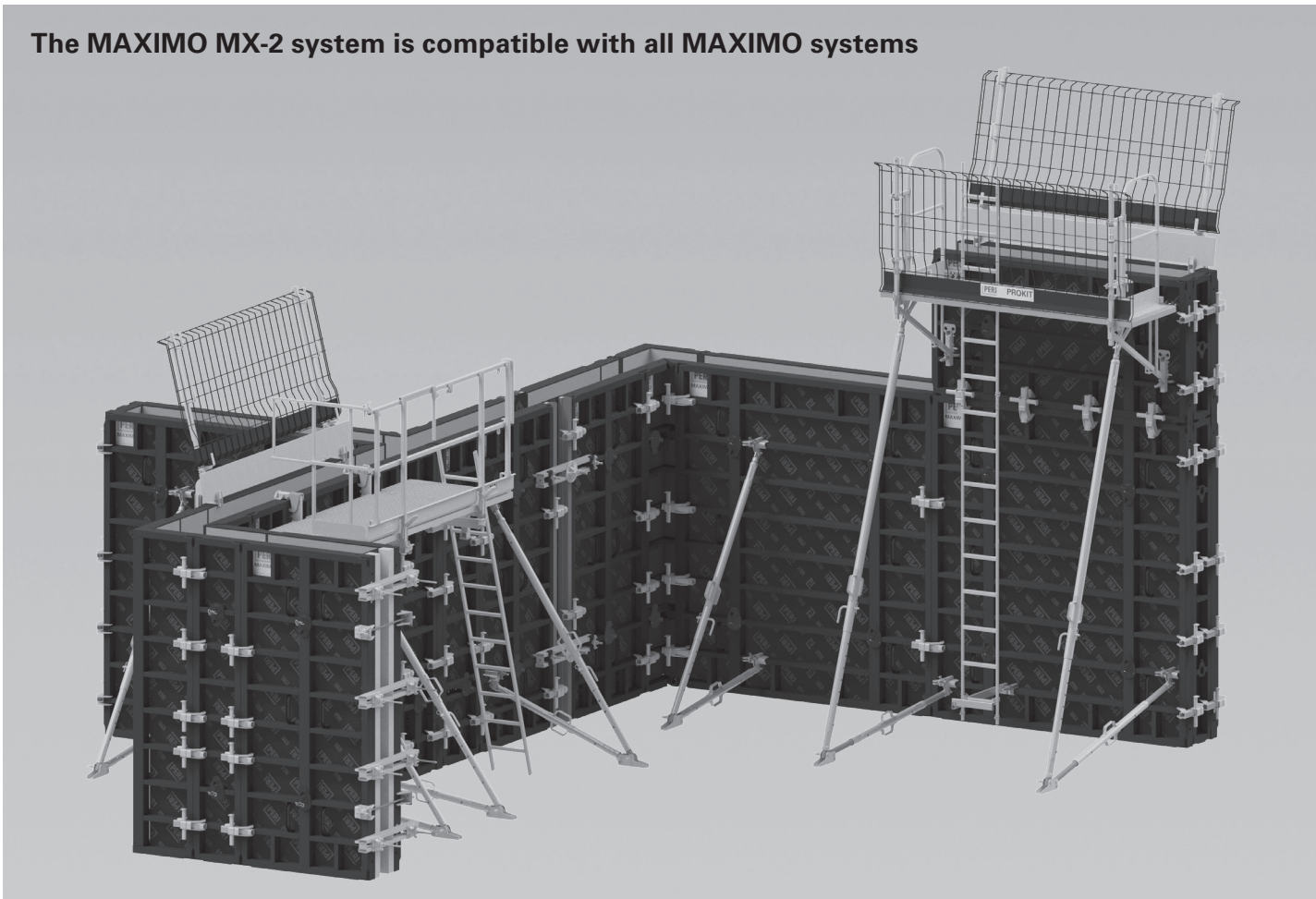


MAXIMO MX-2 18

Panel Formwork

Instructions for Assembly and Use – Standard configuration – Version 1.0

The MAXIMO MX-2 system is compatible with all MAXIMO systems



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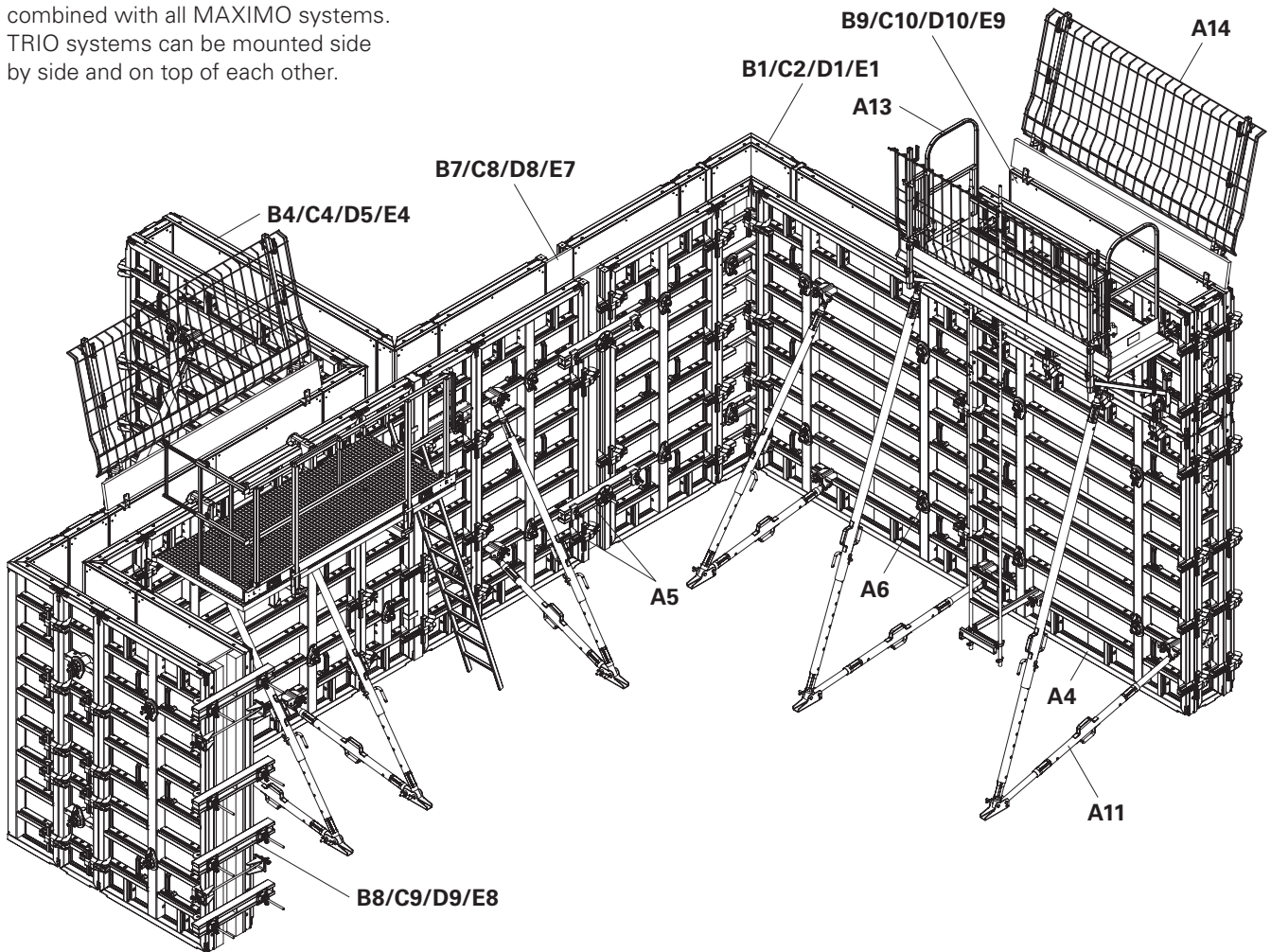
Program overview

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Main components



The MAXIMO MX-2 system can be combined with all MAXIMO systems. TRIO systems can be mounted side by side and on top of each other.

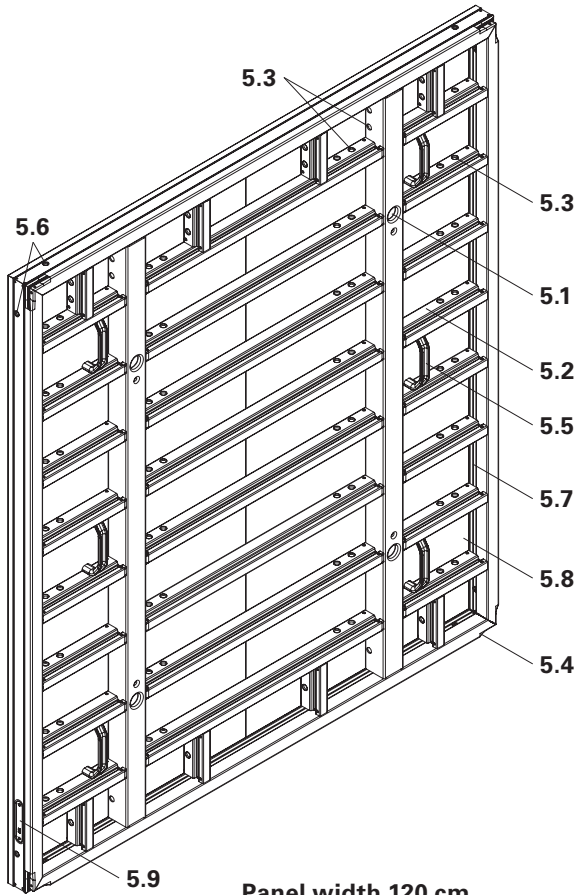


Panel height 270: Section B
 Panel height 300: Section C
 Panel height 330: Section D
 Panel height 360: Section E

- | | |
|----------------------|---|
| A4 | Panels |
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| A6 | Tie System MX 18 |
| A11 | Push-pull props and stabilisers |
| A13 | Working and concreting platforms |
| A14 | Opposing guardrails |
| B1/C2/D1/E1 | Corners 90° with I-Corner MXI-2 300x50/20 |
| B4/C5/D5/E4 | T-junctions 90° with I-corner MXI-2 300x50/20 |
| B7/C8/D8/E7 | Longitudinal infills |
| B8/C9/D9/E8 | Stop end formwork |
| B9/C10/D10/E9 | Height extension |

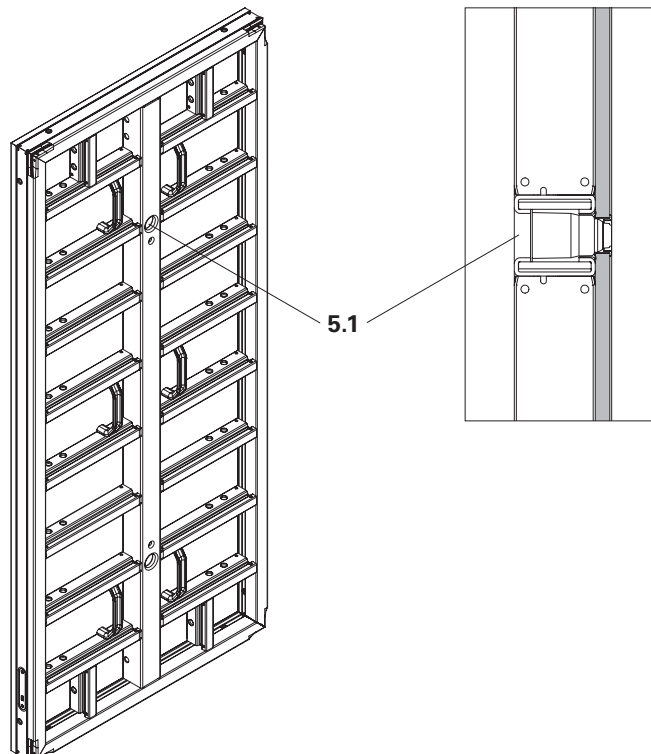
Panel MX-2 18

Panel width 240 cm
















- 5 Panel MX-2 height x width
- 5.1 Tie point with seal
- 5.2 Panel strut
- 5.3 Connecting holes for accessories
- 5.4 Lifting corner
- 5.5 Positioning handle for positioning the panel
- 5.6 Transport openings, e.g. for Stripping Lever MX/TR
- 5.7 Frame profile
- 5.8 Formwork panel
- 5.9 Dual-frequency RFID transponder

Panel width 120 cm






Key

Pictogram | Definition

-  Danger/Warning/Caution
-  Note
-  To be complied with
-  Load-bearing point
-  Visual inspection
-  Tip
-  Incorrect use
-  Safety helmet
-  Safety shoes
-  Safety gloves
-  Safety goggles
-  Personal protective equipment to prevent falling from a height (PPE)
-  Observe additional documentation

Arrows

-  Arrow representing an action
-  Arrow representing a reaction of an action*
-  Arrow representing forces

* If not identical to the action arrow.

Safety instruction categories

The safety instructions alert site personnel to the risks involved and provide information on how to avoid these risks. Safety instructions can be found at the beginning of the section or before instructions for action and are highlighted as follows:

Danger

This sign indicates an extremely hazardous situation that could result in death or serious, irreversible injury if the safety instructions are not followed.

Warning

This sign indicates a hazardous situation that could result in death or serious irreversible injury if the safety instructions are not followed.

Caution

This sign indicates a hazardous situation that could result in minor or moderate injury if the safety instructions are not followed.

Note

This sign indicates situations in which failure to observe the information can result in material damage.

Structure of the safety instructions

Signal word

Type and source of hazard!
Consequences of non-compliance.
⇒ Preventative measures.

Dimensions

Dimensions are usually given in cm. Other measurement units, e.g. m, are shown in the illustrations.

Conventions

- Instructions are numbered with:
1., 2., 3.
- The result of an instruction is shown by: →
- Position numbers are clearly provided for the individual components and are given in the drawing, e.g. **1**, in the text in brackets, for example **(1)**.
- Multiple position numbers, i.e. alternative components, are represented with a slash: e.g. **1/2**.

Notes on illustrations

The illustration on the front cover of these instructions is understood to be a system representation only. The assembly steps presented in these Instructions for Assembly and Use are shown in the form of examples with only one component size. They are valid for all component sizes contained in the standard configuration.

To facilitate understanding, illustrations are sometimes incomplete. The safety equipment that is not shown in these detailed descriptions must nevertheless be available.

Terminology

Components may not always be named in full so that they are easier to read. Example:
Panel MX-2 18 is referred to as Panel MX-2.
This designation also refers to the MX18 panels.

Target groups

Contractors

These Instructions for Assembly and Use are designed for contractors who either

- assemble, modify and dismantle PERI systems, or
- use them, e.g. for pouring concrete, or
- allow them to be used for other operations, e.g. carpentry or electrical work.

Safety and Health Protection

Coordinator*

- is appointed by the client,
- must identify potential hazards during the planning phase,
- determines measures that provide protection against risks,
- creates a safety and health protection plan,
- coordinates the protective measures for the contractor and site personnel so that they do not endanger each other,
- monitors compliance with the protective measures.

Competent person

- is appointed by the contractor,
- must be on site for all system operations,
- prepares and updates the plan for assembly, modification and dismantling,
- prepares and updates the plan for use of the system by the user,
- supervises the assembly, modification and dismantling work (supervisor).

Competent persons qualified to carry out inspections

Due to the specialist knowledge gained from professional training, professional experience and recent professional activity, the competent person qualified to carry out inspections has a reliable understanding of safety-related issues and can carry out inspections correctly. Depending on the complexity of the inspection to be undertaken, e.g. scope of testing, type of testing or the use of certain measuring devices, a range of specialist knowledge is necessary.

Qualified personnel

PERI systems may only be assembled, modified or dismantled by personnel who are suitably qualified to do so. Qualified personnel must have completed a course of training** in the work to be performed, covering the following points at least:

- Explanation of the plan for the assembly, modification or dismantling of the system in an understandable form and language.
- Description of the measures for safely assembling, modifying or dismantling the system.
- Naming of the preventive measures to be taken to avoid the risk of persons and objects falling.

- Designation of the safety precautions in the event of changing weather conditions that could adversely affect the safety of the system, as well as the personnel concerned.
- Details regarding permissible loads.
- Description of all other risks and dangers associated with assembly, modification or dismantling operations.



- **Ensure that the respective current version of relevant national guidelines and regulations are complied with!**
- **If no country-specific regulations are available, PERI recommends that you proceed according to German guidelines and regulations.**

* Valid in Germany e.g.: Regulations for Occupational Health and Safety on Construction Sites 30 (RAB 30).

** Instructions are given by the contractor themselves or a competent person selected by them.

Intended use

Product description

PERI products have been designed for exclusive use in the industrial and commercial sectors only by suitably trained personnel.

These Instructions for Assembly and Use are applicable to the MAXIMO MX-2 18 and MAXIMO MX18 systems.

The MAXIMO MX-2 Wall Formwork System is an adaptable steel panel formwork system for commercial and civil engineering projects.

MAXIMO MX-2 can be used to produce concrete structures such as walls and foundations.

MAXIMO MX-2 has the following features:

- Well-arranged tie and joint pattern.
- Centred tie points for various tie systems. Tie that can be operated from one side, complete with spacing adjustment.
- Panel connection with Alignment Coupler BFD – also possible in the tie area.
- Rigid external corners for wall thicknesses from 15–80 cm.
- Formwork panels are riveted.
- Compatible with PERI MAXIMO and PERI TRIO.

Technical data

- Panel heights: 360, 330, 300, 270, 120, 90, 60 and 30 cm
- Panel widths: 240, 120, 90, 60, 45 and 30 cm
- Permissible load on platforms and console brackets: 150 kg/m²
- Temperature range -20 to +60 °C

Permissible fresh concrete pressure according to DIN 18218

Evenness according to DIN 18202, table 3, line 7

Fresh concrete pressure at:		Height	Tie System MX18*/DW 20 **
Pressure – hydrostatic triangular load		2.70 m	67.5 kN/m ²
		3.00 m	75.0 kN/m ²
		3.30 m	82.5 kN/m ²
		3.60 m	80.0 kN/m ²
Pressure – constant full surface load		2.70 m	80.0 kN/m ²
		3.00 m	80.0 kN/m ²
		3.30 m	80.0 kN/m ²
		3.60 m	80.0 kNm ²

* Tie System MX 18 only valid for panel connections with wall thickness ≤ 60 cm.

** Tie System DW 20 is valid for all wall thicknesses.

Perm. fresh concrete pressure 80 kN/m² for 90° corners and 90° T-junctions for wall thicknesses >40 cm and ≤60 cm: through-ties only for Tie System DW 20 with Steel Waler SRU.

For assembly, see Section A7.

Cleaning and maintenance instructions

In order to maintain the value and operational readiness of the formwork materials over the long term, clean the panels after each use.

Some repair work may also be inevitable due to the tough working conditions.



The contractor must ensure that the personal protective equipment required for cleaning, maintenance and repair work such as

- Safety helmet,
- Safety shoes,
- Safety gloves,
- Safety goggles,

is available and used as intended.

The following instructions should help to keep cleaning and maintenance costs as low as possible.

Cleaning tools must be adapted to the respective surfaces of the components so that they are not damaged.

Spray the formwork on both sides with concrete release agent before each use; this makes the formwork easier and faster to clean. Spray the concrete release agent very thinly and evenly!

Do not spray Working Platforms and access routes with concrete release agent.

Slip hazard.



PERI recommends using the concrete release agent PERI Plasto-Clean for MX-2 panels with ROBU formlining, otherwise it may not be possible to yield the quality of concrete surface required.

Spray the rear side of the formwork with water immediately after concreting; this avoids any time-consuming and costly cleaning operations.

For MX-2 panels with ROBU formlining, clean the polymer formlining side with water.

When used continuously, spray the formlining elements with concrete release agent immediately after de-shuttering; then clean by means of a scraper, brush or rubber lip scraper. Important: do not clean polymer formlining with high-pressure equipment. This could result in the formlining being damaged.

Fix recesses and built-in parts with double-head nails; as a result, the nails can easily be removed later, and damage to the formlining is largely avoided.

Close all unused tie holes with plugs; this eliminates any subsequent cleaning or repair work.

Tie holes accidentally blocked with concrete are cleared by means of a steel pin from the formlining side.

When placing bundles of reinforcement bars or other heavy objects on horizontally supported formwork elements, suitable support, e.g. squared timbers, is to be used; this prevents impressions and damage to the formlining to a large extent.

Internal concrete vibrators should be fitted with rubber caps if possible; as a result, any damage to the formlining is reduced if the internal vibrator is accidentally inserted between the reinforcement and formlining.

Never clean powder-coated components, e.g. elements and accessories, with steel brushes or hard metal scrapers; this preserves the powder coating. Use spacers for reinforcements with large or flat supports; this largely avoids indentations in the formlining under load.

Mechanical components, e.g. spindles or gear mechanisms, must be cleaned of dirt or concrete residue before and after use, and then greased with a suitable lubricant.

Provide suitable support for the components during cleaning so that no unintentional change in their position is possible.

Do not clean components suspended on crane lifting gear.

Clean the frame of the MX-2 panel (not the formlining) with a high-pressure cleaner and a water pressure of $\leq 1,000$ bar and a lance distance to the profile of at least 20 cm. PERI recommends using a lower water pressure so as not to damage the RFID inlay.

Additional technical documentation

- Test certificate
 - DGUV PS 24100024
- Instructions for Assembly and Use:
 - MAXIMO System Supplement
 - MAXIMO Bracket System MXK
 - MAXIMO MXP Platform
 - MXH Heated Panel Formwork
 - Concrete cones and adhesive tie points
 - TRIO Panel Formwork
- Instructions for Use:
 - Lifting Hook MAXIMO 1.5 t
 - Lifting Gear Combi MX
 - Lifting Gear MX
 - Adjustable Bracket MX
 - Pallet lifting truck
 - PERI Bio-Clean
 - PERI Clean
 - PERI Plasto-Clean
- User information:
 - Pallets and stacking devices
- Instruction leaflet:
 - PERI Anchor Bolt SW24 Ø14/20x130 mm
- Data sheets
 - Screw Plugs MX 18-50/75 OF
 - Screw Plugs MX 18-50/75 MF

Instructions for Use

Use in a way not intended, deviating from the standard configuration or the intended use according to the Instructions for Assembly and Use, represents a misapplication with a potential safety risk, e.g. risk of falling.

Only PERI original components may be used. The use of other products and spare parts is not allowed and represents a misapplication with associated safety risks.

Changes to PERI components are not permitted.

Operation with damaged or incomplete load-carrying equipment is not permissible.

The system described in these Instructions for Assembly and Use may contain patent-protected components.

Additional wind attack surfaces resulting from icing and additional masses were not taken into account. Superimposition of ice loads with snow and/or wind were not taken into account.

If necessary, these should be verified by way of a project-specific calculation.

RFID transponder

Individual components are equipped with an RFID transponder. RFID transponders combine hardware with additional software to create a smart product.

Depending on the component and digital solution in question, this makes it possible to:

- Call up technical documents.
- View maintenance plans.
- Track information on transport and logistics.

Clean the frame of the MX-2 panel (not the formlining) with a high-pressure cleaner and a water pressure of $\leq 1,000$ bar and a lance distance to the profile of at least 20 cm. PERI recommends using a lower water pressure so as not to damage the RFID inlay.



For more information, see "RFID LA-TAG Assembly Set User Information".

Disposal

Carry out disposal in accordance with the relevant national regulations.

Observe the safety data sheets of the auxiliary and operating materials.

Cross-system



Safety instructions apply to all service life phases of the system.

General information

The contractor must ensure that the Instructions for Assembly and Use supplied by PERI are available at all times and understood by the site personnel.

These Instructions for Assembly and Use can be used as the basis for creating a risk assessment. The risk assessment is compiled by the contractor. The Instructions for Assembly and Use are not a substitute for a risk assessment!

Observe and comply with the safety instructions and permissible loads.

For the application and inspection of PERI products, the current safety regulations and guidelines valid in the respective countries must be observed.

Materials and working areas are to be inspected before each use and assembly for:

- damage,
- stability and
- functional integrity.

Damaged components must be exchanged immediately on site and no longer used.

Safety components are to be removed only when they are no longer required.

When on slab formwork, scaffolds and Working Platforms:

- do not jump,
- do not run,
- do not drop anything from or onto it.

Components provided by the contractor must comply with the characteristics stipulated in these Instructions for Assembly and Use and all applicable laws and standards. Unless otherwise indicated, the following applies in particular:

- Timber components:
Strength class C24 for solid wood according to DIN EN 338:2016-07.
- Scaffolding tubes:
Galvanized steel tubes with minimum dimension $\varnothing 48.3 \times 3.2$ mm according to DIN EN 12811-1:2004-03 4.2.1.2.
- Scaffolding tube couplings:
according to DIN EN 74-1:2022-09 and DIN EN 74-2:2022-09.

Deviations from the standard configuration are only permitted after a further risk assessment has been carried out by the contractor.

Appropriate measures for working and operational safety, as well as stability, are defined on the basis of this risk assessment.

Corresponding proof of stability can be provided by PERI on request, if the risk assessment and resulting measures to be implemented are made available.

Nails and wood screws must not protrude. Only allow other connecting components to protrude to the extent that is necessary.

If necessary, mark protruding components or fit them with protective material.

Secure all bolts with cotter pins and all screws with nuts

Before and after extraordinary events that may have damaging effects on the safety of the system, the contractor must immediately

- produce another risk assessment, the results of which must be used to implement suitable measures to ensure the stability of the system,
- arrange for an extraordinary inspection to be carried out by a competent person qualified to do so. The aim of this inspection is to detect and repair damage in good time in order to ensure safe use of the system.

Exceptional events could be:

- accidents, fire, explosions, collisions,
- long periods of non-use,
- natural events, e.g. heavy rainfall, heavy snowfall, significant icing, storms or earthquakes.

Suitable measures could be:

- removing nets/tarpaulin,
- clearing snow and ice,
- reducing live loads,
- securing loose materials.

Assembly, modification and dismantling work

PERI systems may only be assembled, modified or dismantled under the supervision of a person qualified to do so and by suitably qualified employees. The qualified personnel must have received appropriate training for the work to be carried out with regard to specific risks and dangers.

On the basis of the risk assessment and Instructions for Assembly and Use, the contractor must create installation instructions in order to guarantee safe assembly, modification and dismantling of the formwork unit.



The contractor must ensure that the personal protective equipment required for the assembly, modification or dismantling of the system, e.g.

- Safety helmet,
- Safety shoes,
- Safety gloves,
- Safety goggles,

is available and used as intended.

For work at a higher level, use an approved ladder or platform system, or an assembly scaffold.



If personal protective equipment against falling from a height (PPE) is required or specified in local regulations, the contractor must determine appropriate attachment points on the basis of the risk assessment.

The PPE to be used to prevent falling is determined by the contractor.

The contractor must

- provide safe working areas for site personnel, which are to be reached through the provision of safe access ways. cordon off and clearly mark danger zones.
- guarantee stability during all stages of construction, in particular during assembly, modification and dismantling operations.
- ensure and demonstrate that all loads that occur are safely transferred.

Use

Every contractor who uses or allows the PERI systems to be used, is responsible for ensuring that the equipment is in good condition.

If the system is used successively or at the same time by several contractors, the health and safety coordinator must point out any possible mutual hazards and all work must then be coordinated.

When systems are used in publicly accessible areas,

- measures to prevent unauthorised use, e.g. enclosure of access areas, must be taken.
- measures are taken against injuries caused by bumping against protruding components, e.g. assembly of protective components.

Always keep the contact surfaces of the system free of dirt, objects, snow and ice.

Close off the system in extreme weather conditions.

System-specific

Strike components only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for deshuttering to take place.

During deshuttering, do not tear off the formwork units with the crane.

Anchoring is to take place only if the anchorage has sufficient concrete strength.

Inspection of the anchoring and associated components must be carried out by the contractor (user).

Enclosure of the platforms or mounting of additional surface areas is not permissible because wind load calculations will be affected.

The platforms are to be inspected for damage at regular intervals by authorised and competent personnel.

Dirt that affects functionality is to be removed immediately.

When stepping onto platforms, watch out for hazards and use PPE if necessary.

When working at open edges of the building, such as when moving the platforms, site personnel must always be secured against falling, e.g. with PPE. Cordon off danger zones.

Site personnel, construction materials or tools must not be transported with the crane during moving operations. Exceptions to this can be determined through the operational working and assembly instructions on the basis of a corresponding risk assessment carried out by the contractor.

When operating lifting equipment near the platforms there is the risk of accidental detachment of the load. This risk is to be taken into consideration when creating the site-specific work and assembly instructions.

If a storm warning is issued, additional push-pull props are to be attached or other bracing measures used along with implementing the details contained in the PERI Design Tables.

Storage and transportation

Store and transport components in such a way that no unintentional change in their position is possible. Detach load-lifting accessories and lifting gear from the lowered components only if they are in a stable position and no unintentional change is possible.

Do not drop the components.

Use PERI load-lifting accessories and lifting gear and only those load-bearing points provided on the component.

During the relocation procedure

- Ensure that components are picked up and set down in such a way that unintentional falling over, falling apart, sliding, falling down or rolling is avoided.
- No one is allowed to remain under the suspended load.

Pre-assembled assemblies should always be guided with ropes when moving them by crane.

The access areas on the construction site must be free of obstacles and tripping hazards, and must also be slip-resistant.

The substrate must have sufficient load-bearing capacity for transport.

Use original PERI storage and transport systems, e.g. crate pallets, pallets or stacking devices.

Component overview and tool list



Pos. no.	Component name	Art. no.
1	Stacking Device MX	115058
2	Stacking Aid MX	113019
3	Lifting Gear Combi MX	117321
4	Lifting Gear MX	117322
5	Panel MX-2 18	–
6	Lifting Hook MX 1.5 t	115168
7	Tie Rod DW15 spec. length	030030
8	Wingnut DW15 ga	030100
9	Stacking Device MXI right	118112
10	Stacking Device MXI left	118110
11	Stacking Device MXA right	118105
12	Stacking Device MXA left	118103
13	Stacking Device MXSE flat	118100
14	Wingnut MX18	123900
15	Adaptor MXE 330	138315
16	Push-Pull Prop RS	–
17	Tie MX18 15-25	123901
18	Tie MX18 20-30	123902
19	Tie MX15 30-40	123903
20	Tie Rod Spanner MX18	108719
21	Waler 85	023551
22	Scaffold Bracket TRG 80	023670
23	Plug MX18 Ø24-28mm	125300
24	Wingnut Pivot Plate DW20 ga	127587
25	M-Panel MXM-2	–
26	Wall Thick.Comp. MX	–
27	Opposite Guardrail Holder MX	129960
28	Alignment Coupler BFD	023500
29	Stripping Lever MX/TR	112588
30	Anchor Bolt SW24 Ø14/20x130 TG	124777
31	Brace Connector-2 MX/TR	023660
32	Conc.Platform MX 100x240	127273
33	Compensation Waler-4 MAR 85	140096
34	Compensation Waler-4 MAR 170	140101
35	Scaff. Build. Ratchet SW19/22	796061
36	Ratchet MX18	130799
37	Tie MX18 15-30	141516
38	Tie MX18 40-50	123904
39	Tie MX18 50-60	123905
43	Tie Rod Wrench DW15	031070
44	Tie Rod Wrench DW20	031050
45	Tie Rod DW20 spec. length	030700
46	Tube Ø28mm 300 rough	031626
47	Sealing Cone DK DW20 55 mm	031637

Pos. no.	Component name	Art. no.
48	Wingnut DW20 ga	030990
49	Counterplate DW20 120x120x20mm	030830
50	Shaft Corner MXSE18 360	–
51	Wingnut Pivot Plate DW15 ga	030370
52	Lifting Pin MX/TR	023440
54	Anchor Cone SK DW20	031646
55	Push-Pull Spreader MX 15-40	115350
56	Magnetic Cone MX18	127425
57	Magnetic Cone Spanner MX15/18	126696
58	Spacer MX18 10mm	125438
59	Stopper MX18-50 MF-LS	127589
60a	Stopper MX18-75 MF-S	127430
60b	Stopper MX18-75 MF-L	127488
61	Stopper MX18-50 OF-LS	127590
62a	Stopper MX18-75 OF-S	127432
62b	Stopper MX18-75 OF-L	127490
63	Stud Spanner MX18	127434
64	Allen wrench 5 mm	–
65	Base Plate-3 f. RS 210-1400	126666
66	Push-Pull Spreader MX 15-100	123842
67	Foundation Strap MX/TR	023800
68	Foundation Tie Clamp MX/TR	023010
69	Perforated Foundation Tie 25m	023020
70	Top Tie Holder-2 AH	023630
71	Plug MXM18 Ø27.6mm	125099
72	Locating board	–
73	Shaft Corner MXSE18 120	–
74	Shaft Corner MXSE18 270	–
75	Shaft Corner MXSE18 300	–
76	Shaft Corner MXSE18 330	–
77	Conc.Platform Hatch MX 100x100	127885
78a	Side Guardrail MXP right	115946
78b	Side Guardrail MXP left	115945
79	Ladder 240-360	107738
80	Side Mesh Barrier PMB	–
81	Guardrail Post MXK	126360
82	Conc.Platform TRIO 120x270	022950
83	Extraction Tool MX Sealing	125337
84	I-Corner MXI-2	–
85	Outs. Corner MXA-2	–
86	Toe board	–
87	Anchor Tie Yoke SW	022030
88	Hook Tie Head DW15 ga	023650
89	Steel Waler SRU U120	–

Component overview and tool list

Pos. no.	Component name	Art. no.
90	Wedge KZ tensionproof	023930
91	Squared timber	–
92	Bulkhead Tie MX DW20	115640
93	Tie Yoke SKZ	024210
94	Articulated Corner MXGI	–
95	Articulated Corner MXGA	–
96	Filler plate 21 mm	–
97	Filler Plate Profile TPP Alu	–
98	Stopend Waler MX 15-40	127732

Pos. no.	Component name	Art. no.
99	Bulkhead Tie MX/TR	023640
100	Stop. Panel TRIO AT	–
101	Stop. Panel TRIO MT	–
102	Stop. Panel TRIO MTF	–
103	Stripping Aid MX/TR	139979
104	Tie Adjustment Plate MX	141201
105	Frame Holder MX/TR	124640
106	Tie Hanger MX	130402
107	Ext. Corner Profile-2 MX	–

Tool name	Art. no.
Stacking Aid MX	115058
Lifting Gear Combi MX	117321
Lifting Gear MX	117322
Lifting Pin MX/TR	023440
Stripping Lever MX/TR	112588
Scaff. Build. Ratchet SW19/22	796061
Ratchet MX18	130799
Tie Rod Wrench DW15	031070

Tool name	Art. no.
Tie Rod Wrench DW20	031050
Magnetic Cone Spanner MX15/18	126696
Stud Spanner MX18	127434
Allen wrench 5 mm	–
Stripping Aid MX/TR	139979
Tie Rod Spanner MX18	108719
Extraction Tool MX Sealing	125337

Tightening torques

Unless otherwise indicated, PERI recommends the following guide values for screw connections as “hand-tightened” tightening torques $M_{A,hand-tightened}$.

These guide values are based on DIN EN 15048-1:2016-09 with minimum Safety Factor 3 against breakage.

Quality class	Quality 4.6		Quality 8.8 and 10.9
	Lightly oiled	MoS2	Undefined
M8 screw	8 Nm	6.6 Nm	8 Nm
M10 screw	16 Nm	13.0 Nm	16 Nm
M12 screw	30 Nm	23.0 Nm	30 Nm
M16 screw	65 Nm	54.0 Nm	65 Nm
M20 screw	100 Nm		100 Nm
M24 screw	150 Nm		150 Nm
M30 screw	260 Nm		260 Nm
M36 screw	350 Nm		350 Nm

Tightening torques have been determined for the following components:

Scaffolding tube coupling	50 Nm
---------------------------	-------

A1 Differences between Panels MX-2 18 and Panels MX18



- These Instructions for Assembly and Use are applicable to the MAXIMO MX-2 18 and MAXIMO MX18 systems.
- There are the following differences between Panels MX-2 18 and Panels MX18:
 - Bone profile with functional holes instead of perforated strut profile
 - Levering corner
 - Positioning handle
 - Dual-frequency RFID transponder in the MAXIMO MX-2

Panel MX-2 18

- Levering corner (5.4a) (Fig. A1.01a)
- Positioning handle (5.5a) (Fig. A1.01b)
- Dual-frequency RFID transponder (5.9a) (Fig. A1.01c)
- Bone profile (5.10a) (Fig. A1.01)

Panel MX-2 18

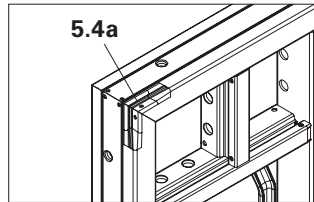


Fig. A1.01a

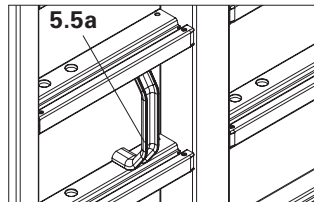


Fig. A1.01b



Fig. A1.01c

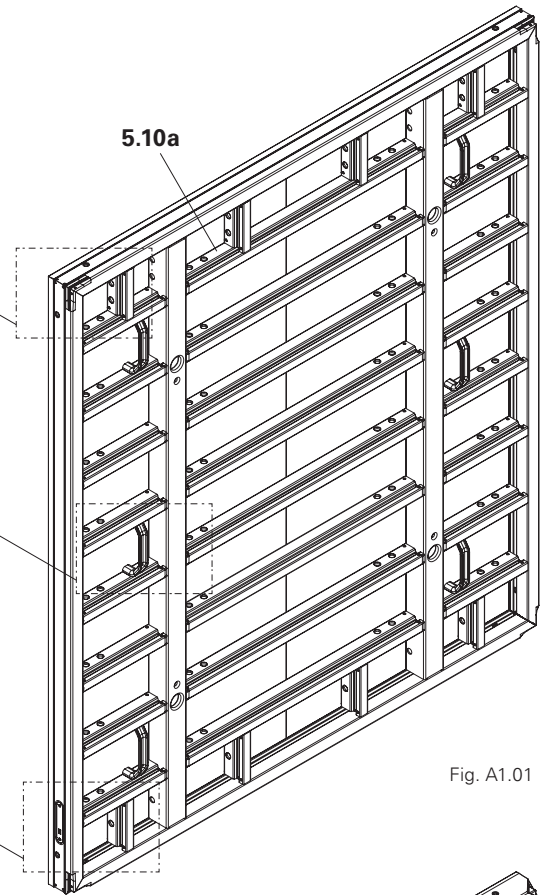


Fig. A1.01

Panel MX18

- Levering corner (5.4b) (Fig. A1.02a)
- Positioning handle (5.5b) (Fig. A1.02b)
- Perforated strut profile (5.10b) (Fig. A1.02)

Panel MX18

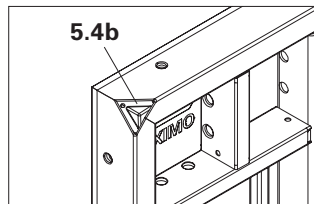


Fig. A1.02a

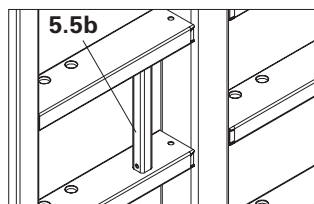


Fig. A1.02b

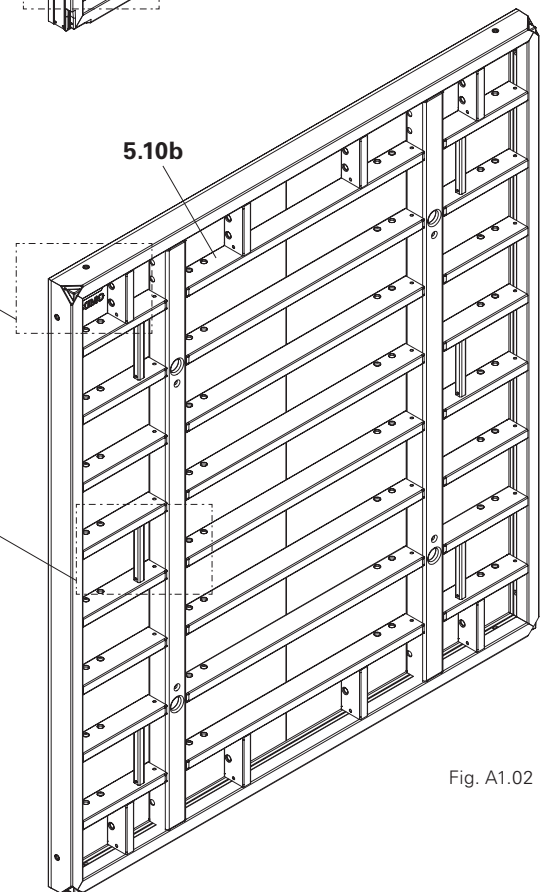


Fig. A1.02



There must be **no** PPE attached to the positioning handle (5.5b) of the MX18 panels, see Section "A15 Anchoring points" on page 104!

Filling Stacking Devices MX



Warning

When stacking in the Stacking Device MX (1), the Panel MX-2 (5) can slip! Slipping Panels MX-2 (5) can lead to serious injury or even death.

- ⇒ Ensure transport units are correctly stacked and secured.
- ⇒ For safety reasons, the Panels MX-2 (5) should never be treated with a concrete release agent immediately before transport.



- Stacking Devices MX (1)
 - are suitable for lifting by crane or forklift.
 - can be moved with the PERI Pallet Lifting Truck.
 - can be lifted both from the longitudinal and front sides.
- Place Stacking Aid MX (2)
 - between the Panels MX-2 (5) as spacers.

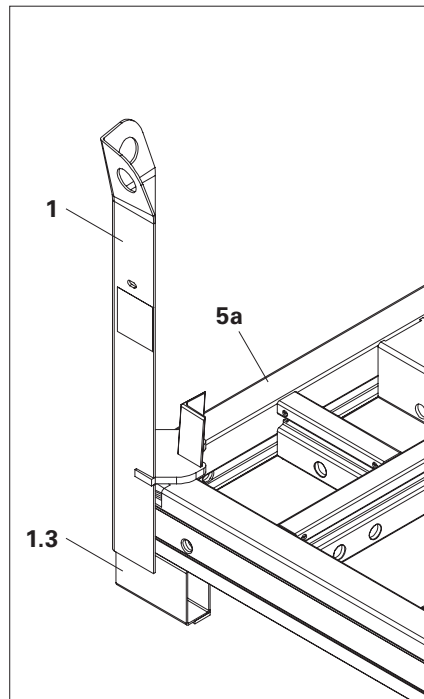


Fig. A2.01

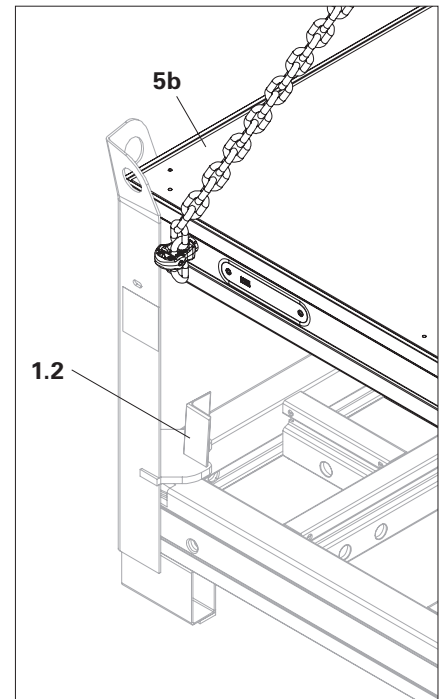


Fig. A2.02

Components

- 1 Stacking Device MX
- 1.1 Load-bearing point
- 1.2 Vertical support plate
- 1.3 Rectangular tubes
- 2 Stacking Aid MX



Observe the instructions for use for the load-carrying equipment used:

- Lifting Gear MX
- Lifting Gear Combi MX



Instead of the locking pins (4.1) of the Lifting Gear MX (4), the locking pins (3.2) of the Lifting Gear Combi MX (3) can also be inserted into the holes of the Panels MX-2 (5).

Filling

1. Using the Lifting Gear MX, place the first Panel MX-2 (**5a**) onto the rectangular tubes (**1.3**) of the Stacking Devices MX (**1**) with the formlining facing downwards. (Fig. A2.01)
2. Using the Lifting Gear MX, place the second Panel MX-2 (**5b**) into the Stacking Devices MX (**1**) with the formlining facing upwards.
 - The vertical support plate (**1.2**) positions the panel and allows Panels MX-2 (**5**) to be transported safely. (Fig. A2.02 + Fig. A2.03)
3. Place 2x Stacking Aid MX (**2**) on each long side. (Fig. A2.04)
 - The formlining is protected.
4. Position another Panel MX-2 (**5**) with the formlining facing upwards.
5. Alternate between Stacking Aid MX (**2**) and Panels MX-2 (**5**), with the formlining facing upwards, until the maximum number of Panels MX-2 (**5**) is reached.

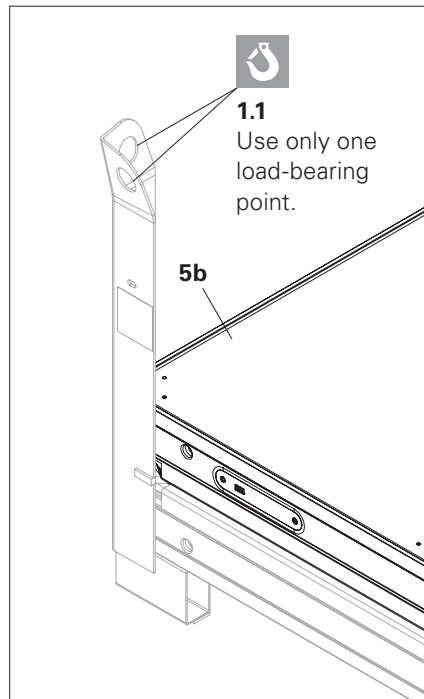


Fig. A2.03

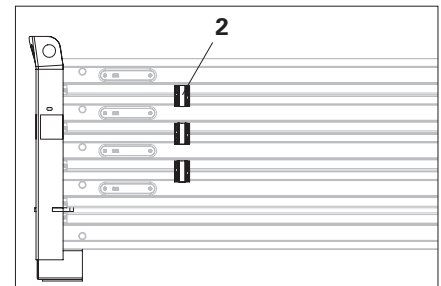


Fig. A2.04

Transporting with the Stacking Device MX



Warning

When transporting in the Stacking Device MX (1), the Panel MX-2 (5) can slip!

Slipping Panels MX-2 (5) can lead to serious injury or even death.

⇒ Only transport Panels MX-2 (5) of the same size in a stack.

⇒ Use Lifting Gear Combi MX (3) or 4-sling lifting gear.

Attach a hook (3.1) to a load-bearing point (1.1) on each Stacking Device MX (1).

→ Four load-bearing points (1.1) (Fig. A2.08)

⇒ Follow the Instructions for Use:
– Lifting Gear Combi MX



- Stacking Devices MX (1) (Fig. A2.05)
 - are suitable for lifting by crane or forklift.
 - can be moved with the PERI Pallet Lifting Truck.
 - can be lifted both from the longitudinal and front sides.
- Place the Stacking Aid MX (2) between the Panels MX-2 (5) as spacers. (Fig. A2.06)

Components

- | | |
|-----|------------------------|
| 1 | Stacking Device MX |
| 1.1 | Load-bearing point |
| 1.2 | Vertical support plate |
| 1.3 | Rectangular tube |
| 2 | Stacking Aid MX |
| 3 | Lifting Gear Combi MX |
| 3.1 | Load hook |

Perm. load-bearing capacity

650 kg/device = 2.6 t/stack

Number of elements per stack

2 – 5 Panels MX-2 of one size

Crane sling angle $\beta \leq 33^\circ$

4-sling lifting gear L = 4.0 m (Fig. A2.07)

Max. stacking height:

3 stacking devices on top of each other



Place a suitable anti-slip mat (e.g. article no. 727299) between the top Panel MX-2 (5) and the Stacking Device MX (1) to protect the formlining.

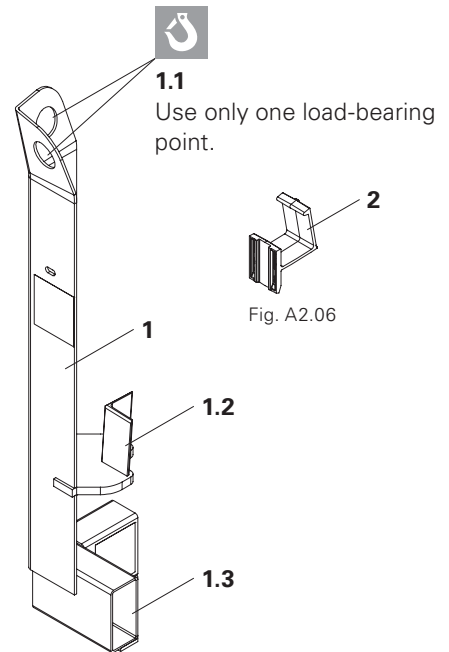


Fig. A2.05

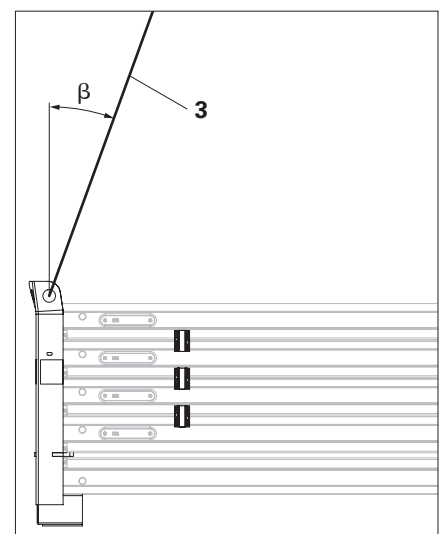


Fig. A2.07

Transportation



Warning

The stack may slip during transportation by crane!
Slipping stacks can lead to serious injury or even death.

- ⇒ Do not treat the panels with concrete release agent immediately before transportation.
- ⇒ Ensure transport units are correctly stacked and secured.
- ⇒ Use PERI load-bearing and lifting gear.
- ⇒ Use the load-bearing points of the components.



For transport, attach load-lifting equipment to the load-bearing points **(1.1)**.

Unloading the stacking devices



Unload the stacks with the crane using a lifting gear combi **(3)** or 4-sling lifting gear. (Fig. A2.08)

1. Attach the load hook **(3.1)** to the load-bearing point **(1.1)** of the Stacking Device MX **(1)**.
(Fig. A2.05 + Fig. A2.08)
2. Lift the stack with the crane and set it down on the ground.

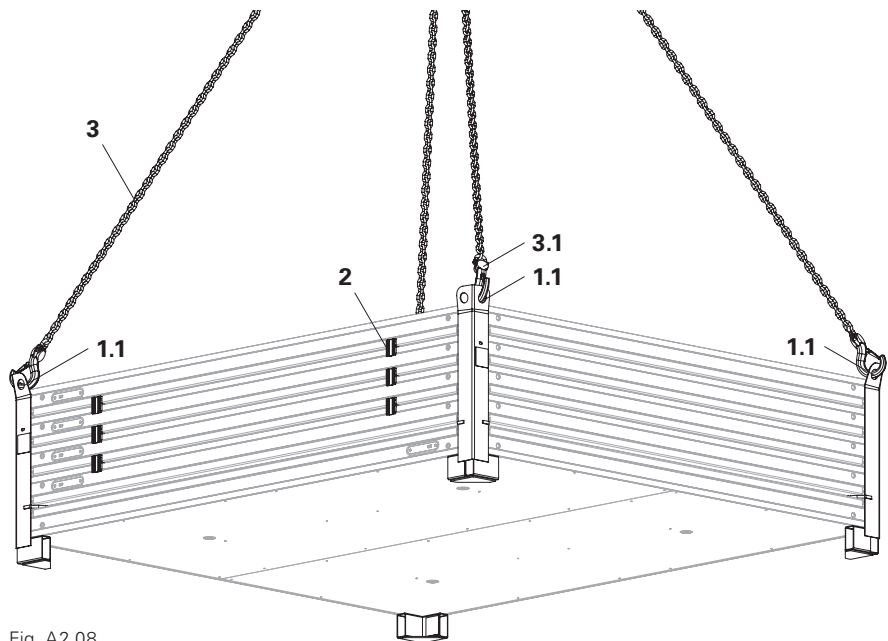


Fig. A2.08

Setting down panels individually



Warning

Panel MX-2 (5) may slip when the Panels MX-2 (5) are set down!
Slipping Panels MX-2 (5) can lead to serious injury or even death.

- ⇒ Use personal protective equipment (PPE) when turning the panels.
- ⇒ Do not attach the lifting hooks until the panel is on the ground! (Fig. A2.11)
- ⇒ Observe the instructions for use for the load-carrying equipment used:
 - Lifting Gear MX
 - Lifting Gear Combi MX
 - Lifting Hook MX 1.5 t



- Remove Panels MX-2 (5) individually or max. 4 Panels MX-2 (5) as a stack from the Stacking Devices MX (1). (Fig. A2.10)
- Turning the Panels MX-2 (5) over is only necessary if the formlining side is facing upwards after it has been lowered. (Fig. A2.09)

Components

- 2 Stacking Aid MX
- 3 Lifting Gear Combi MX
- or
- 4 Lifting Gear MX
- 4.1 Locking pin
- 5 Panel MX-2
- 6 Lifting Hook MAXIMO 1.5t



Instead of the locking pins (4.1) of the Lifting Gear MX (4), the locking pins (3.2) of the Lifting Gear Combi MX (3) can also be inserted into the holes of the Panels MX-2 (5).

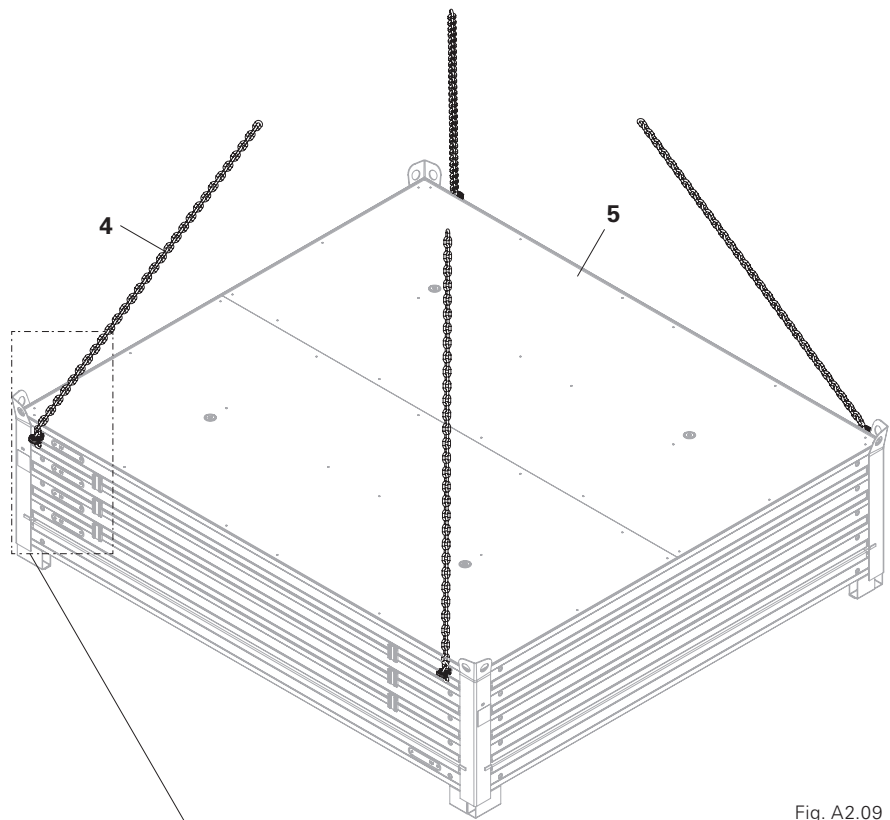


Fig. A2.09

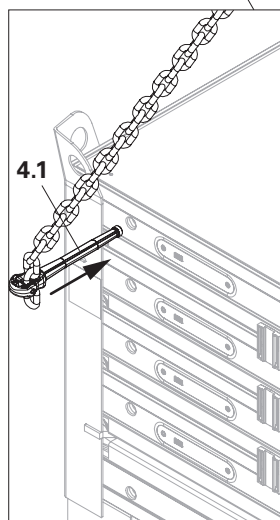


Fig. A2.09a

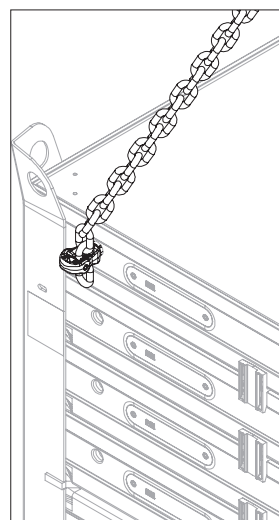


Fig. A2.09b

Setting the load down

1. Place squared timber on the ground.
2. Insert the locking pin (4.1) of the Lifting Gear MX (4) into the holes of the upper Panel MX-2 (5a) as far as it will go. (Fig. A2.09 – Fig. A2.10)
3. Attach Lifting Gear MX (4) to the crane.
4. Lift Panel MX-2 (5a) out of the Stacking Device MX (1). (Fig. A2.10)
5. Remove the Stacking Devices MX (2).
6. Place Panel MX-2 (5a) on squared timbers.
7. Pull out the locking pin (4.1).
8. Attach Lifting Hook MX 1.5t (6) to Panel MX-2 (5a). (Fig. A2.11)
9. Turn the panel, i.e. use the Lifting Hooks MX 1.5t (6) hanging from the crane to pull it upwards until the panel is vertical and then slowly lower it onto the squared timber with the formlining facing downwards. (Fig. A2.11 – Fig. A2.13) Ensure that the chains are always tensioned.
10. Repeat steps 1 to 9 for Panels MX-2 (5b + 5c + 5d).

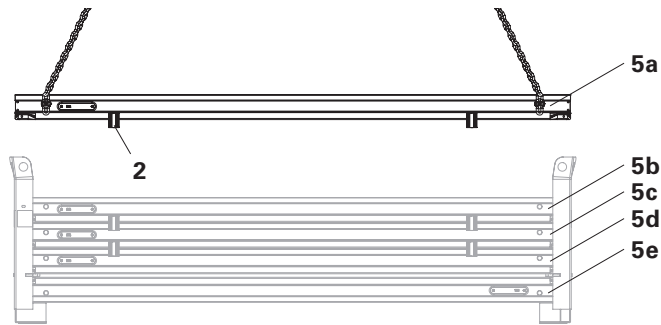


Fig. A2.10

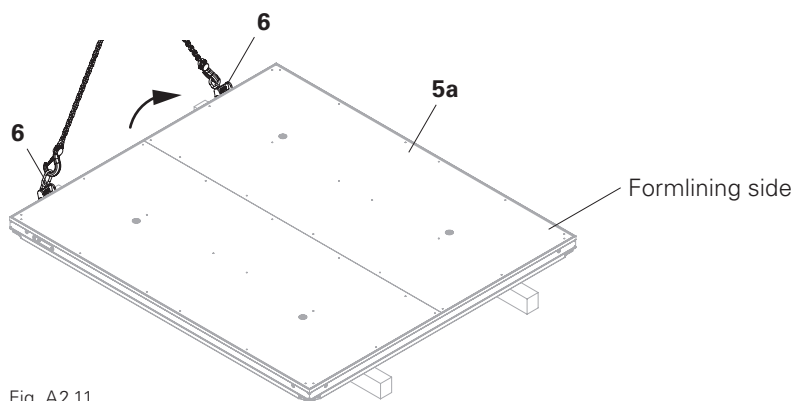


Fig. A2.11

Setting down the final panel

1. Place squared timber on the ground.
2. Insert the locking pin (4.1) of the Lifting Gear MX (4) into the holes of the lowest Panel MX-2 (5ae) as far as it will go. (Fig. A2.09 – Fig. A2.10)
3. Attach Lifting Gear MX (4) to the crane.
4. Raise Panel MX-2 (5e).
5. Remove Stacking Devices MX (1).
6. Place Panel MX-2 (5e) on squared timbers.
7. Pull out the locking pin (4.1).

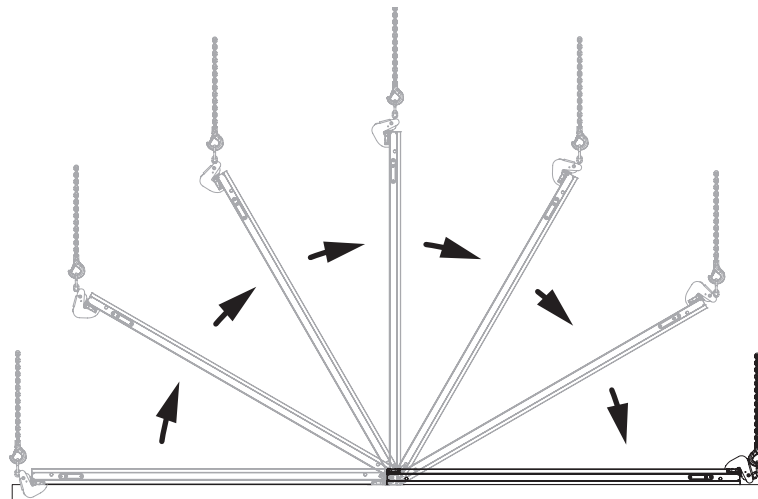


Fig. A2.12

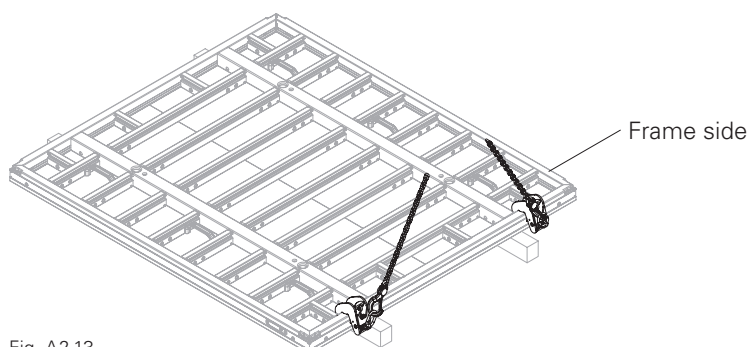


Fig. A2.13

Transporting stacks without stacking devices



Observe Instructions for Use.



As an alternative to the Stacking Devices MX (1), it is possible to transport stacked Panels MX-2 (5) as a stack without Stacking Devices MX (1). To secure the stacks:

- Tie Rod DW20 (45) and Wingnuts DW20 ga (48). The tie rod must be approx. 15 cm longer than the height of the stack.
(Fig. A2.14 + Fig. A2.14a)
- Steel straps (not shown)

Components

- 4 Lifting Gear MX
 - 45 Tie Rod DW20
 - 48 Wingnut DW20 ga
-



Secure panels with Tie Rod DW20 (45) and Wingnut DW20 (48) and lift out with Lifting Gear MX (4).

Assembly

1. Cut Tie Rod DW20 (45) to the specified length.
2. Turn Wingnut DW20 (48) onto Tie Rod DW20 (45).
Leave approx. 5 cm clearance between the stack and Wingnut DW20 (48). (Fig. A2.14a)
3. Repeat steps 1 + 2.
4. Insert 2x Tie Rods DW20 (45) into the opposite tie points in the corners of the Panels MX-2 (5) until the Wingnut DW20 ga (48) is in contact.
– For heights 300 – 360 cm, the middle row of ties remains free.
→ Tie Rod DW20 (45) protrudes approx. 5 cm at the bottom.
5. Insert the locking pin (4.1) of the Lifting Gear MX (4) into the side holes of the lowest Panel MX-2 (5).



Have all four locking pins been (4.1) completely inserted into the holes?

6. Move the stack by crane.
→ The Panels MX-2 (5) are prevented from slipping by the Tie Rods DW20 (45). (Fig. A2.14a)



Do not use the hammer to fix the locking pin (4.1), only insert by hand.

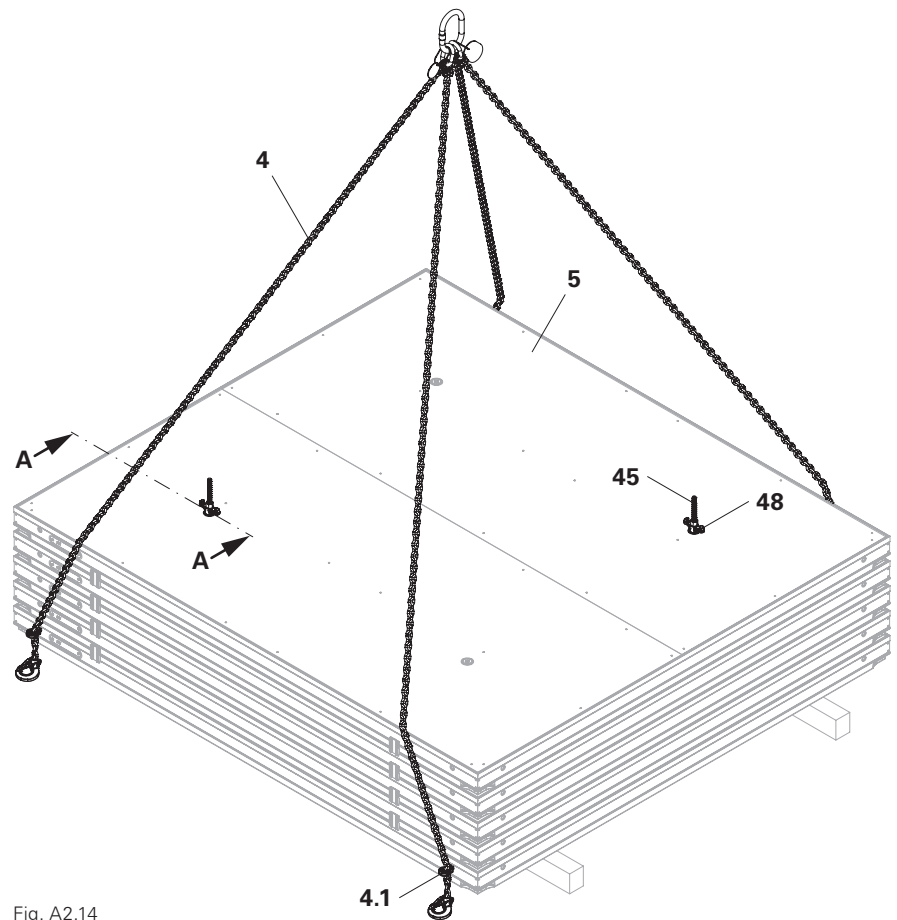


Fig. A2.14

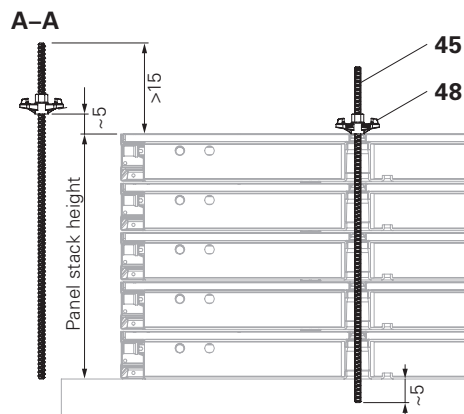


Fig. A2.14a

Stacking aids



Note

Without conveyor belts, the stacks may slip and damage the panels!
 ⇒ Only use stacking aids as transport securing devices in combination with conveyor belts.

Components

- 9 Stacking Device MXI right
- 10 Stacking Device MXI left
- 11 Stacking Device MXA right
- 12 Stacking Device MXA left
- 13 Stacking Device MXSE flat

Stacking Devices MXI



Take into account that there are right and left versions.

I-Corners MXI-2, height x 50/20

Stack with

- two inside corners. (not shown)
- four inside corners. Only install Stacking Devices MXI (9 + 10) at the corners. (Fig. A2.15)

I-Corners MXI-2, height x 60

Stack with

- two inside corners. (Fig. A2.16)
- four inside corners. Only install Stacking Devices MXI (9 + 10) at the corners. (not shown)

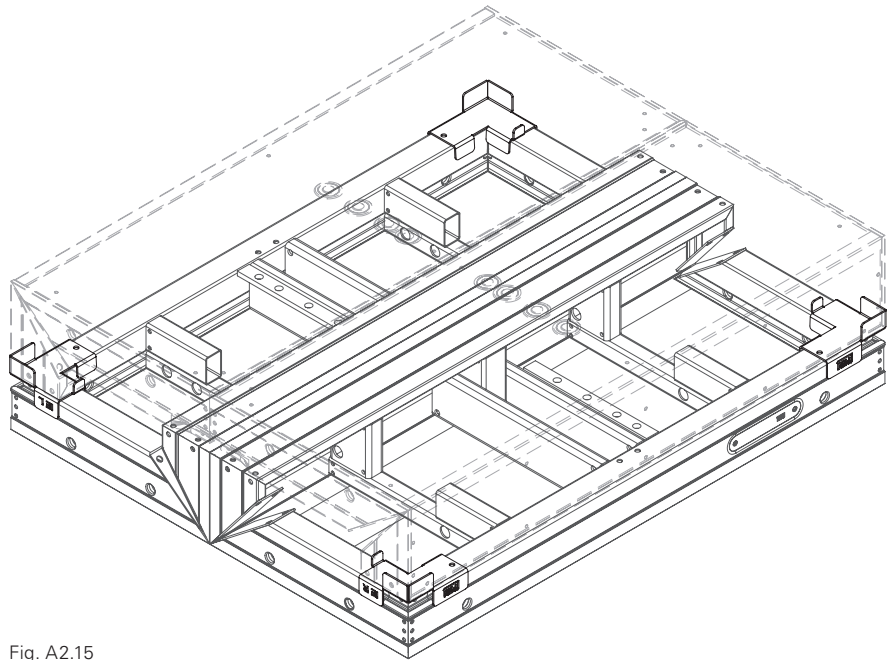


Fig. A2.15

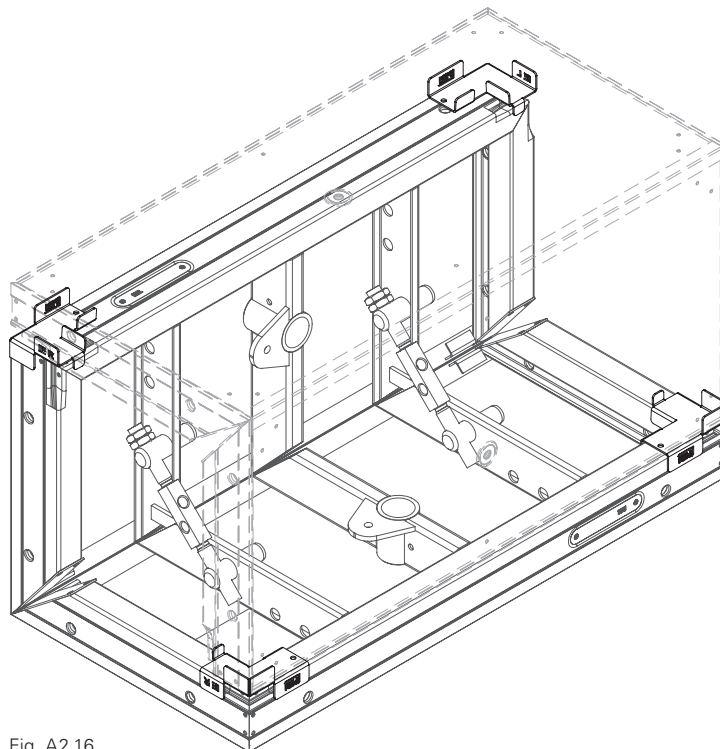


Fig. A2.16

Stacking Devices MXA



Take into account that there are right and left versions.

Outs. Corners MXA-2, height x 45

Stack with

- two outside corners. (not shown)
- four outside corners. Only install Stacking Devices MXA (11 + 12) at the corners. (Fig. A2.17)

Outs. Corners MXA-2, height x 35

Stack with

- two outside corners. (Fig. A2.18)
- four outside corners. Only install Stacking Devices MXA (11 + 12) at the corners. (not shown)

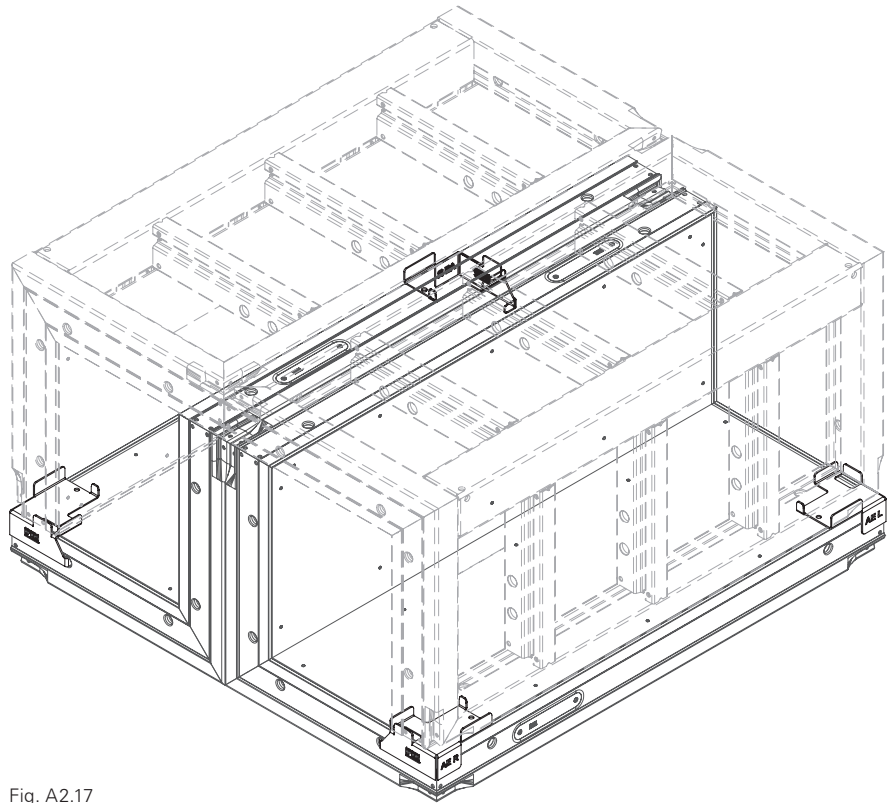


Fig. A2.17

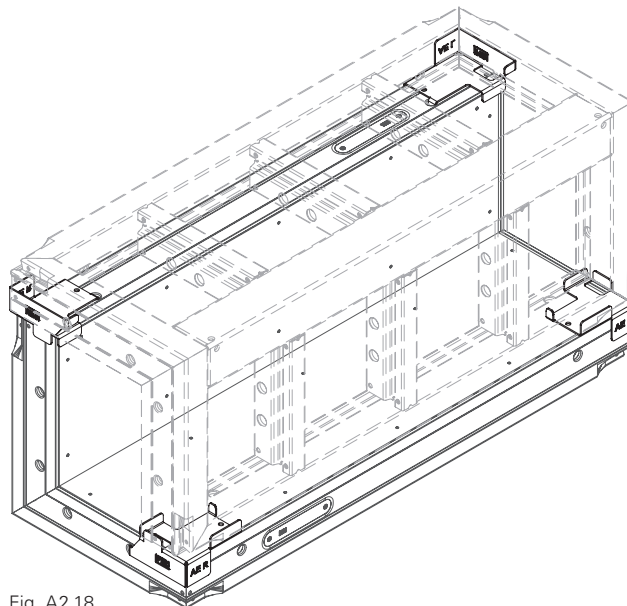


Fig. A2.18

Stacking Device MXSE flat

For Shaft Corners MXSE x height

Stack with

- two shaft corners. Fit Stacking Devices MXSE flat (**13**) on the corners at the top and bottom. (Fig. A2.19)
- four shaft corners. Only fit Stacking Devices MXSE flat (**13**) on the corners at the bottom. (Fig. A2.20)

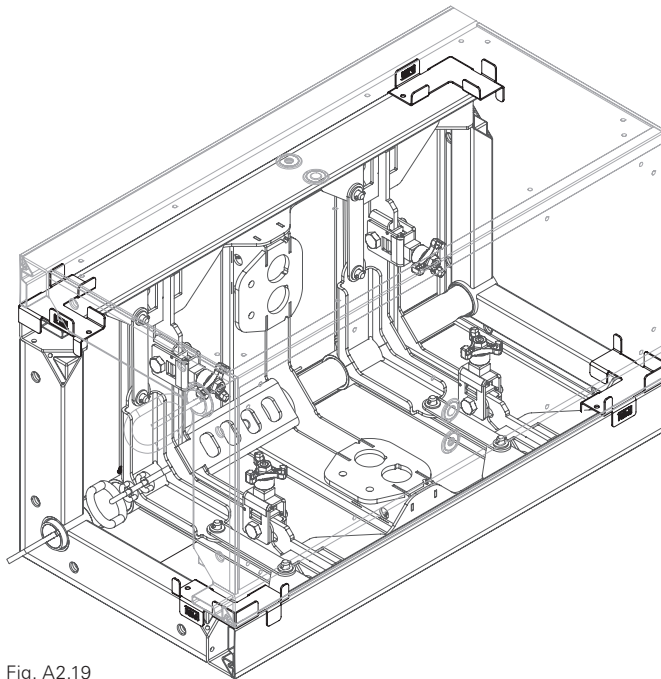


Fig. A2.19

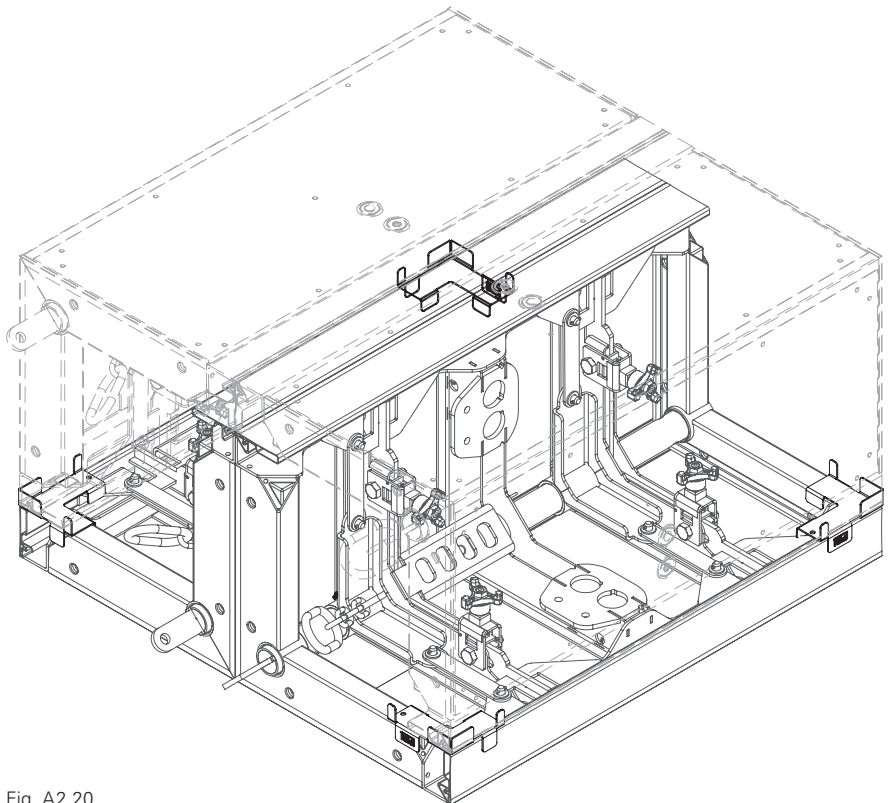


Fig. A2.20



Observe the additional technical documents:

- Lifting Hook MX 1.5 t
- Push-Pull Props RS and RSS

Fitting the primary formwork

- With opposing guardrail here
- The primary formwork is the formwork on which the Push-Pull Props RS are mounted, regardless of the direction of the ties.

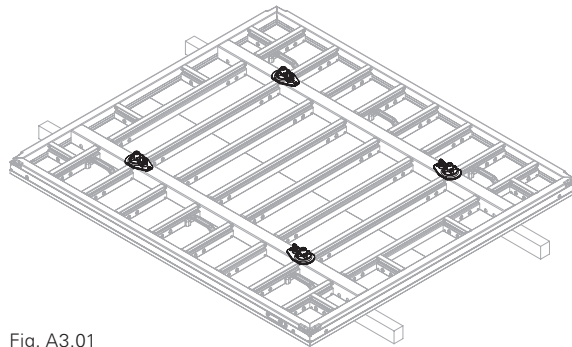


Fig. A3.01



Warning

Unsecured Panels MX-2 (5) may fall over!

Falling Panels MX-2 (5) can lead to serious injury or even death.

- ⇒ Secure Panels MX-2 (5) with Push-Pull Props RS (16) against tilting and wind forces.
- ⇒ First secure the Push-Pull Props RS (16), then loosen the 2-sling lifting gear.

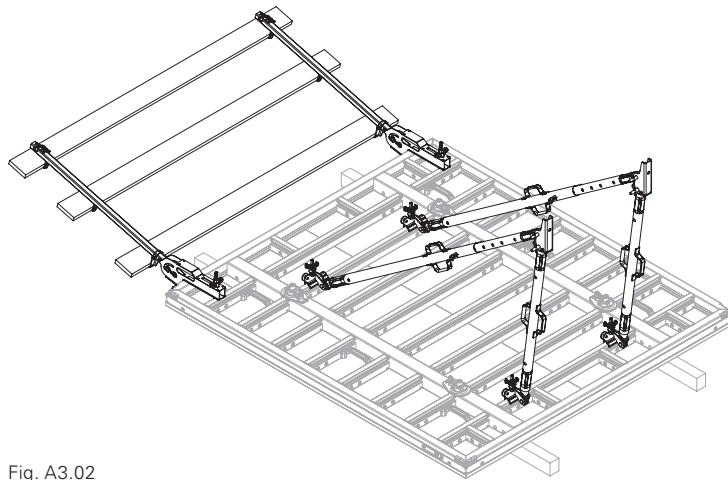


Fig. A3.02



- Carry out all work steps from a safe workplace.
- For attachment points on Panel MX-2 (5), see Section "A15 Anchoring points" on page 104.

Assembly

1. Oil the tie points.
2. PERI recommends fitting a Wingnut MX (14) in each tie point on the primary formwork, as these can then be pre-fitted on the ground. See Section A6. (Fig. A3.01)
3. Fit Push-Pull Props RS (16), see Section A11.
4. Fit the opposing guardrail to the horizontal Panel MX-2 (5), see Section A14. (Fig. A3.02)
5. Fit the Lifting Hook MAXIMO 1.5t (6).
6. Attach the 2-sling lifting gear.
7. Erect Panel MX-2 (5).
8. Transport Panel MX-2 (5) to the place of use by crane. (Fig. A3.03)
9. Secure Push-Pull Props RS (16), for example with Anchor Bolt SW24 Ø14/20x130 TG (30), see Section A11.
10. Release the 2-sling lifting gear.
11. Attach the board to the bottom of the Opposite Guardrail Holder MX.



- When shuttering, start with the outside and inside corners.

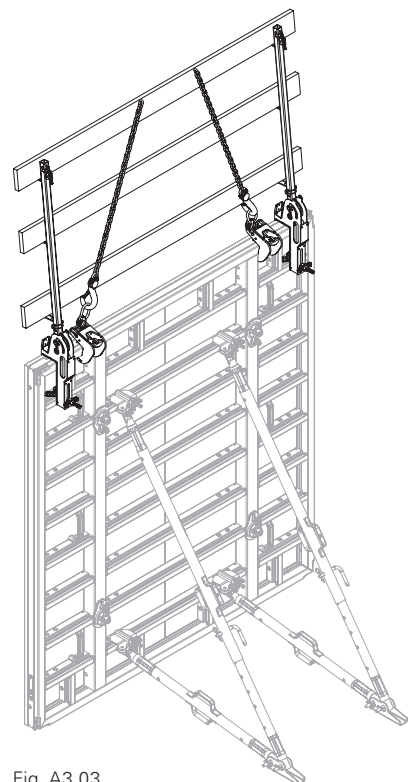


Fig. A3.03

Mounting the closing formwork

With working and concreting scaffold here.



Danger

Unsecured Panels MX-2 (5) may fall over!

Falling Panels MX-2 (5) can lead to serious injury or even death.

⇒ Fit the upper ties first.

⇒ Release the 2-sling lifting gear when all ties have been installed.



Carry out all work steps from a safe workplace.

Assembly

1. Install the work platform, e.g. MAXIMO Bracket System MXK, see Section A13.
2. Fit the Lifting Hook MAXIMO 1.5t (6).
3. Attach the 2-sling lifting gear.
4. Erect Panel MX-2 (5).
5. Transport Panel MX-2 (5) to the place of use by crane. (Fig. A3.04)
6. Fit Tie MX, e.g. Tie MX18 15-25 (17), see Section A6.
7. Release the 2-sling lifting gear. (Fig. A3.05)

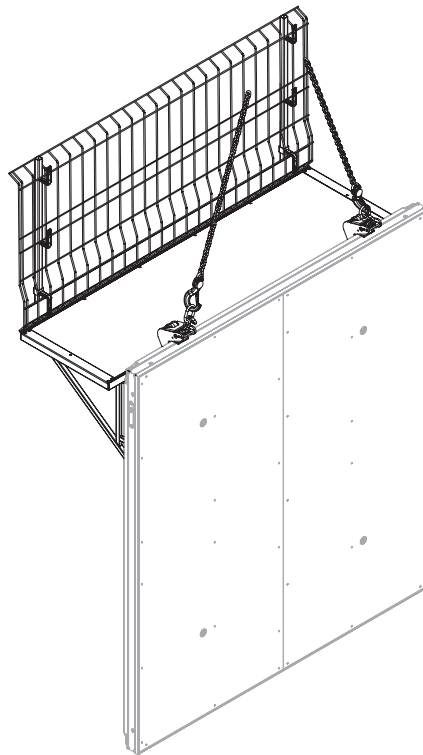


Fig. A3.04

Concreting

From a work platform. (Fig. A3.05)



- Concrete release agent must be applied to the formlining of the MX-2 panels before concreting.
- PERI recommends using the concrete release agent PERI Plasto-Clean for MX-2 panels with ROBU formlining, otherwise it may not be possible to yield the quality of concrete surface required.

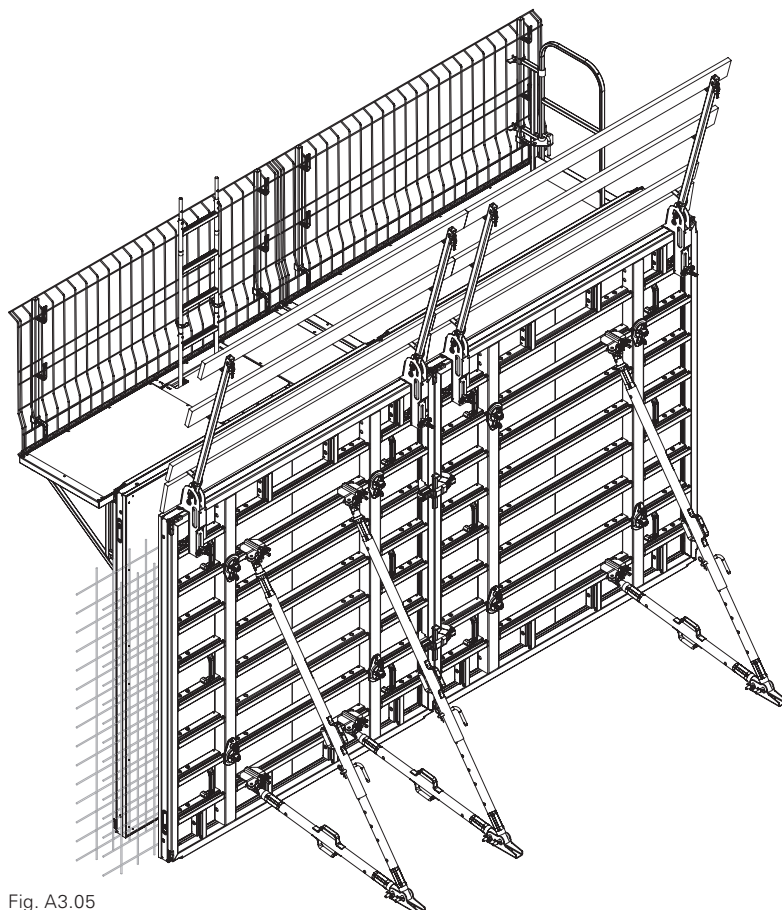


Fig. A3.05

Striking and repositioning

From the compensation to the corner.



Warning

Unsecured Panels MX-2 (5) may fall over!

Falling Panels MX-2 (5) can lead to serious injury or even death.

- ⇒ Secure Panels MX-2 (5) against tilting and wind forces.
- ⇒ First secure the relocated panels with Push-Pull Props RS (16), then loosen the 2-sling lifting gear.



- Concrete strength must be taken into account.
- Strike panels only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for deshuttering to take place.
- Carry out all work steps from a safe workplace.
- For attachment points on Panel MX-2 (5), see Section "A15 Anchoring points" on page 104.

Setting down the closing formwork

1. Fit the Lifting Hook MAXIMO 1.5t (6) to Panel MX-2 (5).
2. Attach the 2-sling lifting gear.
3. Remove Tie MX, e.g. Tie MX18 15-25 (17).
4. Release the panel connection, in this case Alignment Coupler BFD (28).
5. Release Panel MX-2 (5) from the concrete, e.g. with Stripping Lever MX/TR (29) or Stripping Aid MX/TR (103) for clamped Panels MX-2 (5).
6. Set the Panel MX-2 (5) aside and clean it.

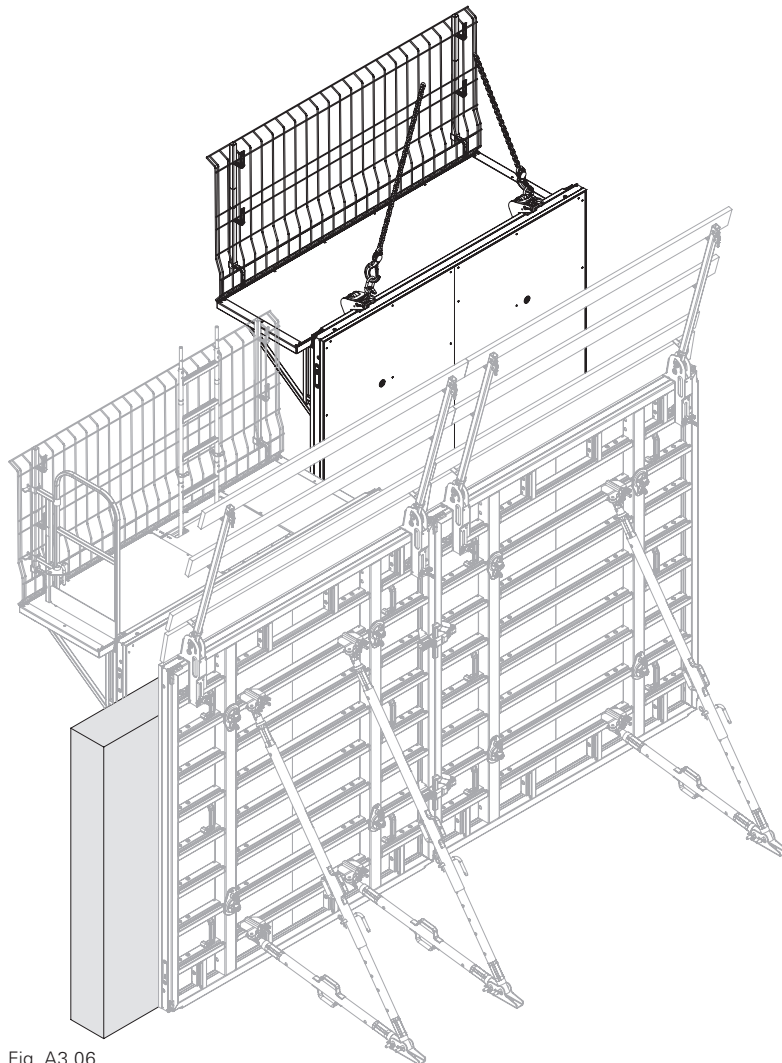


Fig. A3.06

Moving the primary formwork

1. Remove the board at the bottom of the Opposite Guardrail Holder MX and unlock the Opposite Guardrail Holder MX.
2. Fit the Lifting Hook MAXIMO 1.5t (6) to Panel MX-2 (5).
3. Attach the 2-sling lifting gear.
4. Release the panel connection, in this case Alignment Coupler BFD (28).
5. Remove the anchor bolt, e.g. Anchor Bolt SW24 Ø14/20x130 TG (30) of the Push-Pull Props RS (16).
6. Release Panel MX-2 (5)
 - from the concrete, e.g. with Stripping Lever MX/TR (29) or Stripping Aid MX/TR (103) for clamped Panels MX-2 (5).
 - set it down safely, secure it to prevent it from falling over and clean it,
 - transport it to the place of use by crane.
7. Connect Panels MX-2 (5), in this case with Alignment Coupler BFD (28), see Section A5.
8. Secure Push-Pull Props RS (16), see Section A11.
9. Release the 2-sling lifting gear.
11. Remove the Lifting Hook MAXIMO 1.5t (6) from Panel MX-2 (5).
10. Secure the Opposite Guardrail Holder MX and attach the board to the bottom of the Opposite Guardrail Holder MX.

Moving the closing formwork

1. Fit the Lifting Hook MAXIMO 1.5t (6) to the panel.
2. Attach the 2-sling lifting gear.
3. Use a crane to transport Panel MX-2 (5) of the closing formwork to the place of use.
4. Connect Panels MX-2 (5) with Alignment Coupler BFD (16).
5. Fit Tie MX, e.g. Tie MX18 15-25 (17).
6. Release the 2-sling lifting gear. (Fig. A3.06)

Cleaning

- Clean Panels MX-2 (5), see Section “Cleaning and maintenance instructions” on page 11. Then apply concrete release agent, e.g. PERI Bio-Clean and release agent sprayer, to Panels MX-2 (5).
- PERI recommends using the concrete release agent PERI Plasto-Clean for MX-2 panels with ROBU formlining, otherwise it may not be possible to yield the quality of concrete surface required.



Observe the instructions for use for the concrete release agent.

Overview of height 30 – 270

		Width [cm]						M-Panel MXM-2 60
		240	120	90	60	45	30	
Height [cm]	30							
	60							
	90							
	120							
	270							

A4 Panels

Height [cm]	Width [cm]							
	M-Panel MXM-2 80	I-Corner MXI-2 50/20	I-Corner MXI-2 60	Outs. Corner MXA-2 35	Outs. Corner MXA-2 45	Articulated corner		Shaft Corner MXSE
						Inside MXGI	Outside MXGA	
30								
60								
90								
120								
270								

Overview of height 300 – 360

		Width [cm]						
		240	120	90	60	45	30	M-Panel MXM-2 60
Height [cm]	300							
	330 *							
	360							

* Additional Panels MX-2 18 330x270 are available in height 330.

Height [cm]	Width [cm]							
	M-Panel MXM-2 80	I-Corner MXI-2 50/20	I-Corner MXI-2 60	Outs. Corner MXA-2 35	Outs. Corner MXA-2 45	Articulated corner		Shaft Corner MXSE
						Inside MXGI	Outside MXGA	
300								
330								
360								

Structure



- Do not use the positioning handle (5.5) for transportation by crane.
- Do not use the positioning handle (5.5) as a climbing aid.

Panel MX-2

- 5** Panel MX-2 height x width
- 5.1** Tie point with seal
- 5.2** Panel strut
- 5.3** Connecting holes for accessories
- 5.4** Lifting corner
- 5.5** Positioning handle for positioning the panel
- 5.6** Transport openings, e.g. for Stripping Lever MX/TR
- 5.7** Frame profile
- 5.8** Formwork panel
- 5.9** Dual-frequency RFID transponder

(Fig. A4.01 – Fig. A4.02a)

Panel width 240 cm

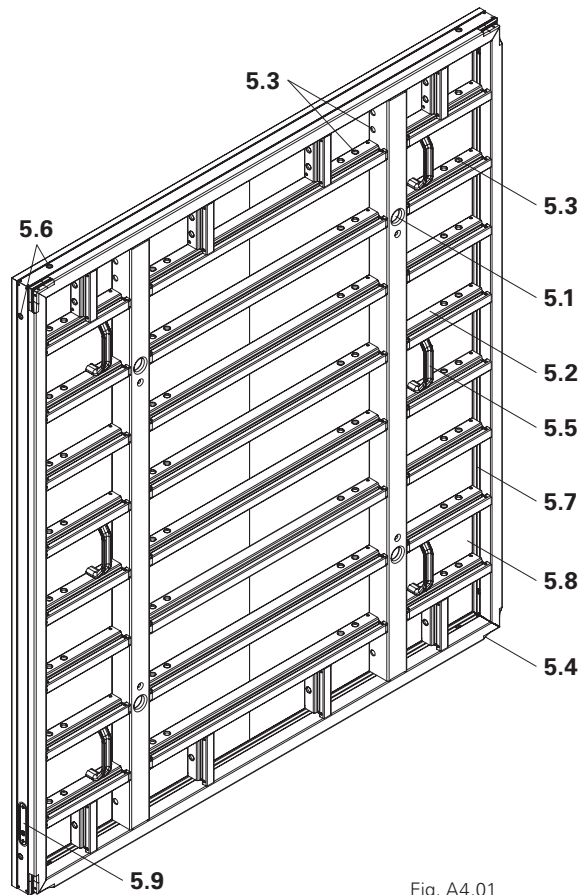


Fig. A4.01

Panel width 120 cm

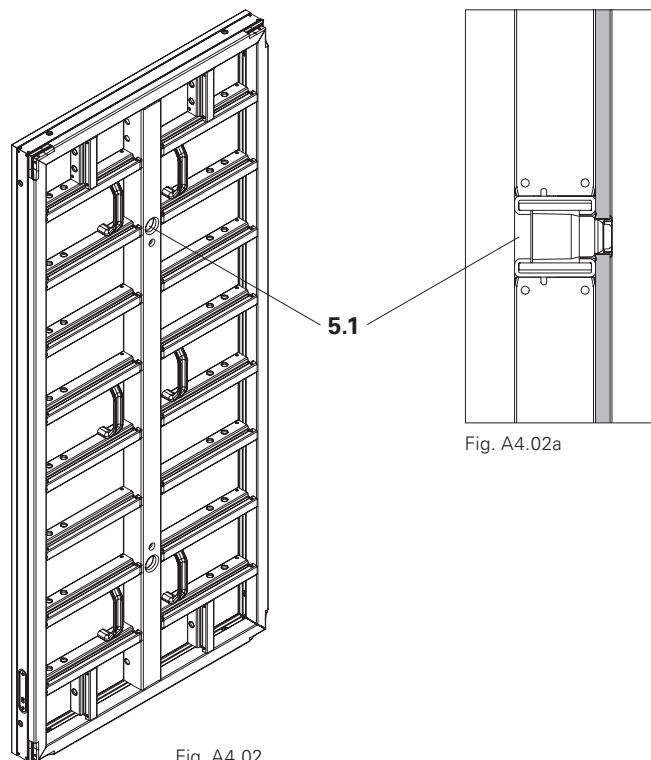


Fig. A4.02a

Fig. A4.02

Connecting holes

Connection options at the connecting holes (5.3):

- For push-pull prop connections, e.g. Brace Connector-2 (31), see Section "Brace Connector-2 MX/TR" on page 62. (Fig. A4.03c)
- For console brackets and opposing guardrail holders, e.g. Scaffold Bracket MXK (22), see Section "A13 Working and concreting platforms" on page 84. (Fig. A4.03 + Fig. A4.03d)
- For bracing elements, e.g. Compensation Waler-4 MAR (33/34), see Section "Compensation Waler-4" on page 42.

Stripping Lever MX/TR

With the Stripping Lever MX/TR (29),

- remove Panels MX-2 (5) from the concrete. (Fig. A4.03a)
- position (Fig. A4.03b)

Stripping Aid MX/TR

With the Stripping Aid MX/TR (103), remove Panels MX-2 (5) from the concrete, see Section "A20 Stripping Aid MX/TR" on page 116. (Fig. A4.03e)

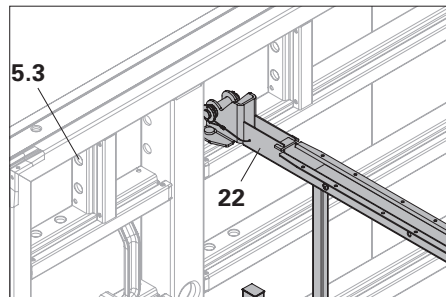


Fig. A4.03d

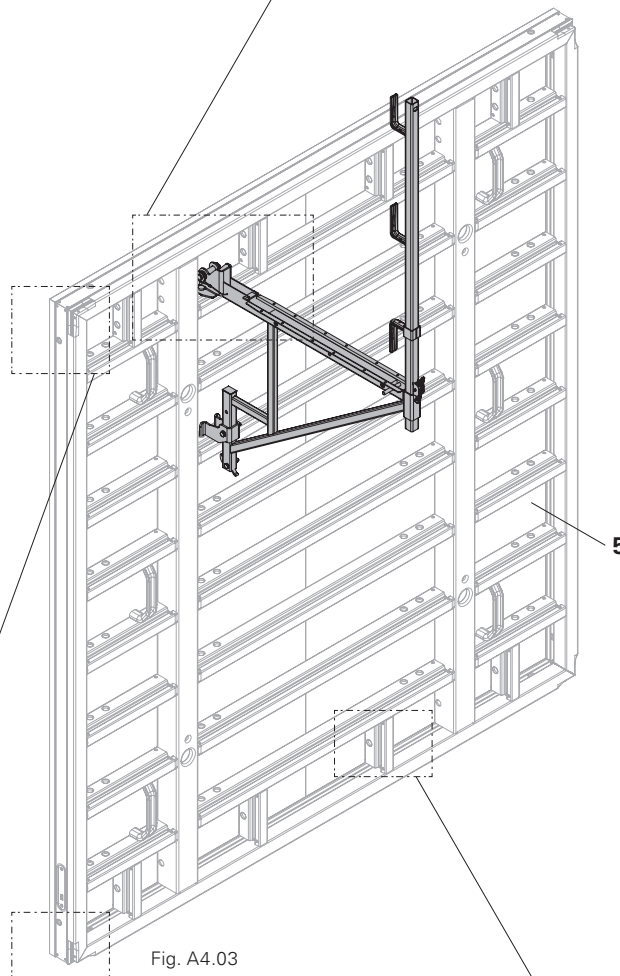


Fig. A4.03

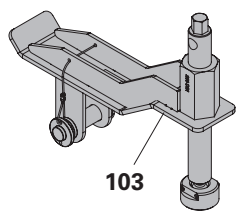


Fig. A4.03e

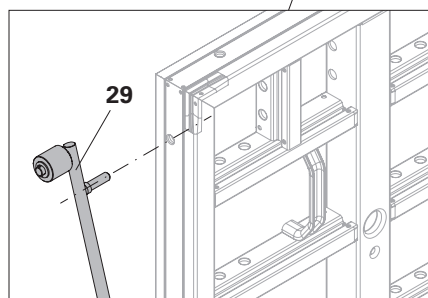


Fig. A4.03a

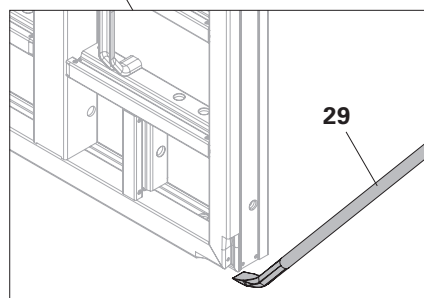


Fig. A4.03b

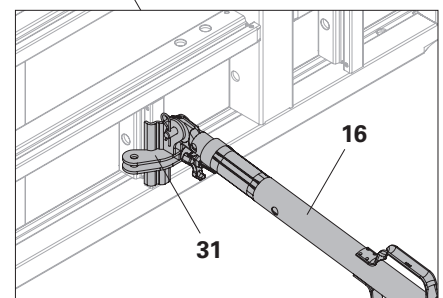


Fig. A4.03c

Alignment Coupler BFD

(Fig. A5.01)

Component

28 Alignment Coupler BFD

28.1 Wedge

28.2 Sliding part

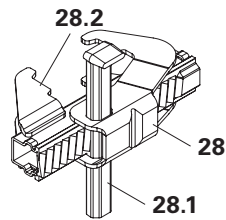


Fig. A5.01

Assembly

1. Move the wedge (**28.1**) to the upper end position.
2. Open the sliding part (**28.2**).
(Fig. A5.01a)
3. Place Alignment Coupler BFD (**28**) on the panel strut (**5.2**).
4. Close the sliding part (**28.2**).
5. Secure the wedge (**28.1**) with a hammer. (Fig. A5.01b)

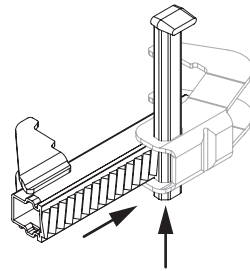


Fig. A5.01a

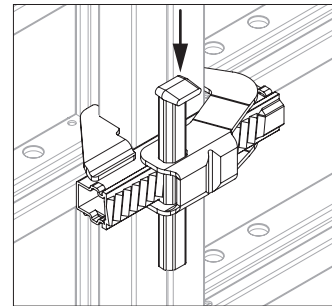


Fig. A5.01b



Is there a gap between the wedge head and the sliding part (**28.2**)?
(Fig. A5.01c)



If the wedge head is resting on the sliding part (**28.2**), there is no clamping effect. (Fig. A5.01d)

Then: Loosen the wedge (**28.1**), reposition the sliding part (**28.2**) and hammer it tight again.

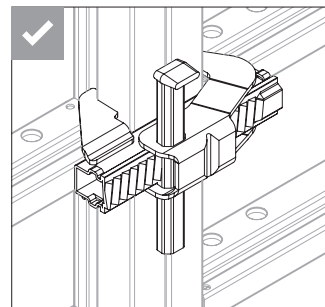


Fig. A5.01c

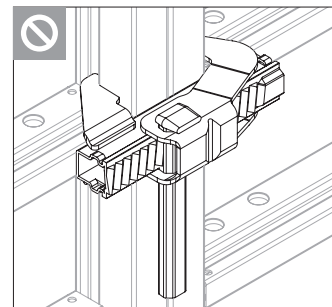


Fig. A5.01d



The following effects occur when the wedge is hammered tight:

1. Panels MX-2 are flush.
 2. Panels MX-2 are aligned.
 3. Panels MX-2 are tightly connected.
- (Fig. A5.02)

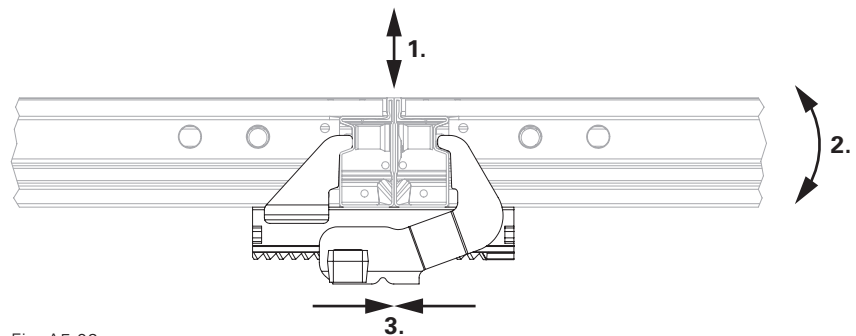


Fig. A5.02

Number of Alignment Couplers BFD

The following table contains the number of alignment couplers required in the vertical joint or refers to the corresponding sections containing further information.

Arrangement of the alignment couplers

- Height of 270 cm (Fig. A5.04a)
- Height of 300 cm (Fig. A5.04b)
- Height of 330 cm (Fig. A5.04c)
- Height of 360 cm (Fig. A5.04d)

① = panel strut number
(numbers increasing from bottom to top)

Height	Standard Joint BFD	MXI-2 Hx50/20	MXI-2 Hx60	Longitudinal infills	Stop end formwork	Height extensions
		see Section				
270 cm	2 pcs	B1 + B4	B2 + B5	B7	B8	B9
300 cm	3 pcs	C2 + C5	C3 + C6	C8	C9	C10
330 cm	3 pcs	D1 + D5	D2 + D6	D8	D9	D10
360 cm	3 pcs	E1 + E4	E2 + E5	E7	E9	

Fig. A5.04

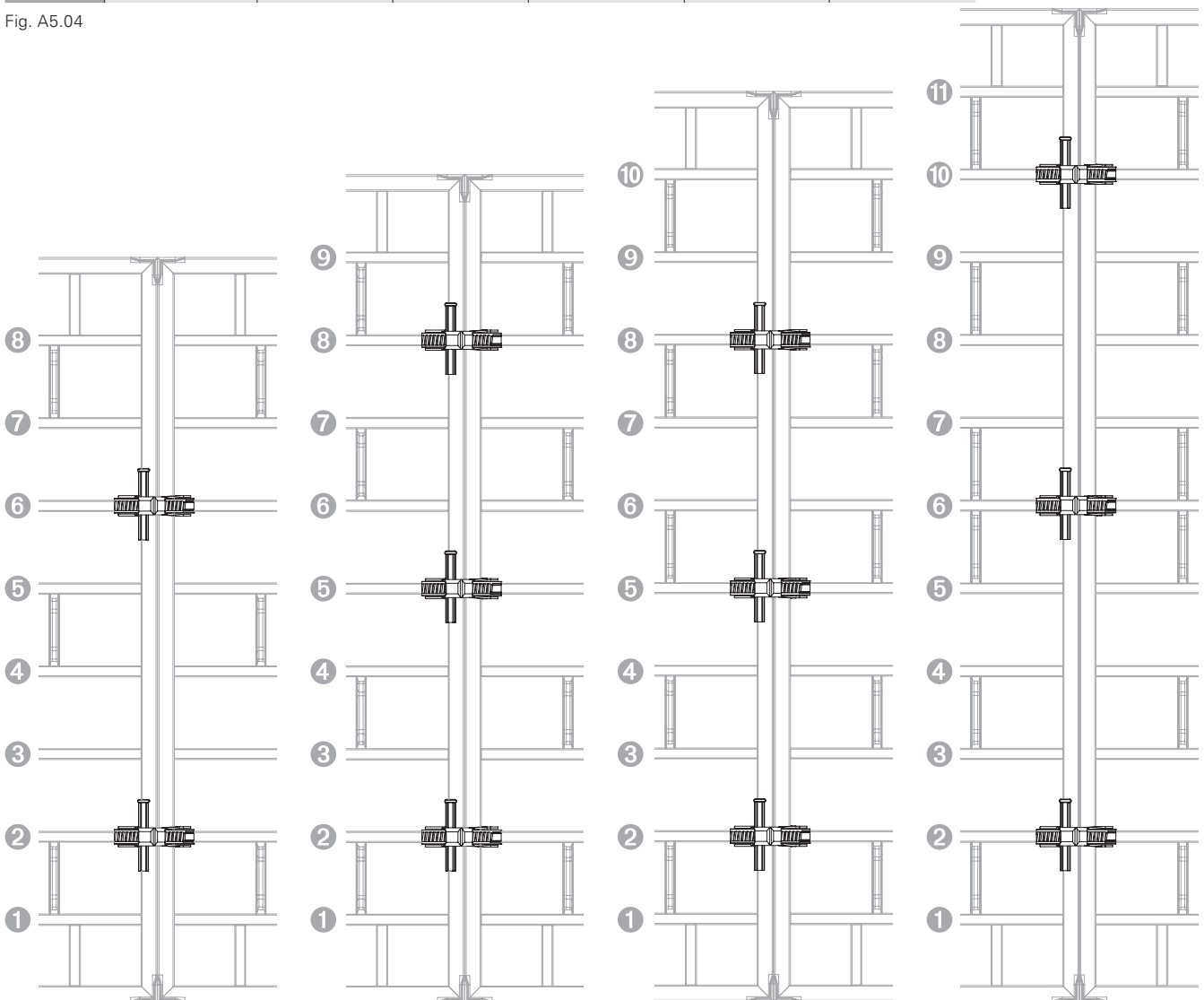


Fig. A5.04a

Fig. A5.04b

Fig. A5.04c

Fig. A5.04d

Compensation Waler-4 MAR 85 and MAR 170

(Fig. A5.05)

The Compensation Walers-4 MAR have a triple function as a panel connection: bracing, aligning, and transferring forces.

Components

- 33** Compensation Waler-4 MAR 85
- 33.1** Double hook
- 33.2** Nut
- 34** Compensation Waler-4 MAR 170

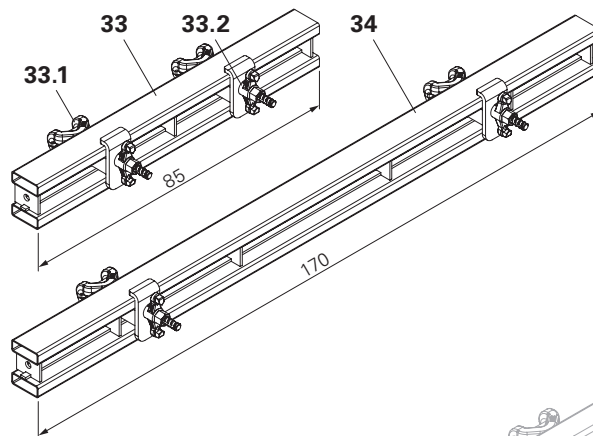


Fig. A5.05

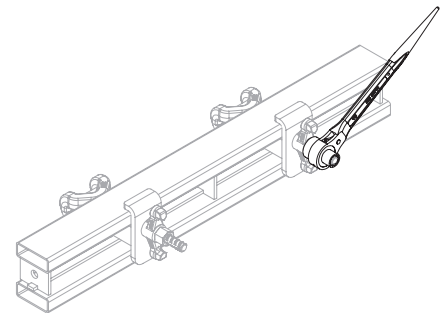


Fig. A5.06

Use:

- Longitudinal infills:
 - For height 270, see Section B7
 - For height 300, see Section C8
 - For height 330, see Section D8
 - For height 360, see Section E7
- Corners with double Wall Thickness Compensator WDA.
- Extensions at great heights:
 - For height 270, see Section B9
 - For height 300, see Section C10
 - For height 330, see Section D10
 - For height 360, see Section E9
- As an option for offset struts. (Fig. A5.07)

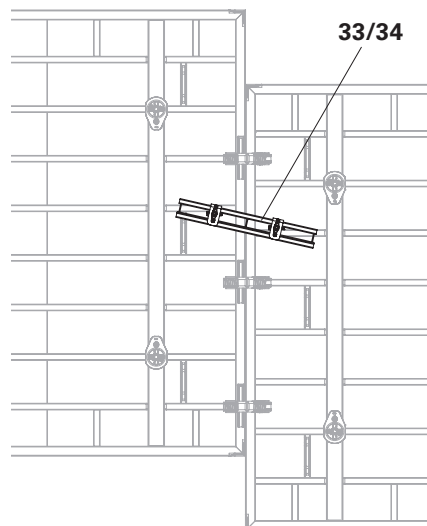


Fig. A5.07

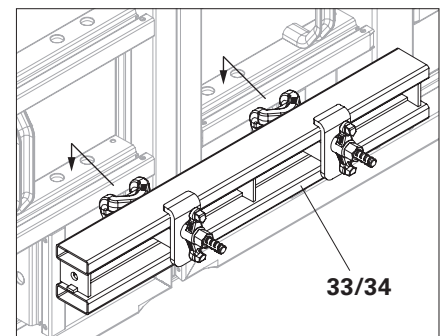


Fig. A5.08

Assembly

1. Insert the double hooks (**33.1**) into the connection holes of the panel.
2. Tighten nut (**33.2**). (Fig. A5.08)



- The nuts (**33.2**) can also be tightened with the Ratchet MX 15 (**36**). (Fig. A5.06)



In the case of T-junctions, according to the wall thickness, install Compensation Waler-4 MAR 170 (**34**) on the straight wall in the middle of the outgoing wall. Insert the double hooks (**34.1**) of the compensation waler into the middle holes. (Fig. A5.09)

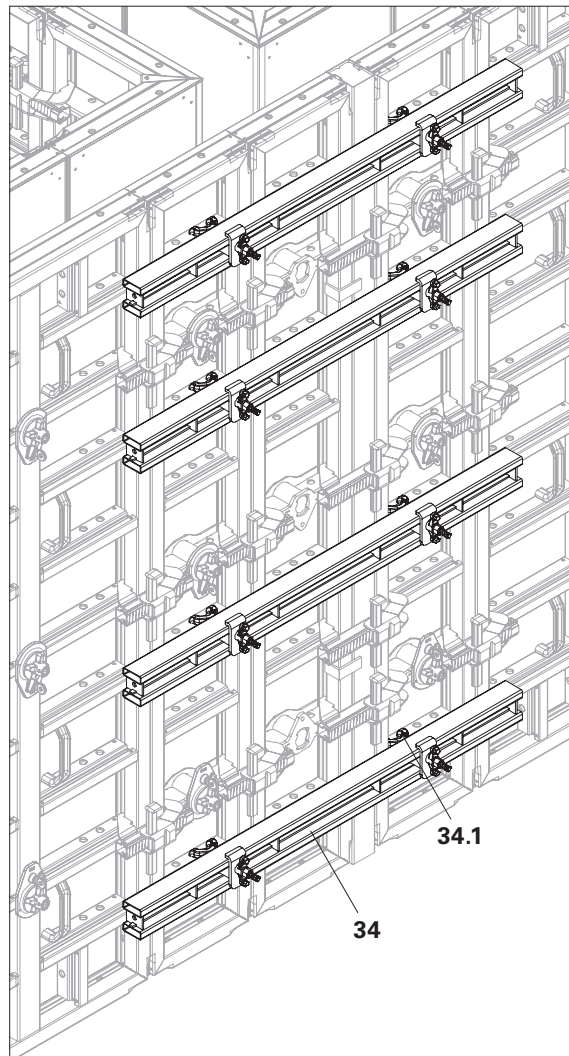


Fig. A5.09

Tie MX18



Perm. Tension force of the tie rods:
130 kN.

Tie MX18 15-25

Article no. 123901

Ties for wall thicknesses (WT) of 15, 17.5, 20, 22, 24 and 25 cm (**17**).

(Fig. A6.01)

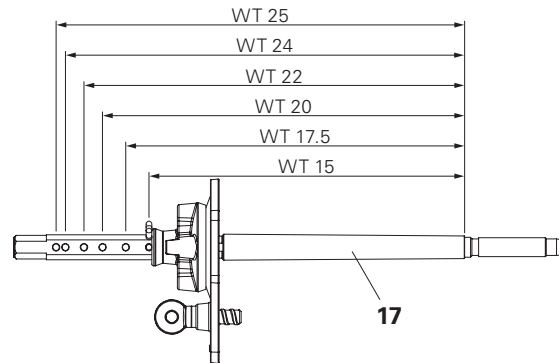


Fig. A6.01

Tie MX18 15-30

Article no. 141516

Ties for wall thicknesses (WT) of 15, 17.5, 20, 22, 24, 25 and 30 cm (**37**).

(Fig. A6.02)

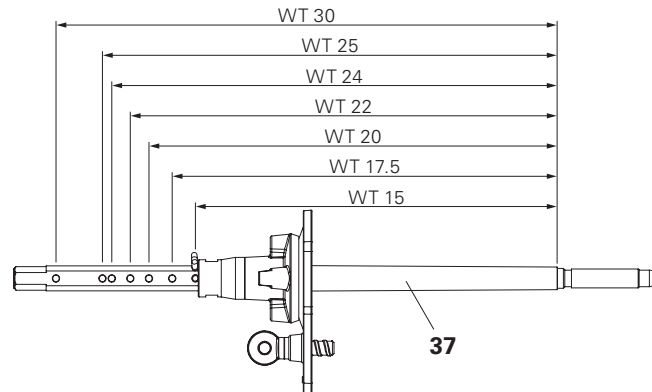


Fig. A6.02

Tie MX18 20-30

Article no. 123902

Ties for wall thicknesses (WT) of 20, 22, 24, 25 and 30 cm (**18**).

(Fig. A6.03)

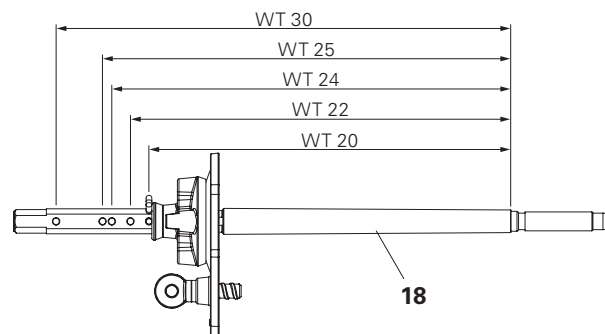


Fig. A6.03

Tie MX18 30-40

Article no. 123903

Ties for wall thicknesses (WT) of 30, 35, 36 and 40 cm (**19**).

(Fig. A6.04)

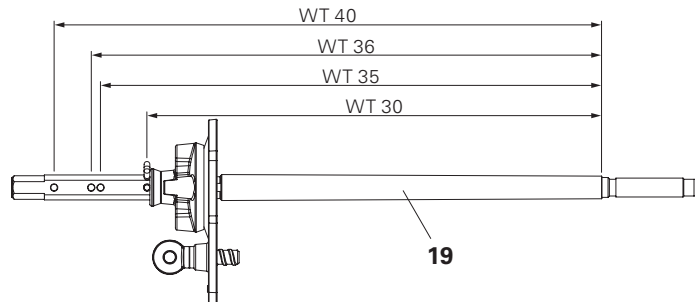


Fig. A6.04

Tie MX18 40-50

Article no. 123904

Ties for wall thicknesses (WT) of 40, 45 and 50 cm (**38**).

(Fig. A6.05)

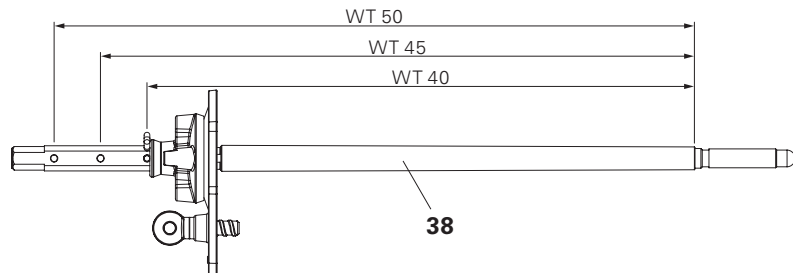


Fig. A6.05

Tie MX18 50-60

Article no. 123905

Ties for wall thicknesses (WT) of 50, 55 and 60 cm (**39**).

(Fig. A6.06)

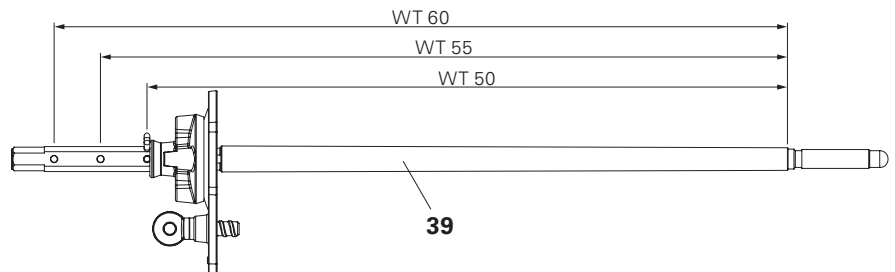


Fig. A6.06

Fitting ties

Components

- 5 Panel MX-2 height x width
- 5.1 Tie point with seal
- 14 Wingnut MX18
- 14.1 Sleeve
- 14.2 Eyebolt
- 17 Tie MX18 *
- 17.1 Cotter pin
- 17.2 Nut
- 17.3 Eyebolt
- 20 Tie Rod Spanner MX18
- 35 Scaff. Build. Ratchet SW19/22
- 36 Ratchet MX18

* The size of the tie is determined by the wall thickness.



- Only ever use a Ratchet MX18 (36), Scaff. Build. Ratchet SW19/22 (35) or Tie Rod Spanner MX18 (20).
- Do not attach any extensions as this can damage the ties.
- Do not use any ties that are damaged.

Preparing primary formwork for initial use

1. Oil the inside of the tie point with seal (5.1) in Panel MX-2 (5) and sleeve (14.1) of the Wingnut MX18 (14). (Fig. A6.07a)
2. Insert the sleeve of the Wingnut MX18 (14.1) into Panel MX-2 (5) so that the Wingnut MX18 (14) can be fixed in place.
3. Hand-tighten the eyebolt (14.2) with Ratchet MX18 (36) or Scaff. Build. Ratchet SW19/22 (35). (Fig. A6.07e / Fig. A6.07f)

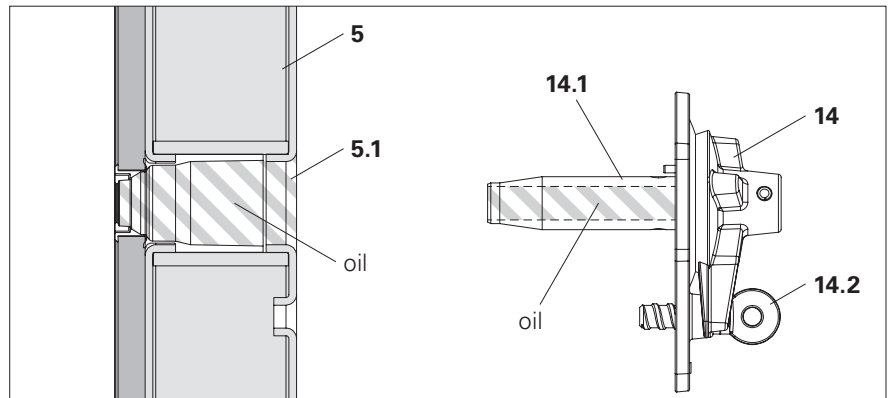


Fig. A6.07a

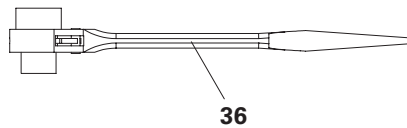


Fig. A6.07b

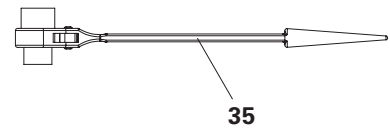


Fig. A6.07c



Fig. A6.07d

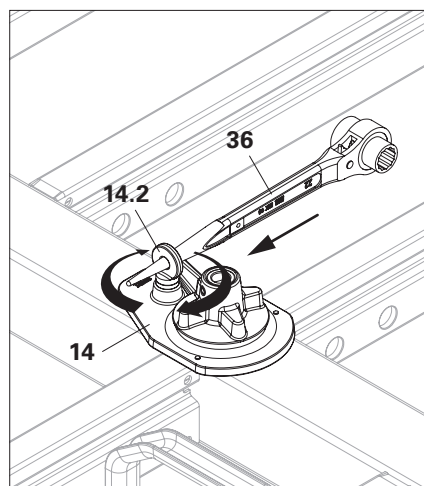
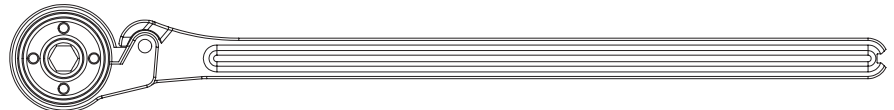
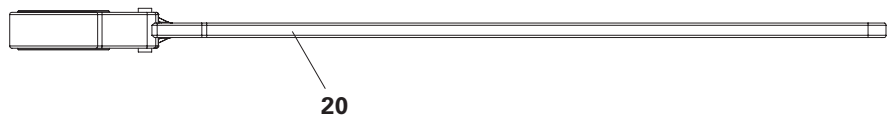


Fig. A6.07e

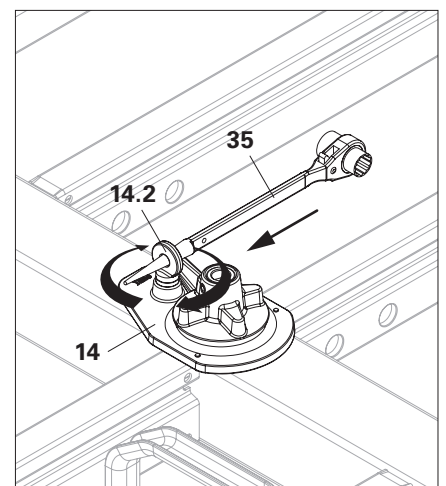


Fig. A6.07f

Preparing ties

1. Peg the thickness of the wall with the cotter pin (17.1).
2. Twist the nut (17.2) onto the cotter pin (17.1).
3. Oil Tie MX18 (17), e.g. with PERI Bio Clean concrete release agent. (Fig. A6.08)

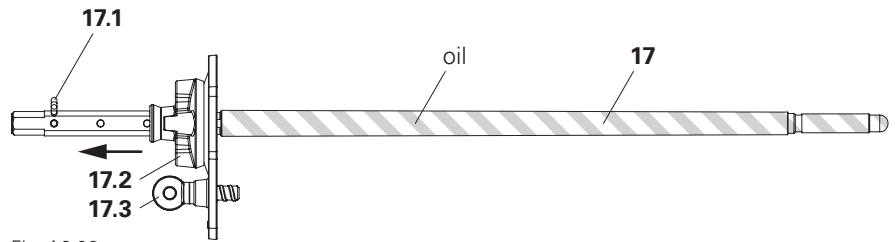


Fig. A6.08



The ties can be adjusted using the Tie Adjustment Plate MX (article no. 141201), see Section "Tie Adjustment Plate MX" on page 52.

Closing formwork

Be mindful of the sequence.

1. Push Tie MX18 (17) through the tie point of the closing formwork and insert it into the Wingnut MX15 (14) of the primary formwork.
2. Turn the base plate with the eyebolt (17.3) so that it can be fixed in place.
3. Screw in Tie MX18 (17) with the Ratchet MX18 (36) or Scaff. Build. Ratchet SW19/22 (35) as far as it will go.
→ The nut (17.2) is lying flush on the formwork.
4. Tighten the eyebolt (17.3) with Ratchet MX18 (36) or Scaff. Build. Ratchet SW19/22 (35). (Fig. A6.09/Fig. A6.10)

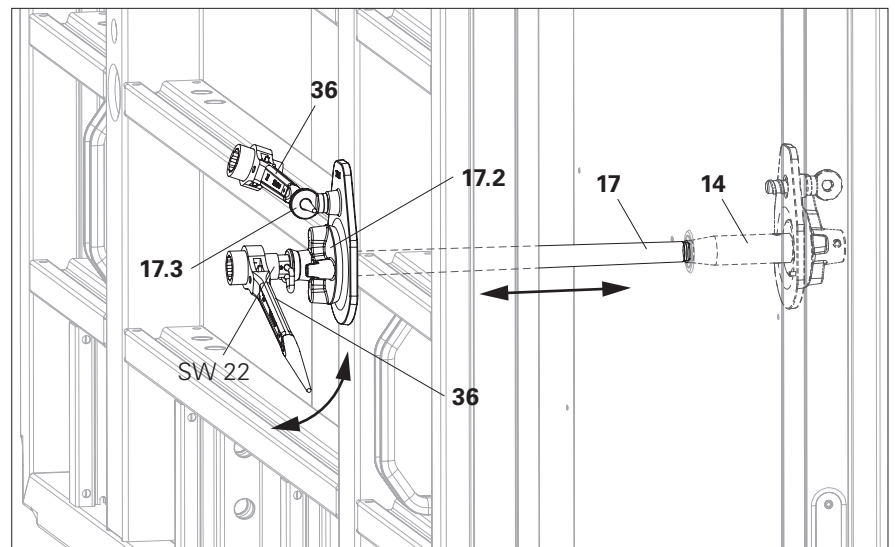


Fig. A6.09

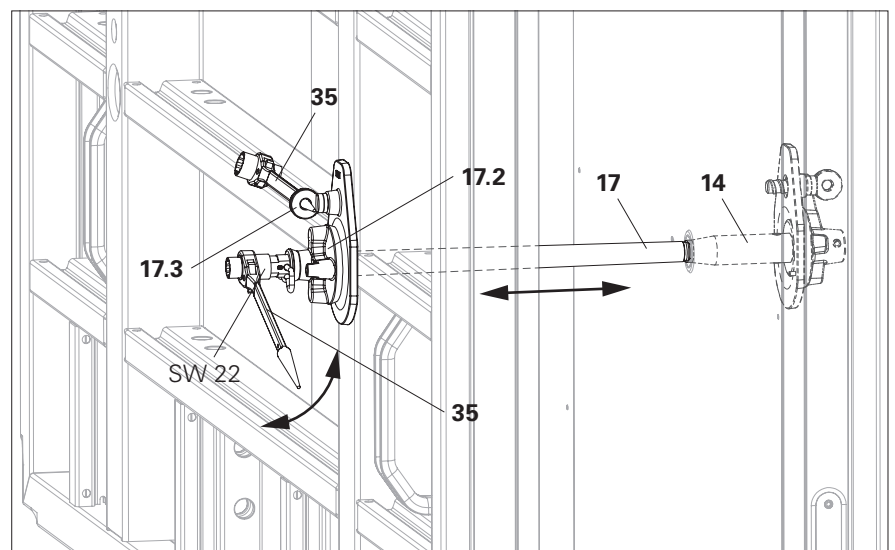


Fig. A6.10

Releasing the ties



Warning

Wingnut MX (14) could fall down during repositioning and injure someone!
Falling Swivel Nuts MX (14) can cause irreversible damage or even death.

⇒ Before repositioning, check that the eyebolt (14.2) of the Wingnut MX18 (14) is tightened.



- Only ever loosen the eyebolt (17.3) with Ratchet MX18 (36), Scaff. Build. Ratchet SW19/22 (35) or Tie Rod Spanner MX18 (20).
- Unscrew Tie MX18 (17) with Tie Rod Spanner MX18 (20).

Releasing

Be mindful of the sequence.

1. Undo the eyebolt (17.3) with Ratchet MX18 (36) or Scaff. Build. Ratchet SW19/22 (35).
 2. Unscrew Tie MX18 (17) with Tie Rod Spanner MX18 (20).
- (Fig. A6.11/Fig. A6.12)



The eyebolt (17.3) can also be loosened with Tie Rod Spanner MX18 (20).

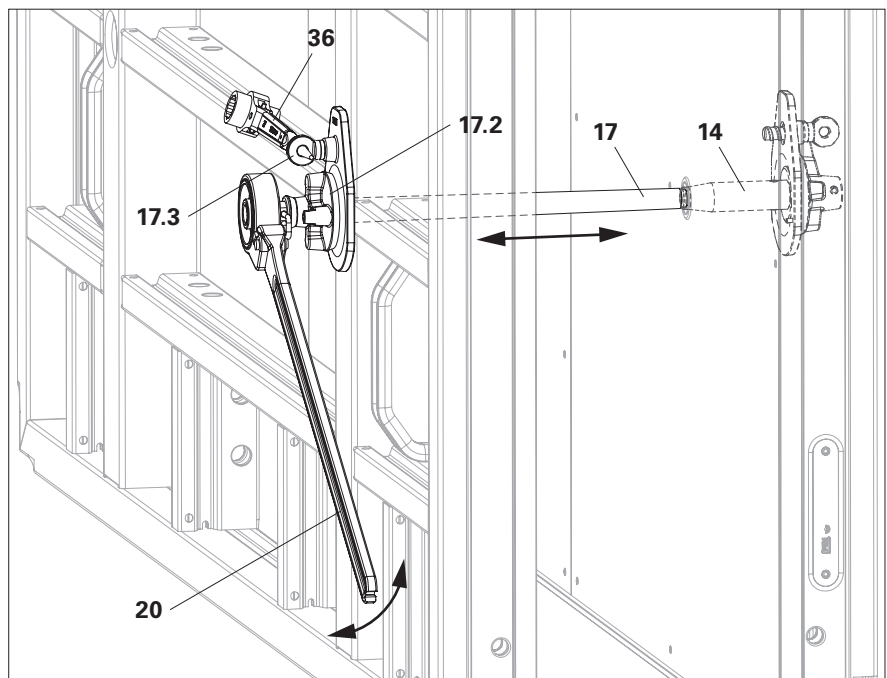


Fig. A6.11

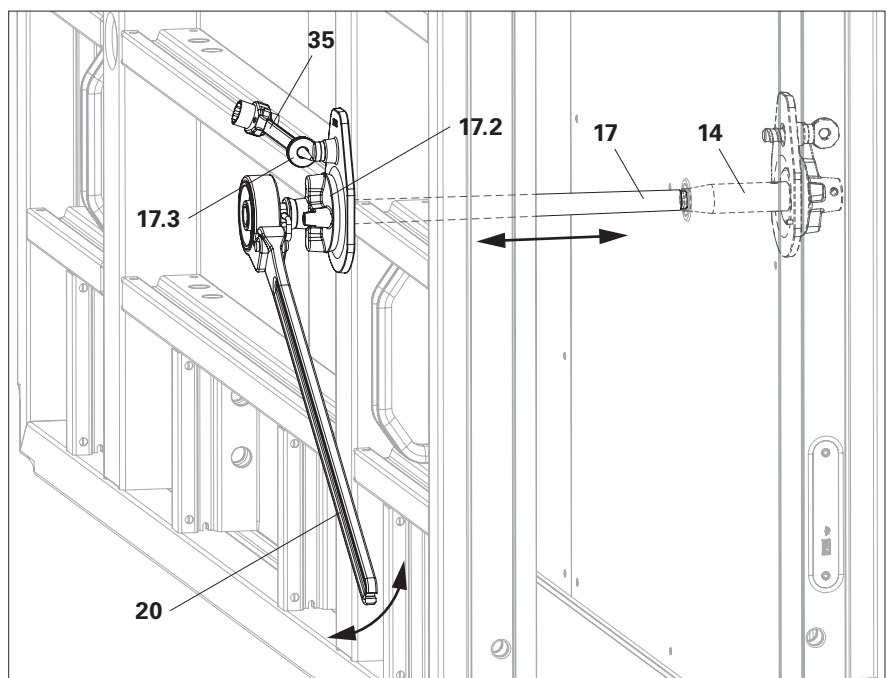


Fig. A6.12

Magnetic Cone MX18



- When using the Magnetic Cone MX18 (56), the maximum inclination of the tie is reduced to 2.5°.
- For the maximum inclination, see Section "A9 Anchoring at an angle" on page 57.

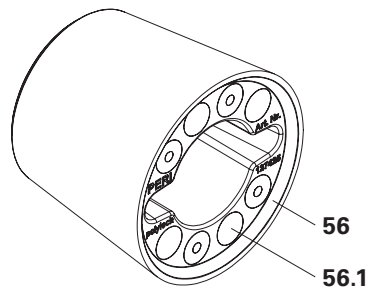


Fig. A6.13

Before installing the Magnetic Cones MX18 (56), ensure that

- the Magnetic Cones MX18 (56) have been completely submerged in a release agent and have been allowed to drain off.
- the contact surfaces of the magnets (56.1) are clean.

The Magnetic Cone MX18 (56)

- can be used on one or both sides and without a sleeve.
- is held in position at the tie point with magnets.

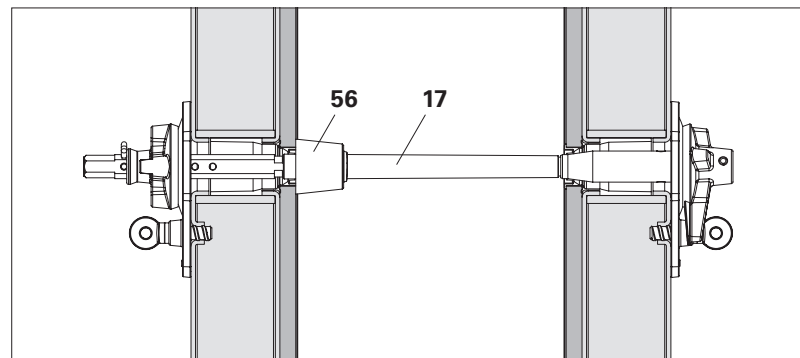


Fig. A6.14

Components

- 17 Tie MX18 15-25*
- 56 Magnetic Cone MX18
- 56.1 Magnet
- 57 Magnetic Cone Spanner MX15/18
- 57.1 Bracket
- 57.2 Retaining lug

* The size of the tie is determined by the wall thickness.

Magnetic Cone MX18

(Fig. A6.13)

Installation on one side

(Fig. A6.14)

Installation on both sides

(Fig. A6.15)

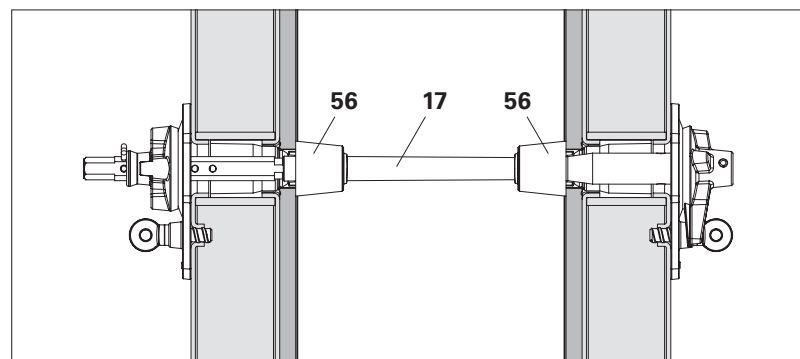


Fig. A6.15

Magnetic Cone Spanner MX15/18

The Magnetic Cone Spanner MX15/18 (57) is used to remove magnet cones. (Fig. A6.16)

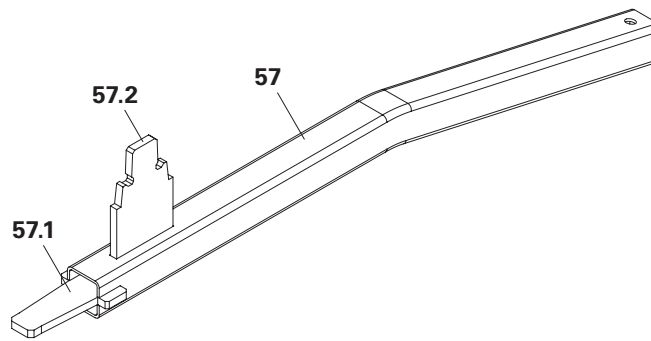


Fig. A6.16

Disassembly



Remove the concrete slurry in the Magnetic Cone MX18 (56) promptly after deshuttering the formwork.

1. Insert the bracket (57.1) straight and turn it in the hole.
→ The hole is cleaned.
2. Insert the bracket (57.1) into the guide groove of the Magnetic Cone MX18 (56) from the right and clean the slot. (Fig. A6.17a)
3. Insert the bracket (57.1) into the guide groove of the Magnetic Cone MX18 (56) from the left and clean the slot. (Fig. A6.17b)
→ The hole and guide grooves of the Magnetic Cone MX18 (56) are cleaned of concrete slurry.
4. Insert the retaining lug (57.2) into the openings. (Fig. A6.17c)
5. Turn the Magnetic Cone Spanner MX15/18 (57). (Fig. A6.17d)
→ The Magnetic Cone MX18 (56) is unscrewed.

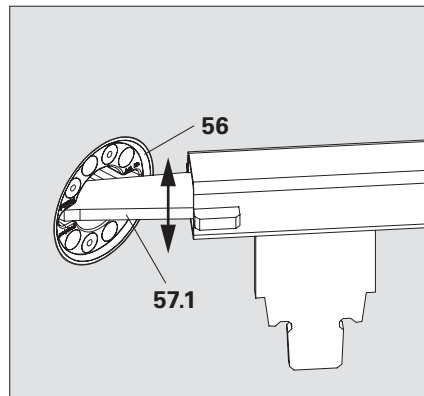


Fig. A6.17a

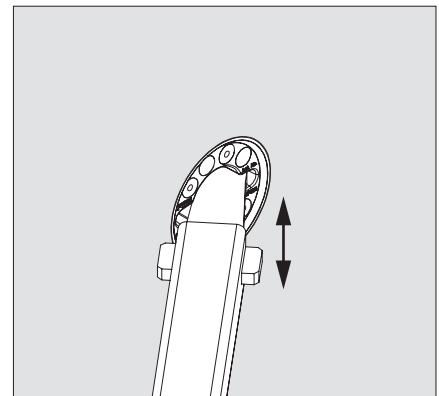


Fig. A6.17b

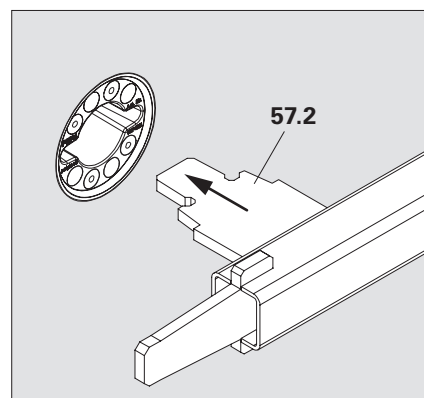


Fig. A6.17c

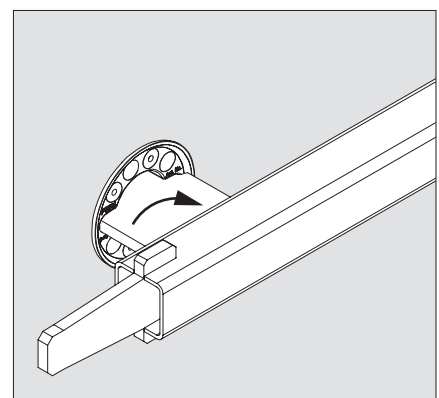


Fig. A6.17d

Closing tie points



- Observe the Instructions for Assembly and Use for the concrete cones and adhesive tie points.
- Observe the safety data sheet of the sealing compound.
- Note special applications such as architectural concrete or water impermeability.

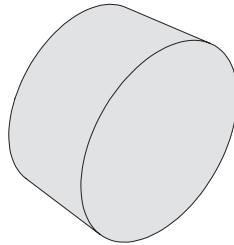


Fig. A6.18

Closures

Components

- 23** Plug MX18 Ø24-28mm
- 71** Plug MXM18 Ø27.6mm

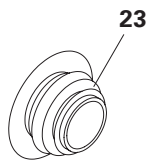


Fig. A6.19

Plug MX18 Ø24-28mm

To visually seal the tie point in the concrete. (Fig. A6.19)

Plug MXM18 Ø27.6mm

For sealing tie points in the formwork panel, e.g. M-Panel MXM-2 60, M-Panel MXM-2 80 and I-Corner MXI-2 50/20. (Fig. A6.20)

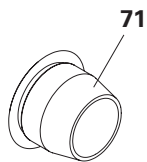


Fig. A6.20

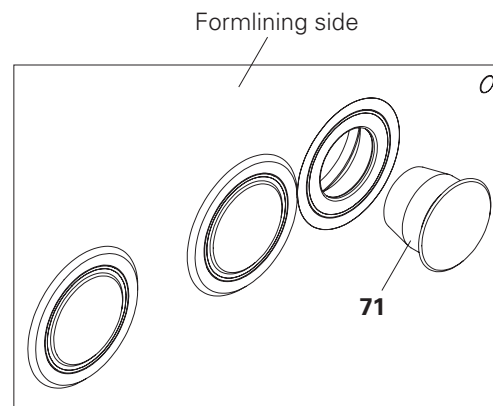


Fig. A6.20a

Illustrated:
I-Corner MXI-2 50/20
(Fig. A6.20a)

Tie Adjustment Plate MX



The Tie Adjustment Plate MX (**104**) is a work aid for adjusting the Tie MX18 to the desired wall thickness more quickly. The Tie Adjustment Plate MX (**104**) can be positioned and attached to the following elements.

- Crate Pallet 80x120-K painted:
 - Anti-slip protection of the Tie Adjustment Plate MX (**104**) with affixed magnets.
 - The magnets of the Tie Adjustment Plate MX (**104**) must be in firm contact with the Crate Pallet 80x120-K painted.

(Fig. A6.21)

- Euro flat pallet 80x120:
 - Fix the Tie Adjustment Plate MX (**104**) to the Euro flat pallet 80x120 using at least 2 nails.

(Fig. A6.22 + Fig. A6.22a)

- Panel MX-2:
 - Anti-slip protection of the Tie Adjustment Plate MX (**104**) with affixed magnets.
 - The magnets of the Tie Adjustment Plate MX (**104**) must be in firm contact with Panel MX-2.

(Fig. A6.23c)

Adjusting the tie

1. Position Tie Adjustment Plate MX (**104**) and fix in place with magnets or nails. (Fig. A6.23a)
2. Remove the cotter pin from Tie MX18 and mark out the desired wall thickness.
3. Place Tie MX18 in the recess of the Tie Adjustment Plate MX (**104**). (Fig. A6.23b)
5. Attach Ratchet MX18 or the impact wrench to Tie MX18 and turn it to the appropriate wall thickness.
6. Remove Tie MX18 from the Tie Adjustment Plate MX (**104**).

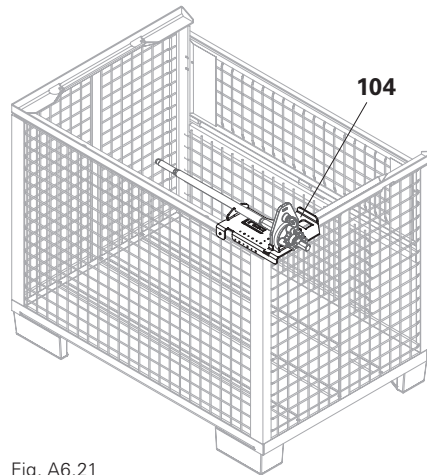


Fig. A6.21

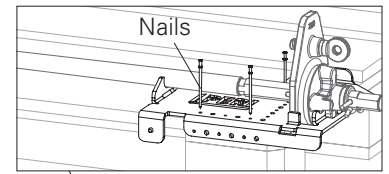


Fig. A6.22a

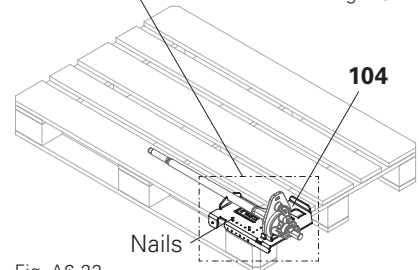


Fig. A6.22

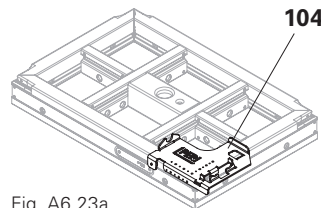


Fig. A6.23a

Insertion position:

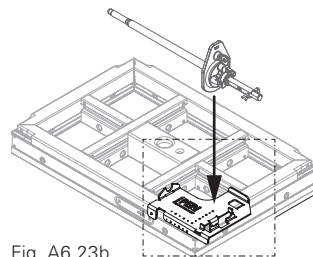
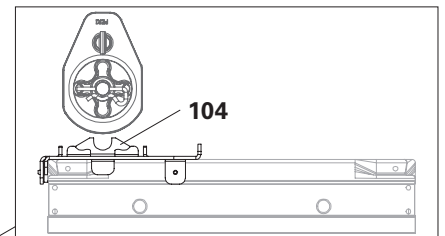


Fig. A6.23b

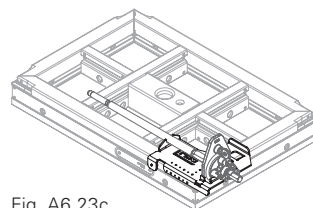


Fig. A6.23c



- As an alternative to the Tie System MX18, there are two variants for anchoring on two sides with the Tie System DW20.
 - Variant 1 with Wingnut DW20 ga (48) and Counterplate DW20 120x120x20mm (49). (Fig. A7.01)
 - Variant 2 with Wingnut Pivot Plate DW20 ga (24). (Fig. A7.02)
- For higher formwork pressure.
- Permissible load of the tie rod according to DIN 18216: 150 kN.

Components

Components	Pcs.
45 Tie Rod DW20*	1x
Variant 1	
48 Wingnut DW20 ga	2x
49 Counterplate DW20 120x120x20mm	2x
Variant 2	
24 Wingnut Pivot Plate DW20 ga	2x

* Length depending on wall thickness

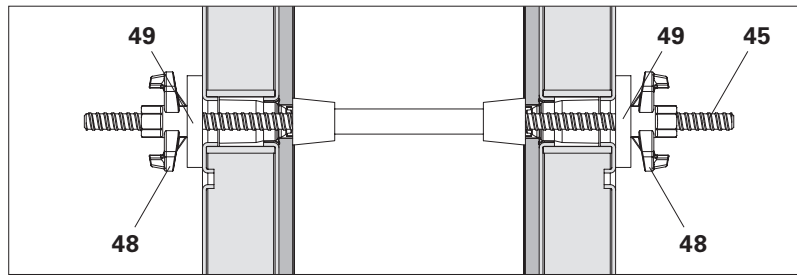


Fig. A7.01

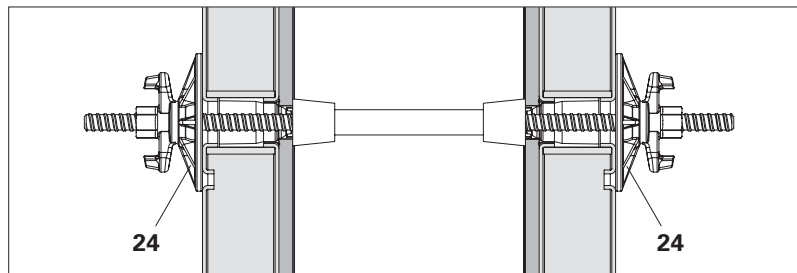


Fig. A7.02

Assembly

1. Fitting the primary formwork
 - Oil the tie point in Panel MX-2 (5).
 - Erect Panel MX-2 (5) and set up at the place of use.
 - Support and secure Panel MX-2 (5).
 - Install reinforcement.
2. Preparing ties
 - Depending on the variant in use, screw on the wingnut/plate (48 + 49/24).
3. Fitting ties
 - Push the Tie Rod DW20 (45) from the primary formwork through the tie point (5.1) of Panel MX-2 (5).
 - Cut Tube Ø28mm 300 rough (46) to the specified length.
 - Push the cone (47/54) onto the Tube Ø28mm 300 rough (46) on both sides.
 - Push Tube Ø28mm 300 rough (46) with cones (47/54) onto Tie Rod DW20 (45).
4. Mounting the closing formwork
 - Position the closing formwork.
 - Depending on the variant in use, screw on the wing nut/plate (48 + 49/24) and tighten the tie point.

Cones



Different cones can be used depending on the application.

- Variant 1 with Sealing Cone DK DW20 55 mm (**47**). (Fig. A7.03)
- Variant 2 with Anchor Cone SK DW20 (**54**). (Fig. A7.04)
 - For a tie hole using Anchor Cone SK DW20 (**54**), 3 tie rods are required – 2x outside and 1x inside (length depending on wall thickness).

Components	Pcs.
46 Tube Ø28mm 300 rough* Variant 1	1x
47 Sealing Cone DK DW20 55mm Variant 2	2x
54 Anchor Cone SK DW20	2x

* Length depending on wall thickness

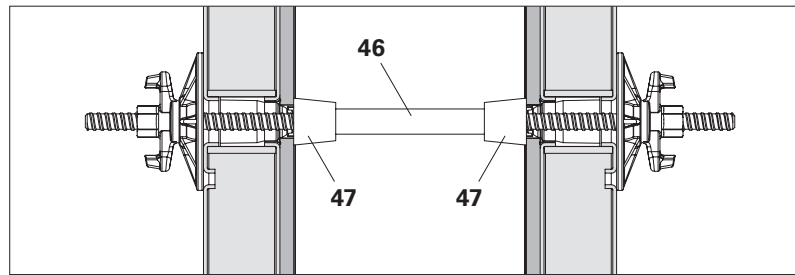


Fig. A7.03

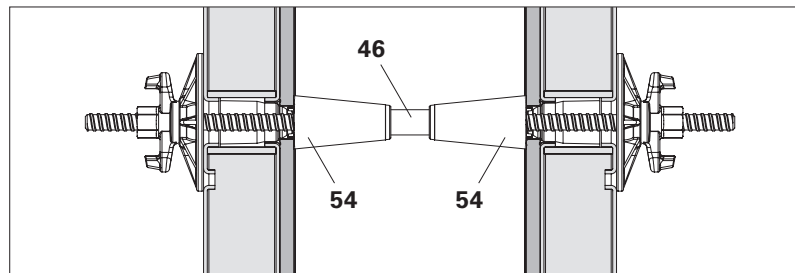


Fig. A7.04

Closing tie points



- Observe the Instructions for Assembly and Use for the concrete cones and adhesive tie points.
- Observe the safety data sheet of the sealing compound.
- Note special applications such as architectural concrete or water impermeability.

Tool

Tool

44 Tie Rod Wrench DW20

(Fig. A7.05)

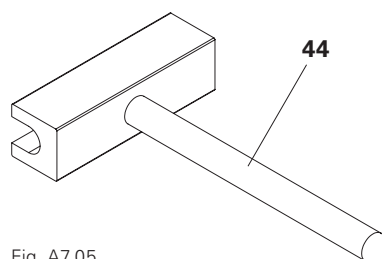


Fig. A7.05



Ties MX18 can be attached to the Panels MX-2 (5) in the Tie Hanger MX (106).

Assembly

1. Press Tie Hanger MX (106) together sideways. (Fig. A8.02a)
 2. First insert the bracket with the long end section (106.1) into the right-hand hole in Panel MX-2 (5).
 3. Insert the bracket with the short end section (106.2) into the left-hand hole.
- (Fig. A8.01 + Fig. A8.02)

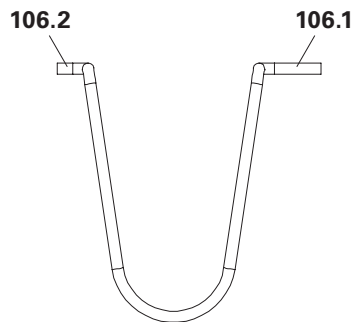


Fig. A8.01

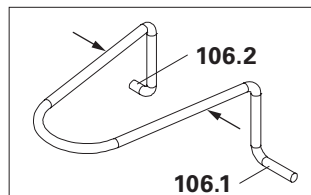


Fig. A8.02a

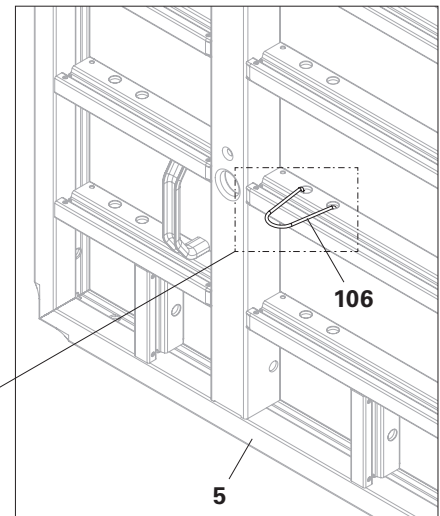


Fig. A8.02



Ensure that the Tie Hanger MX (106) is seated correctly.

Dismantling

1. Press Tie Hanger MX (106) together sideways.
2. Remove the bracket with the short end section (106.2).
3. Remove the bracket with the long end section (106.1).

Parking position of Tie MX15

Hook Tie MX15 into Anchor Hook MX (106). (Fig. A8.03)

Position during transport

Lift Tie Hanger MX (106) and push it diagonally backwards through the two holes.

- Tie Hanger MX (106) is attached to Panel MX-2 (5).
- Several MX-2 panels (5) can be stacked on top of each other and transported.
- The Panels MX-2 (5) do not collide. (Fig. A8.04)

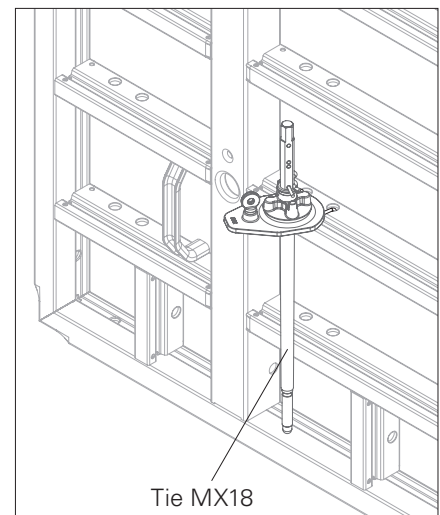


Fig. A8.03

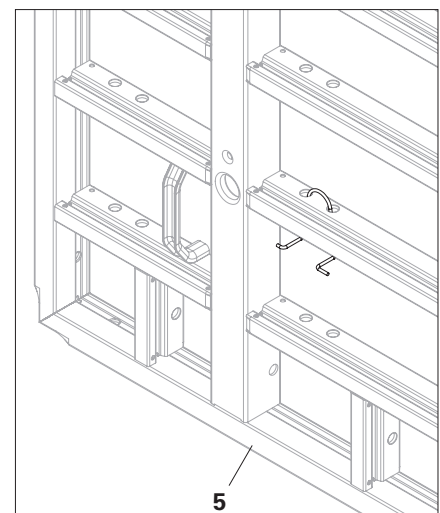


Fig. A8.04



- The conical tie point allows for inclined anchoring of up to 4° on all sides. (Fig. A9.01 + Fig. A9.05)
- Inclined anchoring is possible with both vertically and horizontally-positioned panels.
- Secure Panels MX-2 (5) against upthrust.
- For inclined anchoring with Frame Holder MX/TR, see Section "A12 Frame Holder MX/TR" on page 68.

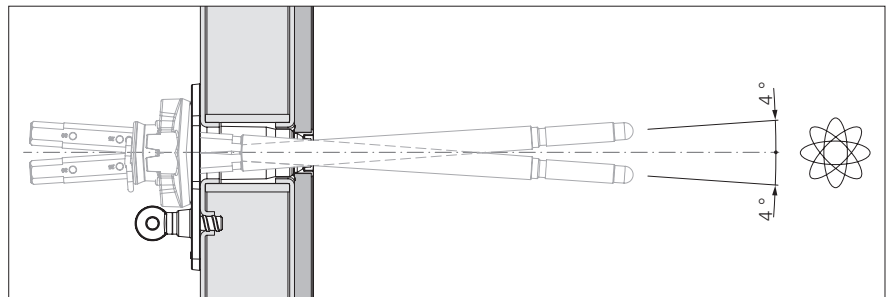


Fig. A9.01

Tie MX 18

Inclined on one side: max. 4°.
(Fig. A9.02)

Inclined on both sides: max. 4° per side.
(Fig. A9.03)

Height offset: max. 1 cm per 10 cm
wall thickness.
(Fig. A9.04)

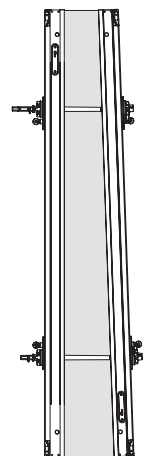


Fig. A9.02

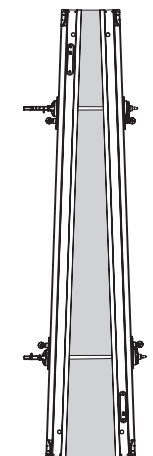


Fig. A9.03

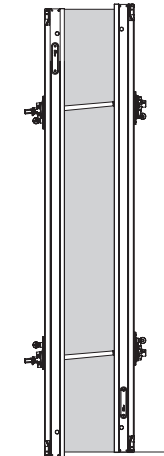


Fig. A9.04

Tie Rod DW 20



- The Wingnut Pivot Plate DW20 ga must be used when anchoring at an angle.
- For inclined anchoring with Frame Holder MX/TR, see Section "A12 Frame Holder MX/TR" on page 68.

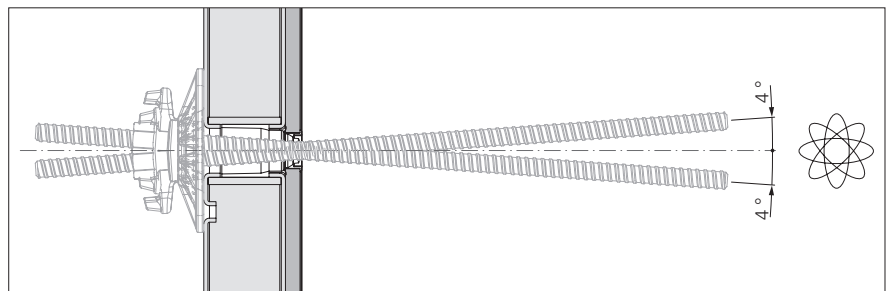


Fig. A9.05

Inclined on one side: max. 4°.
(Fig. A9.06)

Inclined on both sides: max. 4° per
side.
(Fig. A9.07)

Height offset: max. 1 cm per 10 cm
wall thickness.
(Fig. A9.08)

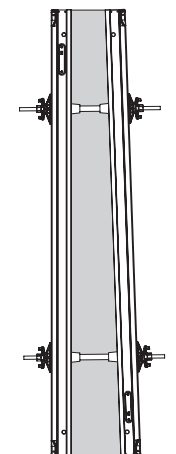


Fig. A9.06

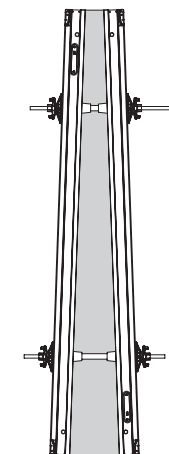


Fig. A9.07

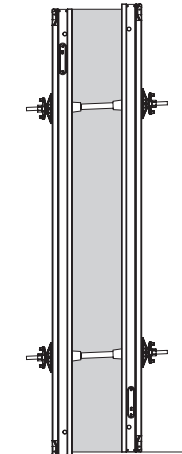


Fig. A9.08

Sealing against pressing water and non-pressing water for waterproof tie points as well as fire and soundproof tie points.



- Installation is only required on the pressing water side.
- Stoppers are not suitable for use in aggressive water or similar, e.g. sewage treatment plants.

There are four types of plugs:

- Stopper MX18-50 MF-LS (Fig. A10.01)
- Stopper MX18-75 MF-S (Fig. A10.02a)
- Stopper MX18-75 MF-L (Fig. A10.02b)
- Stopper MX18-50 OF-LS (Fig. A10.03)
- Stopper MX18-75 OF-S (Fig. A10.04a)
- Stopper MX18-75 OF-L (Fig. A10.04b)

* = waterproof

Key

MF	With flange
OF	Without flange
L	For larger tie hole
S	For smaller tie hole
LS	Suitable for both tie holes

MX18-50 MF-LS

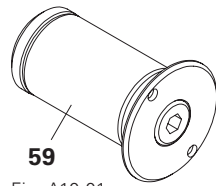


Fig. A10.01

MX18-75 MF-S

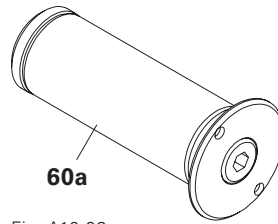


Fig. A10.02a

MX18-75 MF-L

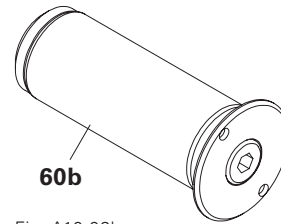


Fig. A10.02b

MX18-50 OF-LS

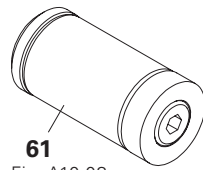


Fig. A10.03

MX18-75 OF-S

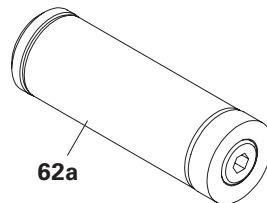


Fig. A10.04a

MX18-75 OF-L

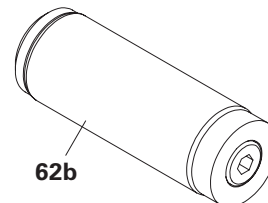


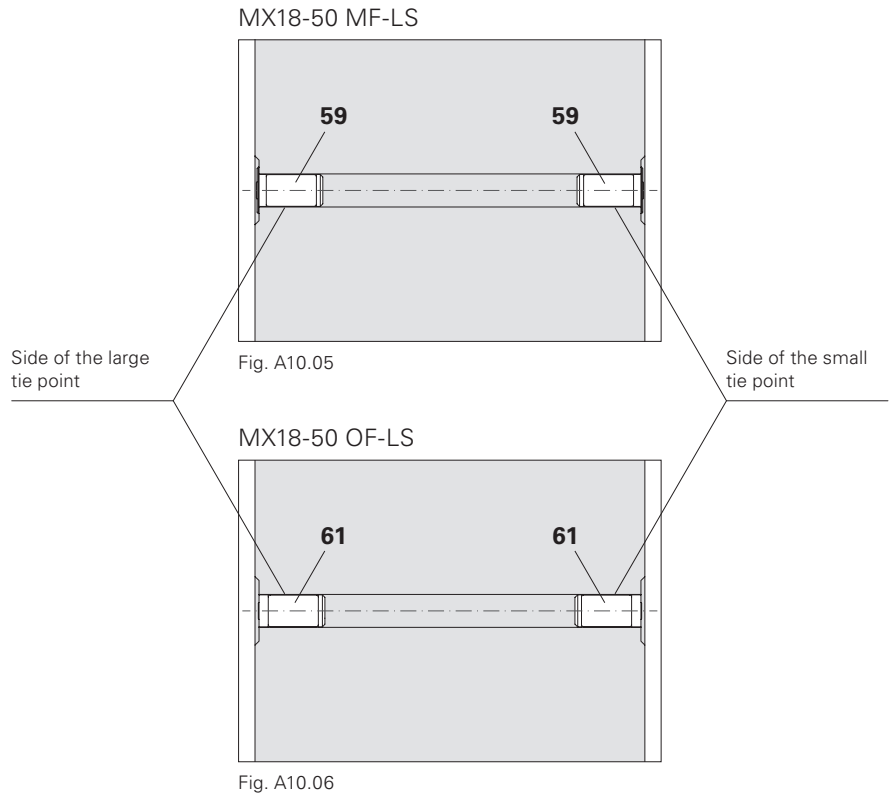
Fig. A10.04b

Possible uses of the Stoppers MX15 for tie points with special requirements

Pos.	Stopper	Art. no.	Sealing against water	Fire-resistance	Soundproofing
59	MX18-50 MF-LS	127589	Sealing against non-pressing water. Stoppers fitted on the water side.	Walls with Fire Resistance F90. Test report available. Stoppers on both sides.	Walls with sound protection function. Test report available. Stoppers on one side or both sides.
61	MX18-50 OF-LS	127590	Sealing against non-pressing water. Stoppers fitted on the water side.	Walls with Fire Resistance F90. Test report available. Stoppers on both sides.	Walls with sound protection function. Test report available. Stoppers on one side or both sides.
60a 60b	MX18-75 MF-S MX18-75 MF-L	127430 127488	For waterproof components Test report available. Stoppers on one side – water side.	Walls with Fire Resistance F90. Test report available. Stoppers on both sides.	Walls with sound protection function. Test report available. Stoppers on one side or both sides.
62a 62b	MX18-75 OF-S MX18-75 OF-L	127432 127490	For waterproof components Test report available. Stoppers on one side – water side.	Walls with Fire Resistance F90. Test report available. Stoppers on both sides.	Walls with sound protection function. Test report available. Stoppers on one side or both sides.

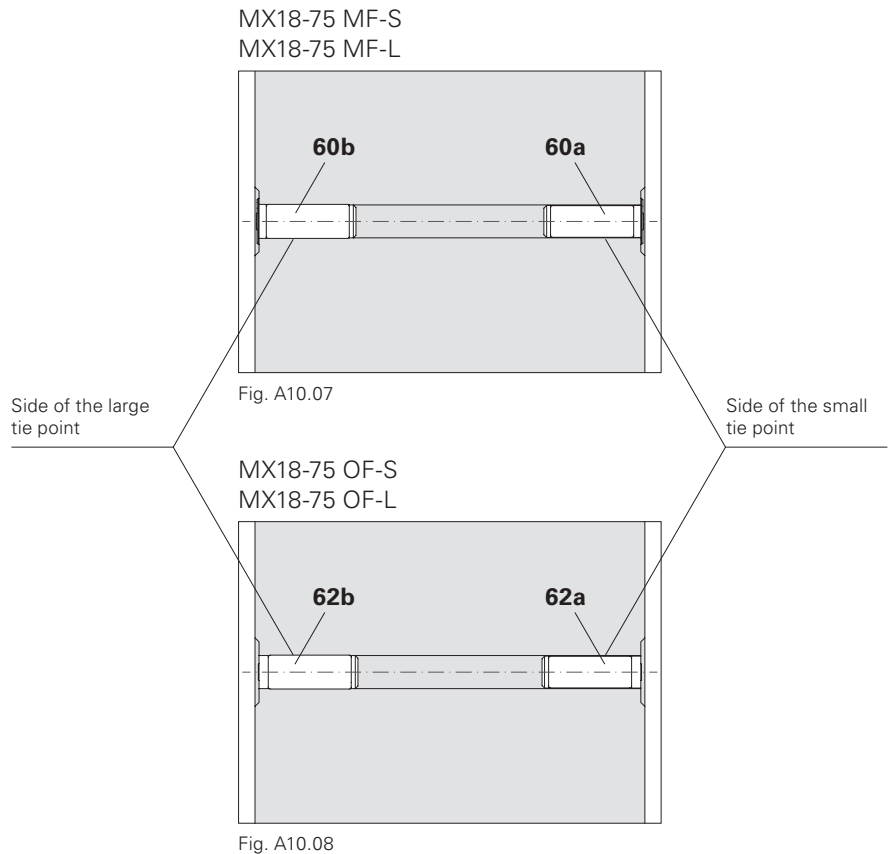
Screw Plugs MX18-50

The Screw Plugs MX18-50 MF-LS (**59**) and MX18-50 OF-LS (**61**) can be fitted in both small and large tie point diameters. (Fig. A10.05 + Fig. A10.06)



Screw Plugs MX18-75

Always fit Screw Plug MX18-75 MF-S (red) (**60a/62a**) for small tie point diameters and Screw Plug MX18-75 MF-L (yellow) (**60b/62b**) for large tie point diameters. (Fig. A10.07 + Fig. A10.08)



Fitting the Screw Plugs MF

1. If necessary, pre-tension the stopper (**59/60a/60b**) with 5 mm Allen key (**64**).
 2. Push the stopper (**59/60a/60b**) into the tie hole up to the flange.
 3. Apply the Stud Spanner MX18 (**63**).
 4. Tighten the stopper (**59/60a/60b**) with 10 – 15 Nm.
- (Fig. A10.09a – Fig. A10.09c)



PERI recommends fitting the Stoppers MX18 MF as they are quicker to fit.

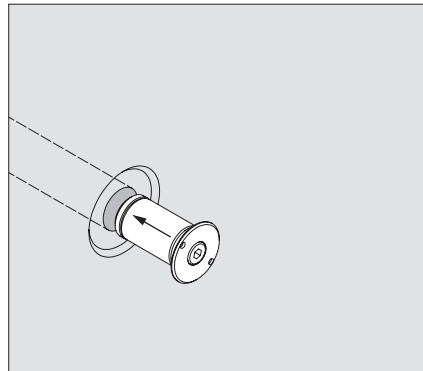
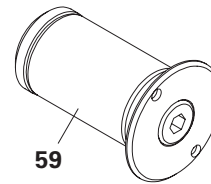
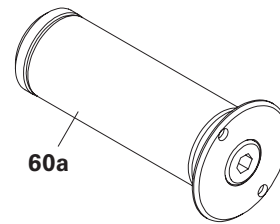


Fig. A10.09a

MX18-50 MF-LS



MX18-75 MF-S



MX18-75 MF-L

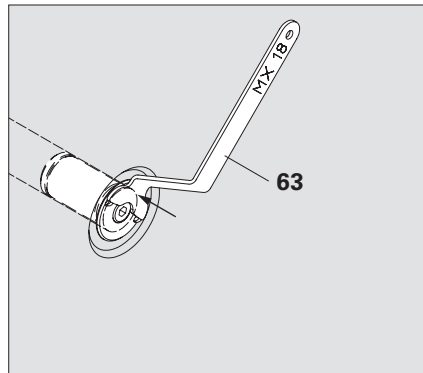
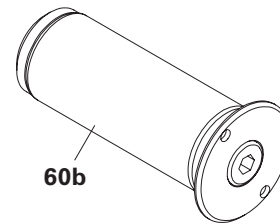


Fig. A10.09b

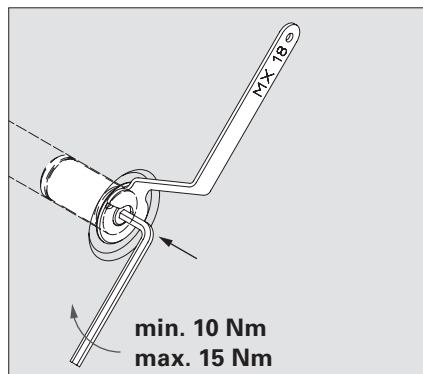


Fig. A10.09c

Fitting the Stoppers OF

1. If necessary, pre-tension the stopper (**61 / 62a / 62b**) with 5 mm Allen key (**64**).
2. Push in the stopper (**61 / 62a / 62b**) to the plug depth using a 5 mm Allen key (**64**).
3. Tilt the 5 mm Allen key (**64**) when tightening.
→ The stopper (**61 / 62a / 62b**) is prevented from turning.
4. Tighten the stopper (**61 / 62a / 62b**) with 10 – 15 Nm.
(Fig. A10.10a – Fig. A10.10d)



PERI recommends starting assembly from the side with the smaller tie hole diameter if the Stopper MX18 OF has been inserted too far.

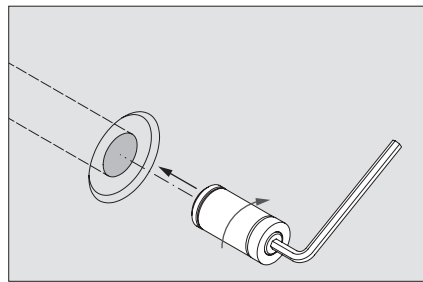
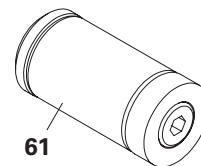


Fig. A10.10a

MX18-50 OF LS



61

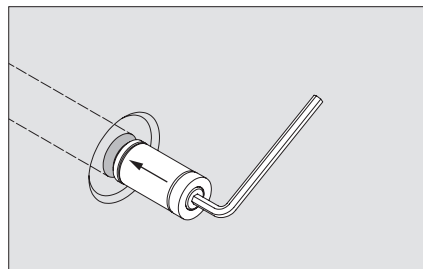
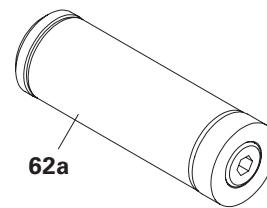


Fig. A10.10b

MX18-75 OF-S



62a

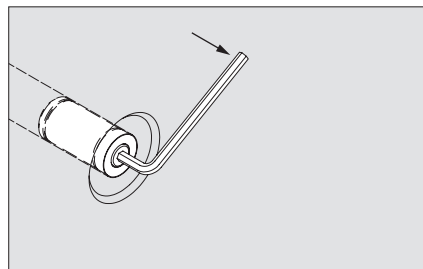
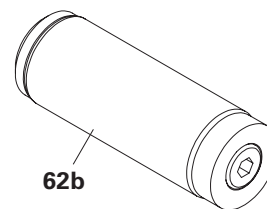


Fig. A10.10c

MX18-75 OF-L



62b

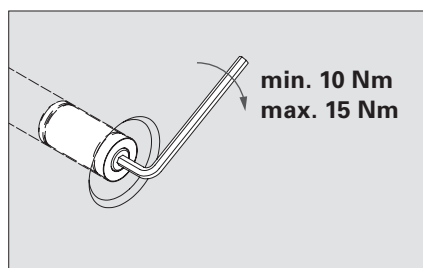


Fig. A10.10d

min. 10 Nm
max. 15 Nm

Brace Connector-2 MX/TR



The Brace Connector-2 MX/TR (**31**) is the connection between the Push-Pull Prop RS (**16**) and Panel MX-2 (**5**). (Fig. A11.01a)

The push-pull prop and kicker brace are attached to the panel using Brace Connector-2 MX/TR (**31**). The connection can be made on:

- Horizontal panel struts
- Vertical panel struts

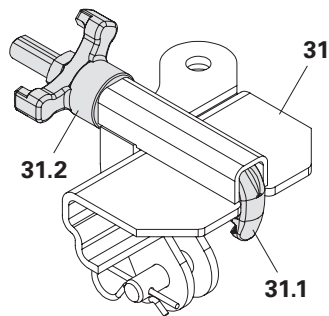


Fig. A11.01a

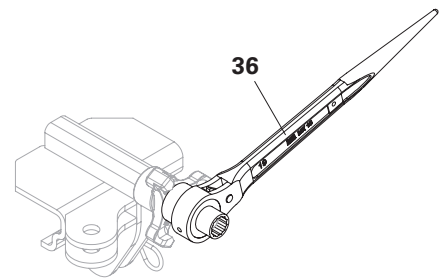


Fig. A11.01b

Components

31 Brace Connector-2 MX/TR

31.1 Hook tie

31.2 Three-winged nut

Assembly

1. Position Brace Connector-2 MX/TR (**31**) on the panel strut in such a way that the hook tie (**31.1**) engages in a connection hole.
2. Tighten Brace Connector-2 MX/TR (**31**) with the three-winged nut (**31.2**).

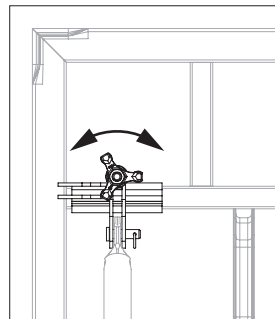


Fig. A11.02a

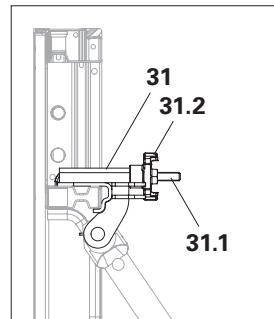


Fig. A11.02b

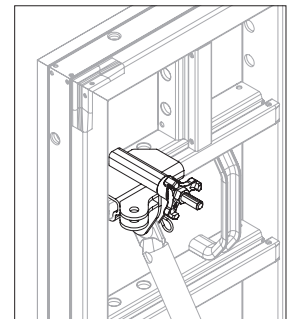


Fig. A11.02c

Connecting to horizontal panel strut
(Fig. A11.02a – Fig. A11.02c)

Connecting to vertical panel strut
(Fig. A11.03a – Fig. A11.03c)



For assembly, the Ratchet MX18 (**36**) can also be used. (Fig. A11.01b)

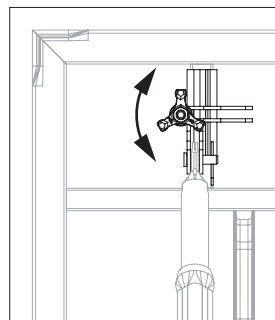


Fig. A11.03a

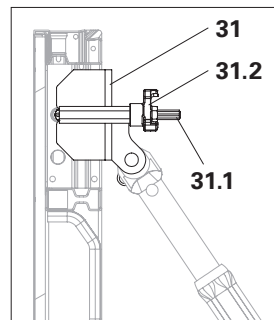


Fig. A11.03b

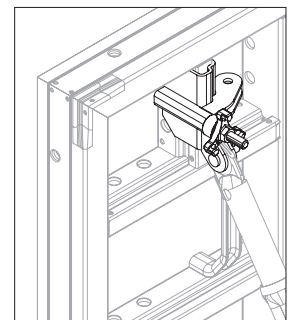


Fig. A11.03c

Base Plate-3 f. RS 210-1400

Components

- 16** Push-Pull Prop RS
- 65** Base Plate-3 f. RS 210-1400

Assembly

1. Attach the lower part of the Push-Pull Prop RS (**16b**) – shown here as a kicker brace – to the Base Plate-3 f. RS 210-1400 (**65**) with bolt (**65.1b**) and cotter pin (**65.2b**).
 2. Attach the lower part of the second push-pull prop – shown here as a push-pull prop – to the Base Plate-3 f. RS 210-1400 (**65**) with bolt (**65.1a**) and cotter pin (**65.2a**).
- (Fig. A11.04)

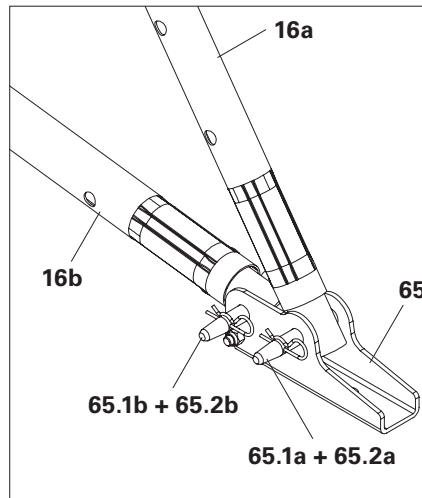


Fig. A11.04

Push-pull prop and kicker brace



- Follow Instructions for Assembly and Use for RS and RSS Push-Pull Props.
- Refer to the data sheet when using the PERI Anchor Bolt $\varnothing 14/20 \times 130$ mm.
- Number of push-pull props
 - On the first panel: 2 push-pull props
 - Second and subsequent panels: 1 push-pull prop

(Fig. A11.05 + Fig. A11.06)



If you sense resistance when unscrewing the Push-Pull Prop RS, do not forcefully unscrew the push-pull prop with a lever or hammer.

Establish the cause of resistance.

The following examples may be the cause of resistance:

- The Push-Pull Prop RS is damaged, replace the Push-Pull Prop RS.
- The Push-Pull Prop RS is at its extension limit, use a longer Push-Pull Prop RS.
- The Base Plate is too far away from the formwork requiring support, move the Base Plate.
- The formwork requiring support is stuck.

Each Push-Pull Prop RS should be extended evenly in length at the top/bottom to prevent unconscious over-tightening. No side may be extended further than the other side. The splint/dowel pin in the Inner Tube acts as an anti-rotation device.

Components

- 16a** Push-Pull Prop RS
- 16b** Push-Pull Prop RS (as kicker brace)
- 30** Anchor Bolt
SW24 $\varnothing 14/20 \times 130$ TG
- 31** Brace Connector-2 MX/TR
- 65** Base Plate-3 f. RS 210-1400

Assembly on brace connector

1. Attach Push-Pull Prop RS (**16a**) and Push-Pull Prop RS (as kicker brace) (**16b**) to the connecting lugs of the Brace Connector-2 MX/TR (**31**) with bolts (**31.3**) and cotter pins (**31.4**).
(Fig. A11.05 + Fig. A11.05a)

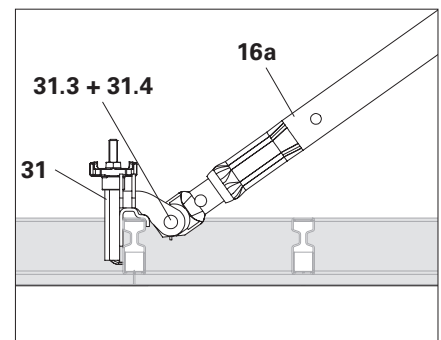


Fig. A11.05a

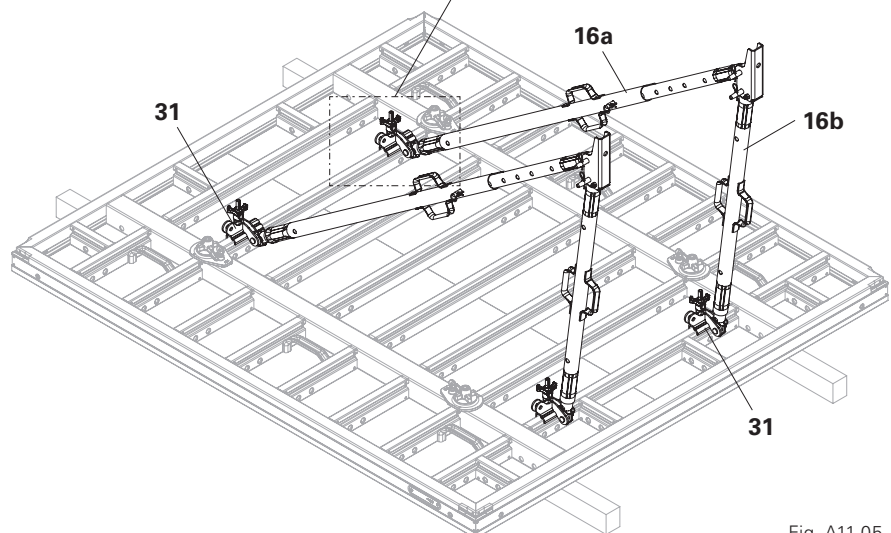


Fig. A11.05

Fitting the base plate

1. Fasten the Base Plate-3 f. RS 210-1400 (**65**) to a flat and sufficiently load-bearing substrate e.g. using Anchor Bolt SW24 Ø14/20x130 TG (**30**). (Fig. A11.06a)

→ The push-pull prop has now been securely fixed in position.

(Fig. A11.06 – concreting platform not shown.)



- If it is not possible to install or adjust the Push-Pull Prop RS (as a kicker brace) (**16b**) on the lowest panel strut, the connection can also be made up to the height of the 2nd panel strut.
- Instead of Push-Pull Props RS, Push-Pull Props RSS and Kicker Braces AV can also be used.
- As an alternative to the Anchor Bolt SW24 Ø14/20x130 TG (**26**), Anchor Bolt SW24 Ø14/20x130 HC (article no.: 141466) can be used.

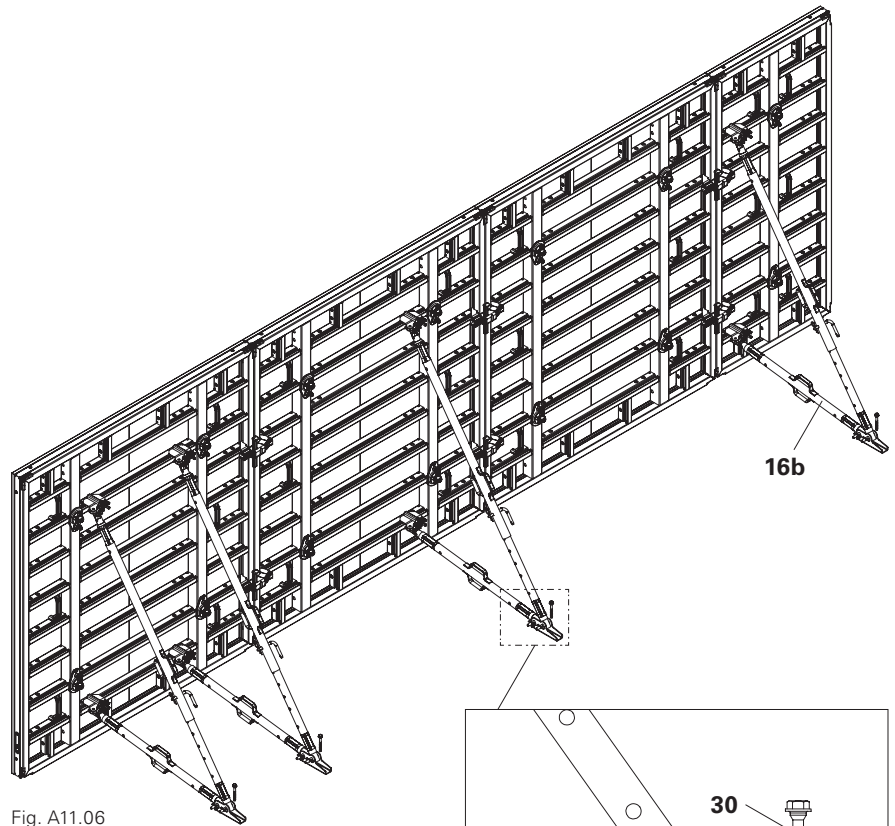


Fig. A11.06

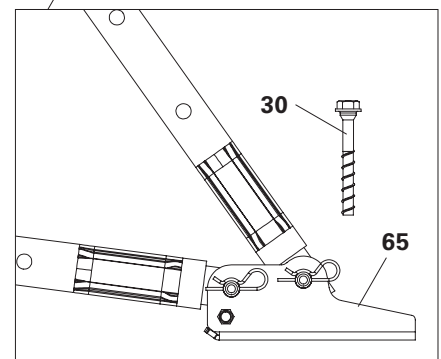


Fig. A11.06a

Standard application

		Formwork height h [m] System 1						Formwork height h [m] System 2			
		3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00
Permissible influence width [m]	W_{I,ref}	4.30	3.22	2.57	2.14	1.95	1.71	2.33	1.89	1.71	1.51
Actual push-pull prop load [kN]	F_{RS1}	11.5	11.5	11.5	11.5	11.5	11.5	10.9	10.0	11.2	11.5
	F_{RS2}							11.5	11.5	11.5	11.1
Actual kicker brace load [kN]	F_{AV}	2.5	2.4	2.4	2.4	2.9	3.3	3.3	2.7	2.6	2.6
Base plate Resulting force [kN]	①	13.3	13.1	13.1	13.0	13.4	13.6	10.9	10.0	11.2	11.5
	②							13.0	11.8	12.9	13.1
Base plate Resulting angle of attack [°]	①	52.0	51.8	51.6	51.5	49.8	48.5	60.0	60.0	60.0	60.0
	②							48.2	49.1	50.5	50.7
Lifting force V _{Wind} [kN/m]		2.4	3.2	4.0	4.8	5.2	6.0	8.5	10.0	11.6	13.1
x = Distance from base plate to rear edge of formwork [m]	x₁	1.2	1.6	2.0	2.4	3.0	3.5	4.1	4.7	5.1	5.5
	x₂							2.6	2.6	2.7	2.9
y = Top connection point measured from top edge of formwork [m]	y₁	1.0	1.3	1.6	1.9	1.9	1.9	1.9	1.9	2.2	2.5
	y₂							4.6	5.5	6.4	7.0
q(z=h) = q _h [kN/m ²]		0.59	0.59	0.59	0.59	0.59	0.61	0.64	0.66	0.69	0.71

Assumptions:

- Wind loads according to DIN EN 1991-1-4 $w = q(z) \times c_p \times \kappa$ [kN/m²]
- Wind Zone 2, Terrain Category III
- Applied pressure coefficient $c_p = 1.8$ (see graphic below)
- Formwork in vertical position on ground
- Service life factor $\kappa = 0.6$
- $q(z)$ = peak velocity pressure
- Inclination of the push-pull props to the horizontal 60°
- Values are characteristic values

Note:

A lift lock must be provided if the lifting force is $F_{A,d} = 1.5 \times V_{Wind} - 0.9 \times G \times h > 0$ where G = surface area weight of the formwork including platforms.

A11 Push-pull props and kicker braces

In the end area L_E , the following c_p values or wind loads are assumed:

$L/h \leq 3$: $c_{p, End} = 2.3^*$

$L/h = 5$: $c_{p, End} = 2.9^*$

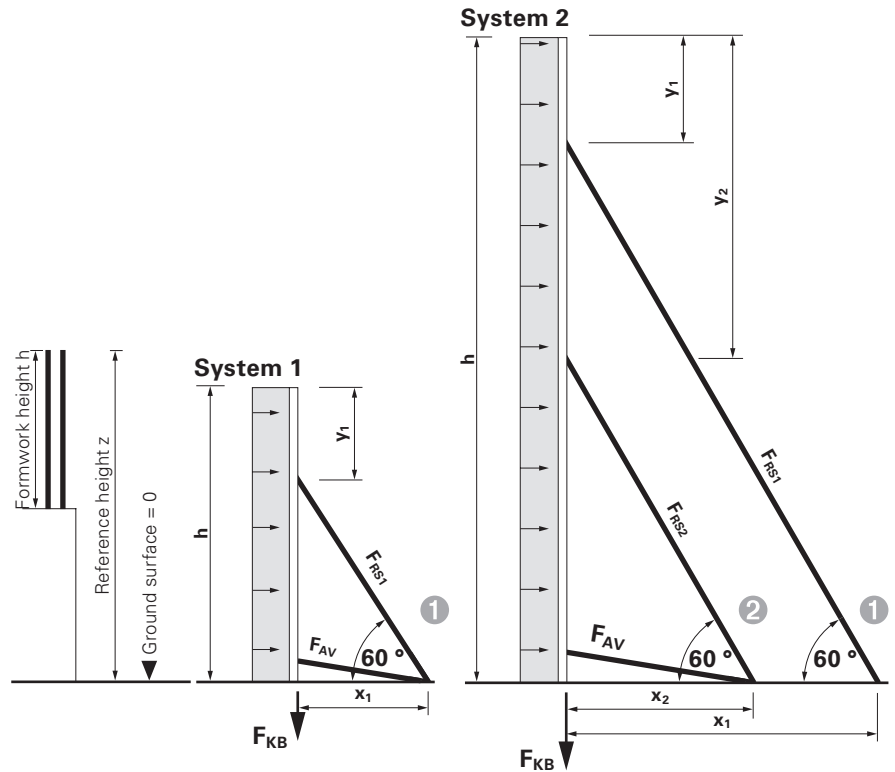
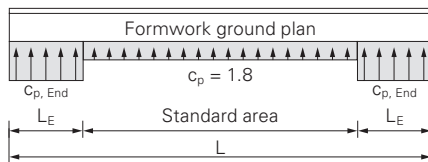
$L/h \geq 10$: $c_{p, End} = 3.4^*$

L_E = length of end area (**$0.3 \times h$**)

h = formwork height

L = formwork length

*intermediate values are interpolated



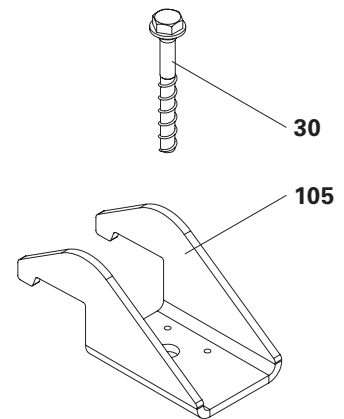
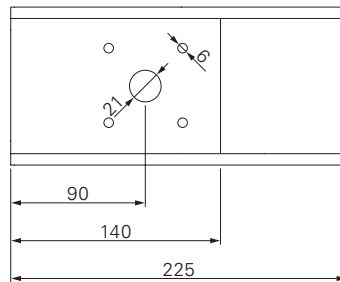
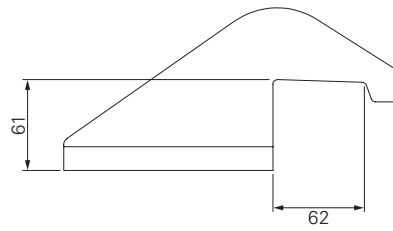


- The Frame Holder MX/TR (**105**) is used to secure Panels MX-2 (**5**), e.g. at the butt T-junction, or to fix and anchor them to the floor slab/concrete slab.
- The centre hole $\varnothing 21$ mm is used, for example, for the Anchor Bolts SW24 $\varnothing 14/20 \times 130$ TG (**30**) and the drill holes $4 \times \varnothing 6$ mm for concrete nails. The length of the notch is 62 mm.



The max. permissible force on anchor bolts, e.g. Anchor Bolt SW24 $\varnothing 14/20 \times 130$ TG (**30**), depends on the concrete strength.

Details in [mm]



Resistance to lifting of inclined Panels MX-2



- Anchoring the Frame Holder MX/TR (**105**) with anchor bolts, e.g. Anchor Bolt SW24 Ø14/20x130 TG (**30**) or a similar fastener.
 - For inclined Panels MX-2 (**5**) see Section "A9 Anchoring at an angle" on page 57.
- (Fig. A12.01 + Fig. A12.01a)

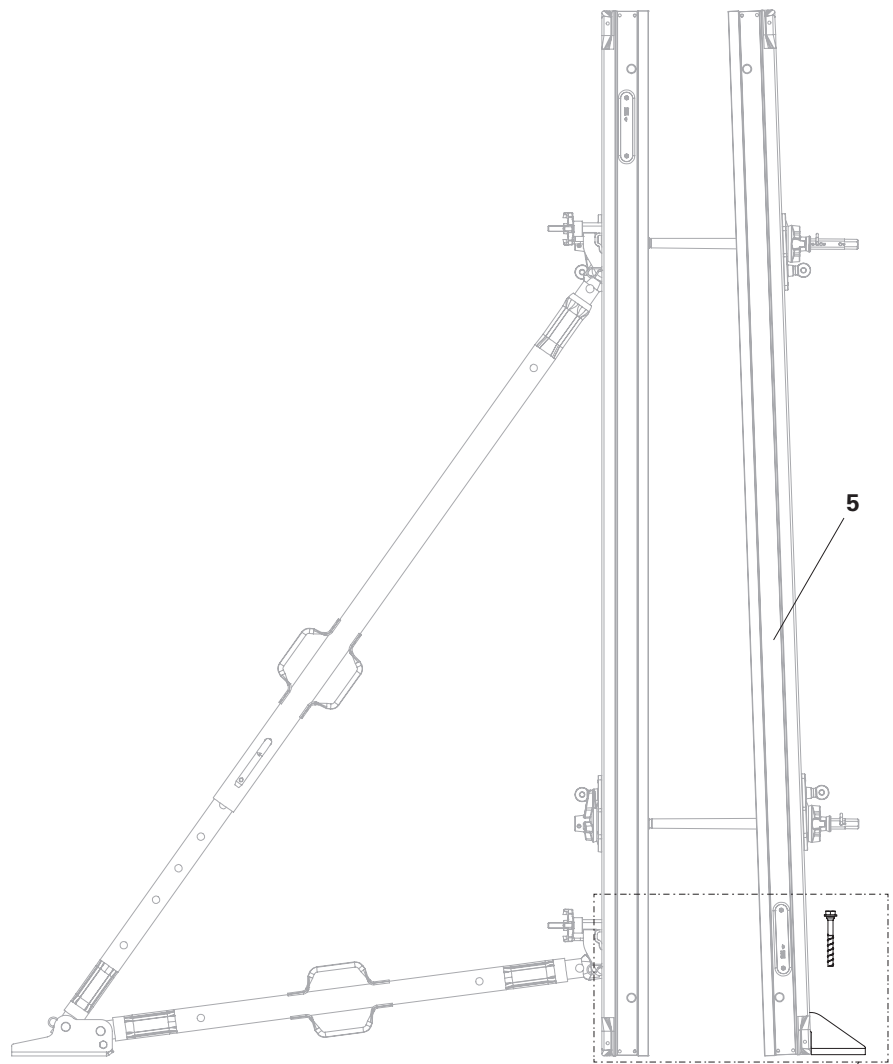


Fig. A12.01

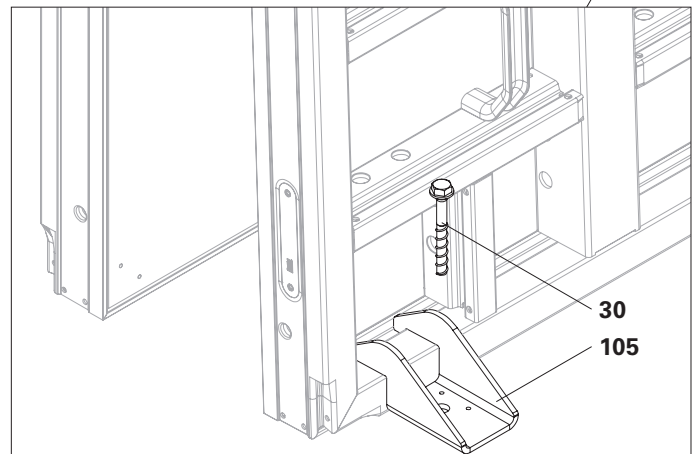


Fig. A12.01a

Anchoring for parapets and foundations



- Anchoring the Frame Holder MX/TR (**105**) with anchor bolts, e.g. Anchor Bolt SW24 Ø14/20x130 TG (**30**) or a similar fastener.
- Further information can be found in Section "A17 Parapets and foundations" on page 108.
(Fig. A12.02 + Fig. A12.02a)

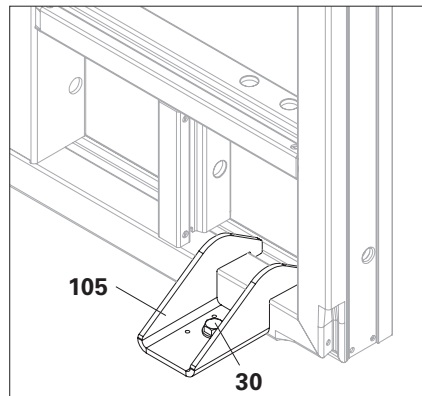


Fig. A12.02a

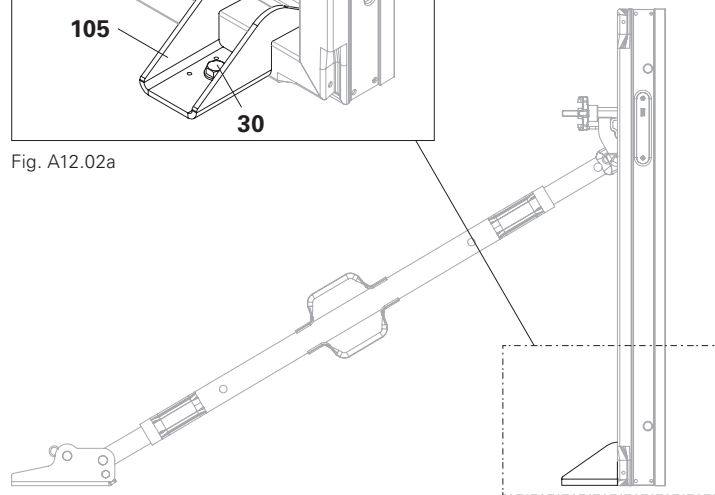


Fig. A12.02

Anchoring to the obtuse wall connections



- Anchoring the Frame Holder MX/TR (**105**) with anchor bolts, e.g. Anchor Bolt SW24 Ø14/20x130 TG (**30**) or a similar fastener.
- Further information can be found in Section "A19 Wall connections" on page 114.
(Fig. A12.03 + Fig. A12.03a)

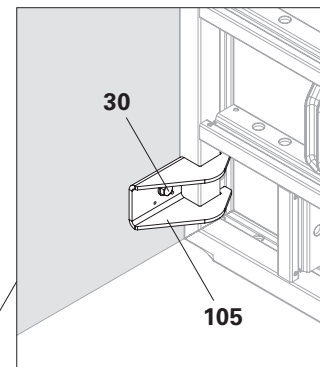


Fig. A12.03a

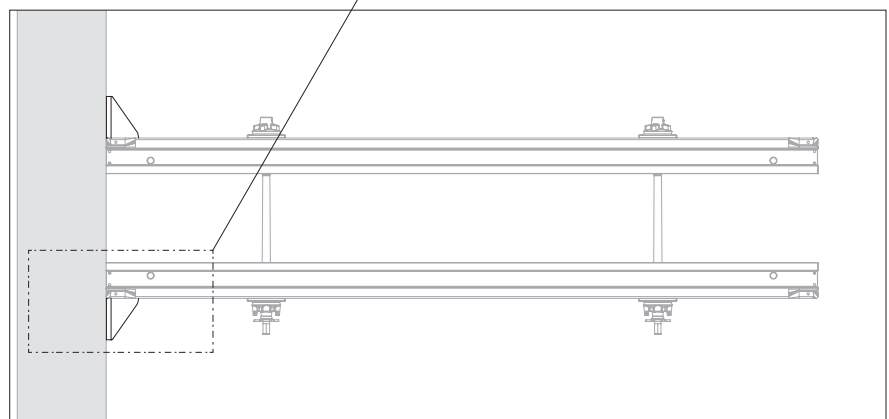


Fig. A12.03

Kicker brace substitute



- Anchoring the Frame Holder MX/TR (**105**) with anchor bolts, e.g. Anchor Bolt SW24 Ø14/20x130 TG (**30**) or a similar fastener.
- Further information can be found in Section "A11 Push-pull props and kicker braces" on page 62. (Fig. A12.04 + Fig. A12.04a)

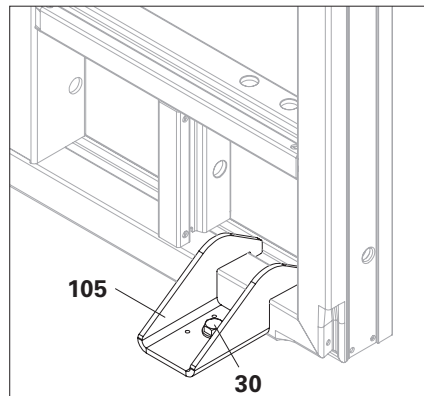


Fig. A12.04a

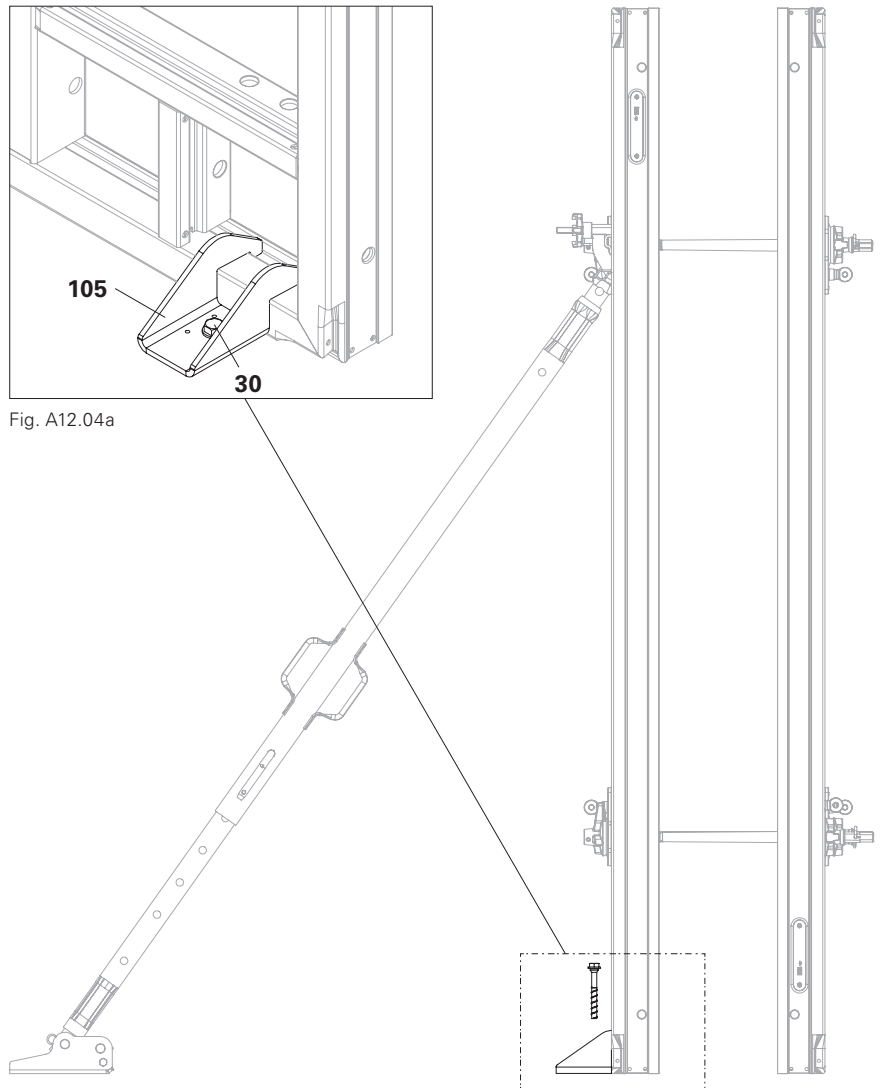


Fig. A12.04

Concrete nails



Constructive use with concrete nails:
Force transmission not possible
(squared timber substitute).
(Fig. A12.05)

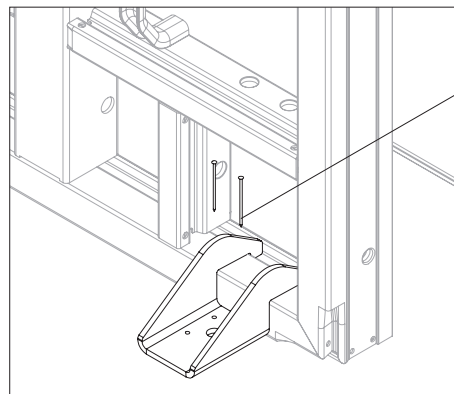


Fig. A12.05

Concrete strength

Wall profile in 0° position and concrete with $f_{ck} = 10 \text{ N/mm}^2$ (Force applied to the right).



- If the Frame Holder MX/TR (105) is fastened in concrete with $f_{ck} = 10 \text{ N/mm}^2$, the maximum forces that can be applied are limited by the permissible tension force in the screw.
- The forces that can be applied to the Frame Holder MX/TR (105) are summarised in Tab. A12.01.

If no Anchor Bolt SW24 Ø14/20x130 TG (30) is used, the screw forces for alternative screws can be calculated using the following formula:

- $F_q = V_1$
- $F_z = 2.3574 \times N + 0.3806 \times V_1$

Table for force application to the right (V_1)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_1 [kN]	N [kN]	F_z [kN]	F_q [kN]
11.30	0.00	4.79	11.30	0.00
11.30	2.50	4.39	11.30	2.50
11.30	5.00	3.99	11.30	5.00
11.30	7.00	3.66	11.30	7.00

Tab. A12.01

N = Permissible vertical force in Frame Holder MX/TR
 V_1 = Permissible horizontal force in Frame Holder MX/TR to the right
 F_z = Tension force in the screw
 F_q = Shear force in the screw

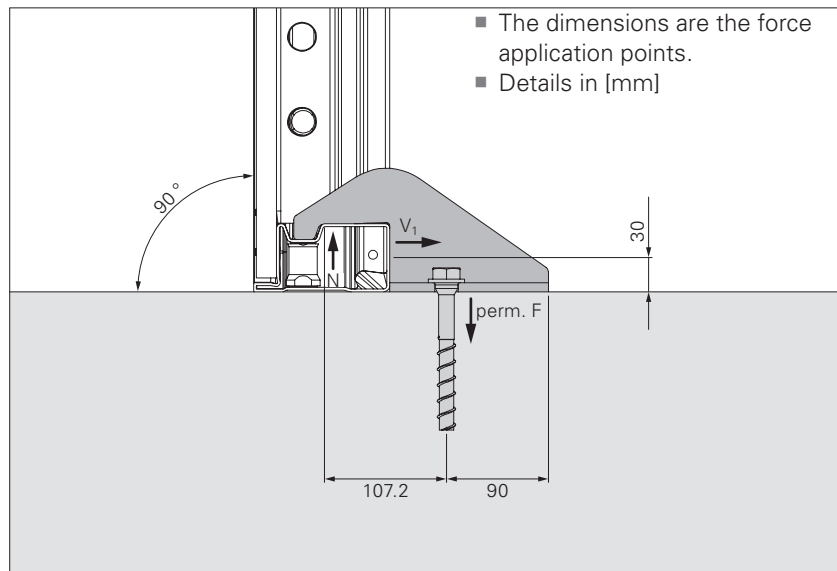


Fig. A12.06a

Case V_1

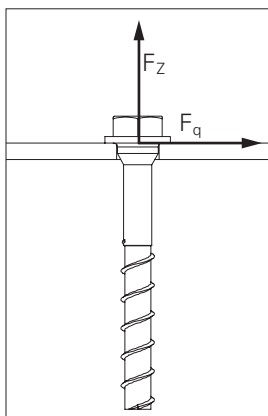
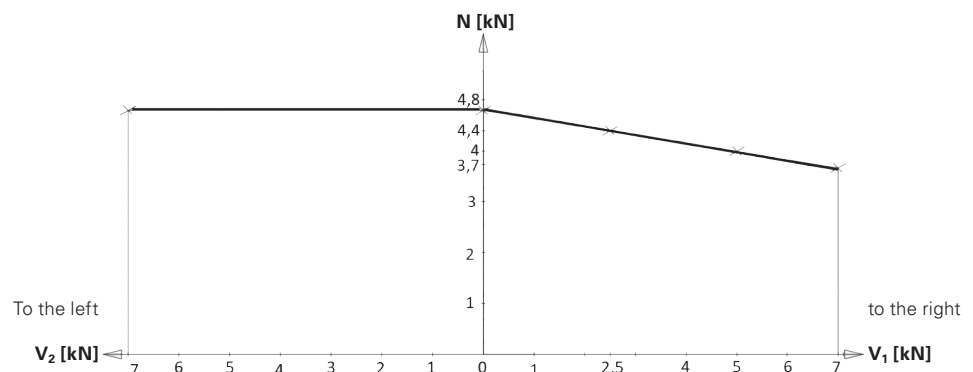


Fig. A12.06b



Wall profile in 0° position and concrete with $f_{ck} = 10 \text{ N/mm}^2$ (Force applied to the left).



- If the Frame Holder MX/TR (**105**) is fastened in concrete with $f_{ck} = 10 \text{ N/mm}^2$, the maximum forces that can be applied are limited by the permissible tension force in the screw.
- The forces that can be applied to the Frame Holder MX/TR (**105**) are summarised in Tab. A12.02.

If no Anchor Bolt SW24 Ø14/20x130 TG (**30**) is used, the screw forces for alternative screws can be calculated using the following formula:

- $F_q = V_2$
- $F_z = 2.3574 \times N + 0.3806 \times V_2$

Table for force application to the left (V_2)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_2 [kN]	N [kN]	F_z [kN]	F_q [kN]
11.30	0.00	4.79	11.30	0.00
11.30	7.00	4.79	11.30	7.00

Tab. A12.02

N = Permissible vertical force in frame holder
 V_2 = Permissible horizontal force in frame holder to the left
 F_z = Tension force in the screw
 F_q = Shear force in the screw

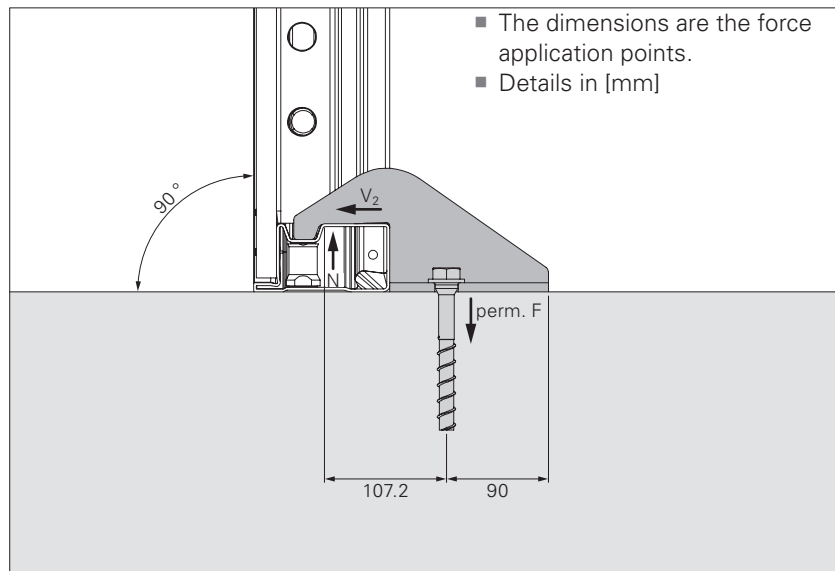


Fig. A12.07a

Case V_2

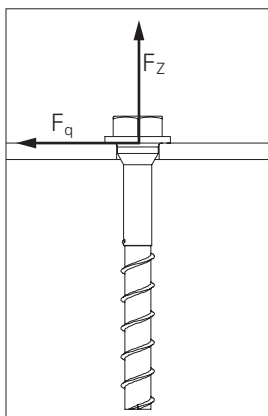
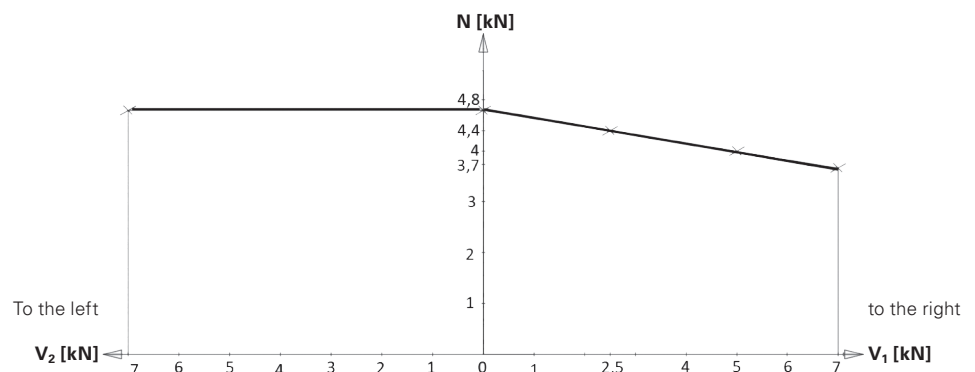


Fig. A12.07b



Wall profile in 0° position and concrete with $f_{ck} = 20 \text{ N/mm}^2$ (Force applied to the right).



The maximum force that can be applied to the Frame Holder MX/TR (**105**) (perm. F) is 17.9 kN. In this case, the Frame Holder MX/TR (**105**) must be fixed in concrete with $f_{ck} \geq 20 \text{ N/mm}^2$.

If no Anchor Bolt SW24 Ø14/20x130 TG (**30**) is used, the screw forces for alternative screws can be calculated using the following formula:

- $F_q = V_1$
- $F_z = 2.321 \times N + 0.3704 \times V_1$

Table for force application to the right (V_1)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_1 [kN]	N [kN]	F_z [kN]	F_q [kN]
17.90	0.00	7.71	17.90	0.00
17.90	2.50	7.31	17.90	2.50
17.90	5.00	6.91	17.90	5.00
17.90	7.19	6.56	17.90	7.19

Tab. A12.03

N = Permissible vertical force in frame holder
 V_1 = Permissible horizontal force in frame holder to the right
 F_z = Tension force in the screw
 F_q = Shear force in the screw

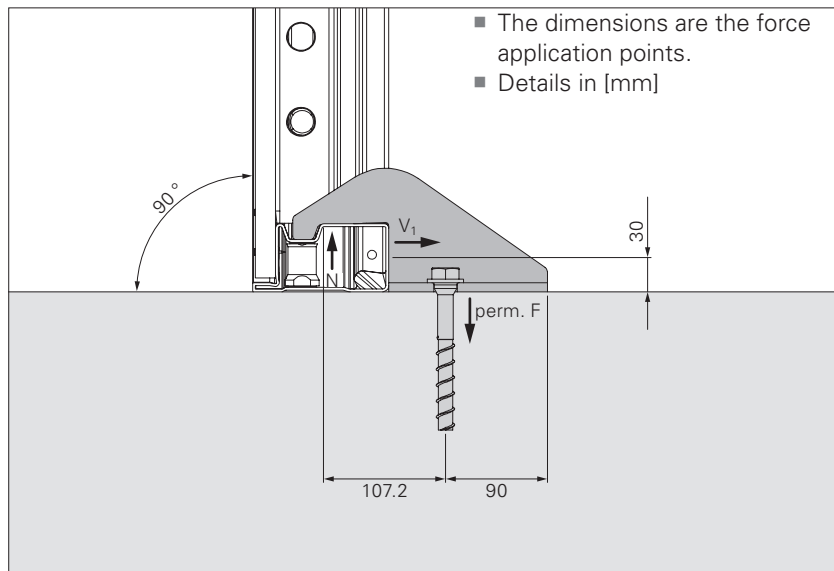


Fig. A12.08a

Case V_1

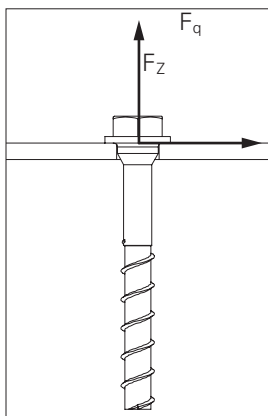
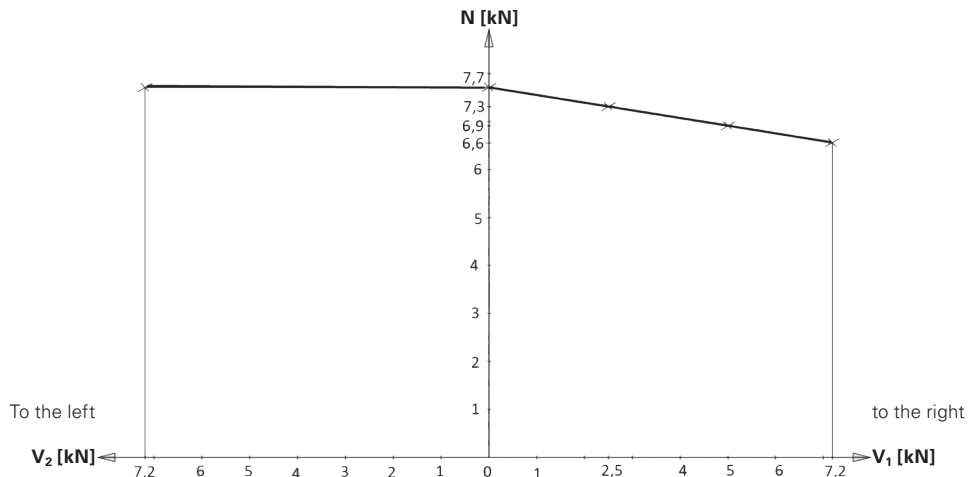


Fig. A12.08b



Wall profile in 0° position and concrete with $f_{ck} = 20 \text{ N/mm}^2$ (Force applied to the left).



The maximum force that can be applied to the Frame Holder MX/TR (**105**) (perm. F) is 17.9 kN. In this case, the Frame Holder MX/TR (**105**) must be fixed in concrete with $f_{ck} \geq 20 \text{ N/mm}^2$.

If no Anchor Bolt SW24 Ø14/20x130 TG (**30**) is used, the screw forces for alternative screws can be calculated using the following formula:

- $F_q = V_2$
- $F_z = 2.321 \times N + 0.3704 \times V_2$

Table for force application to the left (V_2)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_2 [kN]	N [kN]	F_z [kN]	F_q [kN]
17.90	0.00	7.71	17.90	0.00
17.90	7.19	7.71	17.90	7.19

Tab. A12.04

N = Permissible vertical force in frame holder
 V_2 = Permissible horizontal force in frame holder to the left
 F_z = Tension force in the screw
 F_q = Shear force in the screw

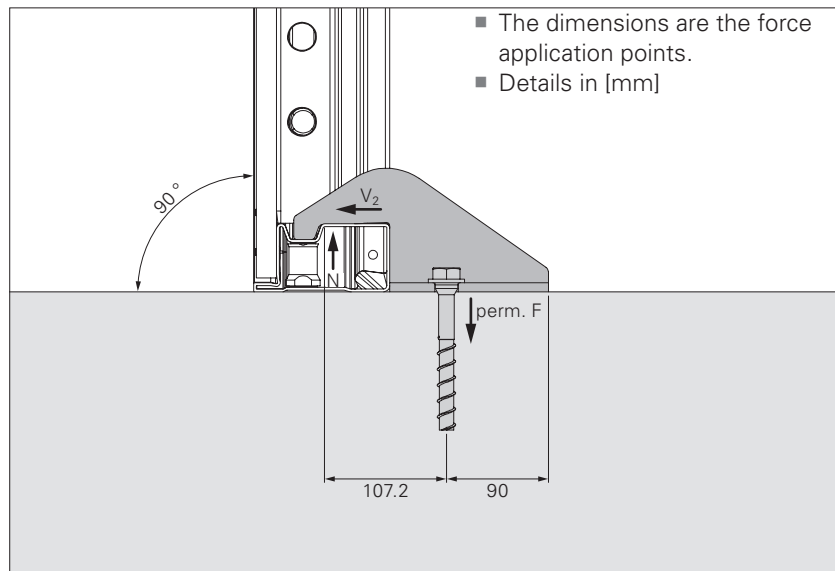


Fig. A12.09a

Case V_2

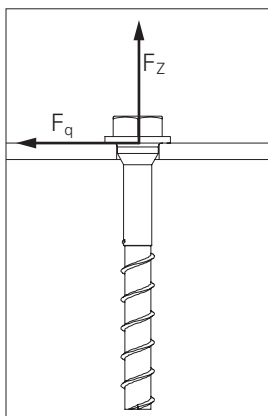
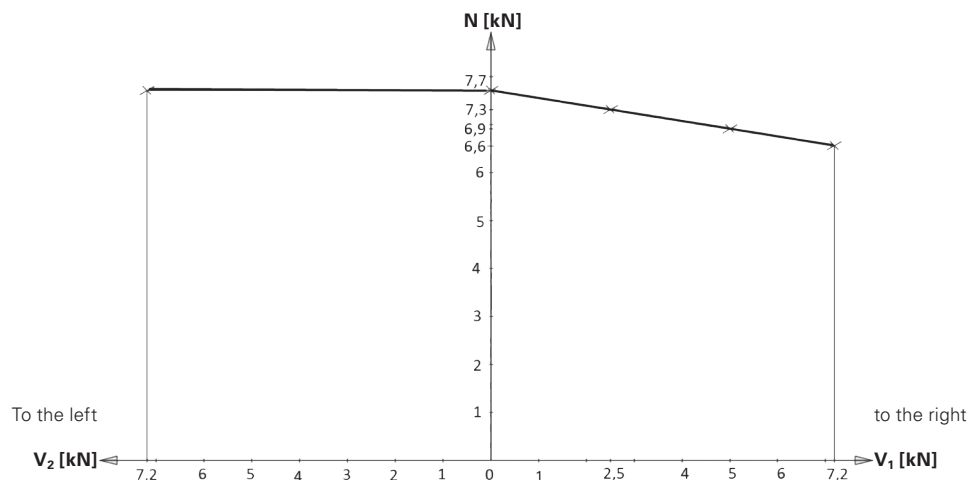


Fig. A12.09b



Wall profile in +3 ° position and concrete with $f_{ck} = 10 \text{ N/mm}^2$ (Force applied to the right).



- If the Frame Holder MX/TR (105) is fastened in concrete with $f_{ck} = 10 \text{ N/mm}^2$, the maximum forces that can be applied are limited by the permissible tension force in the screw.
- The forces that can be applied to the Frame Holder MX/TR (105) are summarised in Tab. A12.05.

If no Anchor Bolt SW24 Ø14/20x130 TG (30) is used, the screw forces for alternative screws can be calculated using the following formula:

- $F_q = V_1$
- $F_z = 2.3921 \times N + 0.7148 \times V_1$

Table for force application to the right (V_1)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_1 [kN]	N [kN]	F_z [kN]	F_q [kN]
11.30	0.00	4.72	11.30	0.00
11.30	2.50	3.98	11.30	2.50
11.30	5.00	3.23	11.30	5.00
11.30	7.00	2.63	11.30	7.00

Tab. A12.05

N = Permissible vertical force in frame holder
 V_1 = Permissible horizontal force in frame holder to the right
 F_z = Tension force in the screw
 F_q = Shear force in the screw

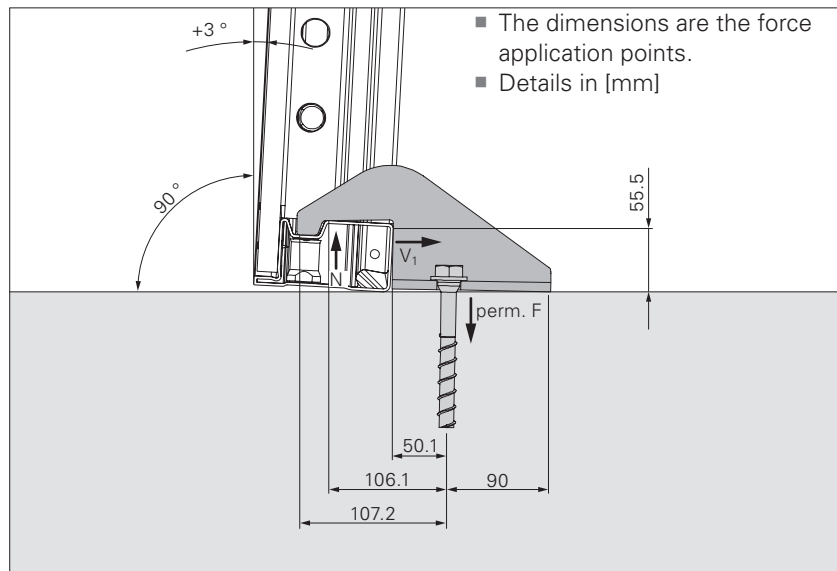


Fig. A12.10a

Case V_1

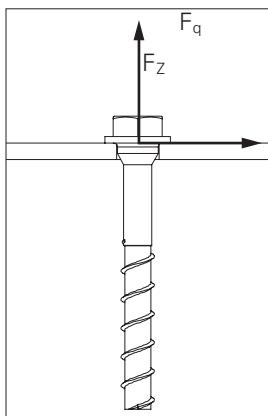
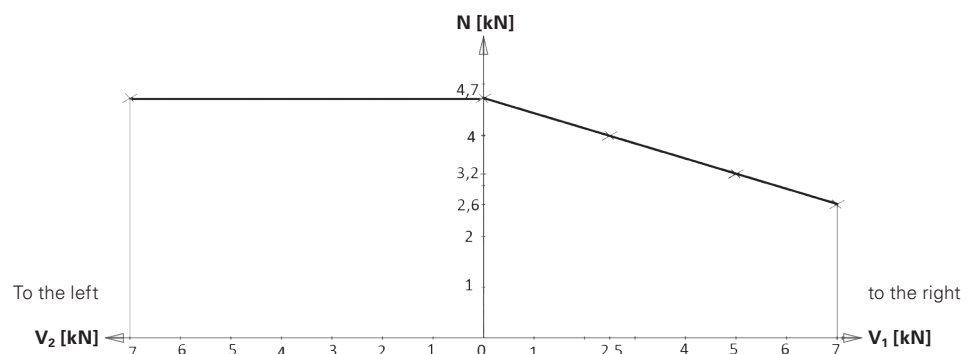


Fig. A12.10b



Wall profile in +3 ° position and concrete with $f_{ck} = 10 \text{ N/mm}^2$ (Force applied to the left).



- If the Frame Holder MX/TR (105) is fastened in concrete with $f_{ck} = 10 \text{ N/mm}^2$, the maximum forces that can be applied are limited by the permissible tension force in the screw.
- The forces that can be applied to the Frame Holder MX/TR (105) are summarised in Tab. A12.06.

If no Anchor Bolt SW24 Ø14/20x130 TG (30) is used, the screw forces for alternative screws can be calculated using the following formula:

- $F_q = V_2$
- $F_z = 2.3921 \times N + 0.7148 \times V_2$

Table for force application to the left (V_2)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_2 [kN]	N [kN]	F_z [kN]	F_q [kN]
11.30	0.00	4.72	11.30	0.00
11.30	7.00	4.72	11.30	7.00

Tab. A12.06

N = Permissible vertical force in frame holder
 V_2 = Permissible horizontal force in frame holder to the left
 F_z = Tension force in the screw
 F_q = Shear force in the screw

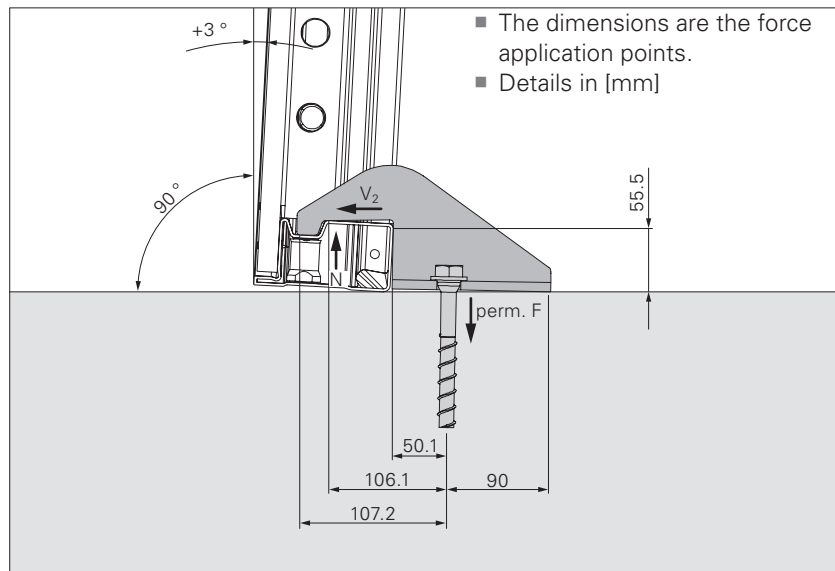


Fig. A12.11a

Case V_2

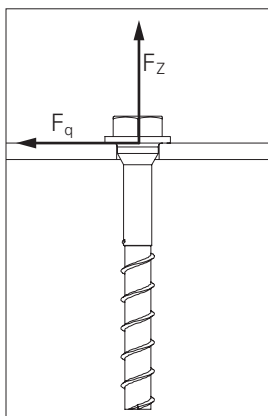
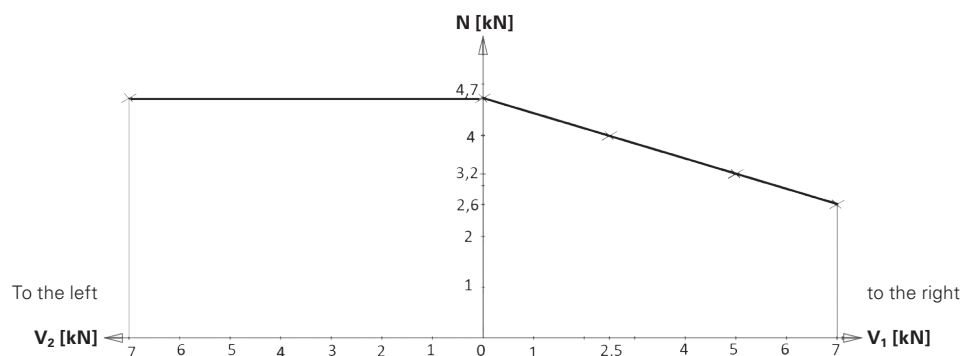


Fig. A12.11b



Wall profile in +3 ° position and concrete with $f_{ck} = 20 \text{ N/mm}^2$ (Force applied to the right).



The maximum force that can be applied to the Frame Holder MX/TR (**105**) (perm. F) is 17.9 kN. In this case, the Frame Holder MX/TR (**105**) must be fixed in concrete with $f_{ck} \geq 20 \text{ N/mm}^2$.

If no Anchor Bolt SW24 Ø14/20x130 TG (**30**) is used, the screw forces for alternative screws can be calculated using the following formula:

- $F_q = V_1$
- $F_z = 2.3229 \times N + 0.68 \times V_1$

Table for force application to the right (V_1)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_1 [kN]	N [kN]	F_z [kN]	F_q [kN]
17.90	0.00	7.71	17.90	0.00
17.90	2.50	6.98	17.90	2.50
17.90	5.00	6.24	17.90	5.00
17.90	7.19	5.60	17.90	7.19

Tab. A12.07

N = Permissible vertical force in frame holder
 V_1 = Permissible horizontal force in frame holder to the right
 F_z = Tension force in the screw
 F_q = Shear force in the screw

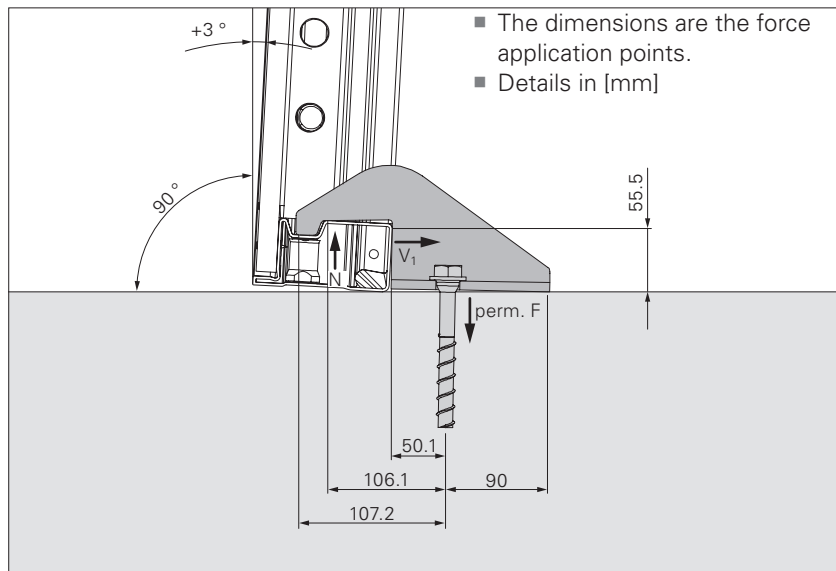


Fig. A12.12a

Case V_1

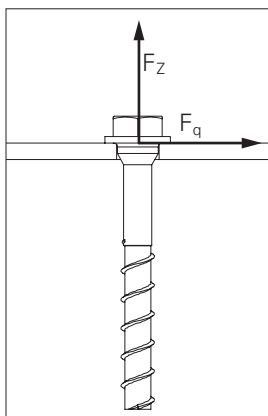
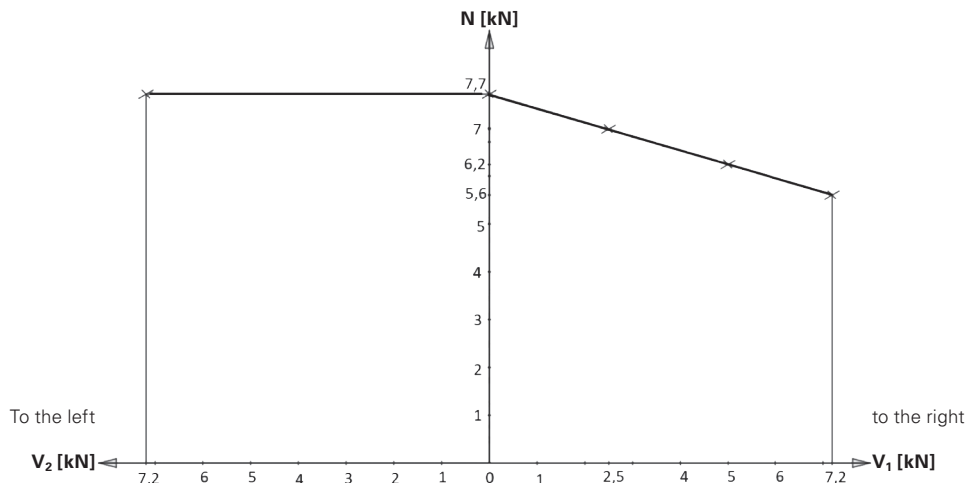


Fig. A12.12b



Wall profile in +3 ° position and concrete with $f_{ck} = 20 \text{ N/mm}^2$ (Force applied to the left).



The maximum force that can be applied to the Frame Holder MX/TR (**105**) (perm. F) is 17.9 kN. In this case, the Frame Holder MX/TR (**105**) must be fixed in concrete with $f_{ck} \geq 20 \text{ N/mm}^2$.

If no Anchor Bolt SW24 Ø14/20x130 TG (**30**) is used, the screw forces for alternative screws can be calculated using the following formula:

- $F_q = V_2$
- $F_z = 2.3229 \times N + 0.68 \times V_2$

Table for force application to the left (V_2)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_2 [kN]	N [kN]	F_z [kN]	F_q [kN]
17.90	0.00	7.71	17.90	0.00
17.90	7.19	7.71	17.90	7.19

Tab. A12.08

N = Permissible vertical force in frame holder
 V_2 = Permissible horizontal force in frame holder to the left
 F_z = Tension force in the screw
 F_q = Shear force in the screw

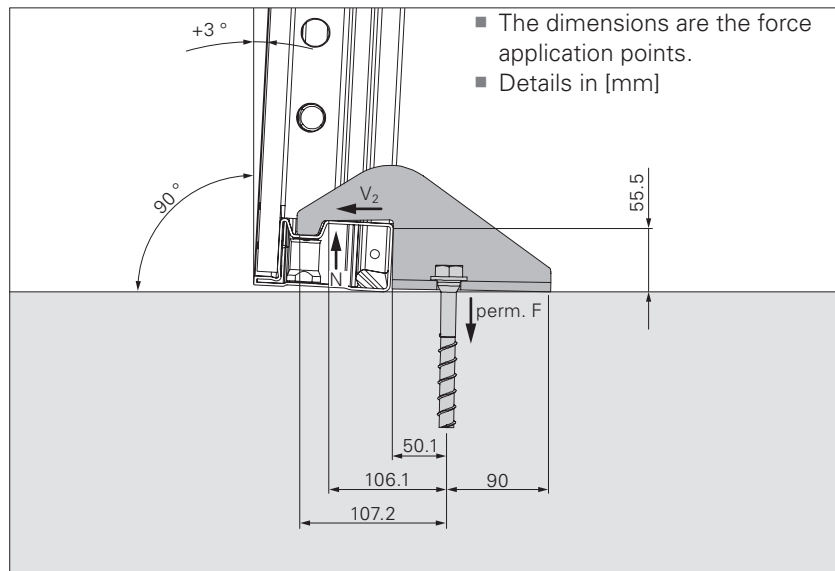


Fig. A12.13a

Case V_2

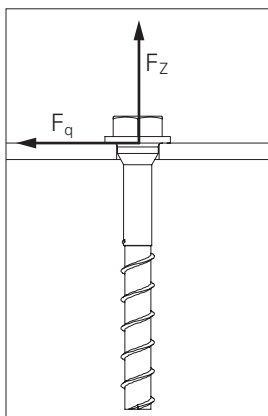
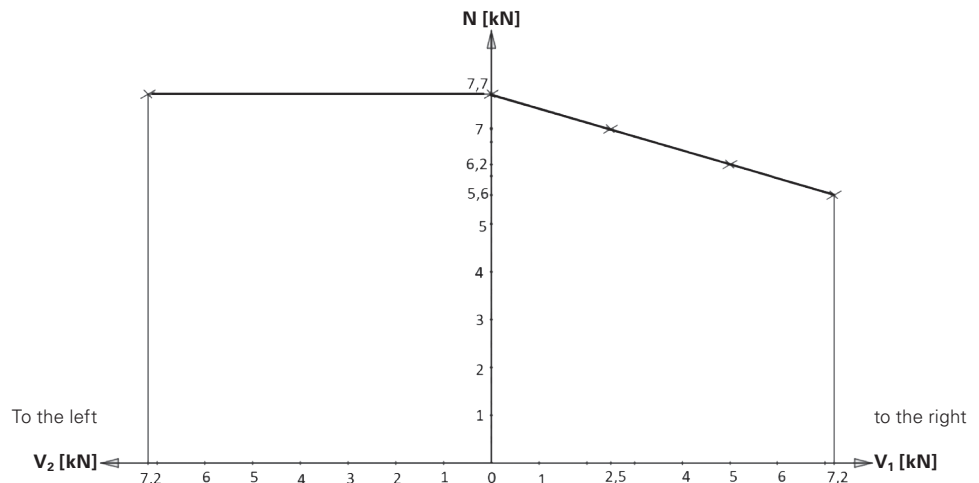


Fig. A12.13b



Wall profile in approx. -4° position and concrete with $f_{ck} = 10 \text{ N/mm}^2$ (Force applied to the right).



- If the frame holder is installed in the -4° position, a gap of 7 mm is created between the Frame Holder MX/TR (105) and the concrete; this gap must be "filled" with a 7 mm thick steel plate (Fig. A12.14c) with steel grade S355.
- If the Frame Holder MX/TR (105) is fastened in concrete with $f_{ck} = 10 \text{ N/mm}^2$, the maximum forces that can be applied are limited by the permissible tension force in the screw.
- The forces that can be applied to the Frame Holder MX/TR (105) are summarised in Tab. A12.09.

If no Anchor Bolt SW24 $\text{Ø}14/20 \times 130$ TG (30) is used, the screw forces for alternative screws can be calculated using the following formula:

$$F_q = V_1$$

$$F_z = 1.715 \times N + 0.164 \times V_1$$

Table for force application to the right (V_1)				
perm. F [kN]	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
	V_2 [kN]	N [kN]	F_z [kN]	F_q [kN]
11.30	0.00	6.59	11.30	0.00
11.30	1.00	6.49	11.30	1.00
11.30	1.50	6.44	11.30	1.50
11.30	2.00	6.40	11.30	2.00
11.30	2.20	6.38	11.30	2.20

Tab. A12.09

N = Permissible vertical force in frame holder
 V_1 = Permissible horizontal force in frame holder to the right
 F_z = Tension force in the screw
 F_q = Shear force in the screw

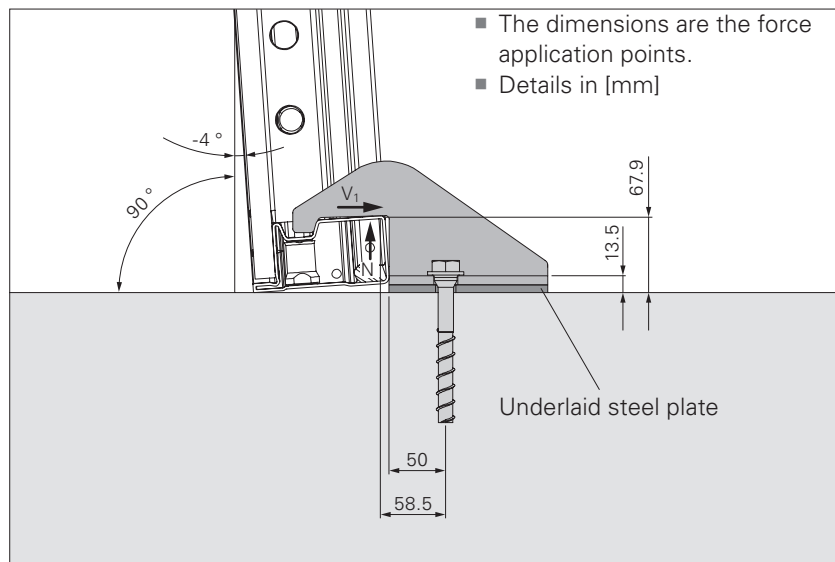


Fig. A12.14a

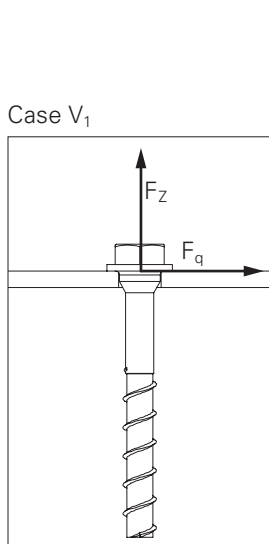


Fig. A12.14b

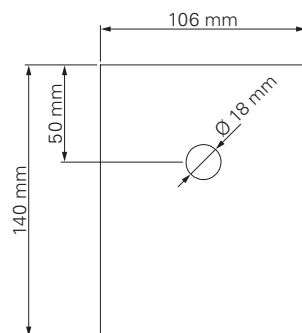
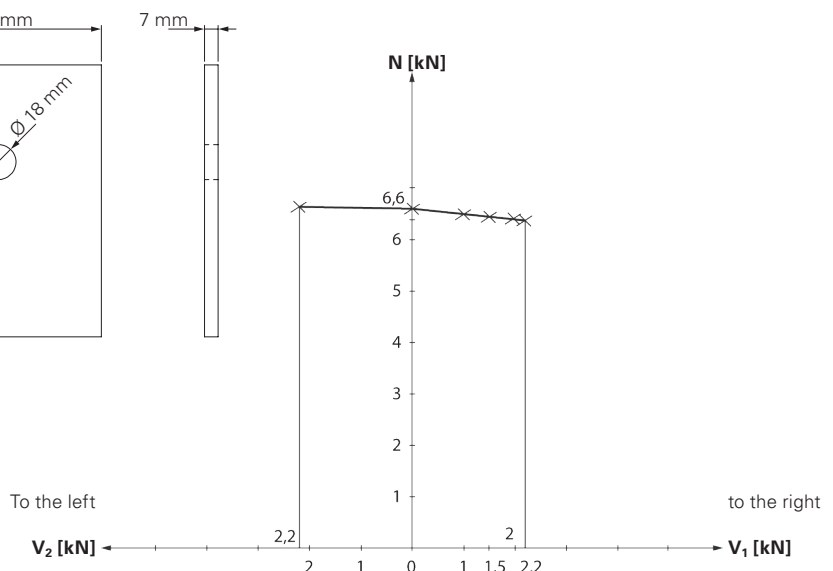


Fig. A12.14c



Wall profile in approx. -4° position and concrete with $f_{ck} = 10 \text{ N/mm}^2$ (Force applied to the left).



- If the frame holder is installed in the -4° position, a gap of 7 mm is created between the Frame Holder MX/TR (105) and the concrete; this gap must be "filled" with a 7 mm thick steel plate (Fig. A12.15c) with steel grade S355.
- If the Frame Holder MX/TR (105) is fastened in concrete with $f_{ck} = 10 \text{ N/mm}^2$, the maximum forces that can be applied are limited by the permissible tension force in the screw.
- The forces that can be applied to the Frame Holder MX/TR (105) are summarised in Tab. A12.10.

If no Anchor Bolt SW24 Ø14/20x130 TG (30) is used, the screw forces for alternative screws can be calculated using the following formula:

$$F_q = V_2$$

$$F_z = 1.715 \times N + 0.164 \times V_2$$

Table for force application to the left (V_2)				
perm. F [kN]	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
	V_2 [kN]	N [kN]	F_z [kN]	F_q [kN]
11.30	0.00	6.59	11.30	0.00
11.30	2.20	6.59	11.30	2.20

Tab. A12.10

N = Permissible vertical force in frame holder
 V_2 = Permissible horizontal force in frame holder to the left
 F_z = Tension force in the screw
 F_q = Shear force in the screw

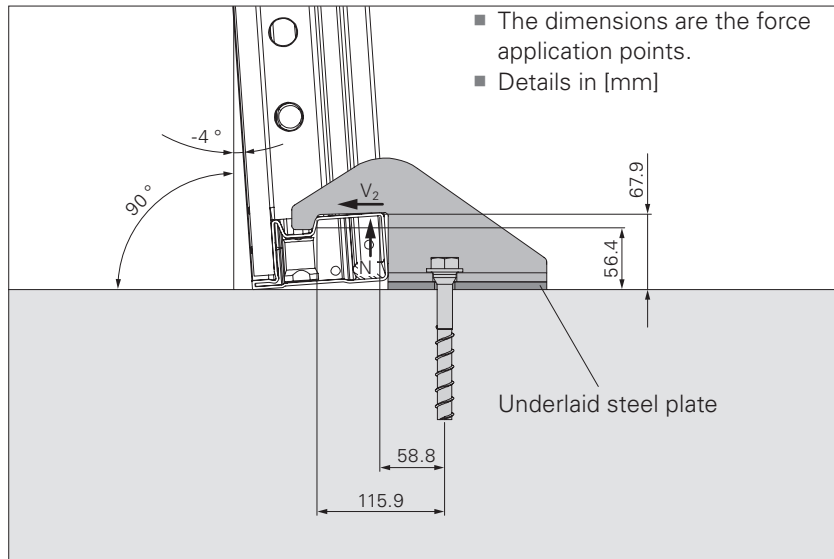


Fig. A12.15a

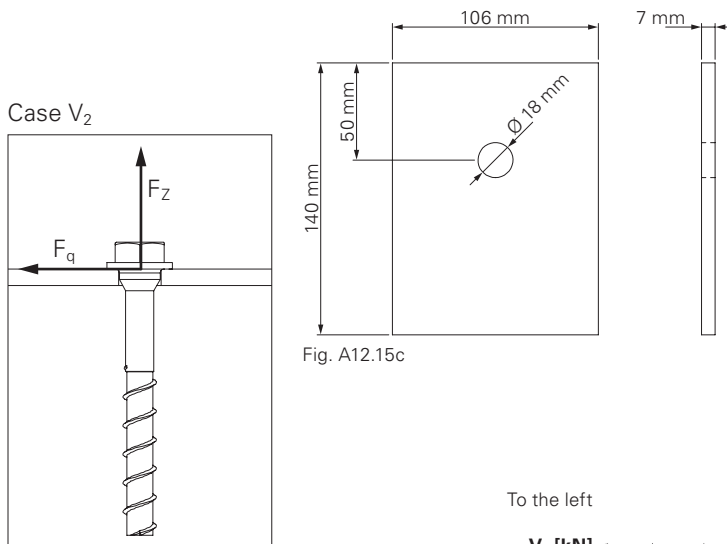
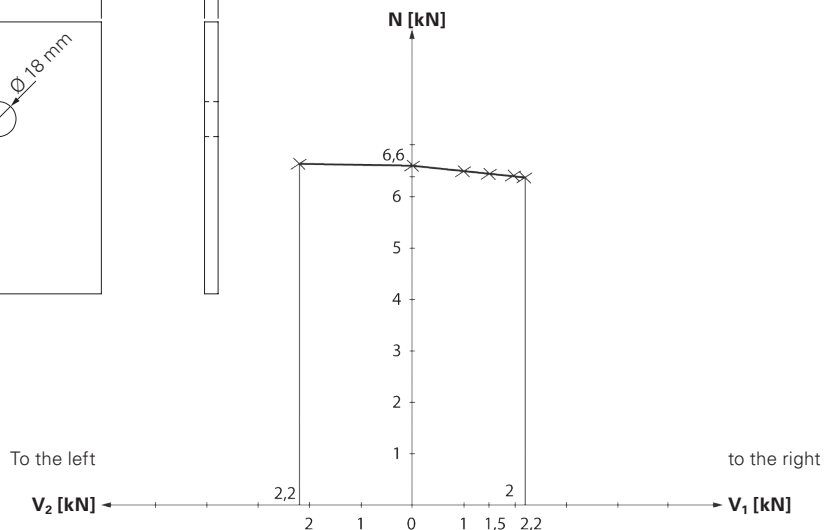


Fig. A12.15c

Fig. A12.15b



Wall profile in approx. -4° position and concrete with $f_{ck} = 20 \text{ N/mm}^2$ (Force applied to the right).



- If the frame holder is installed in the -4° position, a gap of 7 mm is created between the Frame Holder MX/TR (105) and the concrete; this gap must be "filled" with a 7 mm thick steel plate (Fig. A12.16c) with steel grade S355.
- The maximum force that can be applied to the Frame Holder MX/TR (105) (perm. F) is 17.9 kN. In this case, the Frame Holder MX/TR (105) must be fixed in concrete with $f_{ck} \geq 20 \text{ N/mm}^2$.

If no Anchor Bolt SW24 $\text{Ø}14/20 \times 130$ TG (30) is used, the screw forces for alternative screws can be calculated using the following formula:

$$F_q = V_1$$

$$F_z = 1.7 \times N + 0.161 \times V_1$$

Table for force application to the right (V_1)				
perm. F [kN]	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
	V_2 [kN]	N [kN]	F_z [kN]	F_q [kN]
17.90	0.00	10.53	17.90	0.00
17.90	1.00	10.43	17.90	1.00
17.90	1.50	10.39	17.90	1.50
17.90	2.00	10.34	17.90	2.00
17.90	2.23	10.32	17.90	2.23

Tab. A12.11

N = Permissible vertical force in frame holder
 V_1 = Permissible horizontal force in frame holder to the right
 F_z = Tension force in the screw
 F_q = Shear force in the screw

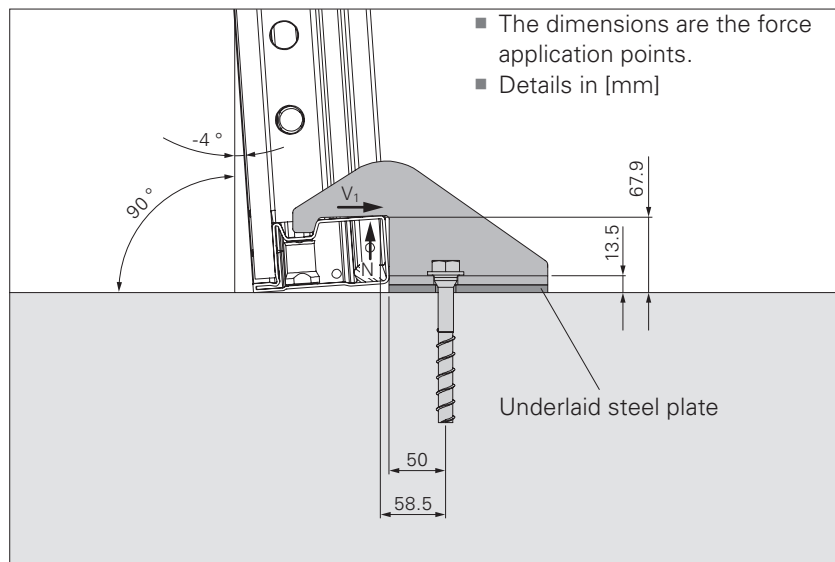


Fig. A12.16a

Case V_1

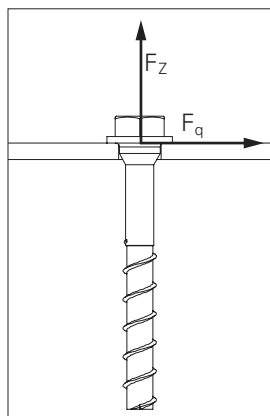


Fig. A12.16b

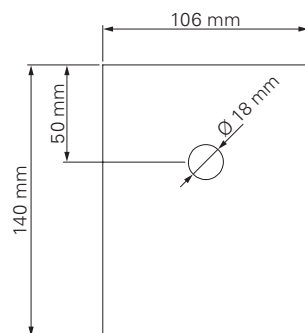
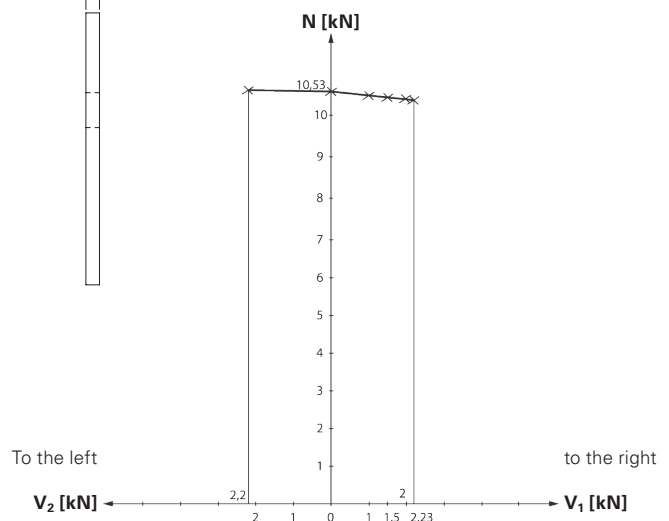


Fig. A12.16c



Wall profile in approx. -4° position and concrete with $f_{ck} = 20 \text{ N/mm}^2$ (Force applied to the left).



- If the frame holder is installed in the -4° position, a gap of 7 mm is created between the Frame Holder MX/TR (105) and the concrete; this gap must be "filled" with a 7 mm thick steel plate (Fig. A12.17c) with steel grade S355.
- The maximum force that can be applied to the Frame Holder MX/TR (105) (perm. F) is 17.9 kN. In this case, the Frame Holder MX/TR (105) must be fixed in concrete with $f_{ck} \geq 20 \text{ N/mm}^2$.

If no Anchor Bolt SW24 $\text{Ø}14/20 \times 130$ TG (30) is used, the screw forces for alternative screws can be calculated using the following formula:

$$F_q = V_2$$

$$F_z = 1.715 \times N + 0.164 \times V_2$$

Table for force application to the left (V_2)				
	Forces that can be introduced into Frame Holder MX/TR		Screw forces	
perm. F [kN]	V_2 [kN]	N [kN]	F_z [kN]	F_q [kN]
17.90	0.00	10.53	17.90	0.00
17.90	2.23	10.53	17.90	2.23

Tab. A12.12

N = Permissible vertical force in frame holder
 V_2 = Permissible horizontal force in frame holder to the left
 F_z = Tension force in the screw
 F_q = Shear force in the screw

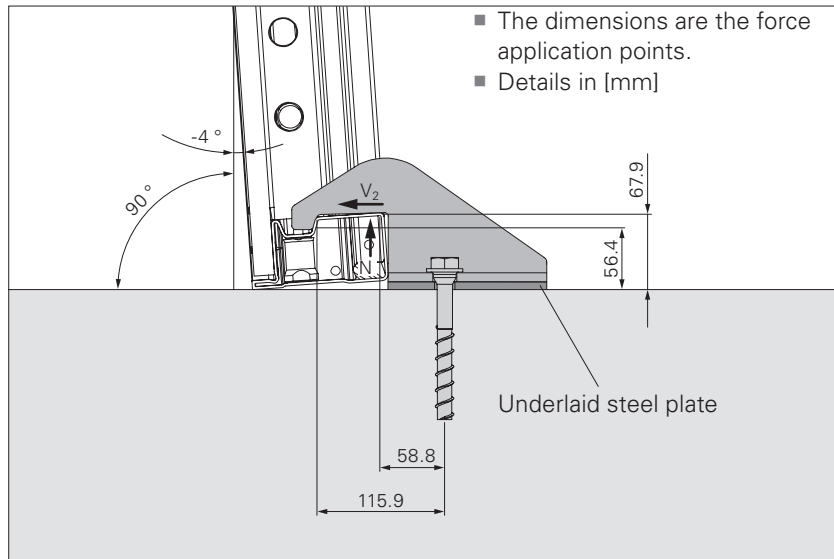


Fig. A12.17a

Case V_2

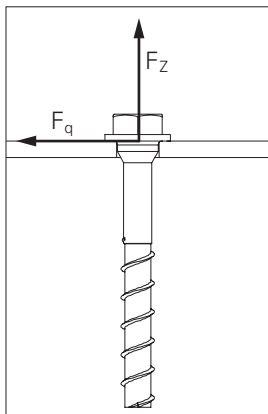


Fig. A12.17b

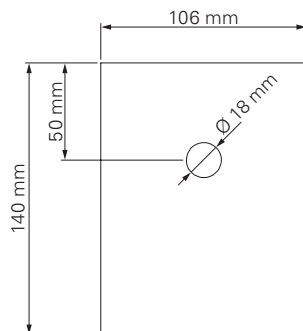
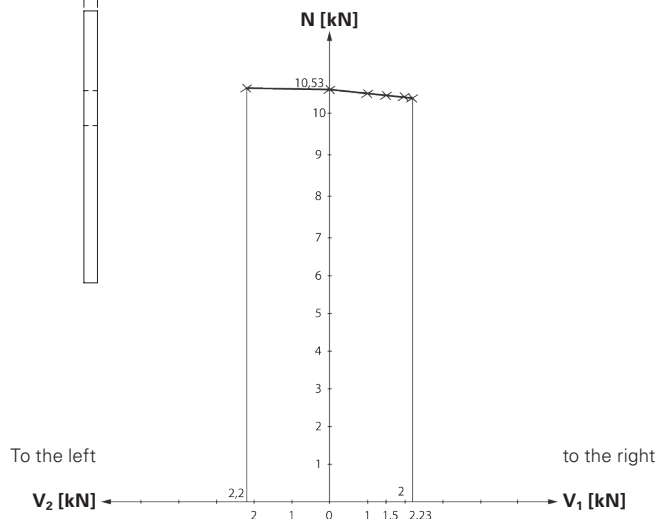


Fig. A12.17c





- The following systems are described:
 - Concreting Platform MX
 - MAXIMO Bracket System MXK
 - MAXIMO Platform MXP
 - Scaffold Bracket TRG 80
 - Concreting Platform TRIO
- Working platforms are mounted as part of the pre-assembly process.
- For attachment points on Panel MX-2 (5), see Section “A15 Anchoring points” on page 104.

Concreting Platform MX



Warning

Concreting Platforms MX (32) can fall out when Panels MX-2 (5) are mounted horizontally!

Falling Concreting Platforms MX (32) can hit people and cause serious injury or even death.

⇒ The Concreting Platform MX (32) must be dismantled when the Panels MX-2 (5) are put into temporary storage.

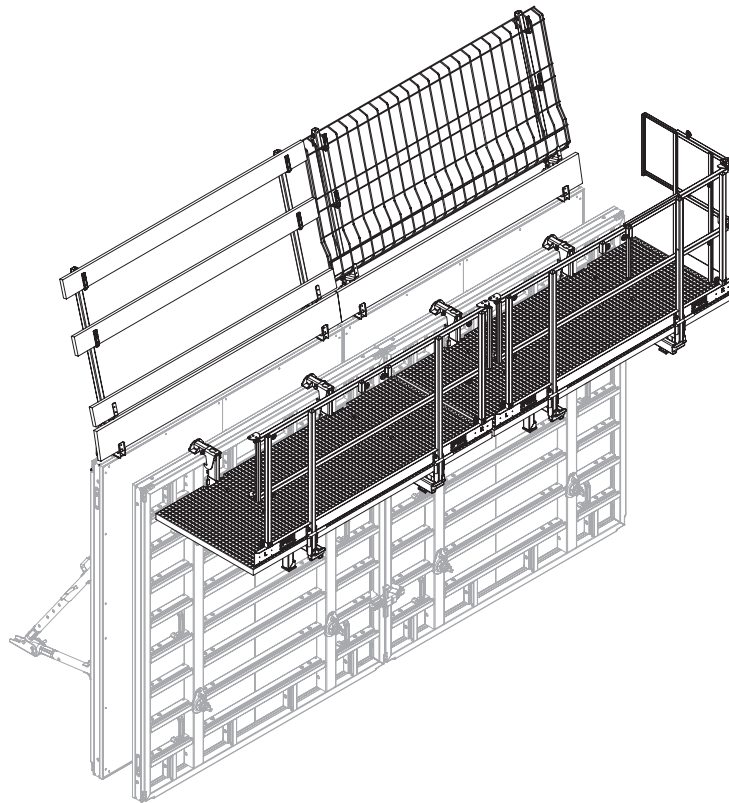
Technical data

- Perm. load: 150 kg/m² Load Class 2 according to DIN EN 12811-1

Conc.Platform MX 100x240

Components

- 32 Conc.Platform MX 100x240
- 32.1 Guardrail
- 32.2 Suspension beam
- 32.3 Sliding sleeve
- 32.4 Eyebolt
- 32.5 Guardrail extension
- 32.6 Retaining claw
- 32.7 Bracket
- 78a Side Guardrail MXP right
- 78b Side Guardrail MXP left
- 69.1 Bolt



Preparing Conc.Platform MX 100x240

1. Pull out guardrail (32.1) horizontally. (Fig. A13.01a)
2. Fold guardrail (32.1) upwards until the guardrail is at right-angles to the deck. (Fig. A13.01b + Fig. A13.01c)
3. Push guardrail (32.1) downwards. → Guardrail is now secured. (Fig. A13.01d)

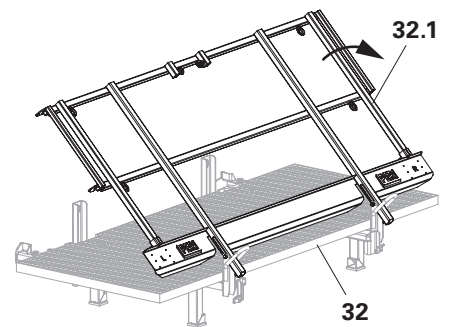


Fig. A13.01

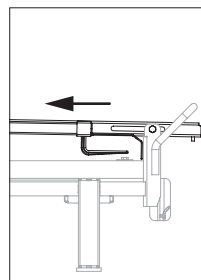


Fig. A13.01a

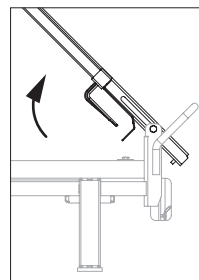


Fig. A13.01b

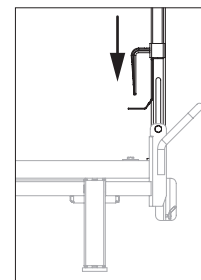


Fig. A13.01c

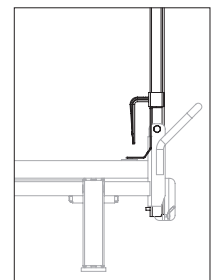


Fig. A13.01d

4. Fold suspension beam upwards (**32.2**). Ensure that the sliding sleeve (**32.3**) is at the top. (Fig. A13.02 – Fig. A13.02b)
5. Push the sliding sleeve (**32.3**) downwards. → The suspension beam is now engaged. (Fig. A13.02c + Fig. A13.02d)

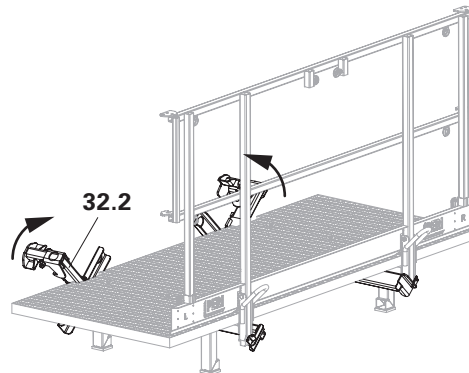


Fig. A13.02

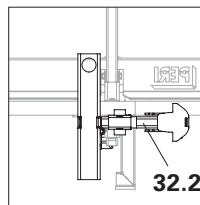


Fig. A13.02a

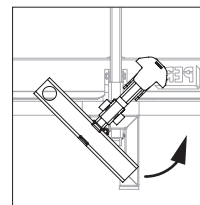


Fig. A13.02b

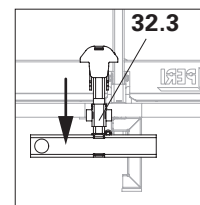


Fig. A13.02c

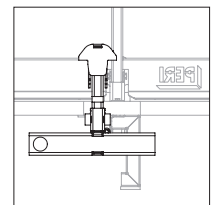


Fig. A13.02d



- Pull out the extension, turn it 90° and then insert it into the sleeves on the top guardrail and secure with the eyebolt (**32.4**) – right and left is possible. → Guardrail (**32.5**) is in position. (Fig. A13.02e)
- Filler areas between the concreting platforms: max. 46 cm.
 - In order to close any filler areas, pull out the guardrail extension (**32.5**) by the sides and secure using eyebolts (**32.4**). (not shown)
 - Fix toe board with nails.
 - Install and secure scaffold boards.

Detail "X"

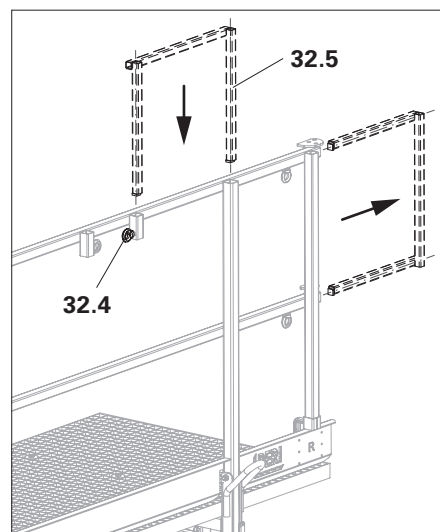


Fig. A13.02e

Fitting the lateral protection



- Attach Side Guardrails MXP (78) to open edges. (Fig. A13.03)
- Position guardrail extension of the concreting platform, see Fig. A13.02e.

Assembly

1. Pull the bolt (78.1) upwards and hold it in place. (Fig. A13.03a)
2. Attach end guardrail. (Fig. A13.03)
3. Release bolt.
 - Bolt pivots back and engages thus securing the guardrail in position.



Is the bolt engaged? (Fig. A13.03b)

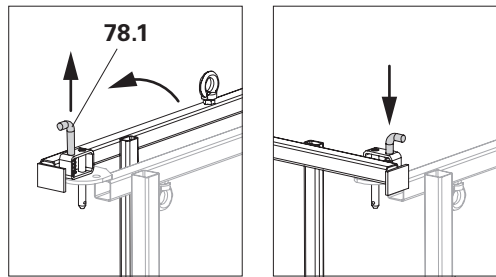


Fig. A13.03a

Fig. A13.03b

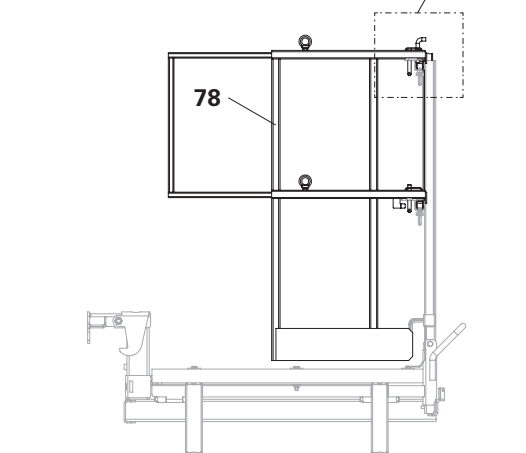


Fig. A13.03

Attaching Conc.Platform MX 100x240

Attach the concreting platform to the four support points (32.6 + 32.7) with 4-sling lifting gear. Ensure that the two chains attached to the lugs (32.7) are outside the guardrail. (Fig. A13.04 – Fig. A13.04b)

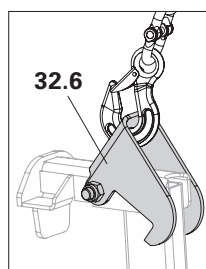


Fig. A13.04a

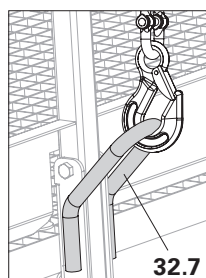


Fig. A13.04b

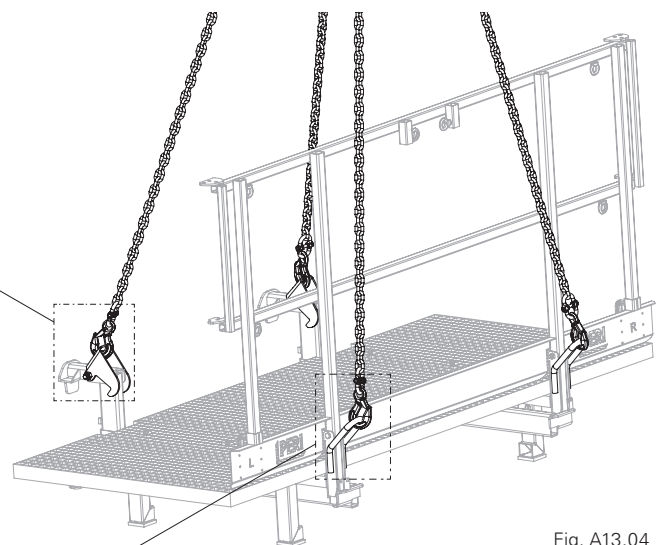


Fig. A13.04

Fitting Conc.Platform MX 100x240 to Panels MX-2



Warning

If gaps arise between the individual concreting platforms, these are to be regarded as a potential cause of falling! A fall can result in serious injury or even death.

⇒ When closing gaps arising between Conc.Platforms MX (32), use PPE at all times!

Components

- 5** Panel MX-2
- 5.7** Frame profile
- 32** Conc.Platform MX 100x240
- 32.2** Suspension beam
- 32.6** Retaining claw
- 78a** Side Guardrail MXP right
- 78b** Side Guardrail MXP left

Assembly

1. Attach Conc.Platform MX 100x240 (32) to the upper frame profile (5.7) of Panel MX-2 (5) with the suspension beams (32.2).
 2. Unhook the 4-sling lifting gear from a safe workplace.
 - The retaining claw (32.6) grips the frame profile (5.7) and secures the Conc.Platform MX 100x240 (32).
- (Fig. A13.05 + Fig. A13.05a)



Is the retaining claw (32.6) gripping the frame profile (5.7) of Panel MX-2 (5)?
(Fig. A13.05a)

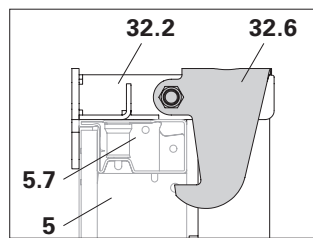


Fig. A13.05a

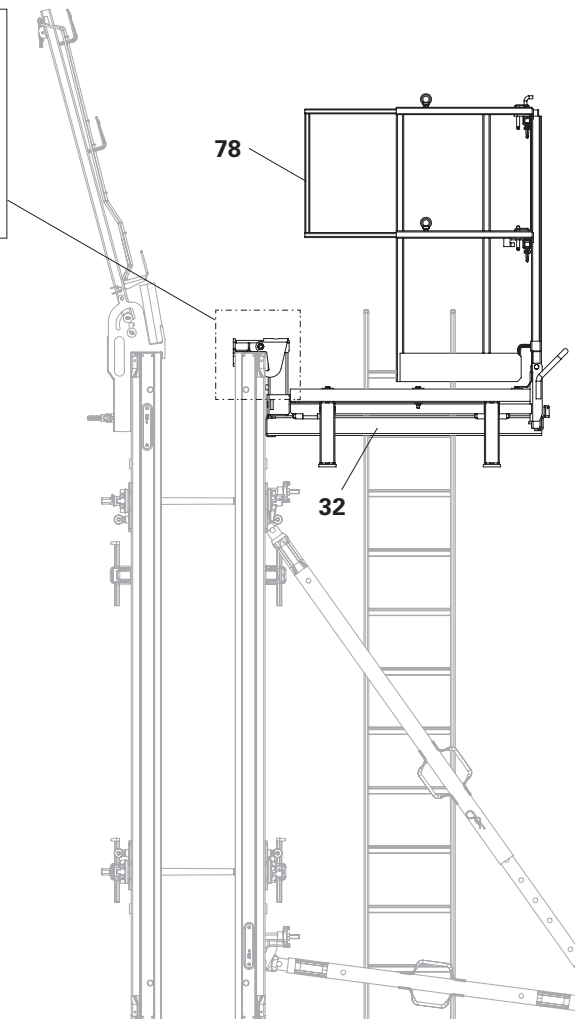


Fig. A13.05

Conc.Platform Hatch MX 100x100

Components

- 77** Conc.Platform Hatch MX 100x100
- 77.1** Suspension beam
- 77.2** Sliding sleeve
- 77.3** Retaining claw
- 77.4** Post holder
- 77.5** Suspension bracket
- 79** Ladder 240-360
- 79.1** Hook
- 80a** Side Mesh Barrier PMB 90
- 81** Guardrail Post MXK

Preparing Conc.Platform Hatch MX 100x100

1. Insert 2x Guardrail Post MXK (**81**) into the post holder (**77.4**). (Fig. A13.06)
2. Attach Side Mesh Barrier PMB 90 (**80a**). (Fig. A13.07)
3. Fold suspension beam upwards (**77.1**). Ensure that the sliding sleeve (**77.2**) is at the top.
4. Push the sliding sleeve downwards. → The suspension beam is now engaged. (see Section "Preparing Conc.Platform MX 100x240" on page 84)

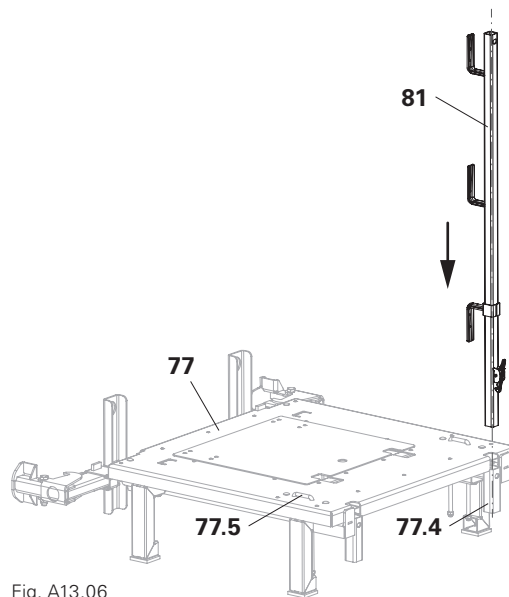


Fig. A13.06

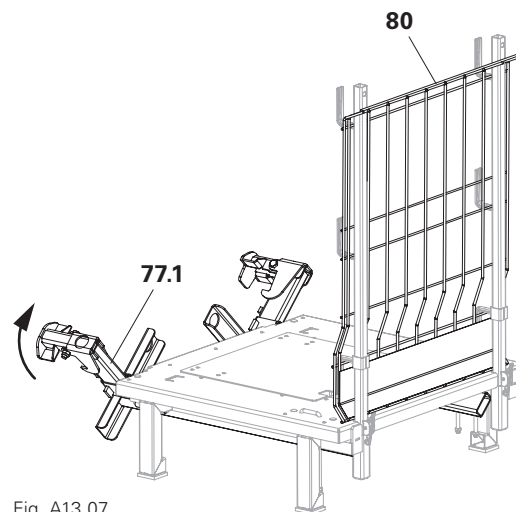


Fig. A13.07

Attaching Conc Platform Hatch MX 100x100

1. Grasp the suspension bracket (77.5), pull it upwards and attach the crane hook of the 4-sling lifting gear (77.3).
 2. Attach the crane hook of the 4-sling lifting gear to the suspension beam (77.3).
- The chains are inside the Lateral Protection Barrier PMB.
(Fig. A13.08 – Fig. A13.08b)

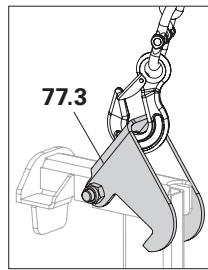


Fig. A13.08a

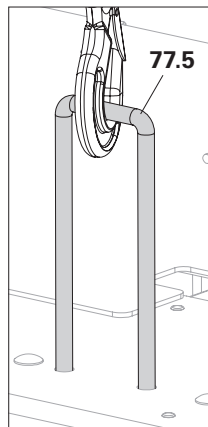


Fig. A13.08b

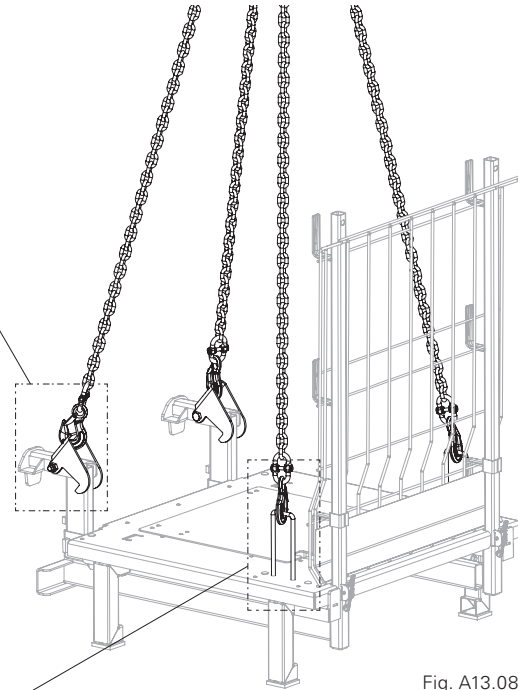


Fig. A13.08

Fitting Conc.Platform Hatch MX 100x100 to Panels MX-2

Assembly

1. Attach Conc.Platform Hatch MX 100x100 (**77**) to the upper frame profile (**5.7**) of Panel MX-2 (**5**) with the suspension beams (**77.1**).
2. Unhook the 4-sling lifting gear from a safe workplace.
→ The retaining claw (**77.3**) grips the frame profile (**5.7**) and secures the Conc.Platform Hatch MX 100x100 (**77**). (Fig. A13.09 + Fig. A13.09b)

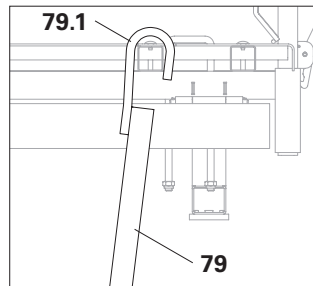


Fig. A13.09a

Fitting Ladder 240-360

1. Adjust the Ladder 240-360 (**79**) to the required length and secure using a linch pin. (If the ladder is too long, remove the base.)
2. From below, push the ladder through the openings of the hatch cover with the hooks (**79.1**).
→ The cover of the hatch opens.
3. Slide the hook (**79.1**) of the Ladder 240-360 (**79**) over the crossbeam of the Conc.Platform Hatch MX 100x100 (**77**). (Fig. A13.09a)
→ Ladder is attached. (Fig. A13.09)

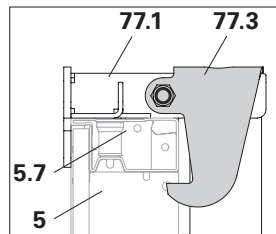


Fig. A13.09b

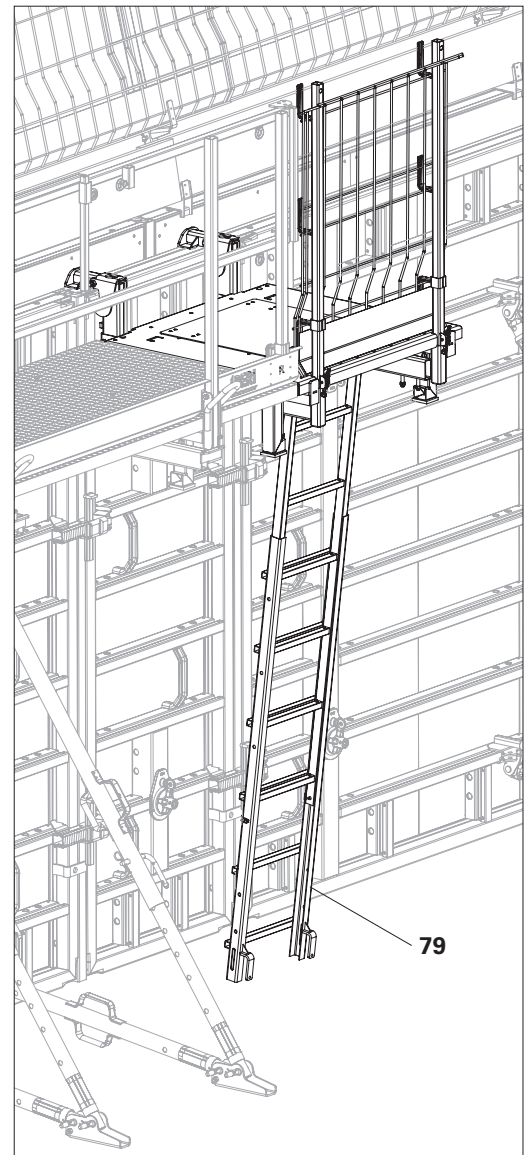


Fig. A13.09



Is the retaining claw (**77.3**) gripping the frame profile of the panel (**5.7**)? (Fig. A13.09b)

Installing Conc.Platform Hatch MX 100x100 at 90° inside corners



- Use the Conc.Platform Hatch MX 100x100 (**77**) for 90° corners on the internal formwork.
- Then fit the Conc.Platform MX 100x240 (**32**) in both directions.

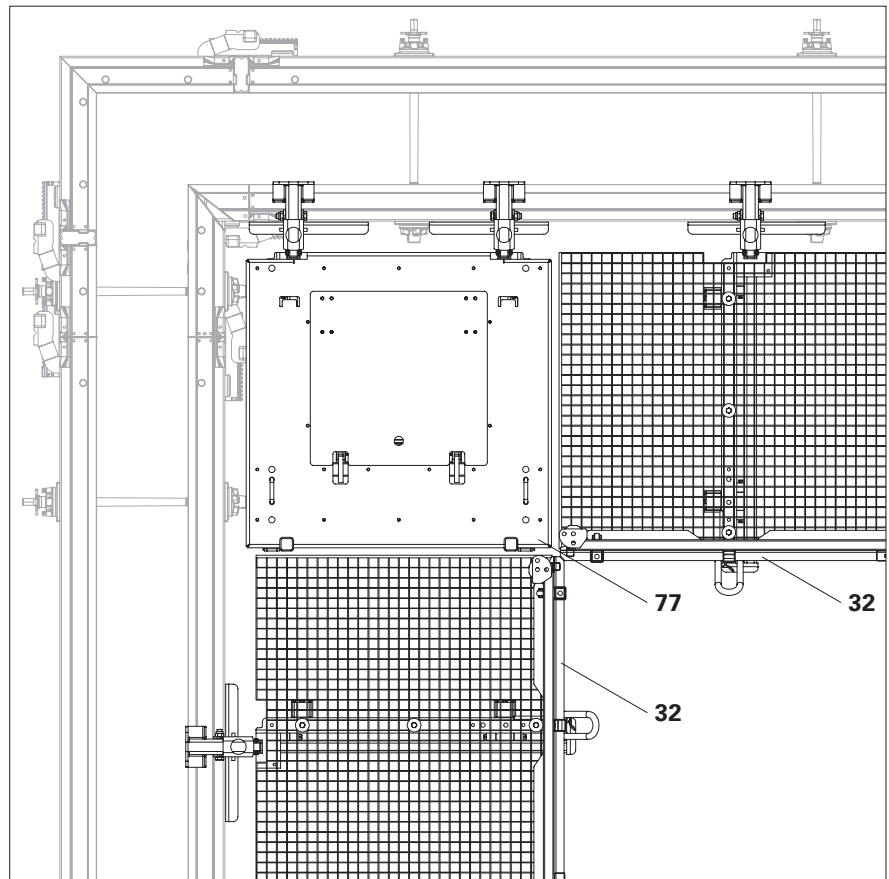


Fig. A13.10

MAXIMO Bracket System MXK

A concreting platform can be mounted on the formwork using the Scaffold Bracket MXK.

Technical data

- Perm. load: 150 kg/m² Load Class 2 according to DIN EN 12811-1



Follow Instructions for Assembly and Use for the MAXIMO Bracket System MXK.



- Assembly: see Instructions for Assembly and Use for the MAXIMO Bracket System MXK.
- The Scaffold Brackets MXK/MXK-RS can be covered with Scaffold Deck MXK or planking provided on site.
- Shown: Height 2.70 m (Fig. A13.11)
- For attachment points on Panel MX-2 (5), see Section "A15 Anchoring points" on page 104.

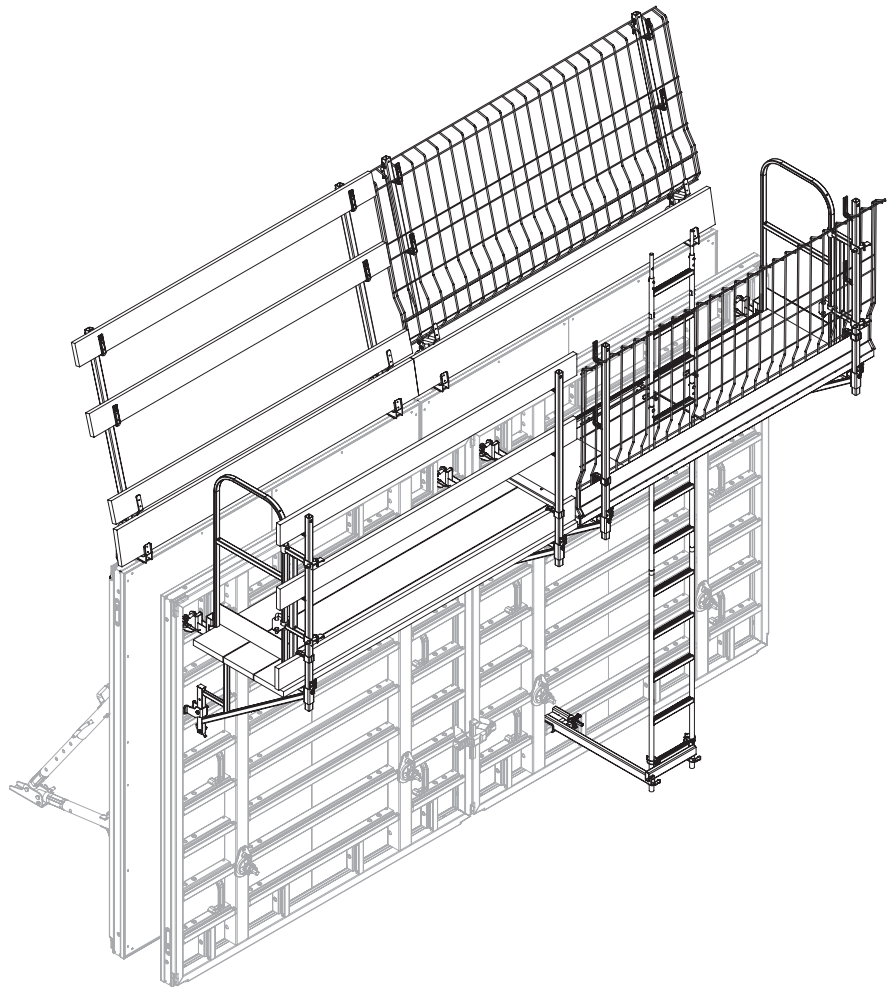


Fig. A13.11

MAXIMO Platform MXP

With the Platform MXP, a working or concreting platform can be mounted on the formwork.

Technical data

- Perm. load: 150 kg/m² Load Class 2 according to DIN EN 12811-1
- Assembly Aid MXP: Load-bearing capacity 2.2 t



Refer to the Instructions for Assembly and Use for the MAXIMO Platform MXP.



- Assembly: see Instructions for Assembly and Use for the MAXIMO Platform MXP.
- Shown: Height 6.00 m (Fig. A13.12)

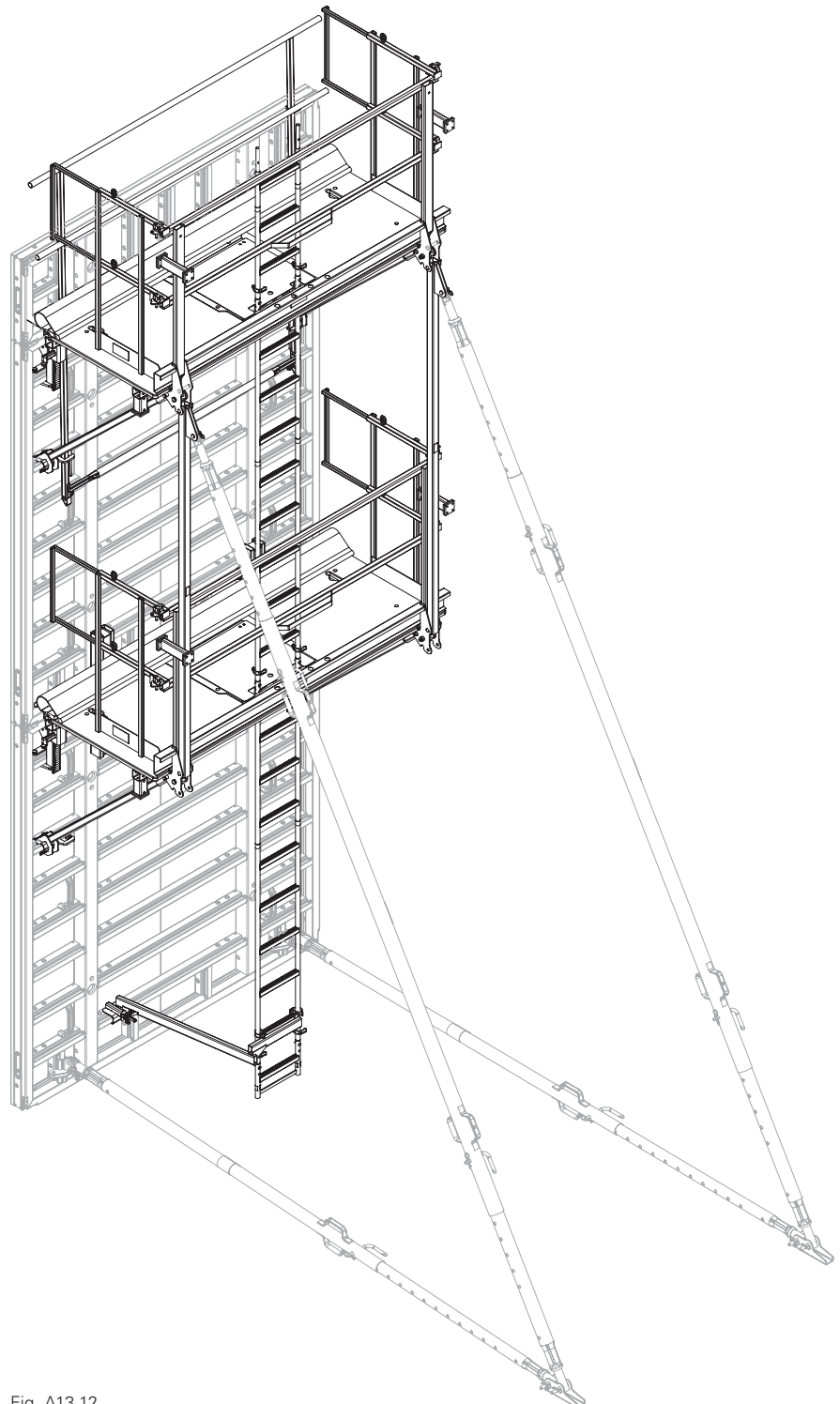


Fig. A13.12

Scaffold Bracket TRG 80

A concreting platform can be mounted on the formwork using the Scaffold Bracket TRG 80 (22).

Technical data

- Perm. load: 150 kg/m² Load Class 2 according to DIN EN 12811-1
- Max. influence width 1.35 m



Refer to the Instructions for Assembly and Use for the TRIO Panel Formwork.



- Assembly: see Instructions for Assembly and Use for the TRIO Panel Formwork.
- Shown: Height 2.70 m (Fig. A13.13)

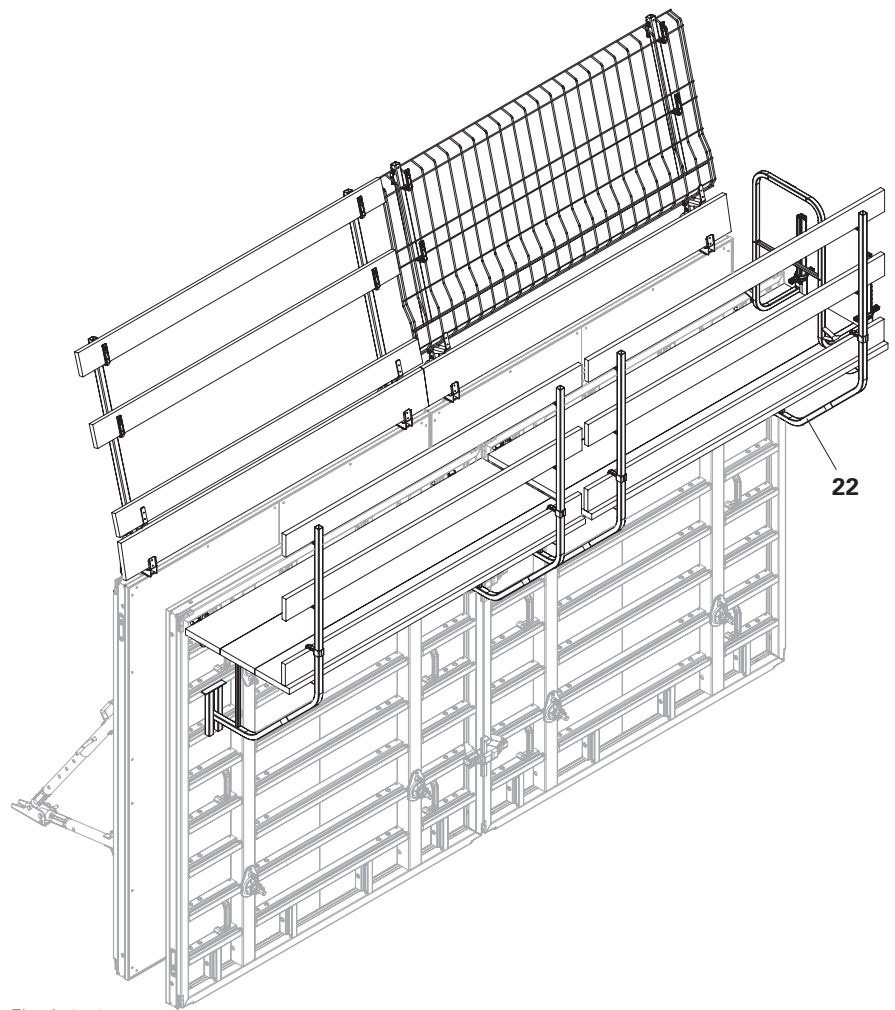


Fig. A13.13

Conc.Platform TRIO 120x270

With the Conc.Platform TRIO 120x270 (82), a working or concreting platform can be mounted on the formwork.

Technical data

- Perm. load: 150 kg/m² Load Class 2 according to DIN EN 12811-1



Refer to the Instructions for Assembly and Use for the TRIO Panel Formwork.



The Conc.Platform TRIO 120x270 (82) is labelled with stickers indicating the load-bearing points.



- Assembly: see Instructions for Assembly and Use for the TRIO Panel Formwork.
- Shown: Height 2.70 m (Fig. A13.14)

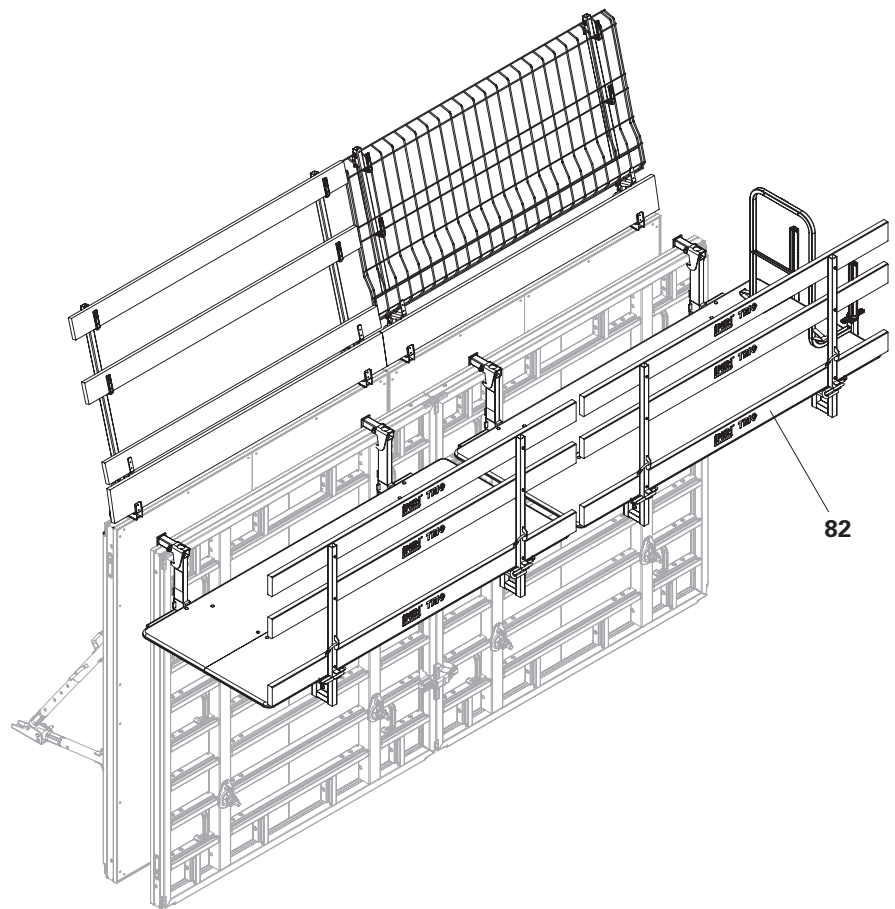


Fig. A13.14



- The following systems are described:
 - Opposite Guardrail Holder MX
 - Guardrail-Post Holder TRIO
- Fit the opposing guardrail during pre-assembly.

Opposite Guardrail Holder MX



- The Opposite Guardrail Holder MX is fitted to the top frame profile of a Panel MX and used as anti-fall protection.
- The Opposite Guardrail Holder MX can also be used on the Outs. Corners MXA-2 45 and MXA-2 35.
- Mount the Opposite Guardrail Holder MX and Side Mesh Barrier PMB on the ground.
- Follow Instructions for Use for the Lifting Hook MAXIMO 1.5 t.

Technical data

Max. influence width 1.35 m

Components

- 5** Panel MX-2
 - 5.7** Upper frame profile
 - 13** Lifting Hook MAXIMO 1.5 t
 - 27** Opposite Guardrail Holder MX
 - 27.1** Mounting shoe
 - 27.2** Double hook
 - 27.3** Wingnut DW 15
 - 27.4** Guardrail post
 - 27.5** L-bracket - 3x
 - 27.6** Securing Hook
 - 27.7** Linch pin
 - 80** Side Mesh Barrier PMB
 - 80.1** Upper horizontal bar
-

Fitting Opposite Guardrail Holder MX

1. Slide the mounting shoe (27.1) of the Opposite Guardrail Holder MX over the upper frame profile (5.7).
2. Insert the double hook (27.2) of the Opposite Guardrail Holder MX (27) into the connecting holes of the panel.
 - Horizontal strut (Fig. A14.01a + Fig. A14.01b)
 - Vertical strut (Fig. A14.02a + Fig. A14.02b)
3. Tighten wingnut (27.3). (Fig. A14.01b or Fig. A14.02b)

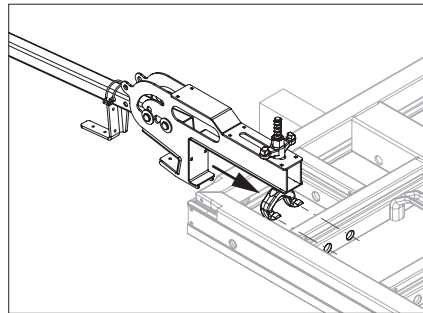


Fig. A14.01a

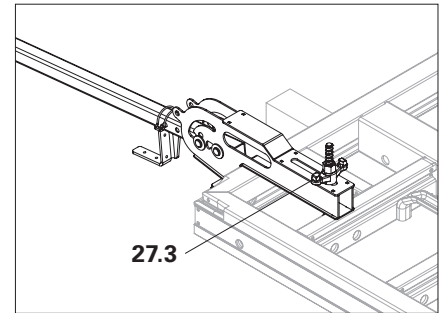


Fig. A14.01b



- Is the double hook (27.2) completely engaged in the connecting holes?
- Is the wingnut (27.3) firmly tightened?
→ The Opposite Guardrail Holder MX (27) is prevented from falling out.

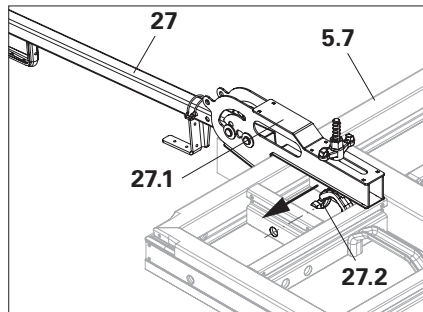


Fig. A14.02a

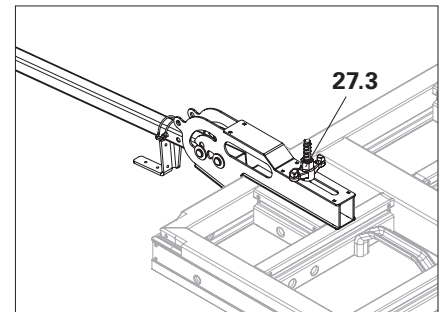


Fig. A14.02b



For assembly, the Ratchet MX 18 (36) can also be used. (Fig. A14.03)

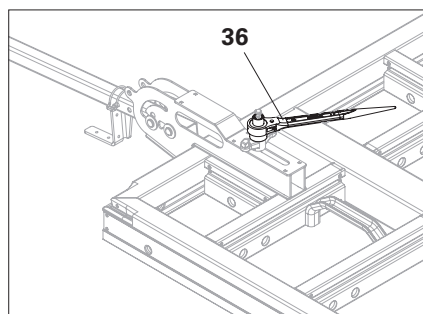


Fig. A14.03

Fitting Side Mesh Barrier PMB



- Side Mesh Barrier PMB overlaps: max. 60 cm
- Total length of the pre-assembled side mesh barrier unit when overlapped: max. 6.00 m
- Lateral projection of the Side Mesh Barrier PMB: max. 30 cm

Assembly

1. Set the Opposite Guardrail Holder MX (**27**) down on squared timbers.
2. The guardrail post (**27.4**) should be
 - ① raised horizontally,
 - ② pulled out,
 - ③ erected.
 (Fig. A14.04a – Fig. A14.04c)
 → The guardrail post (**27.4**) is erected. (Fig. A14.04d)
3. Mount the Side Mesh Barrier PMB (**80**) in the L-brackets (**27.5**) from above. (Fig. A14.05)
4. Secure the top horizontal member of the side mesh barrier (**80.1**) in the recess with the help of the securing hook (**27.6**). (Fig. A14.05a)
5. Set the guardrail post (**27.4**) incl. Side Mesh Barrier PMB (**80**) down. (Fig. A14.05 + Fig. A14.06)
6. Lift the guardrail post (**27.4**) with the Side Mesh Barrier PMB (**80**) horizontally and press it towards the formwork panel.
 → Bolts are in the rear position. (Fig. A14.06a)



Are the bolts in the correct position? (Fig. A14.06a)

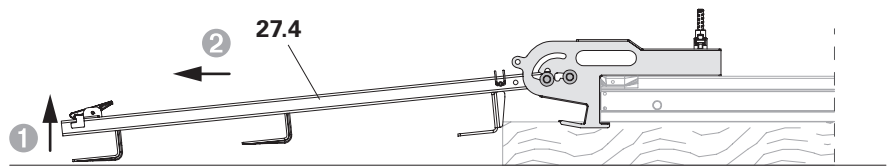


Fig. A14.04a

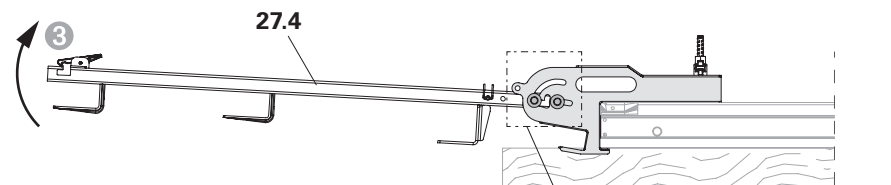


Fig. A14.04b

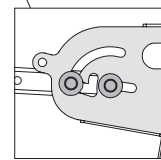


Fig. A14.04c

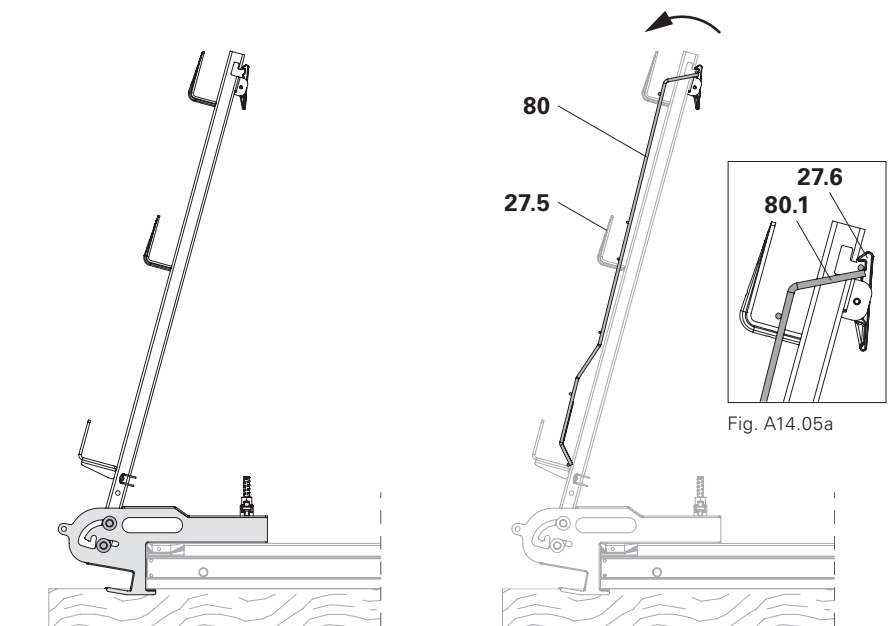


Fig. A14.04d

Fig. A14.05

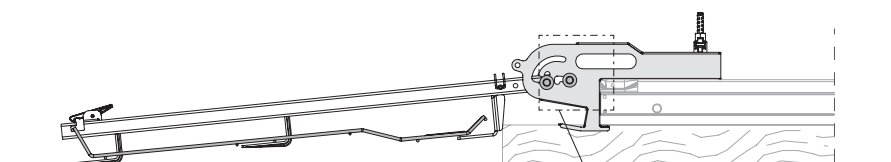


Fig. A14.06

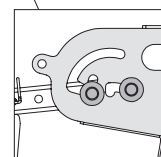


Fig. A14.06a

Erecting and securing the panel

1. Fit the Lifting Hook MX 1.5t (**6**).
Ensure that the crane lifting chains are in front of the Side Mesh Barrier PMB (**80**). (Fig. A14.07a)
2. Erect Panel MX-2 (**5**).
(Fig. A14.07a + Fig. A14.07b)
3. When the Panel MX-2 (**5**) is securely fastened to the ground, remove the Push-Pull Props RS, Lifting Hook MX 1.5 t (**6**) from a safe place of work, e.g. a working platform.
4. Fold the guardrail post with Side Mesh Barrier PMB (**80**) backwards. (Fig. A14.07b + Fig. A14.08)
5. Remove linch pin (**27.7**) from Position **A**. (Fig. A14.08a)
6. Fit the linch pin (**27.7**) in position **B**. (Fig. A14.09a)
→ Guardrail post is secured so that it cannot topple over. (Fig. A14.09)

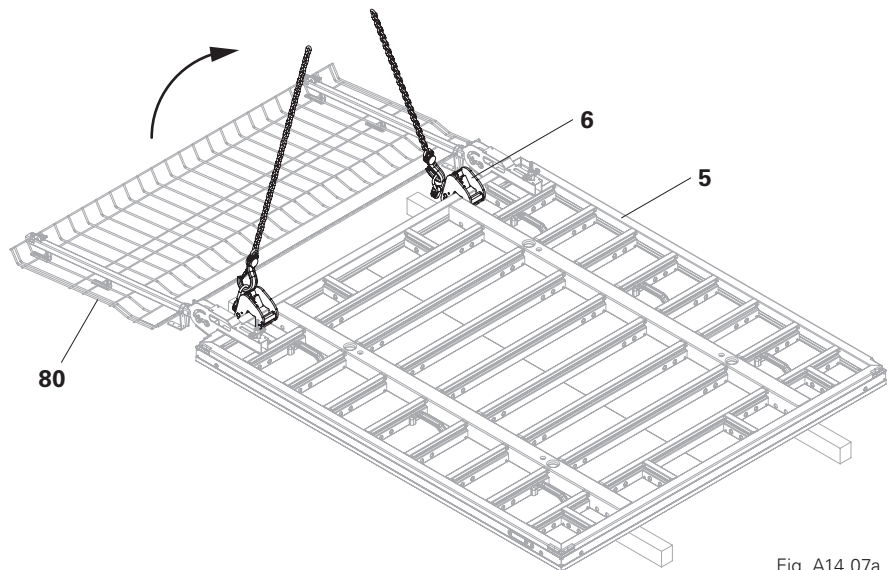


Fig. A14.07a



Instead of the Side Mesh Barrier PMB (**80**), three wooden boards 3x15 cm can be placed in the L-brackets (**27.5**) as guardrails, and secured using nails. (not shown)



Fig. A14.07b

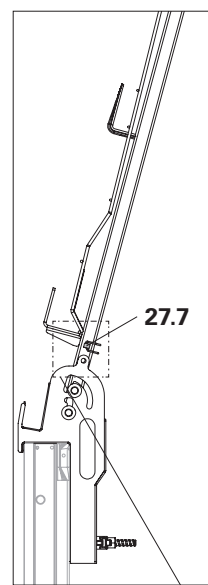


Fig. A14.08

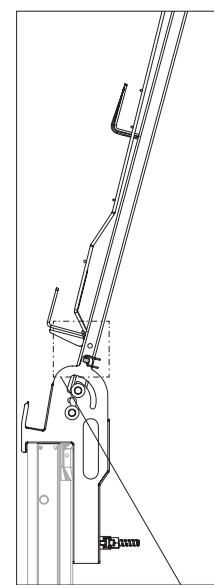


Fig. A14.09

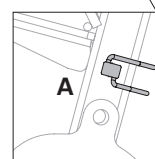


Fig. A14.08a

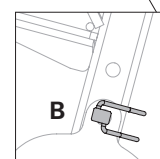


Fig. A14.09a

A – Parking position
B – Secured position

Fitting the toe board

1. Insert the toe board (86) into the mounting shoe (27.1) from a safe workplace.
 2. Secure toe board (86) with suitable nails.
- (Fig. A14.10)

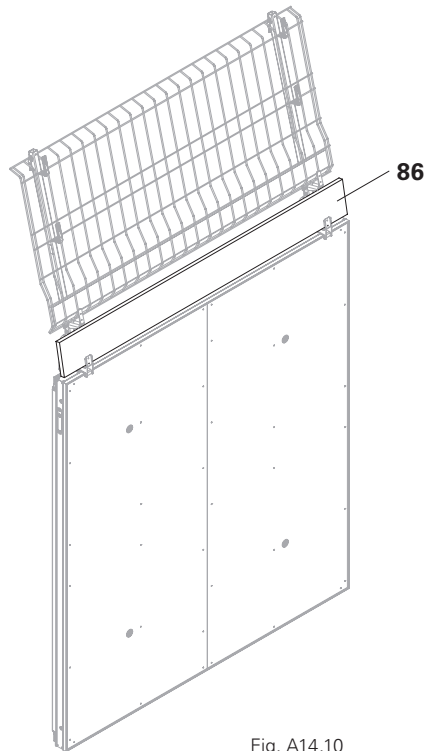


Fig. A14.10

Setting down, cleaning, erecting and securing the panel

1. Remove the toe board (86) from a safe workplace.
2. Fit the Lifting Hook MX 1.5t (6). Ensure that the crane chain is on the formlining side. (Fig. A14.11)
3. Remove the linch pin (27.7) from Position B. (Fig. A14.12a)
4. Fit the linch pin (27.7) in position A. (Fig. A14.13a)

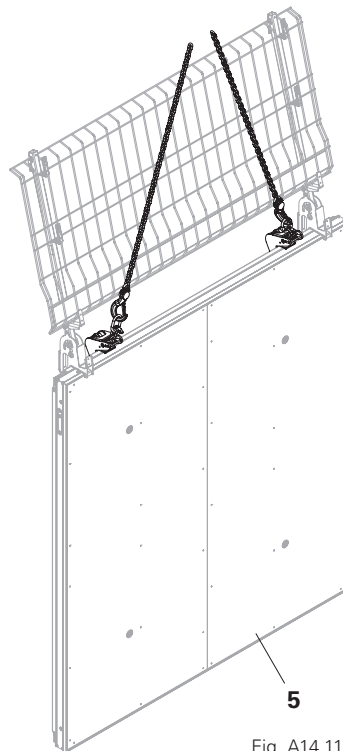


Fig. A14.11

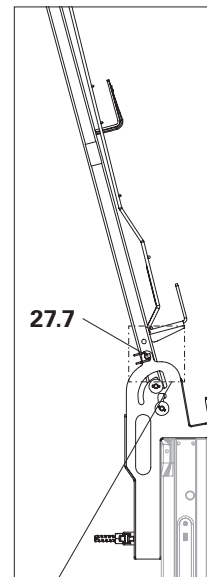


Fig. A14.12

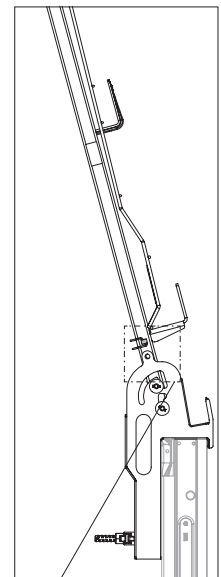


Fig. A14.13

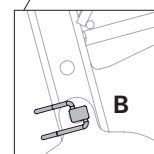


Fig. A14.12a

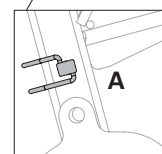


Fig. A14.13a

5. Set Panel MX-2 (5) down on squared timber frame side first.
(Fig. A14.14)
6. Clean Panel MX-2 (5) and apply concrete release agent.
7. Erect Panel MX-2 (5), see Section "Erecting and securing the panel" on page 99.

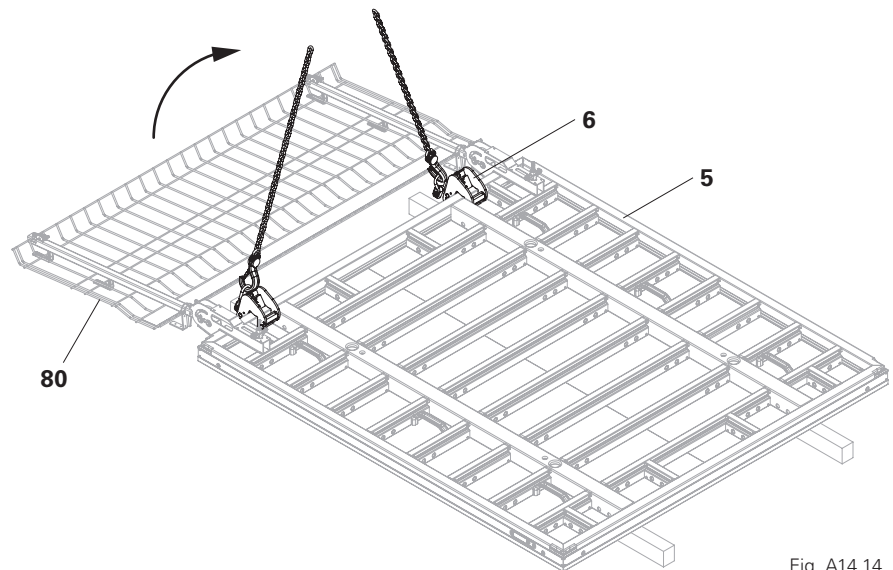


Fig. A14.14

Dismantling opposing guardrails

1. Remove the linch pin (27.7) from Position B. (Fig. A14.13a)
→ Opposing guardrail can move freely.
2. Fit the linch pin (27.7) in position A. (Fig. A14.12a)
→ Linch pin is in the parking position.
3. Fold the guardrail post (27.4) with Side Mesh Barrier PMB (80) forwards.
4. Fit the Lifting Hook MX 1.5t (6).
Ensure that the crane chain is on the frame side. (Fig. A14.15)
5. Set Panel MX-2 (5) down on the formlining side.
6. Lift the guardrail post (27.4) with Side Mesh Barrier PMB (80) horizontally, pull out and set up.
→ The guardrail post is now in its designated position.
7. Press the securing hook and remove the top horizontal member (80.1) of the Side Mesh Barrier PMB (80) from the recess (Fig. A14.15a).
8. Remove Side Mesh Barrier PMB upwards from the L-brackets (27.5).

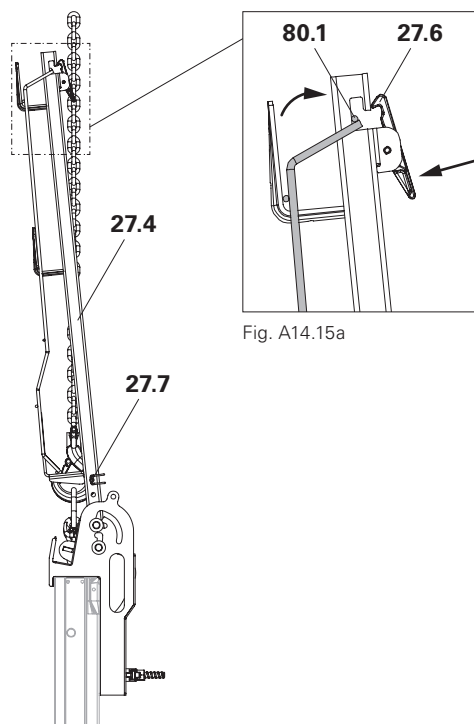


Fig. A14.15

Fig. A14.15a

Guardrail-Post Holder TRIO

Technical data

Max. influence width 1.35 m



Refer to the Instructions for Assembly and Use for the TRIO Panel Formwork.



- Assembly is only possible on vertical panel struts.
- Assembly: see Instructions for Assembly and Use for the TRIO Panel Formwork.
- Shown: Height 2.70 m (Fig. A14.16)



The Side Mesh Barrier PMB can be installed instead of boards.

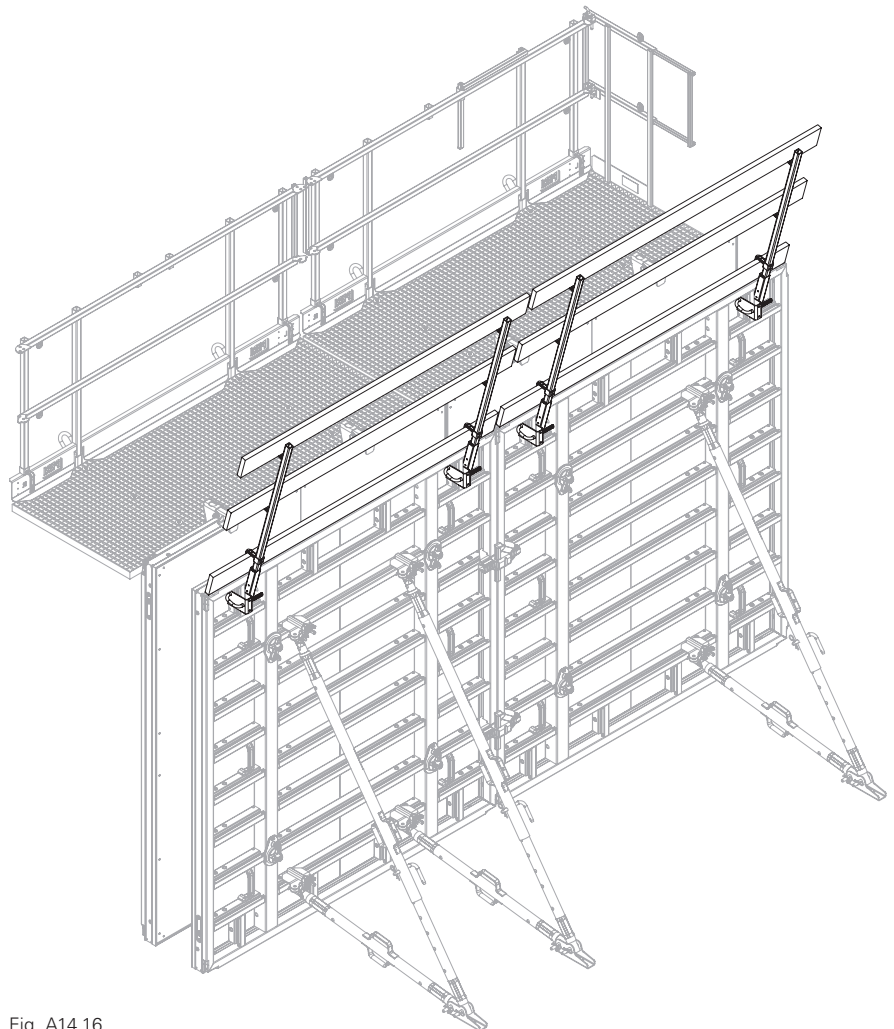


Fig. A14.16



- It is possible to anchor yourself to the MAXIMO MX-2 Panel Formwork with PPE.
- The stability of the panel formwork must be guaranteed at all times.
- The formwork must be assembled in accordance with the risk assessment, referring to the relevant Instructions for Assembly and Use if necessary!

The MAXIMO MX-2 Panel Formwork provides the following anchoring points:

- Attachment point 1: flanged through-hole in the edge profile
- Attachment point 2: upper horizontal perforated strut, second hole from the edge profile (hole facing the centre of the panel)
- Attachment point 3: through-hole in vertical perforated strut, second hole from the edge profile (hole facing the centre of the panel)
- Attachment point 4: on the positioning handle of the panel



- The points shown here have been verified in accordance with DGUV GS-PS-15 "Principles for testing anchoring points in scaffolding and formwork systems" (as of 01.2023).
- The PPE used* must be compatible with the anchoring points. The contractor makes the selection, carries out the documentation, makes everything available and ensures compliance.

* e.g. webbing sling with a permissible breaking load of 26 kN and a width of 25 mm in accordance with EN 354 and EN 795, length 0.6 m.

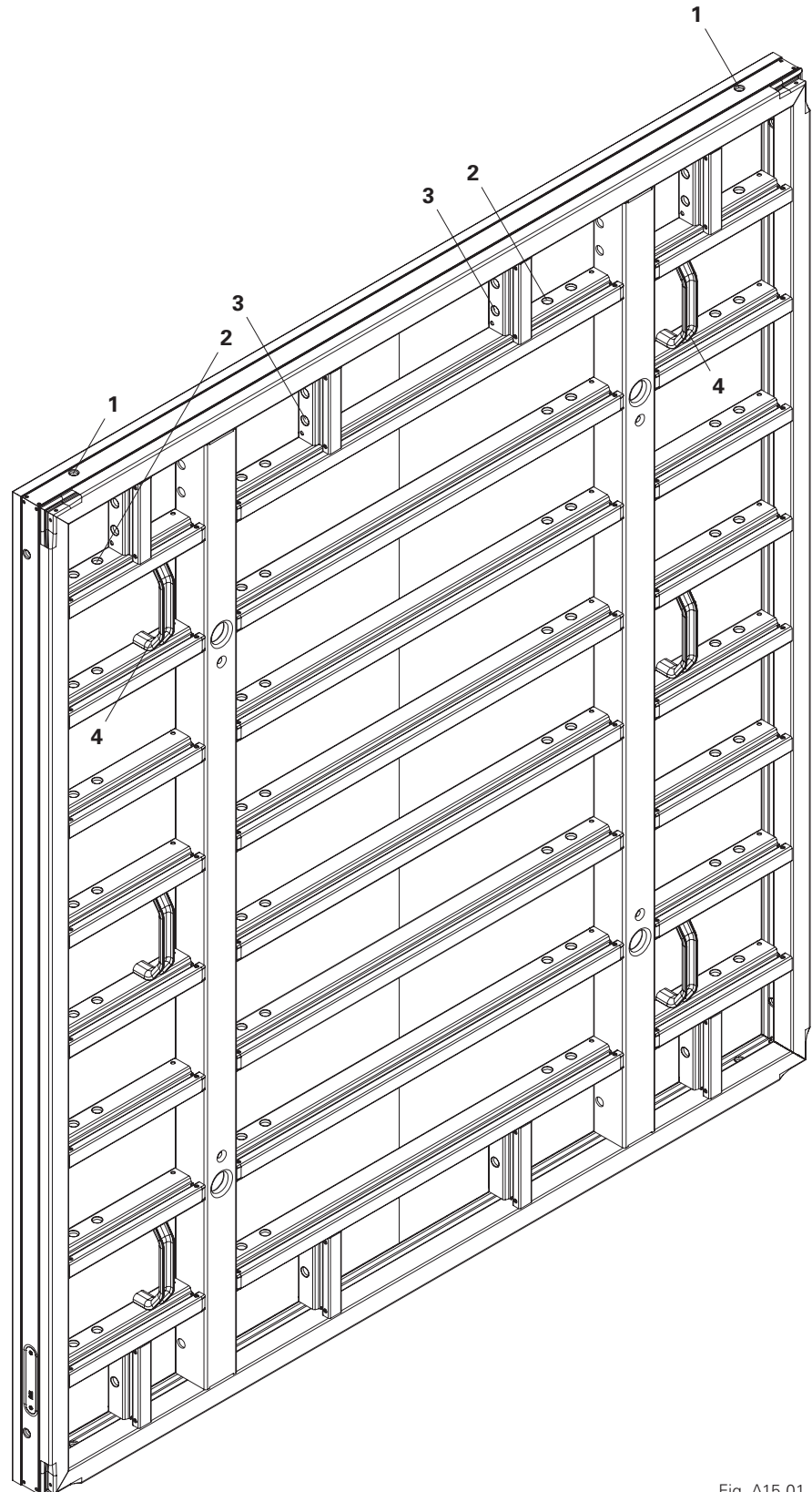


Fig. A15.01



Anchoring points on the formwork with webbing sling carabiner for PPE:

Anchoring point 1:

Flanged through-hole in the edge profile (Fig. A15.02)



Fig. A15.02

Anchoring point 2:

Upper horizontal perforated strut, second hole from the edge profile (hole facing the centre of the panel) (Fig. A15.03)



Fig. A15.03

Anchoring point 3:

Through-hole in vertical perforated strut, second hole from the edge profile (hole facing the centre of the panel) (Fig. A15.04)



Fig. A15.04

Anchoring point 4:

On the positioning handle (5.5a) of Panel MX-2. (Fig. A15.05 + Fig. A15.05a)



There must be **no** PPE attached to the positioning handle (5.5b) of the Panels MX. (Fig. A15.05b)

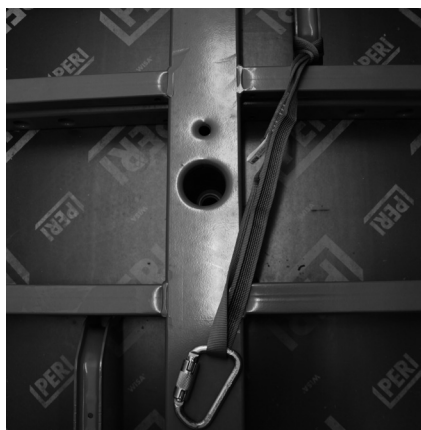


Fig. A15.05

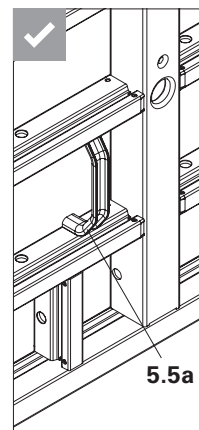


Fig. A15.05a

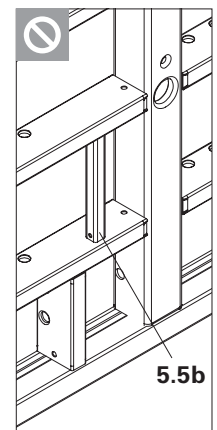


Fig. A15.05b

Arrangement of panel connections

Components	Pcs.
28 Alignment Coupler BFD	6x

Example

Panel MX-2 330x120 and Panel MX-2 330x30
(Fig. A16.01)

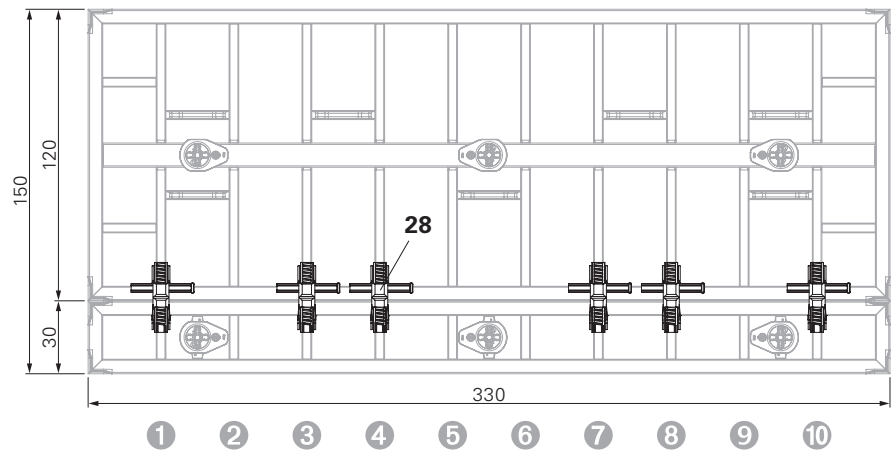


Fig. A16.01

Components	Pcs.
28 Alignment Coupler BFD	2x
33 Compensation Waler-4 MAR 85	2x

Example

Panel MX-2 270x60 and Panel MX-2 270x90
(Fig. A16.02)

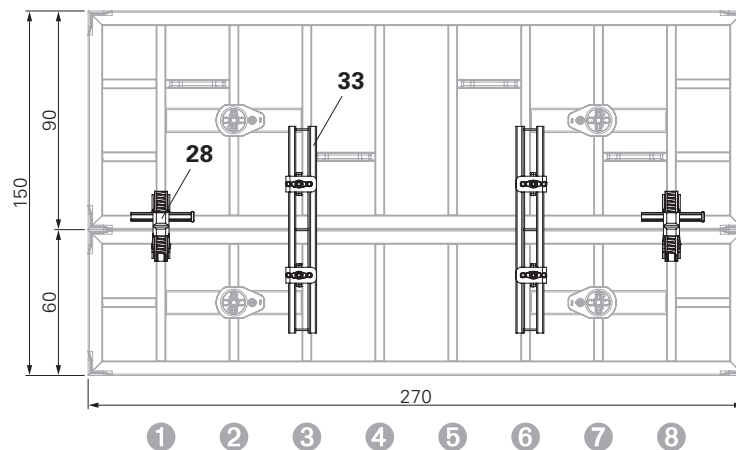


Fig. A16.02

Panel connection	Panel strut				
	MX-2 270	MX-2 300	MX-2 330	MX-2 360	MX-2 240
■ Panel MX-2 30					
Alignment Coupler BFD (20)	1 3 6 8	1 3 4 6 7 9	1 3 4 7 8 10	1 3 4 8 9 11	1 3 5 7
Compensation Waler-4 MAR 85 (33)	-	-	-	-	-
Panel connection	Panel strut				
	MX-2 270	MX-2 300	MX-2 330	MX-2 360	MX-2 240
■ Panel MX-2 60					
■ Panel MX-2 90					
Alignment Coupler BFD (20)	1 8	1 9	1 10	1 6 11	1 7
Compensation Waler-4 MAR 85 (33)	3 6	3 7	3 8	3 9	3 5

Tab. A16.01

Downward extension panels Horizontal downward extension panels up to 2.10 m high

Components

- 28** Alignment Coupler BFD
- 33** Compensation Waler-4 MAR 85

With Panel MX-2 30
(Fig. A16.03)

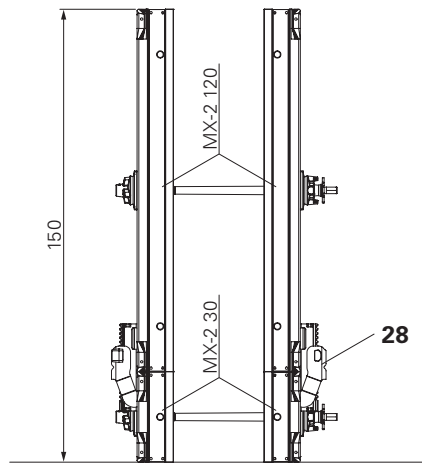


Fig. A16.03



- Fit 4x/6x Alignment Coupler BFD (**28**) to Downward Extension Panel MX-2 30 as a panel connection. (Fig. A16.03)
- Fit 2x Alignment Coupler BFD (**28**) and 2x Compensation Waler-4 MAR 85 (**33**) to Downward Extension Panel MX-2 60 and MX-2 90 as a panel connection. (Fig. A16.04 – Fig. A16.07)

With Panel MX-2 60
(Fig. A16.04 + Fig. A16.05)

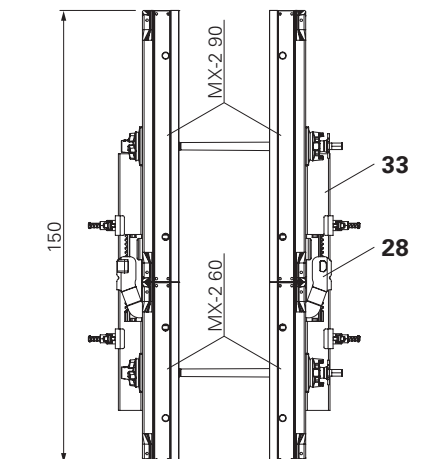


Fig. A16.04

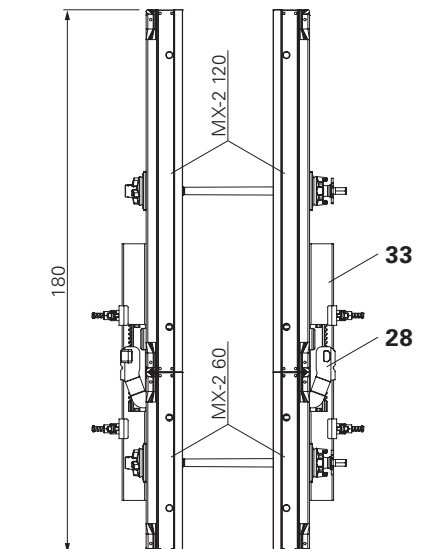


Fig. A16.05

With Panel MX-2 90
(Fig. A16.06 + Fig. A16.07)

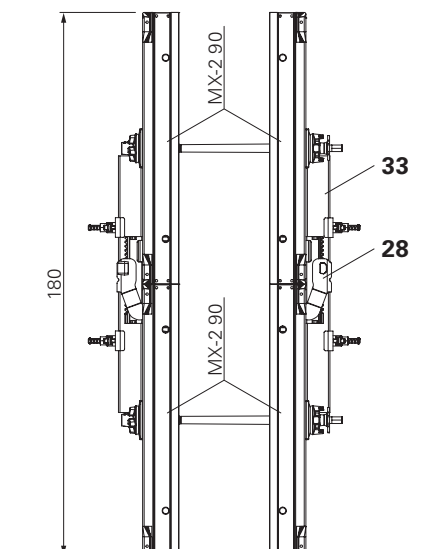


Fig. A16.06

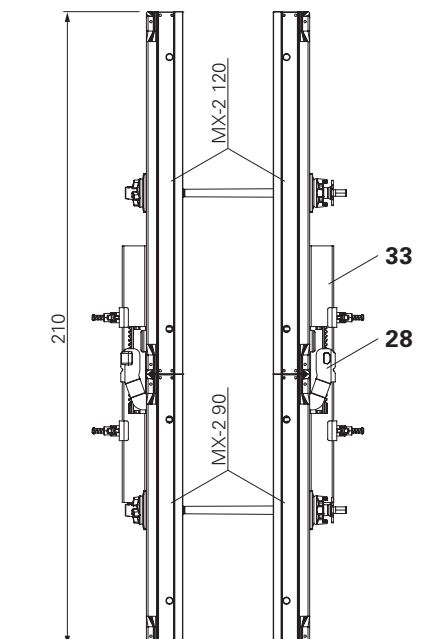


Fig. A16.07

Push-Pull Spreader MX 15-40 and MX 15-100



Depending on the wall thickness, the table shows which Push-Pull Spreaders MX and anchor fastenings can be used.

Wall thickness	Push-Pull Spreader		Tie MX18	Tie Rod DW20
	MX 15-40	MX 15-100		
≤ 40 cm	x	x	x	x
≤ 60 cm	–	x	x	x
≤ 100 cm	–	x	–	x

Perm. tension and compression force = 9 kN.

For max. height 1.20 m, e.g. parapets.



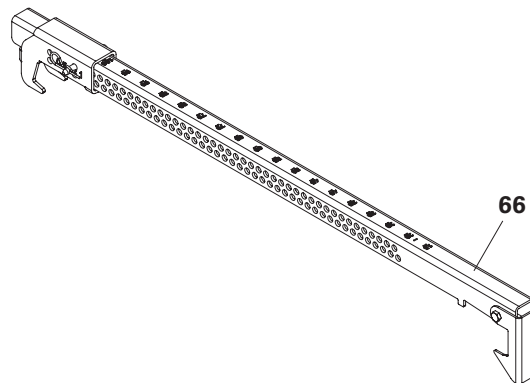
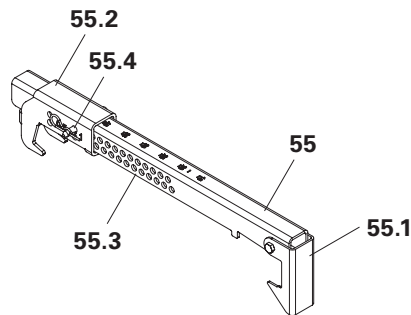
Adjust Push-Pull Spreader MX to:
Setting dimension = wall thickness +5 mm

Wall thickness

- Wall thickness ≤ 40 cm: MX 15-40 (Fig. A17.01)
- Wall thickness ≤ 100 cm: MX 15-100 (Fig. A17.02)

Components

- 55 Push-Pull Spreader MX 15-40
- 55.1 Securing Hook
- 55.2 Mounting shoe
- 55.3 Spacer rack
- 55.4 Bolt with cotter pin
- 66 Push-Pull Spreader MX 15-100



Preparation

- Adjust the mounting shoe (55.2) of the Push-Pull Spreader MX (55/66) to the setting dimension:
 - Remove cotter pin from bolt.
 - Remove bolt from spacer rack (55.3).
 - Slide holes of the mounting shoe (55.2) and spacer rack (55.3) on top of each other according to the setting dimension.
 - Insert bolts through the holes and secure with cotter pins.
- Pivot securing hook (55.1) of the Push-Pull Spreader MX upwards. (Fig. A17.01a)
 - Push-Pull Spreader MX is open for mounting.
- Apply concrete release agent to Push-Pull Spreader MX (55/66).

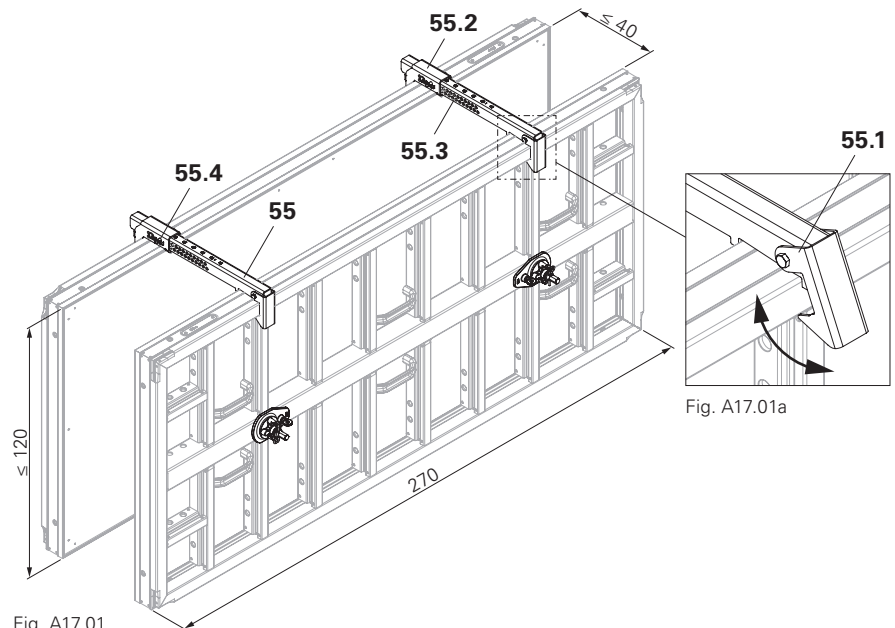


Fig. A17.01

Assembly

- Place the Push-Pull Spreader MX (55/66) on the panels in the area of the tie point, hooking the mounting shoe (55.2) into the frame profile of the formwork.
- Press the securing hook (55.1) downwards over the edge profile and panel strut of the formwork.
 - Push-Pull Spreader MX (55/66) is locked in place.



Clean the spacer rack of the Push-Pull Spreader MX (55/66) after concreting.

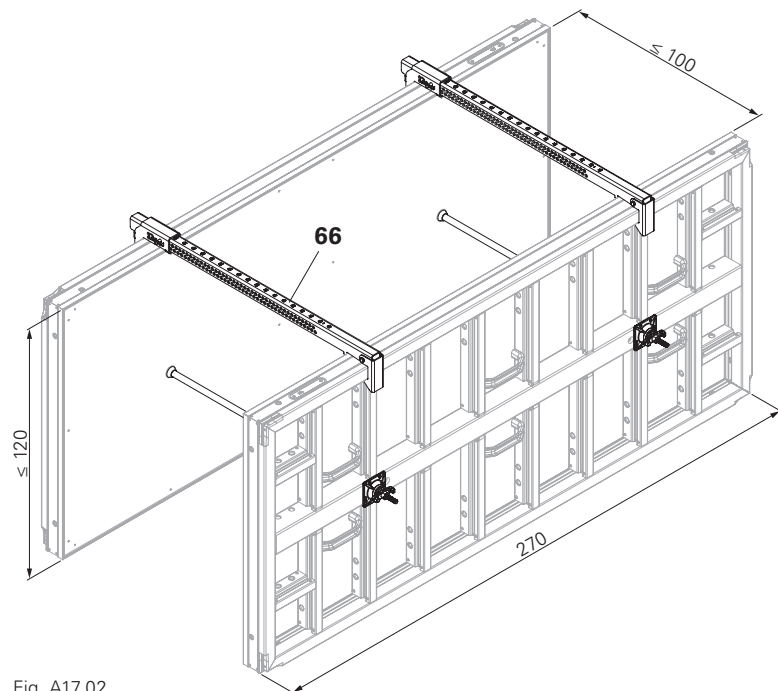


Fig. A17.02

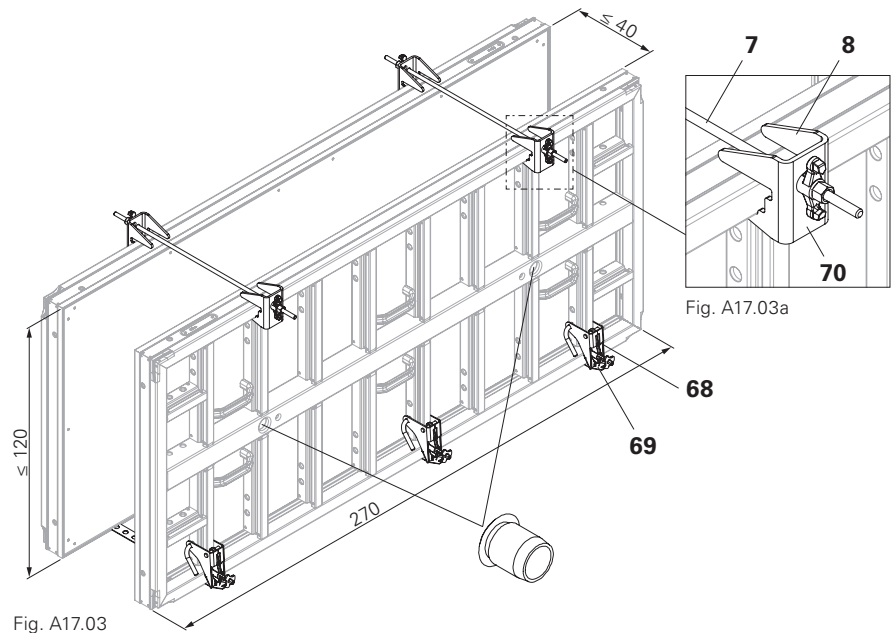
Tie System DW 15

(alternatively)

Components	Pcs.
5 Panel MX-2	2x
7 Tie Rod DW15	1x
8 Wingnut DW15 ga	2x
68 Foundation Tie Clamp MX/TR	6x
69 Perforated foundation tie	3x
70 Top Tie Holder-2 AH	2x
71 Plug MXM18 Ø27.6 mm	4/6x

Assembly

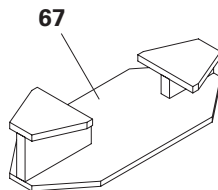
1. Mount Top Tie Holder-2 AH (**70**) and Foundation Tie Clamp MX/TR (**68**). (Fig. A9.04 + Fig. A9.04a)
2. Close open tie points on the form-lining side with Plugs MXM18 Ø27.6 mm (**71**).



Foundation Strap MX/TR

Article no. 023800

The Foundation Strap MX/TR (**67**) is used for forming individual foundations using the "windmill configuration".



$$L = H - 10 \text{ cm}$$

L = length of locating board

H = height of the panel

Example: with a panel height of 60 cm, the length of the locating board is 50 cm.

Components

5 Panel MX-2	4x
67 Foundation Strap MX/TR	8x
72 Locating board	4x

H [cm]	perm. B [cm]
60	255
90	200

Assembly

1. Place two Panels MX-2 (**5**) at right angles to each other on the ground in a Foundation Strap MX/TR (**67**).
2. Nail locating board (**72**) to formlining
 - at a distance of B +12 cm.
 - 5 cm from the edge of the panel at the top and bottom.
3. Place the Foundation Strap MX/TR (**67**) on the edge of the panel on the protruding panel.
4. Push the Foundation Strap MX/TR (**67**) as far as it will go on the offset Panel MX-2 (**5**).
 - Upper web rests against the Panel MX-2 (**5**). (Fig. A17.04a)
5. Fit additional Panels MX-2 (**5**), locating boards (**72**) and Foundation Straps MX/TR (**67**). (Fig. A17.04)

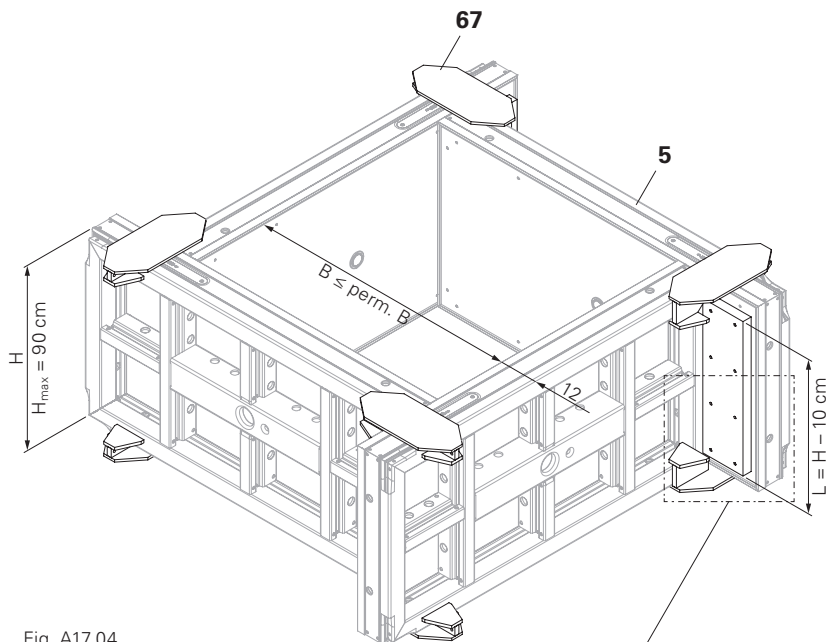


Fig. A17.04



Are the Foundation Straps MX/TR (**67**) – 4x at the top and 4x at the bottom – in contact with the Panels MX-2 (**5**)? (Fig. A17.04a)



Use suitable double-head nails for fastening. This makes disassembly easier.

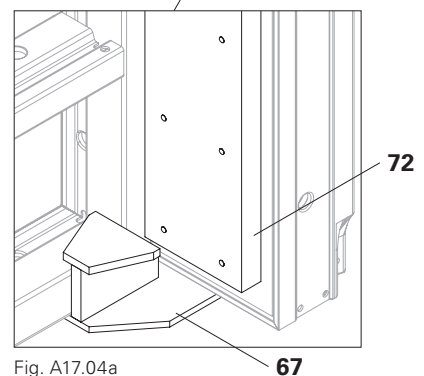


Fig. A17.04a

A18 Height offset

With height offsets, depending on the offset, mount the Alignment Couplers BFD (**28**) alternately on the panel struts (**5.2**) of the right and left Panel MX-2 (**5**) if possible. (Fig. A18.01)

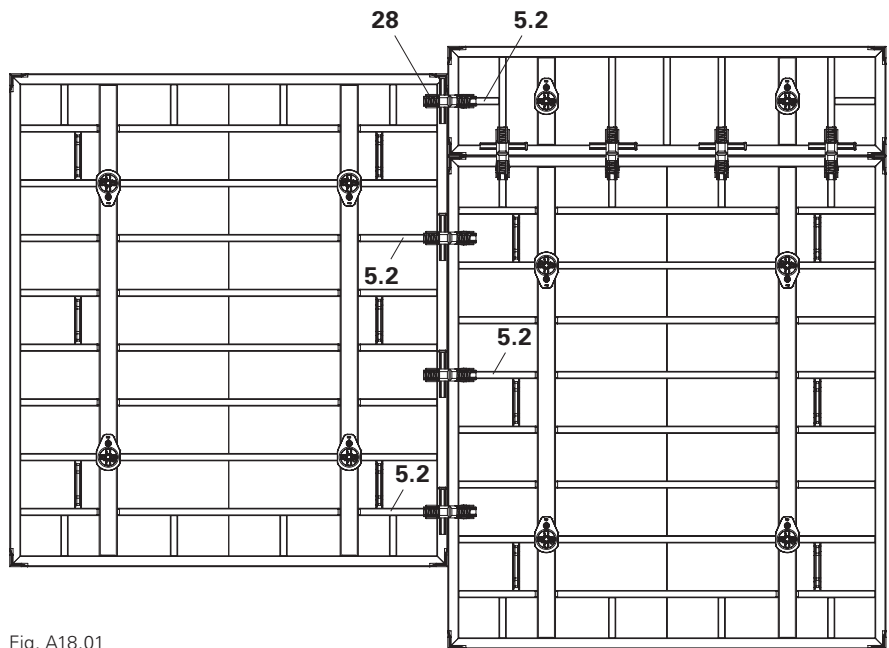


Fig. A18.01



For wall connections, the joints must be sealed with appropriate sealing tapes.

Obtuse wall connections

Connection with Panel MX-2 270x240. (Fig. A19.01a)

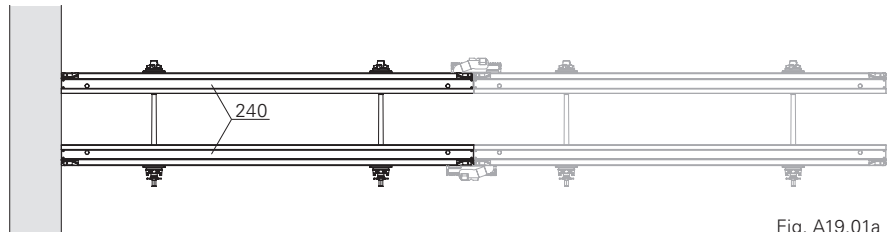


Fig. A19.01a

Connection with Panel MX-2 width > 60. (Fig. A19.01b)

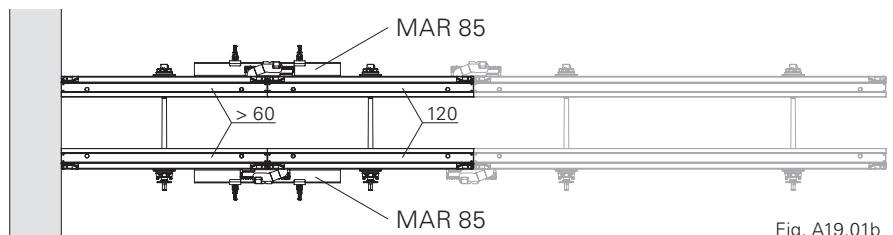


Fig. A19.01b

Connection with Panel MX-2 width ≤ 60. (Fig. A19.01c)

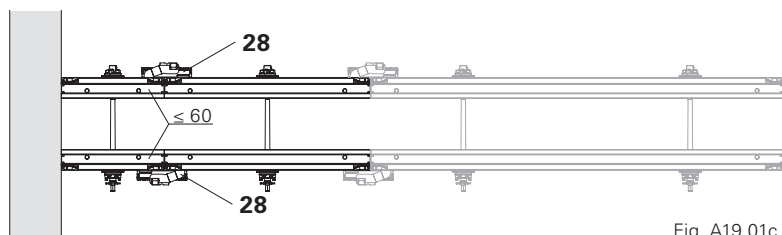


Fig. A19.01c



■ Obtuse wall connections can be realised with Frame Holders MX/TR, see Section "A12 Frame Holder MX/TR" on page 68.

Vertical wall connections

(Fig. A19.02)



For vertical wall connections, the Tie MX18 must be tightly installed (tension and compression-proof) towards the wall connection in the specified sequence.

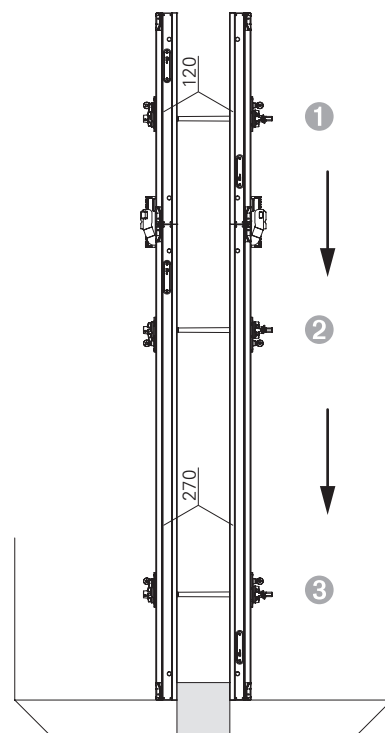


Fig. A19.02

Horizontal wall connections

(Fig. A19.03a + Fig. A19.03b)



For vertical wall connections, the Tie MX18 must be tightly installed (tension and compression-proof) towards the wall connection in the specified sequence.



On the first panel joint, a Compensation Waler-4 MAR 85 (**33**) must always be mounted in the bottom area.
Exception: Panel B > 120 cm.

Sectional view (Fig. A19.03c)

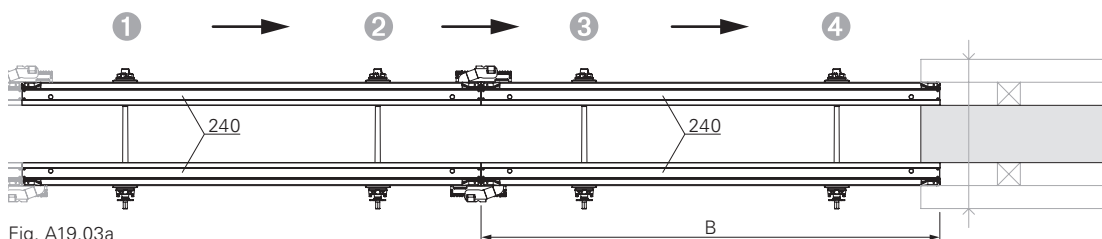


Fig. A19.03a

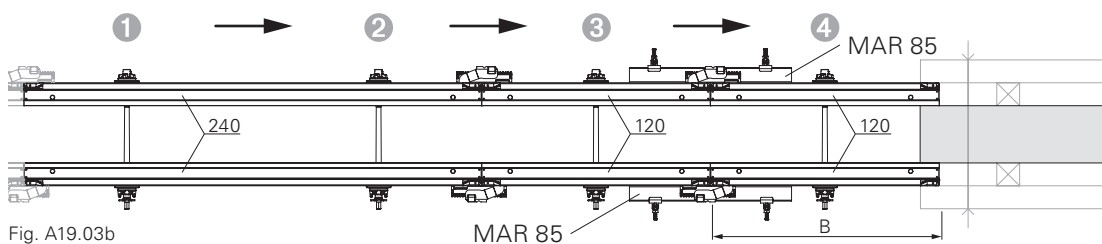


Fig. A19.03b

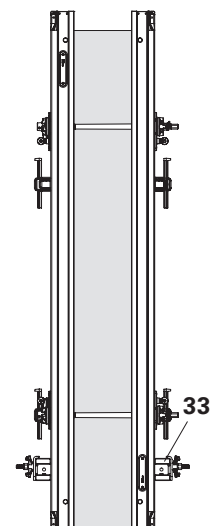


Fig. A19.03c



- The Stripping Aid MX/TR (**103**) is used to remove Panels MX-2 (**5**).
- At least two Stripping Aids MX/TR (**103**) must be used for striking at all times.
- The Stripping Aids MX/TR (**103**) are fitted to the panel to be removed.



Wall Thickness Compensation WDA MX:

- In the case of Wall Thickness Compensation WDA MX, ensure that this is attached to the fixed Panel MX-2.
- The stripping aid can be used for Panels MX-2 $\leq 45^\circ\text{cm}$ together with squared timber or Wall Thickness Compensation WDA MX ≤ 6 cm.
- In the case of Panels MX-2 > 45 cm, squared timber must be used as compensation, if compensation is required.

(Fig. A20.01)

Components

- 103.1** Safety pin
- 103.2** Spindle (SW19)
- 103.3** Ball joint holder



Treat the spindle (**103.2**) with formwork oil or grease.

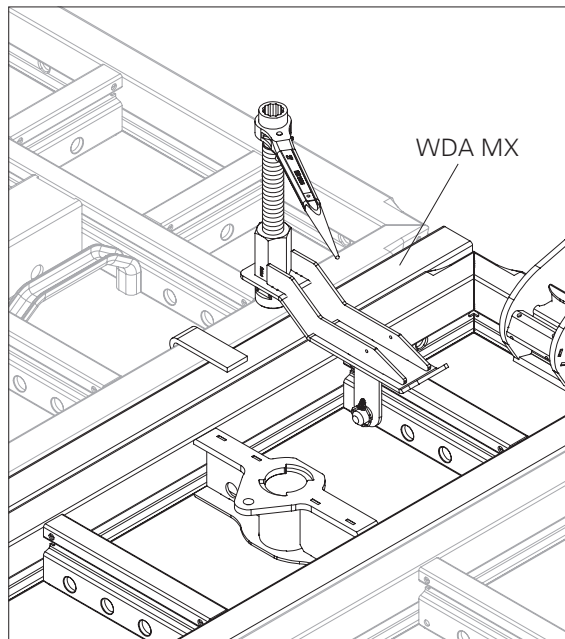
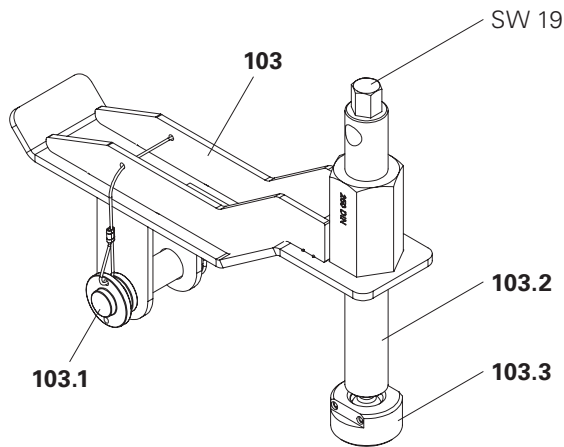


Fig. A20.01



Danger

If the formwork is deshuttered incorrectly or too early, Panels MX-2 (5) may fall over or concrete may escape from the formwork!

Being struck by falling Panels MX-2 (5) or by non-solid concrete will result in serious injury or perhaps even death.

- ⇒ Concrete strength must be taken into account.
- ⇒ Secure Panels MX-2 (5) on both sides of the wall against tilting and wind forces.
- ⇒ Do not remove Anchor MX18 (17 / 18 / 19) until the Panel MX-2 (5) to be released has been secured by a crane and the Alignment Couplers BFD (28) have been removed.
- ⇒ Always work from a safe working level.

Using the Stripping Aid MX/TR

1. Use the Lifting Hook MX 1.5t (3) to secure the Panel MX-2 (6) being released.
2. Place Stripping Aids MX/TR (103) on both sides of the perforated strut in the upper third of the Panel MX-2 (5) being released and secure with safety pins (103.1).

(Fig. A20.02)



- The ball joint holder (103.3) must not rest on the Panel MX-2 being released or the wall thickness compensation. (Fig. A20.02a)
 - Panel MX-2 (5) must be secured with a crane
3. Remove Alignment Couplers BFD (28) and Anchors MX18 (17 / 18 / 19).
 4. Turn spindle (SW19) (103.2) with Scaff. Build. Ratchet SW19/22 (35) on both Stripping Aids MX/TR (103) alternately or simultaneously in a clockwise direction.

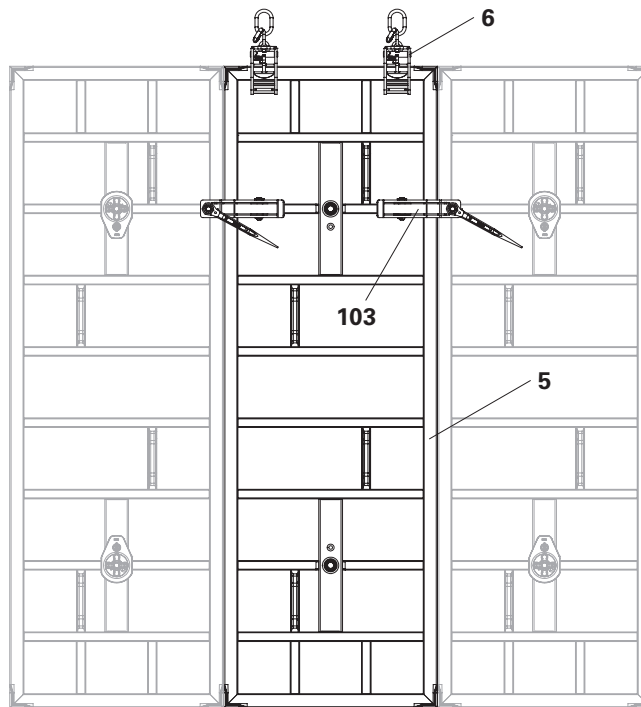


Fig. A20.02

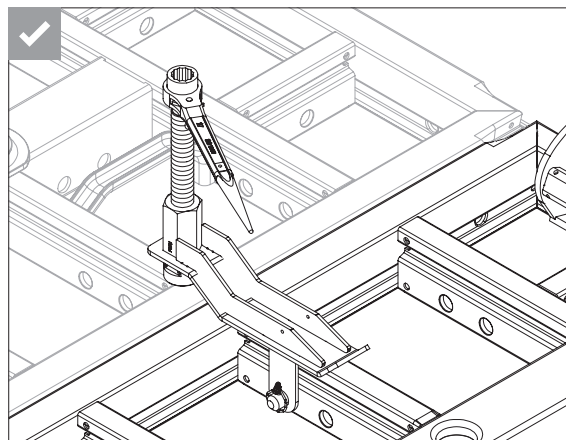


Fig. A20.02a



Danger

Released tension can cause Panel MX-2 to move!
Being struck by Panels MX-2 (5) will result in serious injury or perhaps even death.

⇒ Never use a crane to remove the panel from the panel assembly!



- If the spindles (103.2) are actuated unevenly, the Panel MX-2 will tilt (5).
- To avoid damage, place wood beneath the ball holder (103.3).
- In case of Panels MX-2 (5) that are difficult to remove, use 4x Stripping Aids MX/TR (103), which are attached to the top and centre third of the Panel MX-2 (5).

(Fig. A20.03)

5. If necessary, move Stripping Aid MX/TR (103) to the centre / lower third and repeat the process until Panel MX-2 (5) is completely released.

6. Remove Stripping Aid MX/TR (103) and remove the detached Panel MX-2 (5) with the crane.



For extended Panels MX-2, two Stripping Aids MX/TR (103) must be fitted and operated on the lower Extension Panel MX-2 (5a) and on Panel MX-2 (5b).

(Fig. A20.04)

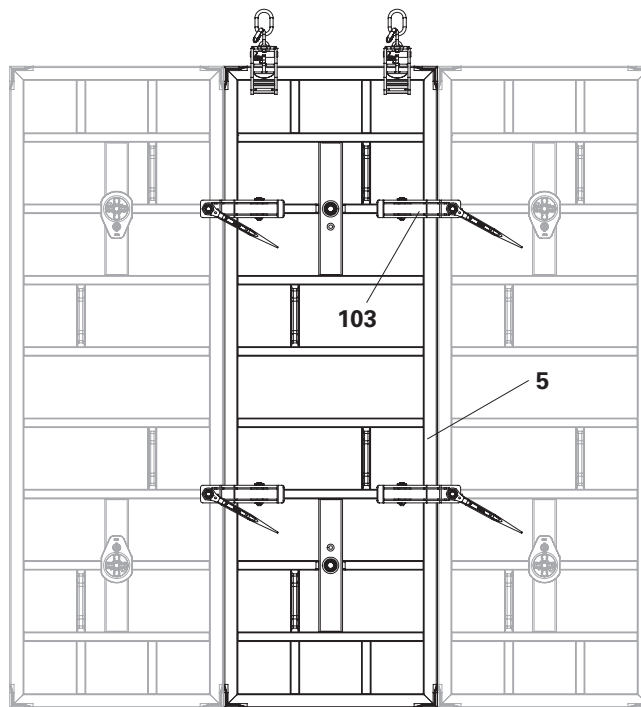


Fig. A20.03

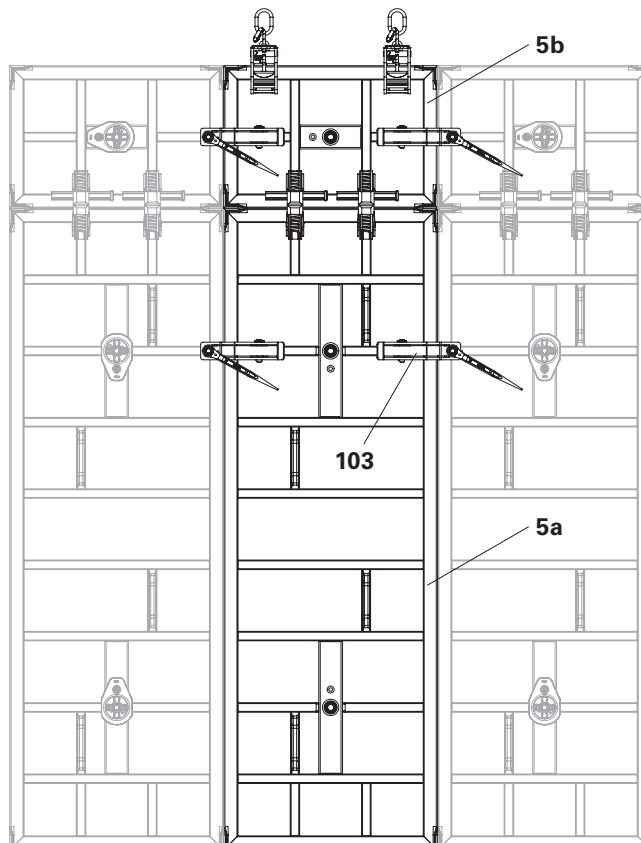


Fig. A20.04

Removing the sealing

Components

- 5 Panel MX-2
- 5.1 Tie point with seal
- 83 Extraction Tool MX Sealing
- 83.1 Extraction head
- 83.2 Extraction bell
- 83.3 Opening
- 83.4 Notch

Preparing the Extraction Tool MX Sealing

Turn the Extraction Tool MX Sealing (83) backwards. (Fig. A21.01)

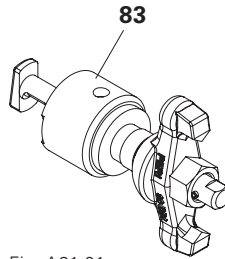


Fig. A21.01

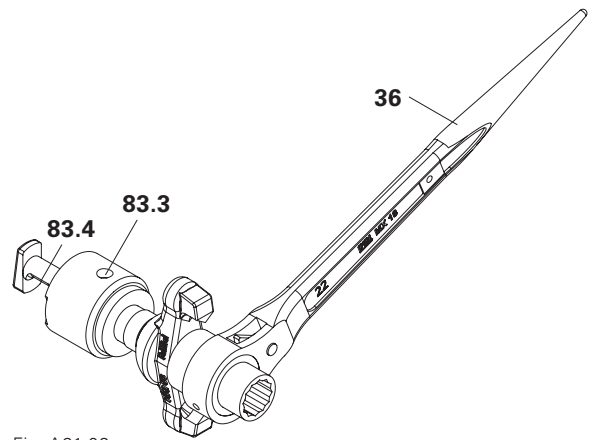


Fig. A21.02

Starting position on the panel

Replacement of Washer MX18 or conversion to Washer MX15 (5.1). (Fig. A21.03a)

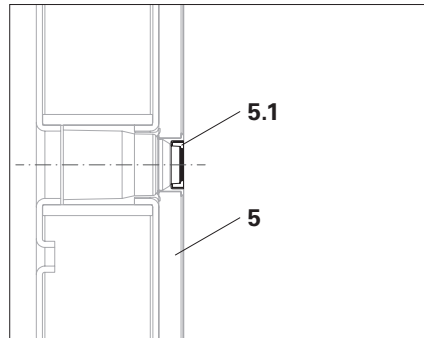


Fig. A21.03a

Using the Extraction Tool MX

1. Screw in the extraction head (83.1) with the thick end at an angle into the washer until the extraction head is positioned inside the sealing. (Fig. A21.03b + Fig. A21.03c)
2. Turn the Extraction Tool MX Sealing (83) onto the Panel MX-2 (5) until the extraction bell (83.2) is in contact. (Fig. A21.03d)
3. Fasten the extraction bell (83.2) and continue turning until the washer (5.1) is free. (Fig. A21.03e)
4. Unscrew the extraction head (83.1) from the washer (5.1). (Fig. A21.03e)

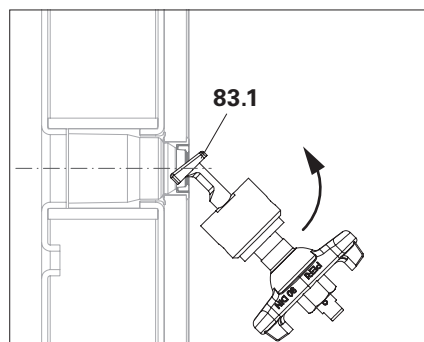


Fig. A21.03b

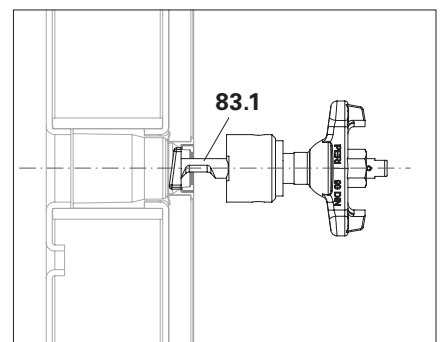


Fig. A21.03c

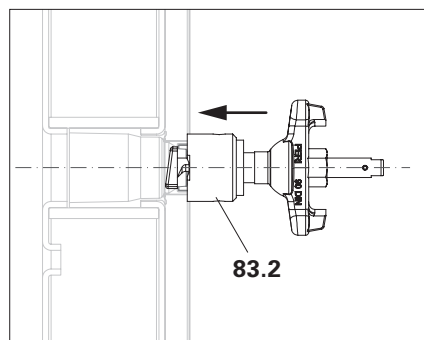


Fig. A21.03d

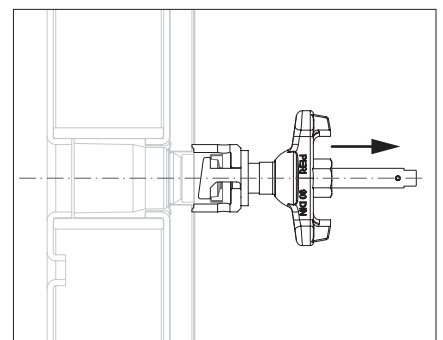


Fig. A21.03e



- The Ratchet MX18 (36) can also be used for the removal process. (Fig. A21.02)
- The notch (83.4) in the Extraction Tool MX Sealing (83) is used for the recessed seal of the I-Corner MXI-2 (85).
- The opening (83.3) can be used to hold the Extraction Tool MX Sealing (83) during the unscrewing process.

Inserting the seal

Inserting

1. Position a new washer (**5.1**) at the opening. (Fig. A21.04a)
2. Knock in the washer (**5.1**) flush with the support and hammer. (Fig. A21.04b)
→ Washer (**5.1**) has been replaced. (Fig. A21.04c)

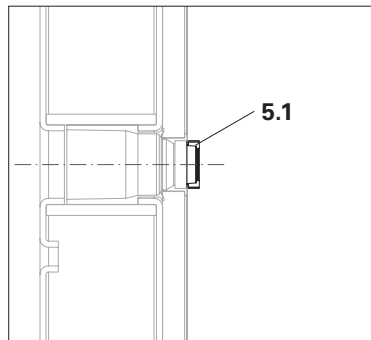


Fig. A21.04a

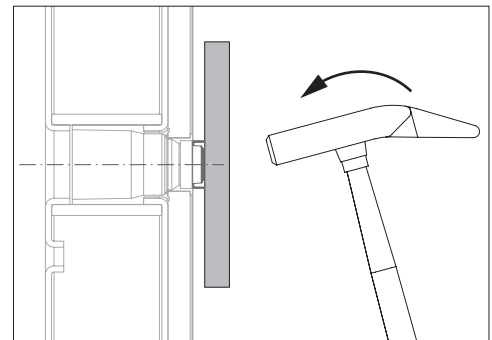


Fig. A21.04b

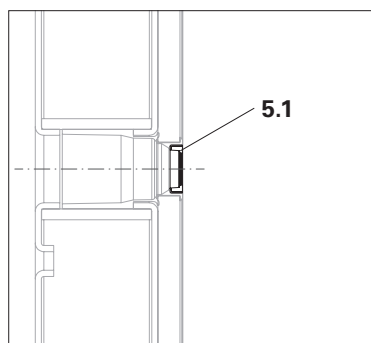


Fig. A21.04c

RFID in the MAXIMO MX-2

The abbreviation RFID stands for "Radio Frequency Identification".

Dual-frequency RFID transponders (5.9) are installed on both long sides of a Panel MX-2 (5). (Fig. A22.01)

These connect the hardware to a smart product with a range of digital services. See the separate product information on the digital services for further information.

PERI dual-frequency RFID transponder

- The PERI dual-frequency RFID transponder contains a high-frequency (HF) and an ultra-high frequency module (UHF).
- Both modules are passive, radiation-free and maintenance-free.
- Do not open RFID transponders or damage them in any other way.

Application

Reading the high-frequency module (HF) with NFC

In order to read the module and retrieve specific product information, PERI Material Scan and an NFC-compatible smartphone are required. This application is available on the App Store* or Google Play**.

Reading

1. Start the app.
2. Select the relevant function.
3. Move the smartphone over the RFID installation point (on the PERI logo).
Distance to the component <math><1^{\circ}\text{cm}</math>. (Fig. A22.02)

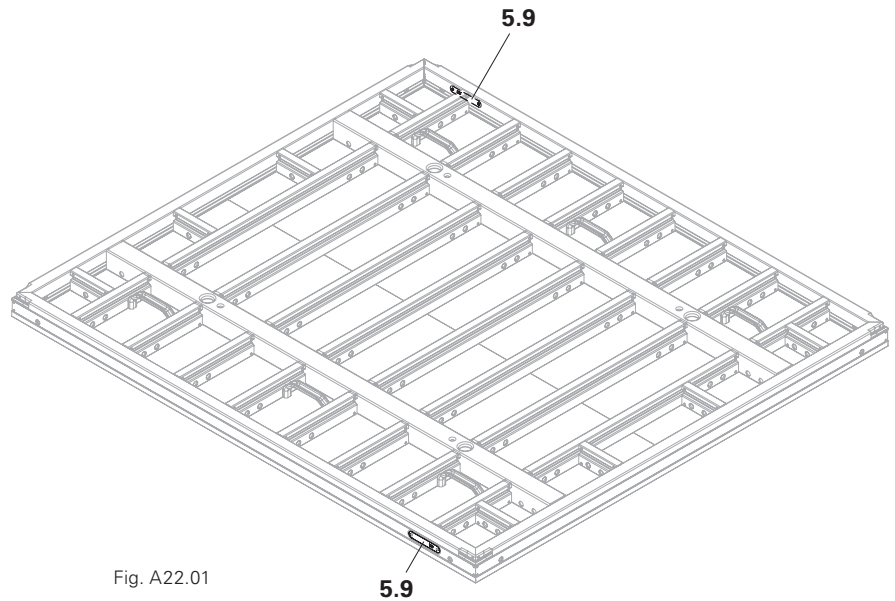


Fig. A22.01

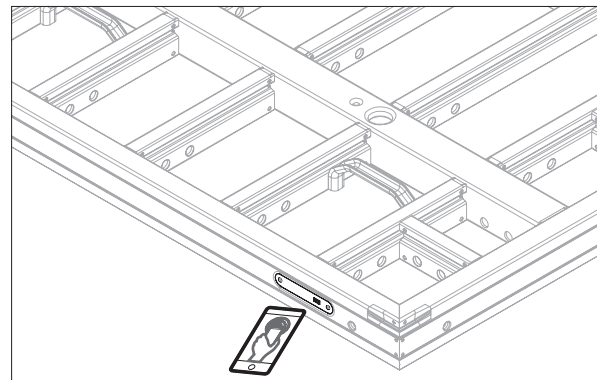


Fig. A22.02

* App Store is a service brand of Apple Inc., listed in the United States of America and other countries.

** Google Play is a brand of Google LLC.

Reading the UHF module

The UHF module can be detected and read with a customary UHF reader from distances of several metres. All conventional readers are suitable. Refer to the respective manufacturer's documentation.

To transmit data, refer to the manufacturer's documentation of the respective merchandise management system.

Several PERI dual-frequency RFID transponders can be detected together (bulk detection). (Fig. A22.03)

These applications are predominantly used in the logistics sector, e.g in order to detect and book the movement of goods automatically.

Reach

The reach of both transponders is influenced by various factors:

- Performance of
 - reader,
 - antennas.
- Shielding effect from
 - other panels,
 - crate pallets,
 - concrete fouling,
 - vehicle side panel,
 - other metallic components.
- With the performance level of the reader and no shielding effect (optimal conditions), a detection distance of up to 12 m is possible.

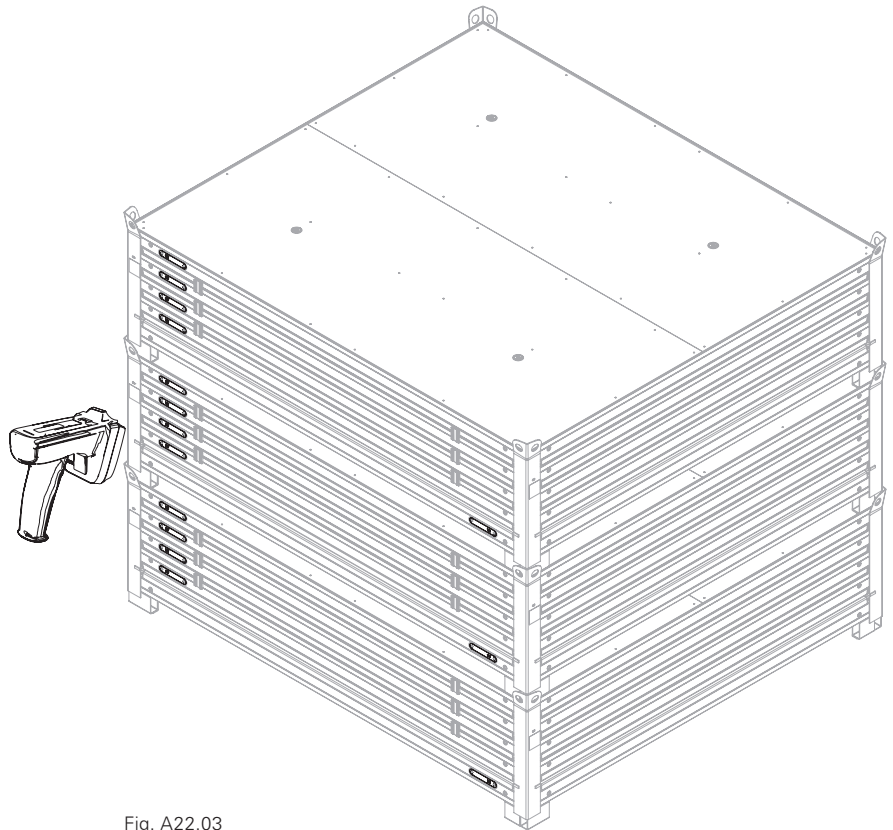


Fig. A22.03

Outs. Corner MXA-2 270x45

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 50/20		
	A	B	C	D	E	F	G	H
15	–	MXA-2 45	–	MXM-2 60	WDA 5 ¹⁾	WDA 10 ¹⁾	MXI-2 50/20	MX-2 45
17.5	–	MXA-2 45	KH 2.5 ²⁾	MXM-2 60	WDA 5 ¹⁾	KH 7.5 ²⁾	MXI-2 50/20	MX-2 45
20	–	MXA-2 45	–	MX-2 30	–	WDA 5 ¹⁾	MXI-2 50/20	WDA 5 ¹⁾
24	–	MXA-2 45	–	MX-2 30	–	KH 1 ²⁾	MXI-2 50/20	KH 1 ²⁾
25	–	MXA-2 45	–	MX-2 30	–	–	MXI-2 50/20	–
30	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 30	–	–	MXI-2 50/20	–
35	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 30	–	–	MXI-2 50/20	–
36	WDA 10 ³⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 30	KH 1 ²⁾	–	MXI-2 50/20	–
40	MXM-2 60	MXA-2 45	–	MX-2 45	–	MX-2 45	MXI-2 50/20	–

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

³⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation. A 1 cm KH must then be fitted to the subsequent element

Tab. B1.01

Arrangement of Alignment Couplers BFD (Fig. B1.02 + Fig. B1.03)						
Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20			Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3 ³⁾	S4	S5	S6
Strut	① ③ ⑤ ⑧	① ③ ⑤ ⑧	① ③ ⑤ ⑧	① ③ ④ ⑥ ⑧	① ③ ④ ⑥ ⑧	① ③ ④ ⑥

³⁾ Arrangement if no Panel MX-2 270x240 is connected directly to the I-Corner MXI-2 50/20

Tab. B1.02



Panels MX-2 270x240 are connected to the short side of the I-Corner MXI-2 270x50/20 as standard for wall thicknesses of 15 – 36 cm. If this is not possible, only the following elements may be connected:

- Panel MX-2 270x30
- Panel MX-2 270x45

(Fig. B1.01)

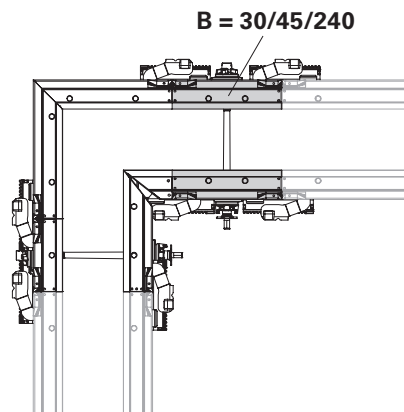


Fig. B1.01

B1 Corners 90° with I-Corner MXI-2 270x50/20

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of I-Corner MXI-2 270x50/20
(Fig. B1.02 + Fig. B1.02a)

Example:

Wall thickness 25 cm

- A – E: Tab. B1.01
- S1 – S3: Tab. B1.02

Position of joint S3 (WT 15 and 17.5)

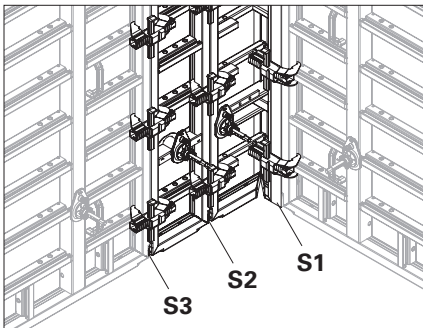


Fig. B1.02a

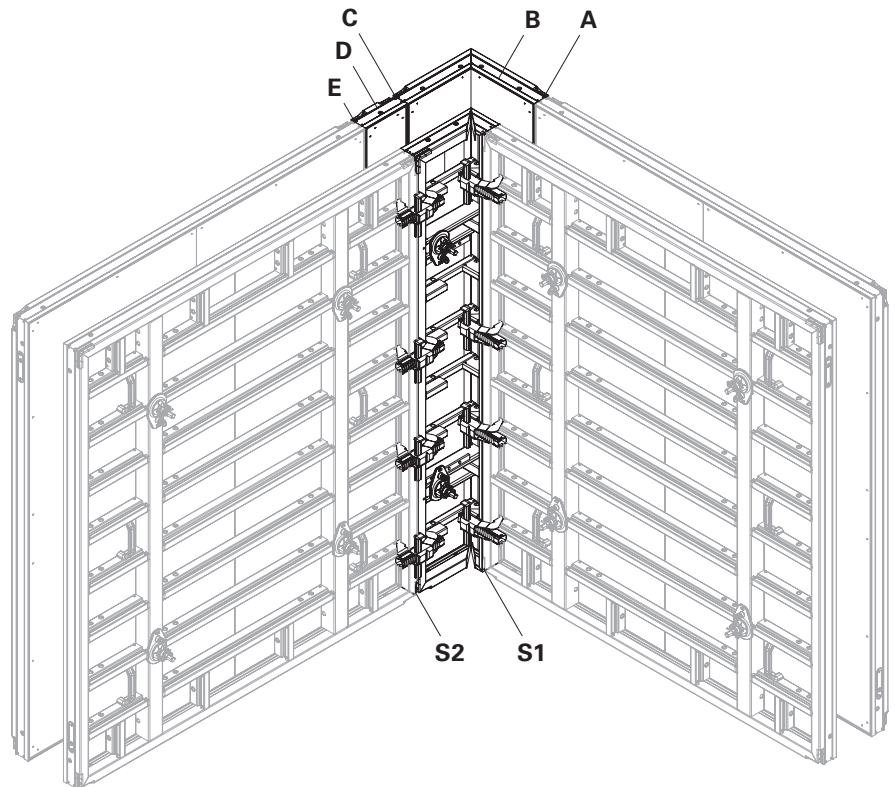


Fig. B1.02

View of Outs. Cor. MXA-2 270x45
(Fig. B1.03)

Example:

Wall thickness 25 cm

- F – H: Tab. B1.01
- S4 – S6: Tab. B1.02

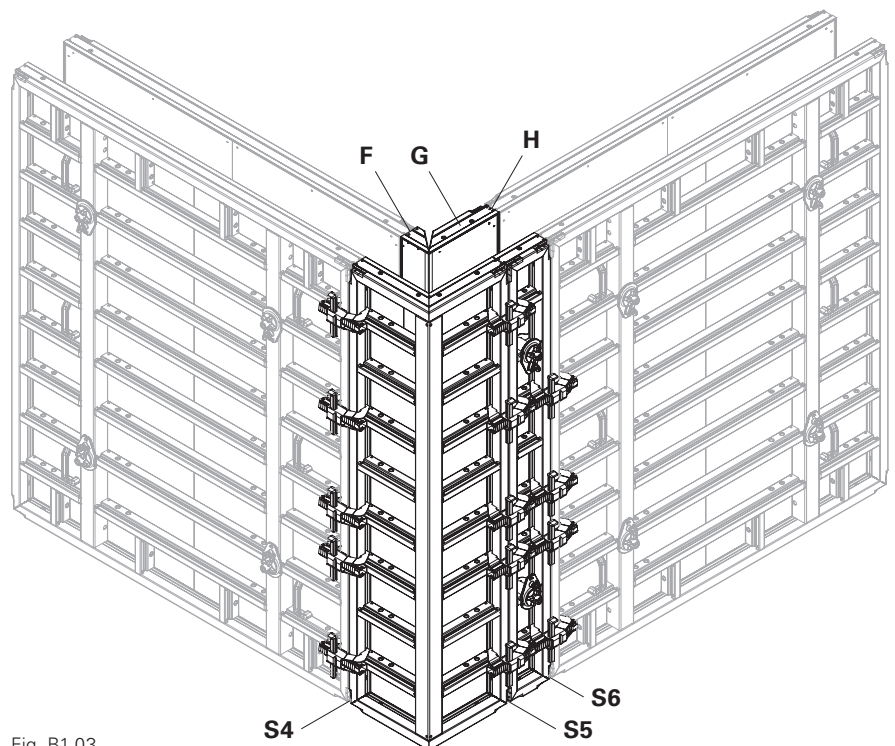


Fig. B1.03

B1 Corners 90° with I-Corner MXI-2 270x50/20



Wall thickness <40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 50/20	
	A	B	C	D	E	F	G
45	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 45	MX-2 45	MXI-2 50/20
50	MXM-2 60	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 45	MX-2 45	MXI-2 50/20
55	MXM-2 60	–	MXA-2 45	–	MX-2 60	MX-2 30	MXI-2 50/20
60	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 60	MX-2 30	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. B1.03

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. B1.04 + Fig. B1.05)						
Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20			Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3	S4	S5 + S6	S7
Strut	① ④ ⑤ ⑧	① ④ ⑤ ⑧	① ④ ⑧ ²⁾	② ③ ⑤ ⑥ ²⁾	② ③ ⑤ ⑥ ⑦	② ③ ⑤ ⑥
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 50/20			Compensation Waler-4 MAR 170 at Outs. Corner MXA-2 45		
Strut	③ ⑥			① ④ ⑧		

²⁾ Alignment Couplers BFD may need to be offset

Tab. B1.04

B1 Corners 90° with I-Corner MXI-2 270x50/20

Arrangement of the alignment couplers and compensation walers

Valid for wall thicknesses <40 – 60 cm

View of I-Corner MXI-2 270x50/20
(Fig. B1.04)

Example:

Wall thickness 50 cm

- A – E: Tab. B1.03
- S1 – S3: Tab. B1.04

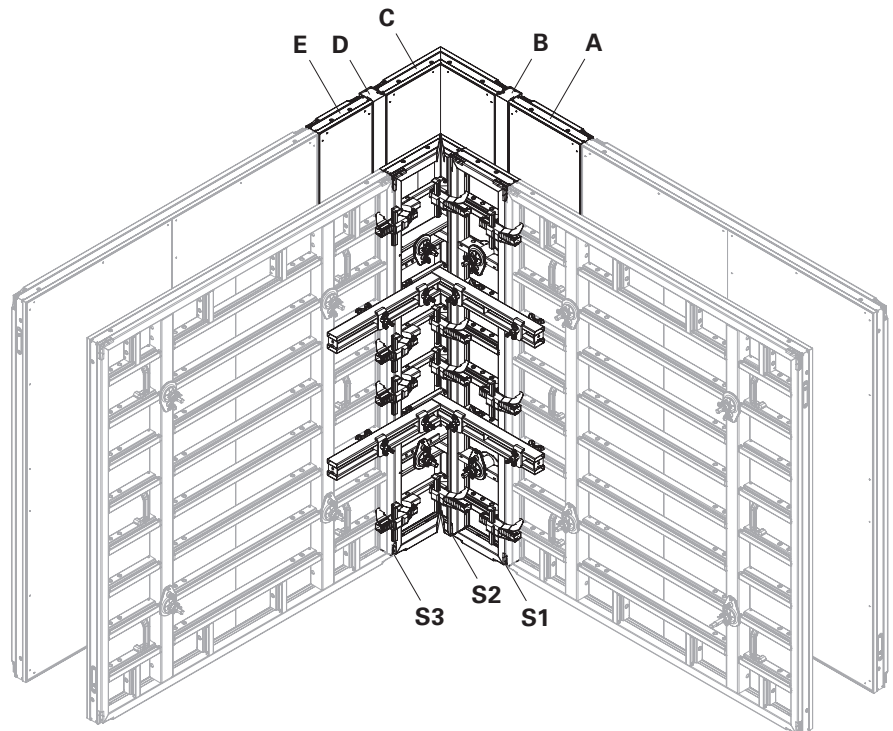


Fig. B1.04

View of Outs. Cor. MXA-2 270x45
(Fig. B1.05)

Example:

Wall thickness 50 cm

- F + G: Tab. B1.03
- S4 – S7: Tab. B1.04

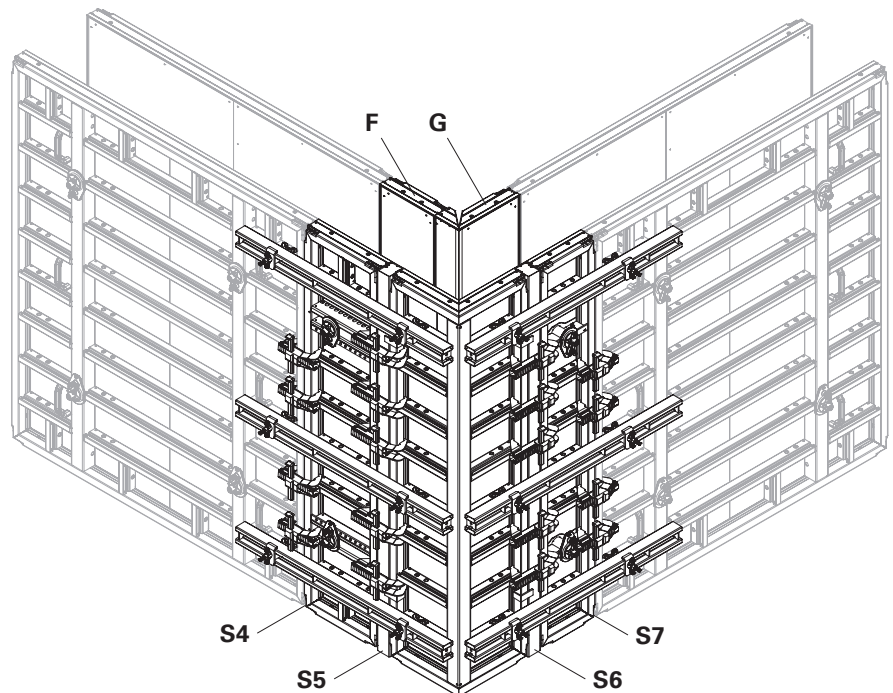


Fig. B1.05

B1 Corners 90° with I-Corner MXI-2 270x50/20



Wall thickness 80 cm



Perm. fresh concrete pressure
60 kN/m²

Components

- 5a Panel MX-2 270x30
- 5b Panel MX-2 270x60
- 7 Tie Rod DW15
- 8 Wingnut DW15 ga
- 26 Wall Thick Comp. WDA MX 270x5
- 28 Alignment Coupler BFD
- 33 Compensation Waler-4 MAR 85
- 45 Tie Rod DW20
- 46 Tube Ø28mm 300 rough
- 47 Sealing Cone DK DW20 55mm
- 48 Wingnut DW20 ga
- 49 Counterplate DW20 120x120x15mm
- 50 Wingnut Pivot Plate DW15 ga
- 84 I-Corner MXI-2 270x50/20
- 85 Outs. Corner MXA-2 270x45
- 86 Waler Stop
- 87 Anchor Tie Yoke SW
- 88 Hook Tie Head DW15 ga
- 89 Steel Waler SRU 247 U120
- 90 Wedge KZ tensionproof

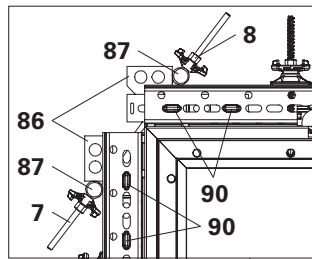


Fig. B1.06a

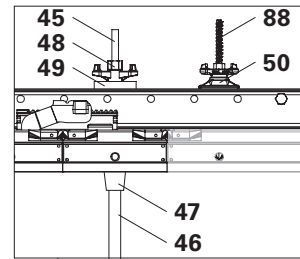


Fig. B1.06b

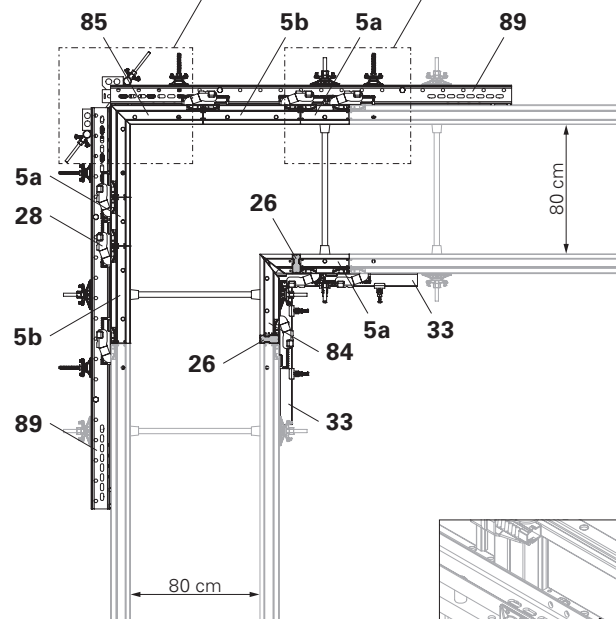


Fig. B1.06

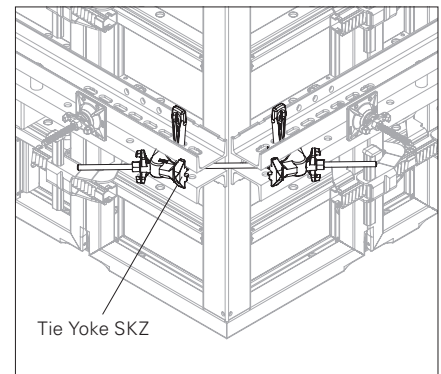


Fig. B1.06c

Example

View from above
(Fig. B1.06 – Fig. B1.06b)



The outside corner can also be implemented with the Tie Yoke SKZ (article no. 024210) instead of the waler stop (86) and anchor tie yoke (87). For assembly, see the Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork. (Fig. B1.06c)

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR/Steel Waler SRU 247 U120 (Fig. B1.07 + Fig. B1.08)

Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20			Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3	S4 + S9	S5 + S8	S6 + S7
Strut	3 8	3 5 8	3 5 8	1 3 5 8	1 3 4 5 8	1 3 4 5 6 8
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 50/20			Steel Waler SRU 247 U120 at Outs. Corner MXA-2 45		
Strut	1 6			2 7		

Tab. B1.05

Arrangement of the alignment couplers and steel walers

View of I-Corner MXI-2 270x50/20
(Fig. B1.07)

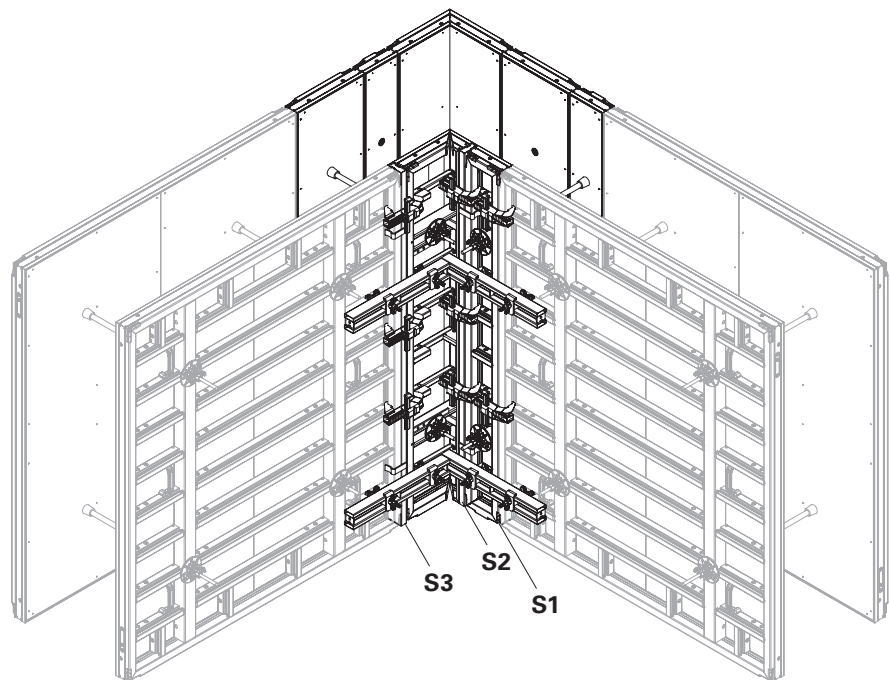


Fig. B1.07

View of Outs. Cor. MXA-2 270x45
(Fig. B1.08)

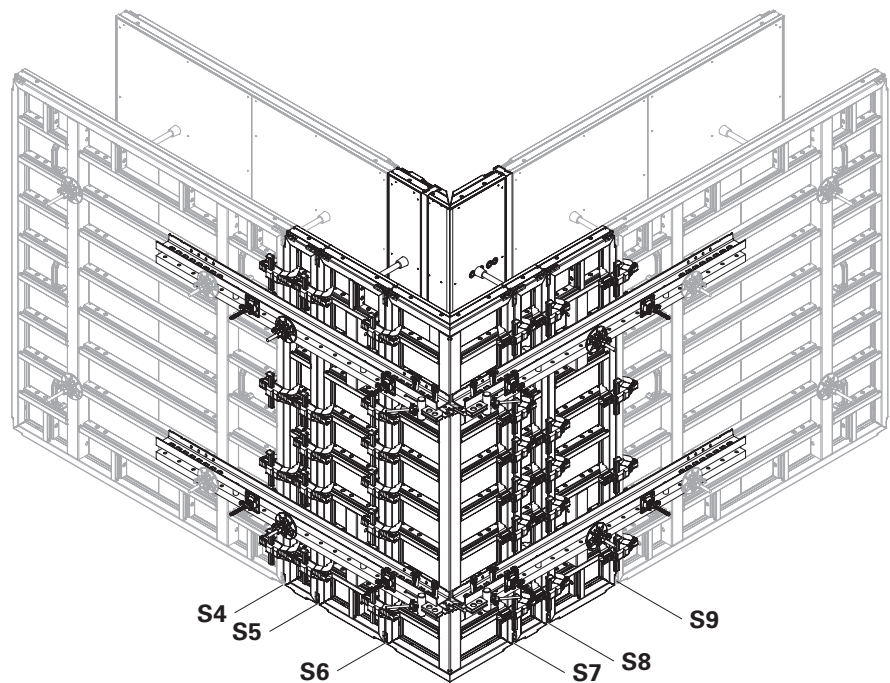


Fig. B1.08

Outs. Corner MXA-2 270x35

Wall thickness 15 – 30 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 35							Panels at I-Corner MXI-2 60
	A	B	C	D	E	F	G	H
15	KH 7.5 ²⁾	MX-2 30	KH 2.5 ²⁾	MXA-2 35	KH 2.5 ²⁾	MX-2 30	KH 7.5 ²⁾	MXI-2 60
17.5	KH 7.5 ²⁾	MX-2 30	WDA 5 ¹⁾	MXA-2 35	WDA 5 ¹⁾	MX-2 30	KH 7.5 ²⁾	MXI-2 60
20	–	MX-2 45	–	MXA-2 35	–	MX-2 45	–	MXI-2 60
24	–	MX-2 45	WDA 4 ¹⁾	MXA-2 35	WDA 4 ¹⁾	MX-2 45	–	MXI-2 60
25	–	MX-2 45	WDA 5 ¹⁾	MXA-2 35	WDA 5 ¹⁾	MX-2 45	–	MXI-2 60
30	–	MX-2 45	WDA 10 ¹⁾	MXA-2 35	WDA 10 ¹⁾	MX-2 45	–	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. B2.01

Arrangement of Alignment Couplers BFD (Fig. B2.01 + Fig. B2.02)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 35		
	S1	S2	S3	S4 + S5	S6
Strut	① ③ ⑤ ⑧	① ③ ⑤ ⑧	① ③ ④ ⑥	① ③ ④ ⑥ ⑧	① ③ ④ ⑥

Tab. B2.02

B2 Corners 90° with I-Corner MXI-2 270x60

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 30 cm

View of I-Corner MXI-2 270x60
(Fig. B2.01)

Example:

Wall thickness 25 cm

- A – G: Tab. B2.01
- S1 + S2: Tab. B2.02

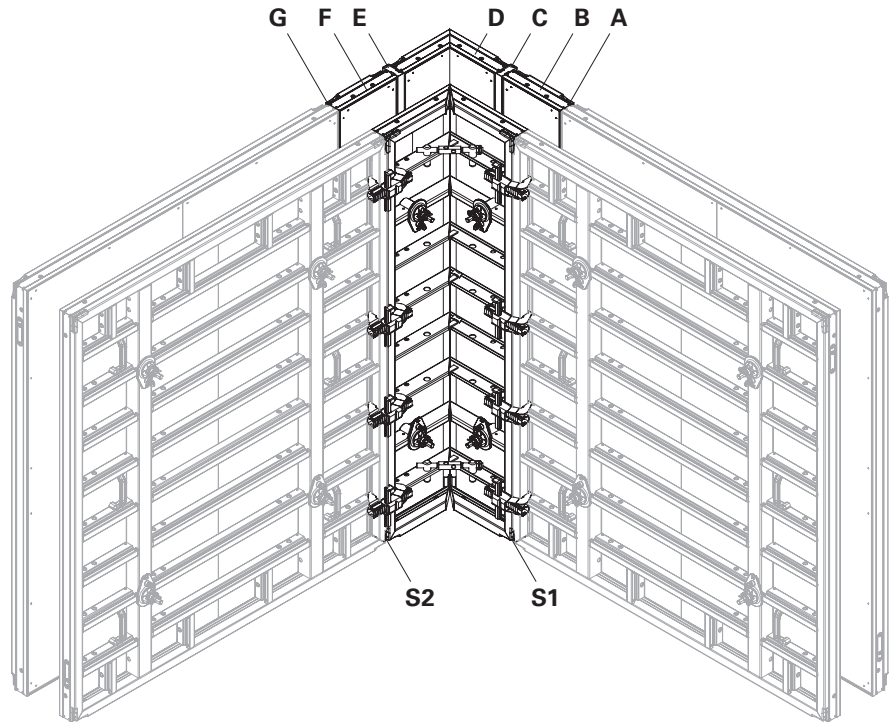


Fig. B2.01

View of Outs. Cor. MXA-2 270x35
(Fig. B2.02)

Example:

Wall thickness 25 cm

- H: Tab. B2.01
- S3 – S6: Tab. B2.02

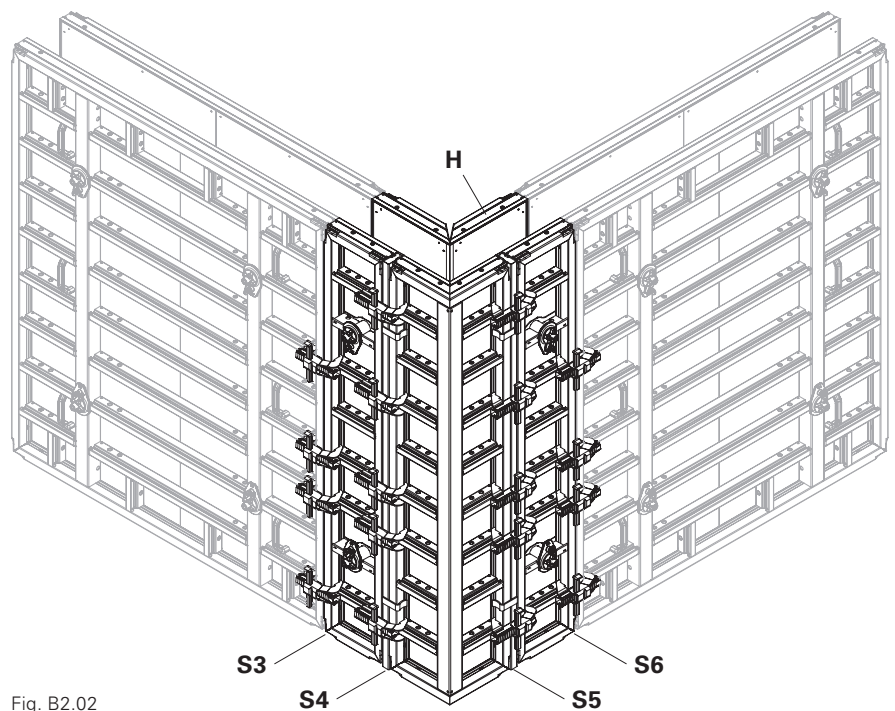


Fig. B2.02

Outs. Corner MXA-2 270x45

Wall thickness 30 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 60
	A	B	C	D	E	F
30	MX-2 45	–	MXA-2 45	–	MX-2 45	MXI-2 60
35	MX-2 45	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 45	MXI-2 60
36	MX-2 45	WDA 6 ¹⁾	MXA-2 45	WDA 6 ¹⁾	MX-2 45	MXI-2 60
40	MX-2 45	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber can be used as compensation.

Tab. B2.03

Arrangement of Alignment Couplers BFD (Fig. B2.03 + Fig. B2.04)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3	S4 + S5	S6
Strut	① ③ ⑤ ⑧	① ③ ⑤ ⑧	① ③ ④ ⑥	① ③ ④ ⑥ ⑧	① ③ ④ ⑥

Tab. B2.04

B2 Corners 90° with I-Corner MXI-2 270x60

Arrangement of the alignment couplers

Valid for wall thicknesses 30 – 40 cm

View of I-Corner MXI-2 270x60
(Fig. B2.03)

Example:

Wall thickness 35 cm

- A – E: Tab. B2.03
- S1 + S2: Tab. B2.04

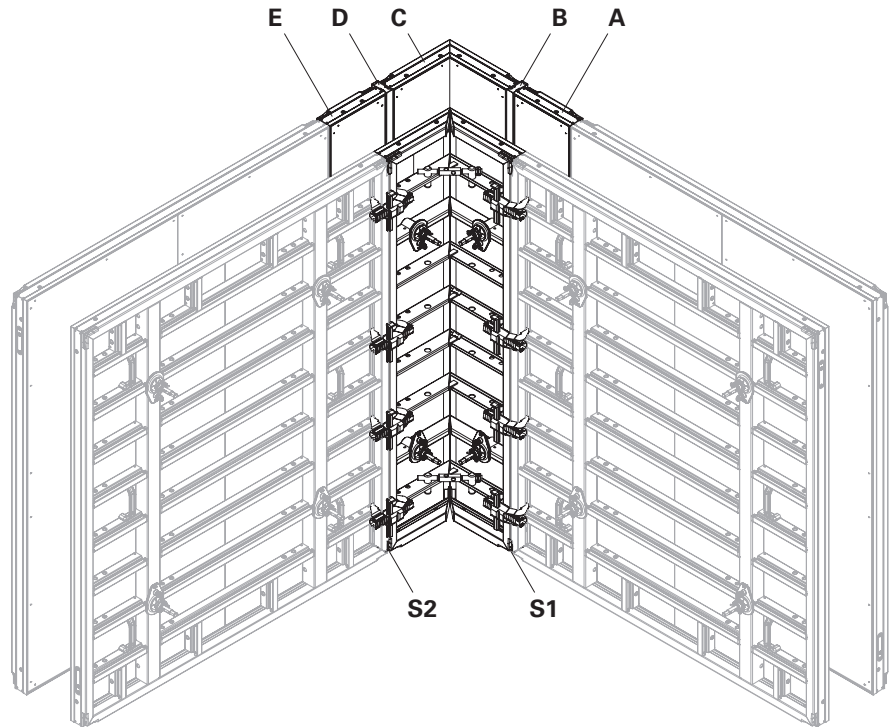


Fig. B2.03

View of Outs. Cor. MXA-2 270x45
(Fig. B2.04)

Example:

Wall thickness 35 cm

- F: Tab. B2.03
- S3 – S6: Tab. B2.04

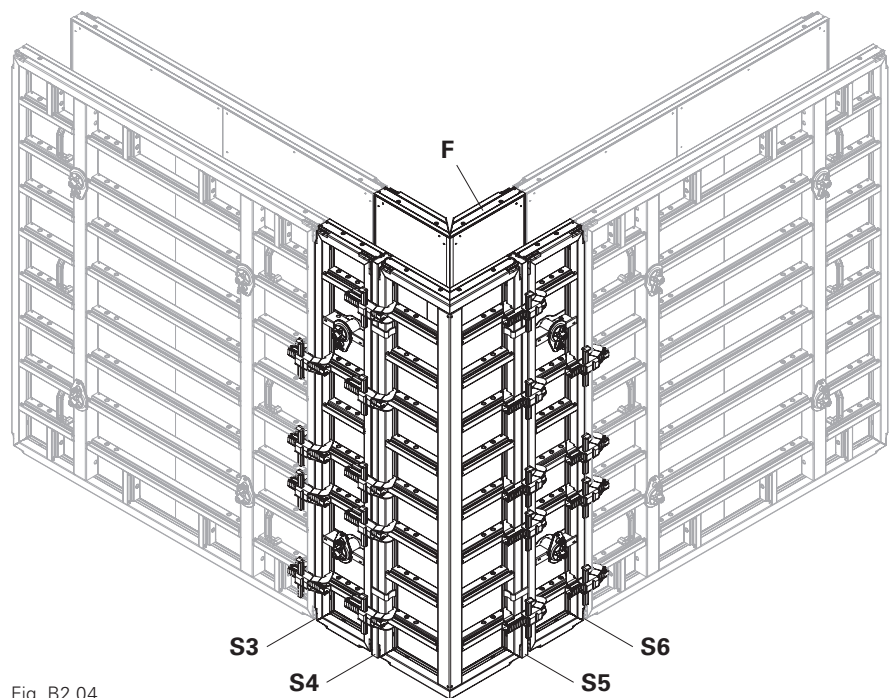


Fig. B2.04

B2 Corners 90° with I-Corner MXI-2 270x60

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 60
	A	B	C	D	E	F
45	MXM-2 60	–	MXA-2 45	–	MXM-2 60	MXI-2 60
50	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MXM-2 60	MXI-2 60
55	MXM-2 60	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MXM-2 60	MXI-2 60
60	MX-2 45	MX-2 30	MXA-2 45	MX-2 30	MX-2 45	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber can be used as compensation.

Tab. B2.05

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. B2.05 + Fig. B2.06)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3	S5 + S6 (+ S4 + S7 ²⁾)	S8
Strut	① ④ ⑤ ⑧	① ④ ⑤ ⑧	② ③ ⑤ ⑥	② ③ ⑤ ⑥ ⑦	② ③ ⑤ ⑥
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 60		Compensation Waler-4 MAR 170 at Outs. Corner MXA-2 45		
Strut	③ ⑥		① ④ ⑧		

²⁾ Joint 4 and joint 7 only in case of 60 cm wall thickness

Tab. B2.06

B2 Corners 90° with I-Corner MXI-2 270x60

Arrangement of the alignment couplers and compensation walers

Valid for wall thicknesses > 40 – 60 cm

View of I-Corner MXI-2 270x60
(Fig. B2.05)

Example:

Wall thickness 60 cm

- A – E: Tab. B2.05
- S1 + S2: Tab. B2.06

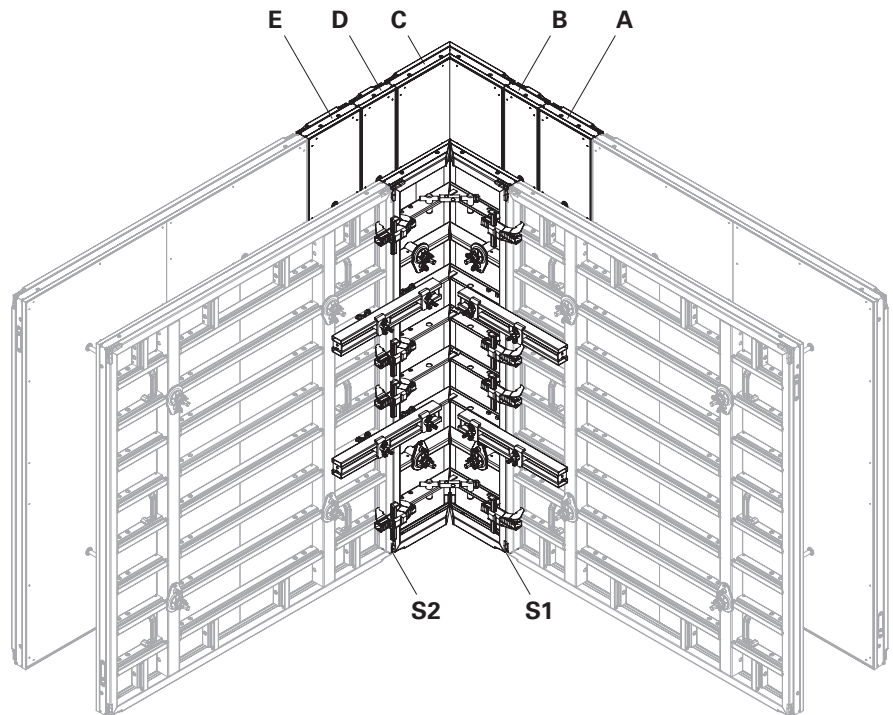


Fig. B2.05

View of Outs. Cor. MXA-2 270x45
(Fig. B2.06)

Example:

Wall thickness 60 cm

- F: Tab. B2.05
- S3 – S8: Tab. B2.06

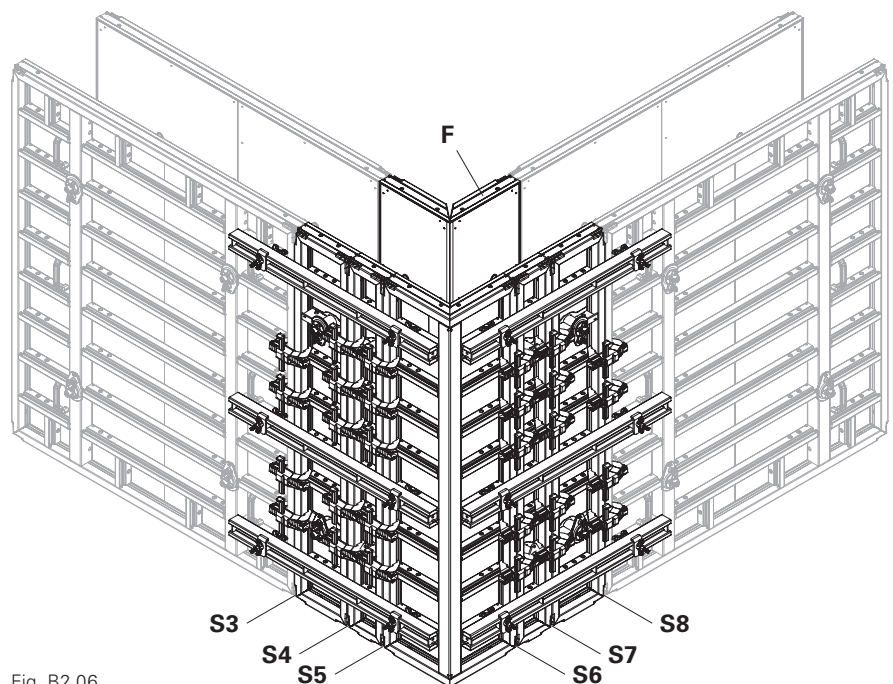


Fig. B2.06

B2 Corners 90° with I-Corner MXI-2 270x60



Wall thickness 80 cm



Perm. fresh concrete pressure
60 kN/m²

Components

- 5 Panel MX-2 270x45
- 7 Tie Rod DW15
- 8 Wingnut DW15 ga
- 26 Wall Thick Comp. WDA MX 270x5
- 28 Alignment Coupler BFD
- 45 Tie Rod DW20
- 46 Tube Ø28mm 300 rough
- 47 Sealing Cone DK DW20 55mm
- 48 Wingnut DW20 ga
- 50 Wingnut Pivot Plate DW15 ga
- 84 I-Corner MXI-2 270x60
- 85 Outs. Corner MXA-2 270x45
- 86 Waler Stop
- 87 Anchor Tie Yoke SW
- 88 Hook Tie Head DW15 ga
- 89 Steel Waler SRU 247 U120
- 90 Wedge KZ tensionproof

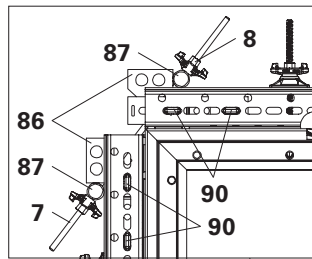


Fig. B2.07a

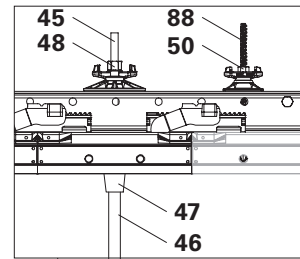


Fig. B2.07b

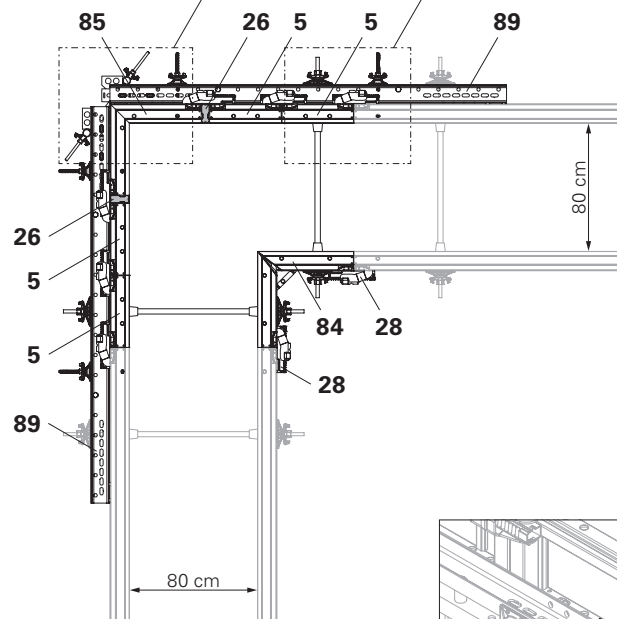


Fig. B2.07

Example

View from above
(Fig. B2.07 – Fig. B2.07b)



The outside corner can also be implemented with the Tie Yoke SKZ (article no. 024210) instead of the waler stop (86) and anchor tie yoke (87). For assembly, see the Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork. (Fig. B2.07c)

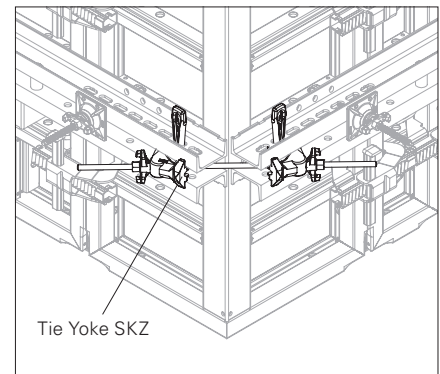


Fig. B2.07c

Arrangement of Alignment Couplers BFD/Steel Walers SRU 247 U120 (Fig. B2.08 + Fig. B2.09)

Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3 + S8	S4 + S7	S5 + S6
Strut	① ③ ⑥	① ③ ⑥	① ③ ⑤ ⑧	① ③ ④ ⑤ ⑧	① ③ ④ ⑤ ⑥ ⑧
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 60		Steel Waler SRU 247 U120 at Outs. Corner MXA-2 45		
Strut	-		② ⑦		

Tab. B2.07

Arrangement of the alignment couplers, compensation walers and steel walers

View of I-Corner MXI-2 270x60
(Fig. B2.08)

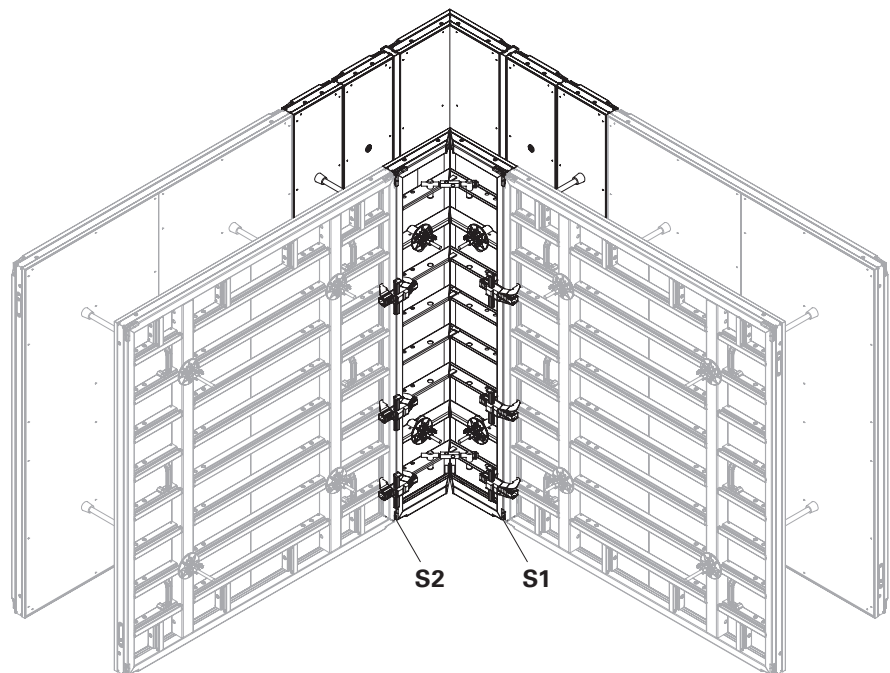


Fig. B2.08

View of Outs. Cor. MXA-2 270x45
(Fig. B2.09)

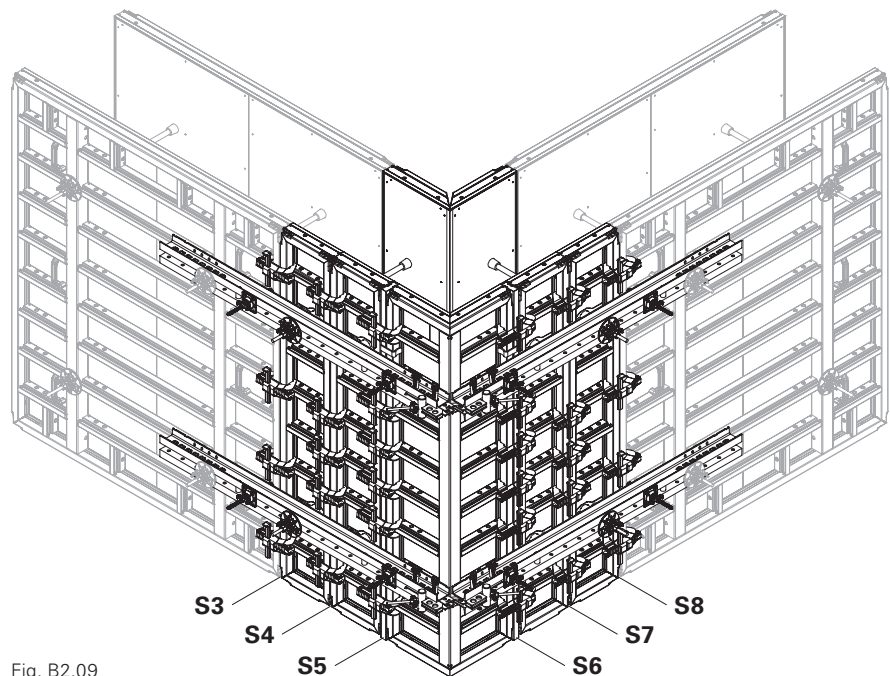


Fig. B2.09

B3 Panel connections following 90° corners



If Panels MX-2 with $b \leq 120$ cm following 90° corners are envisaged, Compensation Waler-4 MAR 85 (**33**) must be installed at the next panel joint for reinforcement.

With height extensions, a second Compensation Waler-4 MAR 85 (**33**) is required on the panel joint (shown as a dotted line). (Fig. B3.02 + Fig. B3.03)

Example

View from above (Fig. B3.01)

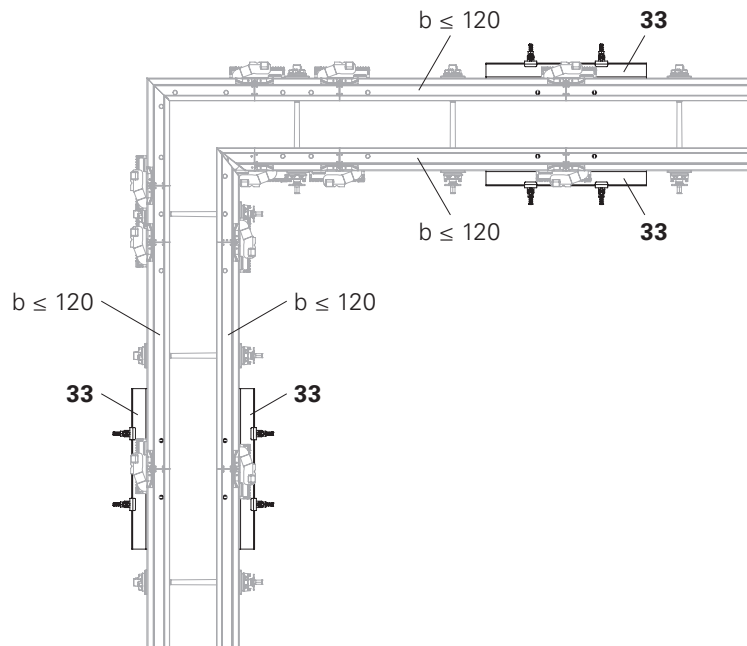


Fig. B3.01

B3 Panel connections following 90° corners

Arrangement of alignment couplers and Compensation Walers-4 MAR 85

View of I-Corner MXI-2 270x50/20
(Fig. B3.02)

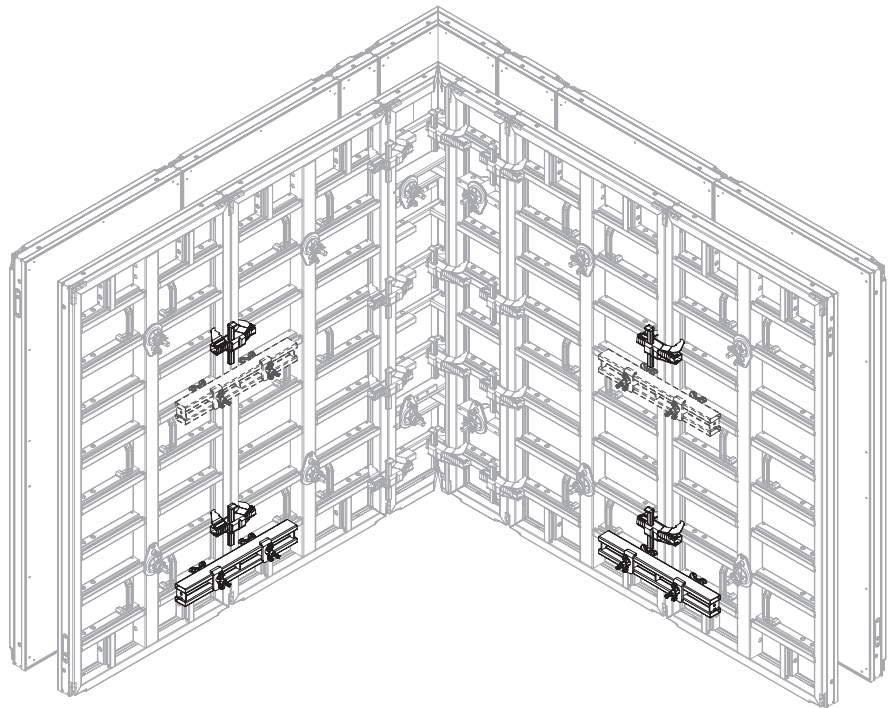


Fig. B3.02

View of Outs. Cor. MXA-2 270x45
(Fig. B3.03)

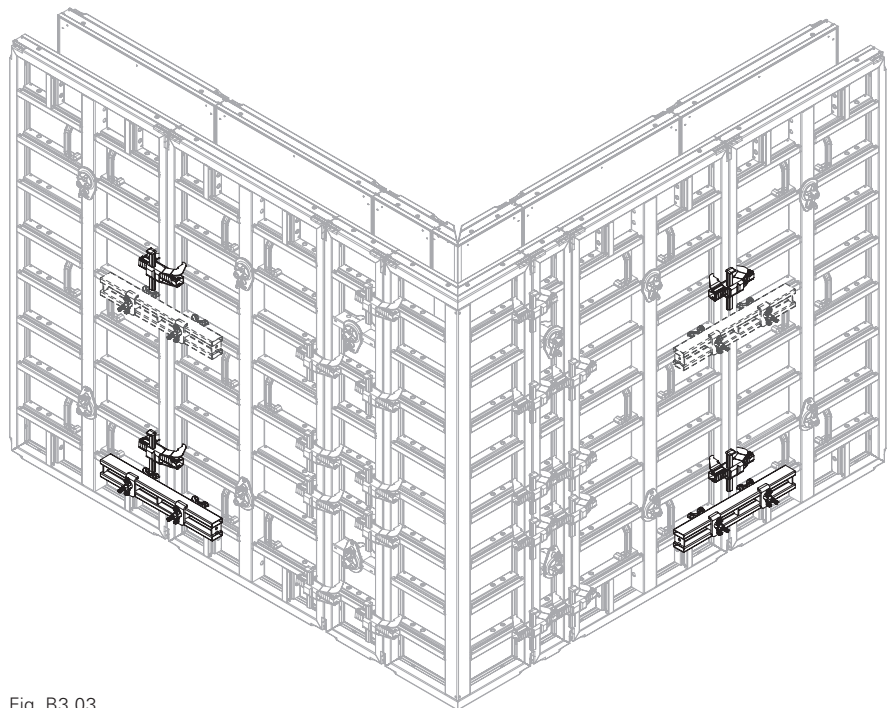


Fig. B3.03

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels on straight wall sections					Panels on T-junction	
	A	B	C	D	E	F	G
15	–	MX-2 45	WDA 10 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
17.5	KH 7.5 ²⁾	MX-2 45	WDA 5 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
20	–	MX-2 60	–	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
24	–	MX-2 60	WDA 4 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
25	–	MX-2 60	WDA 5 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
30	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
35	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 5 ¹⁾	MXI-2 50/20	MXI-2 50/20
36	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 5 ¹⁾	MXI-2 50/20	MXI-2 50/20
40	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 10 ¹⁾	MXI-2 50/20	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. B4.01

Arrangement of Alignment Couplers BFD (Fig. B4.02 + Fig. B4.03)				
Joint	Alignment Couplers BFD on continuous wall section			Alignment Couplers BFD on T-junction
	S1	S2	S3	S4 – S7
Strut	① ③ ⑥	① ③ ⑤ ⑦	① ③ ⑥	① ③ ④ ⑥
Strut for WT 17.5 cm	① ③ ⑥	① ③ ⑤ ⑦	① ③ ⑤ ⑦	① ③ ④ ⑥
Strut for WT ≥35 cm	① ③ ⑤ ⑦	① ③ ⑤ ⑦	① ③ ⑥	① ③ ④ ⑥

Tab. B4.02



Panels MX-2 270x240 are connected to the short side of the I-Corner MXI-2 270x50/20 as standard. If this is not possible, only the following elements may be connected:

- Panel MX-2 270x30
- Panel MX-2 270x45

(Fig. B4.01)

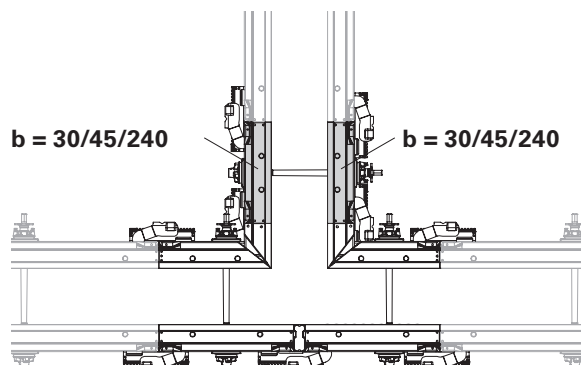


Fig. B4.01

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. B4.02)

Example:

Wall thickness 25 cm

- F – G: Tab. B4.01
- S1 – S3: Tab. B4.02

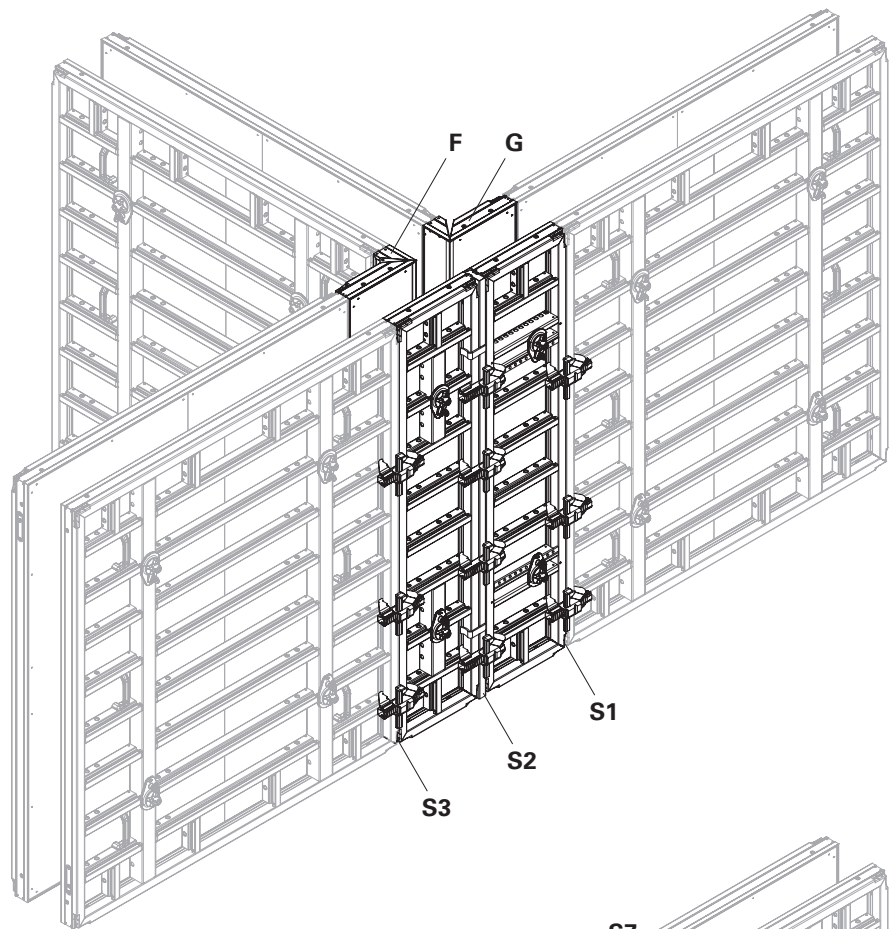


Fig. B4.02

View of T-junction (Fig. B4.03)

Example:

Wall thickness 25 cm

- A – E: Tab. B4.01
- S4 – S7: Tab. B4.02

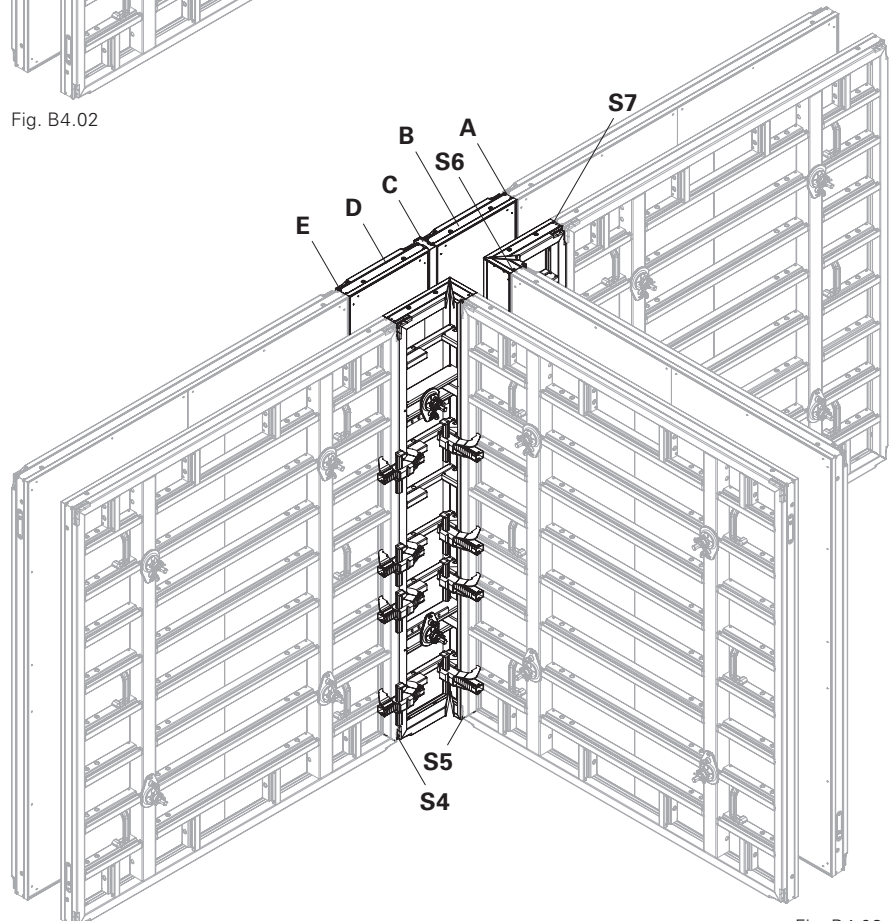


Fig. B4.03

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
45	MX-2 45	MX-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20
50	MX-2 45	MX-2 60	–	MX-2 45	MXI-2 50/20	MXI-2 50/20
55	MX-2 45	MX-2 60	WDA 5 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20
60	MX-2 45	MX-2 60	WDA 10 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. B4.03

Arrangement of Alignment Couplers BFD (Fig. B4.05 + Fig. B4.06)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S5 – S8	
Strut	② ⑦	② ④ ⑦	② ⑦	② ⑦	① ③ ④ ⑥	
Strut for WT 50 cm	② ⑦	② ⑦	② ⑦	② ⑦	① ③ ④ ⑥	
Compensation Waler-4 MAR 170 on continuous wall section						
Strut	① ③ ⑥ ⑧					

Tab. B4.04



Panels MX-2 270x240 are connected to the short side of the I-Corner MXI-2 270x50/20 as standard. If this is not possible, only the following elements may be connected:

- Panel MX-2 270x30
 - Panel MX-2 270x45
- (Fig. B4.04)

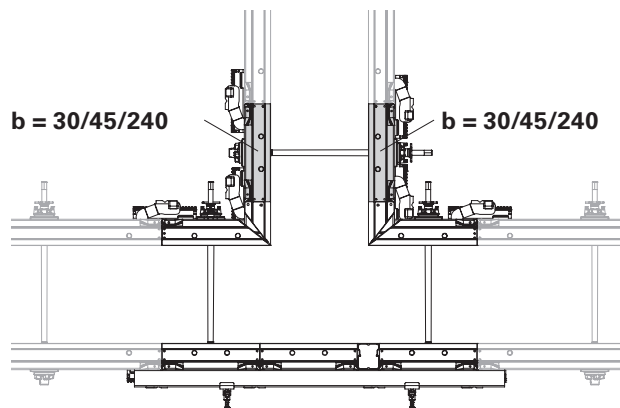


Fig. B4.04

Arrangement of the alignment couplers

Valid for wall thicknesses < 40 – 60 cm

View of continuous wall section (Fig. B4.05)

Example:

Wall thickness 45 cm

- E – F: Tab. B4.03
- S1 – S4: Tab. B4.04

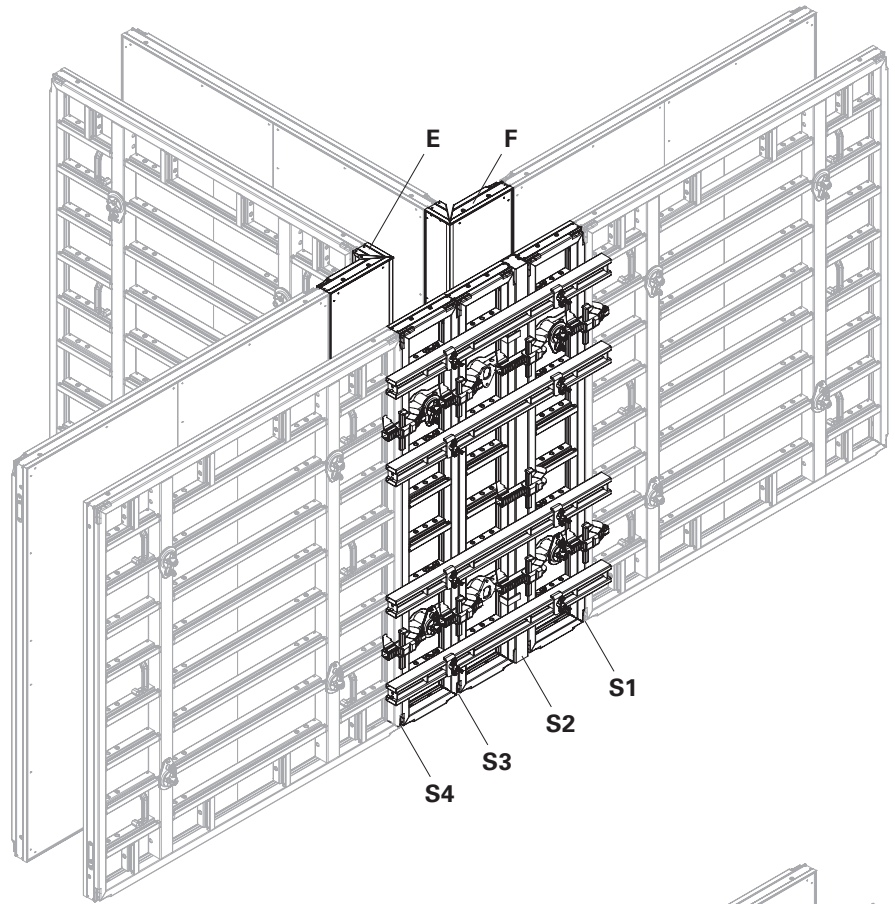


Fig. B4.05

View of T-junction (Fig. B4.06)

Example:

Wall thickness 45 cm

- A – D: Tab. B4.03
- S5 – S8: Tab. B4.04

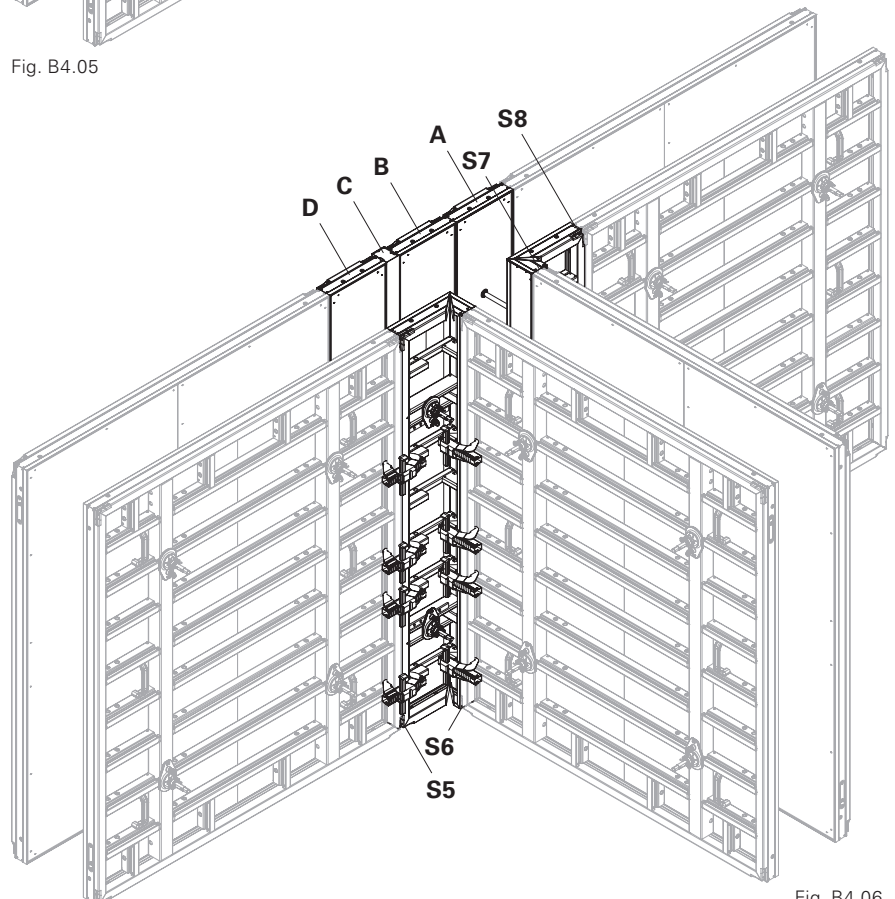


Fig. B4.06

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
15	MX-2 45	MX-2 45	–	MX-2 45	MXI-2 60	MXI-2 60
17.5	MX-2 45	MX-2 45	KH 2.5 ²⁾	MX-2 45	MXI-2 60	MXI-2 60
20	MX-2 45	MX-2 45	–	MX-2 45	MXI-2 60	MXI-2 60
24	MX-2 45	MX-2 45	KH 9 ²⁾	MX-2 45	MXI-2 60	MXI-2 60
25	MX-2 45	MX-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
30	MX-2 45	MX-2 60	–	MX-2 45	MXI-2 60	MXI-2 60
35	MX-2 45	MX-2 60	WDA 5 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
36	MX-2 45	MX-2 60	WDA 6 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
40	MX-2 45	MX-2 60	WDA 10 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. B5.01

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. B5.01 + Fig. B5.02)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S4 – S8	
Strut	② ⑦	② ④ ⑦	② ⑦	② ⑦	① ③ ④ ⑥	
Brace for WT 15, 20 and 30 cm	② ⑦	② ⑦	② ⑦	② ⑦	① ③ ④ ⑥	
Compensation Waler-4 MAR 170 on continuous wall section						
Strut	① ③ ⑥ ⑧					

Tab. B5.02

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. B5.01)

Example:

Wall thickness 25 cm

- E – F: Tab. B5.01
- S1 – S4: Tab. B5.02

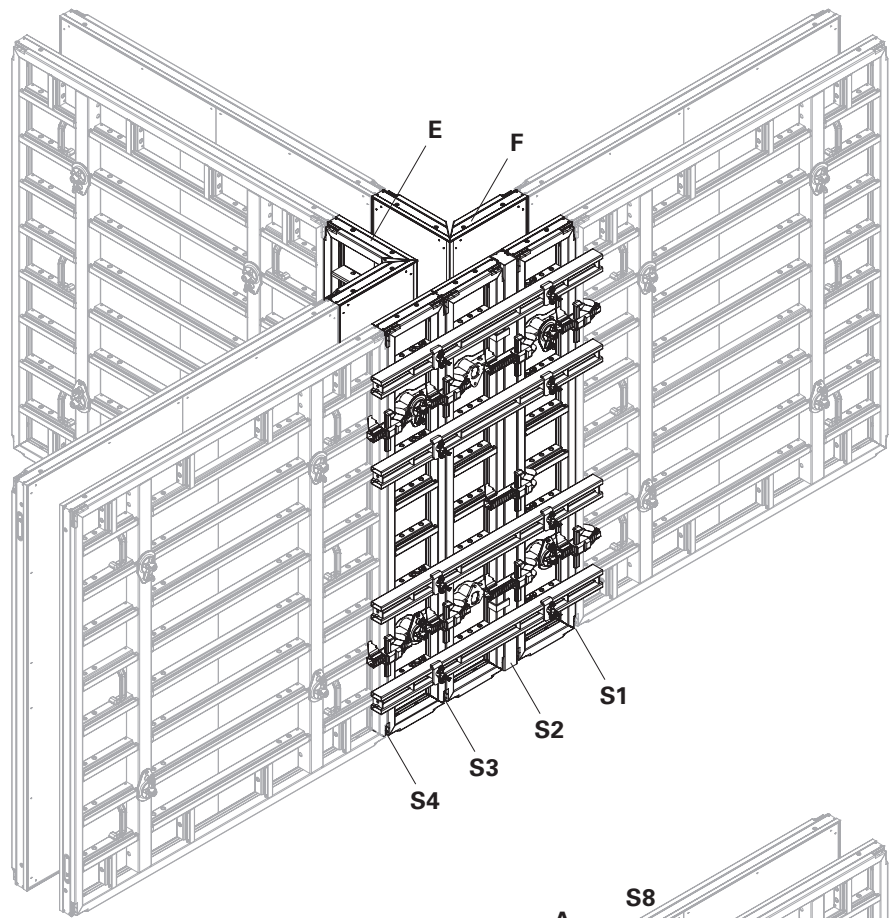


Fig. B5.01

View of T-junction (Fig. B5.02)

Example:

Wall thickness 25 cm

- A – D: Tab. B5.01
- S5 – S8: Tab. B5.02

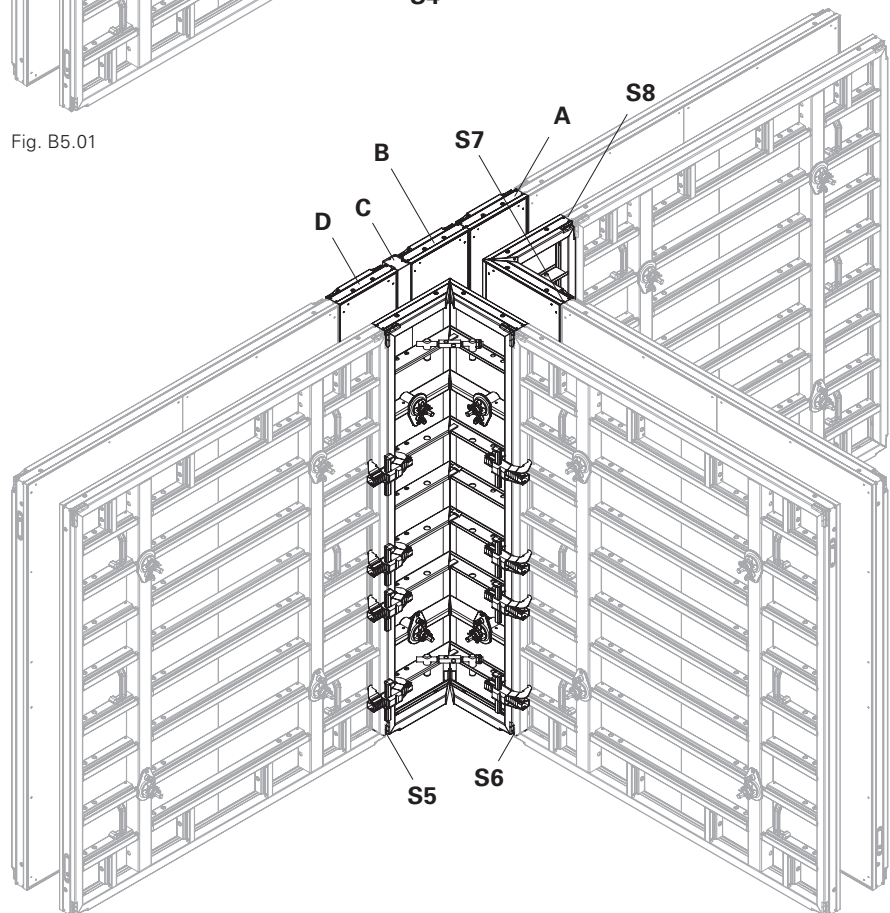


Fig. B5.02

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
45	MX-2 60	MX-2 45	–	MX-2 60	MXI-2 60	MXI-2 60
50	MX-2 60	MX-2 45	WDA 5 ¹⁾	MX-2 60	MXI-2 60	MXI-2 60
55	MX-2 60	MX-2 45	WDA 10 ¹⁾	MX-2 60	MXI-2 60	MXI-2 60
60	MX-2 60	MX-2 60	–	MX-2 60	MXI-2 60	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. B5.03

Arrangement of Alignment Couplers BFD/Steel Walers SRU 197 U120 (Fig. B5.03 + Fig. B5.04)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S5 – S8	
Strut	② ⑦	② ④ ⑦	② ⑦	② ⑦	① ③ ④ ⑥	
Strut for WT 45 and 60 cm	② ⑦	② ⑦	② ⑦	② ⑦	① ③ ④ ⑥	
Steel Waler SRU 197 U120 on continuous wall section						
Strut	① ③ ⑥ ⑧					

Tab. B5.04

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. B5.03)

Example:

Wall thickness 50 cm

- E – F: Tab. B5.03
- S1 – S4: Tab. B5.04

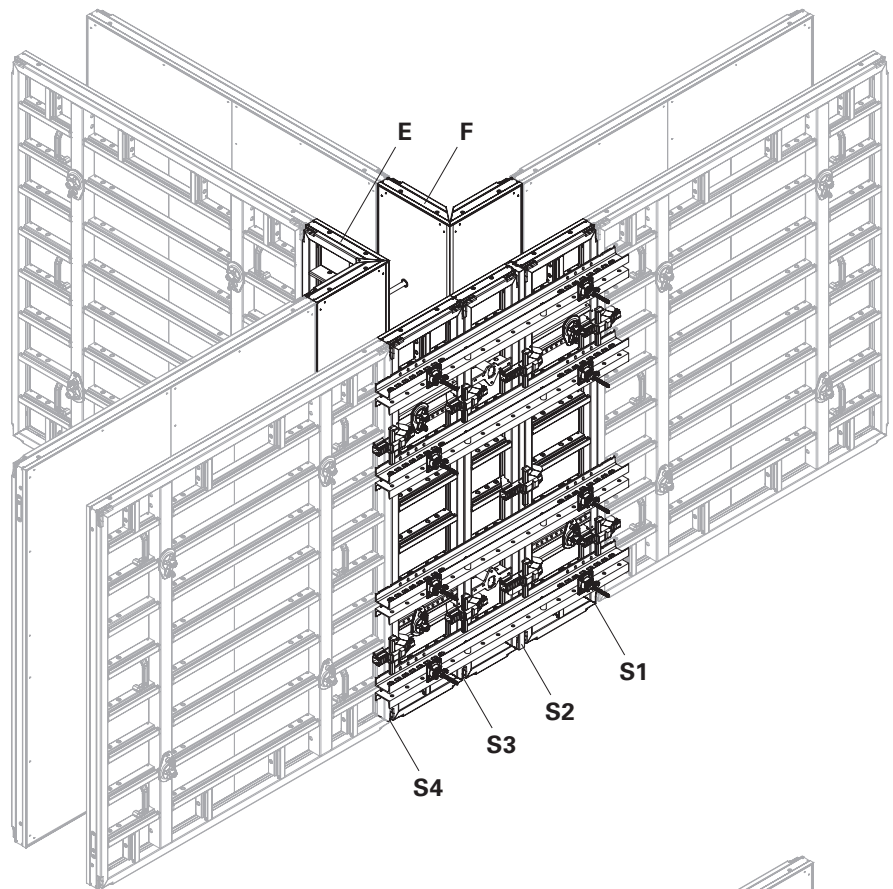


Fig. B5.03

View of T-junction (Fig. B5.04)

Example:

Wall thickness 50 cm

- A – D: Tab. B5.03
- S5 – S8: Tab. B5.04

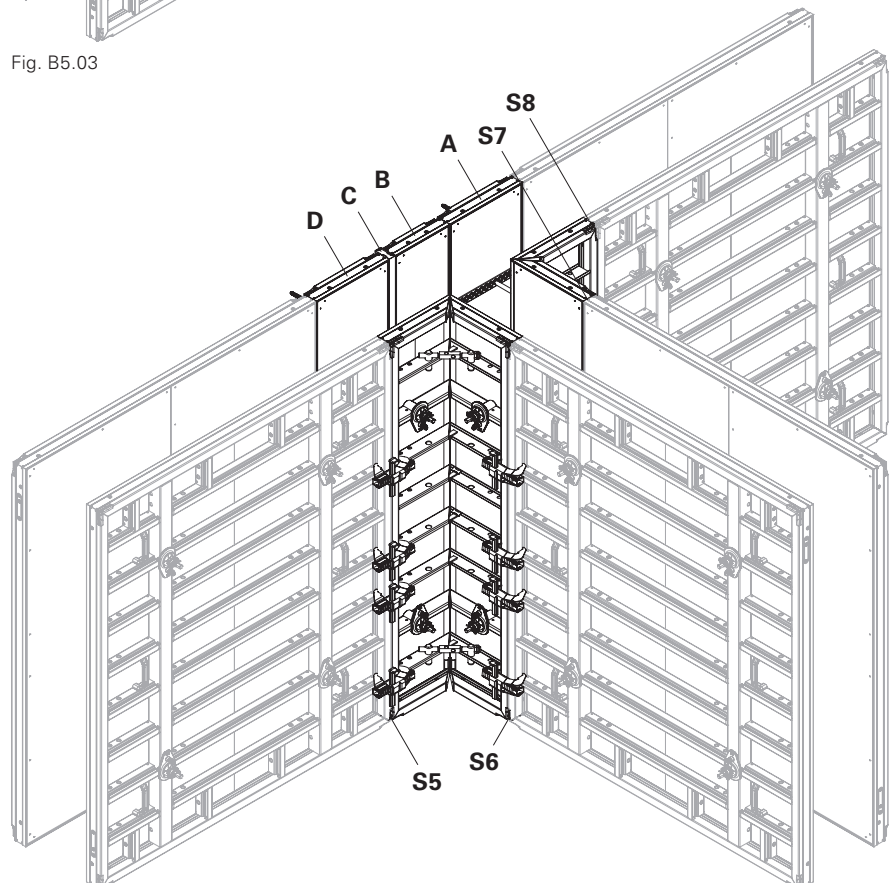


Fig. B5.04



If Panels MX-2 with $b \leq 120$ cm following 90° T-junctions are envisaged, Compensation Waler-4 MAR 85 (**33**) must be installed at the next panel joint for reinforcement.

With height extensions, a second Compensation Waler-4 MAR 85 (**33**) is required on the panel joint (shown as a dotted line). (Fig. B6.02 + Fig. B6.03)

Example

View from above (Fig. B6.01)

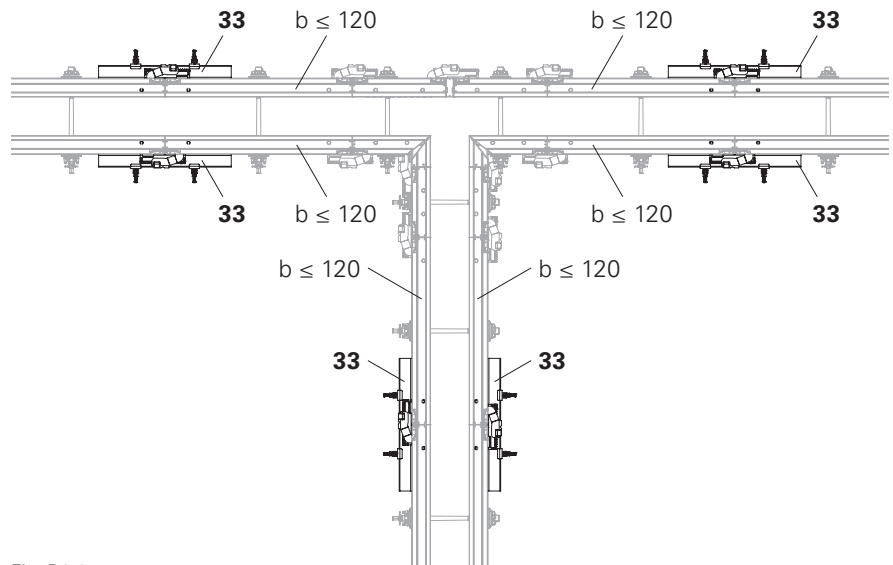


Fig. B6.01

B6 Panel connections following 90° T-junctions

Arrangement of alignment couplers and Compensation Walers-4 MAR 85

View of straight wall section (Fig. B6.02)

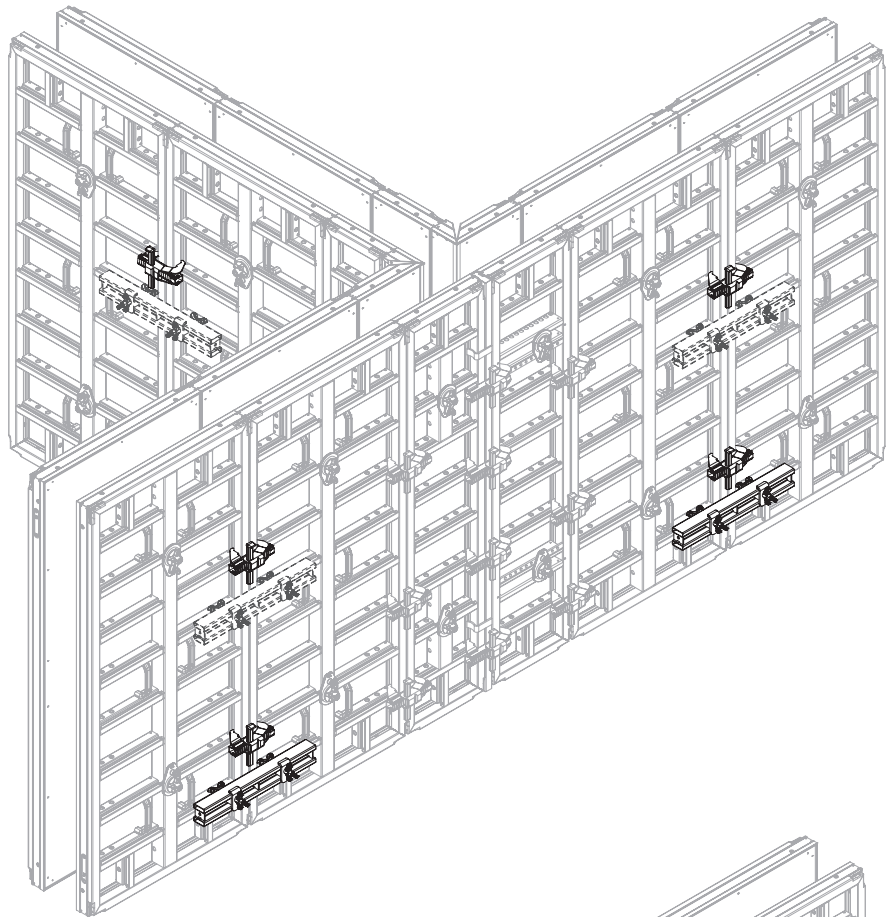


Fig. B6.02

View of T-junction with I-Corner MXI-270x50/20 (Fig. B6.03)

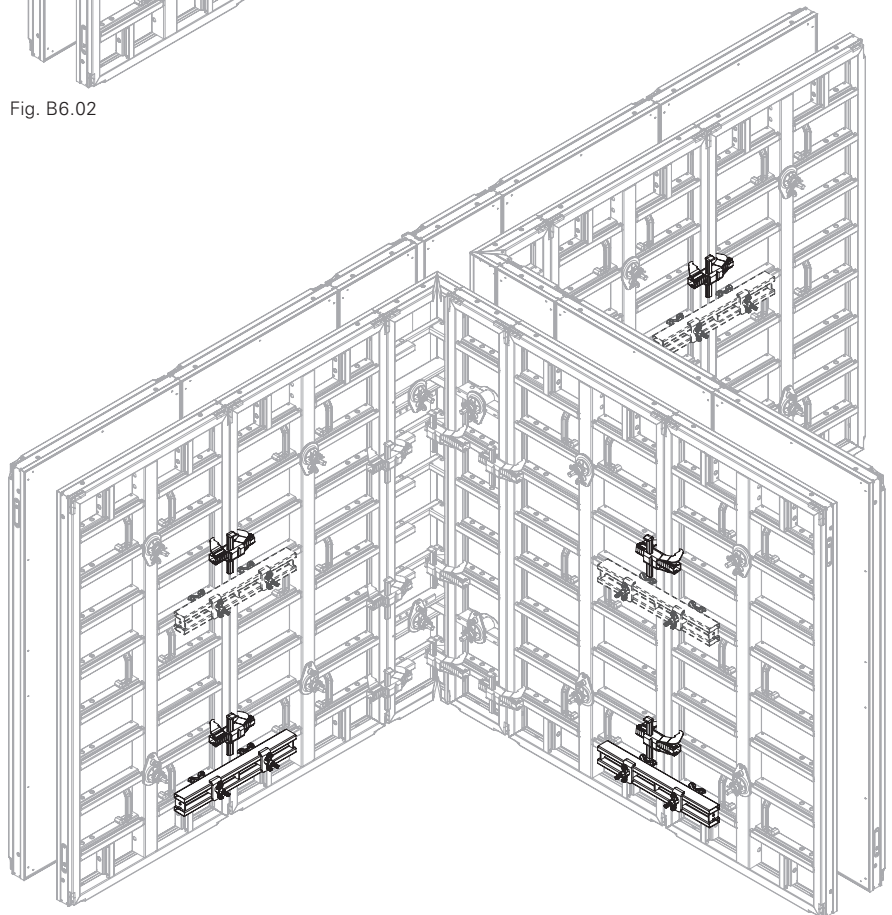


Fig. B6.03

Wall Thi. Com. WDA MX 270



- No additional ties required.
- Longitudinal infill up to 10 cm.
- In contrast to the standard joint, in the case of wall thickness compensation, an additional Alignment Coupler BFD is fitted.

Components	Pcs.
28 Alignment Coupler BFD	3x
26 Wall Thick Comp. WDA MX	1x
or	
91 Squared timber	1x

Longitudinal infills can be created with Wall Thick.Comp. WDA MX 270 x width **(26)** or with squared timber cut to size **(91)**.



Number and arrangement of the Alignment Couplers BFD **(28)**. (Fig. B7.01)

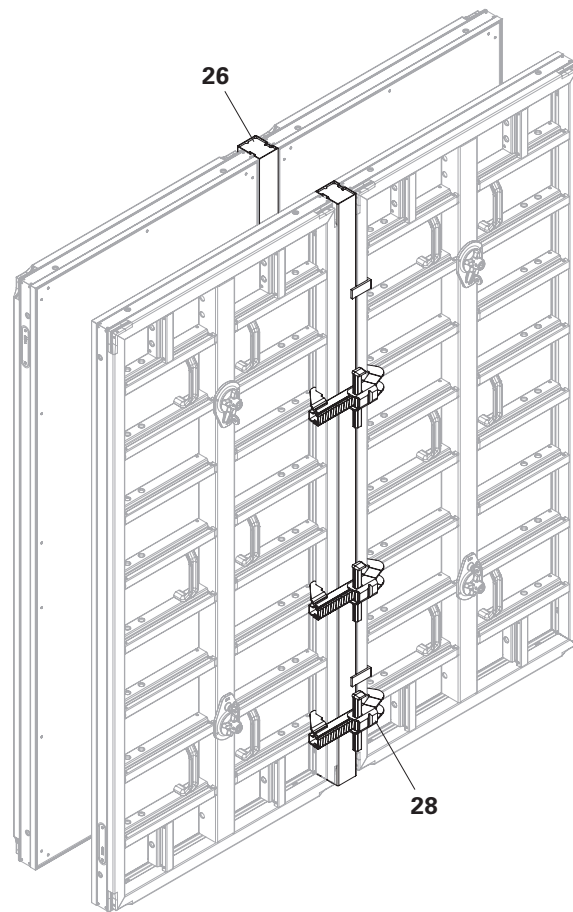


Fig. B7.01

Filler Profile TPP 270 Alu

Longitudinal infill from 20 to 36 cm



- Perm. fresh concrete pressure 80 kN/m² for: $b \geq 20$ and $b < 30$ cm
- Perm. fresh concrete pressure 60 kN/m² for: $b \geq 30$ and $b < 36$ cm

Components	Pcs.
28 Alignment Coupler BFD	4x
33 Compensation Waler-4 MAR 85	2x
96 21 mm filler plate	1x
97 Filler Profile TPP 270 Alu	2x
or	
91 Squared timber	2x



- When anchoring, ensure that the tie forces are transferred centrally through the Compensation Waler-4 MAR 85 (**33**) to the adjacent panels. (Fig. B7.02b)
- Assembly: (Fig. B7.02 + Fig. B7.02a)



Two Wall Thick.Comp. MX 270 or squared timbers can be mounted on two different joints for 10 cm – 20 cm compensations.

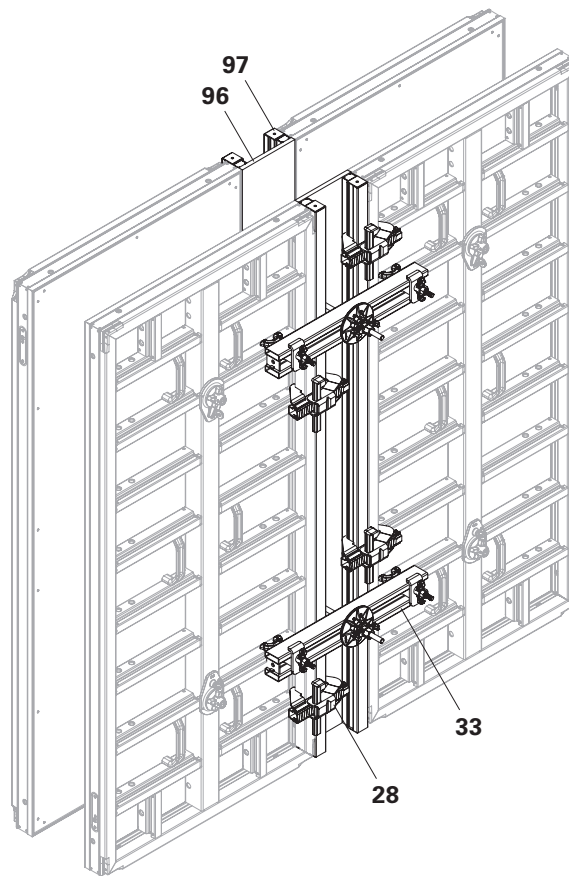


Fig. B7.02

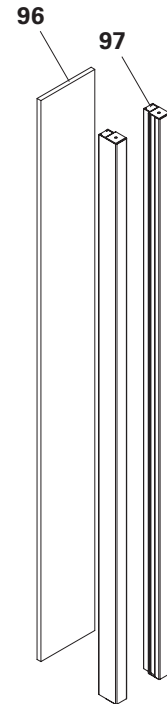


Fig. B7.02a

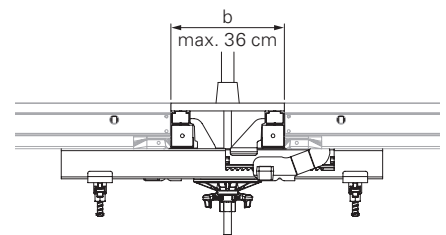


Fig. B7.02b

Bulkhead Tie MX/TR and Waler 85

For wall thickness ≤ 40 cm



The fresh concrete pressure of the stop end formwork is transferred to the Panels MX-2 via the Bulkhead Ties MX/TR (99) and Walers 85 (21).

Wall end with Panels MX-2 270 x width

- Applicable to Panels MX-2: 270x30/45/60/90/120 /
- Shown: 270x120 (Fig. B7.03 + Fig. B7.04)

Components

Components	Pcs.
7 Tie Rod DW15	2x
21 Waler 85	3x
50 Wingnut Pivot Plate DW15 ga	10x
70 Top Tie Holder-2 AH	4x
91 Squared timber	2x
96 21 mm filler plate	1x
99 Bulkhead Tie MX/TR	6x

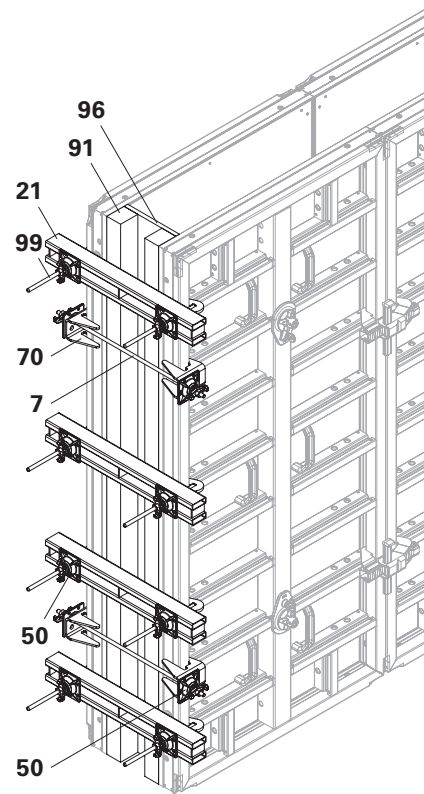


Fig. B7.03

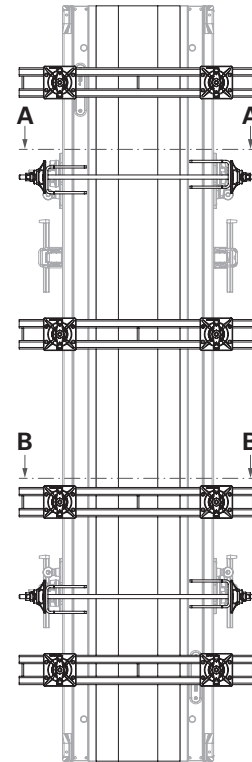


Fig. B7.04

Sectional views

- Top Tie Holder-2 AH (70) with Tie Rod DW15 (7) and Wingnut Pivot Plate DW15 ga (50). (Fig. B7.04a)
- Waler 85 (21) with Bulkhead Tie MX/TR (99) and Wingnut Pivot Plate DW15 ga (50). (Fig. B7.04b)



As an alternative to Waler 85 (21), the Compensation Waler-4 MAR 85 (33) can also be used.

A-A

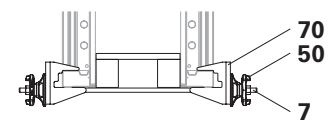


Fig. B7.04a

B-B

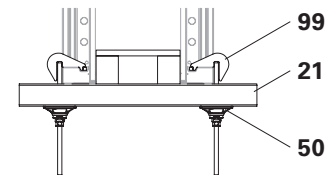


Fig. B7.04b

B8 Stop end formwork

Wall end with Panel MX-2 270 x 240 (not shown)

Components	Pcs.
21 Waler 85	4x
50 Wingnut Pivot Plate DW 15	8x
91 Squared timber	2x
96 21 mm filler plate	1x
99 Bulkhead Tie MX/TR	8x

Waler 85 (**21**) with Bulkhead Tie MX/TR (**99**) and Wingnut Pivot Plate DW15 ga (**50**).



As an alternative to Waler 85 (**21**), the Compensation Waler-4 MAR 85 (**33**) can also be used.

Alignment Coupler BFD

Panel MX-2 270x30 (**5**) can be used as a stop end panel for a wall thickness of 30 cm. (Fig. B8.01)

Pos. Components

5 Panel MX-2 270x30
28 Alignment Coupler BFD



Alternatively, the Stop End Panel TR 270x24 can also be used as a stop end panel.

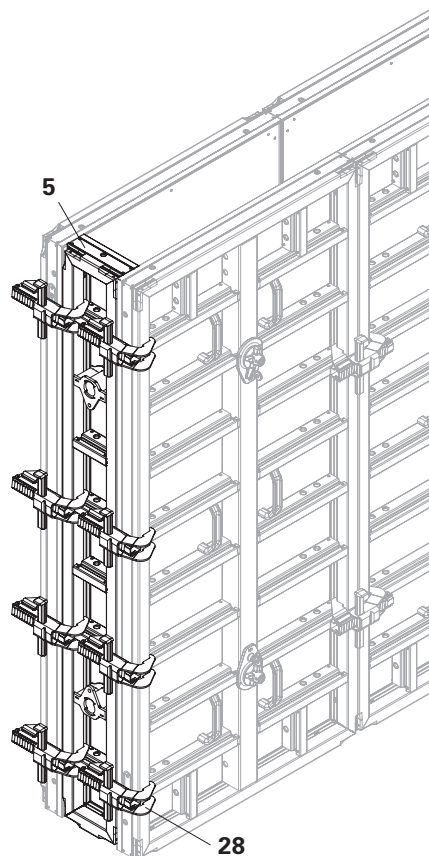


Fig. B8.01

Stop end panel reinforcement without Water Bar Installation MT

Height of 270 cm (Fig. B8.02a)
 Height of 120 cm (Fig. B8.02b)

Consisting of:

- 2x Stop. Panel TRIO AT 3 (**100a**) for approx. 2.5 cm concrete cover or 2x Stop. Panel TRIO AT 5 (**100b**) for approx. 5 cm concrete cover
- 1x Stop. Panel TRIO MT (**101**) (Fig. B8.03)



- Perm. fresh concrete pressure depending on the wall thickness:
 - 80.0 kN/m² for WT < 30 cm
 - 67.5 kN/m² for WT ≥ 30 cm and < 35 cm
 - 60.0 kN/m² for WT ≥ 35 cm and ≤ 40 cm
- The rubber lip (**100.1**) allows for a continuous reinforcement thickness of max. 16 mm.

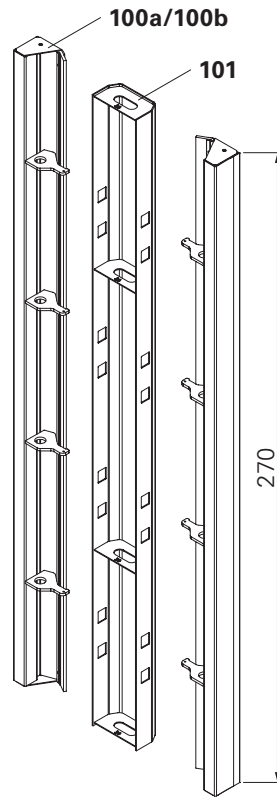


Fig. B8.02a

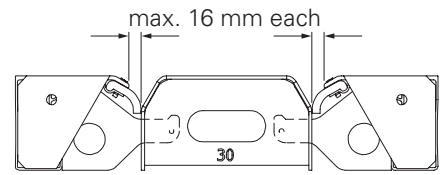


Fig. B8.03

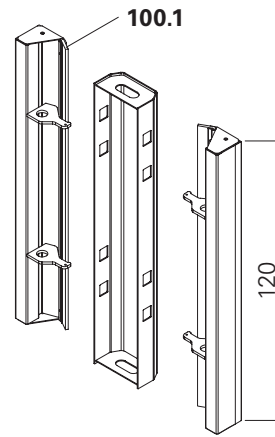


Fig. B8.02b

Concrete cover c:

$$c = \frac{d - b}{2} - \varnothing \text{ reinforcement}$$

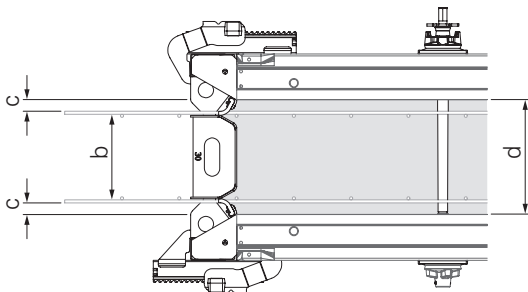


Fig. B8.04

Assembly

1. Position primary formwork.
 2. Fix Stop. Panel TRIO AT (100) to the primary formwork by means of the Alignment Coupler BFD (28).
 3. Install first row of reinforcement.
 4. Position Stop. Panel TRIO MT (101).
 5. Install second row of reinforcement.
 6. Fix Stop. Panel TRIO AT (100) to the closing formwork by means of the Alignment Coupler BFD (28).
 7. Position the closing formwork and in doing so insert Stop. Panel TRIO AT (100) into Stop. Panel TRIO MT (101).
- (Fig. B8.05)

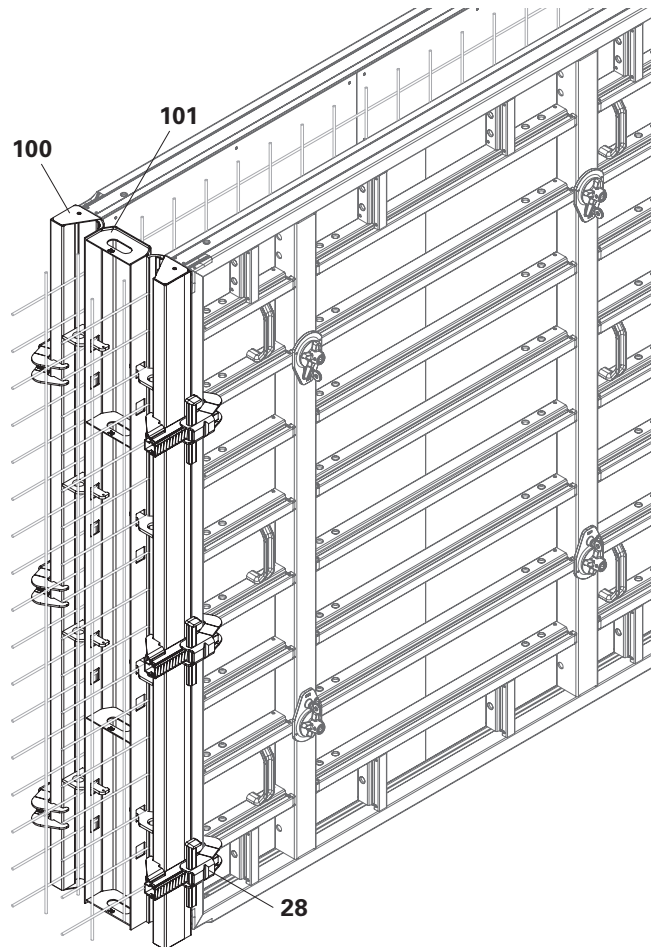


Fig. B8.05

Components



- Combination table for stop end panels without water bar installation at height 2.70 m (Tab. B8.01)
- Combination table for stop end panels without water bar installation at height 1.20 m (Tab. B8.02)

	b [mm]	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
		20	24/25	30	35	24 / 25	30	35	40
H = 2.70 m									
AT 270x3	–	2	2	2	2				
AT 270x5	–					2	2	2	2
MT 270x20	118	1				1			
MT 270x24/25	158		1				1		
MT 270x30	218			1				1	
MT 270x35/36	268				1				1

Tab. B8.01

H = 1.20 m		20	24 / 25	30	35	24 / 25	30	35	40
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
MT 120x20	118	1				1			
MT 120x24/25	158		1				1		
MT 120x30	218			1				1	
MT 120x35/36	268				1				1

Tab. B8.02

Stop end panel reinforcement with Water Bar Installation MTF

Height of 270 cm (Fig. B8.06a)
 Height of 120 cm (Fig. B8.06b)

Consisting of:

- 2x Stop. Panel TRIO AT 3 (**100a**) for approx. 2.5 cm concrete cover or 2x Stop. Panel TRIO AT 5 (**100b**) for approx. 5 cm concrete cover
- 1x Stop. Panel TRIO MTF (**102**) (Fig. B8.07)



- Perm. fresh concrete pressure depending on the wall thickness:
 - 80.0 kN/m² for WT < 30 cm
 - 67.5 kN/m² for WT ≥ 30 cm and < 35 cm
 - 60.0 kN/m² for WT ≥ 35 cm and ≤ 40 cm
- The rubber lip (**100.1**) allows for a continuous reinforcement thickness of max. 16 mm.

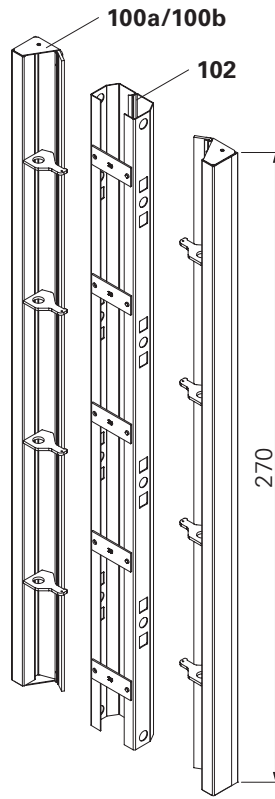


Fig. B8.06a

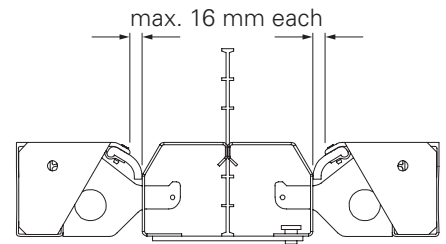


Fig. B8.07

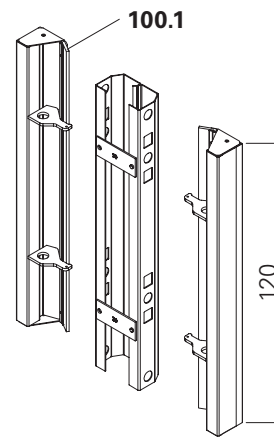


Fig. B8.06b

Concrete cover c:

$$c = \frac{d - b}{2} - \varnothing \text{ reinforcement}$$

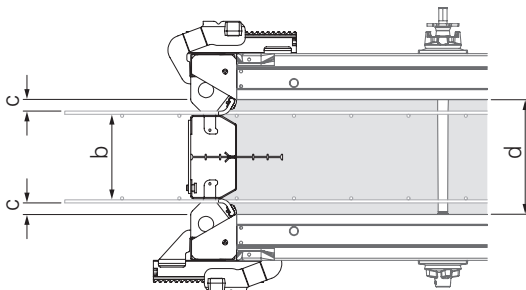


Fig. B8.08

Stop end panel reinforcement with expandable water bar

Consisting of:

- 2x Stop. Panel TRIO AT (**100**)
- 1x Stop. Panel TRIO MTF (**102**)
- Filler plates supplied by the contractor (**96**)

(Fig. B8.09)

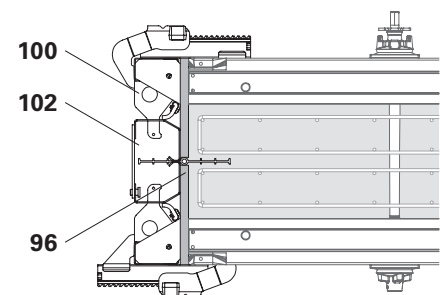


Fig. B8.09

Assembly

1. Position primary formwork.
2. Fix Stop. Panel TRIO AT (100) to the primary formwork by means of the Alignment Coupler BFD (28).
3. Install first row of reinforcement.
4. Position Stop. Panel TRIO MTF (102) and fit the water bar (102.1).
5. Install second row of reinforcement.
6. Fix Stop. Panel TRIO AT (100) to the closing formwork by means of the Alignment Coupler BFD (28).
7. Position the closing formwork and in doing so insert Stop. Panel TRIO AT (100) into Stop. Panel TRIO MTF (102).

(Fig. B8.10)

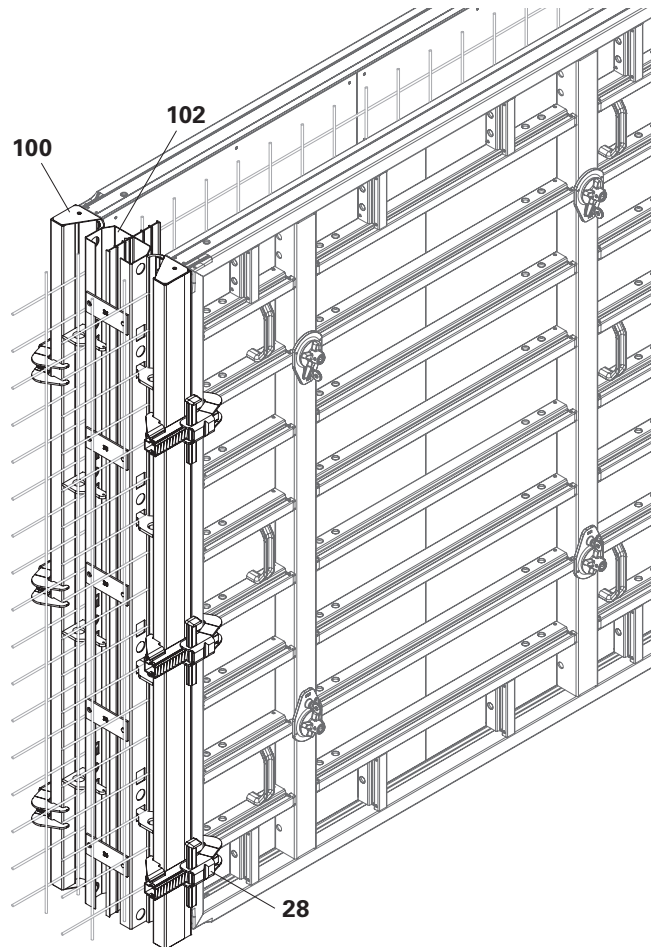


Fig. B8.10

Components



- Combination table for stop end panels with water bar installation at height 2.70 m (Tab. B8.03)
- Combination table for stop end panels with water bar installation at height 1.20 m (Tab. B8.04)

	b [mm]	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
		20	24 / 25	30	35	24 / 25	30	35	40
H = 2.70 m									
AT 270x3	–	2	2	2	2				
AT 270x5	–					2	2	2	2
MTF 270x20	118	1				1			
MTF 270x24/25	158		1				1		
MTF 270x30	218			1				1	
MTF 270x35/36	268				1				1

Tab. B8.03

H = 1.20 m		20	24 / 25	30	35	24 / 25	30	35	40
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
MTF 120x20	118	1				1			
MTF 120x24/25	158		1				1		
MTF 120x30	218			1				1	
MTF 120x35/36	268				1				1

Tab. B8.04

Extension guidelines

Pre-assembly resting on the ground at $H \leq 5.40$ m

Assembly information

- The assembly surface must be level.
- Place squared timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position with the formwork panel facing downwards.

Panel connections

For extension units with height $H \leq 5.40$ m, Alignment Couplers BFD (28) are to be used on panel joints.
 – Examples: (Fig. B9.01a – Fig. B9.01d)



- Fit the Wingnuts MX15 for the tie points on the ground during pre-assembly.
- If a Panel MX-2 H = 30 cm is added horizontally, the tie can be dispensed with for this panel. The unused tie point must be sealed with a Plug MXM15 $\text{\O}18.3\text{mm}$ (71).

**MX-2 270x
30 / 45 / 60**

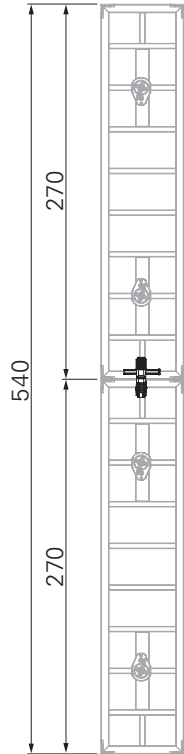


Fig. B9.01a

**MX-2 270x
90 / 120**

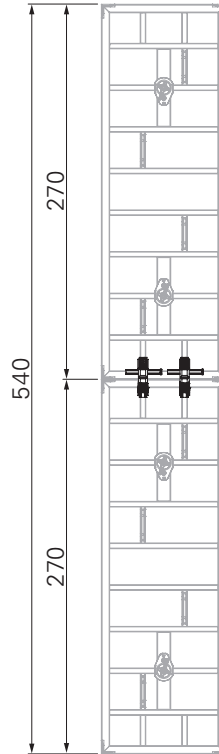


Fig. B9.01b

MX-2 270x240

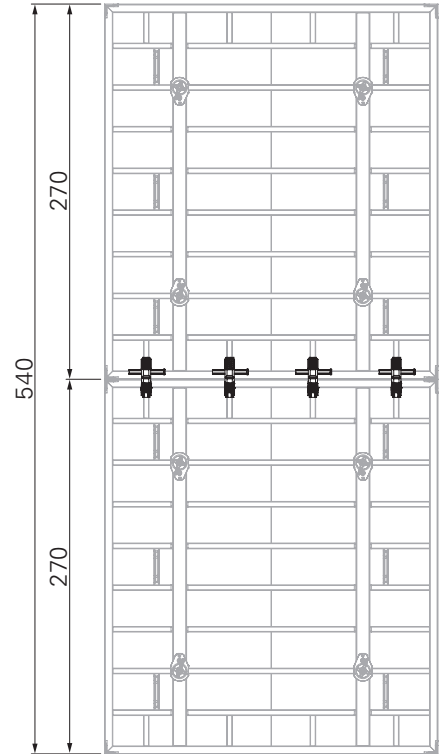


Fig. B9.01c

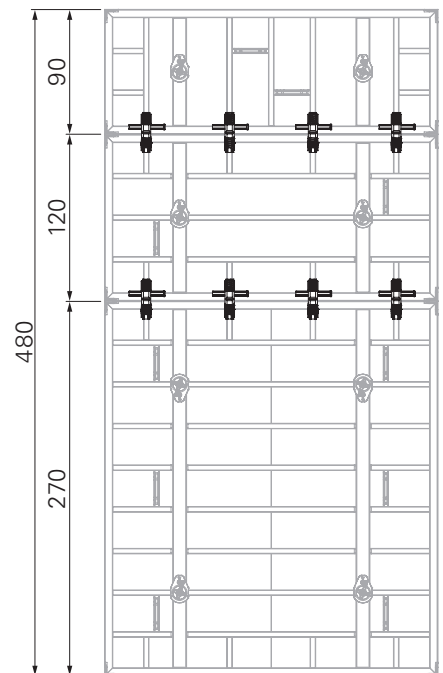


Fig. B9.01d

Erection with the crane

(Fig. B9.02)



Warning

Extension units that are incorrectly or insufficiently attached or incorrectly connected can come loose!

Falling extension units can strike people and cause serious injuries or even death.

- ⇒ Observe the permissible load-bearing capacity of the Lifting Hook MX 1.5t and the crane capacity!
- ⇒ Follow Instructions for Use for the Lifting Hook MX 1.5t!
- ⇒ Take note of the specified panel connections for the relevant height extension.

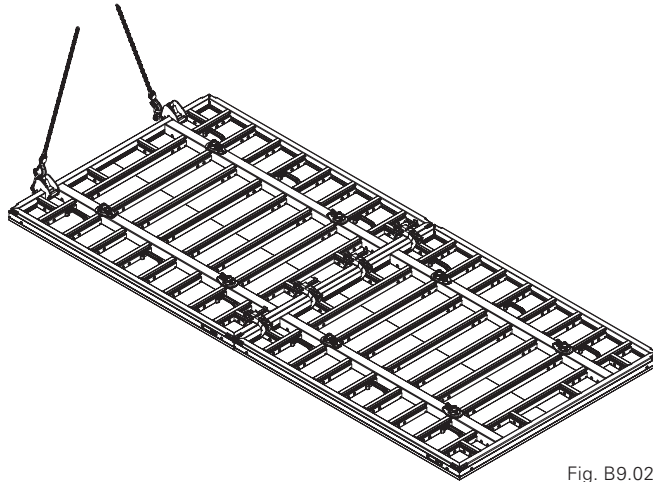


Fig. B9.02



Realise height extensions without any additional load (Push-Pull Props RS etc.).

Pre-assembly resting on the ground between $5.40\text{ m} < H \leq 8.10\text{ m}$

Assembly information

- The assembly surface must be level.
- Place squared timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position with the formwork panel facing downwards.

Panel connections

For extension units with a height of $5.40\text{ m} < H \leq 8.10\text{ m}$, fit Alignment Couplers BFD (28) and Compensation Walsers-4 MAR 85 (33) at the panel joints.

- Examples: (Fig. B9.03a – Fig. B9.03c)



- Fit the Wingnuts MX15 for the tie points on the ground during pre-assembly.
- If a Panel MX-2 H = 30 cm is added horizontally, the tie can be dispensed with for this panel. The unused tie point must be sealed with a Plug MXM15 Ø18.3mm (71).

**MX 270x
60/90 /120**

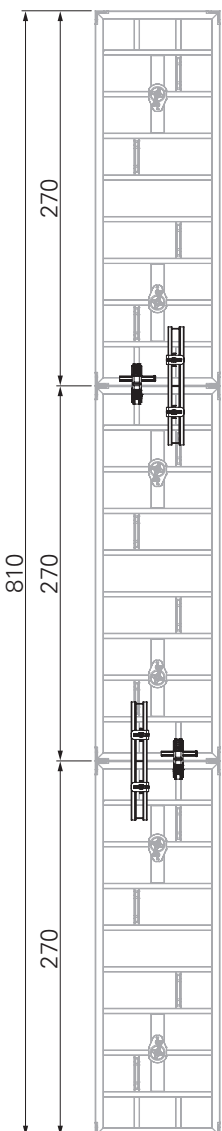


Fig. B9.03a

MX 270x240

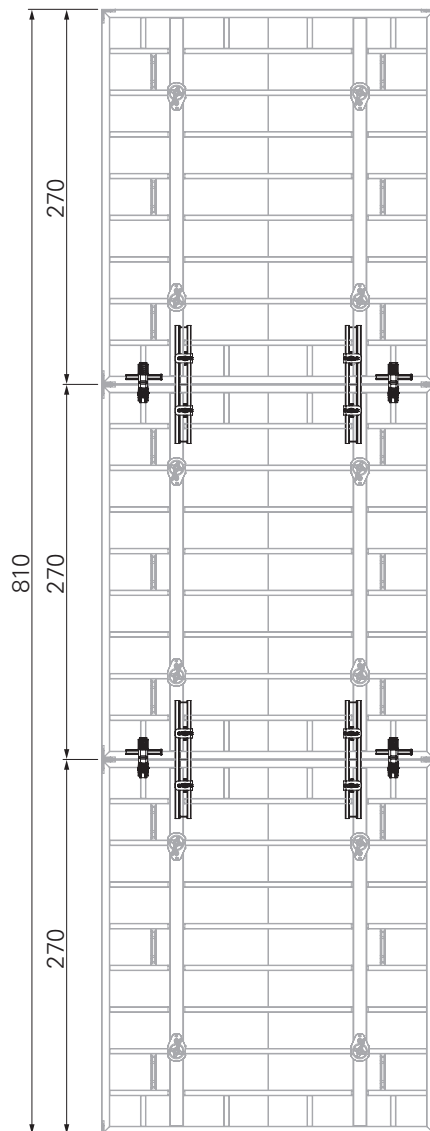


Fig. B9.03b

**MX 270x240
Horizontal panels**

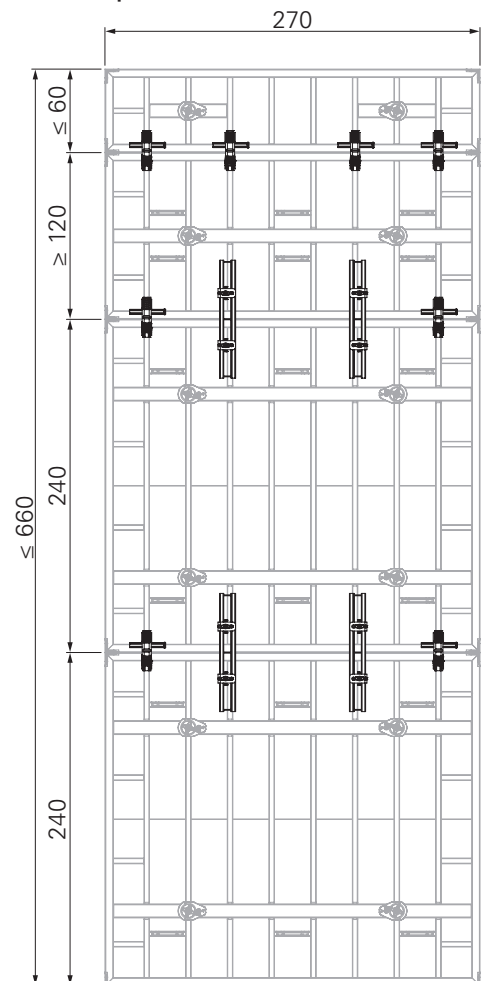


Fig. B9.03c

Erection with the crane

(Fig. B9.04)



Warning

Extension units that are incorrectly or insufficiently attached or incorrectly connected can come loose! Falling extension units can strike people and cause serious injuries or even death.

- ⇒ Observe the permissible load-bearing capacity of the Lifting Hook MX 1.5t and the crane capacity!
- ⇒ Follow Instructions for Use for the Lifting Hook MX 1.5t!
- ⇒ Take note of the specified panel connections for the relevant height extension.



Realise height extensions without any additional load (Push-Pull Props RS etc.).

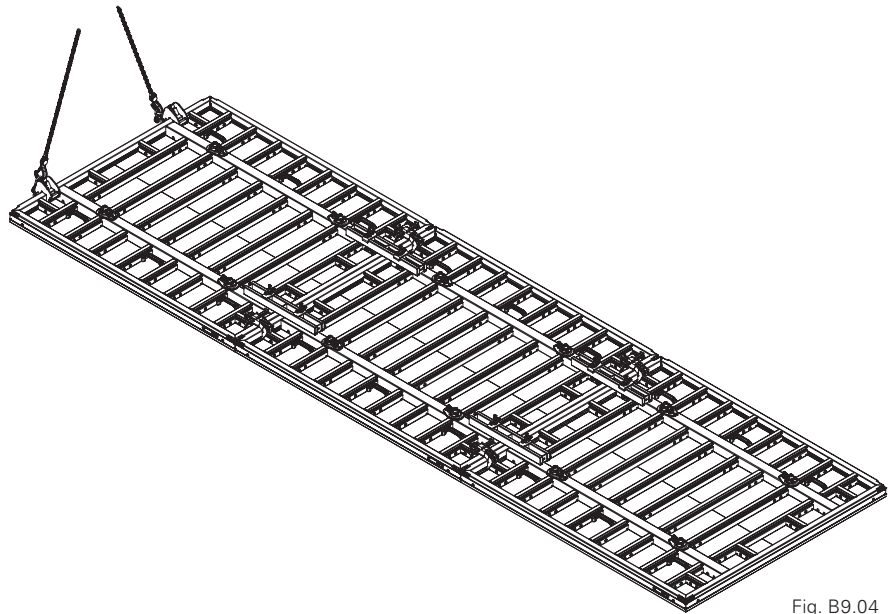


Fig. B9.04



For Panels MX-2 270x240, the Push-Pull Spreader MX can only be used in a horizontal position.



- With a concreting height of 2.40 m, the top tie is not required if a Push-Pull Spreader MX 15-40 or MX 15-100 is used.
- The specified distances must be adhered to
- The panels are braced by the three Push-Pull Spreaders MX (**55 / 66**). (Fig. B10.01)

Components

- 5** Panel MX-2
- 55** Push-Pull Spreader MX 15-40
- 55.1** Securing Hook
- 55.2** Mounting shoe
- 55.3** Spacer rack
- 66** Push-Pull Spreader MX 15-100



- Perm. fresh concrete pressure 60 kN/m²
- Perm. tension and compression force 9 kN
- Adjust Push-Pull Spreader MX to: Setting dimension = wall thickness +5 mm
- For information on how to prepare and fit the Push-Pull Spreader MX, see Section "A17 Parapets and foundations" on page 108.
- Close open tie points on the formlining with Plugs MXM15 Ø18.3 mm (**71**), see Section "Closures" on page 51.
- Always fit platforms and console brackets on the side of the securing hook (**55.1**).

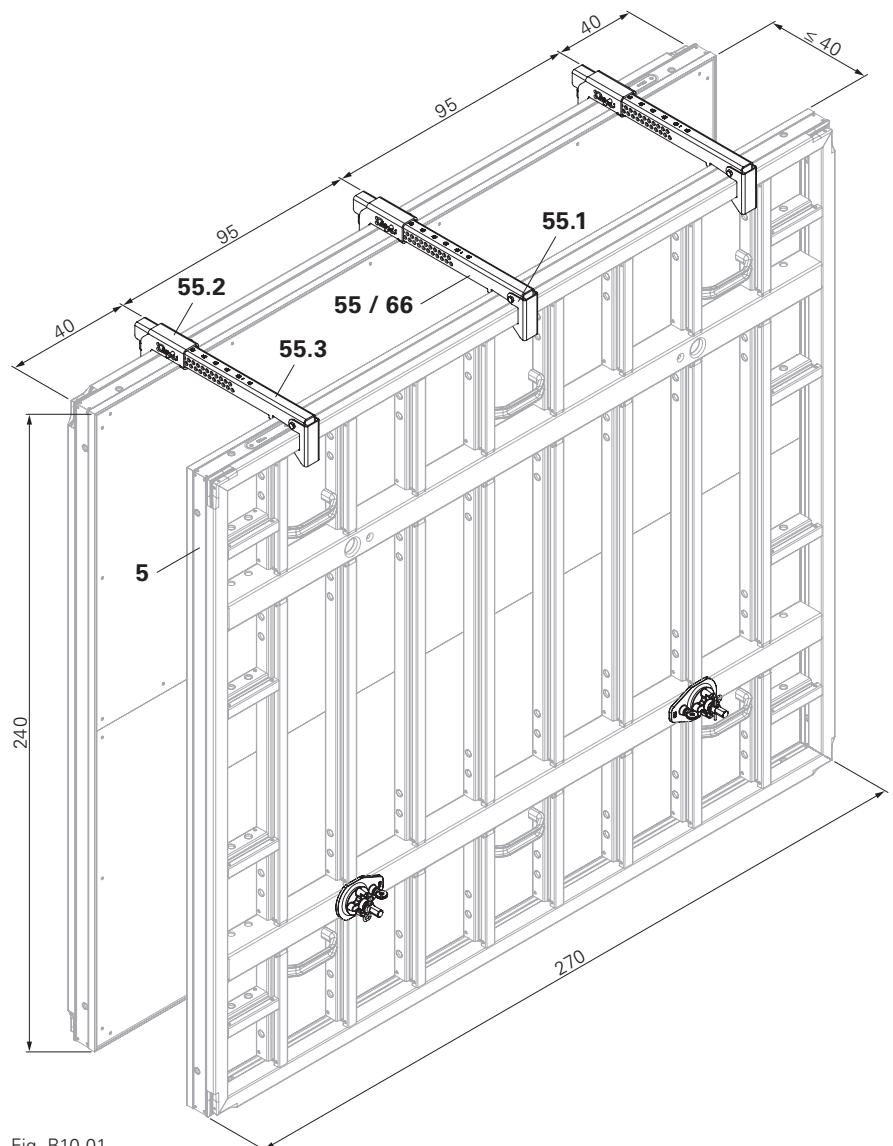


Fig. B10.01

Hydrostatic fresh concrete pressure



- Panel MX 18, 300 x 240 with Tie System MXc18
- Images not drawn to scale.
- Seal unused tie points with Plugs MXM18 Ø27.6 mm.

Triangular load

$$p_{hydr} = 75 \text{ kN/m}^2$$

2 tie points used (middle tie point free)
(Fig. C1.01a + Fig. C1.01b)

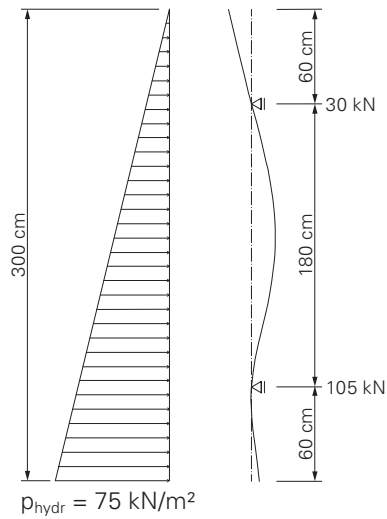


Fig. C1.01a

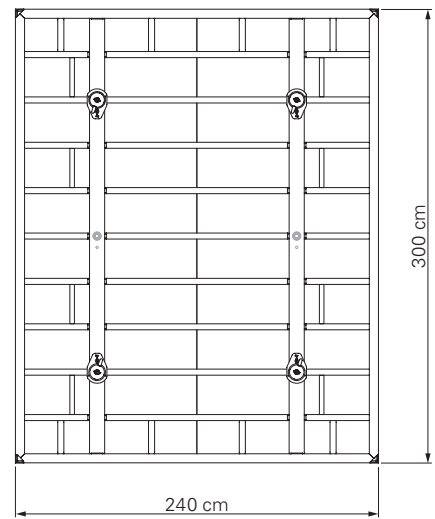


Fig. C1.01b

Measuring the deflection

Place the straight edge on the stripped concrete wall in an inclined position so that the top and bottom measuring wedges are even. (Fig. C1.01c)

Measure the deflection max. f at the bottom tie point and compare with the permissible deflection.
Determine the permissible deflection from the measuring point distance – here: wall height 3.00 m.

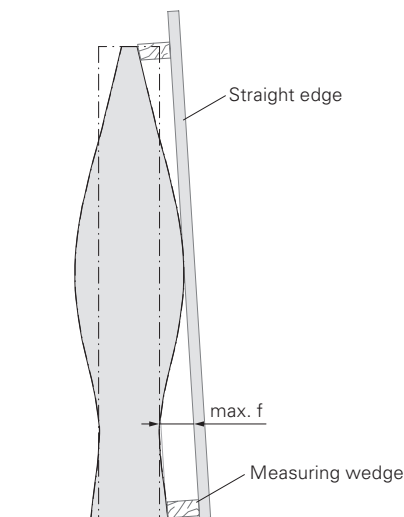


Fig. C1.01c

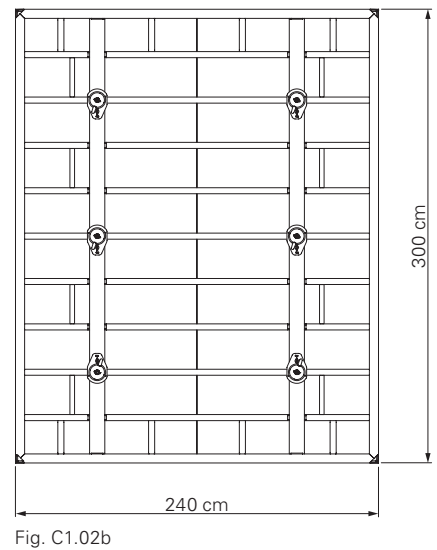
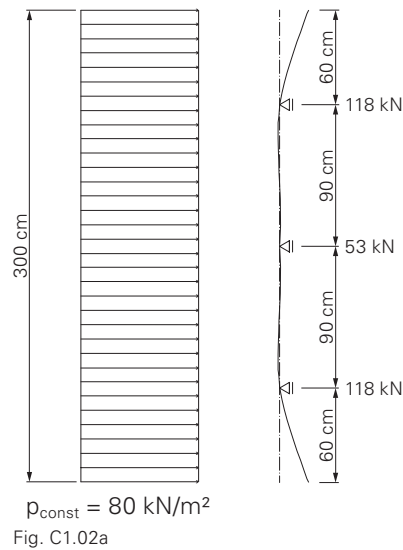
Constant fresh concrete pressure



- Panel MX 18, 300 x 240 with Tie System MX 18
- Images not drawn to scale.

Uniformly distributed load

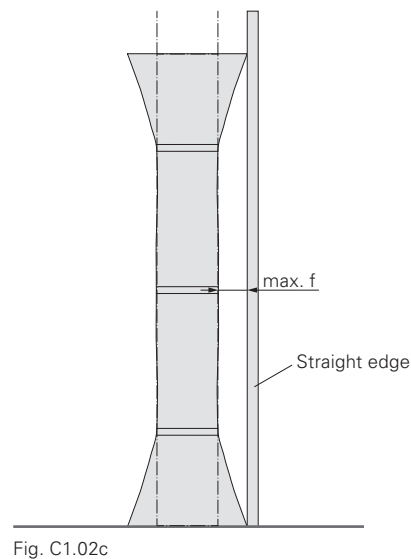
$p_{\text{const}} = 80 \text{ kN/m}^2$
 3 tie points used
 (Fig. C1.02a + Fig. C1.02b)



Measuring the deflection

Place the straight edge on the stripped concrete wall in a vertical position.
 (Fig. C1.02c)

Measure the deflection max. f at the tie points and compare with the permissible deflection.
 Determine the permissible deflection from the measuring point distance – here: wall height 3.00 m.



Outs. Corner MXA-2 300x45

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 50/20		
	A	B	C	D	E	F	G	H
15	–	MXA-2 45	–	MXM-2 60	WDA 5 ¹⁾	WDA 10 ¹⁾	MXI-2 50/20	MX-2 45
17.5	–	MXA-2 45	KH 2.5 ²⁾	MXM-2 60	WDA 5 ¹⁾	KH 7.5 ²⁾	MXI-2 50/20	MX-2 45
20	–	MXA-2 45	–	MX-2 30	–	WDA 5 ¹⁾	MXI-2 50/20	WDA 5 ¹⁾
24	–	MXA-2 45	–	MX-2 30	–	KH 1 ²⁾	MXI-2 50/20	KH 1 ²⁾
25	–	MXA-2 45	–	MX-2 30	–	–	MXI-2 50/20	–
30	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 30	–	–	MXI-2 50/20	–
35	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 30	–	–	MXI-2 50/20	–
36	WDA 10 ³⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 30	KH 1 ²⁾	–	MXI-2 50/20	–
40	MXM-2 60	MXA-2 45	–	MX-2 45	–	MX-2 45	MXI-2 50/20	–

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

³⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation. A 1 cm KH must then be fitted to the subsequent element

Tab. C2.01

Arrangement of Alignment Couplers BFD (Fig. C2.02 + Fig. C2.03)						
Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20			Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3 ³⁾	S4 + S5	S6	
Strut	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑦ ⑨	① ③ ④ ⑥ ⑨	

³⁾ Arrangement if no Panel MX-2 300x240 is connected directly to the I-Corner MXI-2 50/20

Tab. C2.02



Panels MX-2 300x240 are connected to the short side of the I-Corner MXI-2 300x50/20 as standard for wall thicknesses of 15 – 36 cm. If this is not possible, only the following elements may be connected:

- Panel MX-2 300x30
- Panel MX-2 300x45

(Fig. C2.01)

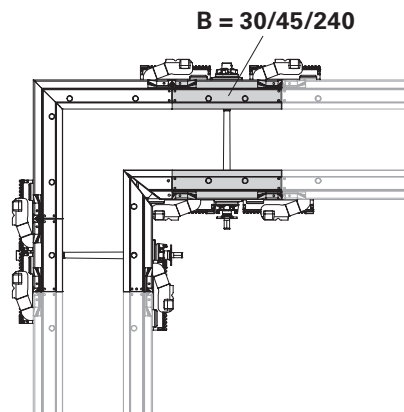


Fig. C2.01

C2 Corners 90° with I-Corner MXI-2 300x50/20

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of I-Corner MXI-2 300x50/20
(Fig. C2.02 + Fig. C2.02a)

Example:

Wall thickness 25 cm

- A – E: Tab. C2.01
- S1 – S3: Tab. C2.02

Position of joint S3 (WT 15 and 17.5)

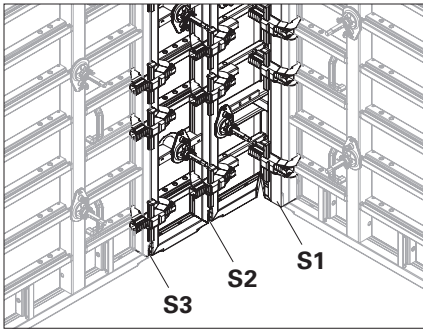


Fig. C2.02a

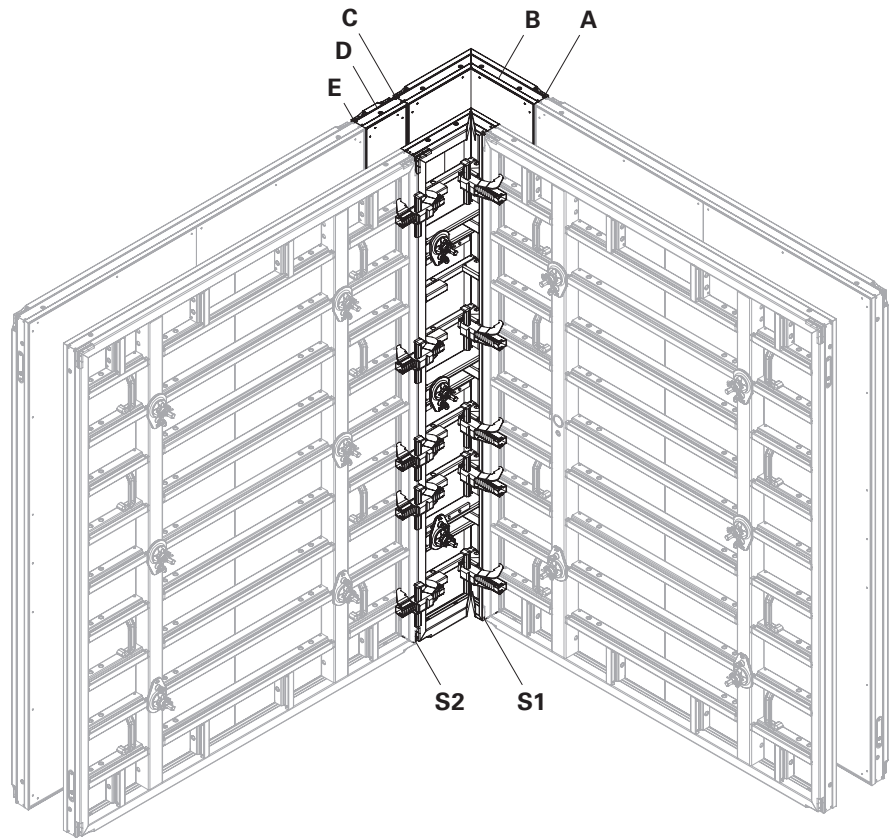


Fig. C2.02

Height 300

View of Outs. Cor. MXA-2 300x45
(Fig. C2.03)

Example:

Wall thickness 25 cm

- F – H: Tab. C2.01
- S4 – S6: Tab. C2.02

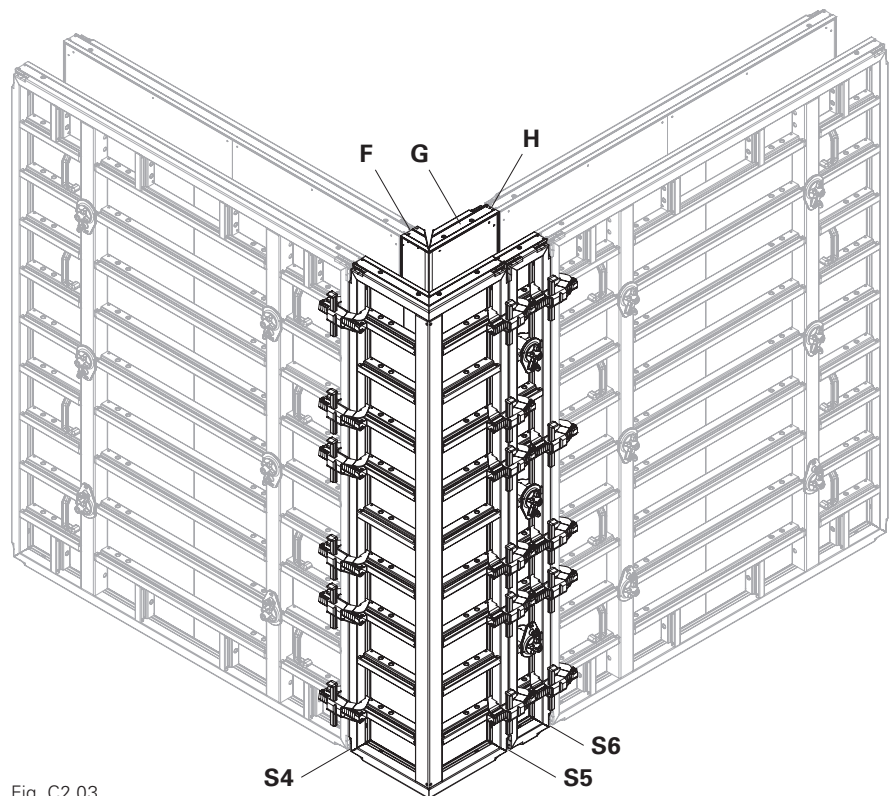


Fig. C2.03

C2 Corners 90° with I-Corner MXI-2 300x50/20

Wall thickness <40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 50/20	
	A	B	C	D	E	F	G
45	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 45	MX-2 45	MXI-2 50/20
50	MXM-2 60	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 45	MX-2 45	MXI-2 50/20
55	MXM-2 60	–	MXA-2 45	–	MX-2 60	MX-2 30	MXI-2 50/20
60	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 60	MX-2 30	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. C2.03

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. C2.04 + Fig. C2.05)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20		Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2 + S3	S4	S5 + S6	S7
Strut	② ③ ⑥ ⑦	② ③ ⑤ ⑥ ⑧ ²⁾	② ③ ⑤ ⑧ ²⁾	② ③ ⑤ ⑥ ⑧ ²⁾	② ③ ⑤ ⑧
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 50/20		Compensation Waler-4 MAR 170 at Outs. Corner MXA-2 45		
Strut	① ④ ⑨		① ④ ⑦ ⑨		

²⁾ Alignment Couplers BFD may need to be offset

Tab. C2.04

Arrangement of the alignment couplers and compensation walers

Valid for wall thicknesses < 40 – 60 cm

View of I-Corner MXI-2 300x50/20
(Fig. C2.04)

Example:

Wall thickness 50 cm

- A – E: Tab. C2.03
- S1 – S3: Tab. C2.04

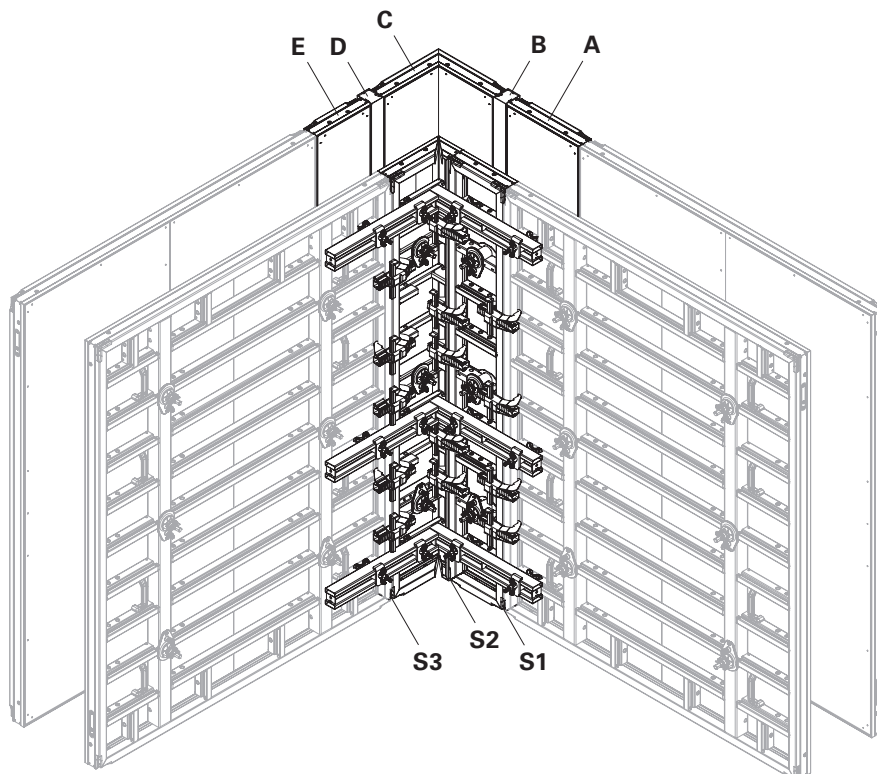


Fig. C2.04

View of Outs. Cor. MXA-2 300x45
(Fig. C2.05)

Example:

Wall thickness 50 cm

- F – G: Tab. C2.03
- S4 – S7: Tab. C2.04

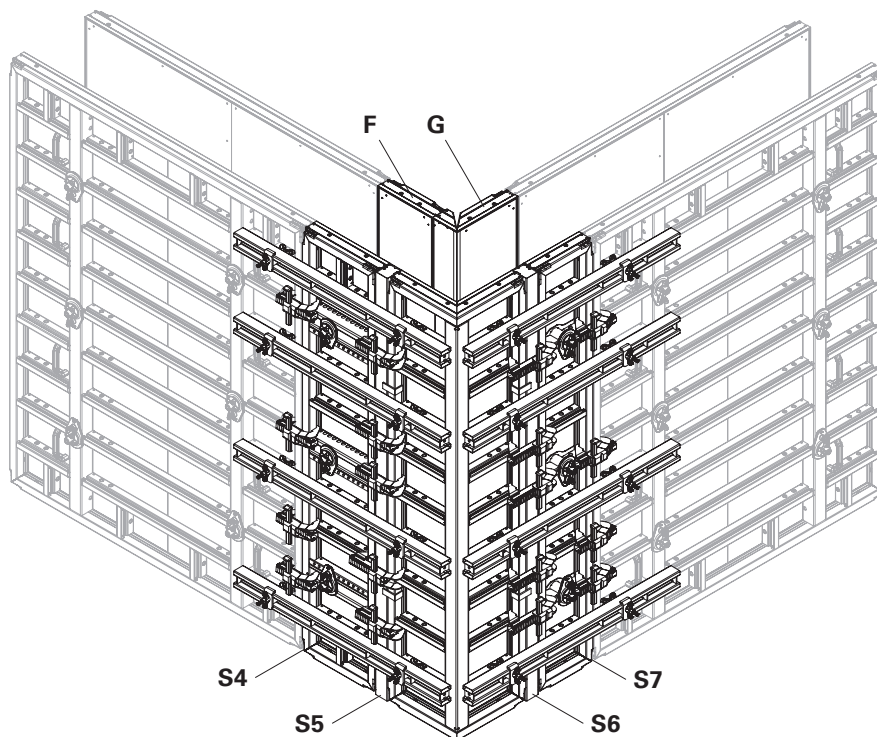


Fig. C2.05

Height 300

C2 Corners 90° with I-Corner MXI-2 300x50/20



Wall thickness 80 cm



Perm. fresh concrete pressure
60 kN/m²

Components

- 5a Panel MX-2 300x30
- 5b Panel MX-2 300x60
- 7 Tie Rod DW15
- 8 Wingnut DW15 ga
- 26 Wall Thick Comp. WDA MX 300x5
- 28 Alignment Coupler BFD
- 33 Compensation Waler-4 MAR 85
- 45 Tie Rod DW20
- 46 Tube Ø28mm 300 rough
- 47 Sealing Cone DK DW20 55mm
- 48 Wingnut DW20 ga
- 49 Counterplate DW20 120x120x15mm
- 50 Wingnut Pivot Plate DW15 ga
- 84 I-Corner MXI-2 300x50/20
- 85 Outs. Corner MXA-2 300x45
- 86 Waler Stop
- 87 Anchor Tie Yoke SW
- 88 Hook Tie Head DW15 ga
- 89 Steel Waler SRU 247 U120
- 90 Wedge KZ tensionproof

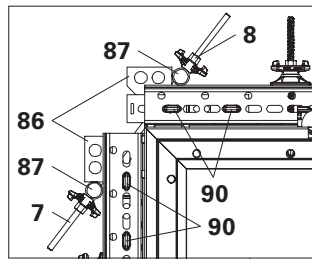


Fig. C2.06a

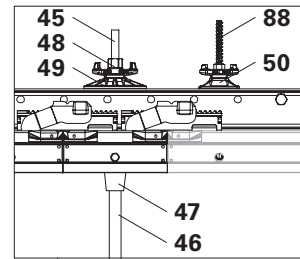


Fig. C2.06b

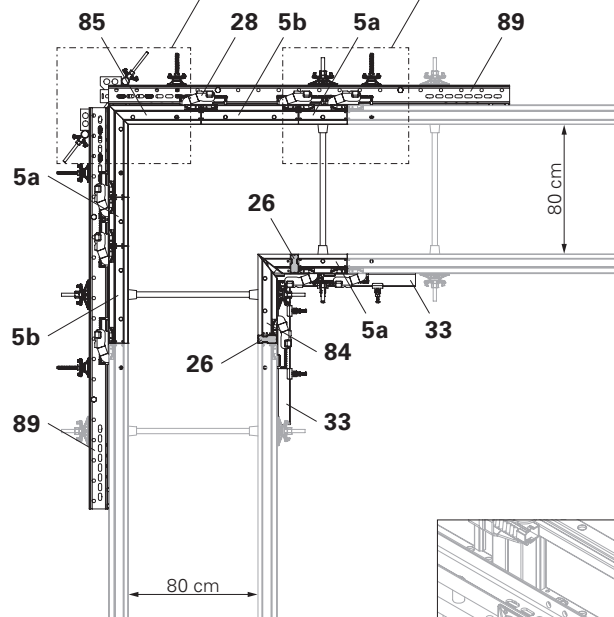


Fig. C2.06

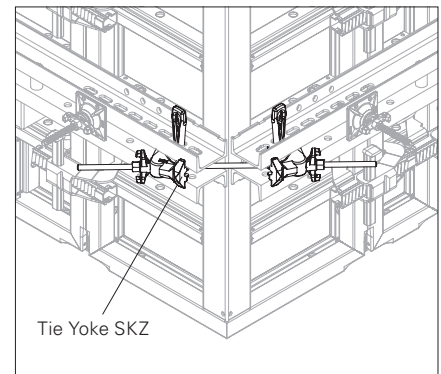


Fig. C2.06c

Example

View from above
(Fig. C2.06 – Fig. C2.06b)



The outside corner can also be implemented with the Tie Yoke SKZ (article no. 024210) instead of the waler stop (86) and anchor tie yoke (87). For assembly, see the Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork. (Fig. C2.06c)

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR/Steel Waler SRU 247 U120
(Fig. C2.07 + Fig. C2.08)

Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20			Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3	S4 + S9	S5 + S8	S6 + S7
Strut	3 6 9	3 6 9	3 9	1 3 6 9	1 3 4 6 9	1 3 4 6 7 9
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 50/20			Steel Waler SRU 247 U120 at Outs. Corner MXA-2 45		
Strut		1 4 7			2 5 8	

Tab. C2.05

Arrangement of the alignment couplers and steel walers

View of I-Corner MXI-2 300x50/20
(Fig. C2.07)

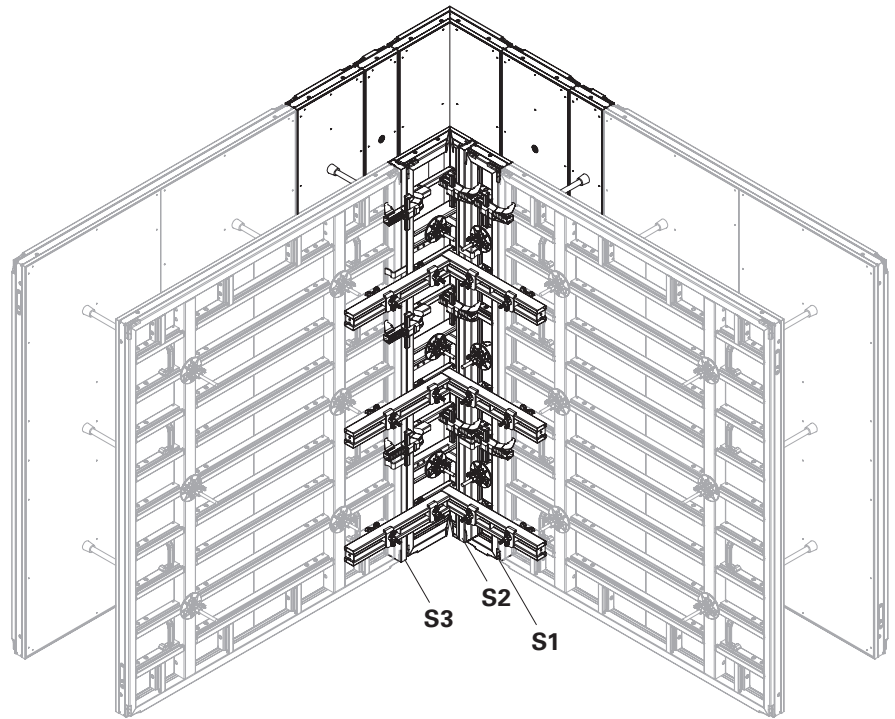


Fig. C2.07

View of Outs. Cor. MXA-2 300x45
(Fig. C2.08)

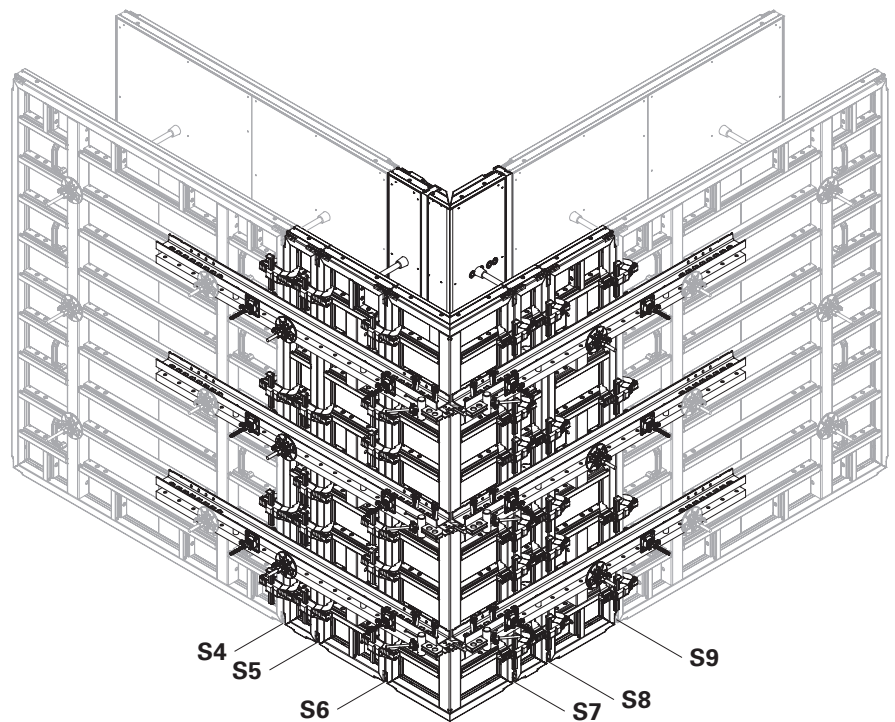


Fig. C2.08

Height 300

Outs. Corner MXA-2 300x35

Wall thickness 15 – 30 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 35							Panels at I-Corner MXI-2 60
	A	B	C	D	E	F	G	H
15	KH 7.5 ²⁾	MX-2 30	KH 2.5 ²⁾	MXA-2 35	KH 2.5 ²⁾	MX-2 30	KH 7.5 ²⁾	MXI-2 60
17.5	KH 7.5 ²⁾	MX-2 30	WDA 5 ¹⁾	MXA-2 35	WDA 5 ¹⁾	MX-2 30	KH 7.5 ²⁾	MXI-2 60
20	–	MX-2 45	–	MXA-2 35	–	MX-2 45	–	MXI-2 60
24	–	MX-2 45	WDA 4 ¹⁾	MXA-2 35	WDA 4 ¹⁾	MX-2 45	–	MXI-2 60
25	–	MX-2 45	WDA 5 ¹⁾	MXA-2 35	WDA 5 ¹⁾	MX-2 45	–	MXI-2 60
30	–	MX-2 45	WDA 10 ¹⁾	MXA-2 35	WDA 10 ¹⁾	MX-2 45	–	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. C3.01

Arrangement of Alignment Couplers BFD (Fig. C3.01 + Fig. C3.02)				
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 35	
	S1	S2	S3 + S6	S4 + S5
Strut	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑦ ⑨

Tab. C3.02

C3 Corners 90° with I-Corner MXI-2 300x60

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 30 cm

View of I-Corner MXI-2 300x60
(Fig. C3.01)

Example:

Wall thickness 25 cm

- A – G: Tab. C3.01
- S1 + S2: Tab. C3.02

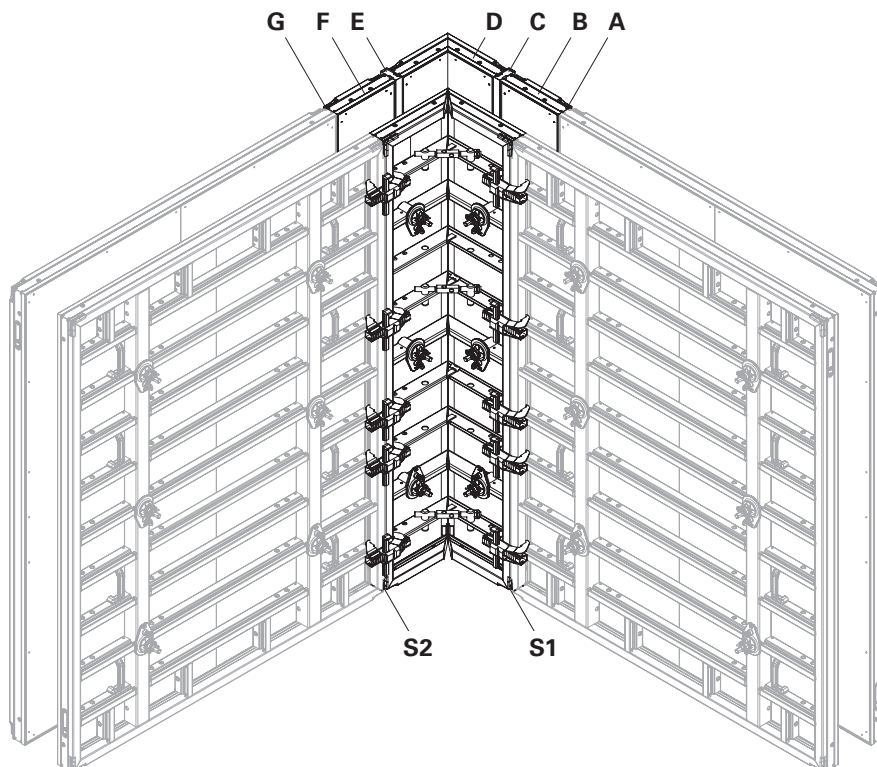


Fig. C3.01

View of Outs. Cor. MXA-2 300x35
(Fig. C3.02)

Example:

Wall thickness 25 cm

- H: Tab. C3.01
- S3 – S6: Tab. C3.02

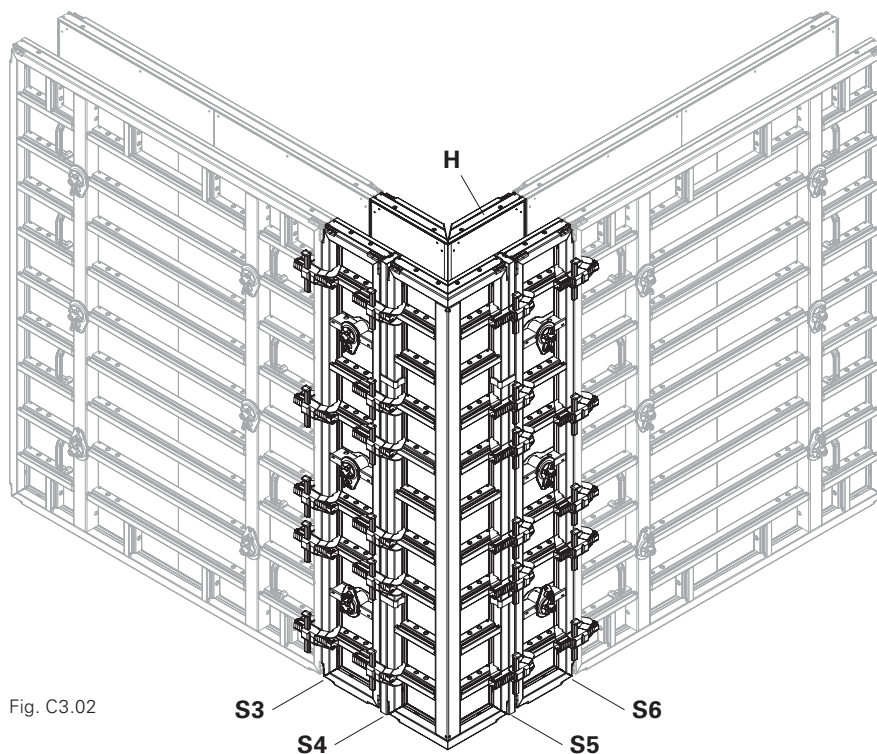


Fig. C3.02

Height 300

Outs. Corner MXA-2 300x45

Wall thickness 30 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 60
	A	B	C	D	E	F
30	MX-2 45	–	MXA-2 45	–	MX-2 45	MXI-2 60
35	MX-2 45	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 45	MXI-2 60
36	MX-2 45	WDA 6 ¹⁾	MXA-2 45	WDA 6 ¹⁾	MX-2 45	MXI-2 60
40	MX-2 45	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber can be used as compensation.

Tab. C3.03

Arrangement of Alignment Couplers BFD (Fig. C3.03 + Fig. C3.04)				
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 35	
	S1	S2	S3 + S6	S4 + S5
Strut	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑦ ⑨

Tab. C3.04

C3 Corners 90° with I-Corner MXI-2 300x60

Arrangement of the alignment couplers

Valid for wall thicknesses 30 – 40 cm

View of I-Corner MXI-2 300x60
(Fig. C3.03)

Example:

Wall thickness 35 cm

- A – E: Tab. C3.03
- S1 – S2: Tab. C3.04

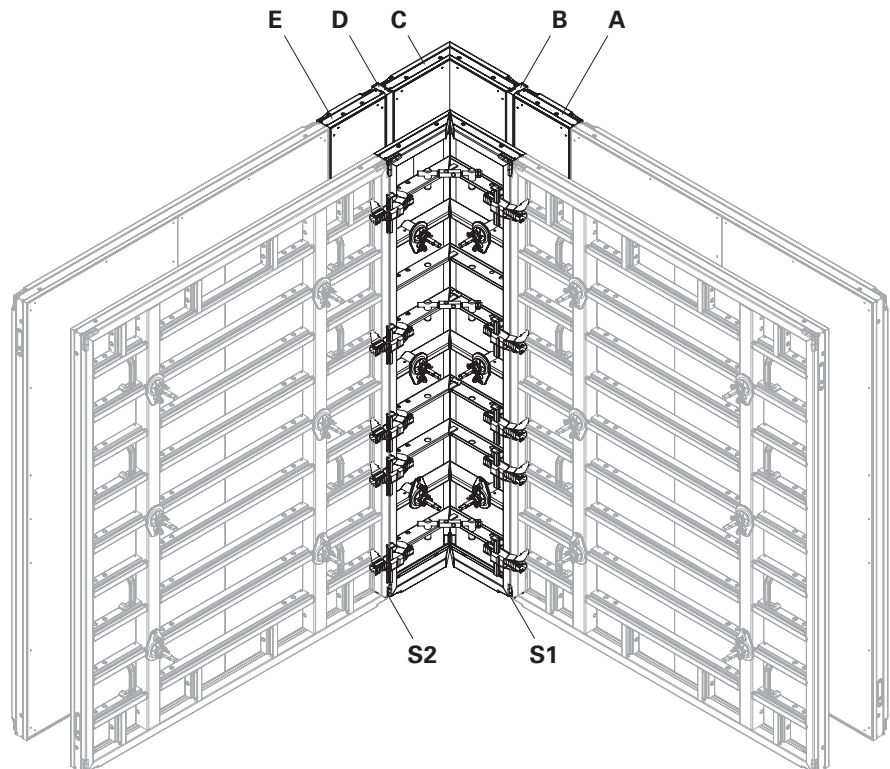


Fig. C3.03

View of Outs. Cor. MXA-2 300x45
(Fig. C3.04)

Example:

Wall thickness 35 cm

- F: Tab. C3.03
- S3 – S6: Tab. C3.04

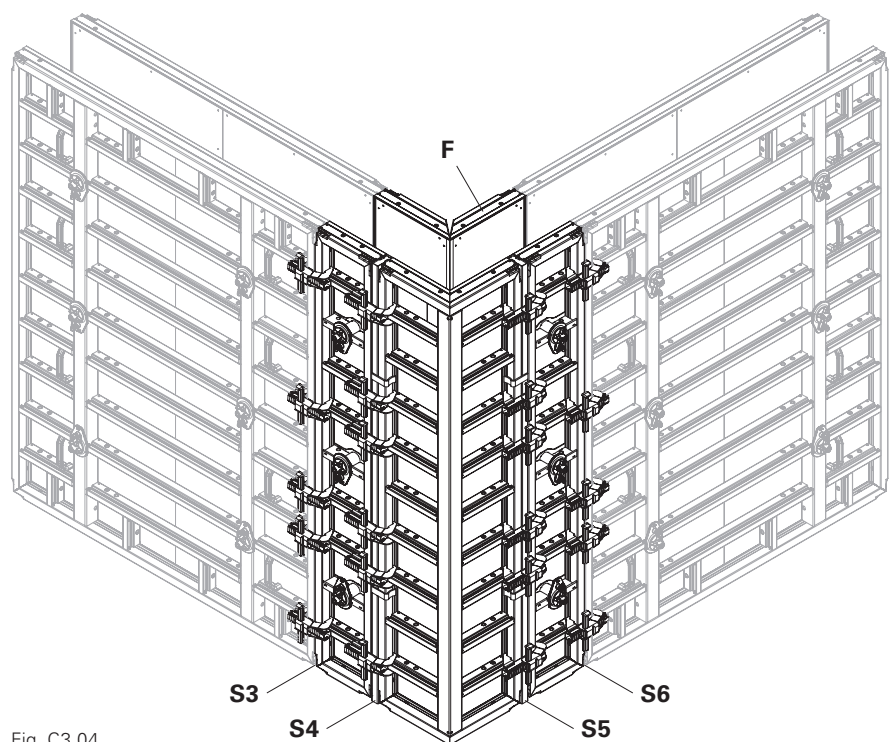


Fig. C3.04

Height 300

C3 Corners 90° with I-Corner MXI-2 300x60

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 60
	A	B	C	D	E	F
45	MXM-2 60	–	MXA-2 45	–	MXM-2 60	MXI-2 60
50	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MXM-2 60	MXI-2 60
55	MXM-2 60	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MXM-2 60	MXI-2 60
60	MX-2 45	MX-2 30	MXA-2 45	MX-2 30	MX-2 45	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber can be used as compensation.

Tab. C3.05

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. C3.05 + Fig. C3.06)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3	S5 + S6 (+ S4 + S7 ²⁾)	S8
Strut	② ③ ⑤ ⑥ ⑧	② ③ ⑤ ⑥ ⑧	② ③ ⑤ ⑧	② ③ ⑤ ⑥ ⑧	② ③ ⑤ ⑧
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 60		Compensation Waler-4 MAR 170 at Outs. Corner MXA-2 45		
Strut	① ④ ⑨		① ④ ⑦ ⑨		

²⁾ Joint 4 and joint 7 only in case of 60 cm wall thickness

Tab. C3.06

C3 Corners 90° with I-Corner MXI-2 300x60

Arrangement of the alignment couplers and compensation walers
Valid for wall thicknesses > 40 – 60 cm

View of I-Corner MXI-2 300x60
(Fig. C3.05)

- Example:**
Wall thickness 60 cm
- A – E: Tab. C3.05
 - S1 + S2: Tab. C3.06

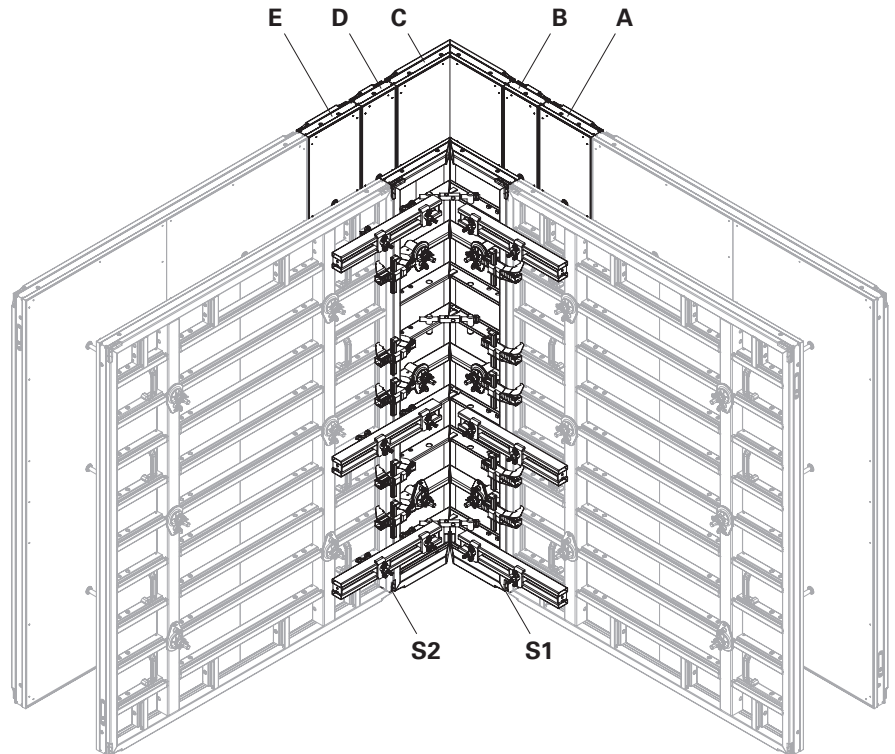


Fig. C3.05

View of Outs. Cor. MXA-2 300x45
(Fig. C3.06)

- Example:**
Wall thickness 60 cm
- F: Tab. C3.05
 - S3 – S8: Tab. C3.06

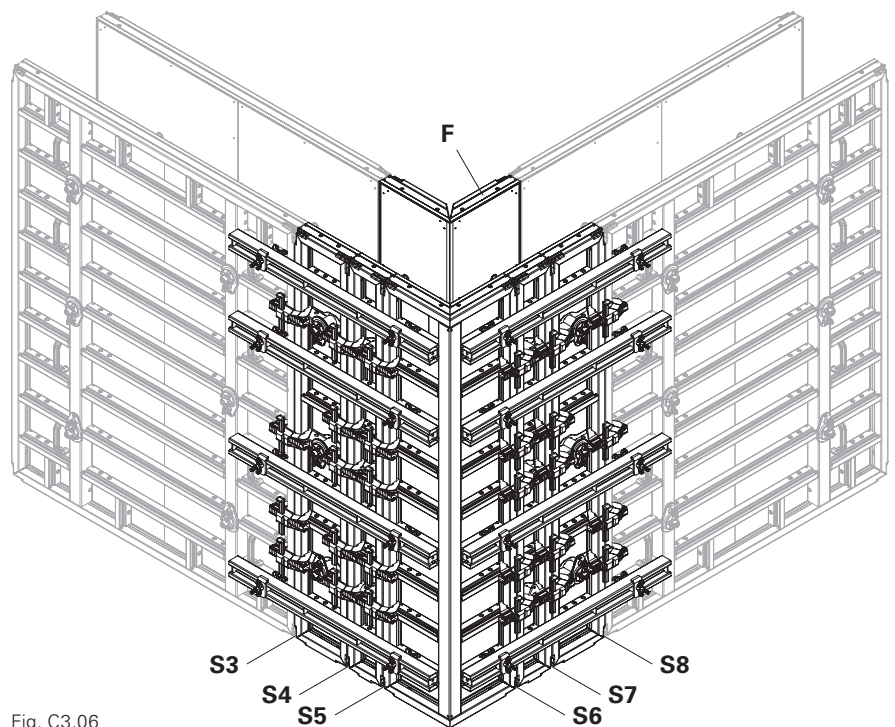


Fig. C3.06

Height 300

C3 Corners 90° with I-Corner MXI-2 300x60



Wall thickness 80 cm



Perm. fresh concrete pressure
60 kN/m²

Components

- 5 Panel MX-2 300x45
- 7 Tie Rod DW15
- 8 Wingnut DW15 ga
- 26 Wall Thick Comp. WDA MX 300x5
- 28 Alignment Coupler BFD
- 45 Tie Rod DW20
- 46 Tube Ø28mm 300 rough
- 47 Sealing Cone DK DW20 55mm
- 48 Wingnut DW20 ga
- 50 Wingnut Pivot Plate DW15 ga
- 84 I-Corner MXI-2 300x60
- 85 Outs. Corner MXA-2 300x45
- 86 Waler Stop
- 87 Anchor Tie Yoke SW
- 88 Hook Tie Head DW15 ga
- 89 Steel Waler SRU 247 U120
- 90 Wedge KZ tensionproof

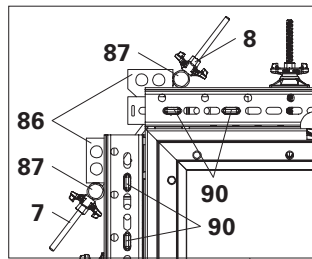


Fig. C3.07a

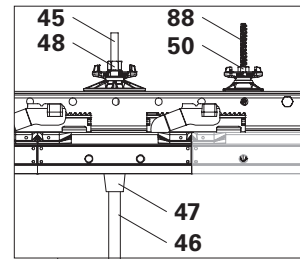


Fig. C3.07b

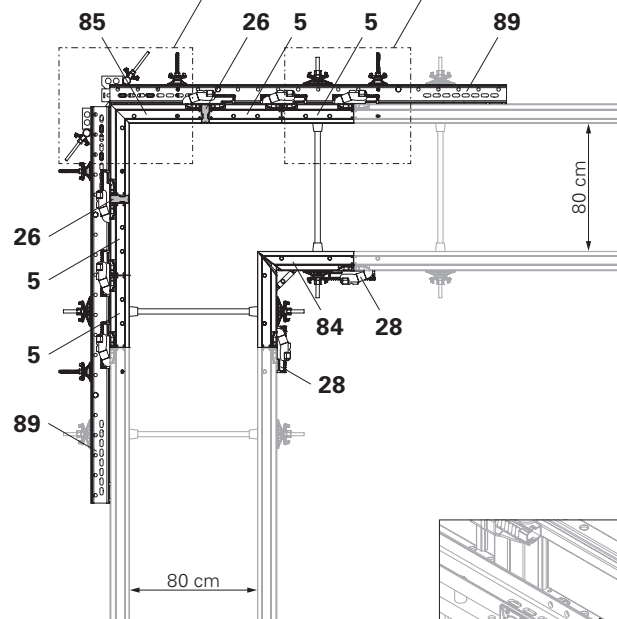


Fig. C3.07

Example

View from above
(Fig. C3.07 – Fig. C3.07b)



The outside corner can also be implemented with the Tie Yoke SKZ (article no. 024210) instead of the waler stop (86) and anchor tie yoke (87). For assembly, see the Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork. (Fig. C3.07c)

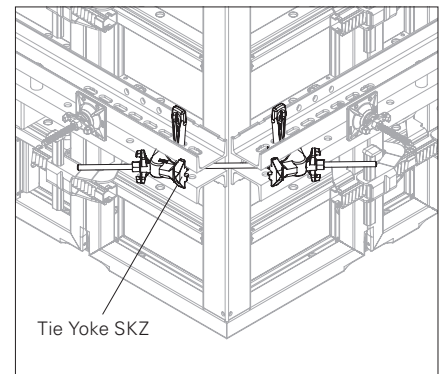


Fig. C3.07c

Arrangement of Alignment Couplers BFD/Steel Walers SRU 247 U120 (Fig. C3.08 + Fig. C3.09)

Joint	Alignment Couplers BFD at I-Corner MXI-2 60	Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1 + S2	S3 + S8	S4 + S7	S5 + S6
Strut	① ③ ④ ⑦	① ③ ⑥ ⑨	① ③ ④ ⑥ ⑨	① ③ ④ ⑥ ⑦ ⑨
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 60	Steel Waler SRU 247 U120 at Outs. Corner MXA-2 45		
Strut	–	② ⑤ ⑧		

Tab. C3.07

Arrangement of the alignment couplers, compensation walers and steel walers

View of I-Corner MXI-2 300x60
(Fig. C3.08)

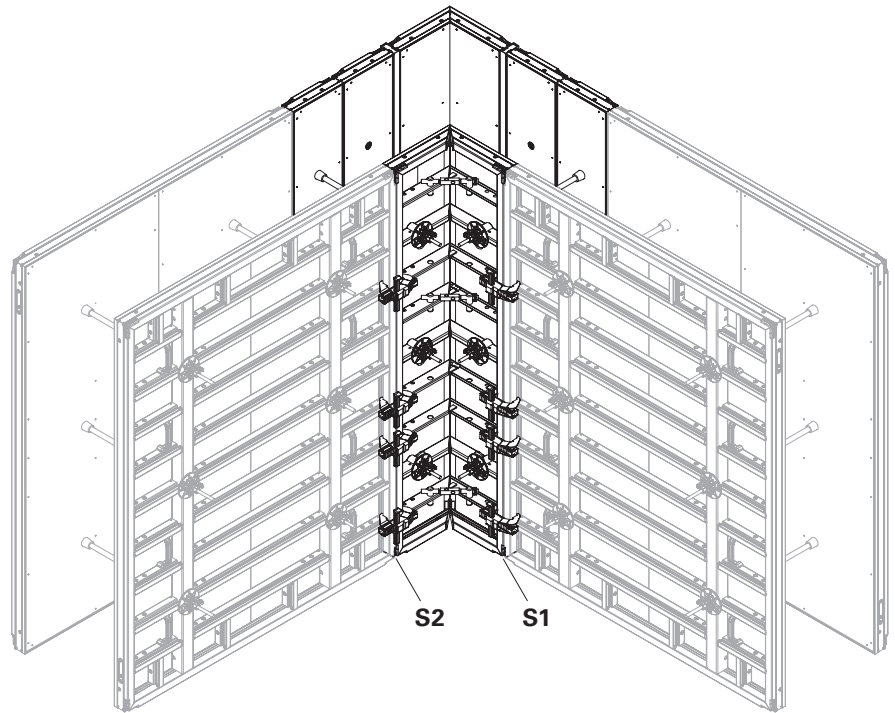


Fig. C3.08

View of Outs. Cor. MXA-2 300x45
(Fig. C3.09)

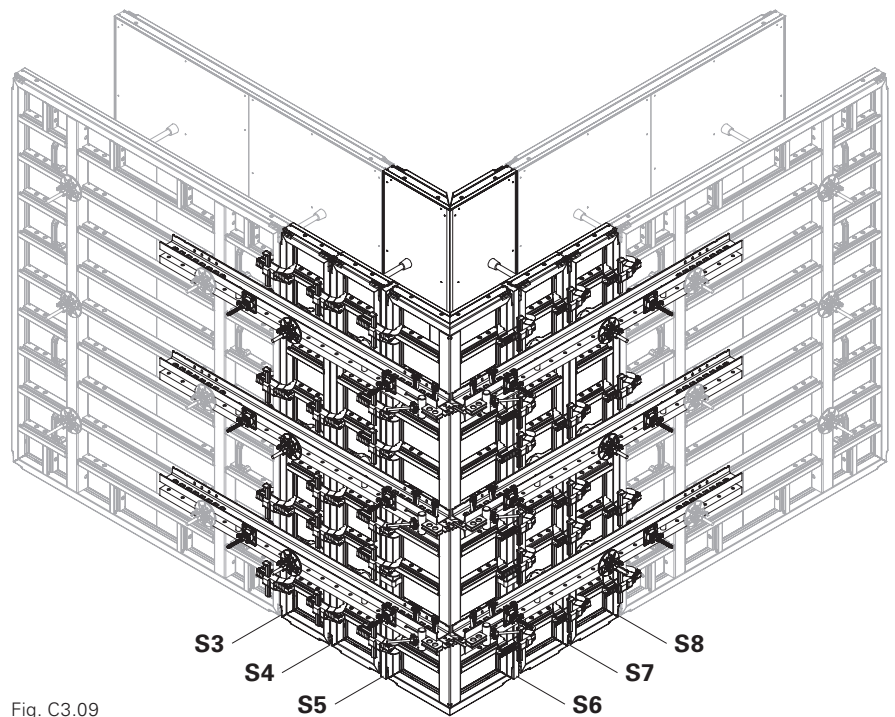


Fig. C3.09

Height 300

C4 Panel connections following 90° corners



If Panels MX-2 with $b \leq 120$ cm following 90° corners are envisaged, Compensation Waler-4 MAR 85 (**33**) must be installed at the next panel joint for reinforcement.

With height extensions, a second Compensation Waler-4 MAR 85 (**33**) is required on the panel joint (shown as a dotted line). (Fig. C4.02 + Fig. C4.03)

Example

View from above (Fig. C4.01)

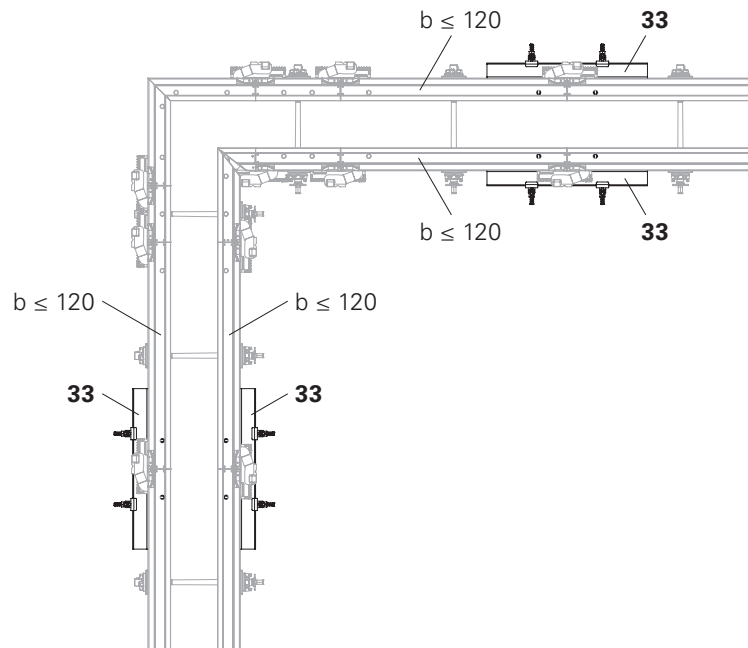


Fig. C4.01

C4 Panel connections following 90° corners

Arrangement of alignment couplers and Compensation Walers-4 MAR 85

View of I-Corner MXI-2 300x50/20
(Fig. C4.02)

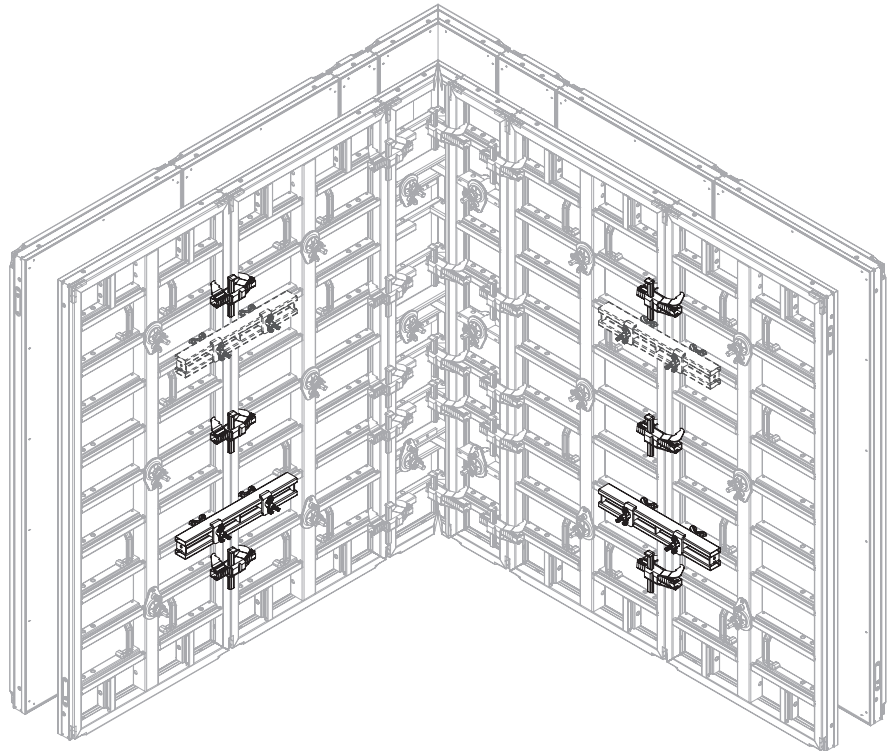


Fig. C4.02

View of Outs. Cor. MXA-2 300x45
(Fig. C4.03)

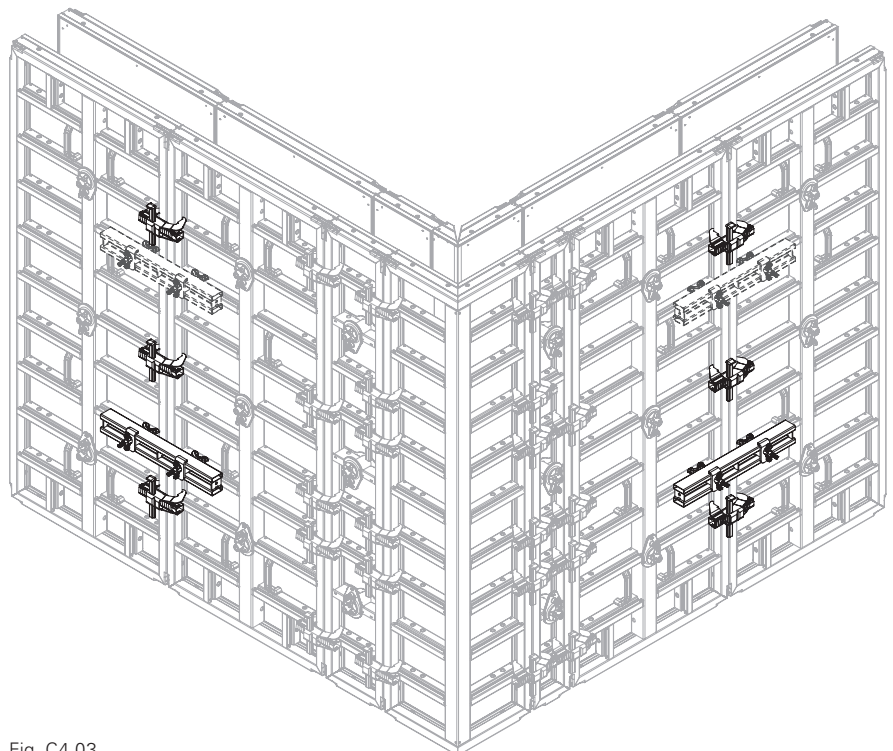


Fig. C4.03

Height 300

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels on straight wall sections					Panels on T-junction	
	A	B	C	D	E	F	G
15	–	MX-2 45	WDA 10 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
17.5	KH 7.5 ²⁾	MX-2 45	WDA 5 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
20	–	MX-2 60	–	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
24	–	MX-2 60	WDA 4 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
25	–	MX-2 60	WDA 5 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
30	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
35	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 5 ¹⁾	MXI-2 50/20	MXI-2 50/20
36	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 5 ¹⁾	MXI-2 50/20	MXI-2 50/20
40	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 10 ¹⁾	MXI-2 50/20	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. C5.01

Arrangement of Alignment Couplers BFD (Fig. C5.02 + Fig. C5.03)				
Joint	Alignment Couplers BFD on continuous wall section			Alignment Couplers BFD on T-junction
	S1	S2	S3	S4 – S7
Strut	① ③ ⑤ ⑧	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑧	① ③ ④ ⑥ ⑨
Strut for WT 17.5 cm	① ③ ⑤ ⑧	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦ ⑨	① ③ ④ ⑥ ⑨
Strut for WT ≥35 cm	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑧	① ③ ④ ⑥ ⑨

Tab. C5.02



Panels MX-2 300x240 are connected to the short side of the I-Corner MXI-2 300x50/20 as standard. If this is not possible, only the following elements may be connected:

- Panel MX-2 300x30
- Panel MX-2 300x45

(Fig. C5.01)

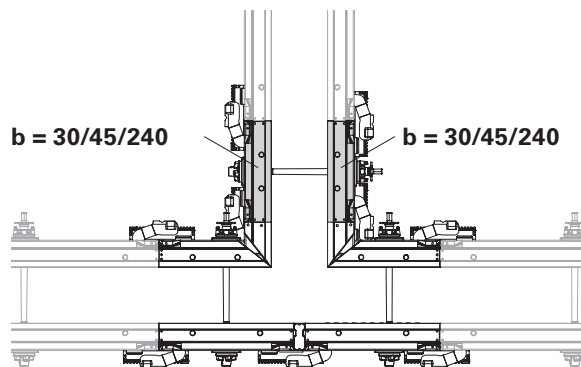


Fig. C5.01

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. C5.02)

Example:

Wall thickness 25 cm

- F + G: Tab. C5.01
- S1 – S3: Tab. C5.02

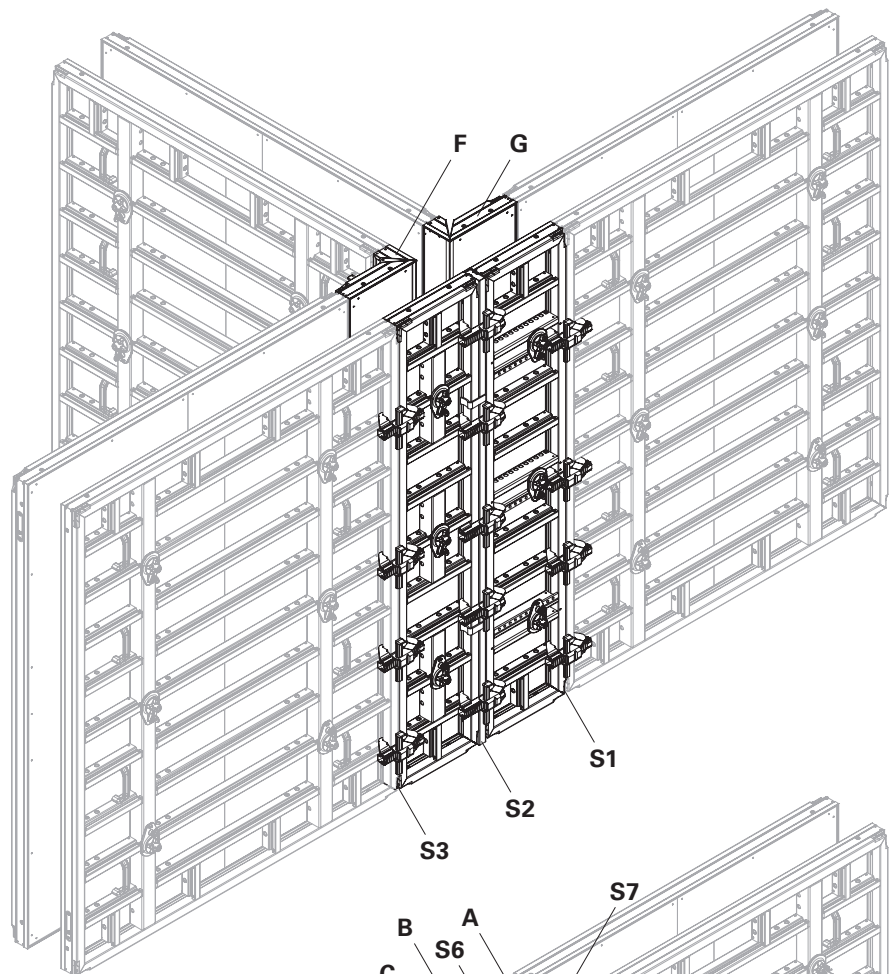


Fig. C5.02

View of T-junction (Fig. C5.03)

Example:

Wall thickness 25 cm

- A – E: Tab. C5.01
- S4 – S7: Tab. C5.02

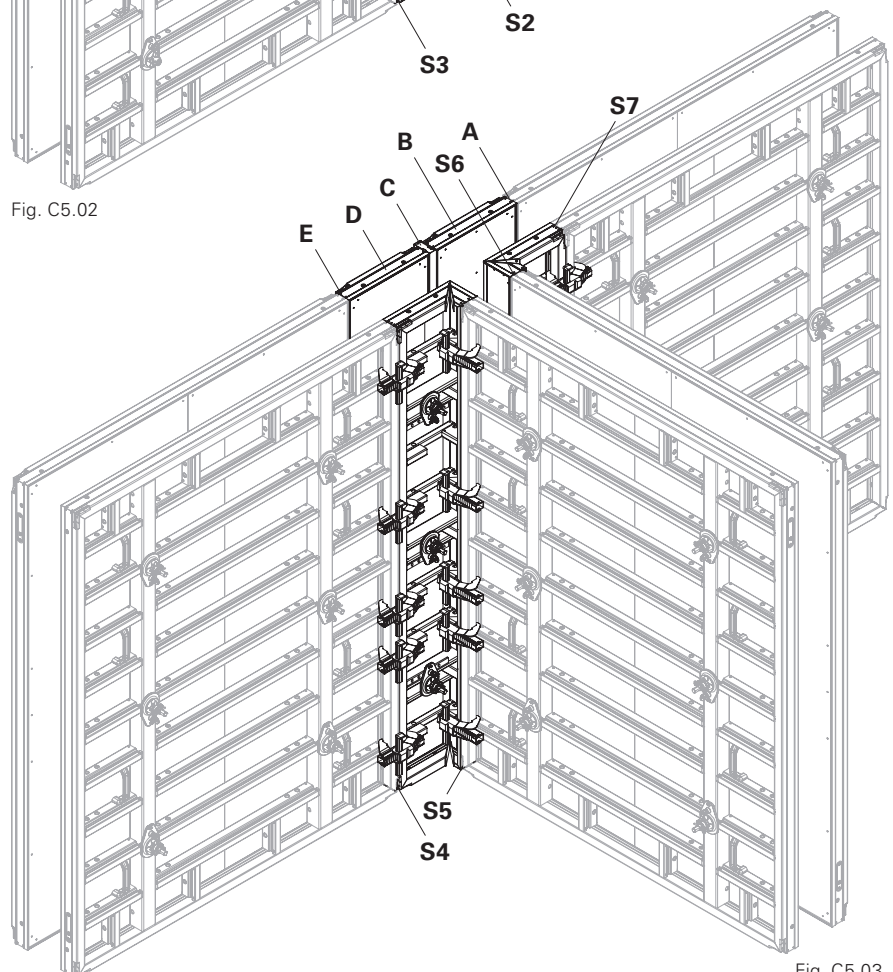


Fig. C5.03

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
45	MX-2 45	MX-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20
50	MX-2 45	MX-2 60	–	MX-2 45	MXI-2 50/20	MXI-2 50/20
55	MX-2 45	MX-2 60	WDA 5 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20
60	MX-2 45	MX-2 60	WDA 10 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. C5.03

Arrangement of Alignment Couplers BFD (Fig. C5.05 + Fig. C5.06)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S5 – S8	
Strut	② ⑤ ⑧	② ③ ⑤ ⑧	② ⑤ ⑧	② ⑤ ⑧	① ③ ④ ⑥ ⑨	
Strut for WT 50 cm	② ⑤ ⑧	② ⑤ ⑧	② ⑤ ⑧	② ⑤ ⑧	① ③ ④ ⑥ ⑨	
Compensation Waler-4 MAR 170 on continuous wall section						
Strut	① ④ ⑥ ⑨					

Tab. C5.04



Panels MX-2 300x240 are connected to the short side of the I-Corner MXI-2 300x50/20 as standard. If this is not possible, only the following elements may be connected:

- Panel MX-2 300x30
 - Panel MX-2 300x45
- (Fig. C5.04)

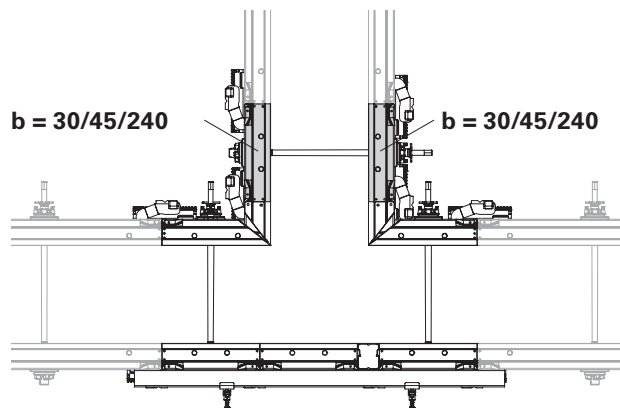


Fig. C5.04

Arrangement of the alignment couplers

Valid for WT > 40 – 60 cm

View of continuous wall section (Fig. C5.05)

Example:

Wall thickness 45 cm

- F + G: Tab. C5.03
- S1 – S4: Tab. C5.04

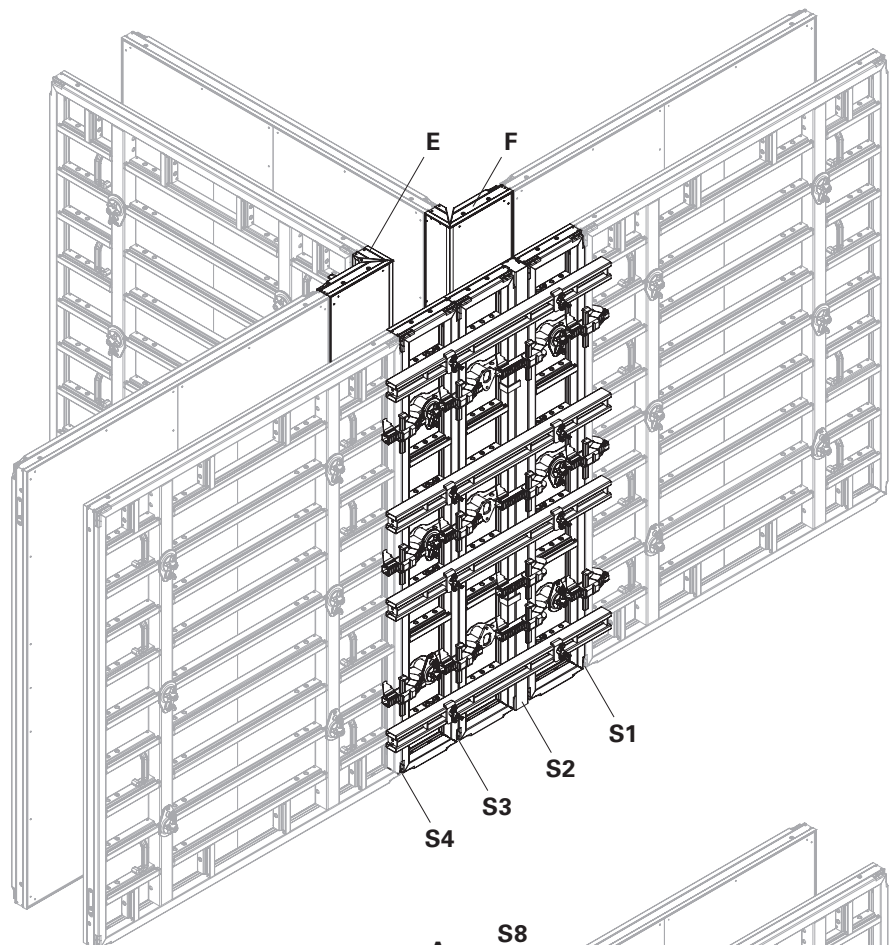


Fig. C5.05

View of T-junction (Fig. C5.06)

Example:

Wall thickness 45 cm

- A – E: Tab. C5.03
- S5 – S7: Tab. C5.04

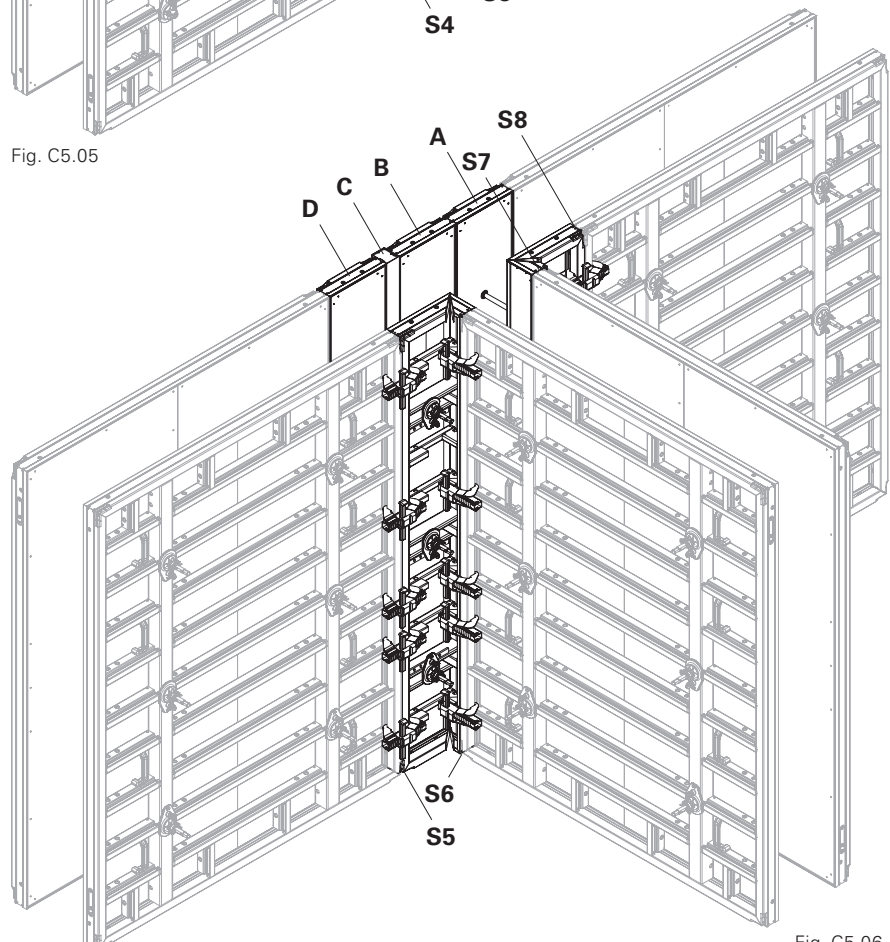


Fig. C5.06

Height 300

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	F	G
15	MX-2 45	MX-2 45	–	MX-2 45	MXI-2 60	MXI-2 60
17.5	MX-2 45	MX-2 45	KH 2.5 ²⁾	MX-2 45	MXI-2 60	MXI-2 60
20	MX-2 45	MX-2 45	–	MX-2 45	MXI-2 60	MXI-2 60
24	MX-2 45	MX-2 45	KH 9 ²⁾	MX-2 45	MXI-2 60	MXI-2 60
25	MX-2 45	MX-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
30	MX-2 45	MX-2 60	–	MX-2 45	MXI-2 60	MXI-2 60
35	MX-2 45	MX-2 60	WDA 5 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
36	MX-2 45	MX-2 60	WDA 6 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
40	MX-2 45	MX-2 60	WDA 10 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. C6.01

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. C6.01 + Fig. C6.02)					
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction
	S1	S2	S3	S4	S4 – S8
Strut	② ⑤ ⑧	② ③ ⑤ ⑧	② ⑤ ⑧	② ⑤ ⑧	① ③ ④ ⑥ ⑨
Brace for WT 15, 20 and 30 cm	② ⑤ ⑧	② ⑤ ⑧	② ⑤ ⑧	② ⑤ ⑧	① ③ ④ ⑥ ⑨
Compensation Waler-4 MAR 170 on continuous wall section					
Strut	① ④ ⑦ ⑨				

Tab. C6.02

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. C6.01)

Example:

Wall thickness 25 cm

- E + F: Tab. C6.01
- S1 – S4: Tab. C6.02

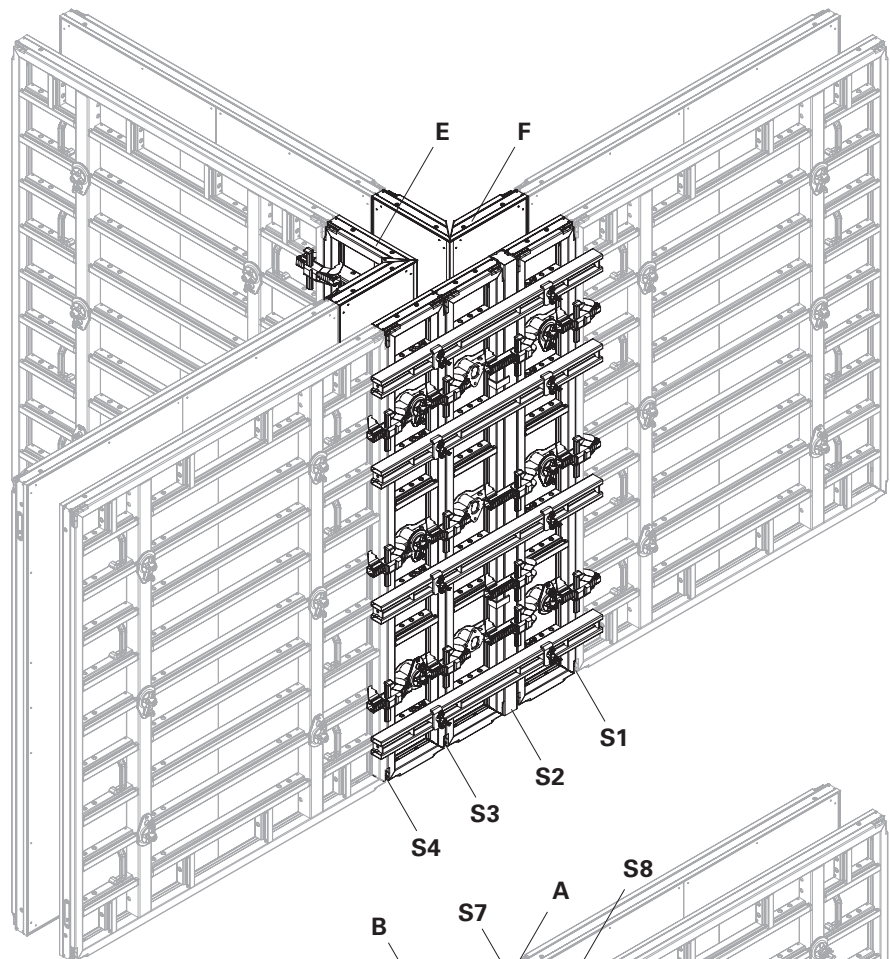


Fig. C6.01

View of T-junction (Fig. C6.02)

Example:

Wall thickness 25 cm

- A – D: Tab. C6.01
- S5 – S8: Tab. C6.02

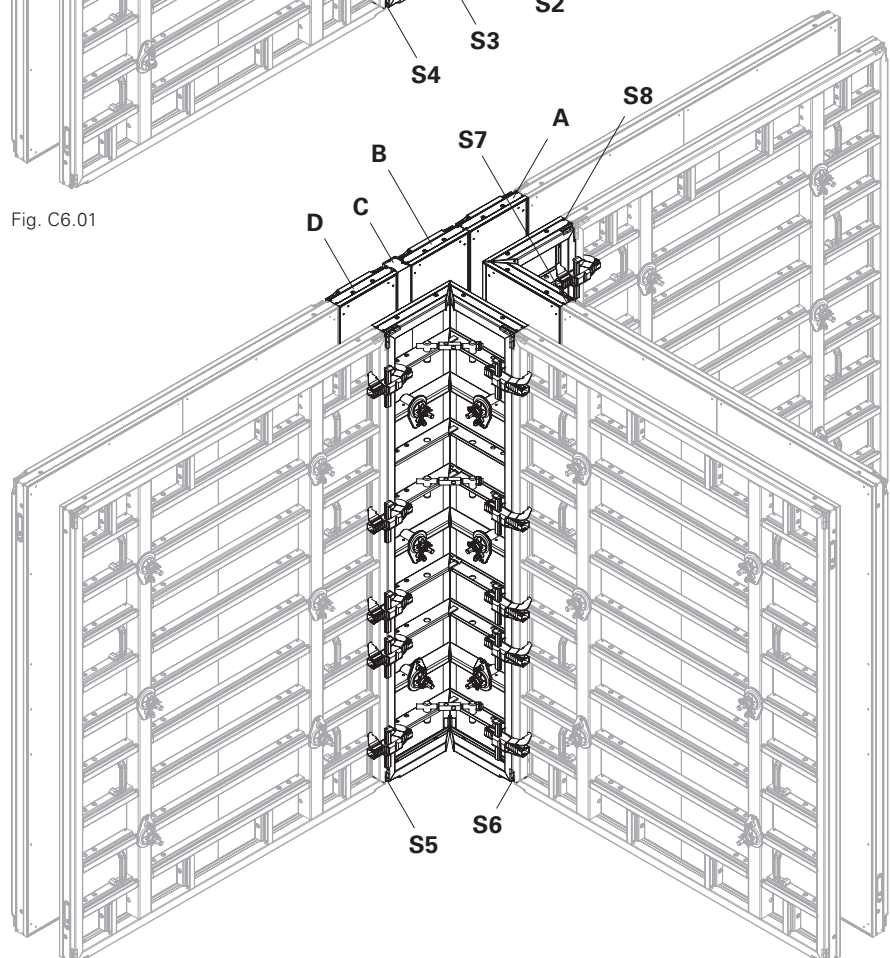


Fig. C6.02

Height 300

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
45	MX-2 60	MX-2 45	–	MX-2 60	MXI-2 60	MXI-2 60
50	MX-2 60	MX-2 45	WDA 5 ¹⁾	MX-2 60	MXI-2 60	MXI-2 60
55	MX-2 60	MX-2 45	WDA 10 ¹⁾	MX-2 60	MXI-2 60	MXI-2 60
60	MX-2 60	MX-2 60	–	MX-2 60	MXI-2 60	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. C6.03

Arrangement of Alignment Couplers BFD/Steel Walers SRU 197 U120 (Fig. C6.03 + Fig. C6.04)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S5 – S8	
Strut	2 5 8	2 5 7 8	2 5 8	2 5 8	1 3 4 6 9	
Strut for WT 45 and 60 cm	2 5 8	2 5 8	2 5 8	2 5 8	1 3 4 6 9	
Steel Waler SRU 197 U120 on continuous wall section						
Strut	1 3 4 6 9					

Tab. C6.04

Arrangement of the alignment couplers

Valid for WT >40 – 60 cm

View of continuous wall section (Fig. C6.03)

Example:

Wall thickness 50 cm

- E + F: Tab. C6.03
- S1 – S4: Tab. C6.04

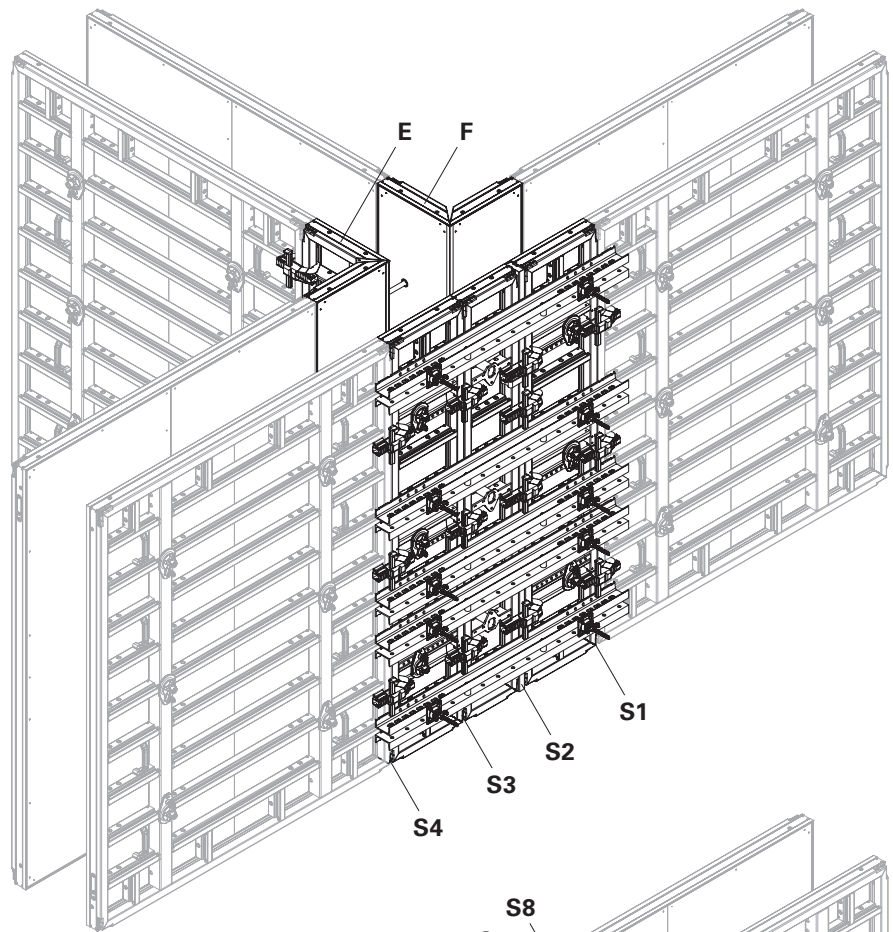


Fig. C6.03

View of T-junction (Fig. C6.04)

Example:

Wall thickness 50 cm

- A – D: Tab. C6.03
- S5 – S8: Tab. C6.04

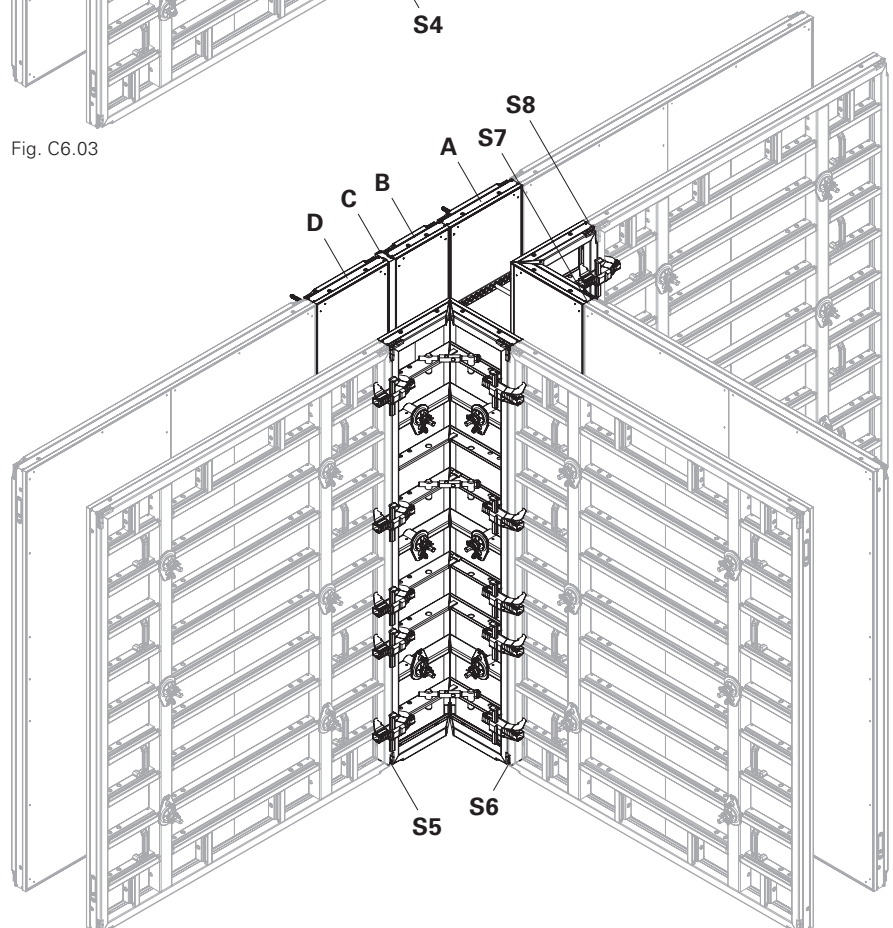


Fig. C6.04

Height 300

C7 Panel connections following 90° T-junctions



If Panels MX-2 with $b \leq 120$ cm following 90° T-junctions are envisaged, Compensation Waler-4 MAR 85 (**33**) must be installed at the next panel joint for reinforcement.

With height extensions, a second Compensation Waler-4 MAR 85 (**33**) is required on the panel joint (shown as a dotted line). (Fig. C7.02 + Fig. C7.03)

Example

View from above (Fig. C7.01)

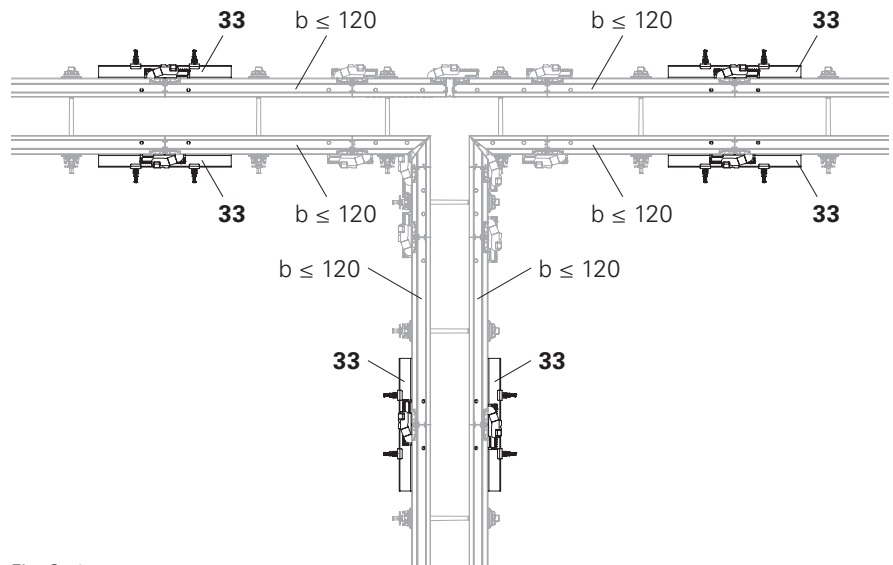
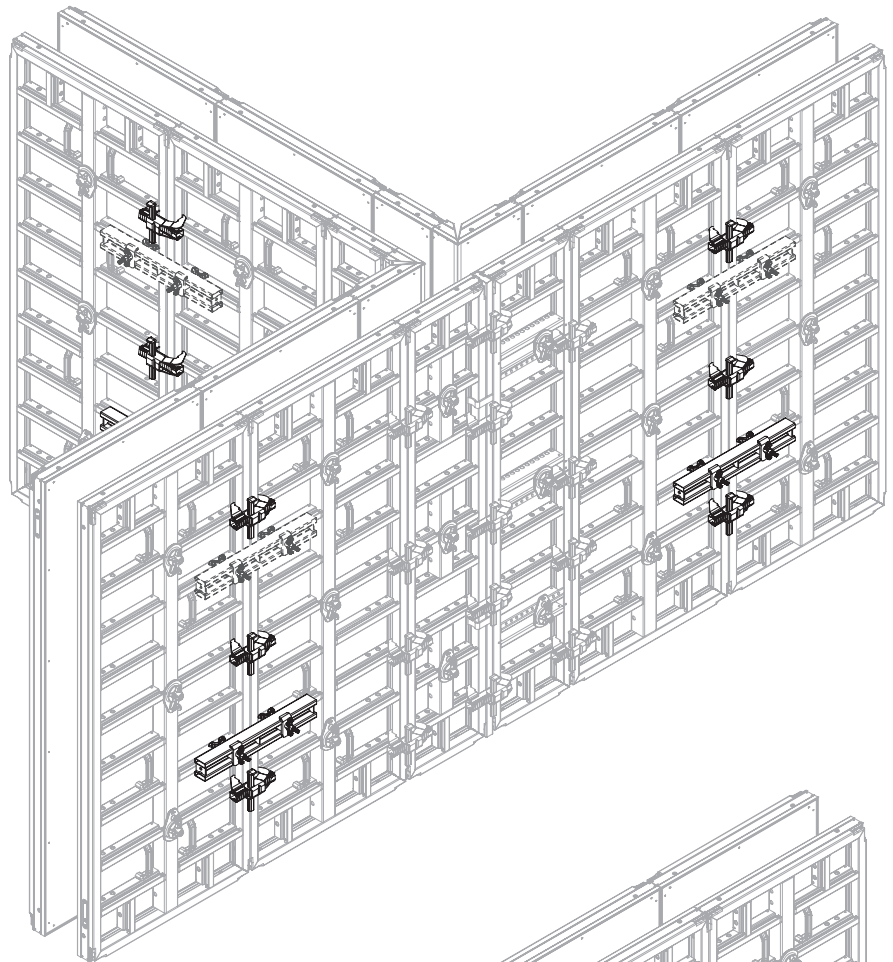


Fig. C7.01

C7 Panel connections following 90° T-junctions

Arrangement of alignment couplers and Compensation Walers-4 MAR 85

View of straight wall section
(Fig. C7.02)



Height 300

View of T-junction with I-Corner MXI-300x50/20 (Fig. C7.03)

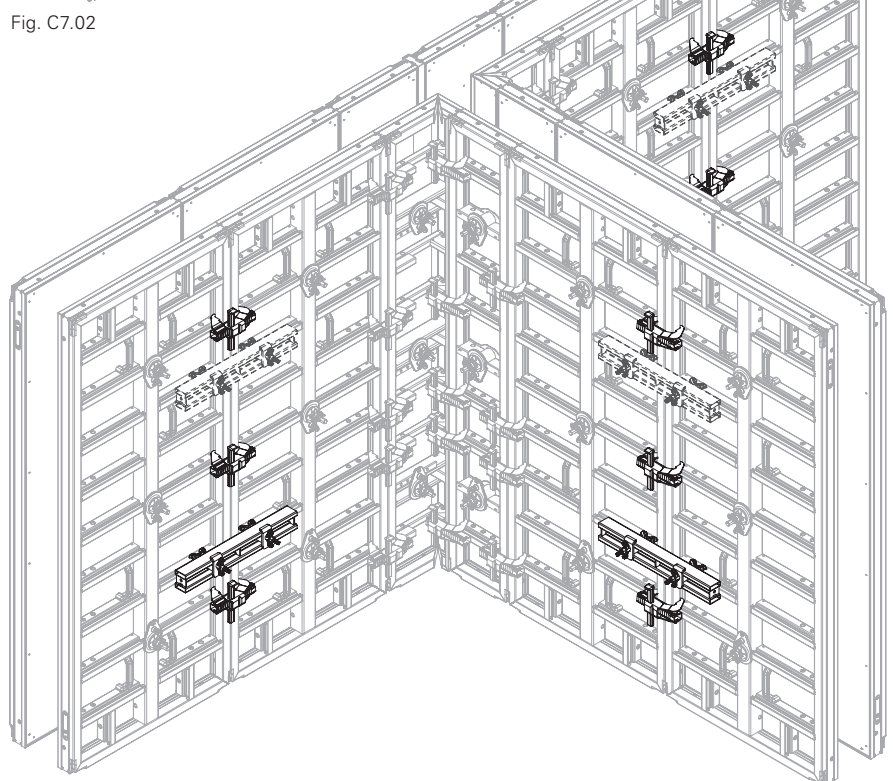


Fig. C7.03

Wall Thi. Com. WDA MX 300



- No additional ties required.
- Longitudinal infill up to 10 cm.
- In contrast to the standard joint, in the case of wall thickness compensation, an additional Alignment Coupler BFD is fitted.

Components	Pcs.
28 Alignment Coupler BFD	3x
26 Wall Thick Comp. WDA MX	1x
or	
91 Squared timber	1x

Longitudinal infills can be created with Wall Thick.Comp. WDA MX 300 x width **(26)** or with squared timber cut to size **(91)**.



Number and arrangement of the Alignment Couplers BFD **(28)**. (Fig. C8.01)

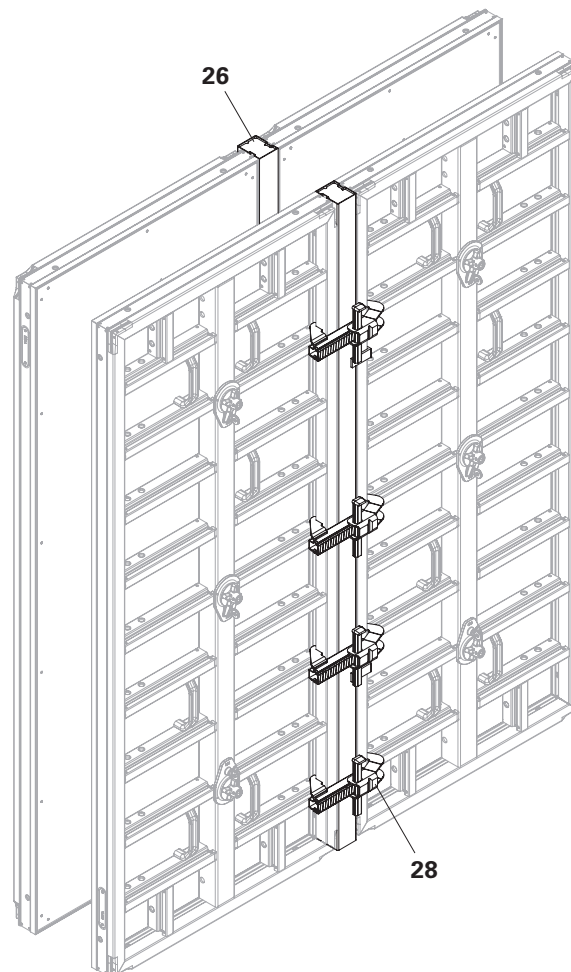


Fig. C8.01

Filler Profile TPP 330 Alu

Longitudinal infill from 20 to 36 cm



- Filler Profile TPP 330 Alu is used for the formwork height 300. Alternatively, squared timber with a length of 300 cm can be used.
- Perm. fresh concrete pressure 80 kN/m² for: $b \geq 20$ and $b < 30$ cm
- Perm. fresh concrete pressure 60 kN/m² for: $b \geq 30$ and $b < 36$ cm

Components

Components	Pcs.
28 Alignment Coupler BFD	4x
33 Compensation Waler-4 MAR 85	2x
96 21 mm filler plate	1x
97 Filler Profile TPP 330 Alu	2x
or	
91 Squared timber	2x



- When anchoring, ensure that the tie forces are transferred centrally through the Compensation Waler-4 MAR 85 (**33**) to the adjacent panels. (Fig. C8.02b)
- Assembly: (Fig. C8.02 + Fig. C8.02a)



Two Wall Thick.Comp. MX 300 or squared timbers can be mounted on two different joints for 10 cm – 20 cm compensations.

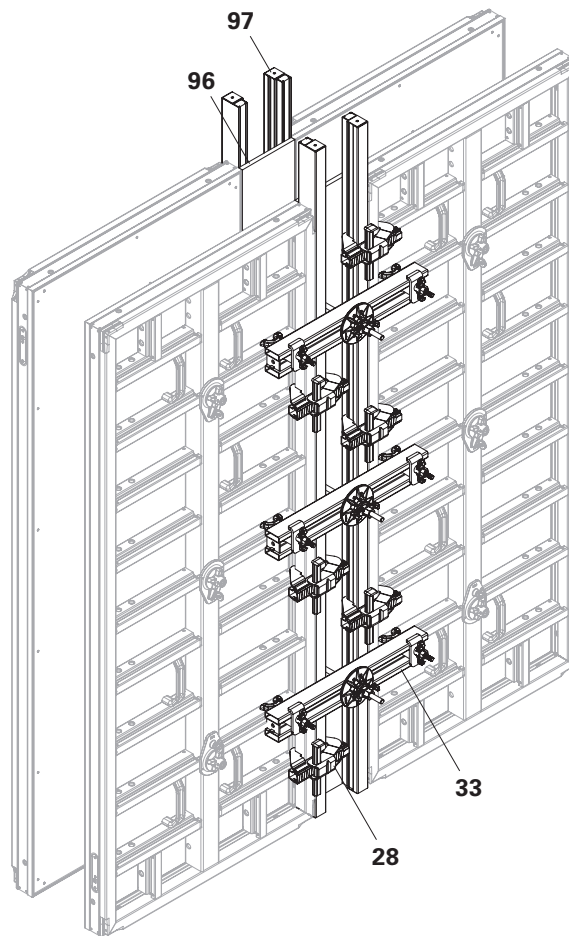


Fig. C8.02

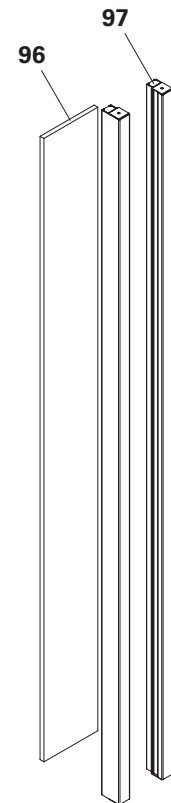


Fig. C8.02a

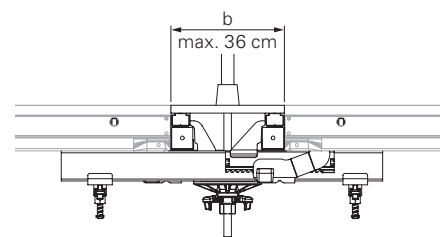


Fig. C8.02b

Bulkhead Tie MX/TR and Waler 85

For wall thickness ≤ 40 cm



The fresh concrete pressure of the stop end formwork is transferred to the Panels MX-2 via the Bulkhead Ties MX/TR (99) and Walers 85 (21).

Wall end with Panels MX-2 300 x width

- Applicable to Panels MX-2: 300x30/45/60/90/120 /
- Shown: 300x120 (Fig. C8.03 + Fig. C8.04)

Components

Components	Pcs.
7 Tie Rod DW15	3x
21 Waler 85	4x
50 Wingnut Pivot Plate DW15 ga	14x
70 Top Tie Holder-2 AH	6x
91 Squared timber	2x
96 21 mm filler plate	1x
99 Bulkhead Tie MX/TR	8x

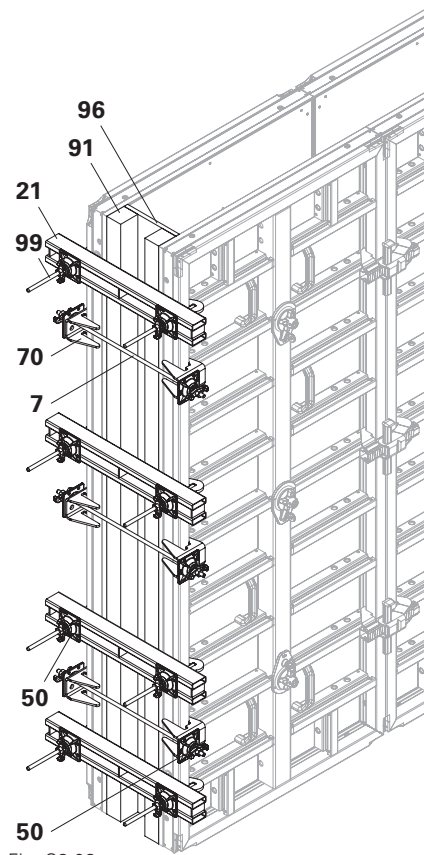


Fig. C8.03

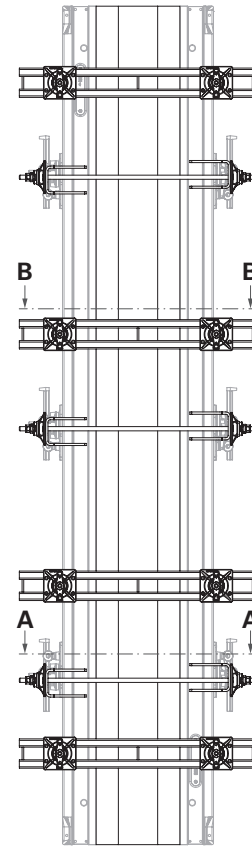


Fig. C8.04

Sectional views

- Top Tie Holder-2 AH (70) with Tie Rod DW15 (7) and Wingnut Pivot Plate DW15 ga (50). (Fig. C8.04a)
- Waler 85 (21) with Bulkhead Tie MX/TR (99) and Wingnut Pivot Plate DW15 ga (50). (Fig. C8.04b)



As an alternative to Waler 85 (21), the Compensation Waler-4 MAR 85 (33) can also be used.

A-A

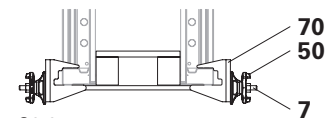


Fig. C8.04a

B-B

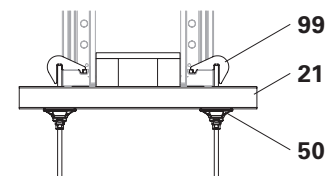


Fig. C8.04b

Wall end with Panel MX-2 300 x 240 (not shown)

Components	Pcs.
21 Waler 85	4x
50 Wingnut Pivot Plate DW 15	8x
91 Squared timber	2x
96 21 mm filler plate	1x
99 Bulkhead Tie MX/TR	8x

Waler 85 (**21**) with Bulkhead Tie MX/TR (**99**) and Wingnut Pivot Plate DW15 ga (**50**).



As an alternative to Waler 85 (**21**), the Compensation Waler-4 MAR 85 (**33**) can also be used.

Alignment Coupler BFD

Panel MX-2 300x30 (**5**) can be used as a stop end panel for a wall thickness of 30 cm. (Fig. C9.01)

Pos. Components

5 Panel MX-2 300x30
28 Alignment Coupler BFD

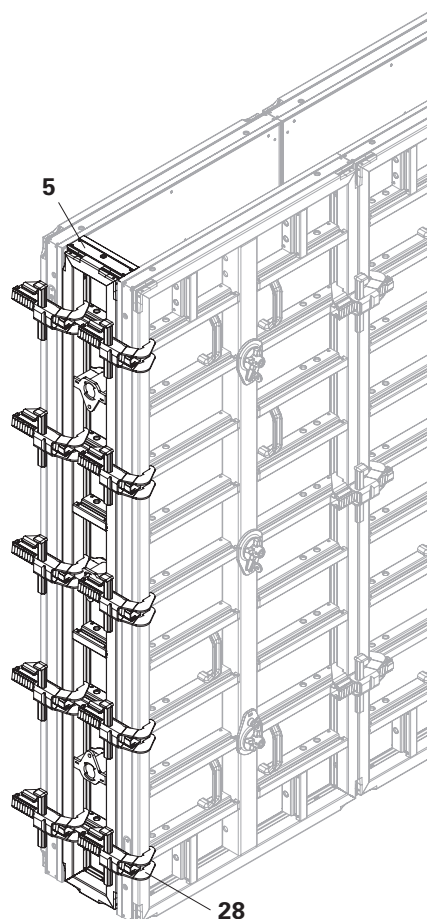


Fig. C9.01

Stop end panel reinforcement without Water Bar Installation MT

Height of 330 cm (Fig. C9.02a)
 Height of 120 cm (Fig. C9.02b)

Consisting of:

- 2x Stop. Panel TRIO AT 3 (**100a**) for approx. 2.5 cm concrete cover or 2x Stop. Panel TRIO AT 5 (**100b**) for approx. 5 cm concrete cover
- 1x Stop. Panel TRIO MT (**101**) (Fig. C9.03)



- Panels of height 330 are used for formwork height 300.
- Perm. fresh concrete pressure depending on the wall thickness:
 - 67.5 kN/m² for WT < 35 cm
 - 60.0 kN/m² for WT ≥ 35 cm and ≤ 40 cm
- The rubber lip (**100.1**) allows for a continuous reinforcement thickness of max. 16 mm.

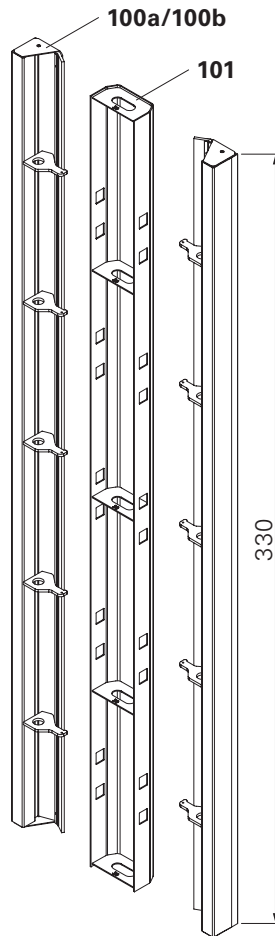


Fig. C9.02a

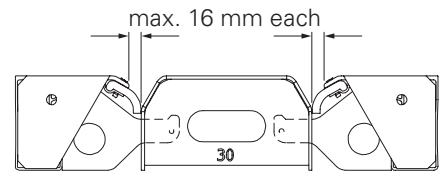


Fig. C9.03

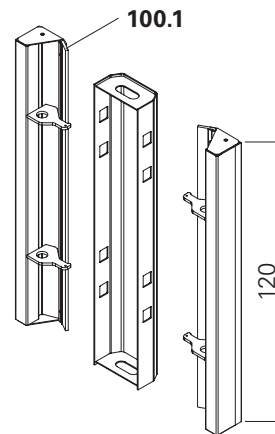


Fig. C9.02b

Concrete cover c:

$$c = \frac{d - b}{2} - \varnothing \text{ reinforcement}$$

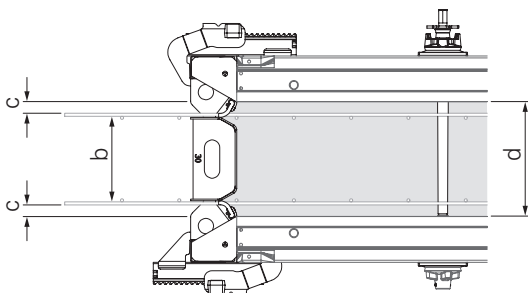


Fig. C9.04

Assembly

1. Position primary formwork.
2. Fix Stop. Panel TRIO AT (100) to the primary formwork by means of the Alignment Coupler BFD (28).
3. Install first row of reinforcement.
4. Position Stop. Panel TRIO MT (101).
5. Install second row of reinforcement.
6. Fix Stop. Panel TRIO AT (100) to the closing formwork by means of the Alignment Coupler BFD (28).
7. Position the closing formwork and in doing so insert Stop. Panel TRIO AT (100) into Stop. Panel TRIO MT (101). (Fig. C9.05)

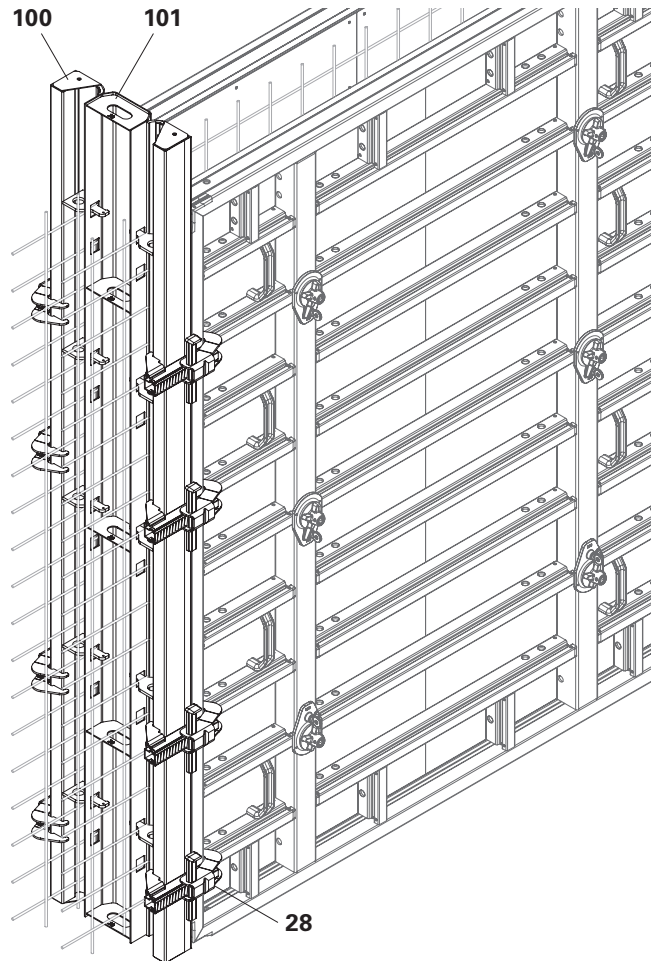


Fig. C9.05

Components



- Combination table for stop end panels without water bar installation at height 3.30 m (Tab. C9.01)
- Combination table for stop end panels without water bar installation at height 1.20 m (Tab. C9.02)

H = 3.30 m	b [mm]	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
		20	24 / 25	30	35	24 / 25	30	35	40
AT 330x3	–	2	2	2	2				
AT 330x5	–					2	2	2	2
MT 330x20	118	1				1			
MT 330x24/25	158		1				1		
MT 330x30	218			1				1	
MT 330x35/36	268				1				1

Tab. C9.01

H = 1.20 m		20	24 / 25	30	35	24 / 25	30	35	40
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
MT 120x20	118	1				1			
MT 120x24/25	158		1				1		
MT 120x30	218			1				1	
MT 120x35/36	268				1				1

Tab. C9.02

Stop end panel reinforcement with Water Bar Installation MTF

Height of 330 cm (Fig. C9.06a)
 Height of 120 cm (Fig. C9.06b)

Consisting of:

- 2x Stop. Panel TRIO AT 3 (**100a**) for approx. 2.5 cm concrete cover or 2x Stop. Panel TRIO AT 5 (**100b**) for approx. 5 cm concrete cover
- 1x Stop. Panel TRIO MTF (**102**) (Fig. C9.07)



- Panels of height 330 are used for formwork height 300.
- Perm. fresh concrete pressure depending on the wall thickness:
 - 67.5 kN/m² for WT < 35 cm
 - 60.0 kN/m² for WT ≥ 35 cm and ≤ 40 cm
- The rubber lip (**100.1**) allows for a continuous reinforcement thickness of max. 16 mm.

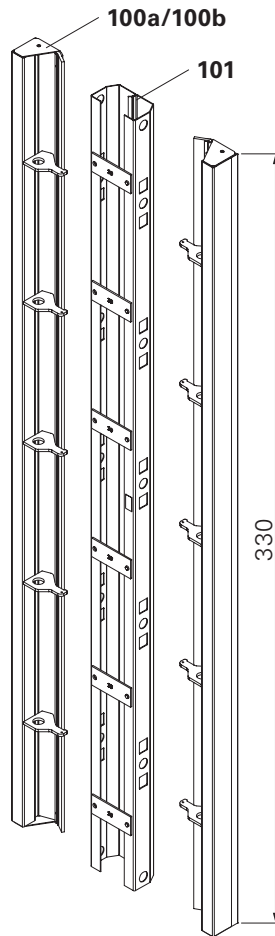


Fig. C9.06a

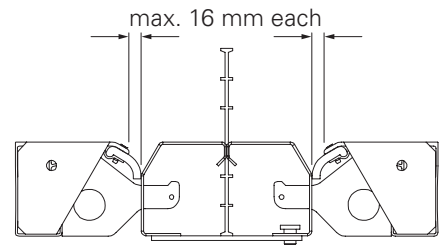


Fig. C9.07

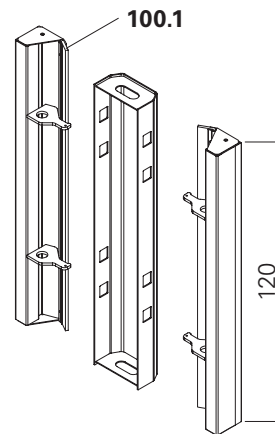


Fig. C9.06b

Concrete cover c:

$$c = \frac{d - b}{2} - \varnothing \text{ reinforcement}$$

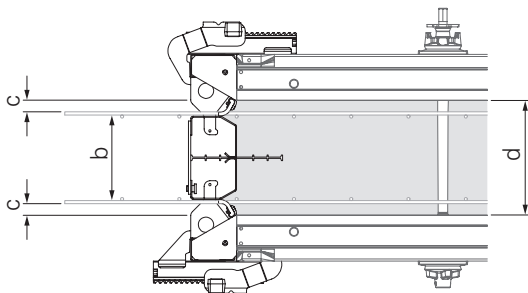


Fig. C9.08

Stop end panel reinforcement with expandable water bar

Consisting of:

- 2x Stop. Panel TRIO AT (**100**)
- 1x Stop. Panel TRIO MTF (**102**)
- Filler plates supplied by the contractor (**96**)

(Fig. C9.09)

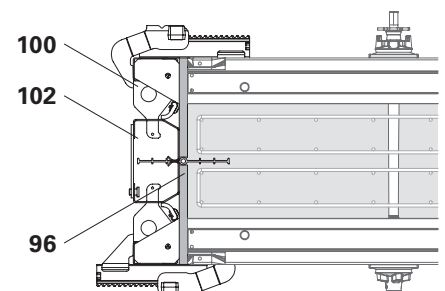


Fig. C9.09

Assembly

1. Position primary formwork.
2. Fix Stop. Panel TRIO AT (**100**) to the primary formwork by means of the Alignment Coupler BFD (**28**).
3. Install first row of reinforcement.
4. Position Stop. Panel TRIO MTF (**102**) and fit the water bar (**102.1**).
5. Install second row of reinforcement.
6. Fix Stop. Panel TRIO AT (**100**) to the closing formwork by means of the Alignment Coupler BFD (**28**).
7. Position the closing formwork and in doing so insert Stop. Panel TRIO AT (**100**) into Stop. Panel TRIO MTF (**102**).

(Fig. C9.10)

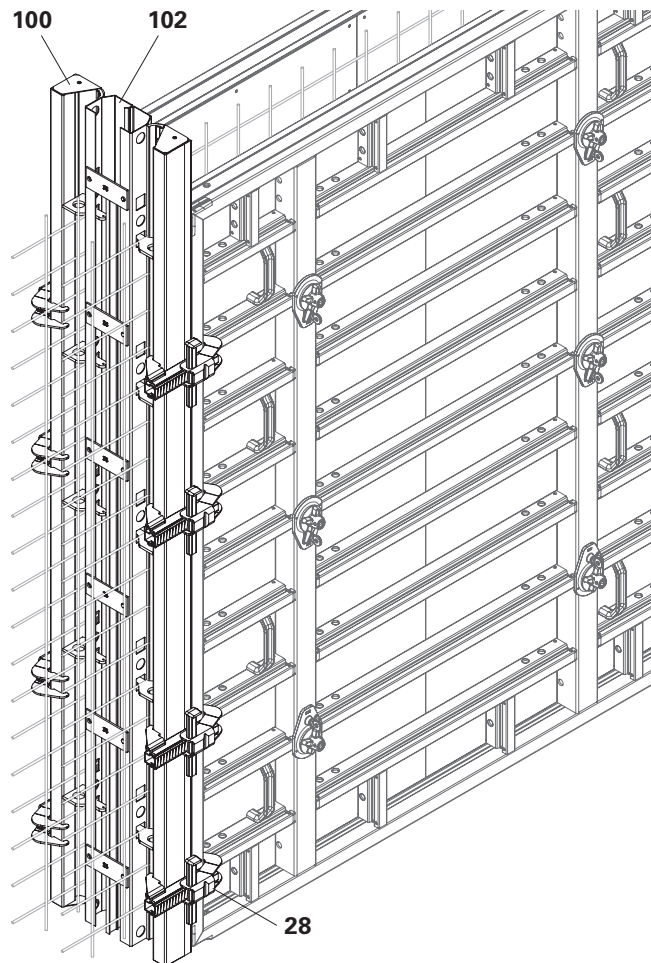


Fig. C9.10

Components



- Combination table for stop end panels with water bar installation at height 3.30 m (Tab. C9.03)
- Combination table for stop end panels with water bar installation at height 1.20 m (Tab. C9.04)

	b [mm]	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
		20	24 / 25	30	35	24 / 25	30	35	40
H = 3.30 m									
AT 330x3	–	2	2	2	2				
AT 330x5	–					2	2	2	2
MTF 330x20	118	1				1			
MTF 330x24/25	158		1				1		
MTF 330x30	218			1				1	
MTF 330x35/36	268				1				1

Tab. C9.03

H = 1.20 m		20	24 / 25	30	35	24 / 25	30	35	40
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
MTF 120x20	118	1				1			
MTF 120x24/25	158		1				1		
MTF 120x30	218			1				1	
MTF 120x35/36	268				1				1

Tab. C9.04

Extension guidelines

Pre-assembly resting on the ground at $H \leq 6.00$ m

Assembly information

- The assembly surface must be level.
- Place squared timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position with the formwork panel facing downwards.

Panel connections

- For extension units with a height of $5.10 \text{ m} < H \leq 6.00 \text{ m}$, fit Alignment Couplers BFD (28) and Compensation Walters-4 MAR 85 (33) at the panel joints.
 - Examples: (Fig. C10.01a – Fig. C10.01c)



- Fit the Wingnuts MX15 for the tie points on the ground during pre-assembly.
- If a Panel MX-2 $H = 30$ cm is added horizontally, the tie can be dispensed with for this panel. The unused tie point must be sealed with a Plug MXM15 $\text{Ø}18.3\text{mm}$ (71).

MX-2 300x60/90/120

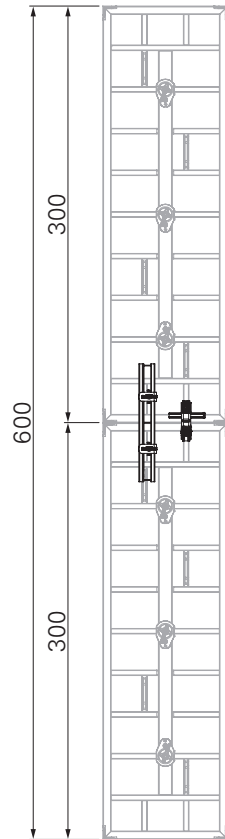


Fig. C10.01a

MX-2 300x240

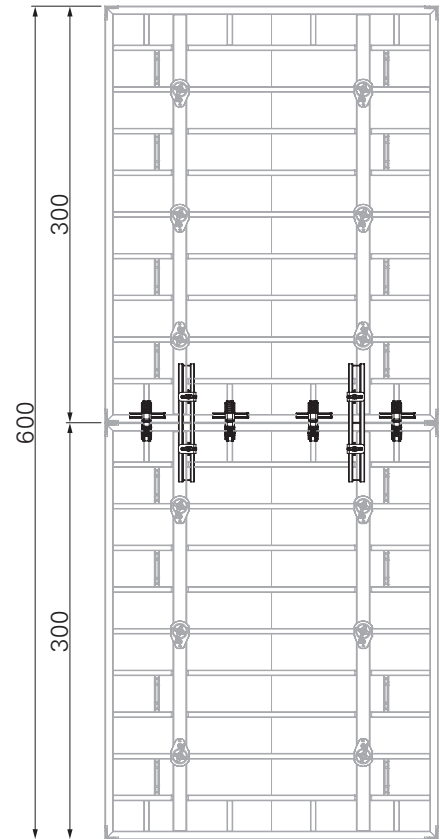


Fig. C10.01b

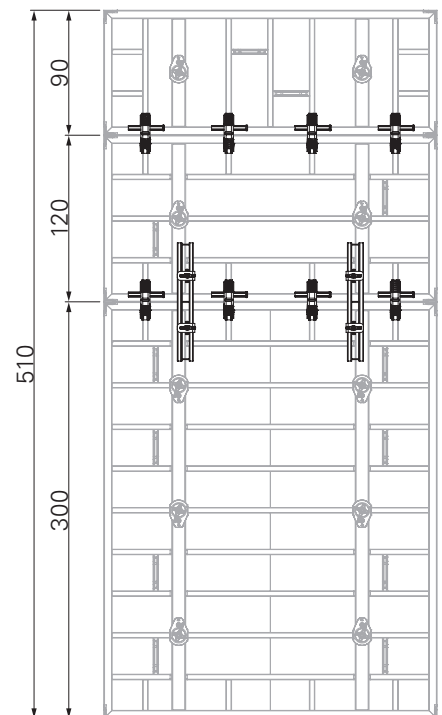


Fig. C10.01c

Erection with the crane

(Fig. C10.02)



Warning

Extension units that are incorrectly or insufficiently attached or incorrectly connected can come loose!

Falling extension units can strike people and cause serious injuries or even death.

- ⇒ Observe the permissible load-bearing capacity of the Lifting Hook MX 1.5t and the crane capacity!
- ⇒ Follow Instructions for Use for the Lifting Hook MX 1.5t!
- ⇒ Take note of the specified panel connections for the relevant height extension.



Realise height extensions without any additional load (Push-Pull Props RS etc.).

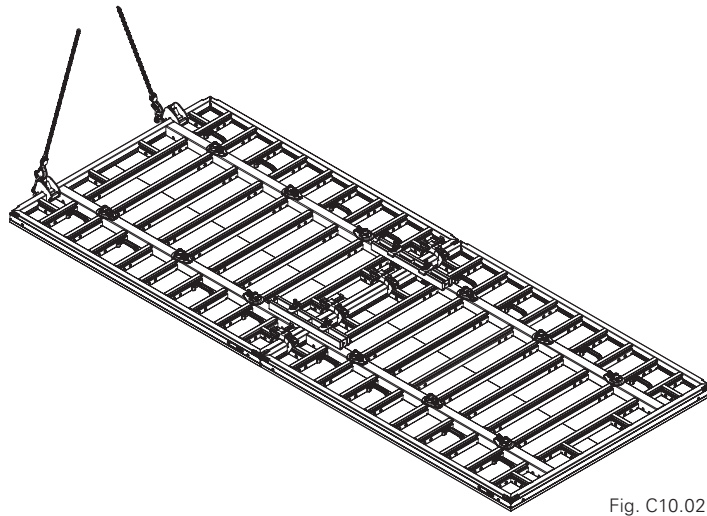


Fig. C10.02

Horizontal pre-assembly up to H 8.70 m

Assembly information

- The assembly surface must be level.
- Place squared timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position with the formwork panel facing downwards.

Panel connections

For extension units with a height of $6.00\text{ m} \leq H \leq 8.70\text{ m}$ or 6.00 m (horizontal), fit Alignment Couplers BFD (28) and Compensation Walers-4 MAR 85 (33) at the panel joints.

- Examples:
(Fig. C10.03a + Fig. C10.03b)



- Fit the Wingnuts MX15 for the tie points on the ground during pre-assembly.
- If a Panel MX-2 H = 30 cm is added horizontally, the tie can be dispensed with for this panel. The unused tie point must be sealed with a Plug MXM15 Ø18.3mm (71).

MX-2 300x240

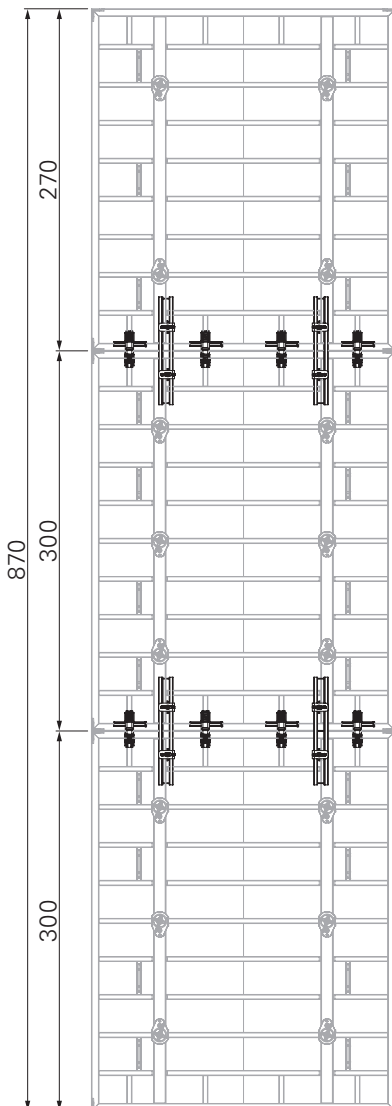


Fig. C10.03a

MX-2 300x240

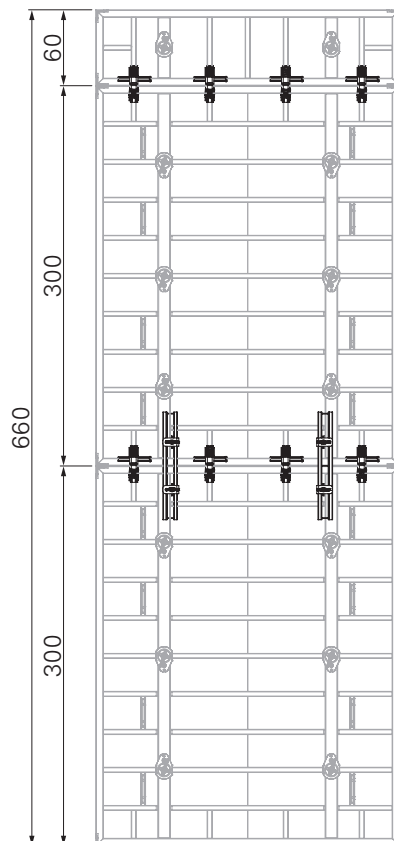


Fig. C10.03b

MX-2 300x240
Horizontal panels

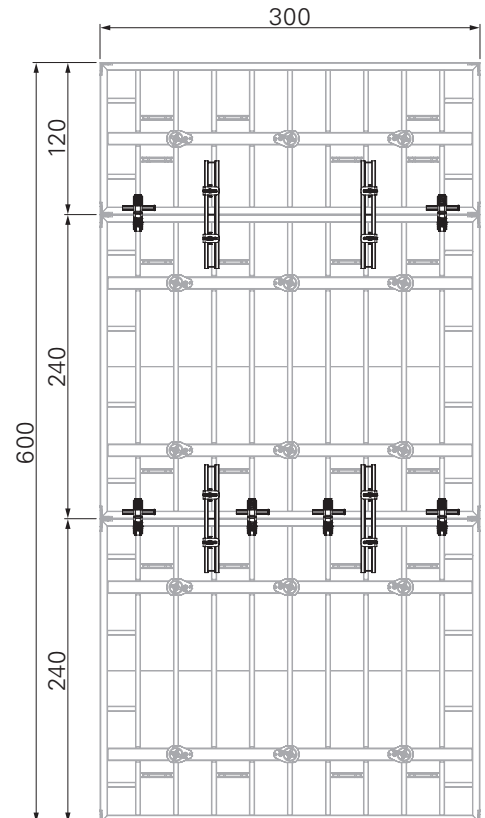


Fig. C10.03c

Erection with the crane

(Fig. C10.04)



Warning

Extension units that are incorrectly or insufficiently attached or incorrectly connected can come loose! Falling extension units can strike people and cause serious injuries or even death.

- ⇒ Observe the permissible load-bearing capacity of the Lifting Hook MX 1.5t and the crane capacity!
- ⇒ Follow Instructions for Use for the Lifting Hook MX 1.5t!
- ⇒ Take note of the specified panel connections for the relevant height extension.



Realise height extensions without any additional load (Push-Pull Props RS etc.).

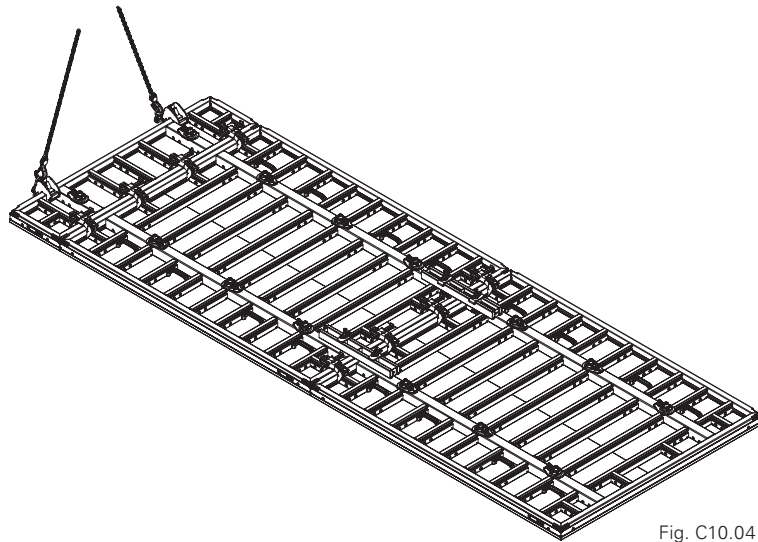


Fig. C10.04

Upright assembly

With a concreting height of 3.00 m, the top tie is not required if a Push-Pull Spreader MX 15-40 or MX 15-100 is used.

The panels are braced by the two Push-Pull Spreaders MX (**55/66**).
(Fig. C11.01)

Components

- 5** Panel MX-2
- 5.2** Panel strut
- 55** Push-Pull Spreader MX 15-40
- 55.1** Securing Hook
- 55.2** Mounting shoe
- 55.3** Spacer rack
- 66** Push-Pull Spreader MX 15-100



- Setting dimension = wall thickness
- For information on how to prepare and fit the Push-Pull Spreader MX, see Section "A17 Parapets and foundations" on page 108.
- Push the two Push-Pull Spreaders MX 15 onto the outside of the tie profiles.
- Close open tie points on the formlining with Plugs MXM15 Ø18.3mm (**71**), see Section "Closures" on page 51.
- Always fit platforms and console brackets on the side of the securing hook (**55.1**).

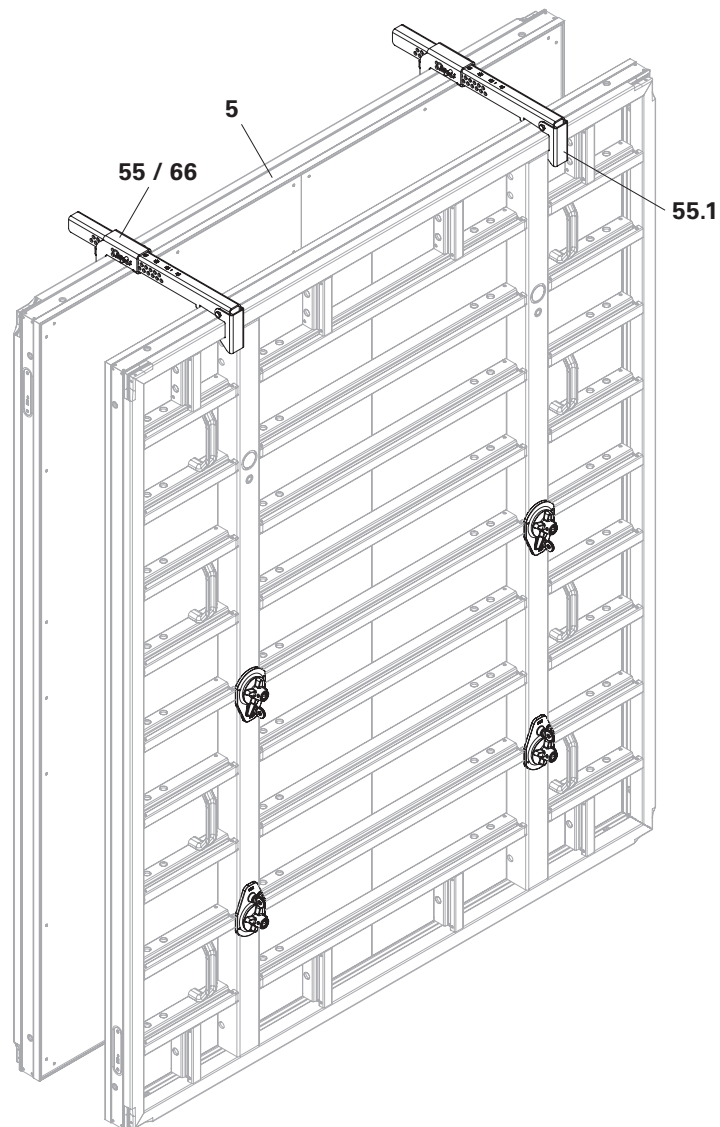


Fig. C11.01

Outs. Corner MXA-2 330x45

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 50/20		
	A	B	C	D	E	F	G	H
15	–	MXA-2 45	–	MXM-2 60	WDA 5 ¹⁾	WDA 10 ¹⁾	MXI-2 50/20	MX-2 45
17.5	–	MXA-2 45	KH 2.5 ²⁾	MXM-2 60	WDA 5 ¹⁾	KH 7.5 ²⁾	MXI-2 50/20	MX-2 45
20	–	MXA-2 45	–	MX-2 30	–	WDA 5 ¹⁾	MXI-2 50/20	WDA 5 ¹⁾
24	–	MXA-2 45	–	MX-2 30	–	KH 1 ²⁾	MXI-2 50/20	KH 1 ²⁾
25	–	MXA-2 45	–	MX-2 30	–	–	MXI-2 50/20	–
30	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 30	–	–	MXI-2 50/20	–
35	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 30	–	–	MXI-2 50/20	–
36	WDA 10 ³⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 30	KH 1 ²⁾	–	MXI-2 50/20	–
40	MXM-2 60	MXA-2 45	–	MX-2 45	–	MX-2 45	MXI-2 50/20	–

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

³⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation. A 1 cm KH must then be fitted to the subsequent element

Tab. D1.01

Arrangement of Alignment Couplers BFD (Fig. D1.02 + Fig. D1.03)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20			Alignment Couplers BFD at Outs. Corner MXA-2 45	
	S1 + S2		S3 ³⁾	S4 + S5	
Strut	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦ ⑨	① ③ ④ ⑤ ⑦ ⑧ ⑩	① ③ ④ ⑥ ⑧	

³⁾ Arrangement if no Panel MX-2 330x240 is connected directly to the I-Corner MXI-2 50/20

Tab. D1.02



Panels MX-2 330x240 are connected to the short side of the I-Corner MXI-2 330x50/20 as standard for wall thicknesses of 15 – 36 cm. If this is not possible, only the following elements may be connected:

- Panel MX-2 330x30
- Panel MX-2 330x45

(Fig. D1.01)

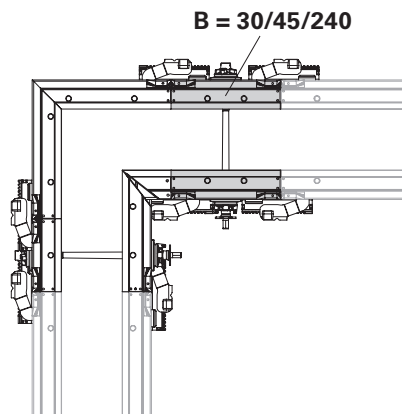


Fig. D1.01

D1 Corners 90° with I-Corner MXI-2 330x50/20

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of I-Corner MXI-2 330x50/20
(Fig. D1.02 + Fig. D1.02a)

Example:

Wall thickness 25 cm

- A – E: Tab. D1.01
- S1 – S3: Tab. D1.02

Position of joint S3 (WT 15 and 17.5)

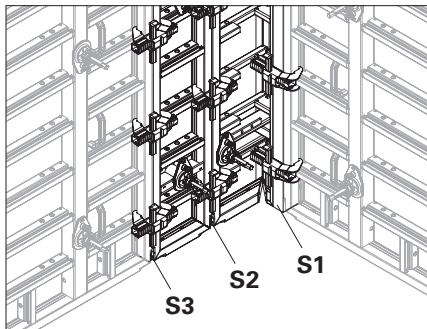


Fig. D1.02a

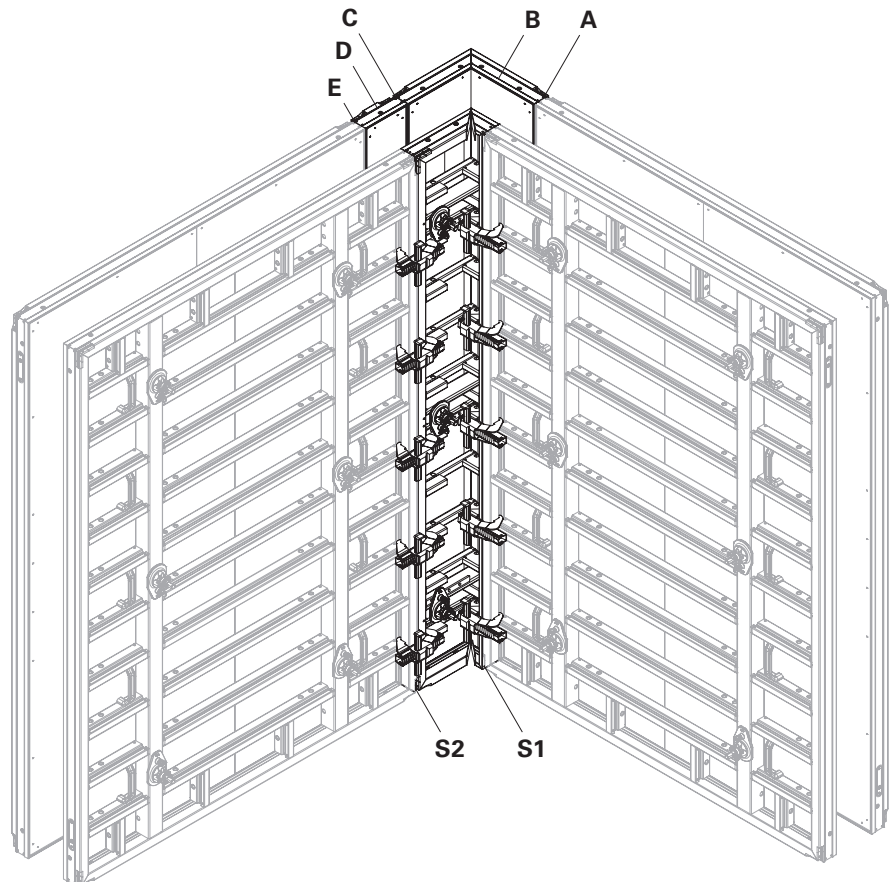


Fig. D1.02

View of Outs. Cor. MXA-2 330x45
(Fig. D1.03)

Example:

Wall thickness 25 cm

- F – H: Tab. D1.01
- S4 – S6: Tab. D1.02

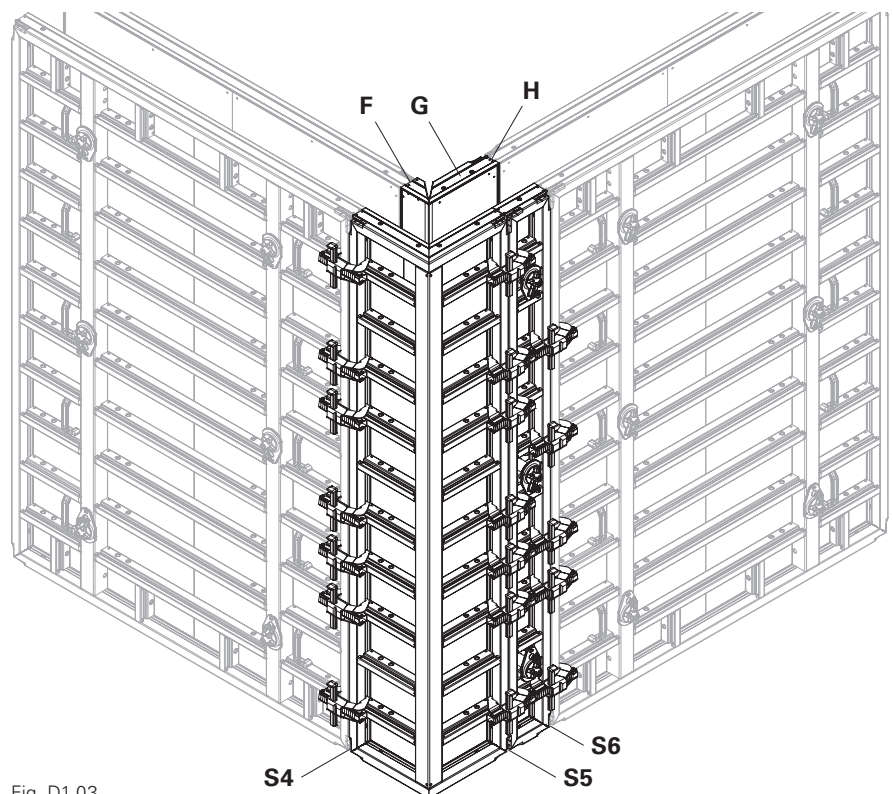


Fig. D1.03

D1 Corners 90° with I-Corner MXI-2 330x50/20



Wall thickness <40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 50/20	
	A	B	C	D	E	F	G
45	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 45	MX-2 45	MXI-2 50/20
50	MXM-2 60	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 45	MX-2 45	MXI-2 50/20
55	MXM-2 60	–	MXA-2 45	–	MX-2 60	MX-2 30	MXI-2 50/20
60	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 60	MX-2 30	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. D1.03

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. D1.04 + Fig. D1.05)				
Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20		Alignment Couplers BFD at Outs. Corner MXA-2 45	
	S1	S2 + S3	S4 + S7	S5 + S6
Strut	② ③ ⑤ ⑧	② ③ ⑤ ⑦ ⑨ ²⁾	② ③ ⑤ ⑦ ⑨ ²⁾	② ③ ⑤ ⑥ ⑦ ⑨ ²⁾
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 50/20		Compensation Waler-4 MAR 170 at Outs. Corner MXA-2 45	
Strut	① ④ ⑩		① ④ ⑧ ⑩	

²⁾ Alignment Couplers BFD may need to be offset

Tab. D1.04

Arrangement of the alignment couplers and compensation walers

Valid for wall thicknesses < 40 – 60 cm

View of I-Corner MXI-2 330x50/20
(Fig. D1.04)

Example:

Wall thickness 50 cm

- A – E: Tab. D1.01
- S1 – S3: Tab. D1.02

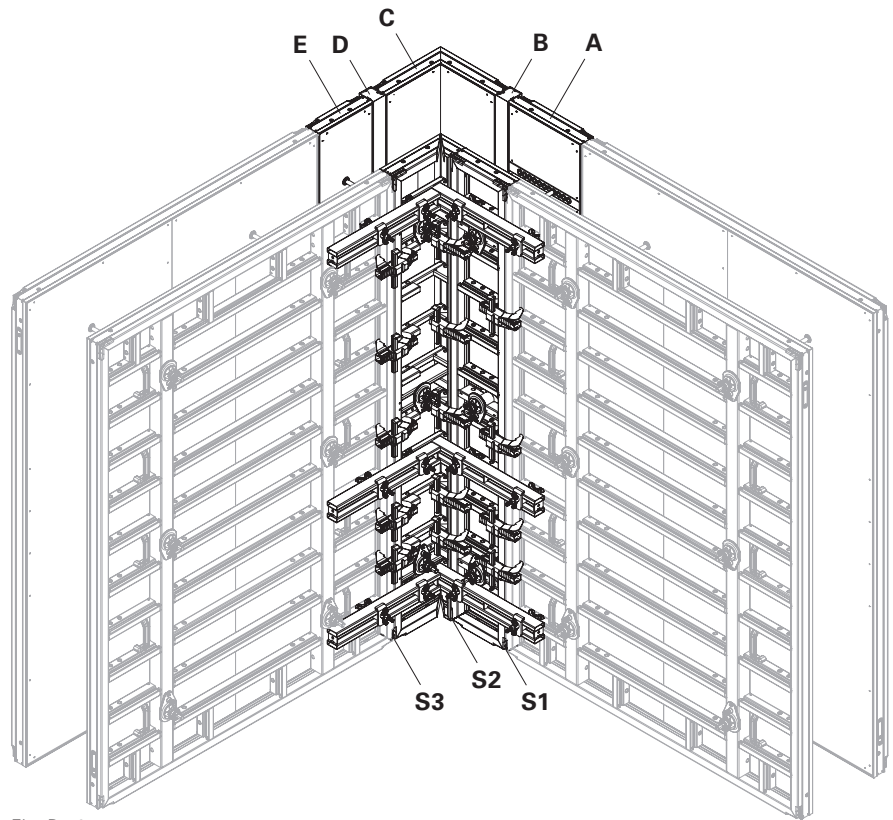


Fig. D1.04

View of Outs. Cor. MXA-2 330x45
(Fig. D1.05)

Example:

Wall thickness 50 cm

- F + G: Tab. D1.01
- S4 – S6: Tab. D1.02

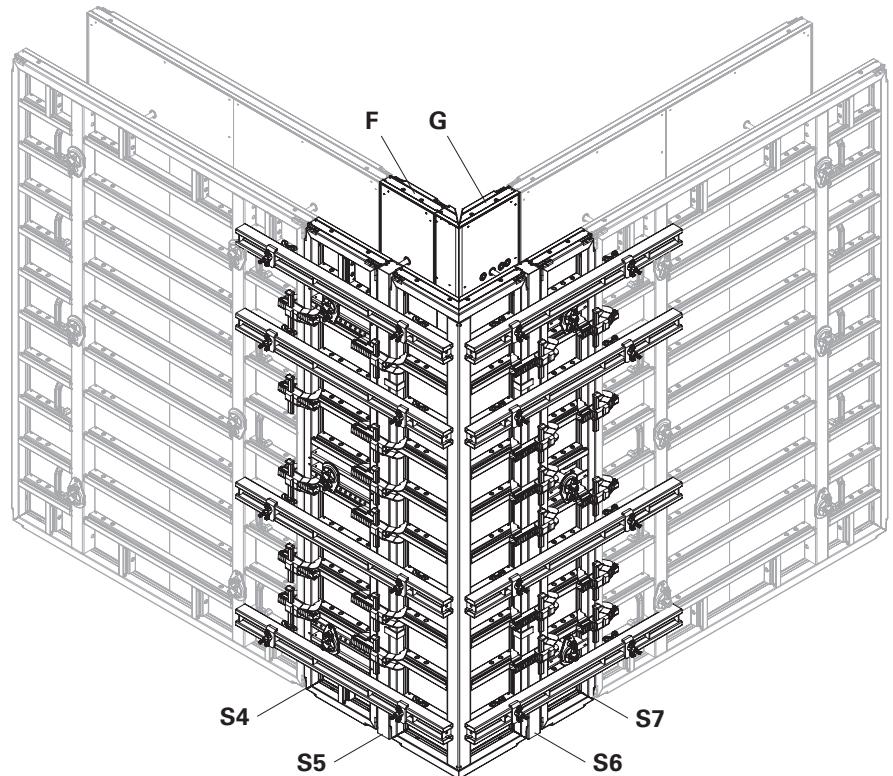


Fig. D1.05

D1 Corners 90° with I-Corner MXI-2 330x50/20



Wall thickness 80 cm



- Perm. fresh concrete pressure 60 kN/m²
- The Adaptor MXE 330 can also be used to mount the Steel Walers SRU 247 U120 (89), see Section "D3 90° corners with Adaptor MXE 330" on page 220.

Components

- 5a Panel MX-2 330x30
- 5b Panel MX-2 330x60
- 7 Tie Rod DW15
- 8 Wingnut DW15 ga
- 26 Wall Thick Comp. WDA MX 330x5
- 28 Alignment Coupler BFD
- 33 Compensation Waler-4 MAR 85
- 45 Tie Rod DW20
- 46 Tube Ø28mm 300 rough
- 47 Sealing Cone DK DW20 55mm
- 48 Wingnut DW20 ga
- 49 Counterplate DW20 120x120x15mm
- 84 I-Corner MXI-2 330x50/20
- 85 Outs. Corner MXA-2 330x45
- 86 Waler Stop
- 87 Anchor Tie Yoke SW
- 89 Steel Waler SRU 247 U120
- 90 Wedge KZ tensionproof

Example

View from above
(Fig. D1.06 – Fig. D1.06b)

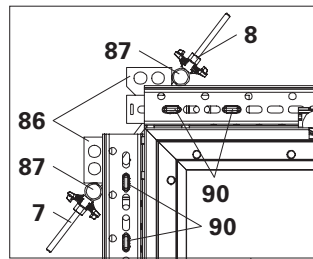


Fig. D1.06a

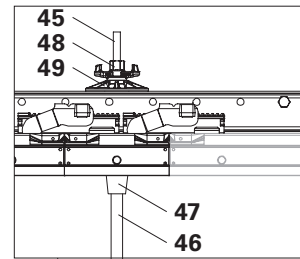


Fig. D1.06b

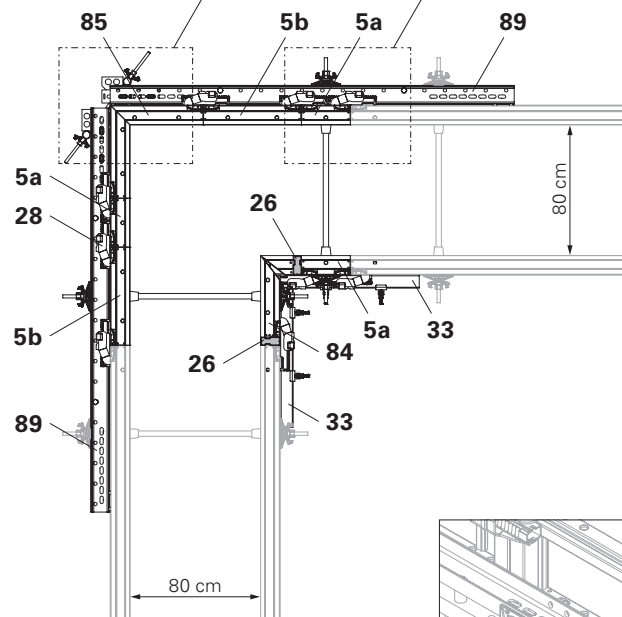


Fig. D1.06



The outside corner can also be implemented with the Tie Yoke SKZ (article no. 024210) instead of the waler stop (86) and anchor tie yoke (87).

For assembly, see the Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork. (Fig. D1.06c)

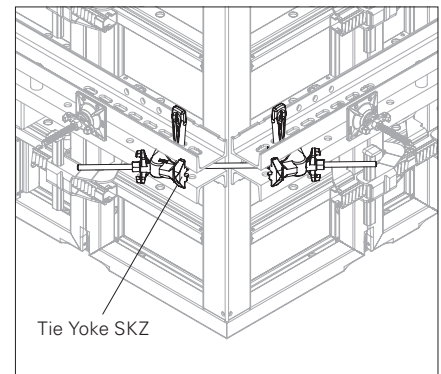


Fig. D1.06c

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR/Steel Waler SRU 247 U120 (Fig. D1.07 + Fig. D1.08)

Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20		Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2 + S3	S4 + S9	S5 + S8	S6 + S7
Strut	① ⑤ ⑨	① ③ ⑥ ⑨	② ④ ⑥ ⑧ ⑩	② ③ ④ ⑥ ⑧ ⑩	② ③ ④ ⑥ ⑦ ⑧ ⑩
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 50/20		Steel Waler SRU 247 U120 at Outs. Corner MXA-2 45		
Strut	② ④ ⑧		Steel Walers SRU 247 U120 are placed at the tie position		

Tab. D1.05

Arrangement of the alignment couplers and steel walers

View of I-Corner MXI-2 330x50/20
(Fig. D1.07)

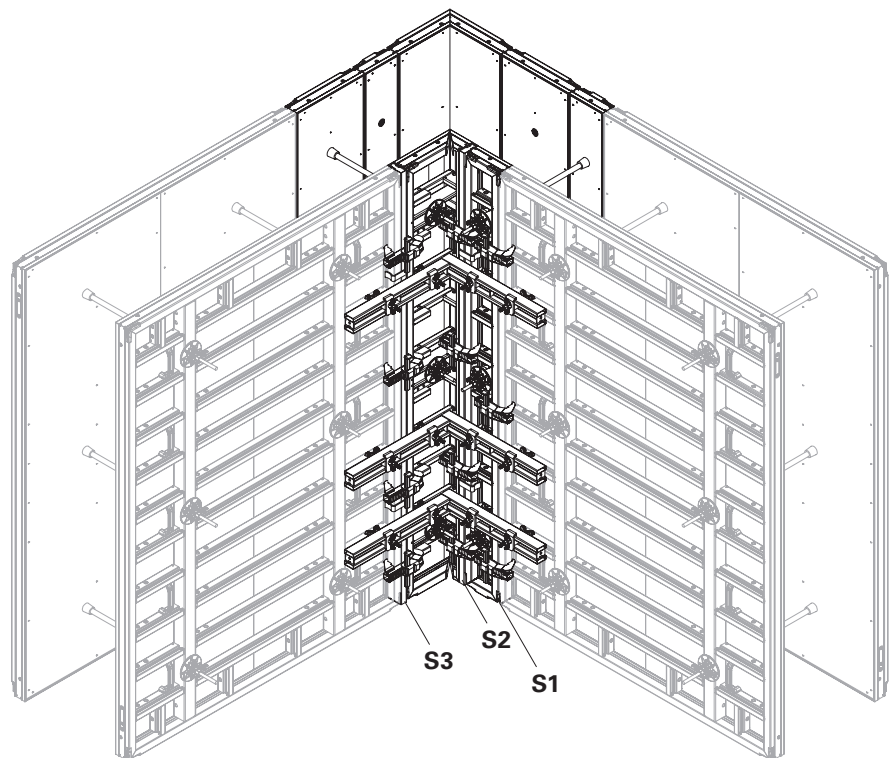


Fig. D1.07

View of Outs. Cor. MXA-2 330x45
(Fig. D1.08)

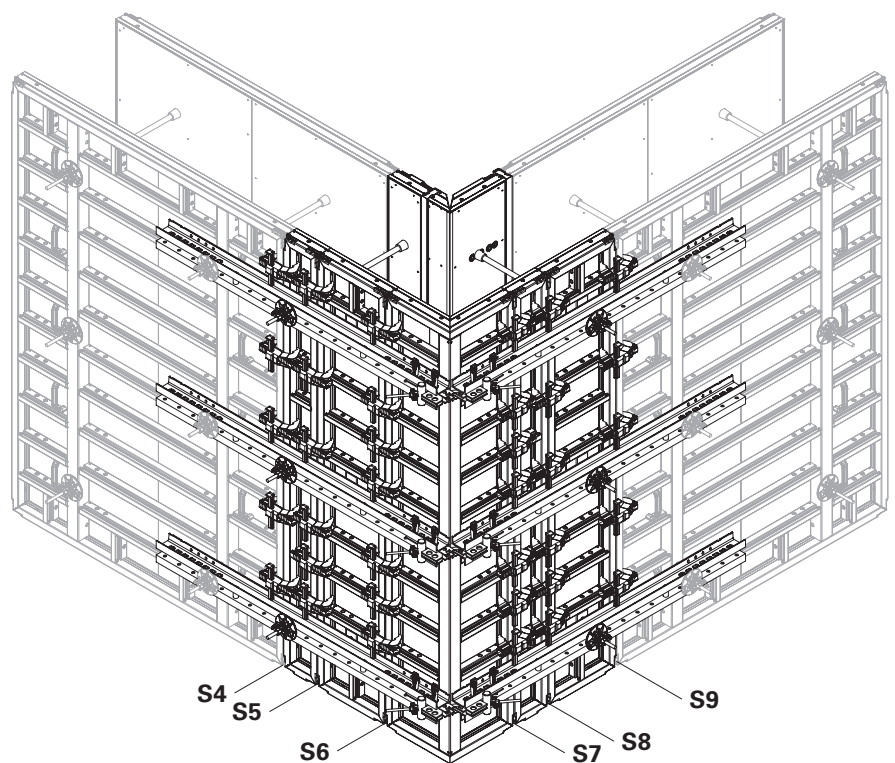


Fig. D1.08

D2 Corners 90° with I-Corner MXI-2 330x60



Outs. Corner MXA-2 330x35

Wall thickness 15 – 30 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 35							Panels at I-Corner MXI-2 60
	A	B	C	D	E	F	G	H
15	KH 7.5 ²⁾	MX-2 30	KH 2.5 ²⁾	MXA-2 35	KH 2.5 ²⁾	MX-2 30	KH 7.5 ²⁾	MXI-2 60
17.5	KH 7.5 ²⁾	MX-2 30	WDA 5 ¹⁾	MXA-2 35	WDA 5 ¹⁾	MX-2 30	KH 7.5 ²⁾	MXI-2 60
20	–	MX-2 45	–	MXA-2 35	–	MX-2 45	–	MXI-2 60
24	–	MX-2 45	WDA 4 ¹⁾	MXA-2 35	WDA 4 ¹⁾	MX-2 45	–	MXI-2 60
25	–	MX-2 45	WDA 5 ¹⁾	MXA-2 35	WDA 5 ¹⁾	MX-2 45	–	MXI-2 60
30	–	MX-2 45	WDA 10 ¹⁾	MXA-2 35	WDA 10 ¹⁾	MX-2 45	–	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. D2.01

Arrangement of Alignment Couplers BFD (Fig. D2.01 + Fig. D2.02)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 35		
	S1	S2	S3	S4 + S5	S6
Strut	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦ ⑨	① ③ ④ ⑥ ⑧	① ③ ④ ⑤ ⑦ ⑧ ⑩	① ③ ④ ⑥ ⑧

Tab. D2.02

D2 Corners 90° with I-Corner MXI-2 330x60

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 30 cm

View of I-Corner MXI-2 330x60
(Fig. D2.01)

Example:

Wall thickness 25 cm

- A – G: Tab. D2.01
- S1 + S2: Tab. D2.02

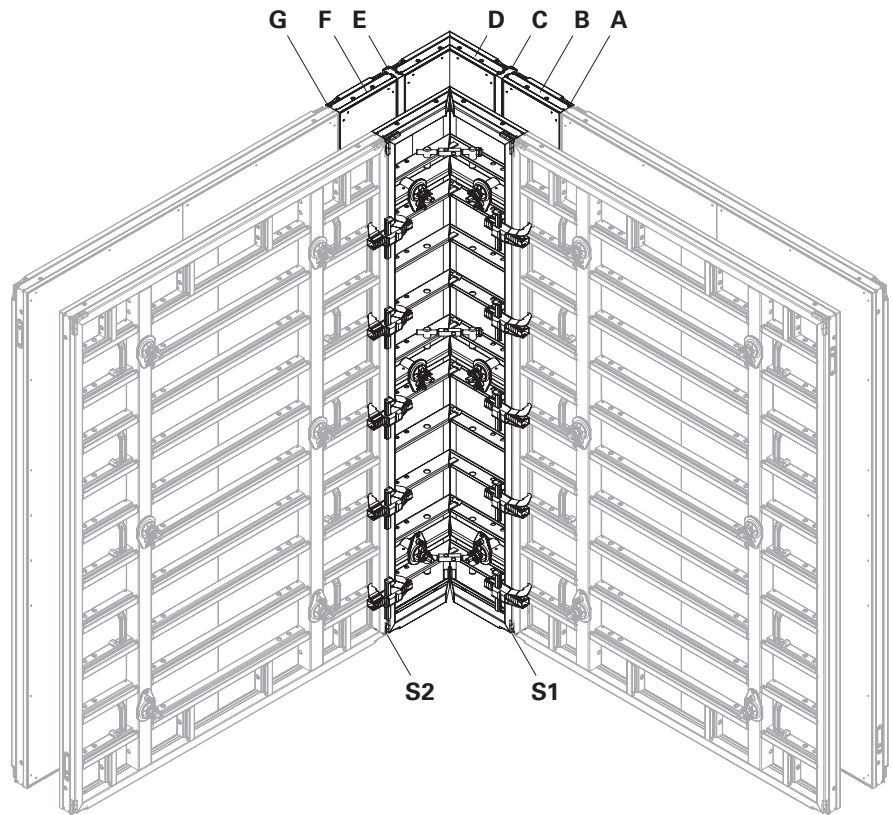


Fig. D2.01

View of Outs. Cor. MXA-2 330x35
(Fig. D2.02)

Example:

Wall thickness 25 cm

- H: Tab. D2.01
- S3 – S6: Tab. D2.02

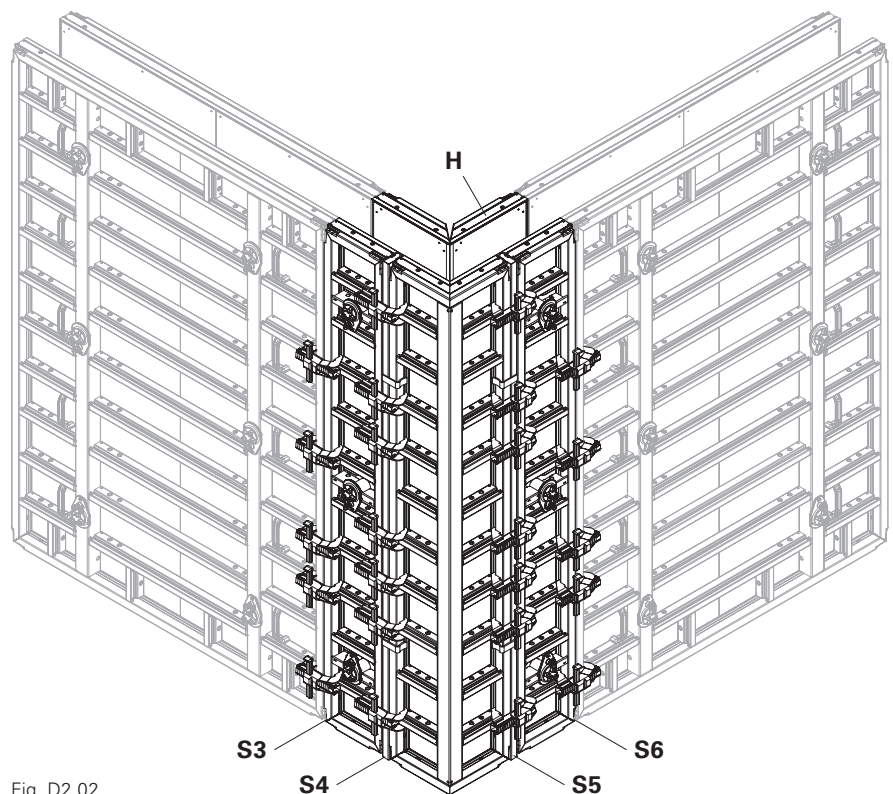


Fig. D2.02

Outs. Corner MXA-2 330x45

Wall thickness 30 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 60
	A	B	C	D	E	F
30	MX-2 45	–	MXA-2 45	–	MX-2 45	MXI-2 60
35	MX-2 45	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 45	MXI-2 60
36	MX-2 45	WDA 6 ¹⁾	MXA-2 45	WDA 6 ¹⁾	MX-2 45	MXI-2 60
40	MX-2 45	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber can be used as compensation.

Tab. D2.03

Arrangement of Alignment Couplers BFD (Fig. D2.03 + Fig. D2.04)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 35		
	S1	S2	S3	S4 + S5	S6
Strut	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦ ⑨	① ③ ④ ⑥ ⑧	① ③ ④ ⑤ ⑦ ⑧ ⑩	① ③ ④ ⑥ ⑧

Tab. D2.04

D2 Corners 90° with I-Corner MXI 330x60

Arrangement of the alignment couplers

Valid for wall thicknesses 30 – 40 cm

View of I-Corner MXI-2 330x60
(Fig. D2.03)

Example:

Wall thickness 35 cm

- A – E: Tab. D2.03
- S1 + S2: Tab. D2.04

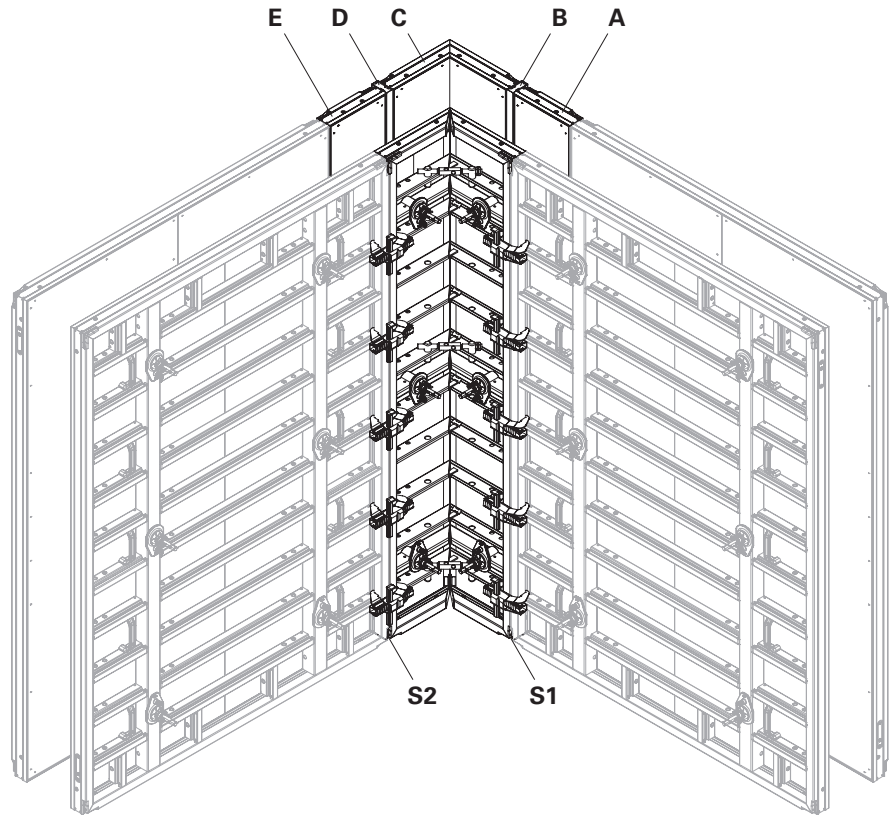


Fig. D2.03

View of Outs. Cor. MXA-2 330x45
(Fig. D2.04)

Example:

Wall thickness 35 cm

- F: Tab. D2.03
- S3 – S6: Tab. D2.04

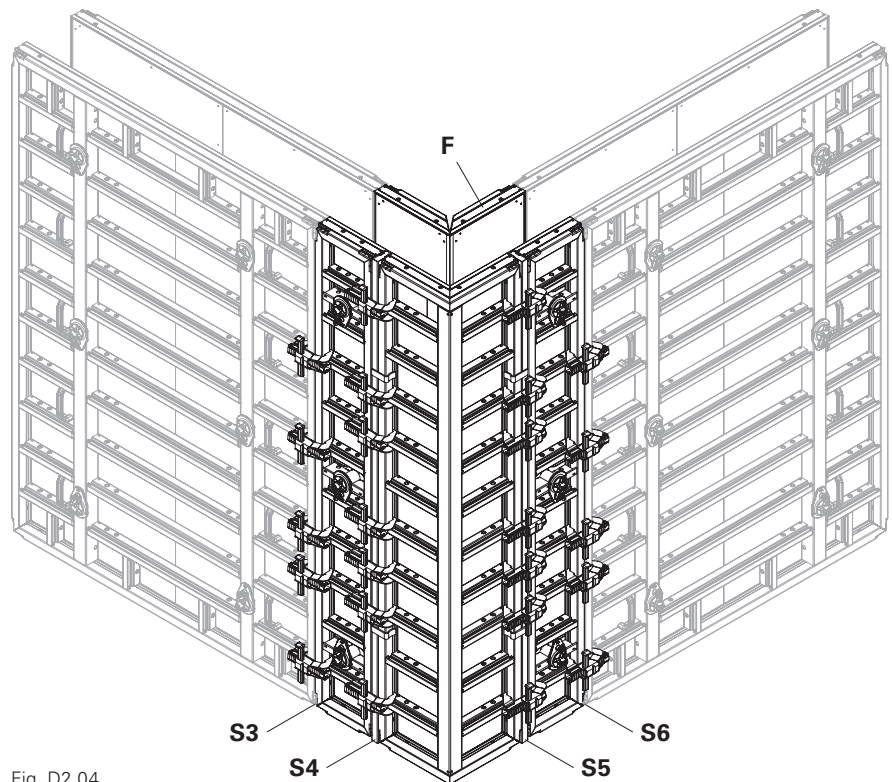


Fig. D2.04

D2 Corners 90° with I-Corner MXI-2 330x60

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 60
	A	B	C	D	E	F
45	MXM-2 60	–	MXA-2 45	–	MXM-2 60	MXI-2 60
50	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MXM-2 60	MXI-2 60
55	MXM-2 60	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MXM-2 60	MXI-2 60
60	MX-2 45	MX-2 30	MXA-2 45	MX-2 30	MX-2 45	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber can be used as compensation.

Tab. D2.05

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. D2.05 + Fig. D2.06)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 60		Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2	S3	S5 + S6 (+ S4 + S7 ²⁾)	S8
Strut	② ③ ⑤ ⑦ ⑨	② ③ ⑤ ⑦ ⑨	② ③ ⑤ ⑦ ⑨	② ③ ⑤ ⑥ ⑦ ⑨	② ③ ⑤ ⑦ ⑨
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 60		Compensation Waler-4 MAR 170 at Outs. Corner MXA-2 45		
Strut	① ④ ⑩		① ④ ⑧ ⑩		

²⁾ Joint 4 and joint 7 only in case of 60 cm wall thickness

Tab. D2.06

D2 Corners 90° with I-Corner MXI-2 330x60

Arrangement of the alignment couplers and compensation walers

Valid for wall thicknesses > 40 – 60 cm

View of I-Corner MXI-2 330x60
(Fig. D2.05)

Example:

Wall thickness 60 cm

- A – E: Tab. D2.05
- S1 + S2: Tab. D2.06

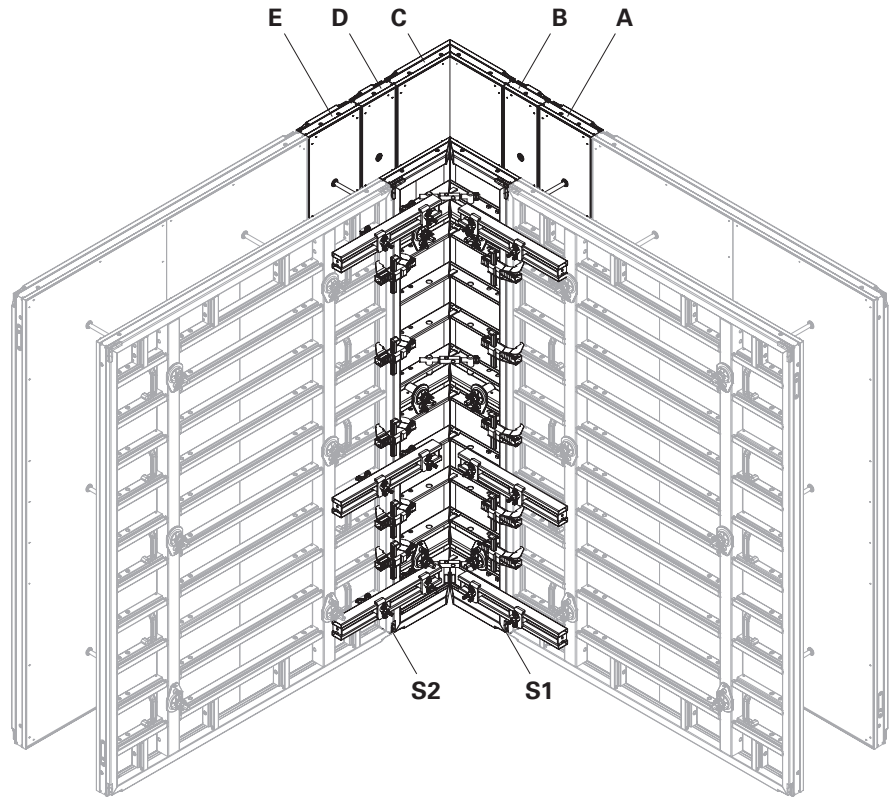


Fig. D2.05

View of Outs. Cor. MXA-2 330x45
(Fig. D2.06)

Example:

Wall thickness 60 cm

- F: Tab. D2.05
- S3 – S8: Tab. D2.06

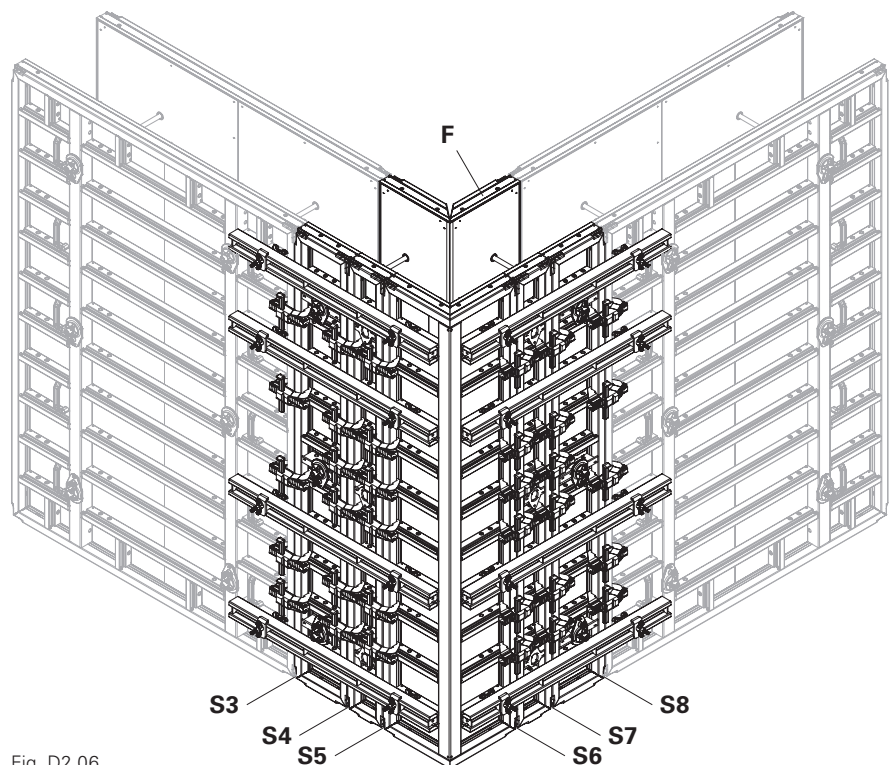


Fig. D2.06

D2 Corners 90° with I-Corner MXI-2 330x60



Wall thickness 80 cm



- Perm. fresh concrete pressure 60 kN/m²
- The Adaptor MXE 330 can also be used to mount the Steel Walers SRU 247 U120 (89), see Section "D3 90° corners with Adaptor MXE 330" on page 220.

Components

- 5 Panel MX-2 330x45
- 7 Tie Rod DW15
- 8 Wingnut DW15 ga
- 26 Wall Thick Comp. WDA MX 330x5
- 28 Alignment Coupler BFD
- 45 Tie Rod DW20
- 46 Tube Ø28mm 300 rough
- 47 Sealing Cone DK DW20 55mm
- 48 Wingnut DW20 ga
- 84 I-Corner MXI-2 330x60
- 85 Outs. Corner MXA-2 330x45
- 86 Waler Stop
- 87 Anchor Tie Yoke SW
- 89 Steel Waler SRU 247 U120
- 90 Wedge KZ tensionproof

Example

View from above
(Fig. D2.07 – Fig. D2.07b)



The outside corner can also be implemented with the Tie Yoke SKZ (article no. 024210) instead of the waler stop (86) and anchor tie yoke (87). For assembly, see the Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork. (Fig. D2.07c)

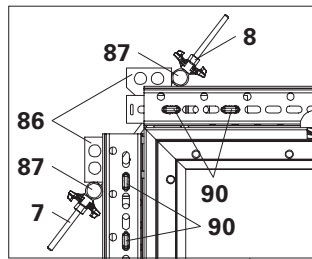


Fig. D2.07a

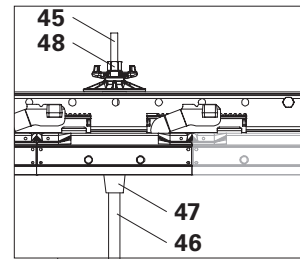


Fig. D2.07b

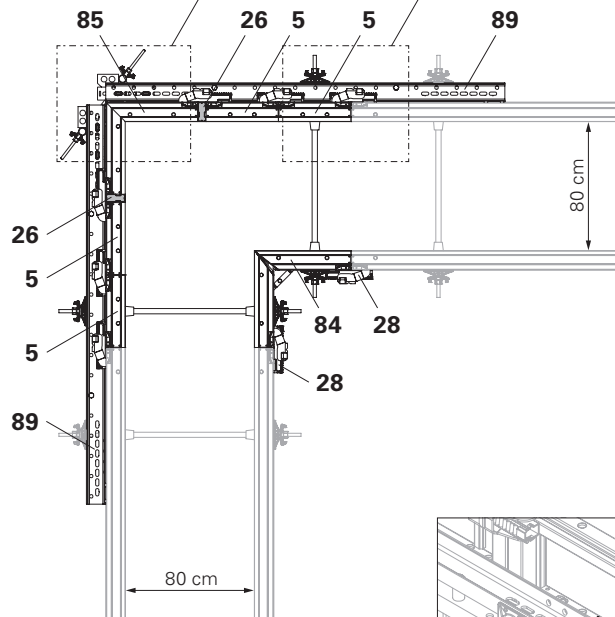


Fig. D2.07

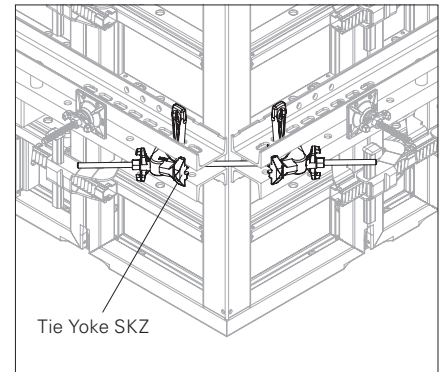


Fig. D2.07c

Arrangement of Alignment Couplers BFD/Steel Walers SRU 247 U120 (Fig. D2.08 + Fig. D2.09)

Joint	Alignment Couplers BFD at I-Corner MXI-2 60	Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1 + S2	S3 + S8	S4 + S7	S5 + S6
Strut	① ③ ④ ⑥ ⑧	② ④ ⑥ ⑧	② ③ ④ ⑥ ⑧	② ③ ④ ⑥ ⑦ ⑧
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 60	Steel Waler SRU 247 U120 at Outs. Corner MXA-2 45		
Strut	–	Steel Walers SRU 247 U120 are placed at the tie position		

Tab. D2.07

Arrangement of the alignment couplers, compensation walers and steel walers

View of I-Corner MXI-2 330x60
(Fig. D2.08)

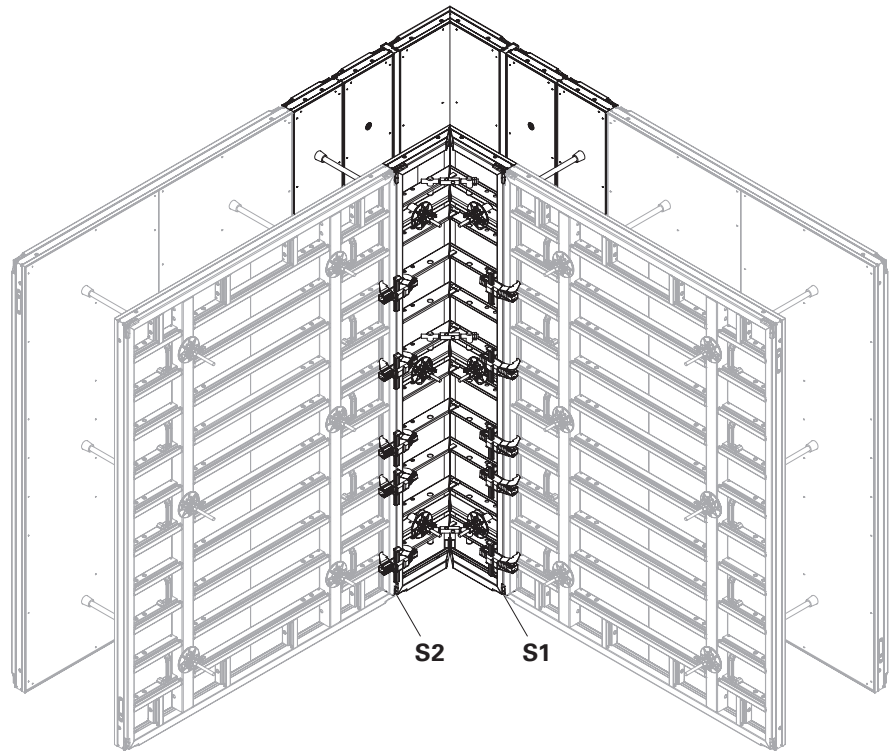


Fig. D2.08

View of Outs. Cor. MXA-2 330x45
(Fig. D2.09)

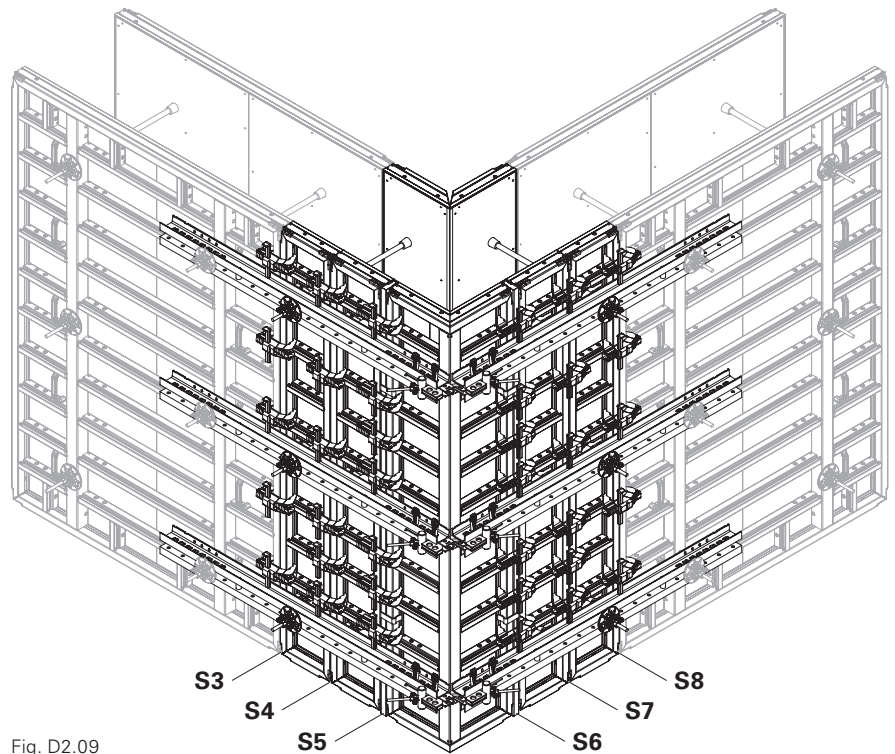
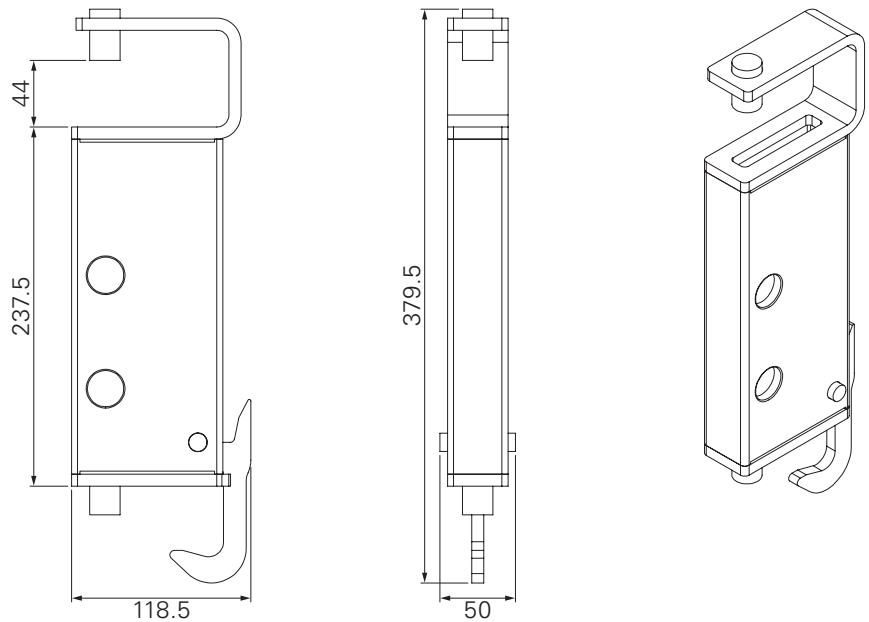


Fig. D2.09

Height 330



- The Adaptor MXE 330 (15) is compatible with the Panels MX-2 330.
- The Adaptor MXE 330 (15) is placed at the tie position (Fig. D3.02) and serves as an additional connection option for positioning the Steel Waler SRU U120 (89) at the tie height.
- The Steel Waler SRU U120 (89) positioned there serves as a stiffening and force-transmitting element when forming outside corner solutions.



Installing Adaptor MXE 330



The Adaptor MXE 330 (15) or the Steel Waler SRU U120 (89) is installed in the tie position in a horizontal state. After setting up the Panels MX-2 (5), at least one tie point must be realised using the pre-assembled Steel Waler SRU U120 (89). The anchoring and corner connection take the load off the Adaptors MXE 330 (15) when the formwork system is loaded.

Installing Adaptor MXE 330

1. Insert Adaptor MXE 330 (15) between two horizontal struts at the tie position.
2. Place Adaptor MXE 330 (15) into the system holes of the Panel MX-2 (5).

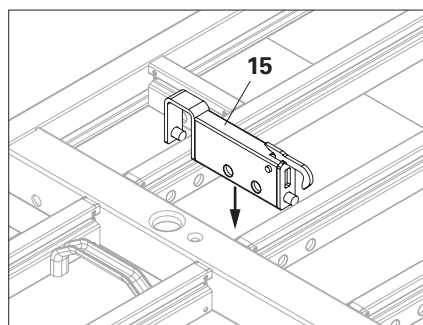


Fig. D3.01a

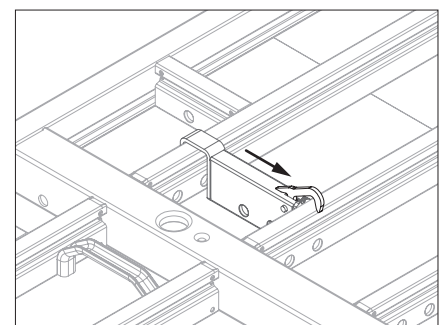


Fig. D3.01b



Check whether the securing hook of the Adaptor MXE 330 (15) is in the locking position. (Fig. 01c)

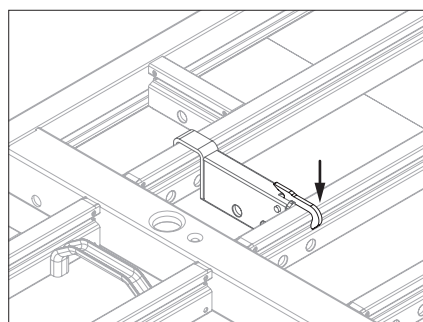


Fig. D3.01c

D3 90° corners with Adaptor MXE 330



- The Adaptor MXE 330 (15) may only be fitted to the following Panels MX-2 in accordance with its intended use:
 - Panel MX-2 18 330x240
 - Panel MX-2 18 330x120
 - Panel MX-2 18 330x90
 - Panel MX-2 18 330x60
 - Outs. Corner MXA-2 330x45
 - Outs. Corner MXA-2 330x35
- The Adaptor MXE 330 (15) may only be fitted at the positions specified in Fig. D3.02.

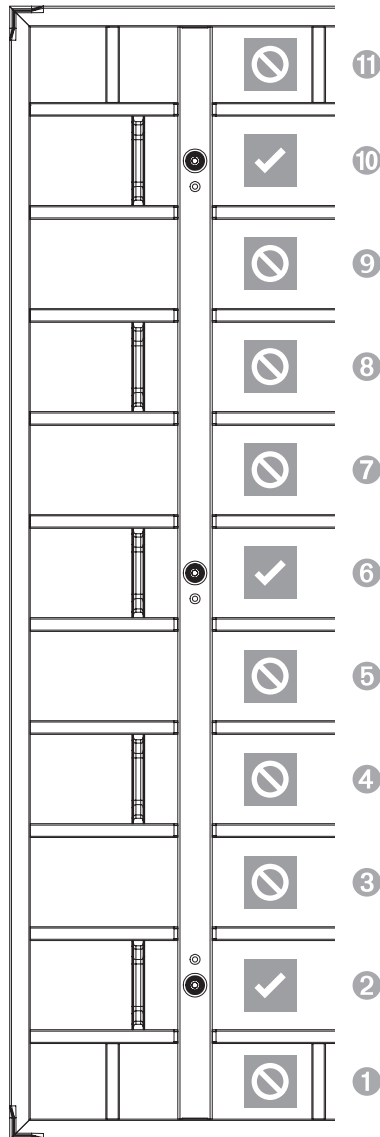


Fig. D3.02

Height 330

Installing the steel waler



- Attach the Steel Waler SRU U120 (89) to the horizontal Panel MX-2 (5).
- This creates a frictional connection between the Steel Waler SRU U120 (89) and the rectangular tube of the Adaptor MXE 330 (15).
- The Steel Waler SRU U120 (89) can be levelled or displaced along the rectangular profile of the Adaptor MXE 330 (15) by up to 36 mm (Fig. D3.03a).

Components

- 15** Adaptor MXE 330
- 24** Wingnut Pivot Plate DW15 ga
- 88** Hook Tie Head DW15 ga
- 89** Steel Waler SRU U120

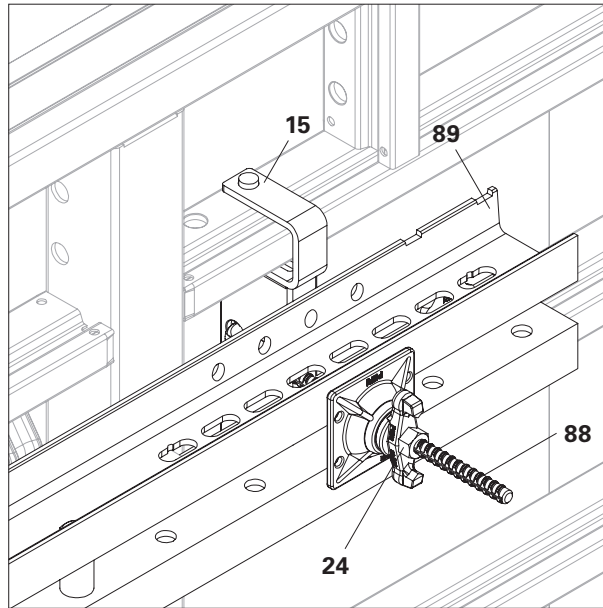


Fig. D3.03

Installing the Steel Waler SRU U120

1. Place the full surface of the Steel Waler SRU U120 (89) on the Adaptor MXE 330 (15).
 2. Insert Hook Tie Head DW15 ga (88) through Steel Waler SRU U120 (89) and hook into Adaptor MXE 330 (15).
 3. Attach Hook Tie Head DW15 ga (88) with Wingnut Pivot Plate DW15 ga (24).
- (Fig. D3.03 + Fig. D3.03a)

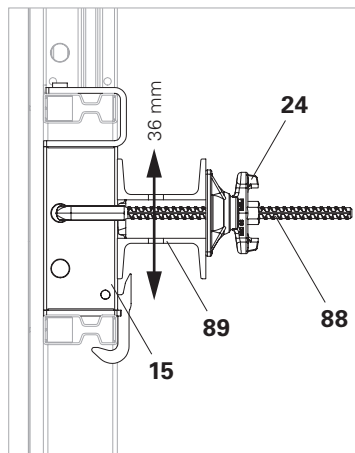


Fig. D3.03a

General rules for assembly



Observe the following rules when installing the Adaptor MXE 330 (15) or the Steel Waler SRU U120 (89):

- Regardless of the length of the Steel Waler SRU U120 (89), only two fixing points or connection points are necessary. The connection points can be realised in two ways:
 - Two Adaptors MXE 330 (15) (Fig. D3.10 on page 227)
 - One Adaptor MXE 330 (15) and one connection point on the Panel MX-2 330x45 element (not shown).
- The system holes in a frame provide several options for fitting the Adaptor MXE 330 (15). Opt for the maximum possible distance A between the two connection points. Taking this rule into account, two types of installation are possible. Here, X is the smaller distance between the Adaptor MXE 330 (15) and the edge of the steel waler compared to the opposite distance Y (Fig. D3.04):

– Symmetrical installation state:

$$\frac{X}{Y} \geq 0.75 \quad \text{and} \quad A \geq \frac{L}{3}$$

– Asymmetrical installation state:

$$\frac{X}{Y} < 0.75 \quad \text{and} \quad A \geq \frac{L}{2} \times 0.9$$

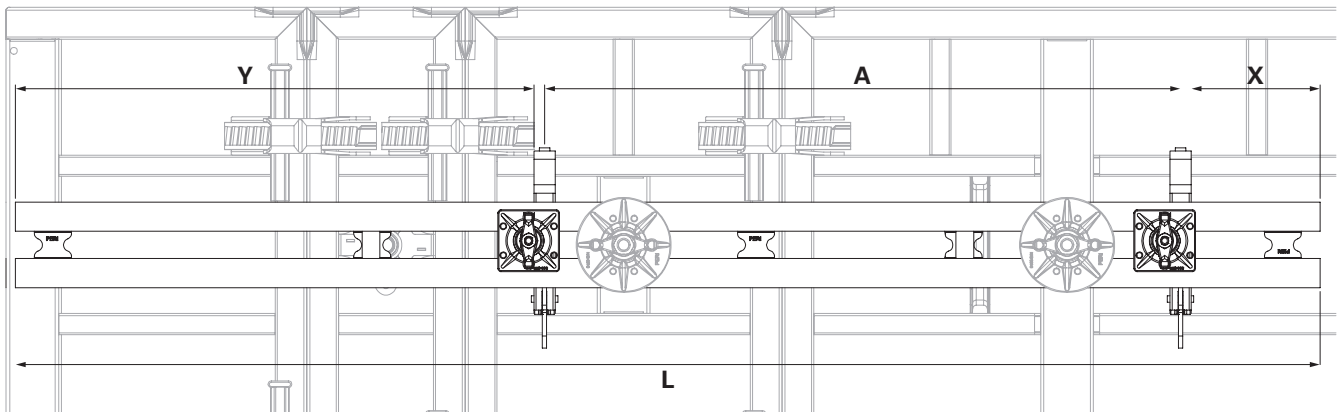


Fig. D3.04

Potential application errors



If the mount for the upper cross strut is plastically deformed, it is **forbidden** to bend the sheet metal due to the possibility of mechanical material fatigue.
(Fig. D3.05)

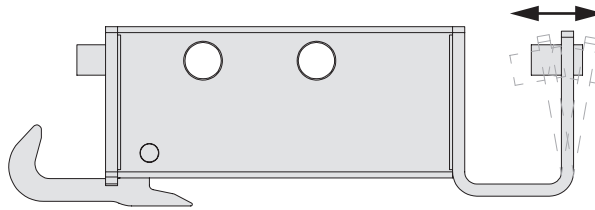


Fig. D3.05



The contact surfaces (shown in grey) must be free of dirt, dry and free of lubricants.
This is the only way to ensure a friction-locked connection between the Adaptor MXE 330 (15) and the Steel Waler SRU U120 (89).
(Fig. D3.06)

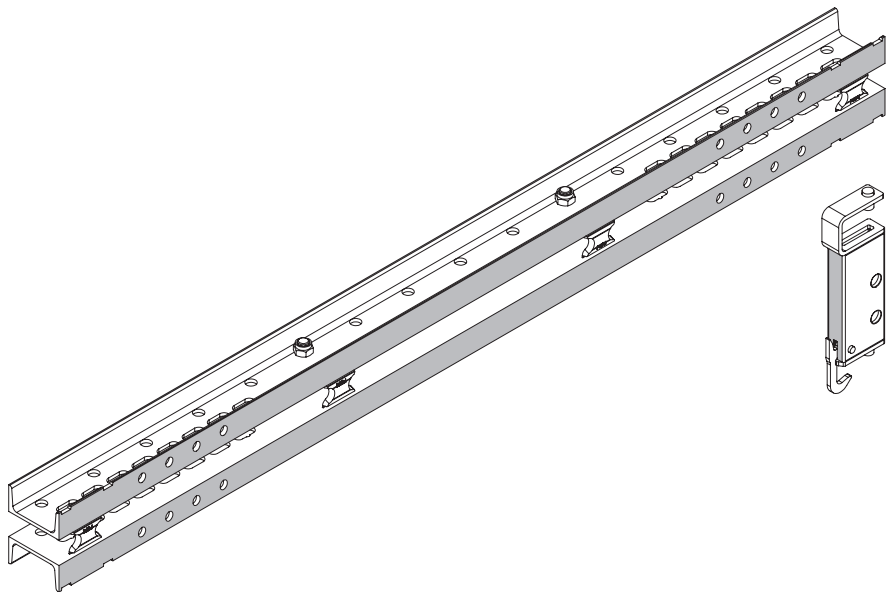


Fig. D3.06



When installing the Steel Waler SRU U120 (**89**), ensure that the contact surface of the Adaptor MXE 330 (**15**) is in full contact with the contact surface of the steel waler. (Fig. D3.07a)

An inclined Adaptor MXE 330 (**15**) (Fig. D3.07b) will reduce the extent of the adhesive surface and thus the adhesive effect, making it more difficult or even impossible to produce a friction-locked bond between the Steel Waler SRU U120 (**89**) and the frame during the anchoring and corner connection process.

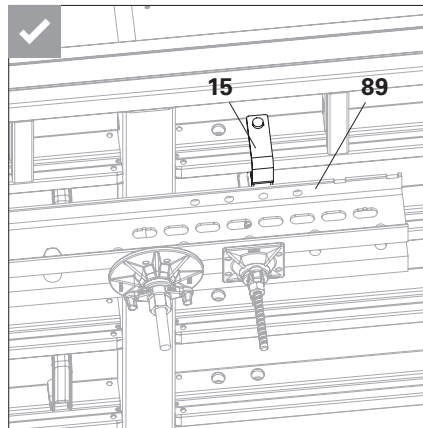


Fig. D3.07a

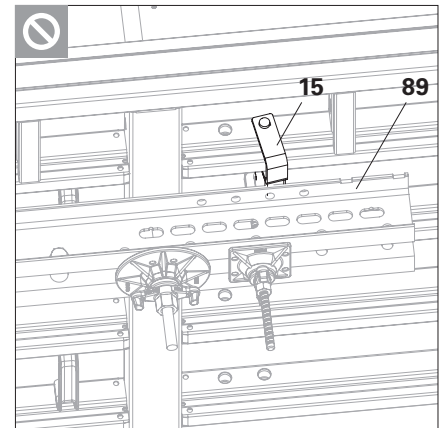


Fig. D3.07b



The safety hook (**15.1**) of the Adaptor MXE 330 (**15**) must grip the lower horizontal strut of the frame as intended. (Fig. D3.08a)

If this is installed incorrectly, there will be no safety function. (Fig. D3.08b)

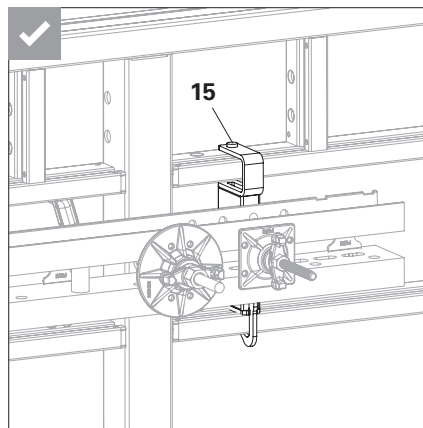


Fig. D3.08a

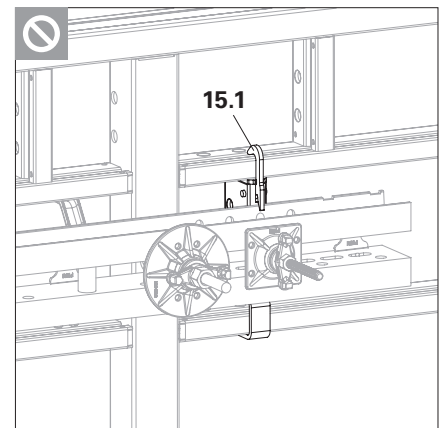


Fig. D3.08b

Application



- As the Steel Waler SRU U120 (89) is fixed directly to the Adaptor MXE 330 (15) and this has a defined freedom of movement in the Frame MX-2 (5), the Steel Waler SRU U120 (89) has little or no contact with the frames once the Panels MX-2 have been fitted.
- To achieve a friction-locked connection between the Steel Waler SRU U120 (89) and the frame, the following conditions must be met:
 - ❶ Correct installation of the Adaptor MXE 330 (15) and the Steel Waler SRU U120 (89), taking into account foreseeable misuse.
 - ❷ There must be at least one tie point, which is realised with the Steel Waler SRU U120 (89).
 - ❸ The corner connection must have been produced in accordance with Section "D1 Corners 90° with I-Corner MXI-2 330x50/20" on page 206 or Section "D2 Corners 90° with I-Corner MXI-2 330x60" on page 212.

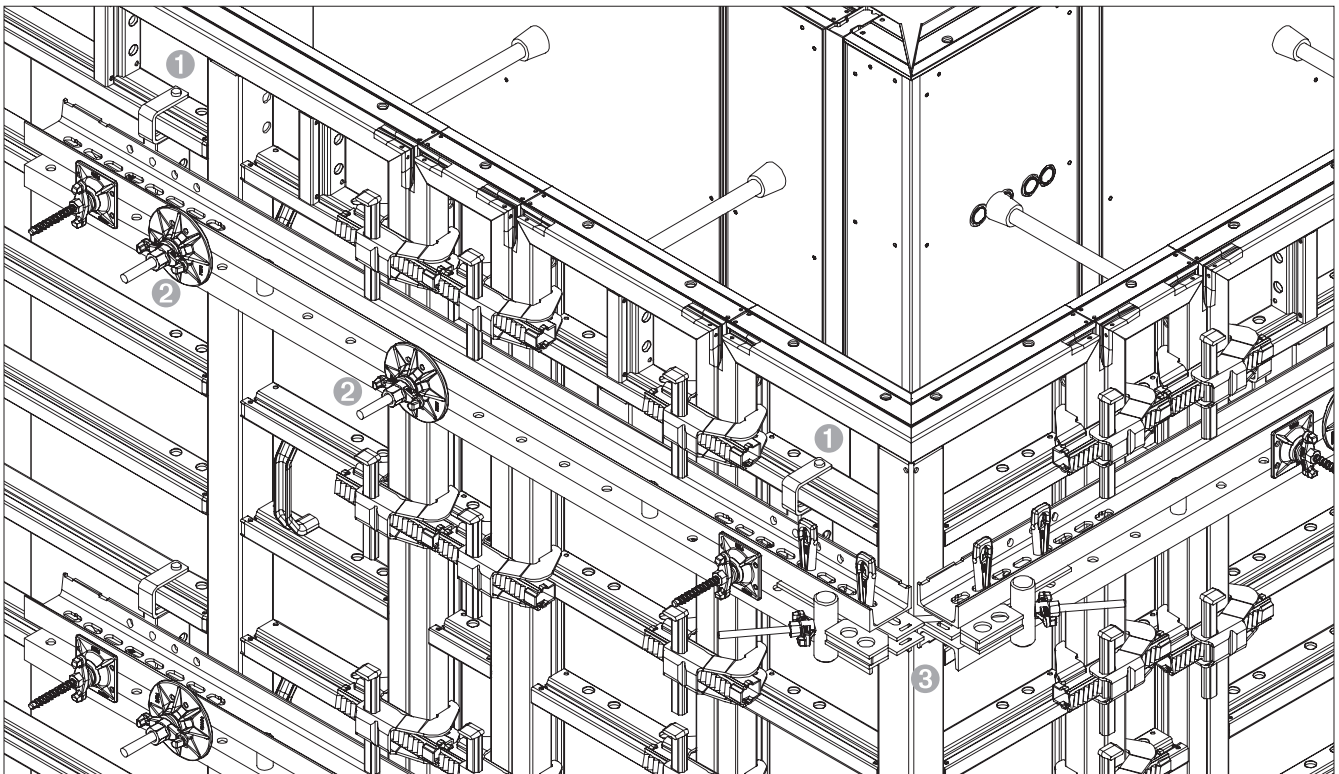


Fig. D3.09



- If the above conditions are met, then the pre-assembled Adaptors MXE 330 (15) will be relieved of load during the formwork system loading process.
- Relieving the load on the Adaptor MXE 330 (15) and the friction-locked connection between the Steel Waler SRU U120 (89) and the frame is absolutely essential. Only then can the outside corner be formed. This ensures that the Steel Waler SRU U120 (89) functions as a stiffening and force-transmitting element.

D3 90° corners with Adaptor MXE 330



With Outs. Corners MXA-2 up to a wall thickness of 80 cm.

Execution example:

- Affix 2x to the Adaptor MXE 330 (15).
- Bracing with Steel Waler SRU U120 (89).

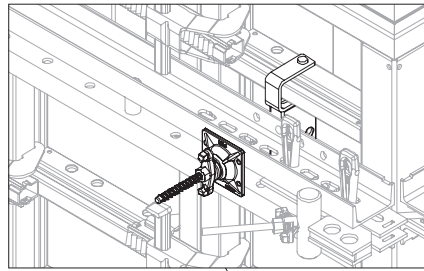


Fig. D3.10a

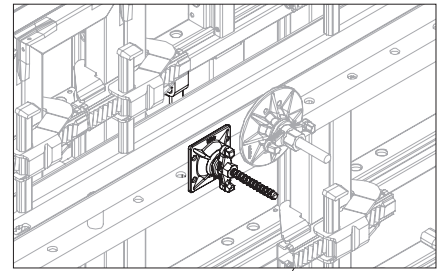


Fig. D3.10b

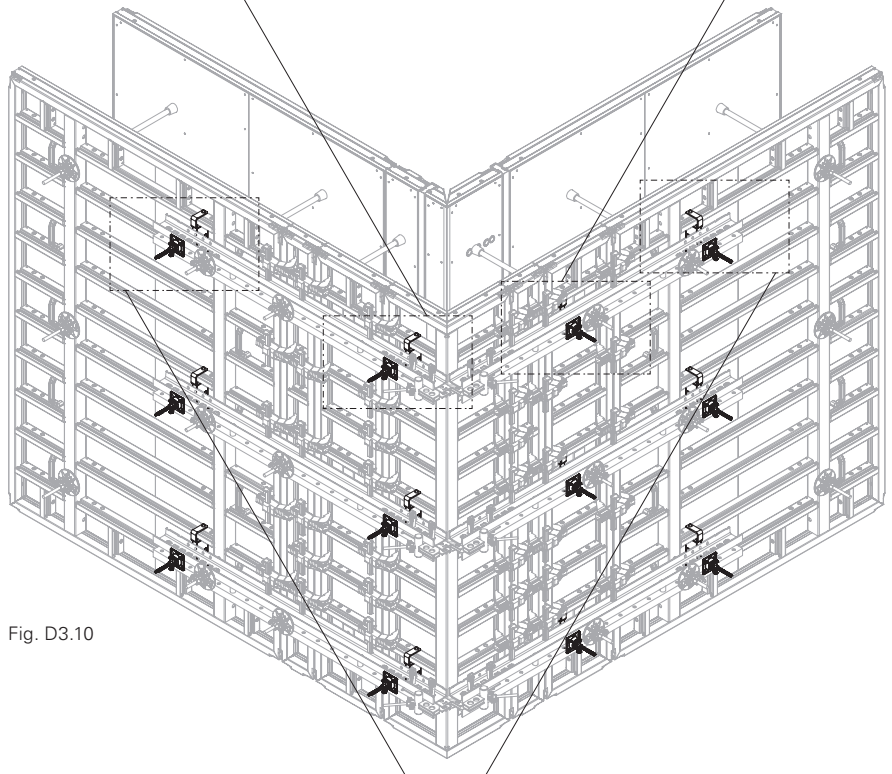


Fig. D3.10

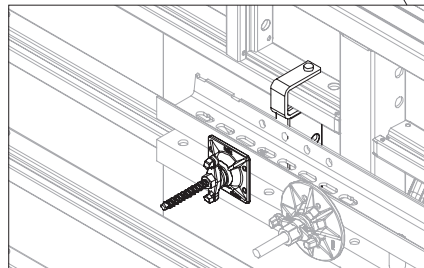


Fig. D3.10c

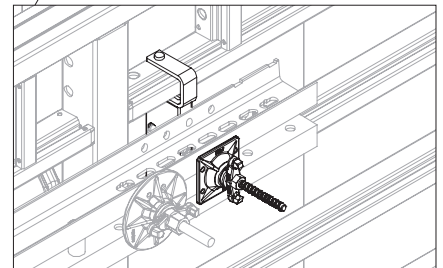


Fig. D3.10d

Height 330

Dismantling



The Adaptor MXE 330 (1) and the Steel Waler SRU U120 (2) must be disassembled in the horizontal position.

D4 Panel connections following 90° corners



If Panels MX-2 with $b \leq 120$ cm following 90° corners are envisaged, Compensation Waler-4 MAR 85 (**33**) must be installed at the next panel joint for reinforcement.

With height extensions, a second Compensation Waler-4 MAR 85 (**33**) is required on the panel joint (shown as a dotted line). (Fig. D4.02 + Fig. D4.03)

Example

View from above (Fig. D4.01)

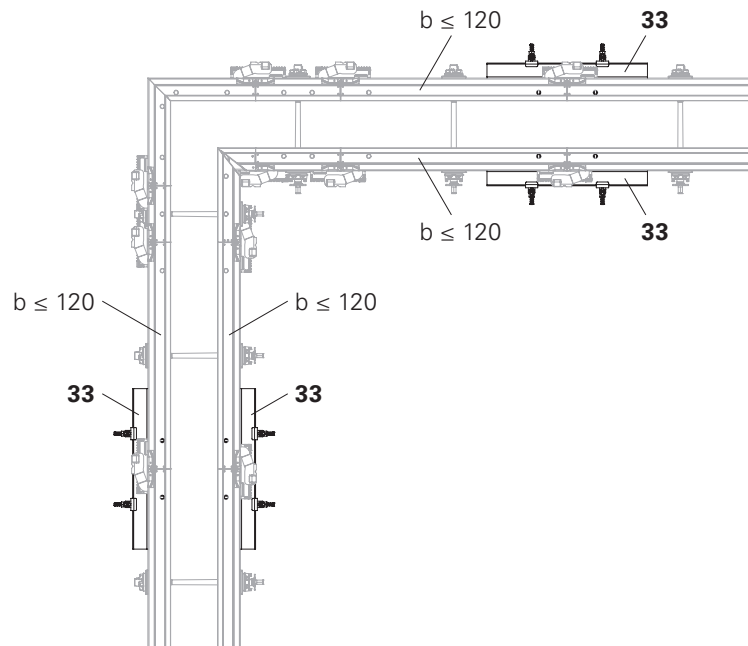


Fig. D4.01

D4 Panel connections following 90° corners

Arrangement of alignment couplers and Compensation Walers-4 MAR 85

View of I-Corner MXI-2 330x50/20
(Fig. D4.02)

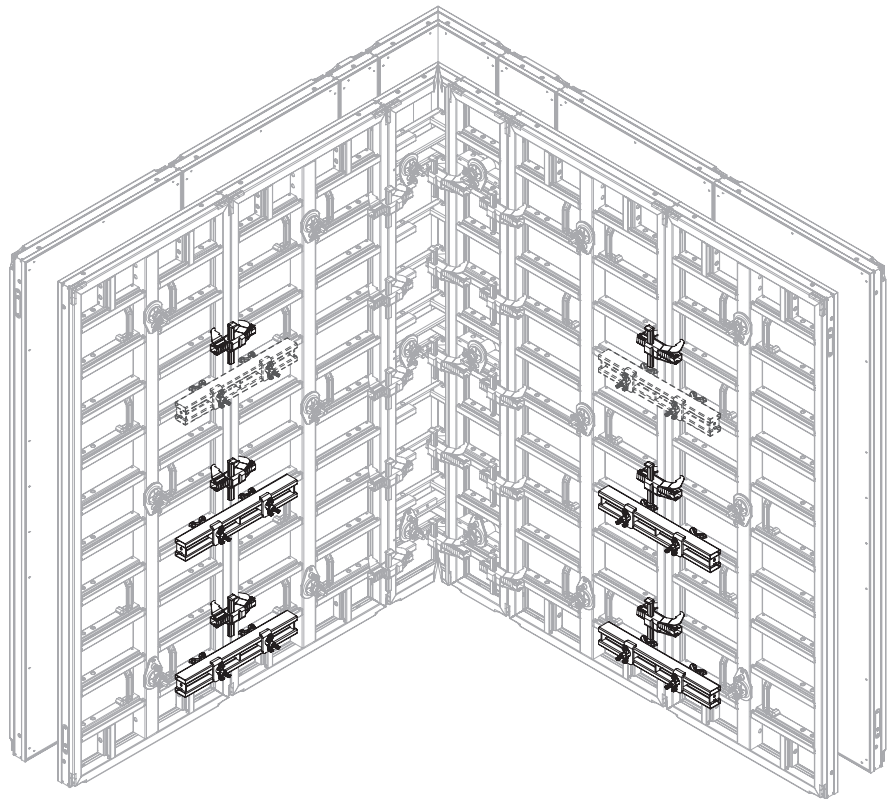


Fig. D4.02

View of Outs. Cor. MXA-2 330x45
(Fig. D4.03)

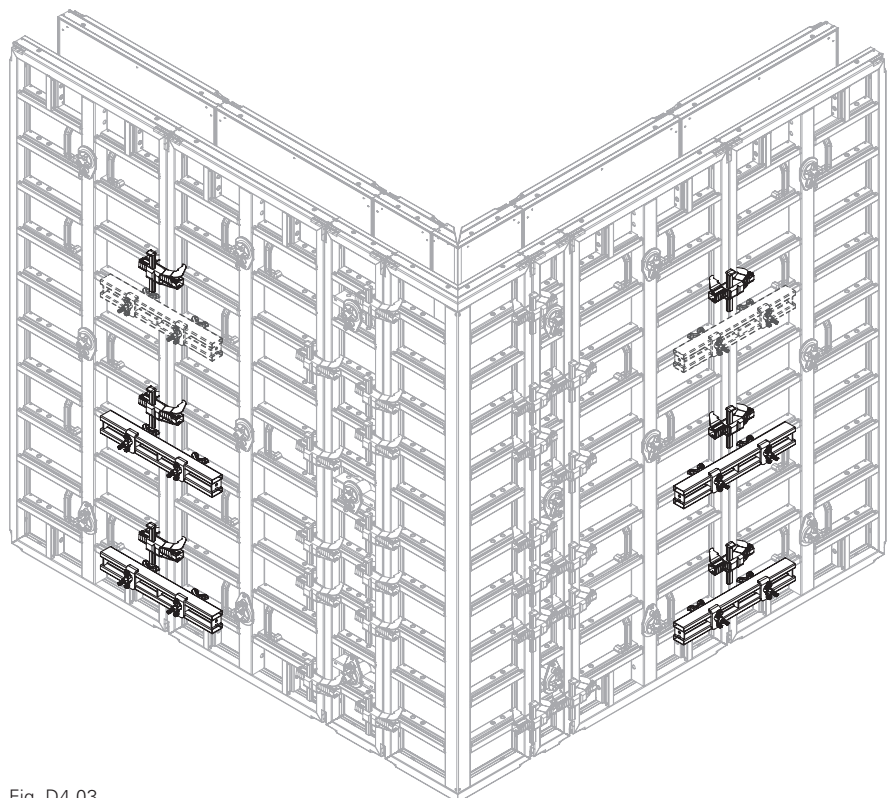


Fig. D4.03

Height 330

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections					Panels on T-junction	
	A	B	C	D	E	F	G
15	–	MX-2 45	WDA 10 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
17.5	KH 7.5 ²⁾	MX-2 45	WDA 5 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
20	–	MX-2 60	–	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
24	–	MX-2 60	WDA 4 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
25	–	MX-2 60	WDA 5 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
30	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
35	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 5 ¹⁾	MXI-2 50/20	MXI-2 50/20
36	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 5 ¹⁾	MXI-2 50/20	MXI-2 50/20
40	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 10 ¹⁾	MXI-2 50/20	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. D5.01

Arrangement of Alignment Couplers BFD (Fig. D5.02 + Fig. D5.03)				
Joint	Alignment Couplers BFD on continuous wall section			Alignment Couplers BFD on T-junction
	S1	S2	S3	S4 – S7
Strut	① ③ ⑤ ⑦	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦	① ③ ⑤ ⑦ ⑨
Strut for WT 17.5 cm	① ③ ⑤ ⑦	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦ ⑨
Strut for WT ≥35 cm	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦ ⑨	① ③ ⑤ ⑦	① ③ ⑤ ⑦ ⑨

Tab. D5.02



Panels MX-2 330x240 are connected to the short side of the I-Corner MXI-2 330x50/20 as standard. If this is not possible, only the following elements may be connected:

- Panel MX-2 330x30
 - Panel MX-2 330x45
- (Fig. C5.01)

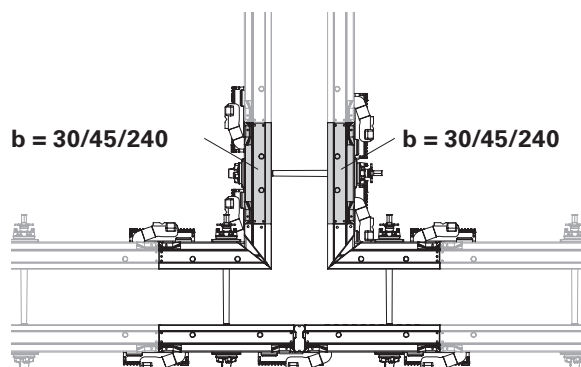


Fig. D5.01

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. D5.02)

Example:

Wall thickness 25 cm

- F + G: Tab. D5.01
- S1 – S3: Tab. D5.02

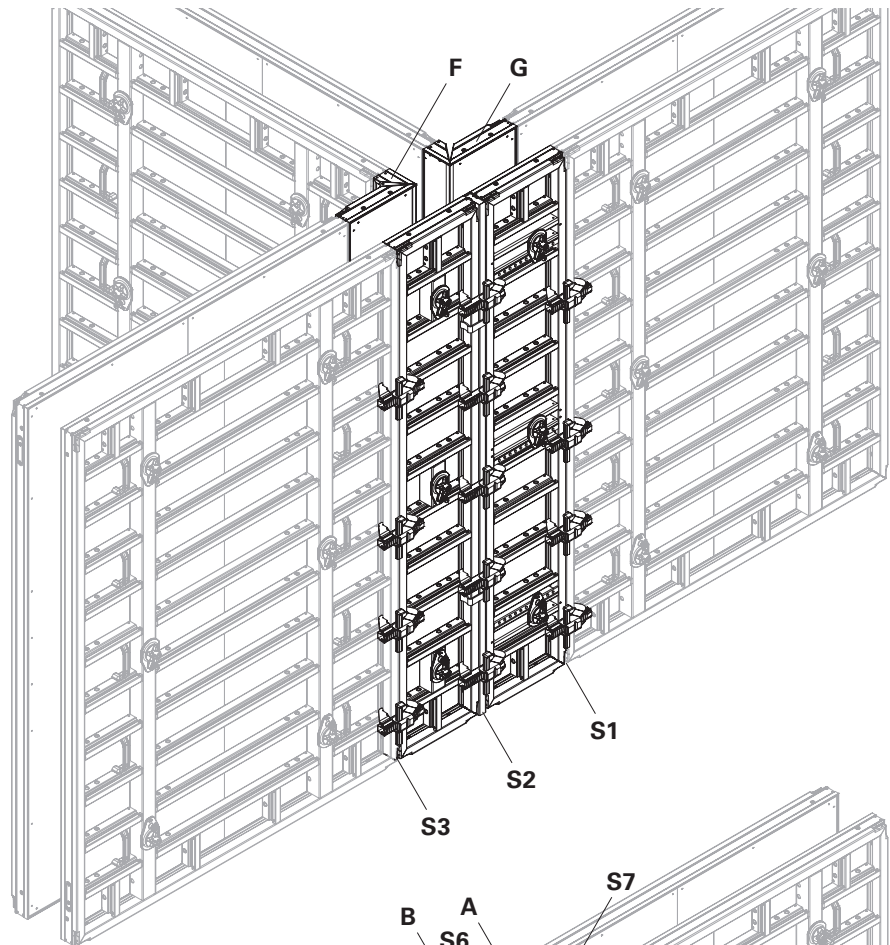


Fig. D5.02

View of T-junction (Fig. D5.03)

Example:

Wall thickness 25 cm

- A – E: Tab. D5.01
- S4 – S7: Tab. D5.02

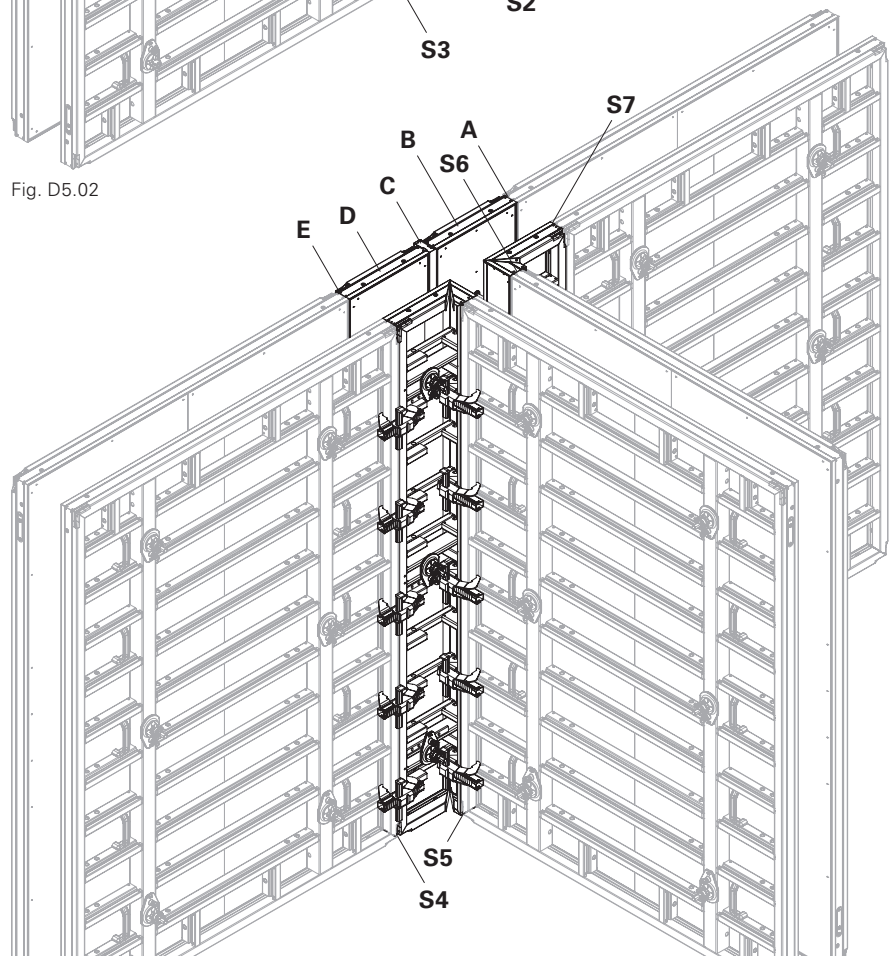


Fig. D5.03

Height 330

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
45	MX-2 45	MX-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20
50	MX-2 45	MX-2 60	–	MX-2 45	MXI-2 50/20	MXI-2 50/20
55	MX-2 45	MX-2 60	WDA 5 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20
60	MX-2 45	MX-2 60	WDA 10 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. D5.03

Arrangement of Alignment Couplers BFD (Fig. C5.05 + Fig. C5.06)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S5 – S8	
Strut	② ⑤ ⑨	② ③ ⑤ ⑨	② ⑤ ⑨	② ⑤ ⑨	① ③ ⑤ ⑦ ⑨	
Strut for WT 50 cm	② ⑤ ⑨	② ⑤ ⑨	② ⑤ ⑨	② ⑤ ⑨	① ③ ⑤ ⑦ ⑨	
Compensation Waler-4 MAR 170 on continuous wall section						
Strut	① ④ ⑥ ⑧					

Tab. D5.04



Panels MX-2 330x240 are connected to the short side of the I-Corner MXI-2 330x50/20 as standard. If this is not possible, only the following elements may be connected:

- Panel MX-2 330x30
- Panel MX-2 330x45 (Fig. C5.04)

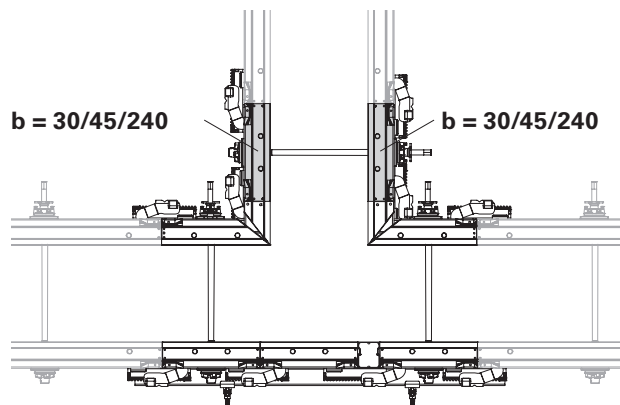


Fig. D5.04

Arrangement of the alignment couplers

Valid for WT > 40 – 60 cm

View of continuous wall section (Fig. C5.05)

Example:

Wall thickness 45 cm

- F + G: Tab. C5.03
- S1 – S4: Tab. C5.04

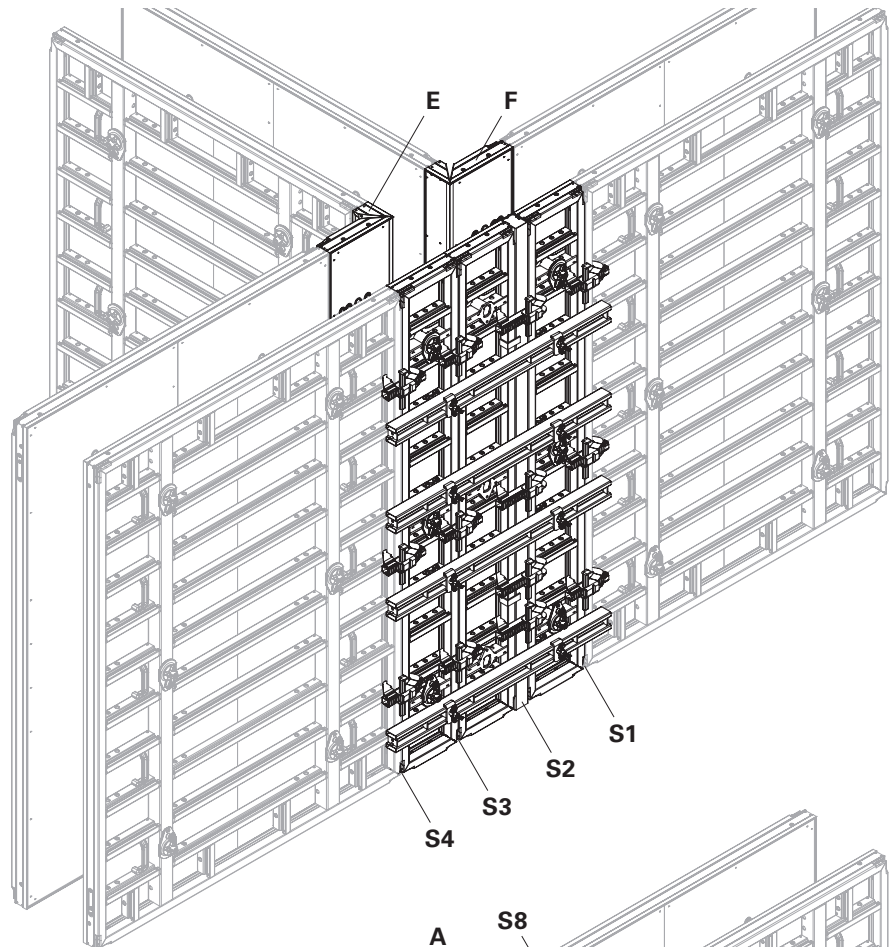


Fig. D5.05

View of T-junction (Fig. C5.06)

Example:

Wall thickness 45 cm

- A – E: Tab. C5.03
- S5 – S7: Tab. C5.04

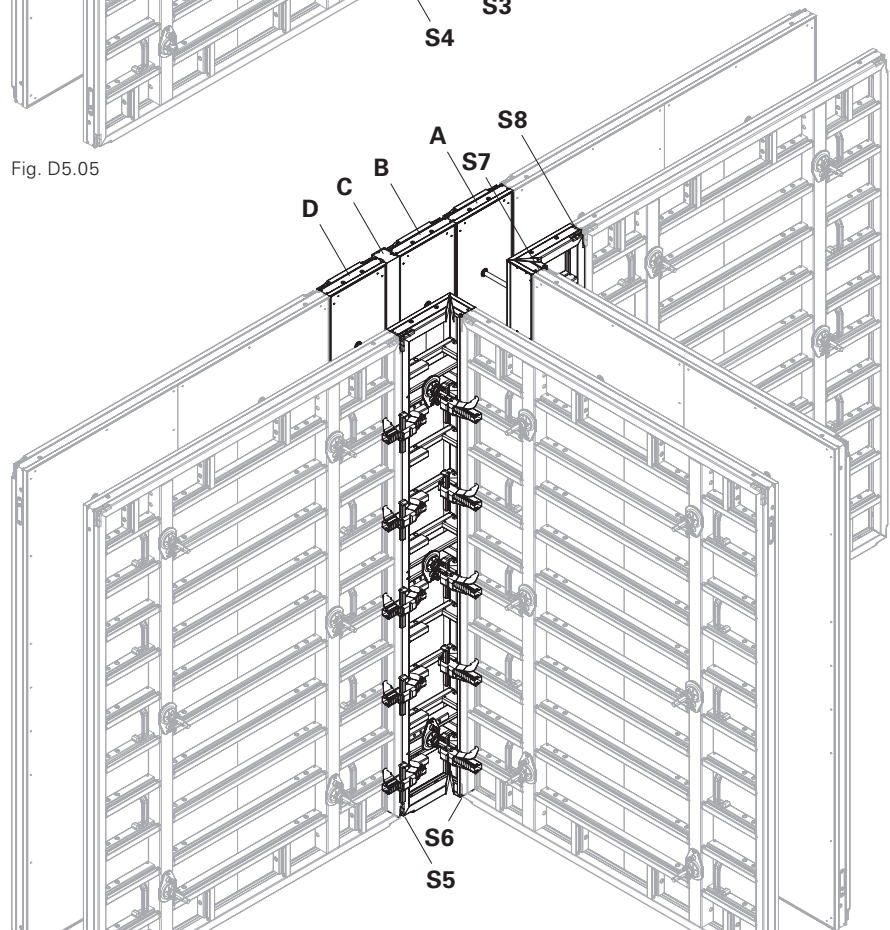


Fig. D5.06

Height 330

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	F	G
15	MX-2 45	MX-2 45	–	MX-2 45	MXI-2 60	MXI-2 60
17.5	MX-2 45	MX-2 45	KH 2.5 ²⁾	MX-2 45	MXI-2 60	MXI-2 60
20	MX-2 45	MX-2 45	–	MX-2 45	MXI-2 60	MXI-2 60
24	MX-2 45	MX-2 45	KH 9 ²⁾	MX-2 45	MXI-2 60	MXI-2 60
25	MX-2 45	MX-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
30	MX-2 45	MX-2 60	–	MX-2 45	MXI-2 60	MXI-2 60
35	MX-2 45	MX-2 60	WDA 5 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
36	MX-2 45	MX-2 60	WDA 6 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
40	MX-2 45	MX-2 60	WDA 10 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. D6.01

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. D6.01 + Fig. D6.02)					
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction
	S1	S2	S3	S4	S4 – S8
Strut	② ⑤ ⑨	② ⑤ ⑥ ⑨	② ⑤ ⑨	② ⑤ ⑨	① ③ ⑤ ⑦ ⑨
Brace for WT 15, 20 and 30 cm	② ⑤ ⑨	② ⑤ ⑨	② ⑤ ⑨	② ⑤ ⑨	① ③ ⑤ ⑦ ⑨
Compensation Waler-4 MAR 170 on continuous wall section					
Strut	① ③ ④ ⑦ ⑩				

Tab. D6.02

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. D6.01)

Example:

Wall thickness 25 cm

- E + F: Tab. D6.01
- S1 – S4: Tab. D6.02

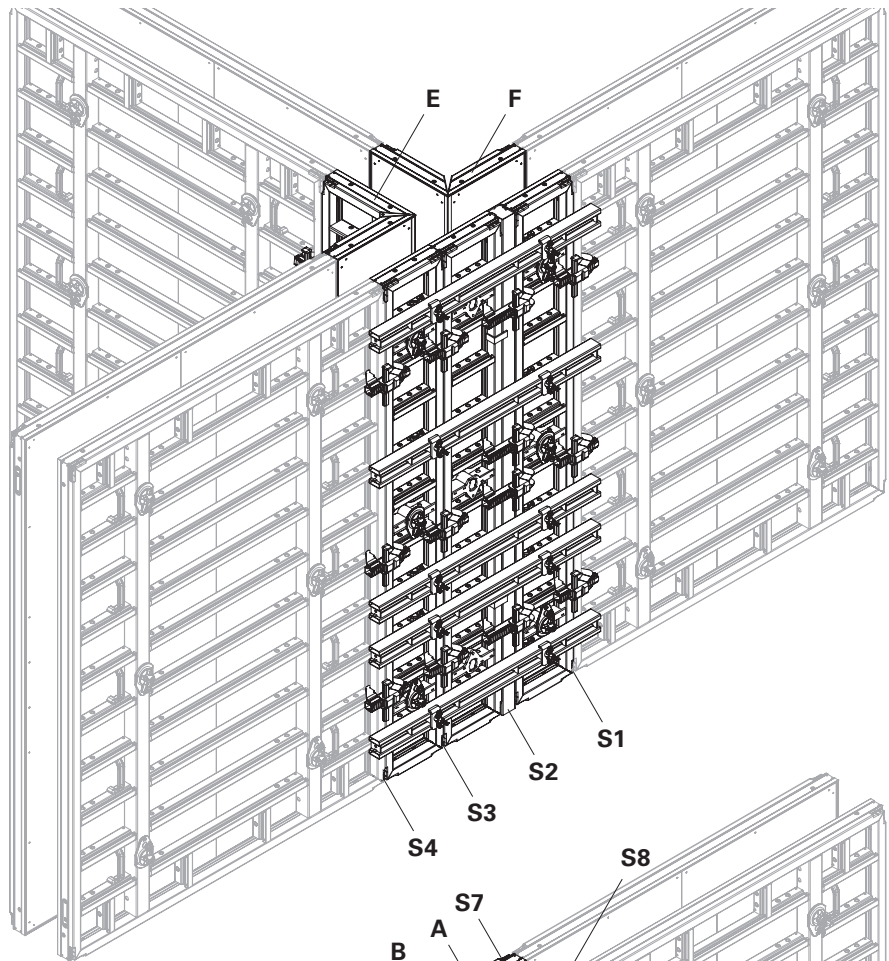


Fig. D6.01

View of T-junction (Fig. D6.02)

Example:

Wall thickness 17.5 cm

- A – D: Tab. D6.01
- S5 – S8: Tab. D6.02

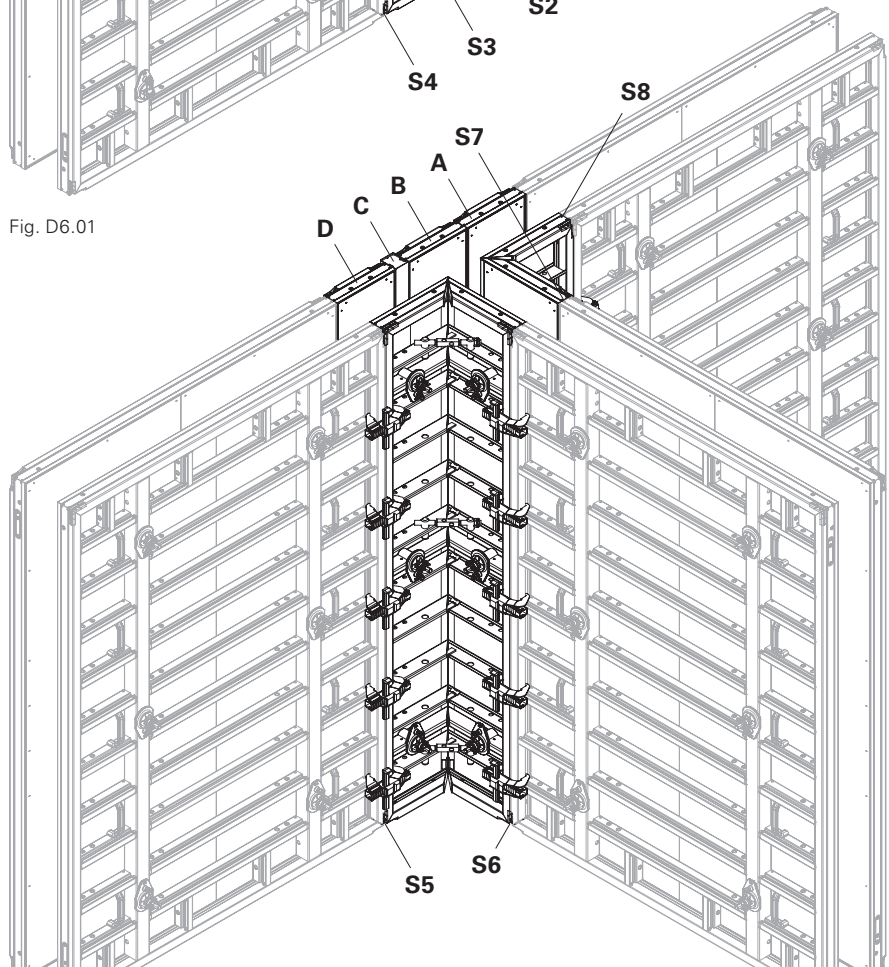


Fig. D6.02

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thick-ness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
45	MX-2 60	MX-2 45	–	MX-2 60	MXI-2 60	MXI-2 60
50	MX-2 60	MX-2 45	WDA 5 ¹⁾	MX-2 60	MXI-2 60	MXI-2 60
55	MX-2 60	MX-2 45	WDA 10 ¹⁾	MX-2 60	MXI-2 60	MXI-2 60
60	MX-2 60	MX-2 60	–	MX-2 60	MXI-2 60	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.
Tab. D6.03

Arrangement of Alignment Couplers BFD/Steel Walers SRU 197 U120 (Fig. D6.03 + Fig. D6.04)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S5 – S8	
Strut	② ⑤ ⑨	② ⑤ ⑥ ⑨	② ⑤ ⑨	② ⑤ ⑨	① ③ ⑤ ⑦ ⑨	
Strut for WT 45 and 60 cm	② ⑤ ⑨	② ⑤ ⑨	② ⑤ ⑨	② ⑤ ⑨	① ③ ⑤ ⑦ ⑨	
	Steel Waler SRU 197 U120 on continuous wall section					
Strut	① ③ ④ ⑦ ⑩					

Tab. D6.04

Arrangement of the alignment couplers

Valid for WT >40 – 60 cm

View of continuous wall section (Fig. D6.03)

Example:

Wall thickness 50 cm

- E + F: Tab. D6.03
- S1 – S4: Tab. D6.04

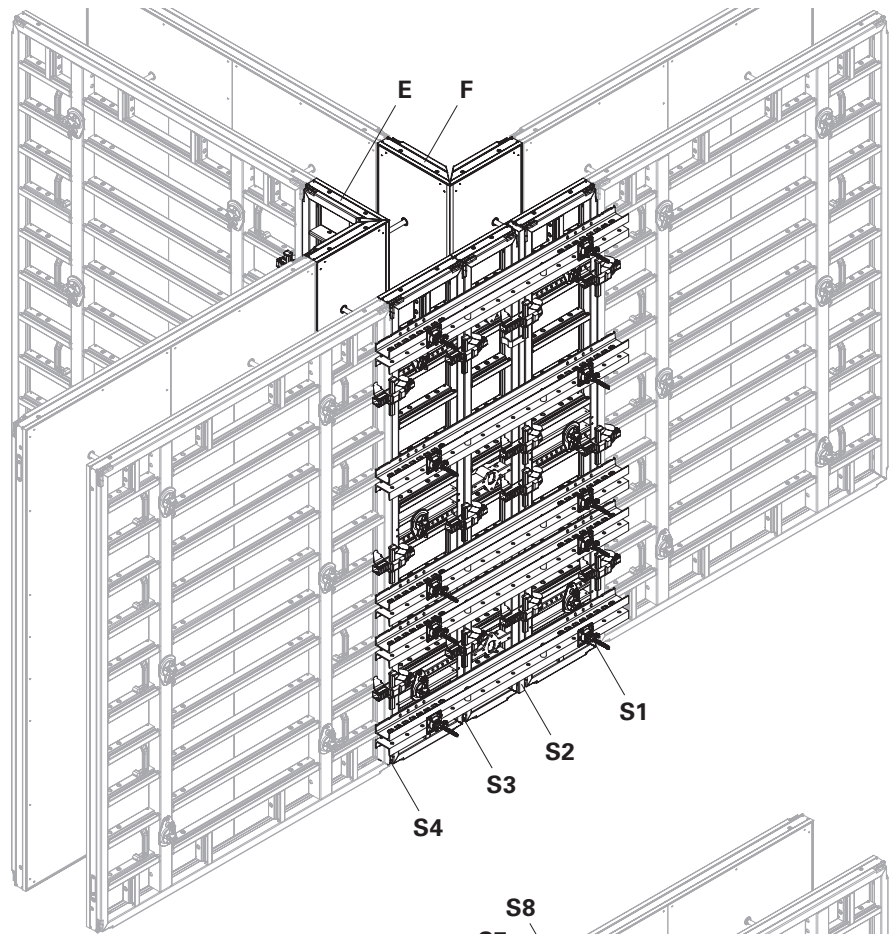


Fig. D6.03

View of T-junction (Fig. D6.04)

Example:

Wall thickness 50 cm

- A – D: Tab. D6.03
- S5 – S8: Tab. D6.04

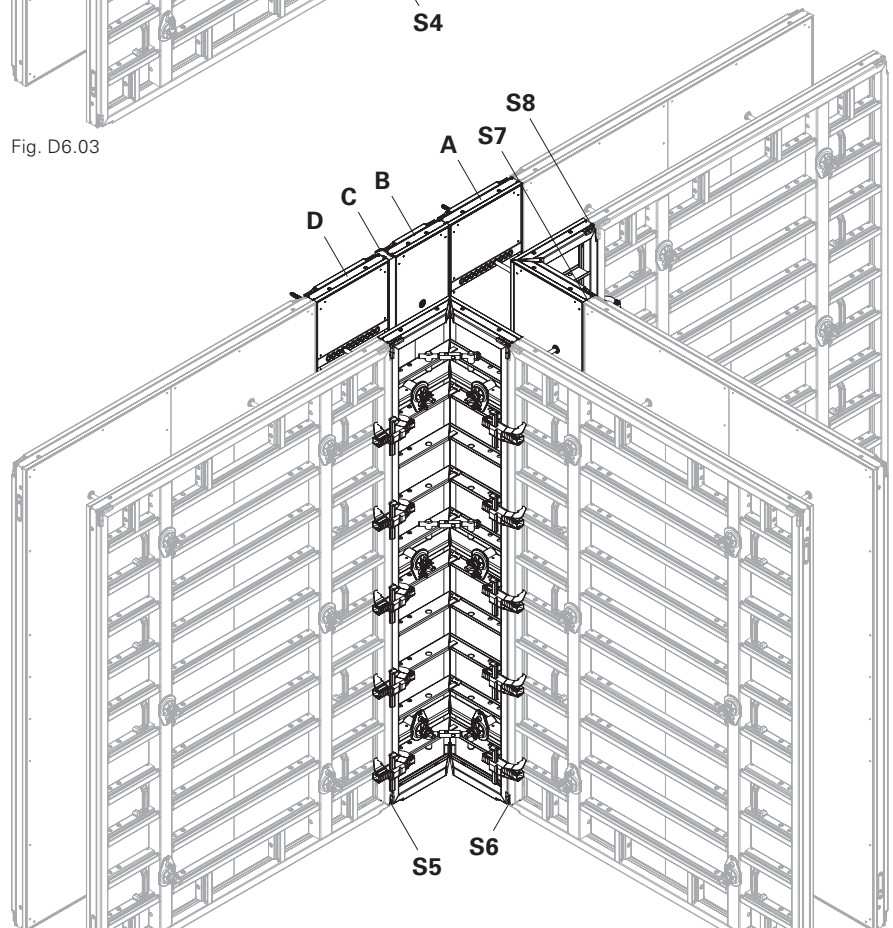


Fig. D6.04



If Panels MX-2 with $b \leq 120$ cm following 90° T-junctions are envisaged, Compensation Waler-4 MAR 85 (**33**) must be installed at the next panel joint for reinforcement.

With height extensions, a second Compensation Waler-4 MAR 85 (**33**) is required on the panel joint (shown as a dotted line). (Fig. D7.02 + Fig. D7.03)

Example

View from above (Fig. D7.01)

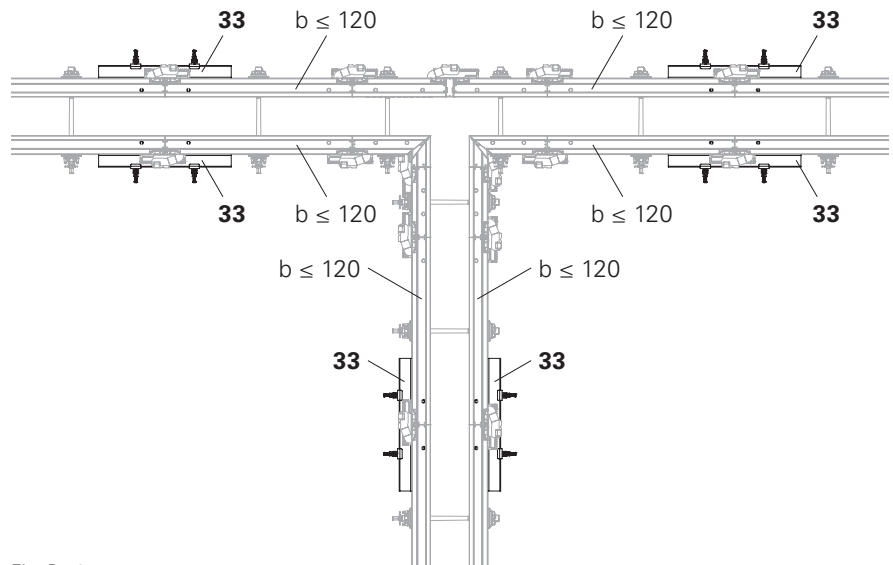


Fig. D7.01

Arrangement of alignment couplers and Compensation Walers-4 MAR 85

View of straight wall section
(Fig. D7.02)

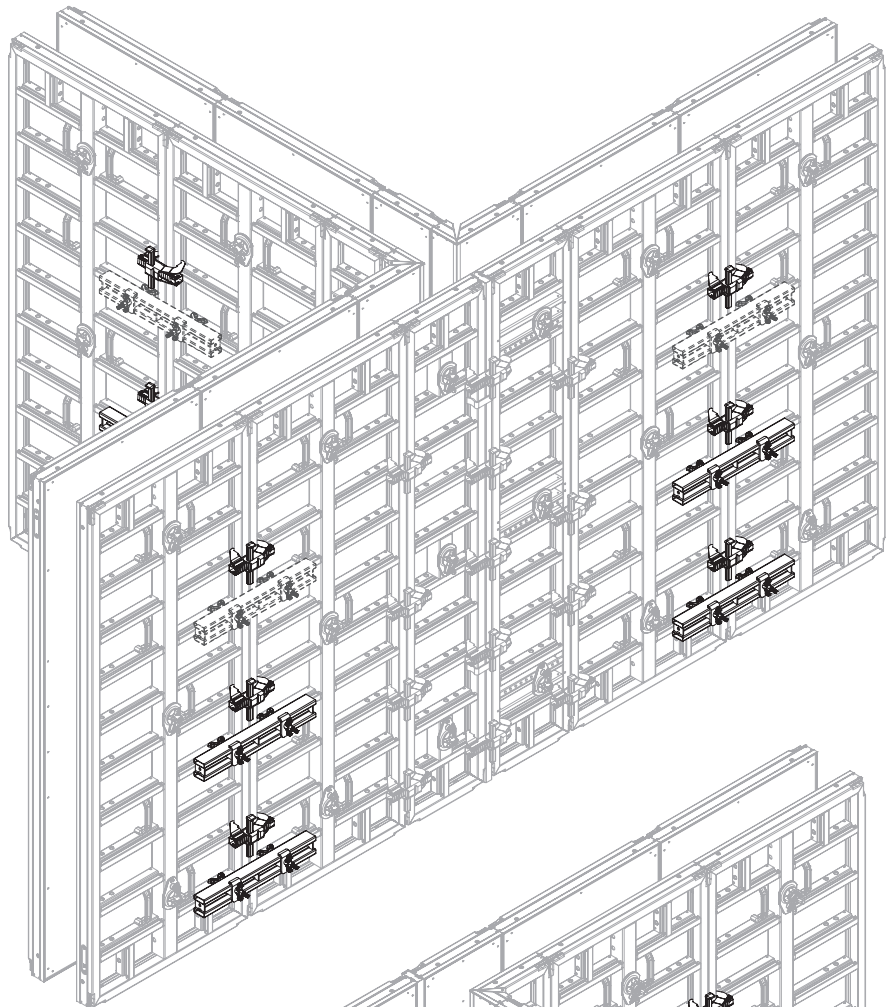


Fig. D7.02

View of T-junction with I-Corner MXI-330x50/20 (Fig. D7.03)

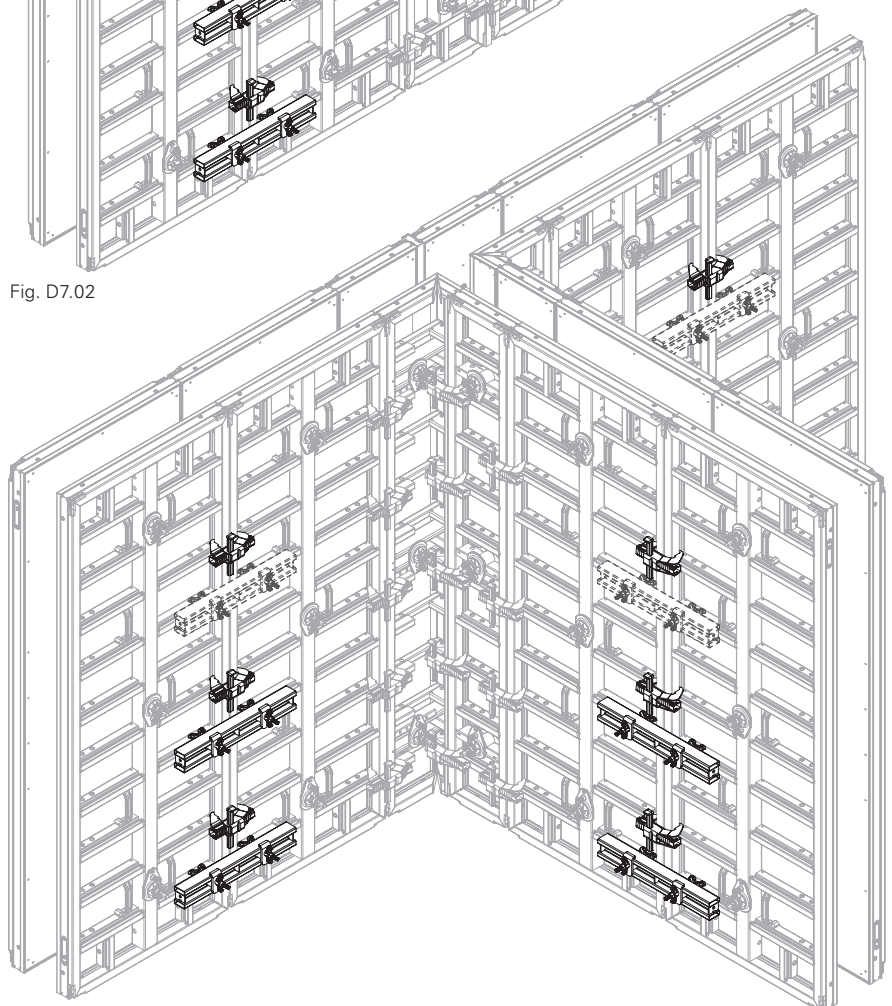


Fig. D7.03

Height 330

Wall Thi. Com. WDA MX 330



- No additional ties required.
- Longitudinal infill up to 10 cm.
- In contrast to the standard joint, in the case of wall thickness compensation, an additional Alignment Coupler BFD is fitted.

Components	Pcs.
28 Alignment Coupler BFD	3x
26 Wall Thick Comp. WDA MX	1x
or	
91 Squared timber	1x

Longitudinal infills can be created with Wall Thick.Comp. WDA MX 330 x width **(26)** or with squared timber cut to size **(91)**.



Number and arrangement of the Alignment Couplers BFD **(28)**. (Fig. D8.01)

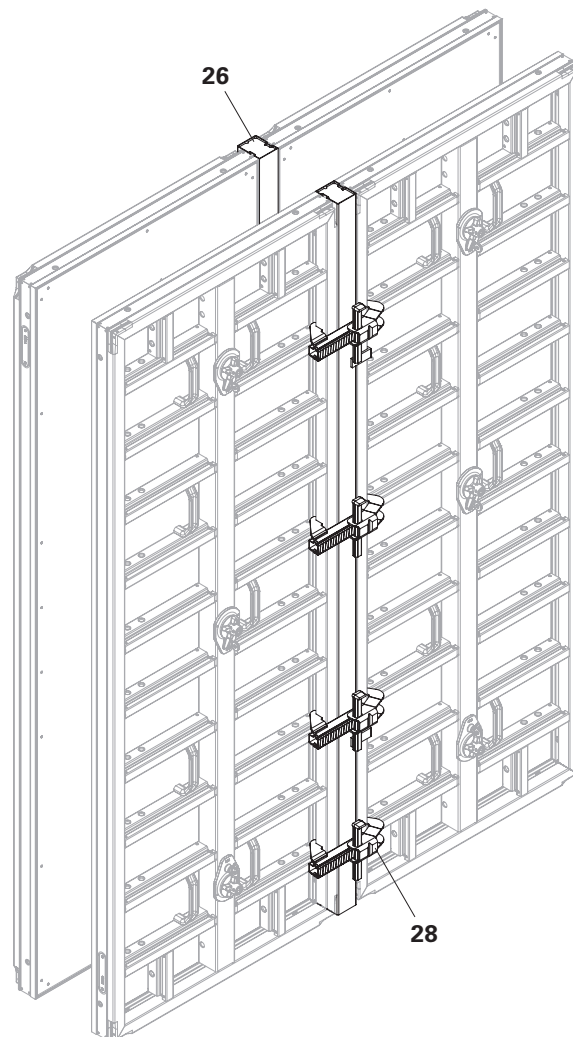


Fig. D8.01

Filler Profile TPP 330 Alu

Longitudinal infill from 20 to 36 cm



- Perm. fresh concrete pressure
80 kN/m² for: $b \geq 20$ and $b < 30$ cm
- Perm. fresh concrete pressure
60 kN/m² for: $b \geq 30$ and $b < 36$ cm

Components

Components	Pcs.
28 Alignment Coupler BFD	4x
33 Compensation Waler-4 MAR 85	2x
96 21 mm filler plate	1x
97 Filler Profile TPP 330 Alu	2x
or	
91 Squared timber	2x



- When anchoring, ensure that the tie forces are transferred centrally through the Compensation Waler-4 MAR 85 (**33**) to the adjacent panels. (Fig. D8.02b)
- Assembly: (Fig. D8.02 + Fig. D8.02a)



Two Wall Thick.Comp. MX 330 or squared timbers can be mounted on two different joints for 10 cm – 20 cm compensations.

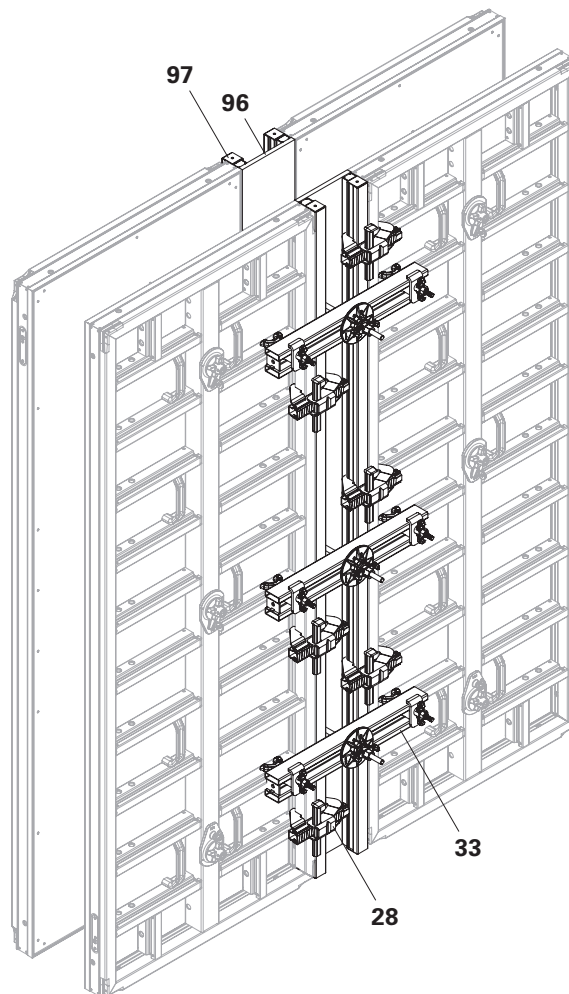


Fig. D8.02

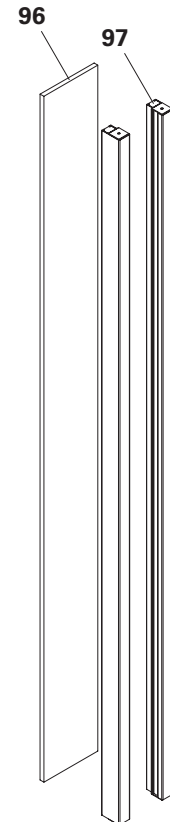


Fig. D8.02a

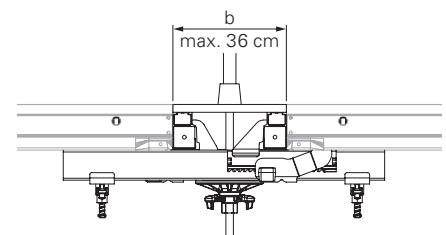


Fig. D8.02b

Bulkhead Tie MX/TR and Waler 85

For wall thickness ≤ 40 cm



The fresh concrete pressure of the stop end formwork is transferred to the Panels MX-2 via the Bulkhead Ties MX/TR (99) and Walers 85 (21).

Wall end with Panels MX-2 330 x width

- Applicable to Panels MX-2: 330x30/45/60/90/120 /
- Shown: 330x120 (Fig. D8.03 + Fig. D8.04)

Components

Components	Pcs.
7 Tie Rod DW15	2x
21 Waler 85	3x
50 Wingnut Pivot Plate DW15 ga	10x
70 Top Tie Holder-2 AH	4x
91 Squared timber	2x
99 Bulkhead Tie MX/TR	6x
96 21 mm filler plate	1x

Sectional views

- Top Tie Holder-2 AH (70) with Tie Rod DW15 (7) and Wingnut Pivot Plate DW15 ga (50). (Fig. D8.04a)
- Waler 85 (21) with Bulkhead Tie MX/TR (99) and Wingnut Pivot Plate DW15 ga (50). (Fig. D8.04b)



As an alternative to Waler 85 (21), the Compensation Waler-4 MAR 85 (33) can also be used.

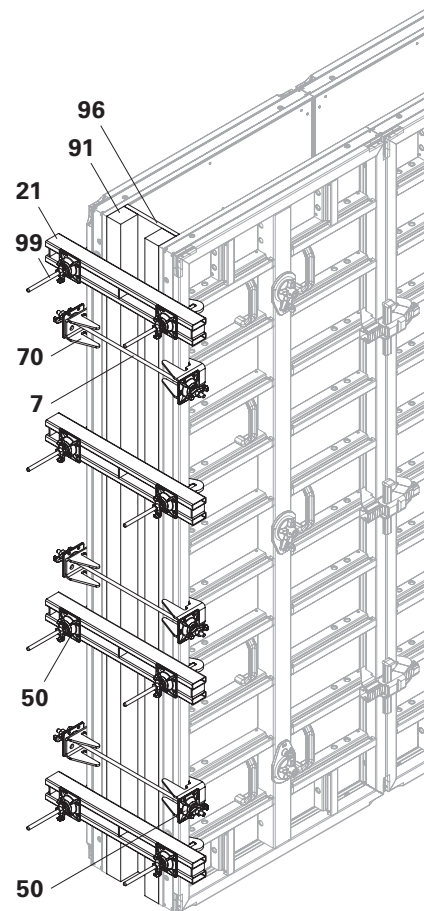


Fig. D8.03

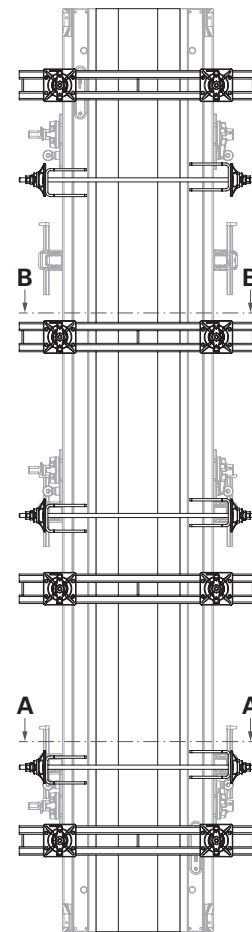


Fig. D8.04

A-A

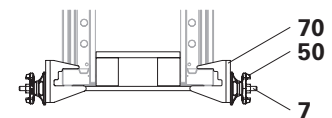


Fig. D8.04a

B-B

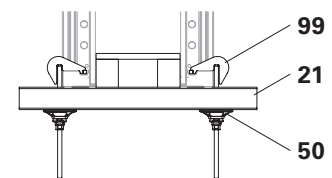


Fig. D8.04b

D9 Stop end formwork

Wall end with Panel MX-2 330 x 240 (not shown)

Components	Pcs.
21 Waler 85	4x
50 Wingnut Pivot Plate DW 15	8x
91 Squared timber	2x
96 21 mm filler plate	1x
99 Bulkhead Tie MX/TR	8x

Waler 85 (**21**) with Bulkhead Tie MX/TR (**99**) and Wingnut Pivot Plate DW15 ga (**50**).



As an alternative to Waler 85 (**21**), the Compensation Waler-4 MAR 85 (**33**) can also be used.

Alignment Coupler BFD

Panel MX-2 330x30 (**5**) can be used as a stop end panel for a wall thickness of 30 cm. (Fig. D9.01)

Pos. Components

5 Panel MX-2 330x30
28 Alignment Coupler BFD



Alternatively, the Stop End Panel TR 330x24 can also be used as a stop end panel.

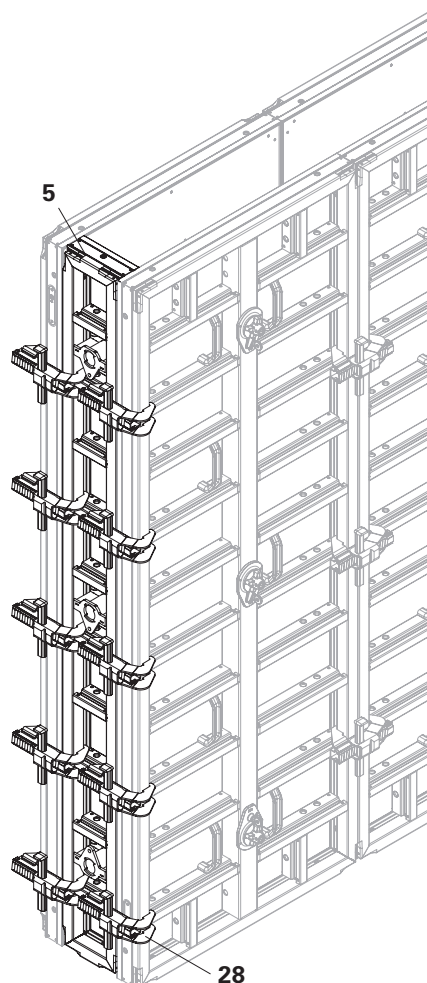


Fig. D9.01

Stop end panel reinforcement without Water Bar Installation MT

Height of 330 cm (Fig. D9.02a)
 Height of 120 cm (Fig. D9.02b)

Consisting of:

- 2x Stop. Panel TRIO AT 3 (**100a**) for approx. 2.5 cm concrete cover or 2x Stop. Panel TRIO AT 5 (**100b**) for approx. 5 cm concrete cover
- 1x Stop. Panel TRIO MT (**101**) (Fig. D9.03)



- Perm. fresh concrete pressure depending on the wall thickness:
 - 67.5 kN/m² for WT < 35 cm
 - 60.0 kN/m² for WT ≥ 35 cm and ≤ 40 cm
- The rubber lip (**100.1**) allows for a continuous reinforcement thickness of max. 16 mm.

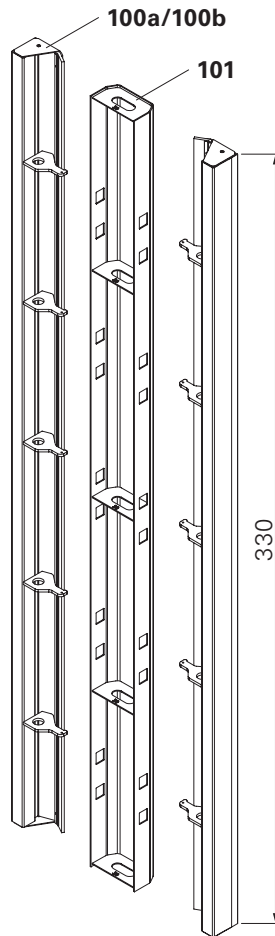


Fig. D9.02a

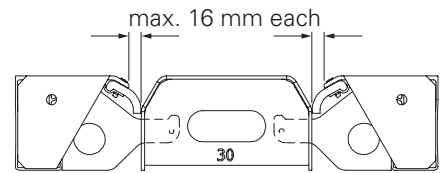


Fig. D9.03

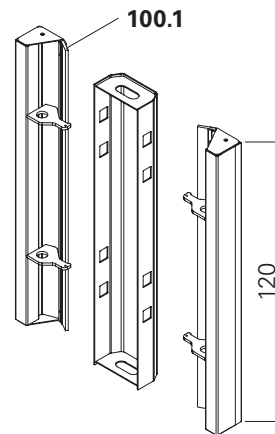


Fig. D9.02b

Concrete cover c:

$$c = \frac{d - b}{2} - \varnothing \text{ reinforcement}$$

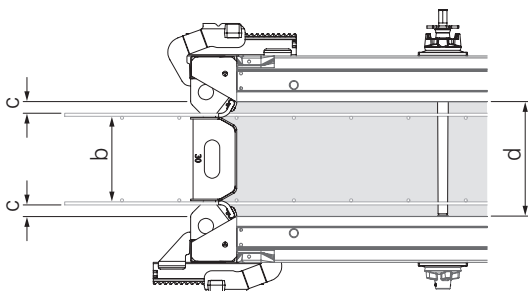


Fig. D9.04

Assembly

1. Position primary formwork.
2. Fix Stop. Panel TRIO AT (100) to the primary formwork by means of the Alignment Coupler BFD (28).
3. Install first row of reinforcement.
4. Position Stop. Panel TRIO MT (101).
5. Install second row of reinforcement.
6. Fix Stop. Panel TRIO AT (100) to the closing formwork by means of the Alignment Coupler BFD (28).
7. Position the closing formwork and in doing so insert Stop. Panel TRIO AT (100) into Stop. Panel TRIO MT (101). (Fig. D9.05)

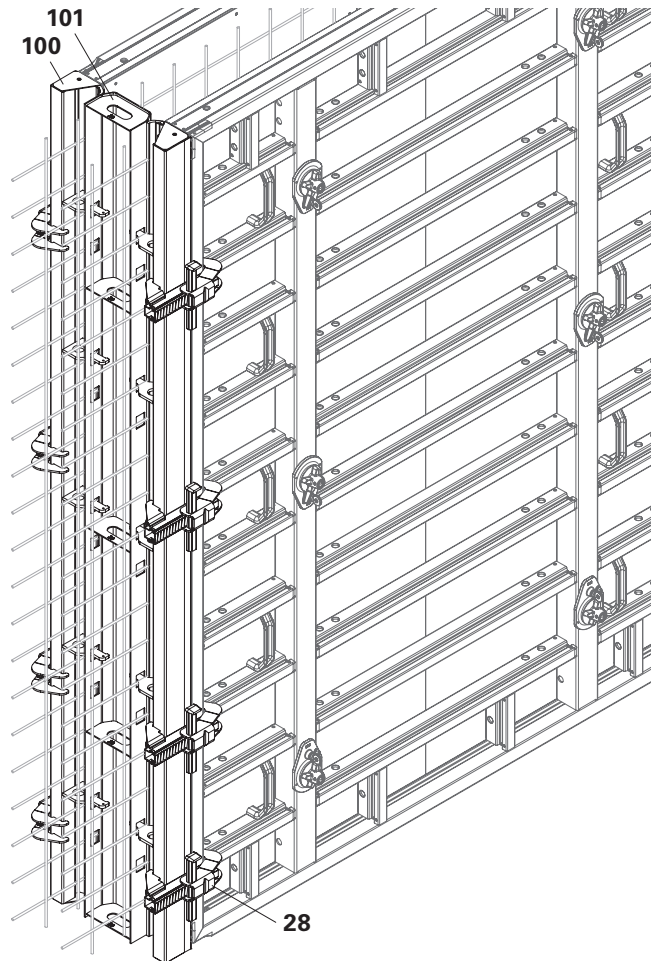


Fig. D9.05

Components



- Combination table for stop end panels without water bar installation at height 3.30 m (Tab. D9.01)
- Combination table for stop end panels without water bar installation at height 1.20 m (Tab. D9.02)

H = 3.30 m	b [mm]	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
		20	24 / 25	30	35	24 / 25	30	35	40
AT 330x3	–	2	2	2	2				
AT 330x5	–					2	2	2	2
MT 330x20	118	1				1			
MT 330x24/25	158		1				1		
MT 330x30	218			1				1	
MT 330x35/36	268				1				1

Tab. D9.01

H = 1.20 m		20	24 / 25	30	35	24 / 25	30	35	40
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
MT 120x20	118	1				1			
MT 120x24/25	158		1				1		
MT 120x30	218			1				1	
MT 120x35/36	268				1				1

Tab. D9.02

Stop end panel reinforcement with Water Bar Installation MTF

Height of 330 cm (Fig. D9.06a)
 Height of 120 cm (Fig. D9.06b)

Consisting of:

- 2x Stop. Panel TRIO AT 3 (**100a**) for approx. 2.5 cm concrete cover or
- 2x Stop. Panel TRIO AT 5 (**100b**) for approx. 5 cm concrete cover
- 1x Stop. Panel TRIO MTF (**102**) (Fig. D9.07)



- Perm. fresh concrete pressure depending on the wall thickness:
 - 67.5 kN/m² for WT < 35 cm
 - 60.0 kN/m² for WT ≥ 35 cm and ≤ 40 cm
- The rubber lip (**100.1**) allows for a continuous reinforcement thickness of max. 16 mm.

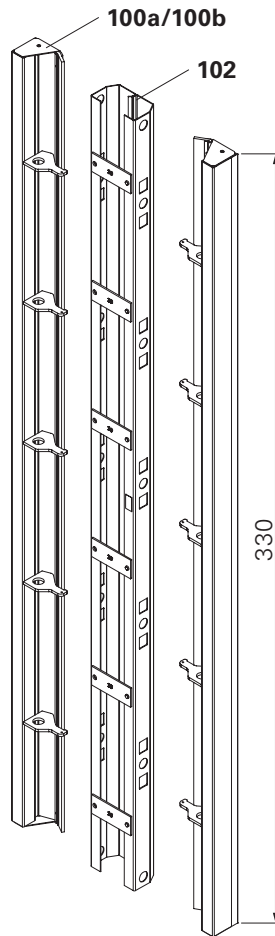


Fig. D9.06a

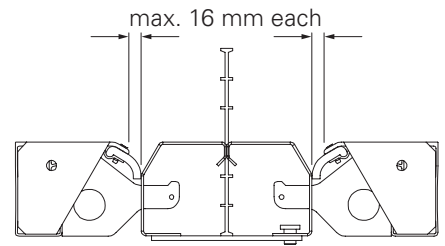


Fig. D9.07

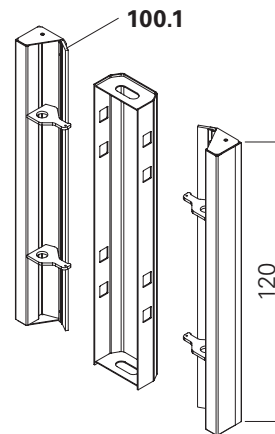


Fig. D9.06b

Concrete cover c:

$$c = \frac{d - b}{2} - \varnothing \text{ reinforcement}$$

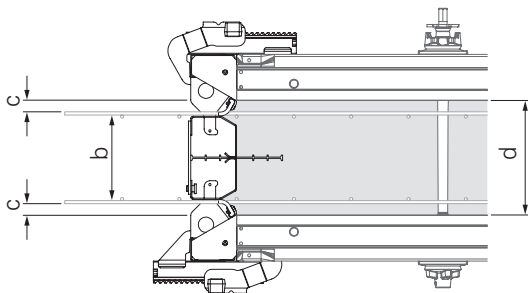


Fig. D9.08

Stop end panel reinforcement with expandable water bar

Consisting of:

- 2x Stop. Panel TRIO AT (**100**)
- 1x Stop. Panel TRIO MTF (**102**)
- Filler plates supplied by the contractor (**96**) (Fig. D9.09)

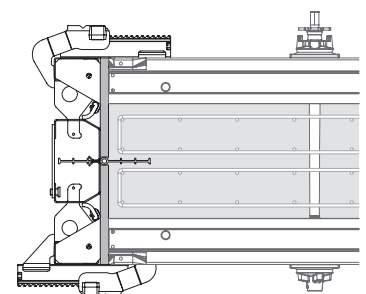


Fig. D9.09

Assembly

1. Position primary formwork.
2. Fix Stop. Panel TRIO AT (100) to the primary formwork by means of the Alignment Coupler BFD (28).
3. Install first row of reinforcement.
4. Position Stop. Panel TRIO MTF (102) and fit the water bar (102.1).
5. Install second row of reinforcement.
6. Fix Stop. Panel TRIO AT (100) to the closing formwork by means of the Alignment Coupler BFD (28).
7. Position the closing formwork and in doing so insert Stop. Panel TRIO AT (100) into Stop. Panel TRIO MTF (102). (Fig. D9.10)

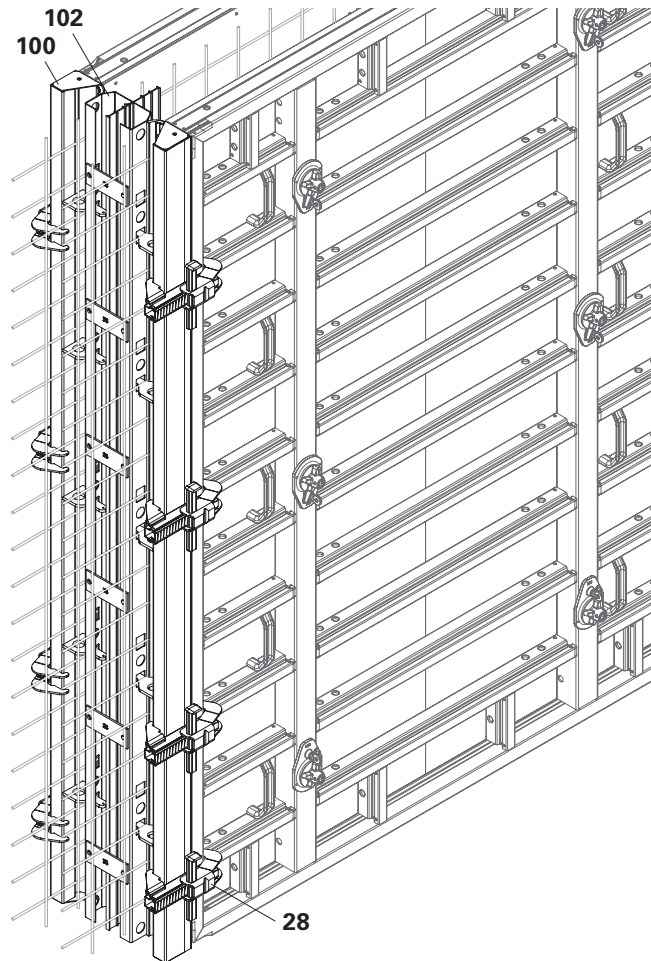


Fig. D9.10

Components



- Combination table for stop end panels with water bar installation at height 3.30 m (Tab. D9.03)
- Combination table for stop end panels with water bar installation at height 1.20 m (Tab. D9.04)

H = 3.30 m	b [mm]	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
		20	24 / 25	30	35	24 / 25	30	35	40
AT 330x3	–	2	2	2	2				
AT 330x5	–					2	2	2	2
MTF 330x20	118	1				1			
MTF 330x24/25	158		1				1		
MTF 330x30	218			1				1	
MTF 330x35/36	268				1				1

Tab. D9.03

H = 1.20 m		20	24 / 25	30	35	24 / 25	30	35	40
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
MTF 120x20	118	1				1			
MTF 120x24/25	158		1				1		
MTF 120x30	218			1				1	
MTF 120x35/36	268				1				1

Tab. D9.04

Extension guidelines

Pre-assembly resting on the ground at $H \leq 6.60$ m

Assembly

- The assembly surface must be level.
- Place squared timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position with the formwork panel facing downwards.

Panel connections

- For extension units with a height of $5.40 \text{ m} < H \leq 6.60 \text{ m}$, fit Alignment Couplers BFD (28) and Compensation Walers-4 MAR 85 (33) at the panel joints.
 - Examples: (Fig. D10.01a + Fig. D10.01b)
- For extension units with height $H \leq 5.40 \text{ m}$, Alignment Couplers BFD (28) are to be used on panel joints.
 - Examples: (Fig. D10.01c)



- Fit the Wingnuts MX15 for the tie points on the ground during pre-assembly.
- If a Panel MX-2 $H = 30$ cm is added horizontally, the tie can be dispensed with for this panel. The unused tie point must be sealed with a Plug MXM15 $\text{Ø}18.3\text{mm}$ (71).

MX-2 330x60/90/120

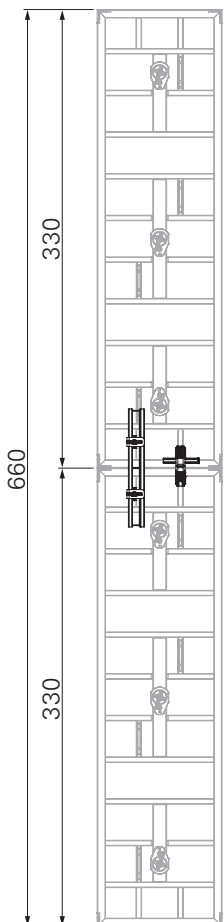


Fig. D10.01a

MX-2 330x240

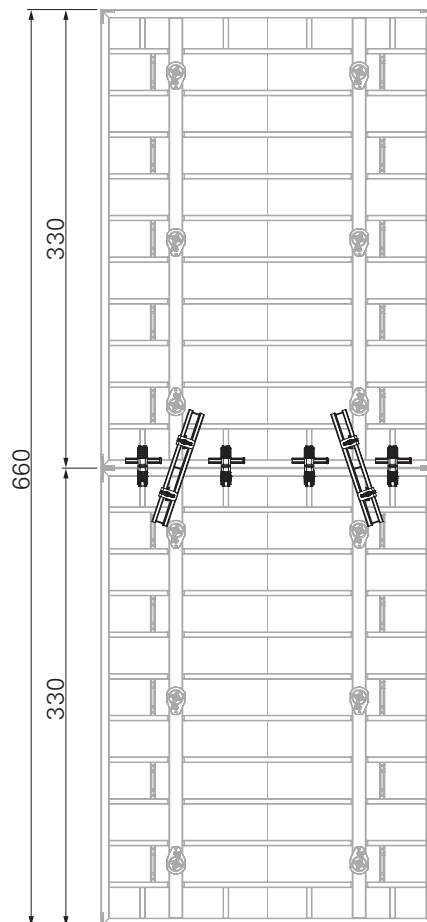


Fig. D10.01b

MX-2 330x240

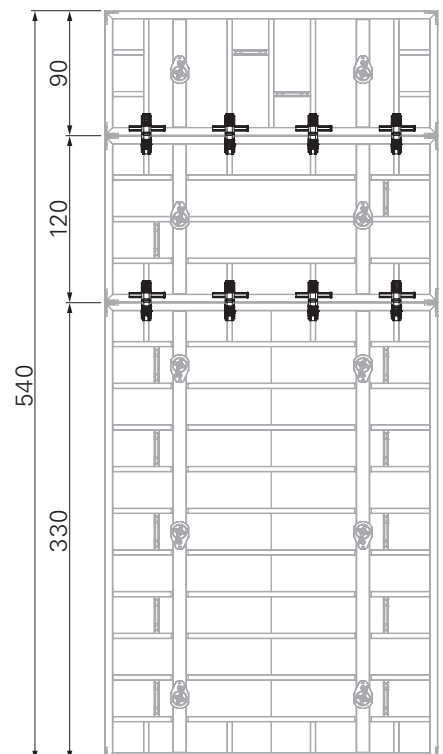


Fig. D10.01c

Erection with the crane

(Fig. D10.02)



Warning

Extension units that are incorrectly or insufficiently attached or incorrectly connected can come loose!

Falling extension units can strike people and cause serious injuries or even death.

- ⇒ Observe the permissible load-bearing capacity of the Lifting Hook MX 1.5t and the crane capacity!
- ⇒ Follow Instructions for Use for the Lifting Hook MX 1.5t!
- ⇒ Take note of the specified panel connections for the relevant height extension.

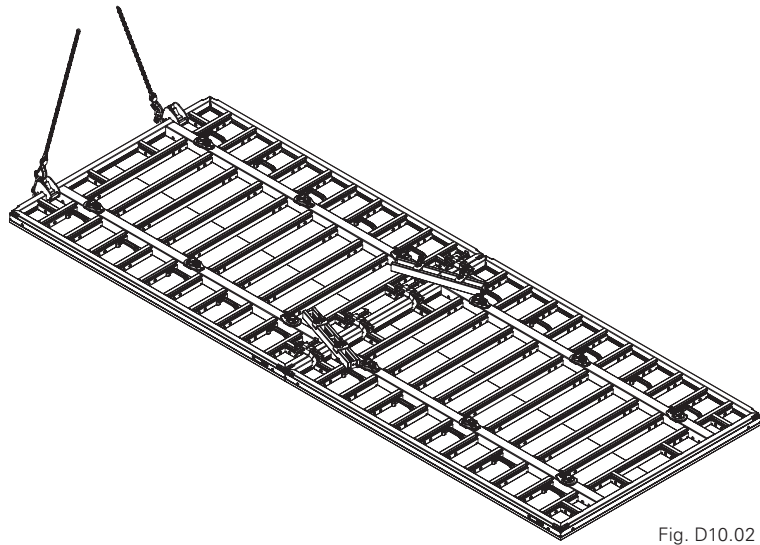


Fig. D10.02



Realise height extensions without any additional load (Push-Pull Props RS etc.).

Pre-assembly resting on the ground between $6.00\text{ m} < H \leq 8.70\text{ m}$

Assembly

- The assembly surface must be level.
- Place squared timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position with the formwork panel facing downwards.

Panel connections

For extension units with a height of $6.00\text{ m} < H \leq 8.70\text{ m}$, fit Alignment Couplers BFD (28) and Compensation Walers-4 MAR 85 (33) at the panel joints.

- Examples: (Fig. D10.03a – Fig. D10.03c)



- Fit the Wingnuts MX15 for the tie points on the ground during pre-assembly.
- If a Panel MX-2 H = 30 cm is added horizontally, the tie can be dispensed with for this panel. The unused tie point must be sealed with a Plug MXM15 Ø18.3mm (71).

MX-2 330x240

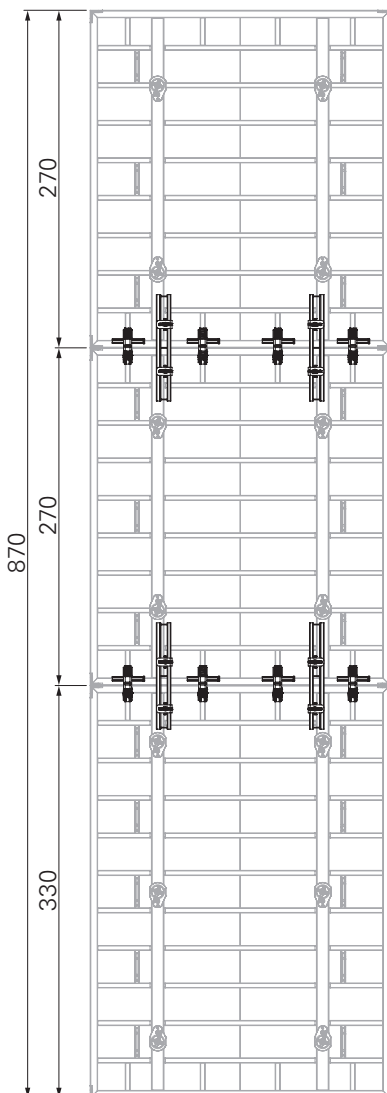


Fig. D10.03a

2x MX-2 330x240

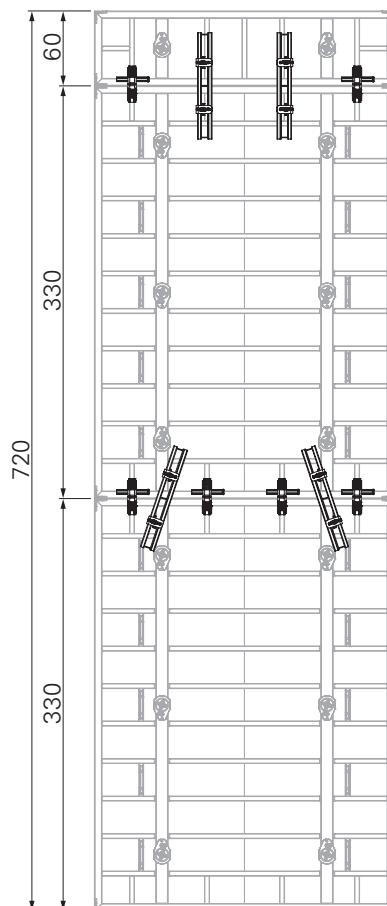


Fig. D10.03b

MX-2 330x240
Horizontal panels

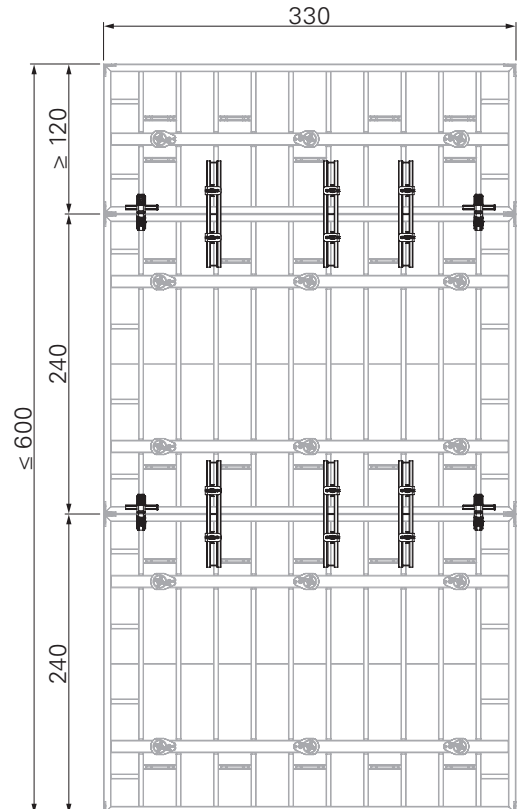


Fig. D10.03c

Erection with the crane

(Fig. D10.04)



Warning

Extension units that are incorrectly or insufficiently attached or incorrectly connected can come loose!

Falling extension units can strike people and cause serious injuries or even death.

- ⇒ Observe the permissible load-bearing capacity of the Lifting Hook MX 1.5t and the crane capacity!
- ⇒ Follow Instructions for Use for the Lifting Hook MX 1.5t!
- ⇒ Take note of the specified panel connections for the relevant height extension.

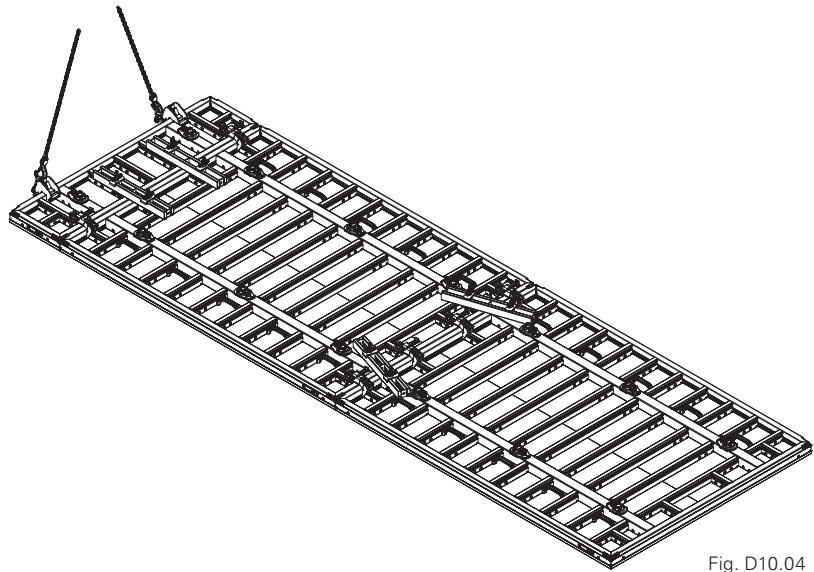


Fig. D10.04



- Realise height extensions without any additional load (Push-Pull Props RS etc.).
- Extension units can be erected with the crane up to a height $H = 7.20$ m without any additional bracing.

Upright assembly

With a concreting height of 3.30 m, the top tie is not required if a Push-Pull Spreader MX 15-40 or MX 15-100 is used.

The panels are braced by the two Push-Pull Spreaders MX (**55/66**). (Fig. D11.01)

Components

- 5** Panel MX-2
- 55** Push-Pull Spreader MX 15-40
- 55.1** Securing Hook
- 55.2** Mounting shoe
- 55.3** Spacer rack
- 66** Push-Pull Spreader MX 15-100



- Setting dimension = wall thickness
- For information on how to prepare and fit the Push-Pull Spreader MX, see Section "A17 Parapets and foundations" on page 108.
- Push the two Push-Pull Spreaders MX 15 onto the outside of the tie profiles.
- Close open tie points on the formlining with Plugs MXM15 Ø18.3 mm (**71**), see Section "Closures" on page 51.
- Always fit platforms and console brackets on the side of the securing hook (**55.1**).

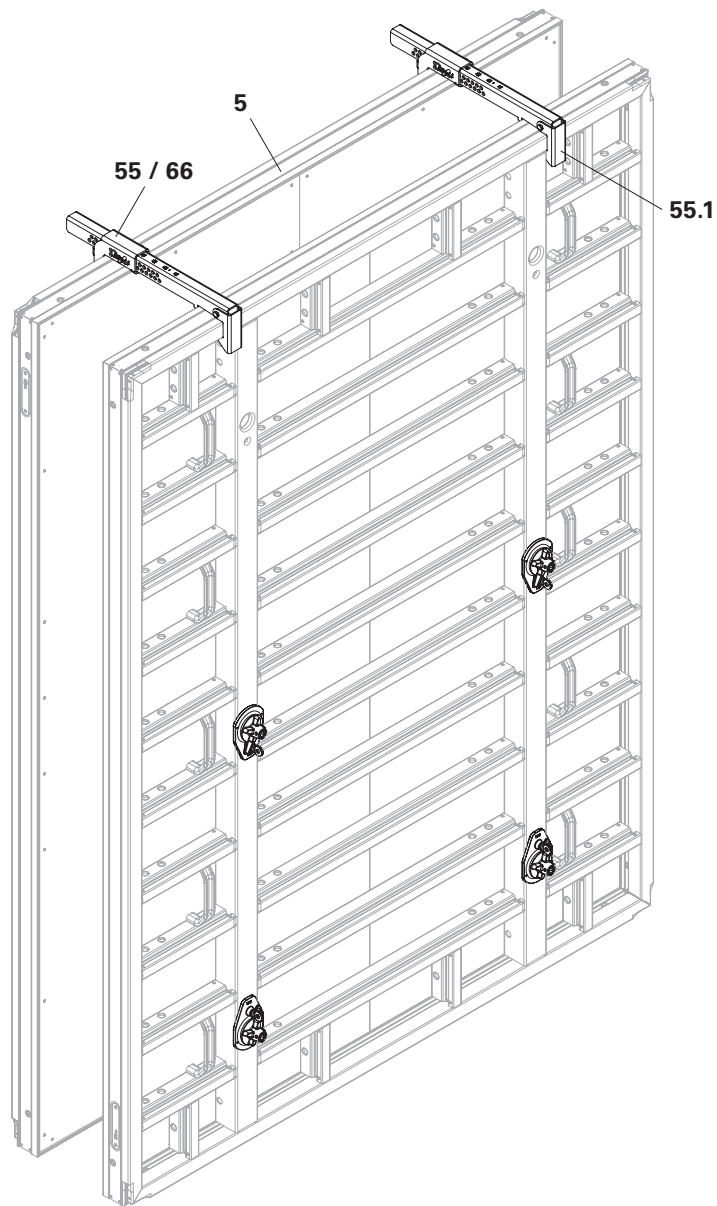


Fig. D11.01

Outs. Corner MXA-2 360x45

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 50/20		
	A	B	C	D	E	F	G	H
15	–	MXA-2 45	–	MXM-2 60	WDA 5 ¹⁾	WDA 10 ¹⁾	MXI-2 50/20	MX-2 45
17.5	–	MXA-2 45	KH 2.5 ²⁾	MXM-2 60	WDA 5 ¹⁾	KH 7.5 ²⁾	MXI-2 50/20	MX-2 45
20	–	MXA-2 45	–	MX-2 30	–	WDA 5 ¹⁾	MXI-2 50/20	WDA 5 ¹⁾
24	–	MXA-2 45	–	MX-2 30	–	KH 1 ²⁾	MXI-2 50/20	KH 1 ²⁾
25	–	MXA-2 45	–	MX-2 30	–	–	MXI-2 50/20	–
30	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 30	–	–	MXI-2 50/20	–
35	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 30	–	–	MXI-2 50/20	–
36	WDA 10 ³⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 30	KH 1 ²⁾	–	MXI-2 50/20	–
40	MXM-2 60	MXA-2 45	–	MX-2 45	–	MX-2 45	MXI-2 50/20	–

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

³⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation. A 1 cm KH must then be fitted to the subsequent element

Tab. E1.01

Arrangement of Alignment Couplers BFD (Fig. E1.02 + Fig. E1.03)					
Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20			Alignment Couplers BFD at Outs. Corner MXA-2 45	
	S1 + S2		S3 ³⁾	S4 + S5	
Strut	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ④ ⑤ ⑦ ⑧ ⑨ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	

³⁾ Arrangement if no Panel MX-2 330x240 is connected directly to the I-Corner MXI-2 50/20

Tab. E1.02



Panels MX-2 360x240 are connected to the short side of the I-Corner MXI-2 360x50/20 as standard for wall thicknesses of 15 – 36 cm. If this is not possible, only the following elements may be connected:

- Panel MX-2 360x30
- Panel MX-2 360x45

(Fig. E1.01)

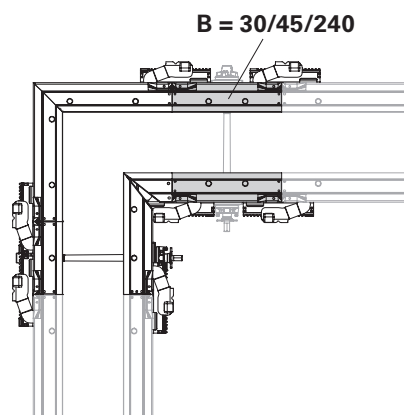


Fig. E1.01

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of I-Corner MXI-2 360x50/20
(Fig. E1.02 + Fig. E1.02a)

Example:

Wall thickness 25 cm

- A – E: Tab. E1.01
- S1 – S3: Tab. E1.02

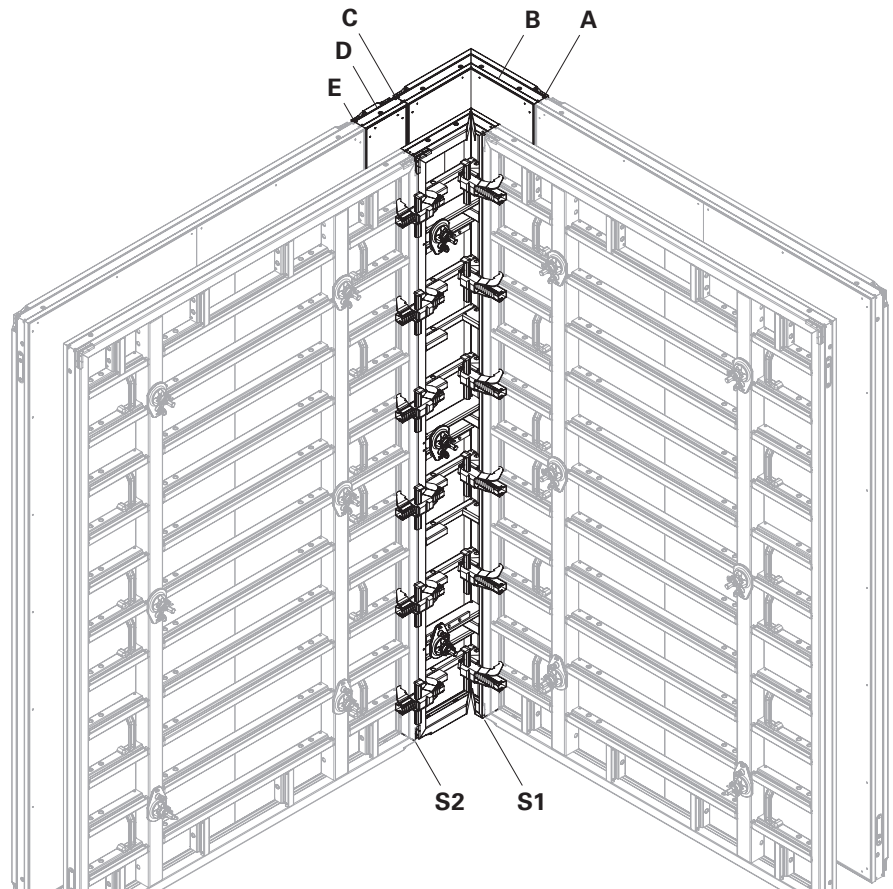


Fig. E1.02

Position of joint S3 (WT 15 and 17.5)

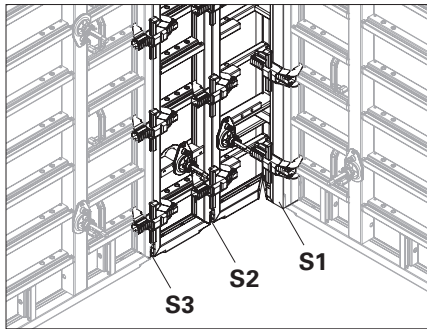


Fig. E1.02a

View of Outs. Cor. MXA-2 360x45
(Fig. E1.03)

Example:

Wall thickness 25 cm

- F – H: Tab. E1.01
- S4 – S6: Tab. E1.02

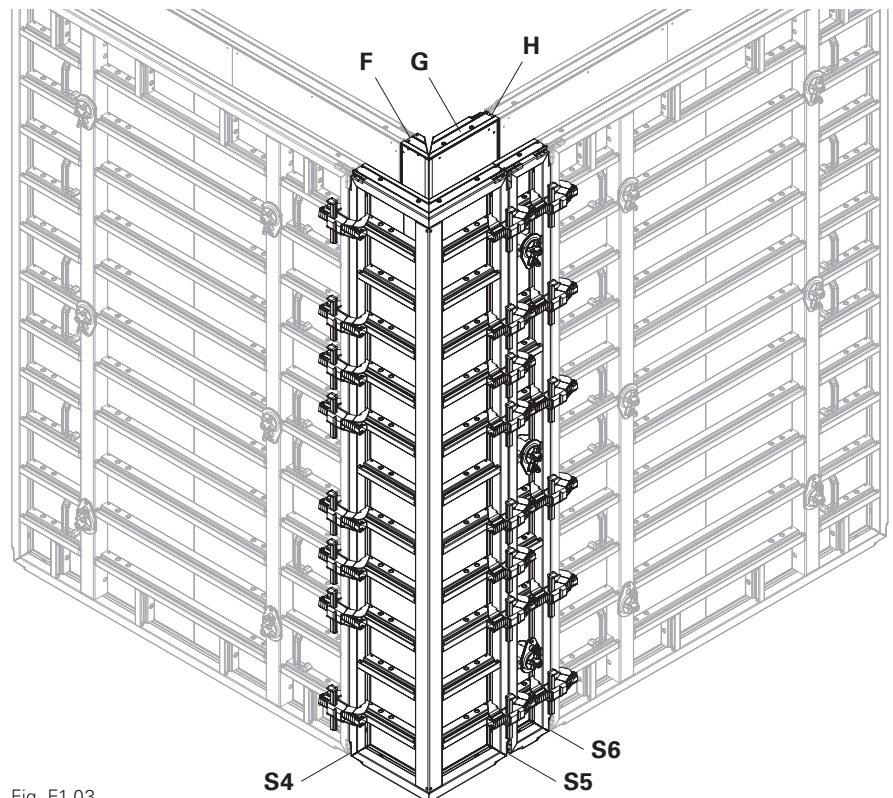


Fig. E1.03

E1 Corners 90° with I-Corner MXI-2 360x50/20



Wall thickness <40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 50/20	
	A	B	C	D	E	F	G
45	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 45	MX-2 45	MXI-2 50/20
50	MXM-2 60	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 45	MX-2 45	MXI-2 50/20
55	MXM-2 60	–	MXA-2 45	–	MX-2 60	MX-2 30	MXI-2 50/20
60	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 60	MX-2 30	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. E1.03

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. E1.04 + Fig. E1.05)				
Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20		Alignment Couplers BFD at Outs. Corner MXA-2 45	
	S1	S2 + S3	S4 + S7	S5 + S6
Strut	② ③ ⑤ ⑦ ⑨	② ③ ⑤ ⑦ ⑧ ⑨ ²⁾	② ③ ⑤ ⑥ ⑦ ⑨ ²⁾	② ③ ⑤ ⑥ ⑦ ⑨ ⑩ ²⁾
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 50/20		Compensation Waler-4 MAR 170 at Outs. Corner MXA-2 45	
Strut	① ④ ⑪		① ④ ⑧ ⑪	

²⁾ Alignment Couplers BFD may need to be offset

Tab. E1.04

Arrangement of the alignment couplers and compensation walers

Valid for wall thicknesses < 40 – 60 cm

View of I-Corner MXI-2 360x50/20
(Fig. E1.04)

Example:

Wall thickness 50 cm

- A – E: Tab. E1.03
- S1 – S3: Tab. E1.04

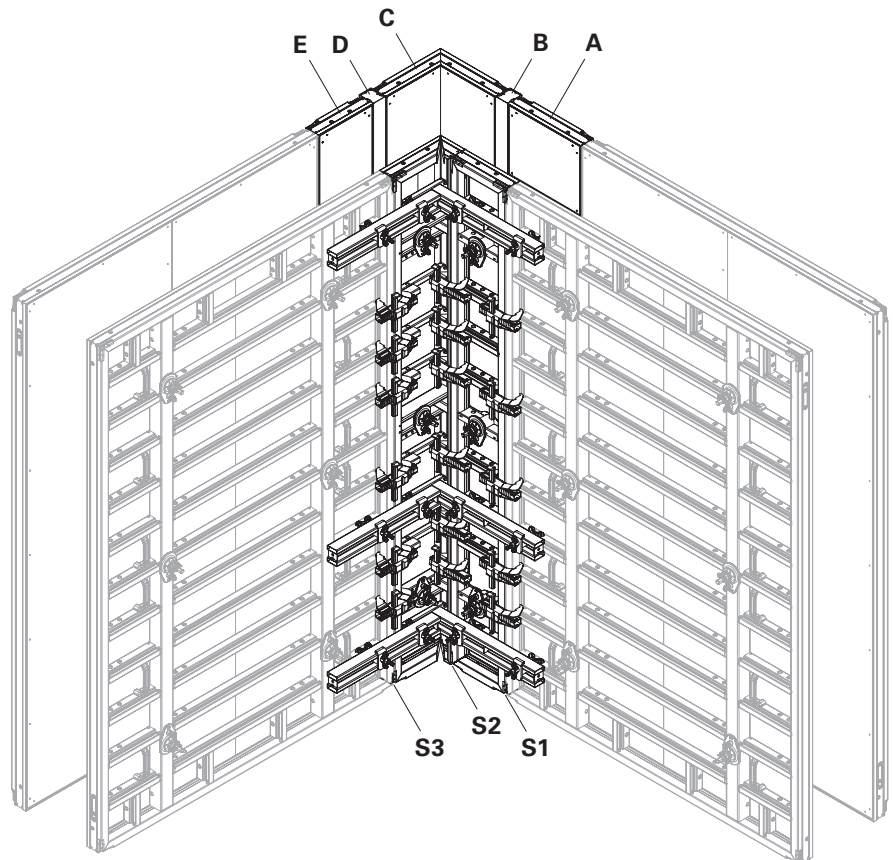


Fig. E1.04

View of Outs. Cor. MXA-2 360x45
(Fig. E1.05)

Example:

Wall thickness 50 cm

- F + G: Tab. E1.03
- S4 – S6: Tab. E1.04

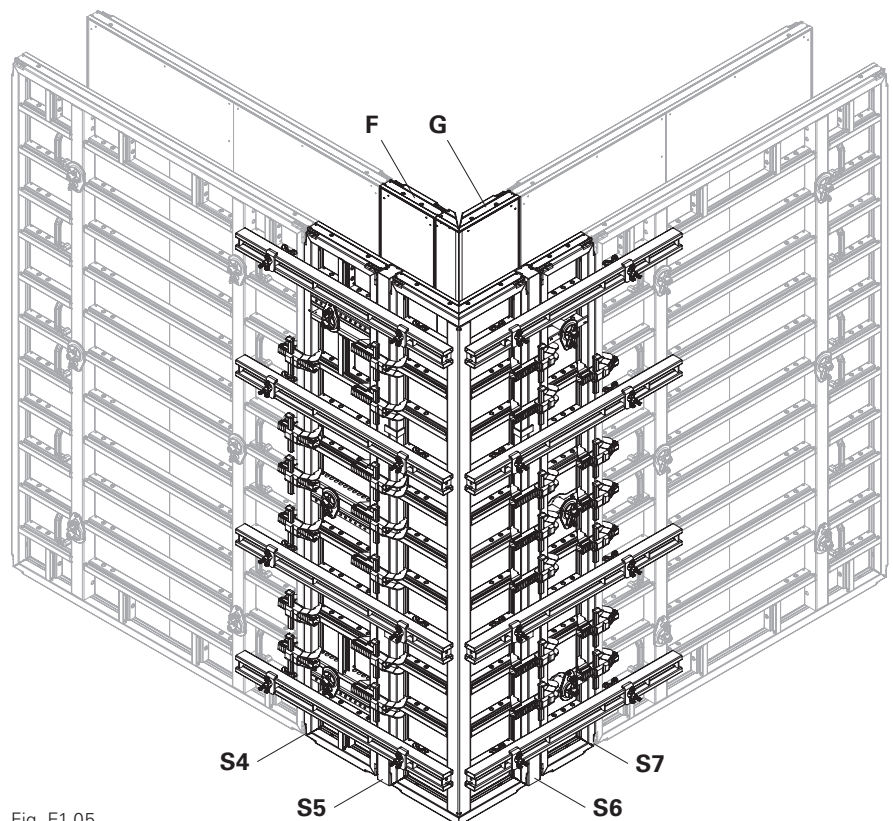


Fig. E1.05

E1 Corners 90° with I-Corner MXI-2 360x50/20



Wall thickness 80 cm



Perm. fresh concrete pressure
60 kN/m²

Components

- 5a Panel MX-2 360x30
- 5b Panel MX-2 360x60
- 7 Tie Rod DW15
- 8 Wingnut DW15 ga
- 26 Wall Thick Comp. WDA MX 360x5
- 28 Alignment Coupler BFD
- 33 Compensation Waler-4 MAR 85
- 45 Tie Rod DW20
- 46 Tube Ø28mm 300 rough
- 47 Sealing Cone DK DW20 55mm
- 48 Wingnut DW20 ga
- 49 Counterplate DW20 120x120x15mm
- 50 Wingnut Pivot Plate DW15 ga
- 84 I-Corner MXI-2 360x50/20
- 85 Outs. Corner MXA-2 360x45
- 86 Waler Stop
- 87 Anchor Tie Yoke SW
- 88 Hook Tie Head DW15 ga
- 89 Steel Waler SRU 247 U120
- 90 Wedge KZ tensionproof

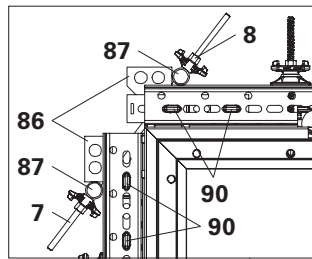


Fig. E1.06a

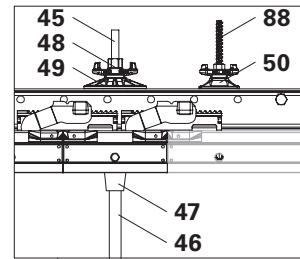


Fig. E1.06b

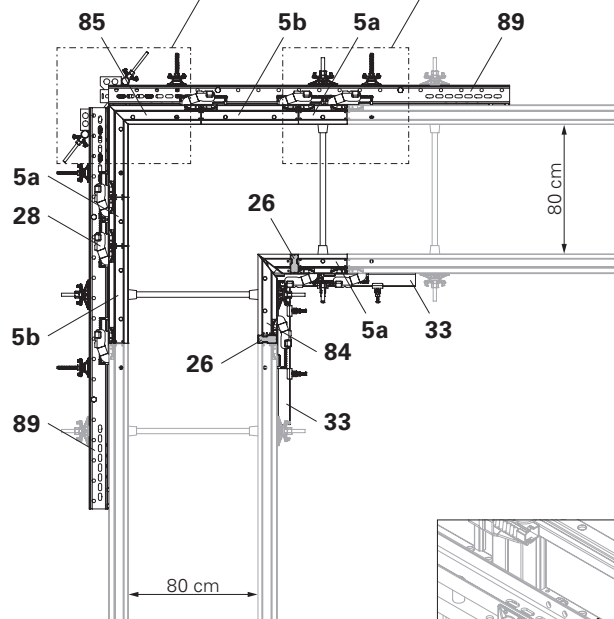


Fig. E1.06

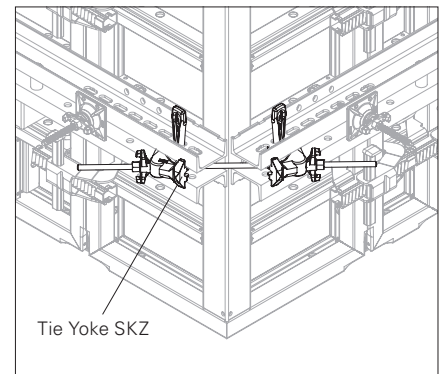


Fig. E1.06c

Example

View from above
(Fig. E1.06 – Fig. E1.06b)



The outside corner can also be implemented with the Tie Yoke SKZ (article no. 024210) instead of the waler stop (86) and anchor tie yoke (87). For assembly, see the Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork. (Fig. E1.06c)

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR/Steel Waler SRU 247 U120
(Fig. E1.07 + Fig. E1.08)

Joint	Alignment Couplers BFD at I-Corner MXI-2 50/20		Alignment Couplers BFD at Outs. Corner MXA-2 45		
	S1	S2 + S3	S4 + S9	S6 and S7	S8
Strut	② ⑤ ⑧ ⑪	② ③ ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ④ ⑤ ⑦ ⑨ ⑪	① ③ ④ ⑤ ⑦ ⑧ ⑨ ⑪
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 50/20		Steel Waler SRU 247 U120 at Outs. Corner MXA-2 45		
Strut	① ④ ⑨		Steel Walers SRU 247 U120 are placed at the tie position		

Tab. E1.05

Arrangement of the alignment couplers and steel walers

View of I-Corner MXI-2 360x50/20
(Fig. E1.07)

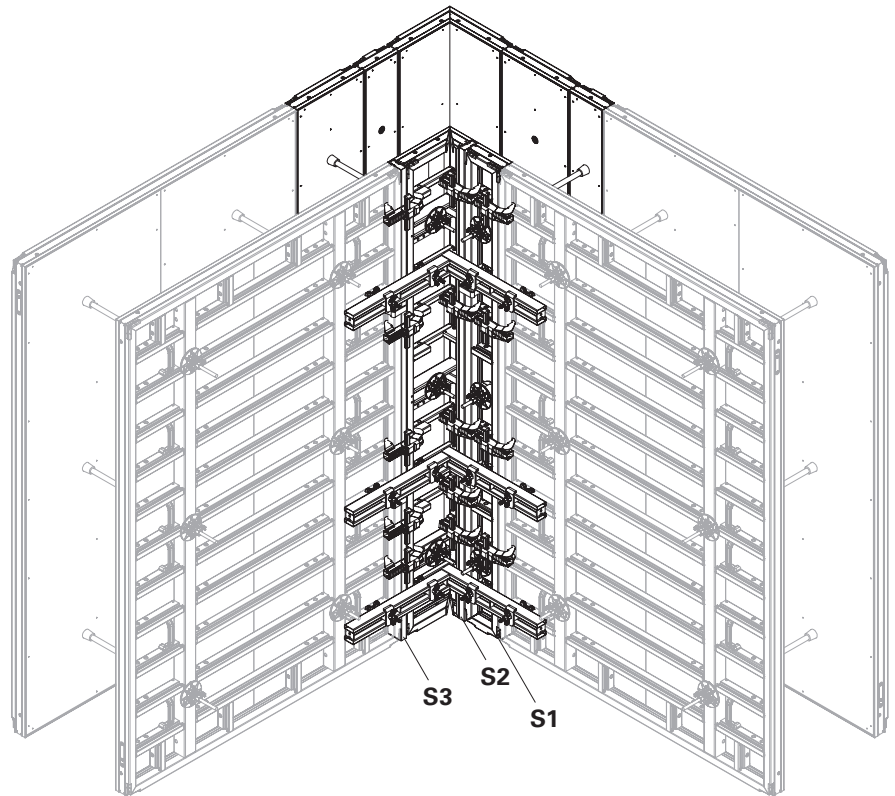


Fig. E1.07

View of Outs. Cor. MXA-2 360x45
(Fig. E1.08)

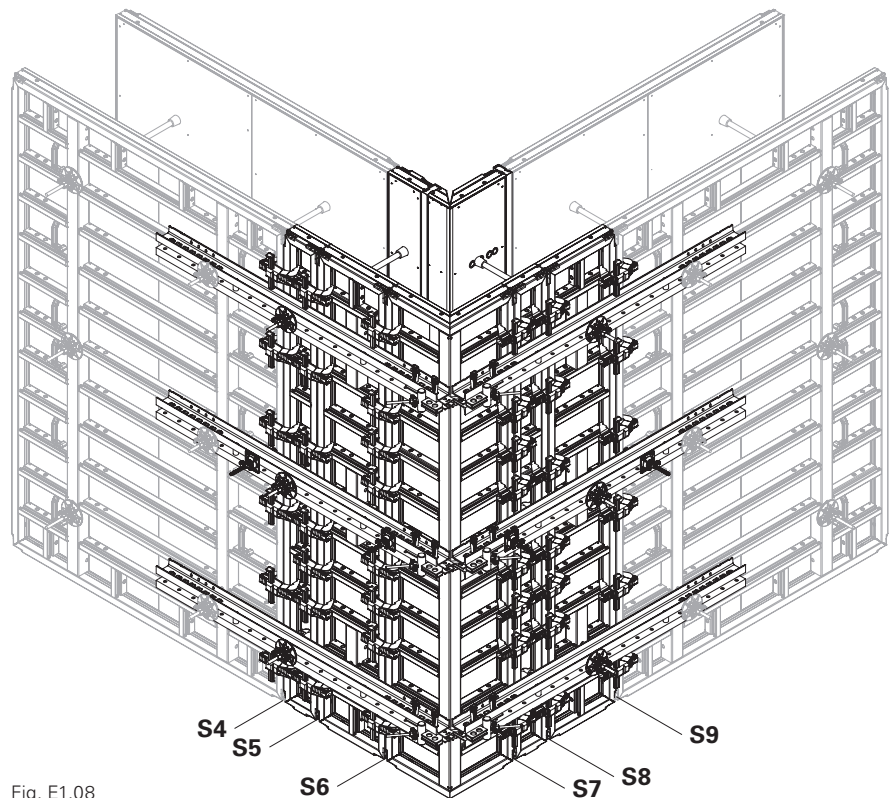


Fig. E1.08

Height 360

Outs. Corner MXA-2 360x35

Wall thickness 15 – 30 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 35							Panels at I-Corner MXI-2 60
	A	B	C	D	E	F	G	H
15	KH 7.5 ²⁾	MX-2 30	KH 2.5 ²⁾	MXA-2 35	KH 2.5 ²⁾	MX-2 30	KH 7.5 ²⁾	MXI-2 60
17.5	KH 7.5 ²⁾	MX-2 30	WDA 5 ¹⁾	MXA-2 35	WDA 5 ¹⁾	MX-2 30	KH 7.5 ²⁾	MXI-2 60
20	–	MX-2 45	–	MXA-2 35	–	MX-2 45	–	MXI-2 60
24	–	MX-2 45	WDA 4 ¹⁾	MXA-2 35	WDA 4 ¹⁾	MX-2 45	–	MXI-2 60
25	–	MX-2 45	WDA 5 ¹⁾	MXA-2 35	WDA 5 ¹⁾	MX-2 45	–	MXI-2 60
30	–	MX-2 45	WDA 10 ¹⁾	MXA-2 35	WDA 10 ¹⁾	MX-2 45	–	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. E2.01

Arrangement of Alignment Couplers BFD (Fig. E2.01 + Fig. E2.02)			
Joint	Alignment Couplers BFD at I-Corner MXI-2 60	Alignment Couplers BFD at Outs. Corner MXA-2 35	
	S1 + S2	S3 + S6	S4 + S5
Strut	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ④ ⑤ ⑦ ⑧ ⑨ ⑪

Tab. E2.02

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 30 cm

View of I-Corner MXI-2 360x60
(Fig. E2.01)

Example:

Wall thickness 25 cm

- A – G: Tab. E2.01
- S1 + S2: Tab. E2.02

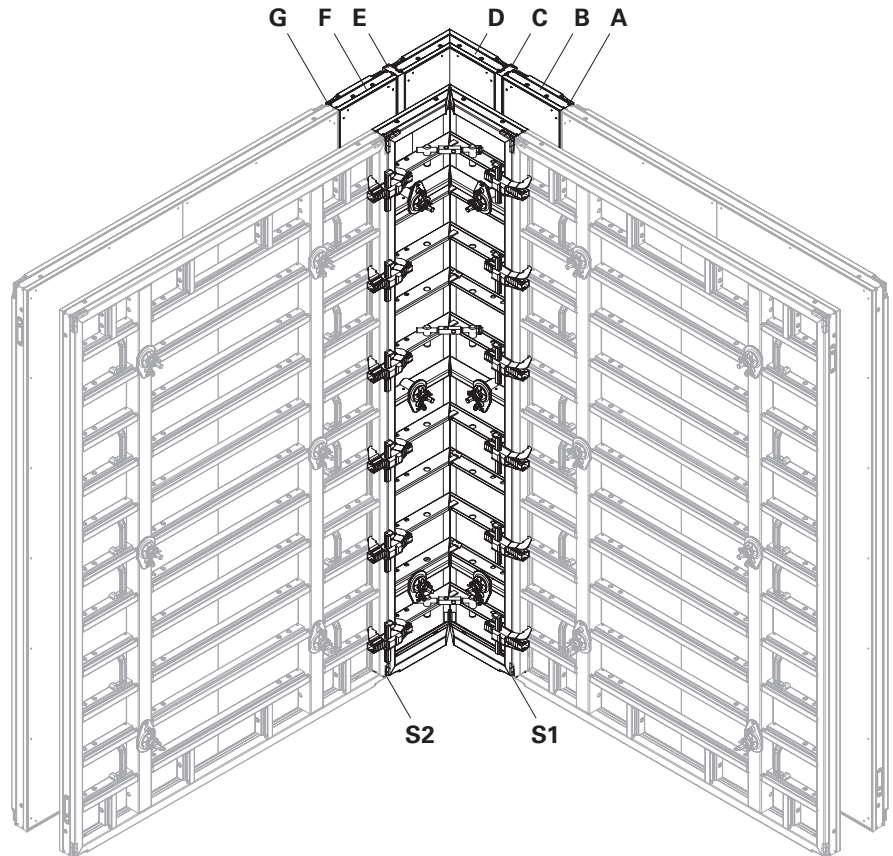


Fig. E2.01

View of Outs. Cor. MXA-2 360x35
(Fig. E2.02)

Example:

Wall thickness 25 cm

- H: Tab. E2.01
- S3 – S6: Tab. E2.02

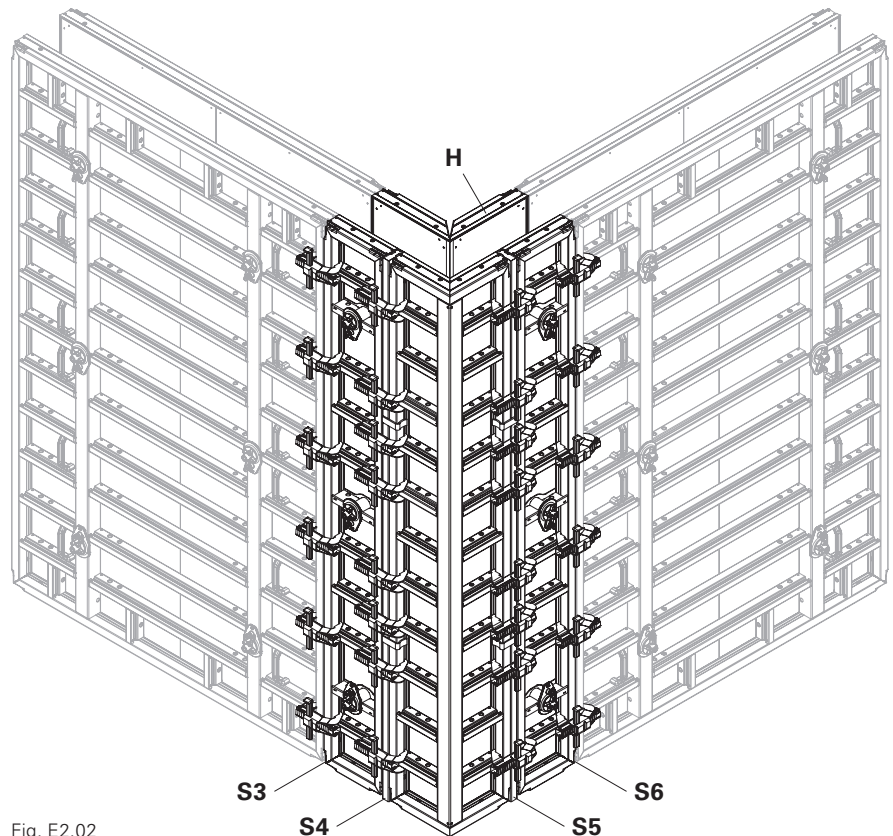


Fig. E2.02

Outs. Corner MXA-2 360x45

Wall thickness 30 – 40 cm



Perm. fresh concrete pressure
80 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 60
	A	B	C	D	E	F
30	MX-2 45	–	MXA-2 45	–	MX-2 45	MXI-2 60
35	MX-2 45	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MX-2 45	MXI-2 60
36	MX-2 45	WDA 6 ¹⁾	MXA-2 45	WDA 6 ¹⁾	MX-2 45	MXI-2 60
40	MX-2 45	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber can be used as compensation.

Tab. E2.03

Arrangement of Alignment Couplers BFD (Fig. E2.03 + Fig. E2.04)			
Joint	Alignment Couplers BFD at I-Corner MXI-2 60	Alignment Couplers BFD at Outs. Corner MXA-2 45	
	S1 + S2	S3 + S6	S4 + S5
Strut	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ④ ⑤ ⑦ ⑧ ⑨ ⑪

Tab. E2.04

Arrangement of the alignment couplers

Valid for wall thicknesses 30 – 40 cm

View of I-Corner MXI-2 360x60
(Fig. E2.03)

Example:

Wall thickness 35 cm

- A – E: Tab. E2.03
- S1 + S2: Tab. E2.04

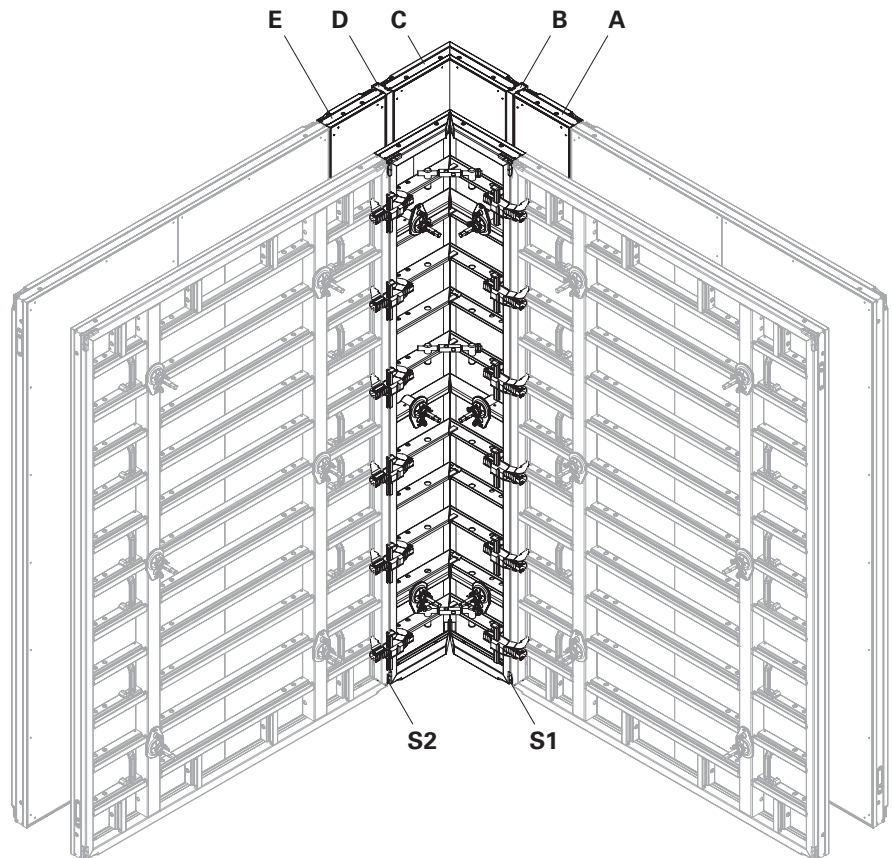


Fig. E2.03

View of Outs. Cor. MXA-2 360x45
(Fig. E2.04)

Example:

Wall thickness 35 cm

- F: Tab. E2.03
- S3 – S6: Tab. E2.04

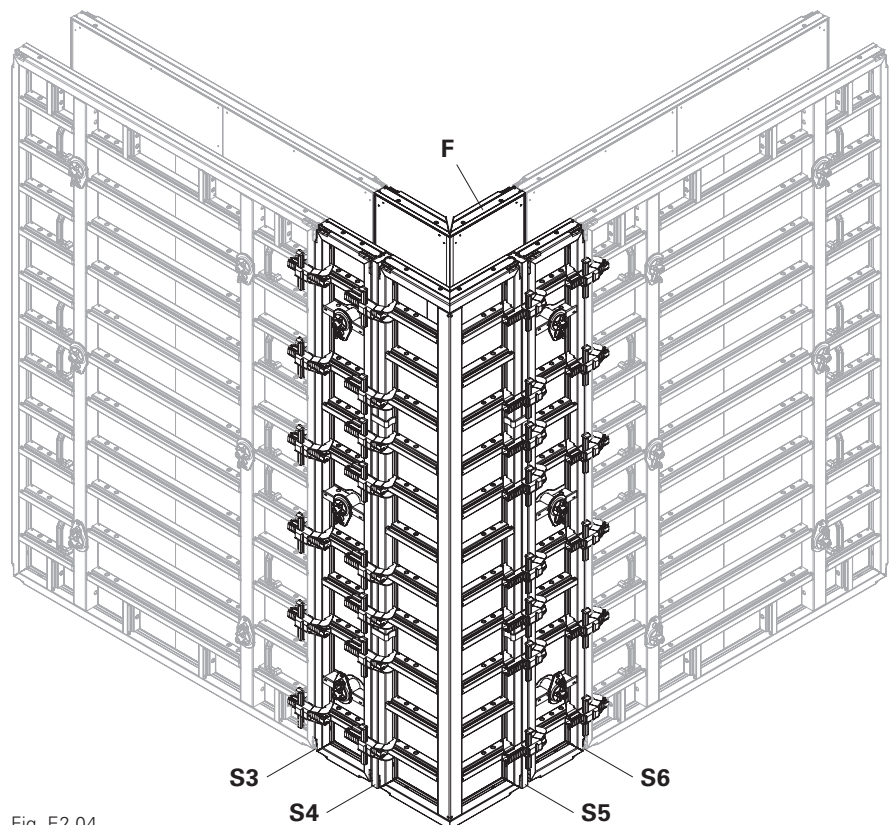


Fig. E2.04

E2 Corners 90° with I-Corner MXI-2 360x60

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels at Outs. Corner MXA-2 45					Panels at I-Corner MXI-2 60
	A	B	C	D	E	F
45	MXM-2 60	–	MXA-2 45	–	MXM-2 60	MXI-2 60
50	MXM-2 60	WDA 5 ¹⁾	MXA-2 45	WDA 5 ¹⁾	MXM-2 60	MXI-2 60
55	MXM-2 60	WDA 10 ¹⁾	MXA-2 45	WDA 10 ¹⁾	MXM-2 60	MXI-2 60
60	MX-2 45	MX-2 30	MXA-2 45	MX-2 30	MX-2 45	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber can be used as compensation.

Tab. E2.05

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. E2.05 + Fig. E2.06)			
Joint	Alignment Couplers BFD at I-Corner MXI-2 60	Alignment Couplers BFD at Outs. Corner MXA-2 45	
	S1 + S2	S3 + S8	S5 + S6 (+ S4 + S7 ²⁾)
Strut	② ③ ⑤ ⑥ ⑧ ⑩	② ③ ⑤ ⑥ ⑦ ⑨	② ③ ⑤ ⑥ ⑦ ⑨ ⑩
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 60	Compensation Waler-4 MAR 170 at Outs. Corner MXA-2 45	
Strut	① ④ ⑪	① ④ ⑧ ⑪	

²⁾ Joint 4 and joint 7 only in case of 60 cm wall thickness

Tab. E2.06

E2 Corners 90° with I-Corner MXI-2 360x60

Arrangement of the alignment couplers and compensation walers

Valid for wall thicknesses > 40 – 60 cm

View of I-Corner MXI-2 360x60
(Fig. E2.05)

Example:

Wall thickness 60 cm

- A – E: Tab. E2.05
- S1 + S2: Tab. E2.06

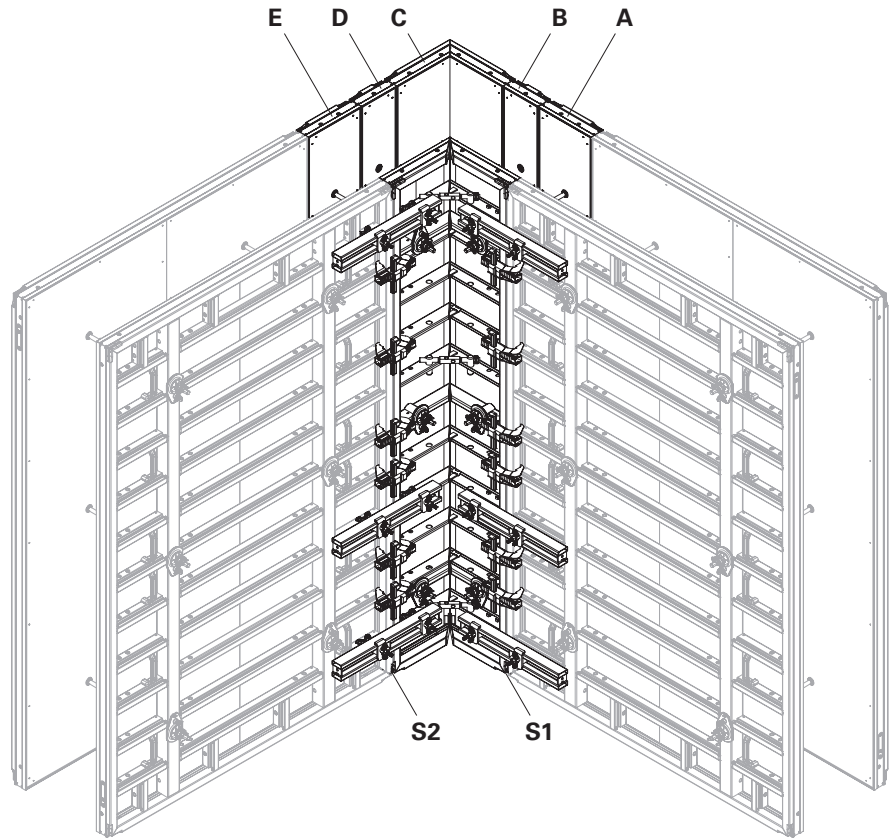


Fig. E2.05

View of Outs. Cor. MXA-2 360x45
(Fig. E2.06)

Example:

Wall thickness 60 cm

- F: Tab. E2.05
- S3 – S8: Tab. E2.06

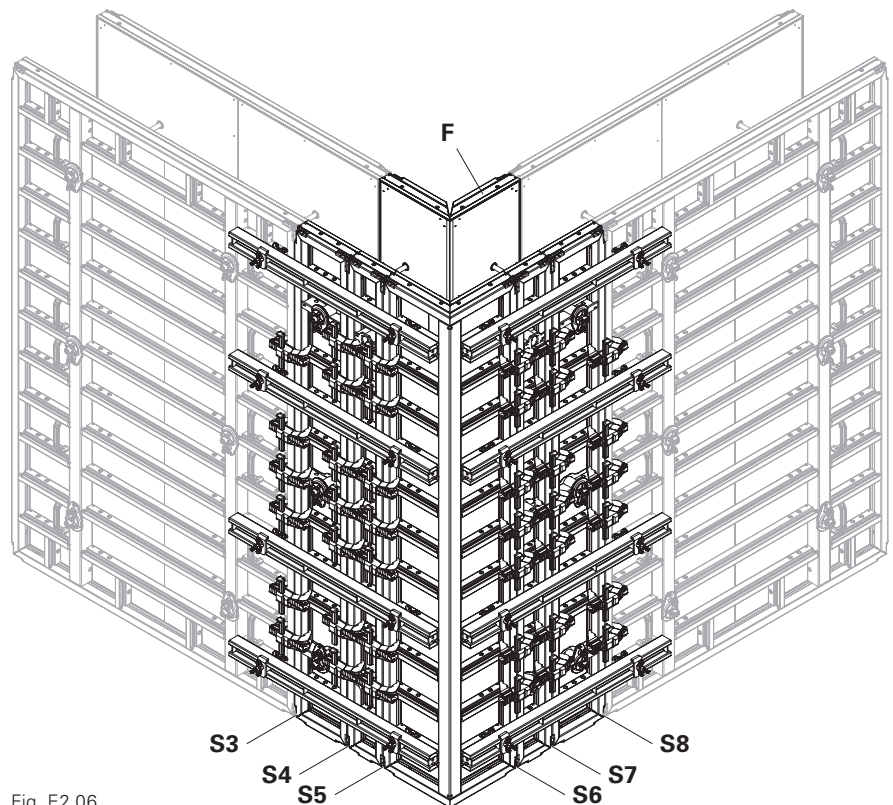


Fig. E2.06

E2 Corners 90° with I-Corner MXI-2 360x60



Wall thickness 80 cm



Perm. fresh concrete pressure
60 kN/m²

Components

- 5 Panel MX-2 360x45
- 7 Tie Rod DW15
- 8 Wingnut DW15 ga
- 26 Wall Thick Comp. WDA MX 360x5
- 28 Alignment Coupler BFD
- 45 Tie Rod DW20
- 46 Tube Ø28mm 300 rough
- 47 Sealing Cone DK DW20 55mm
- 48 Wingnut DW20 ga
- 50 Wingnut Pivot Plate DW15 ga
- 84 I-Corner MXI-2 360x0
- 85 Outs. Corner MXA-2 360x45
- 86 Waler Stop
- 87 Anchor Tie Yoke SW
- 88 Hook Tie Head DW15 ga
- 89 Steel Waler SRU 247 U120
- 90 Wedge KZ tensionproof

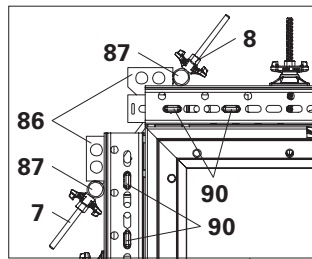


Fig. E2.07a

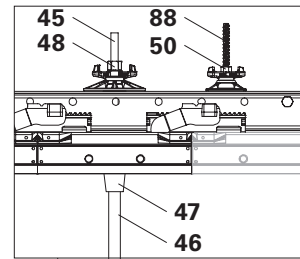


Fig. E2.07b

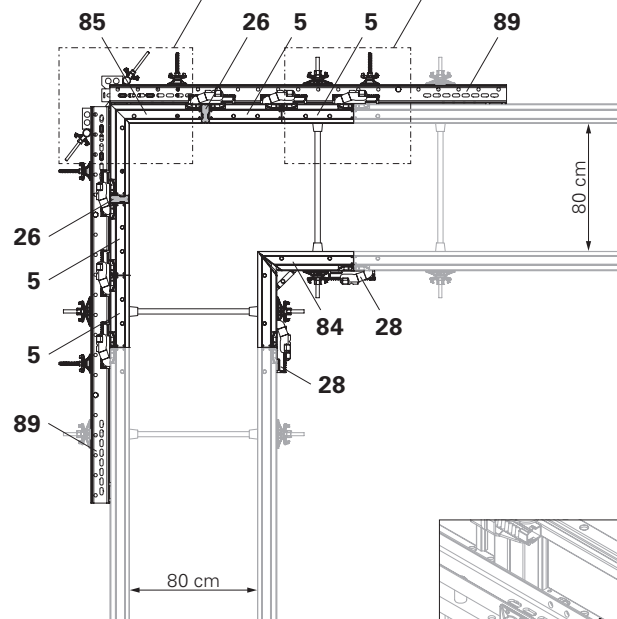


Fig. E2.07

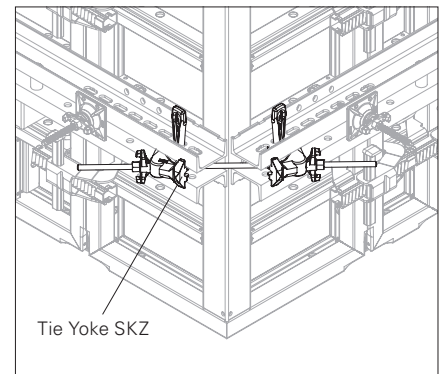


Fig. E2.07c

Example

View from above
(Fig. E2.07 – Fig. E2.07b)



The outside corner can also be implemented with the Tie Yoke SKZ (article no. 024210) instead of the waler stop (86) and anchor tie yoke (87). For assembly, see the Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork. (Fig. E2.07c)

Arrangement of Alignment Couplers BFD/Steel Walers SRU 247 U120 (Fig. E2.08 + Fig. E2.09)

Joint	Alignment Couplers BFD at I-Corner MXI-2 60	Alignment Couplers BFD at Outs. Corner MXA-2 45			
	S1 + S2	S3 + S8	S4 + S7	S5 + S6	
Strut	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ④ ⑤ ⑦ ⑨ ⑪	① ③ ④ ⑤ ⑦ ⑧ ⑨ ⑪	
	Compensation Waler-4 MAR 85 at I-Corner MXI-2 60	Steel Waler SRU 247 U120 at Outs. Corner MXA-2 45			
Strut	–	Steel Walers SRU 247 U120 are placed at the tie position			

Tab. E2.07

Arrangement of the alignment couplers, compensation walers and steel walers

View of I-Corner MXI-2 360x60
(Fig. E2.08)

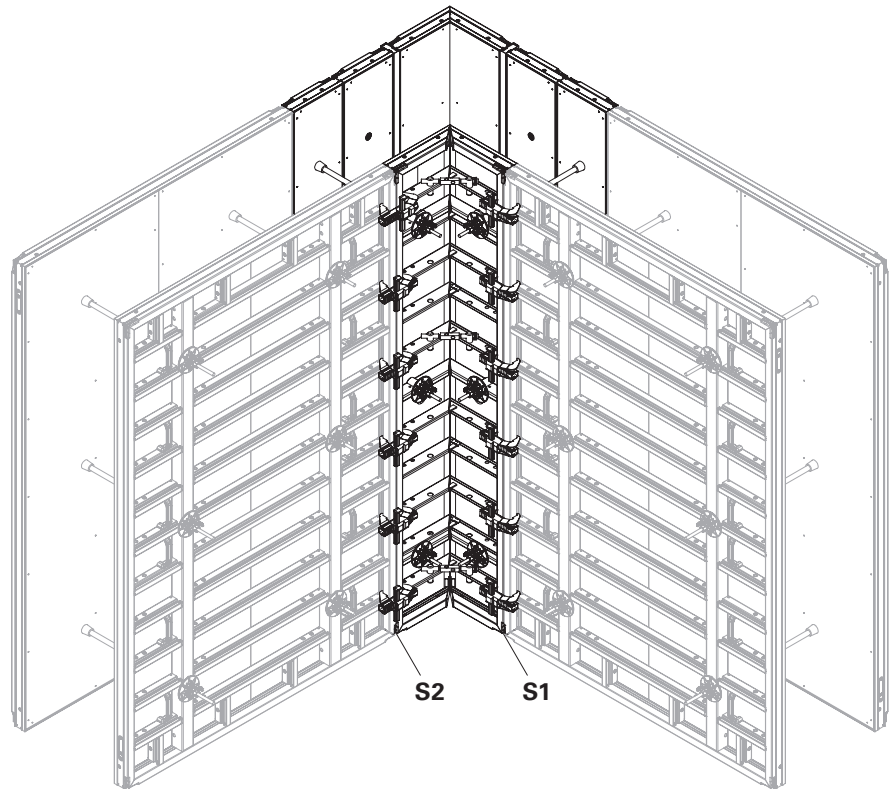


Fig. E2.08

View of Outs. Cor. MXA-2 360x45
(Fig. E2.09)

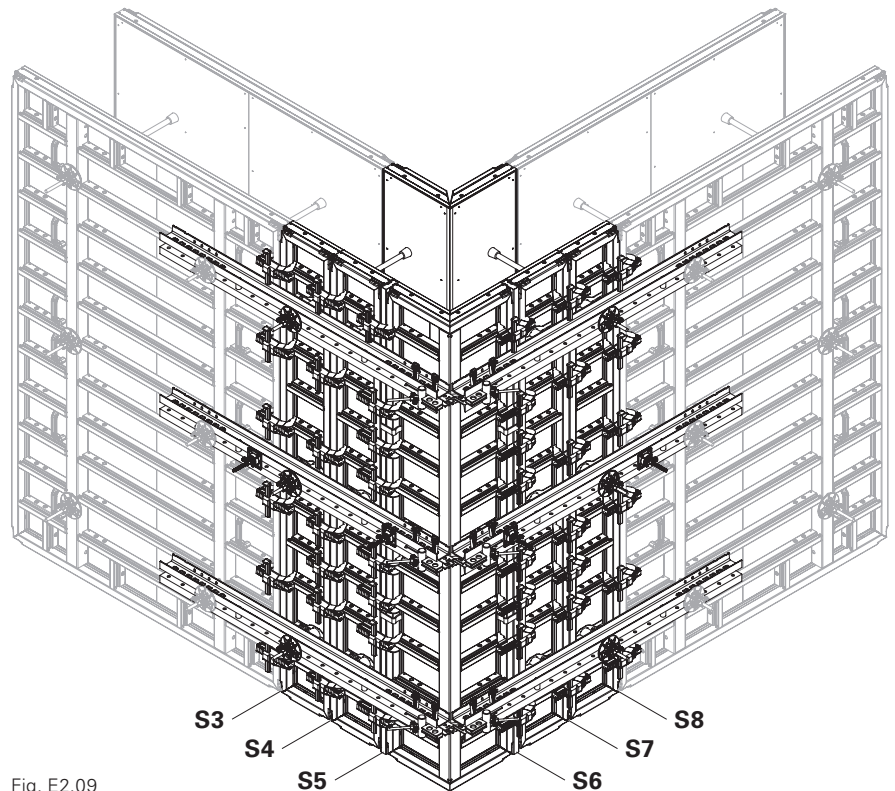


Fig. E2.09

Height 360

E3 Panel connections following 90° corners



If Panels MX-2 with $b \leq 120$ cm following 90° corners are envisaged, Compensation Waler-4 MAR 85 (**33**) must be installed at the next panel joint for reinforcement.

With height extensions, a second Compensation Waler-4 MAR 85 (**33**) is required on the panel joint (shown as a dotted line). (Fig. E3.02 + Fig. E3.03)

Example

View from above (Fig. E3.01)

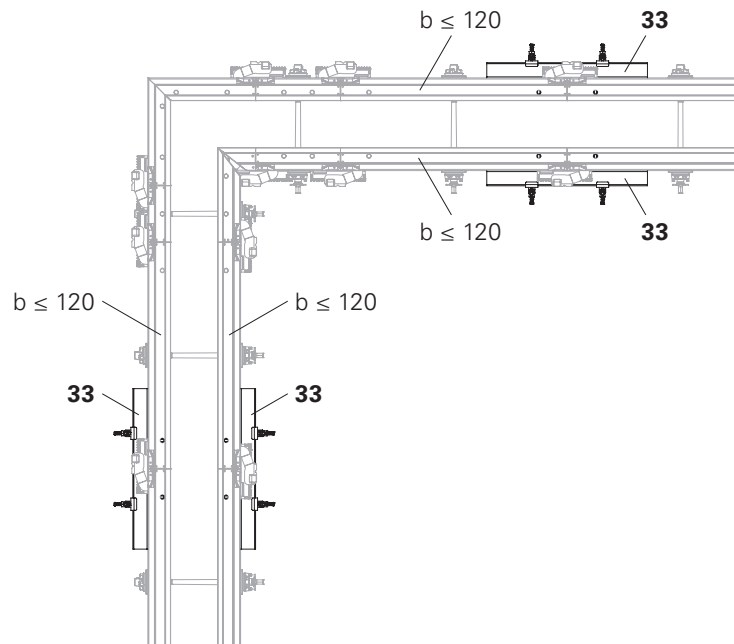


Fig. E3.01

E3 Panel connections following 90° corners

Arrangement of alignment couplers and Compensation Walers-4 MAR 85

View of I-Corner MXI-2 360x50/20
(Fig. E3.02)

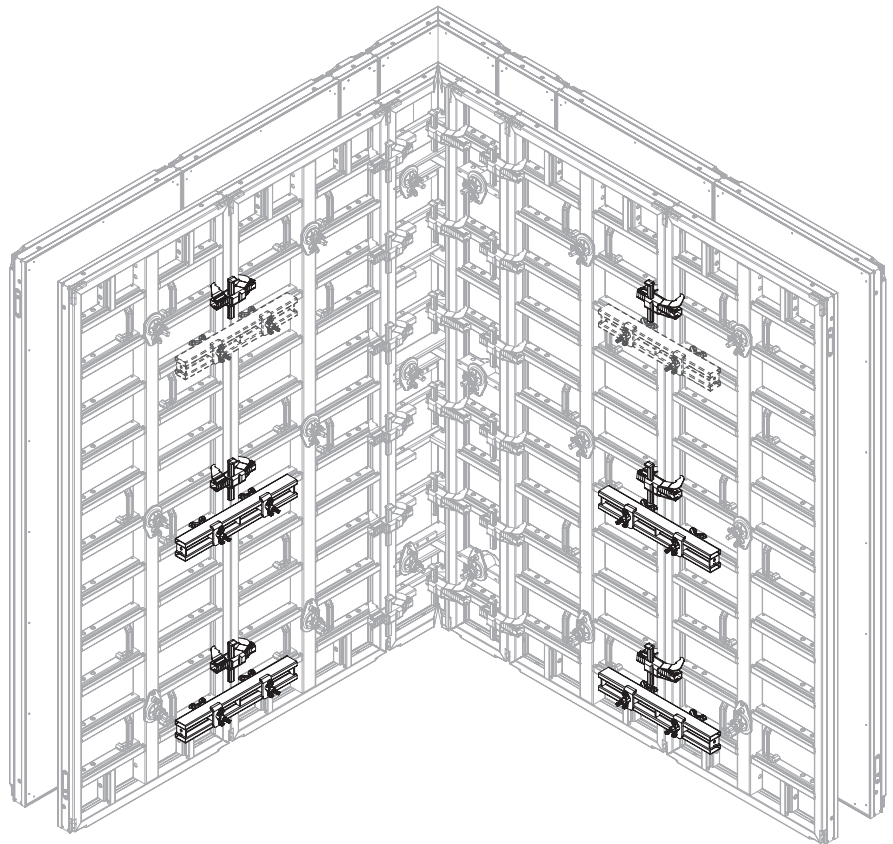


Fig. E3.02

View of Outs. Cor. MXA-2 360x45
(Fig. E3.03)

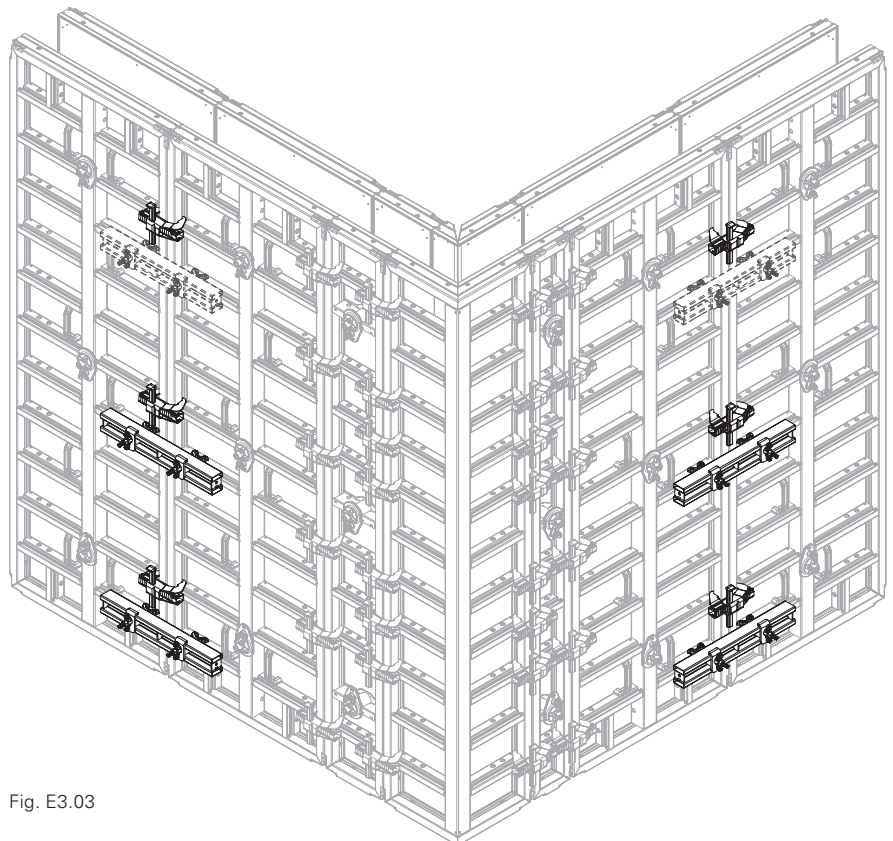


Fig. E3.03

Height 360

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections					Panels on T-junction	
	A	B	C	D	E	F	G
15	–	MX-2 45	WDA 10 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
17.5	KH 7.5 ²⁾	MX-2 45	WDA 5 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
20	–	MX-2 60	–	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
24	–	MX-2 60	WDA 4 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
25	–	MX-2 60	WDA 5 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
30	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	–	MXI-2 50/20	MXI-2 50/20
35	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 5 ¹⁾	MXI-2 50/20	MXI-2 50/20
36	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 5 ¹⁾	MXI-2 50/20	MXI-2 50/20
40	–	MX-2 60	WDA 10 ¹⁾	MXM-2 60	WDA 10 ¹⁾	MXI-2 50/20	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. E4.01

Arrangement of Alignment Couplers BFD (Fig. E4.02 + Fig. E4.03)				
Joint	Alignment Couplers BFD on continuous wall section			Alignment Couplers BFD on T-junction
	S1	S2	S3	S4 – S7
Strut	① ③ ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪
Strut for WT 17.5 cm	① ③ ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑦ ⑨ ⑪
Strut for WT ≥35 cm	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	① ③ ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪

Tab. E4.02



Panels MX-2 360x240 are connected to the short side of the I-Corner MXI-2 360x50/20 as standard. If this is not possible, only the following elements may be connected:

- Panel MX-2 360x30
- Panel MX-2 360x45

(Fig. E4.01)

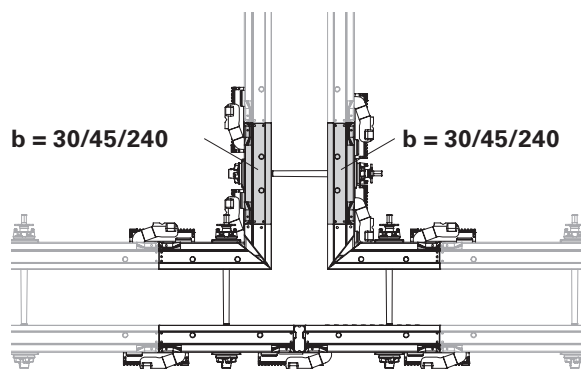


Fig. E4.01

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. E4.02)

Example:

Wall thickness 20 cm

- F + G: Tab. E4.01
- S1 – S3: Tab. E4.02

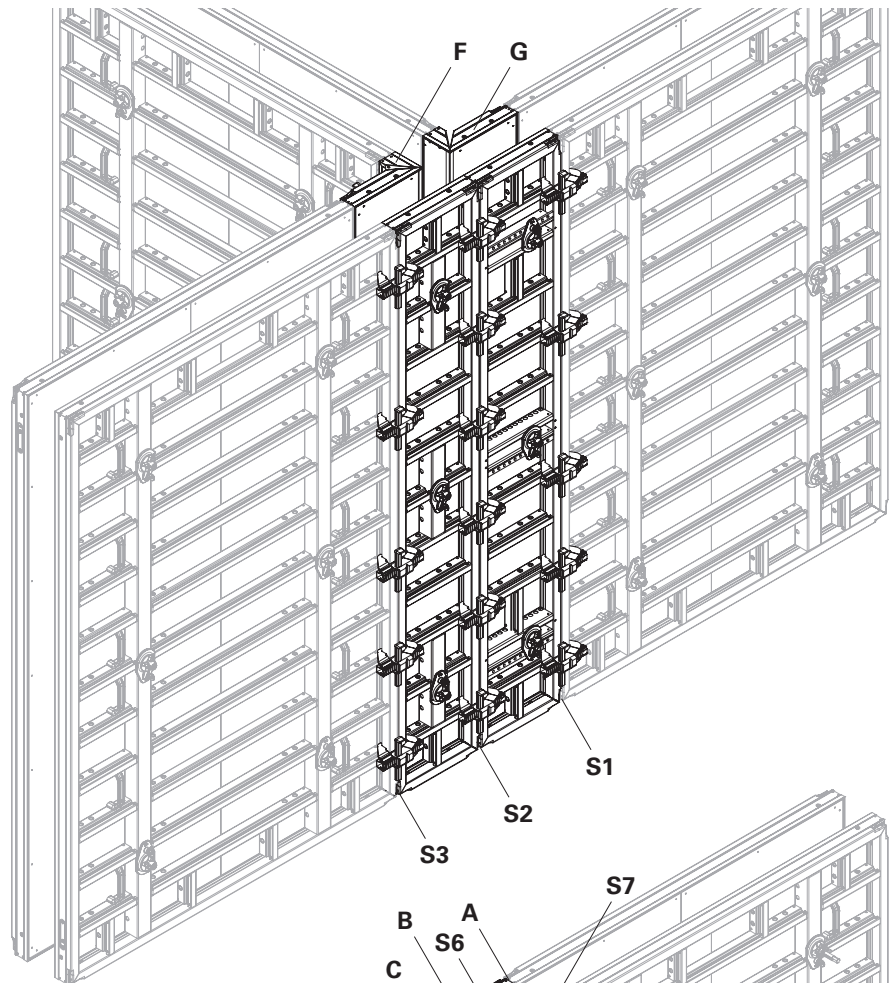


Fig. E4.02

View of T-junction (Fig. E4.03)

Example:

Wall thickness 20 cm

- A – E: Tab. E4.01
- S4 – S7: Tab. E4.02

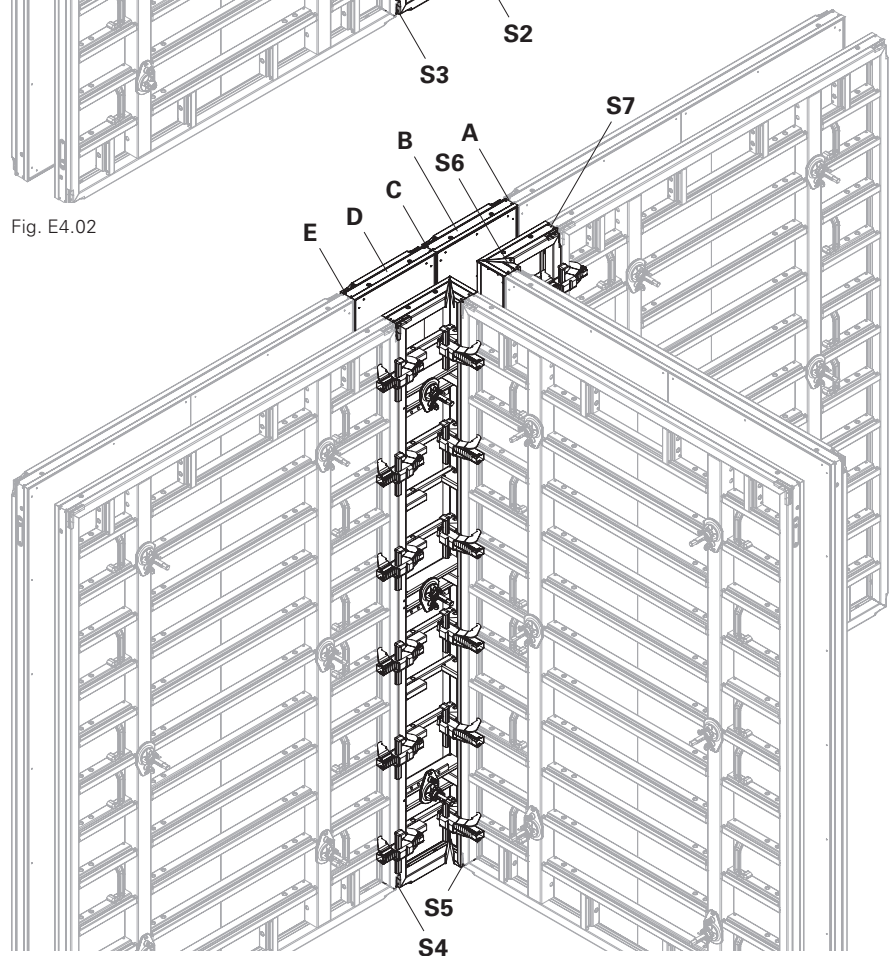


Fig. E4.03

Height 360

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
45	MX-2 45	MX-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20
50	MX-2 45	MX-2 60	–	MX-2 45	MXI-2 50/20	MXI-2 50/20
55	MX-2 45	MX-2 60	WDA 5 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20
60	MX-2 45	MX-2 60	WDA 10 ¹⁾	MX-2 45	MXI-2 50/20	MXI-2 50/20

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

Tab. E4.03

Arrangement of Alignment Couplers BFD (Fig. C5.05 + Fig. C5.06)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S5 – S8	
Strut	② ⑤ ⑧ ⑪	② ⑤ ⑥ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	
Strut for WT 50 cm	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	
Compensation Waler-4 MAR 170 on continuous wall section						
Strut	① ③ ④ ⑦ ⑨					

Tab. E4.04



Panels MX-2 330x240 are connected to the short side of the I-Corner MXI-2 330x50/20 as standard. If this is not possible, only the following elements may be connected:

- Panel MX-2 330x30
 - Panel MX-2 330x45
- (Fig. C5.04)

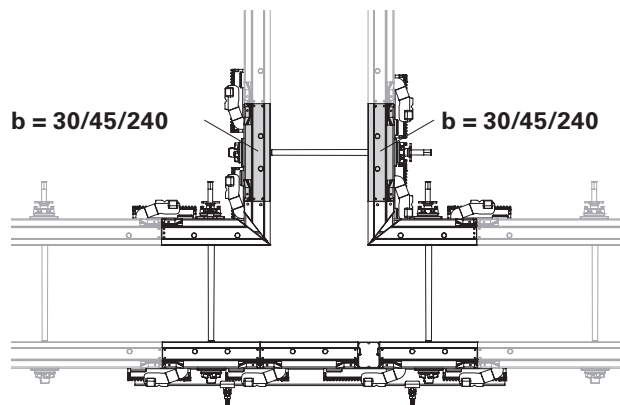


Fig. E4.04

Arrangement of the alignment couplers

Valid for WT > 40 – 60 cm

View of continuous wall section (Fig. C5.05)

Example:

Wall thickness 45 cm

- F + G: Tab. C5.03
- S1 – S4: Tab. C5.04

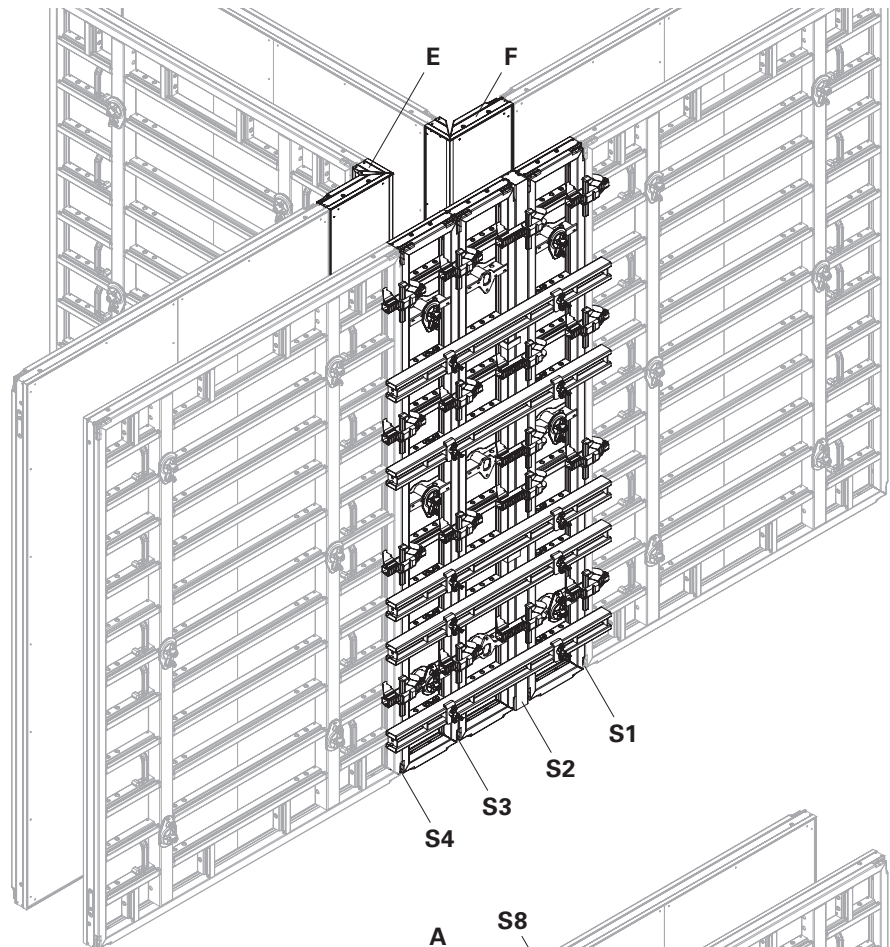


Fig. E4.05

View of T-junction (Fig. C5.06)

Example:

Wall thickness 45 cm

- A – E: Tab. C5.03
- S5 – S7: Tab. C5.04

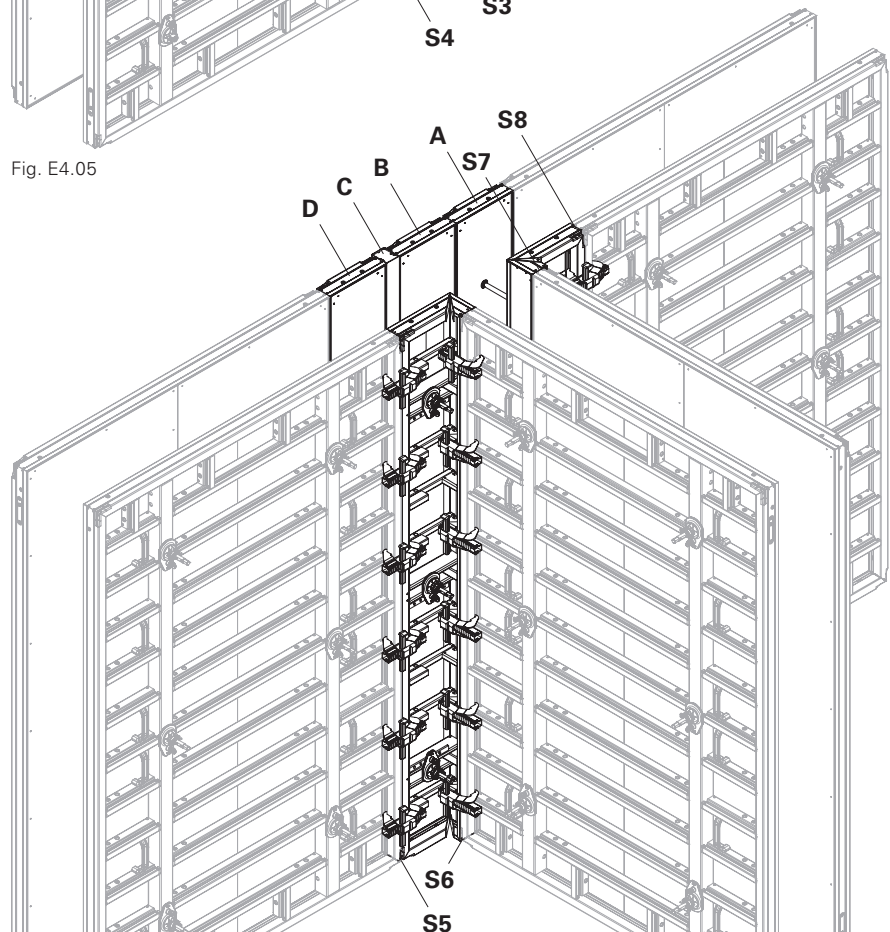


Fig. E4.06

Wall thickness 15 – 40 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	F	G
15	MX-2 45	MX-2 45	–	MX-2 45	MXI-2 60	MXI-2 60
17.5	MX-2 45	MX-2 45	KH 2.5 ²⁾	MX-2 45	MXI-2 60	MXI-2 60
20	MX-2 45	MX-2 45	–	MX-2 45	MXI-2 60	MXI-2 60
24	MX-2 45	MX-2 45	KH 9 ²⁾	MX-2 45	MXI-2 60	MXI-2 60
25	MX-2 45	MX-2 45	WDA 10 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
30	MX-2 45	MX-2 60	–	MX-2 45	MXI-2 60	MXI-2 60
35	MX-2 45	MX-2 60	WDA 5 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
36	MX-2 45	MX-2 60	WDA 6 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60
40	MX-2 45	MX-2 60	WDA 10 ¹⁾	MX-2 45	MXI-2 60	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.

²⁾ Compensation with squared timber (KH) (in cm)

Tab. E5.01

Arrangement of Alignment Couplers BFD/Compensation Waler-4 MAR (Fig. E5.01 + Fig. E5.02)					
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction
	S1	S2	S3	S4	S4 – S8
Strut	② ⑤ ⑧ ⑪	② ⑤ ⑥ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪
Brace for WT 15, 20 and 30 cm	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪
Compensation Waler-4 MAR 170 on continuous wall section					
Strut	① ③ ④ ⑦ ⑨				

Tab. E5.02

Arrangement of the alignment couplers

Valid for wall thicknesses 15 – 40 cm

View of continuous wall section (Fig. E5.01)

Example:

Wall thickness 17.5 cm

- E + F: Tab. E5.01
- S1 – S4: Tab. E5.02

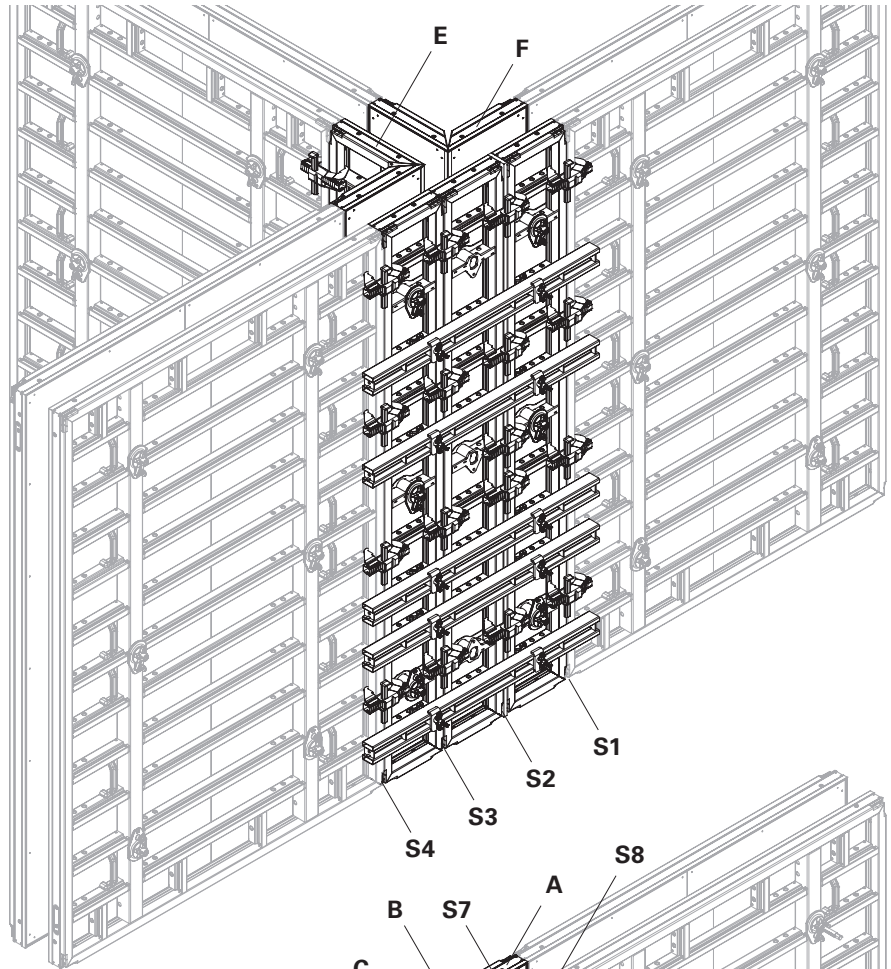


Fig. E5.01

View of T-junction (Fig. E5.02)

Example:

Wall thickness 17.5 cm

- A – D: Tab. E5.01
- S5 – S8: Tab. E5.02

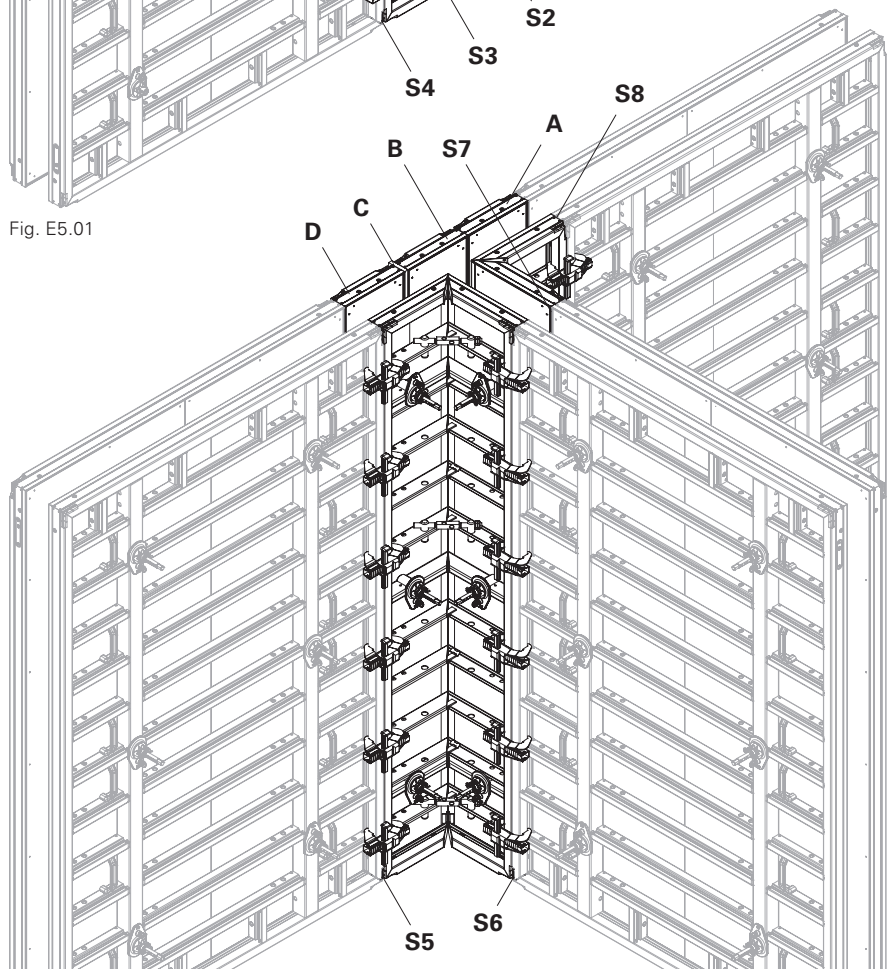


Fig. E5.02

Wall thickness >40 – 60 cm



Perm. fresh concrete pressure
60 kN/m²

Wall thickness [cm]	Panels on straight wall sections				Panels on T-junction	
	A	B	C	D	E	F
45	MX-2 60	MX-2 45	–	MX-2 60	MXI-2 60	MXI-2 60
50	MX-2 60	MX-2 45	WDA 5 ¹⁾	MX-2 60	MXI-2 60	MXI-2 60
55	MX-2 60	MX-2 45	WDA 10 ¹⁾	MX-2 60	MXI-2 60	MXI-2 60
60	MX-2 60	MX-2 60	–	MX-2 60	MXI-2 60	MXI-2 60

¹⁾ The Wall Thick.Comp. WDA MX or squared timber (KH) can be used as compensation.
Tab. E5.03

Arrangement of Alignment Couplers BFD/Steel Walers SRU 197 U120 (Fig. E5.03 + Fig. E5.04)						
Joint	Alignment Couplers BFD on continuous wall section				Alignment Couplers BFD on T-junction	
	S1	S2	S3	S4	S5 – S8	
Strut	② ⑤ ⑧ ⑪	② ⑤ ⑥ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	
Strut for WT 45 and 60	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	② ⑤ ⑧ ⑪	① ③ ⑤ ⑦ ⑨ ⑪	
Steel Waler SRU 197 U120 on continuous wall section						
Strut	① ③ ④ ⑦ ⑨					

Tab. E5.04

Arrangement of the alignment couplers

Valid for WT >40 – 60 cm

View of continuous wall section (Fig. E5.03)

Example:

Wall thickness 50 cm

- E + F: Tab. E5.03
- S1 – S4: Tab. E5.04

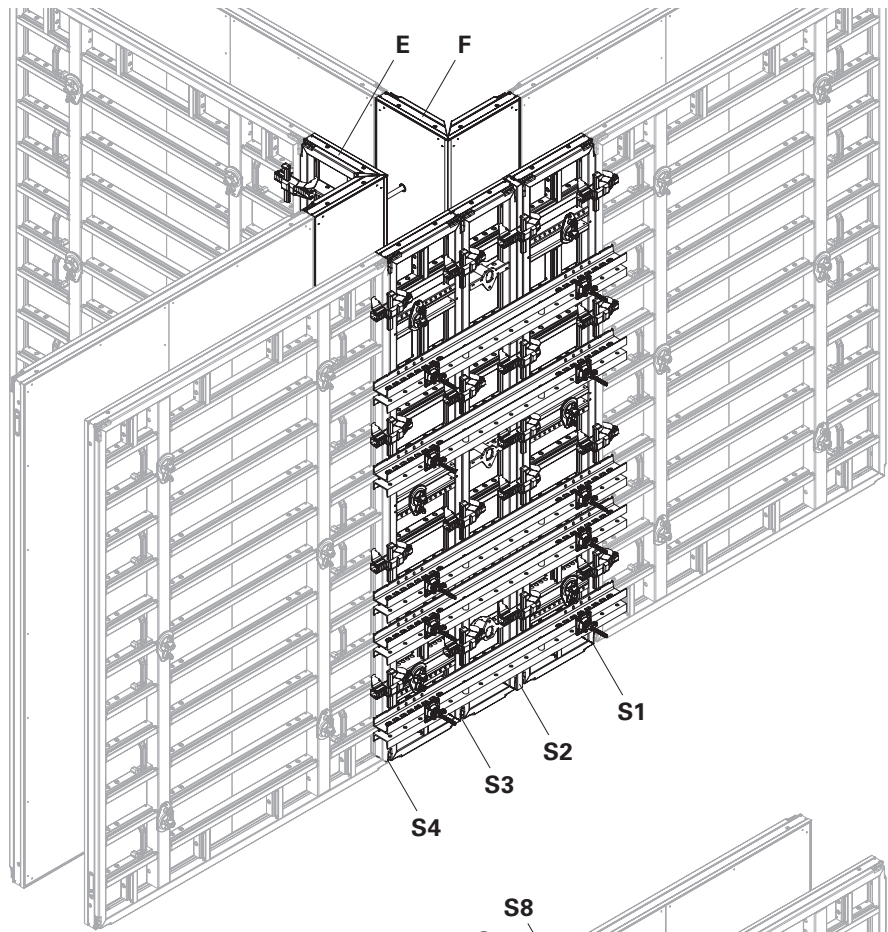


Fig. E5.03

View of T-junction (Fig. E5.04)

Example:

Wall thickness 50 cm

- A – D: Tab. E5.03
- S5 – S8: Tab. E5.04

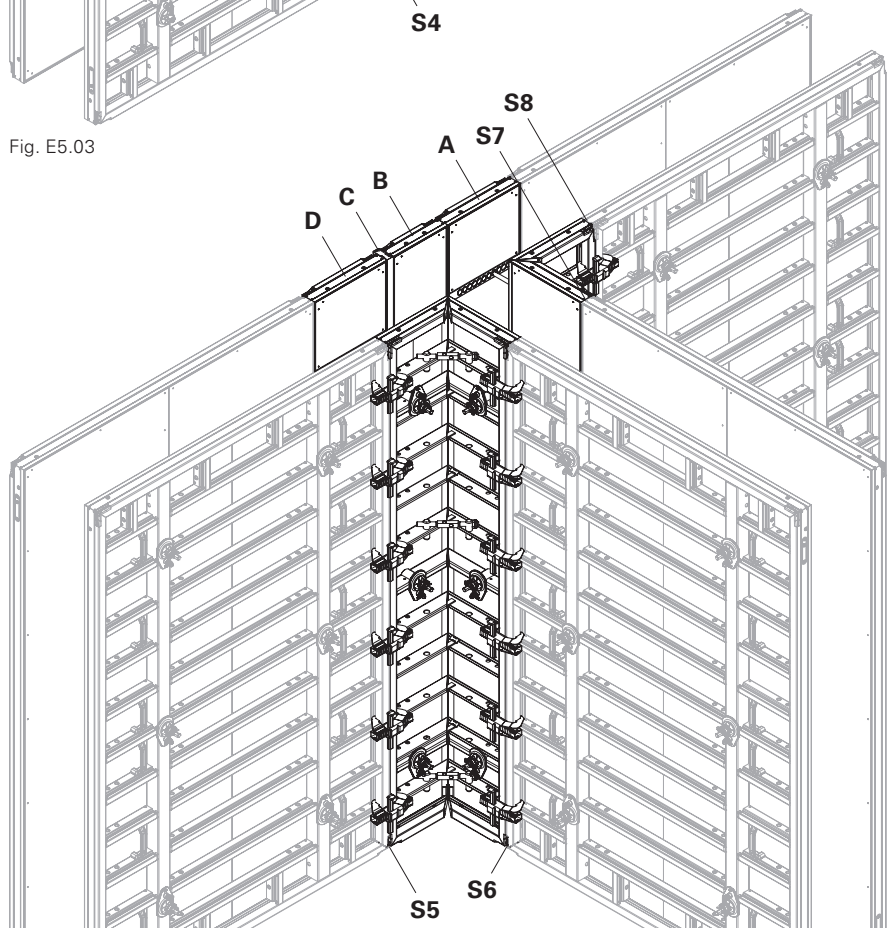


Fig. E5.04



If Panels MX-2 with $b \leq 120$ cm following 90° T-junctions are envisaged, Compensation Waler-4 MAR 85 (**33**) must be installed at the next panel joint for reinforcement.

With height extensions, a second Compensation Waler-4 MAR 85 (**33**) is required on the panel joint (shown as a dotted line). (Fig. E6.02 + Fig. E6.03)

Example

View from above (Fig. E6.01)

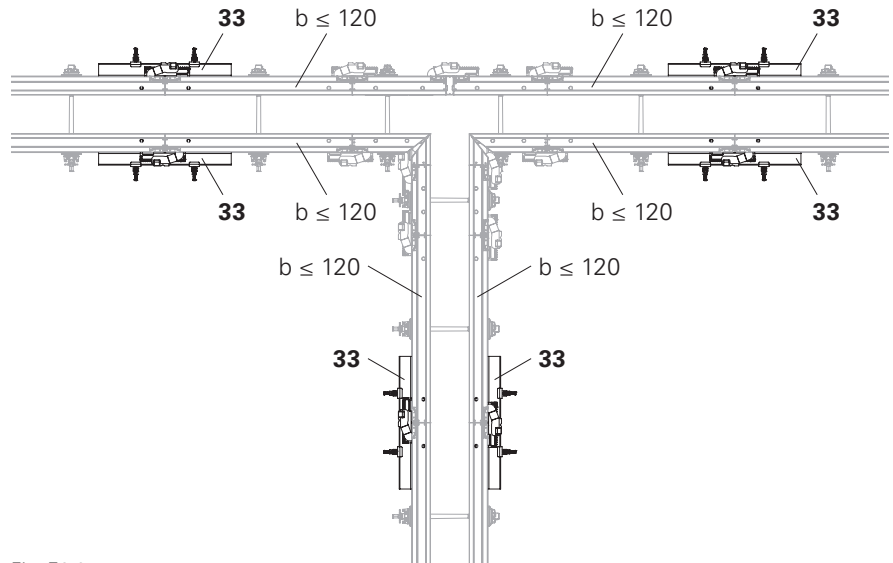


Fig. E6.01

E6 Panel connections following 90° T-junctions



Arrangement of alignment couplers and Compensation Walers-4 MAR 85

View of straight wall section
(Fig. E6.02)

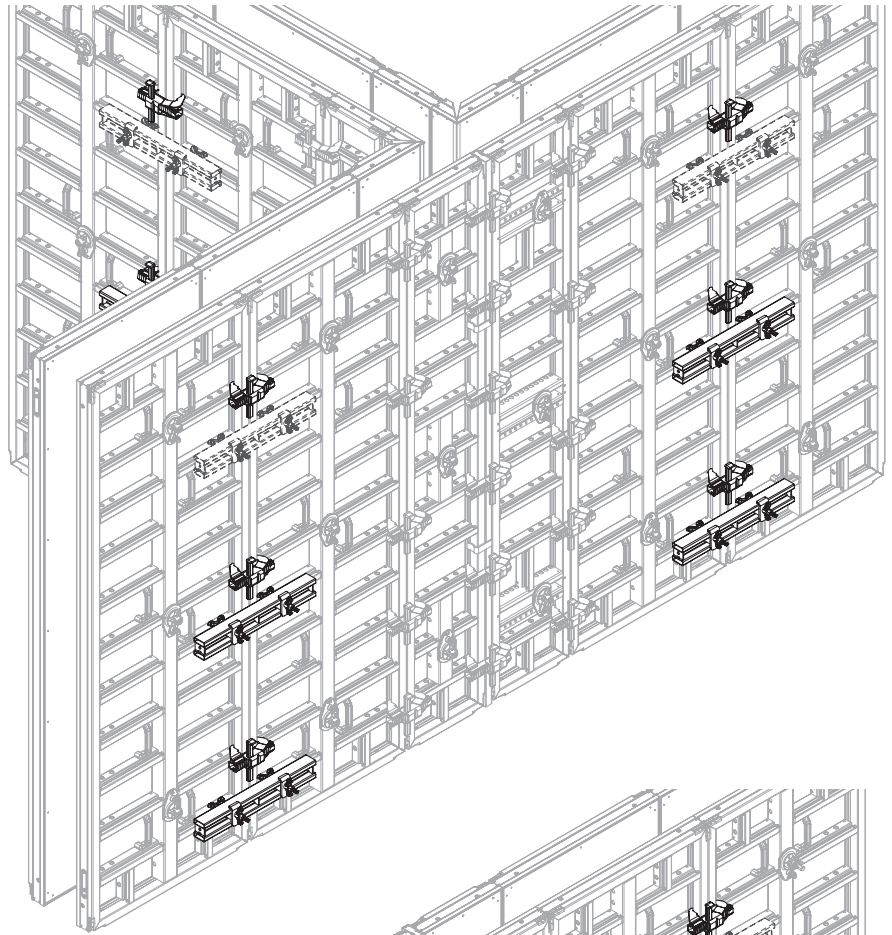


Fig. E6.02

View of T-junction with I-Corner MXI-360x50/20 (Fig. E6.03)

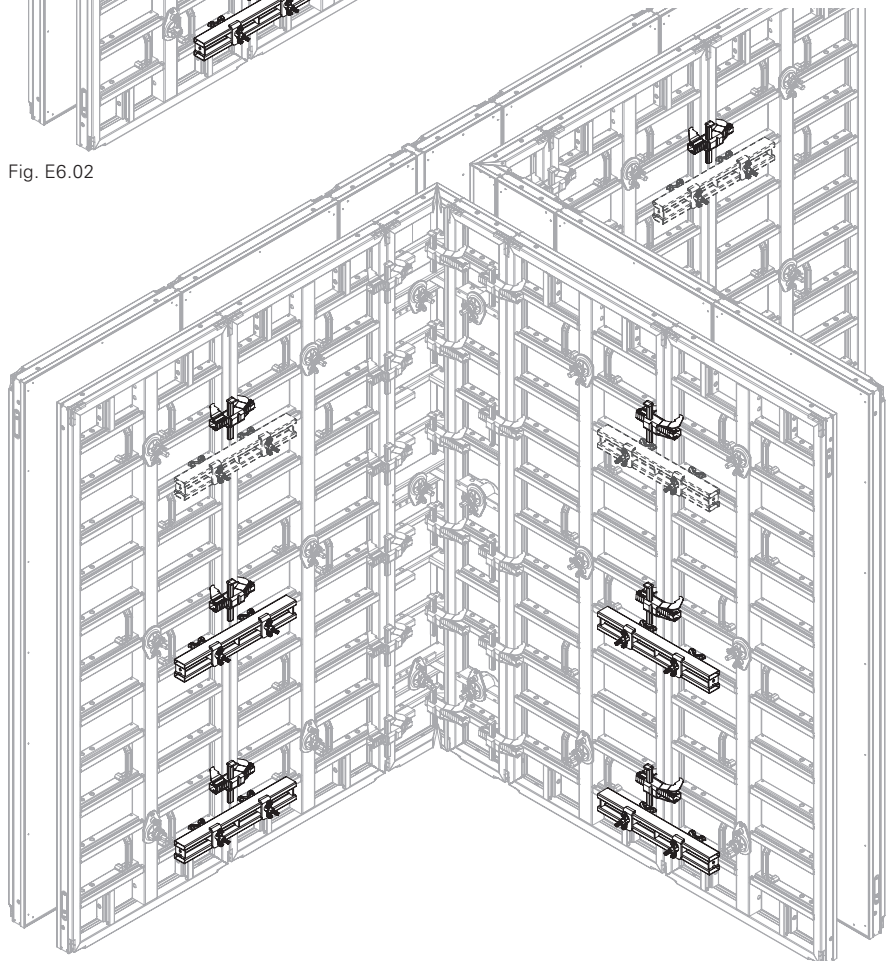


Fig. E6.03

Height 360

Wall Thi. Com. WDA MX 360



- No additional ties required.
- Longitudinal infill up to 10 cm.
- In contrast to the standard joint, in the case of wall thickness compensation, an additional Alignment Coupler BFD is fitted.

Components	Pcs.
28 Alignment Coupler BFD	3x
26 Wall Thick Comp. WDA MX	1x
or	
91 Squared timber	1x

Longitudinal infills can be created with Wall Thick.Comp. WDA MX 360 x width (**26**) or with squared timber cut to size (**91**).



Number and arrangement of the Alignment Couplers BFD (**28**).
(Fig. E7.01)

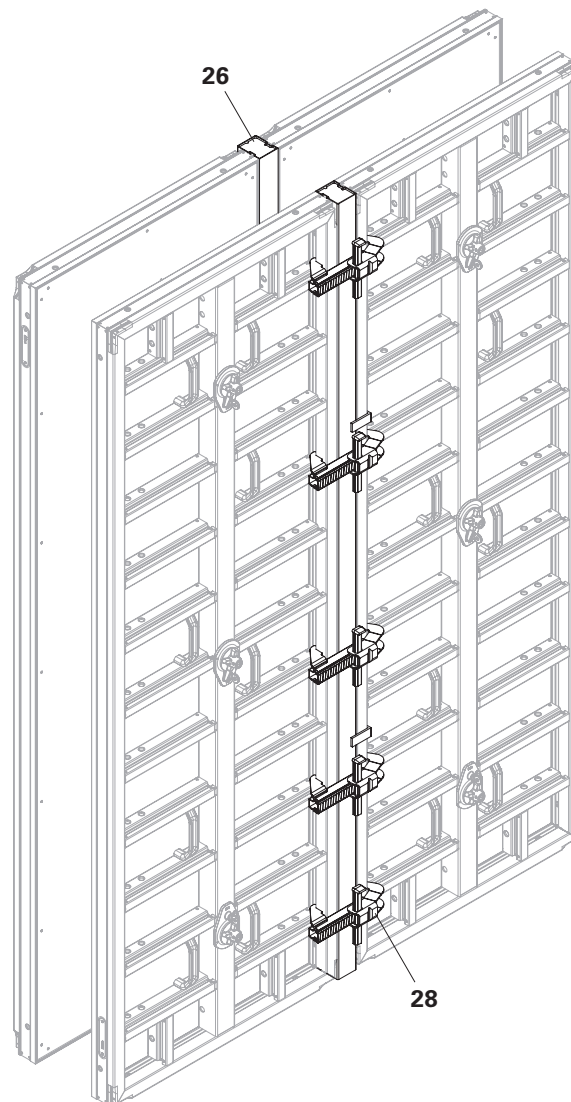


Fig. E7.01

Filler Profile TPP 270 Alu and TPP 120 Alu

Longitudinal infill from 20 to 36 cm



- The Filler Profiles TPP 270 Alu (**97a**) and TPP 120 Alu (**97b**) are used for formwork height 360.
- Permissible fresh concrete pressure 80 kN/m² for: $b \geq 20$ and $b < 30$ cm
- Perm. fresh concrete pressure 60 kN/m² for: $b \geq 30$ and $b < 36$ cm

Components	Pcs.
28 Alignment Coupler BFD	4x
33 Compensation Waler-4 MAR 85	2x
96 21 mm filler plate	1x
97a Filler Profile TPP 270 Alu	2x
97b Filler Profile TPP 120 Alu	2x



- When anchoring, ensure that the tie forces are transferred centrally through the Compensation Waler-4 MAR 85 (**33**) to the adjacent panels. (Fig. E7.02b)
- Assembly: (Fig. E7.02 + Fig. E7.02a)



Two Wall Thick.Comp. MX 360 or squared timbers can be mounted on two different joints for 10 cm – 20 cm compensations.

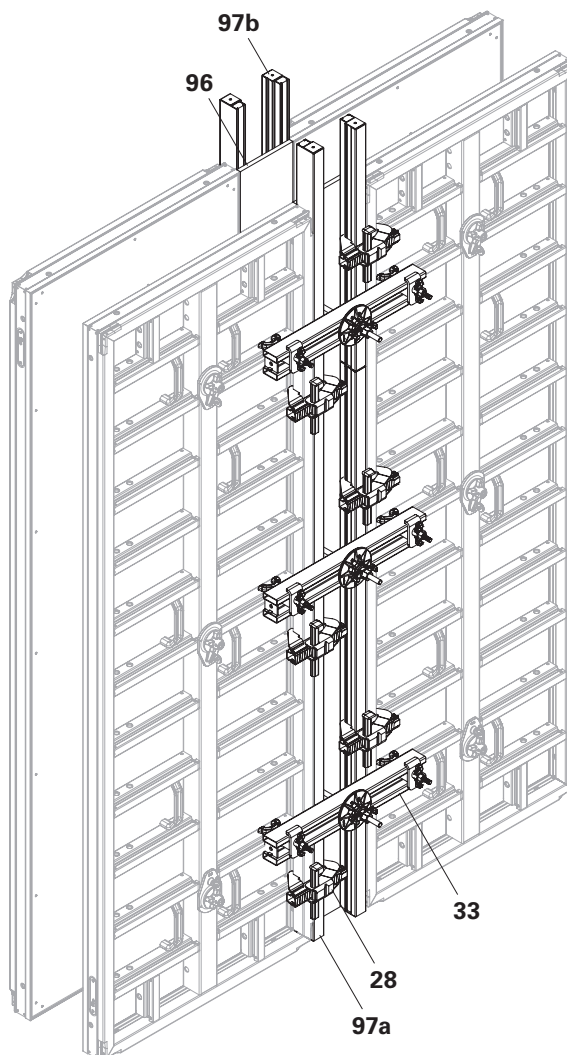


Fig. E7.02

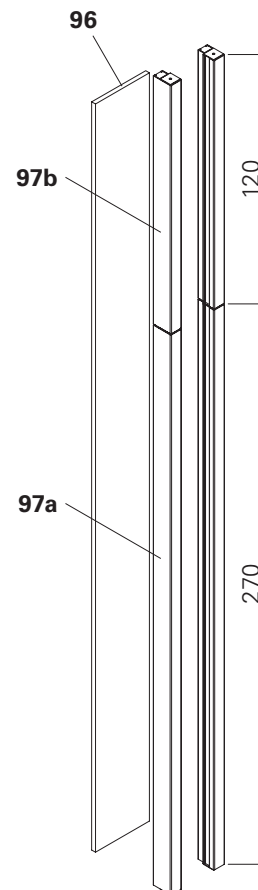


Fig. E7.02a

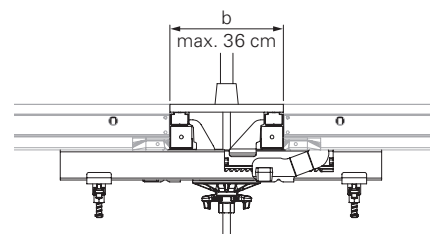


Fig. E7.02b

Bulkhead Tie MX/TR and Waler 85

For wall thickness ≤ 40 cm



The fresh concrete pressure of the stop end formwork is transferred to the Panels MX-2 via the Bulkhead Ties MX/TR (99) and Walers 85 (21).

Wall end with Panels MX-2 300 x width

- Applicable to Panels MX-2: 360x30/45/60/90/120 /
- Shown: 360x120 (Fig. E7.03 + Fig. E7.04)

Components

Components	Pcs.
7 Tie Rod DW15	3x
21 Waler 85	4x
50 Wingnut Pivot Plate DW15 ga	14x
70 Top Tie Holder-2 AH	6x
91 Squared timber	2x
96 21 mm filler plate	1x
99 Bulkhead Tie MX/TR	8x

Sectional views

- Top Tie Holder-2 AH (70) with Tie Rod DW15 (7) and Wingnut Pivot Plate DW15 ga (50). (Fig. E7.04a)
- Waler 85 (21) with Bulkhead Tie MX/TR (99) and Wingnut Pivot Plate DW15 ga (50). (Fig. E7.04b)



As an alternative to Waler 85 (21), the Compensation Waler-4 MAR 85 (33) can also be used.

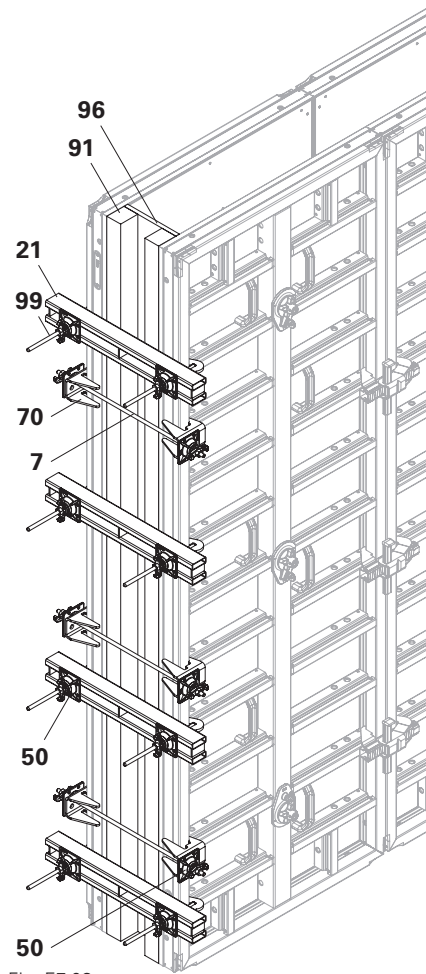


Fig. E7.03

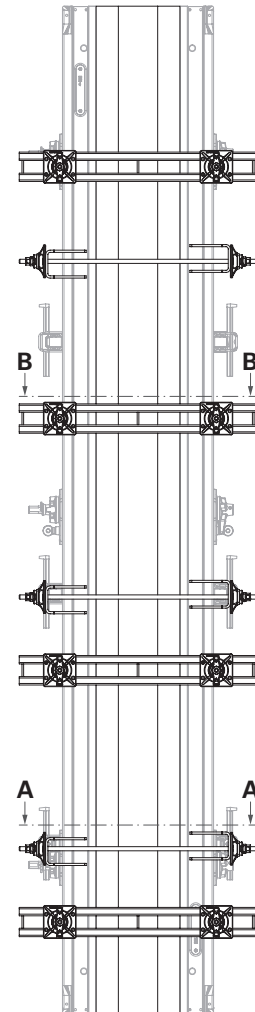


Fig. E7.04

A-A

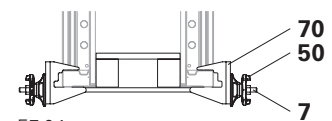


Fig. E7.04a

B-B

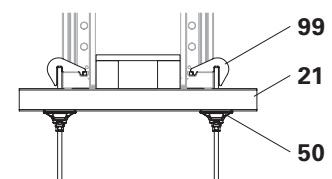


Fig. E7.04b

E8 Stop end formwork

Wall end with Panel MX-2 360 x 240 (not shown)

Components	Pcs.
21 Waler 85	4x
50 Wingnut Pivot Plate DW 15	8x
91 Squared timber	2x
96 21 mm filler plate	1x
99 Bulkhead Tie MX/TR	8x

Waler 85 (**21**) with Bulkhead Tie MX/TR (**99**) and Wingnut Pivot Plate DW15 ga (**50**).



As an alternative to Waler 85 (**21**), the Compensation Waler-4 MAR 85 (**33**) can also be used.

Alignment Coupler BFD

Panel MX-2 360x30 (**5**) can be used as a stop end panel for a wall thickness of 30 cm. (Fig. E8.01)

Pos. Components

5 Panel MX-2 360x30
28 Alignment Coupler BFD

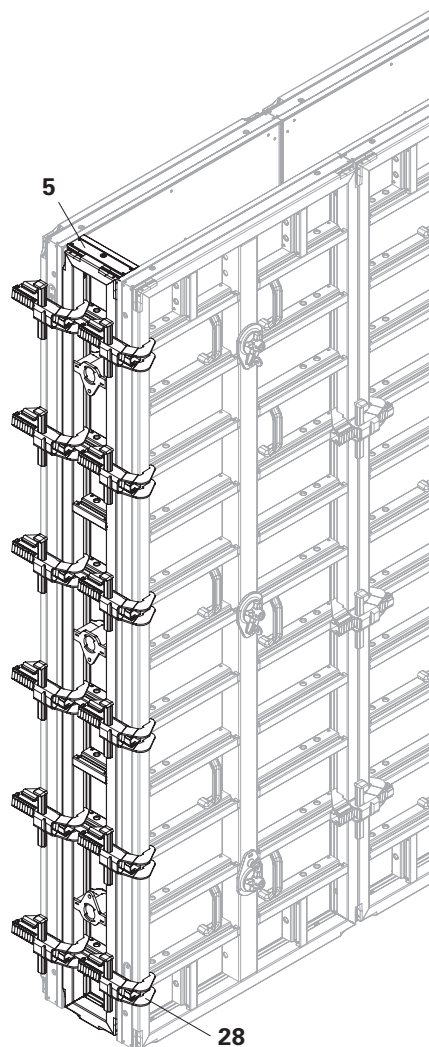


Fig. E8.01

Stop end panel reinforcement without Water Bar Installation MT

Height of 270 cm (Fig. E8.02a)
 Height of 120 cm (Fig. E8.02b)

Consisting of:

- 2x Stop. Panel TRIO AT 3 (**100a**) for approx. 2.5 cm concrete cover or 2x Stop. Panel TRIO AT 5 (**100b**) for approx. 5 cm concrete cover
- 1x Stop. Panel TRIO MT (**101**) (Fig. E8.03)



- Panels of height 270 and 120 are combined for formwork height 360.
- Perm. fresh concrete pressure depending on the wall thickness:
 - 67.5 kN/m² for WT < 35 cm
 - 60.0 kN/m² for WT ≥ 35 cm and ≤ 40 cm
- The rubber lip (**100.1**) allows for a continuous reinforcement thickness of max. 16 mm.

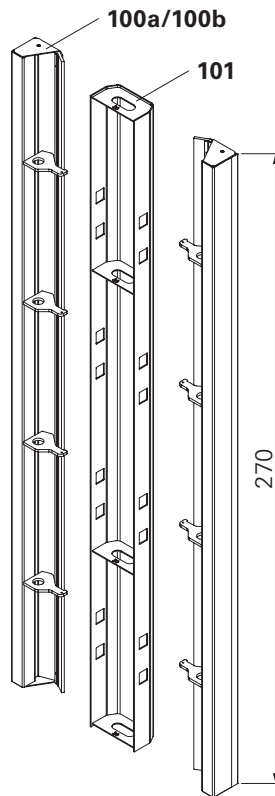


Fig. E8.02a

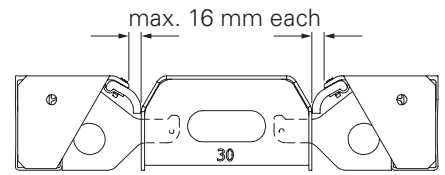


Fig. E8.03

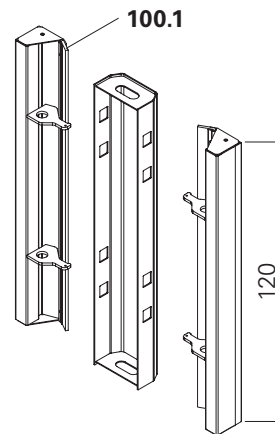


Fig. E8.02b

Concrete cover c:

$$c = \frac{d - b}{2} - \varnothing \text{ reinforcement}$$

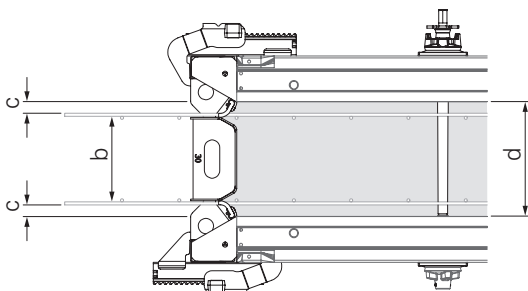


Fig. E8.04

Assembly

1. Position primary formwork.
 2. Fix Stop. Panel TRIO AT (100) to the primary formwork by means of the Alignment Coupler BFD (28).
 3. Install first row of reinforcement.
 4. Position Stop. Panel TRIO MT (101).
 5. Install second row of reinforcement.
 6. Fix Stop. Panel TRIO AT (100) to the closing formwork by means of the Alignment Coupler BFD (28).
 7. Position the closing formwork and in doing so insert Stop. Panel TRIO AT (100) into Stop. Panel TRIO MT (101).
- (Fig. E8.05)

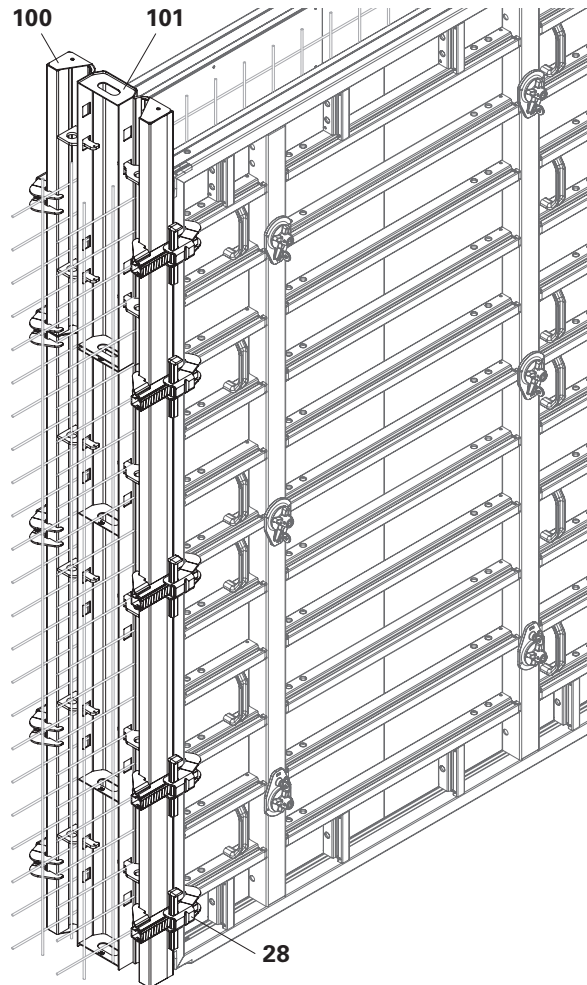


Fig. E8.05

Components



- Combination table for stop end panels without water bar installation at height 3.30 m (Tab. E8.01)
- Combination table for stop end panels without water bar installation at height 1.20 m (Tab. E8.02)

H = 3.30 m	b [mm]	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
		20	24 / 25	30	35	24 / 25	30	35	40
AT 330x3	–	2	2	2	2				
AT 330x5	–					2	2	2	2
MT 330x20	118	1				1			
MT 330x24/25	158		1				1		
MT 330x30	218			1				1	
MT 330x35/36	268				1				1

Tab. E8.01

H = 1.20 m		20	24 / 25	30	35	24 / 25	30	35	40
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
MT 120x20	118	1				1			
MT 120x24/25	158		1				1		
MT 120x30	218			1				1	
MT 120x35/36	268				1				1

Tab. E8.02

Stop end panel reinforcement with Water Bar Installation MTF

Height of 270 cm (Fig. E8.06a)
 Height of 120 cm (Fig. E8.06b)

Consisting of:

- 2x Stop. Panel TRIO AT 3 (**100a**) for approx. 2.5 cm concrete cover or 2x Stop. Panel TRIO AT 5 (**100b**) for approx. 5 cm concrete cover
- 1x Stop. Panel TRIO MTF (**102**) (Fig. E8.07)



- Panels of height 270 and 120 are combined for formwork height 360.
- Perm. fresh concrete pressure depending on the wall thickness:
 - 67.5 kN/m² for WT < 35 cm
 - 60.0 kN/m² for WT ≥ 35 cm and ≤ 40 cm
- The rubber lip (**100.1**) allows for a continuous reinforcement thickness of max. 16 mm.

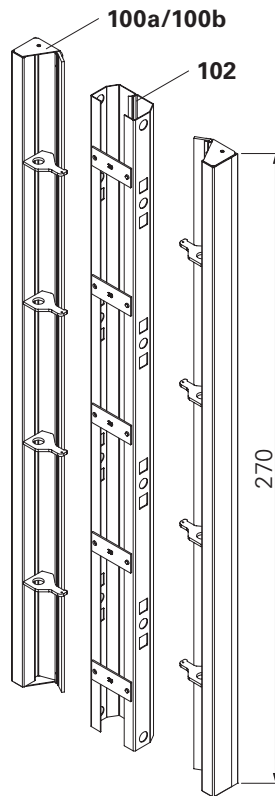


Fig. E8.06a

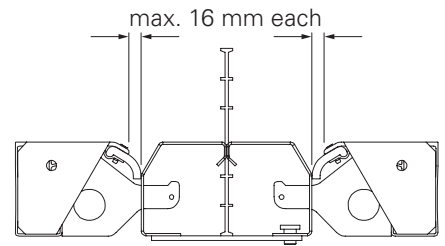


Fig. E8.07

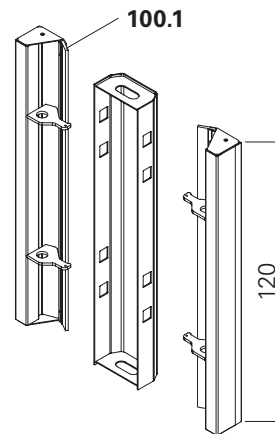


Fig. E8.06b

Concrete cover c:

$$c = \frac{d - b}{2} - \varnothing \text{ reinforcement}$$

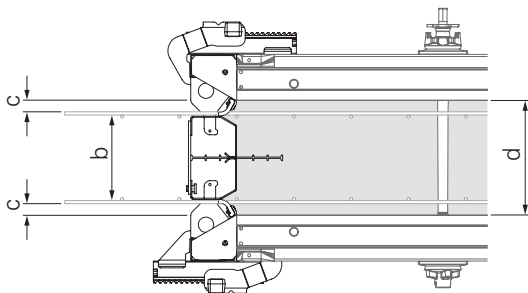


Fig. E8.08

Stop end panel reinforcement with expandable water bar

Consisting of:

- 2x Stop. Panel TRIO AT (**100**)
- 1x Stop. Panel TRIO MTF (**102**)
- Filler plates supplied by the contractor (**96**)

(Fig. E8.09)

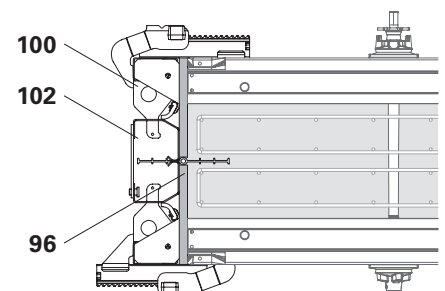


Fig. E8.09

Assembly

1. Position primary formwork.
2. Fix Stop. Panel TRIO AT (100) to the primary formwork by means of the Alignment Coupler BFD (28).
3. Install first row of reinforcement.
4. Position Stop. Panel TRIO MTF (102) and fit the water bar (102.1).
5. Install second row of reinforcement.
6. Fix Stop. Panel TRIO AT (100) to the closing formwork by means of the Alignment Coupler BFD (28).
7. Position the closing formwork and in doing so insert Stop. Panel TRIO AT (100) into Stop. Panel TRIO MTF (102).

(Fig. E8.10)

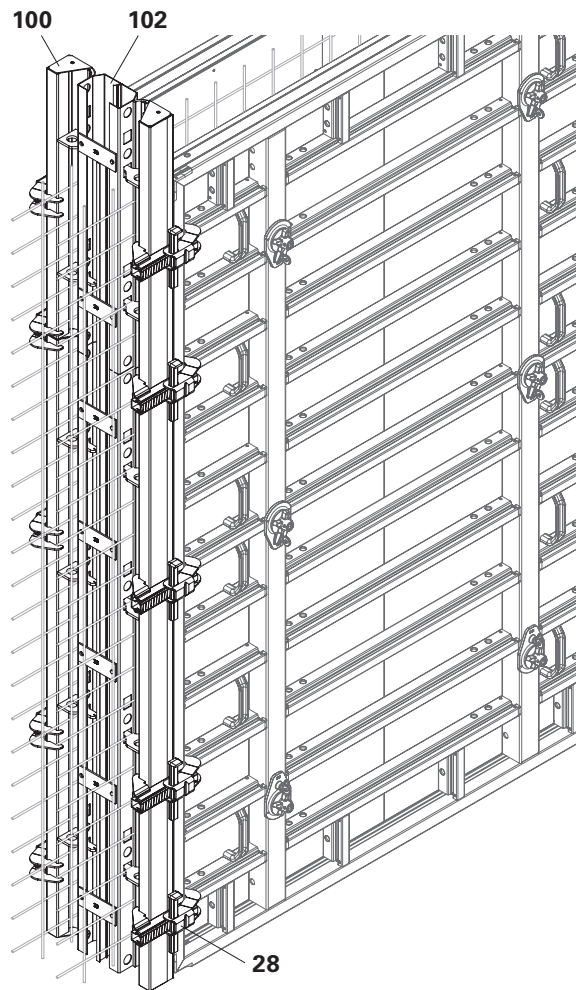


Fig. E8.10

Components



- Combination table for stop end panels with water bar installation at height 3.30 m (Tab. E8.04)
- Combination table for stop end panels with water bar installation at height 1.20 m (Tab. E8.04)

	b [mm]	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
		20	24 / 25	30	35	24 / 25	30	35	40
H = 3.30 m									
AT 330x3	–	2	2	2	2				
AT 330x5	–					2	2	2	2
MTF 330x20	118	1				1			
MTF 330x24/25	158		1				1		
MTF 330x30	218			1				1	
MTF 330x35/36	268				1				1

Tab. E8.03

H = 1.20 m		20	24 / 25	30	35	24 / 25	30	35	40
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
MTF 120x20	118	1				1			
MTF 120x24/25	158		1				1		
MTF 120x30	218			1				1	
MTF 120x35/36	268				1				1

Tab. E8.04

Extension guidelines

Pre-assembly resting on the ground at $H \leq 7.20$ m

Assembly information

- The assembly surface must be level.
- Place squared timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position with the formwork panel facing downwards.

Panel connections

- For extension units with a height of $5.70 \text{ m} < H \leq 7.20 \text{ m}$, fit Alignment Couplers BFD (28) and Compensation Walters-4 MAR 85 (33) at the panel joints.
 - Examples: (Fig. E9.01a – Fig. E9.01c)



- Fit the Wingnuts MX15 for the tie points on the ground during pre-assembly.
- If a Panel MX-2 $H = 30$ cm is added horizontally, the tie can be dispensed with for this panel. The unused tie point must be sealed with a Plug MXM18 $\text{Ø}27.6$ mm (71).

MX-2 360x60/90/120

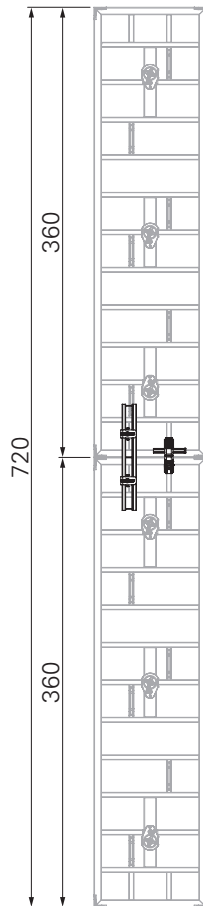


Fig. E9.01a

MX-2 360x240

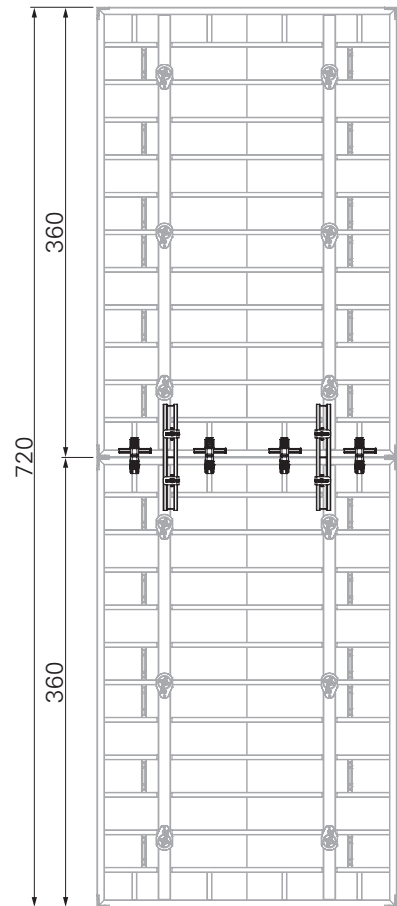


Fig. E9.01b

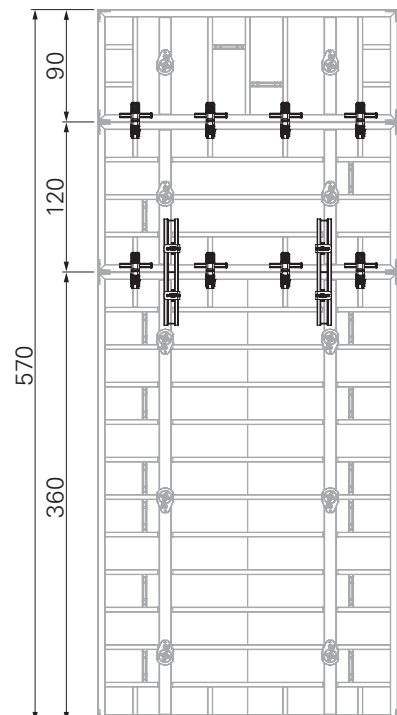


Fig. E9.01c

Erection with the crane

(Fig. E9.02)



Warning

Extension units that are incorrectly or insufficiently attached or incorrectly connected can come loose! Falling extension units can strike people and cause serious injuries or even death.

- ⇒ Observe the permissible load-bearing capacity of the Lifting Hook MX 1.5t and the crane capacity!
- ⇒ Follow Instructions for Use for the Lifting Hook MX 1.5t!
- ⇒ Take note of the specified panel connections for the relevant height extension.

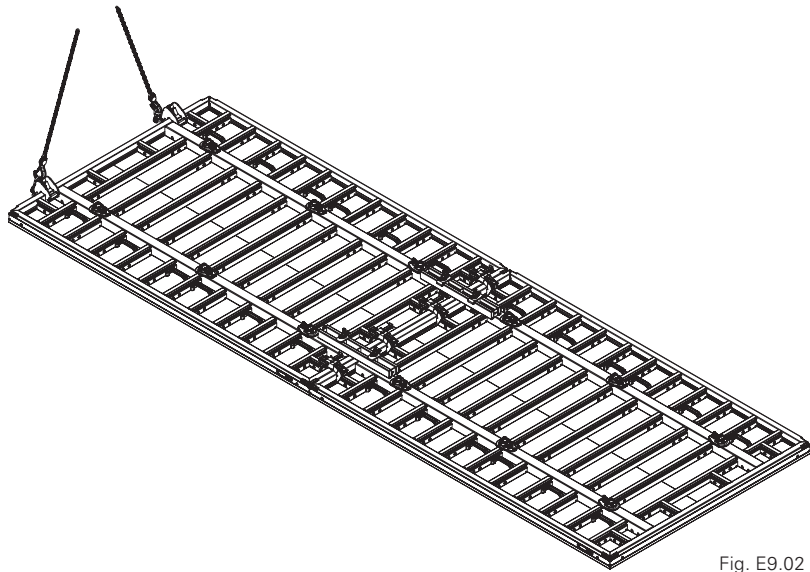


Fig. E9.02



Realise height extensions without any additional load (Push-Pull Props RS etc.).

Horizontal pre-assembly up to H 7.80 m

Assembly information

- The assembly surface must be level.
- Place squared timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position with the formwork panel facing downwards.

Panel connections

For extension units with a height of $7.20\text{ m} \leq H \leq 7.80\text{ m}$ or 6.00 m (horizontal), fit Alignment Couplers BFD (28) and Compensation Walers-4 MAR 85 (33) at the panel joints.

- Examples:
(Fig. E9.03a + Fig. E9.03b)



- Fit the Wingnuts MX15 for the tie points on the ground during pre-assembly.
- If a Panel MX-2 H = 30 cm is added horizontally, the tie can be dispensed with for this panel. The unused tie point must be sealed with a Plug MXM18 Ø27.6 mm (71).

MX-2 360x240

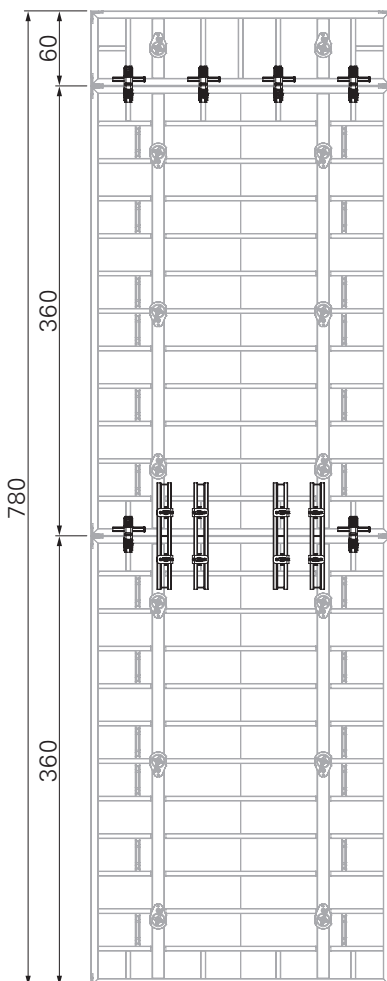


Fig. E9.03a

MX-2 360x240
Horizontal panels

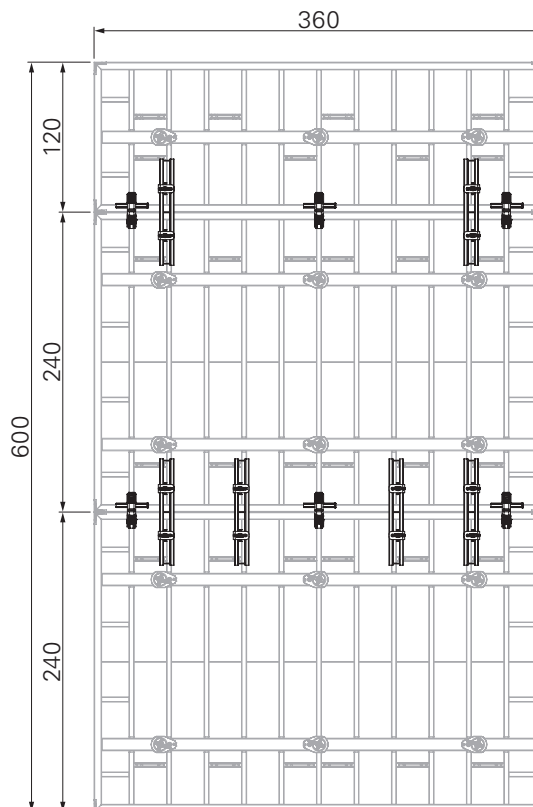


Fig. E9.03b

Erection with the crane

(Fig. E9.04)



Warning

Extension units that are incorrectly or insufficiently attached or incorrectly connected can come loose!

Falling extension units can strike people and cause serious injuries or even death.

- ⇒ Observe the permissible load-bearing capacity of the Lifting Hook MX 1.5t and the crane capacity!
- ⇒ Follow Instructions for Use for the Lifting Hook MX 1.5t!
- ⇒ Take note of the specified panel connections for the relevant height extension.



Realise height extensions without any additional load (Push-Pull Props RS etc.).

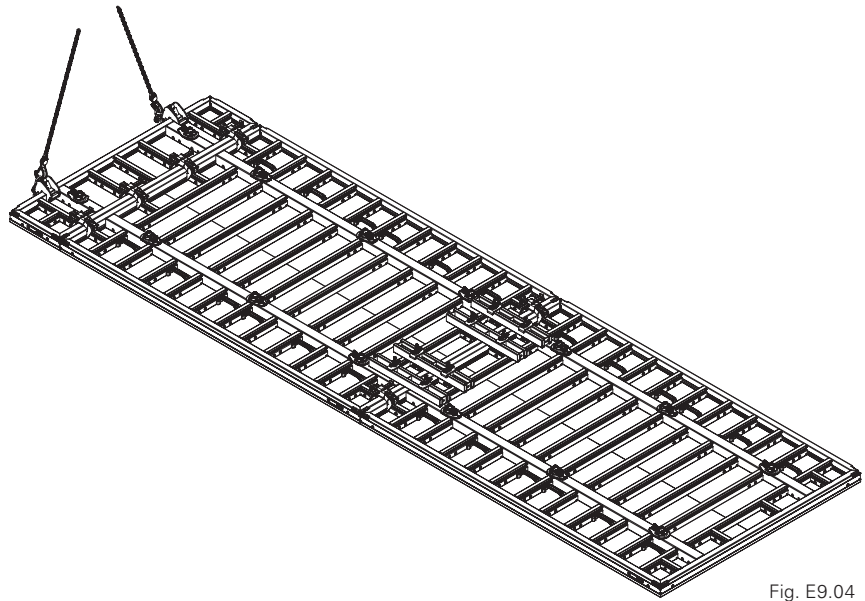


Fig. E9.04

Upright assembly

With a concreting height of 3.60 m, the top tie is not required if a Push-Pull Spreader MX 15-40 or MX 15-100 is used.

The panels are braced by the three Push-Pull Spreaders MX (**55 / 66**). (Fig. E10.01)

Components

- 5** Panel MX-2
- 5.2** Panel strut
- 55** Push-Pull Spreader MX 15-40
- 55.1** Securing Hook
- 55.2** Mounting shoe
- 55.3** Spacer rack
- 66** Push-Pull Spreader MX 15-100



- Setting dimension = wall thickness
- For information on how to prepare and fit the Push-Pull Spreader MX, see Section "A17 Parapets and foundations" on page 108.
- Fasten the two outer Push-Pull Spreaders MX directly above the outer struts (**5.2**). (Fig. E10.01a)
- Place another Push-Pull Spreader MX in the centre of Panel MX-2.
- Close open tie points on the formlining with Plugs MXM18 Ø27.6 mm (**71**), see Section "Closures" on page 51.
- Always fit platforms and console brackets on the side of the securing hook (**55.1**).

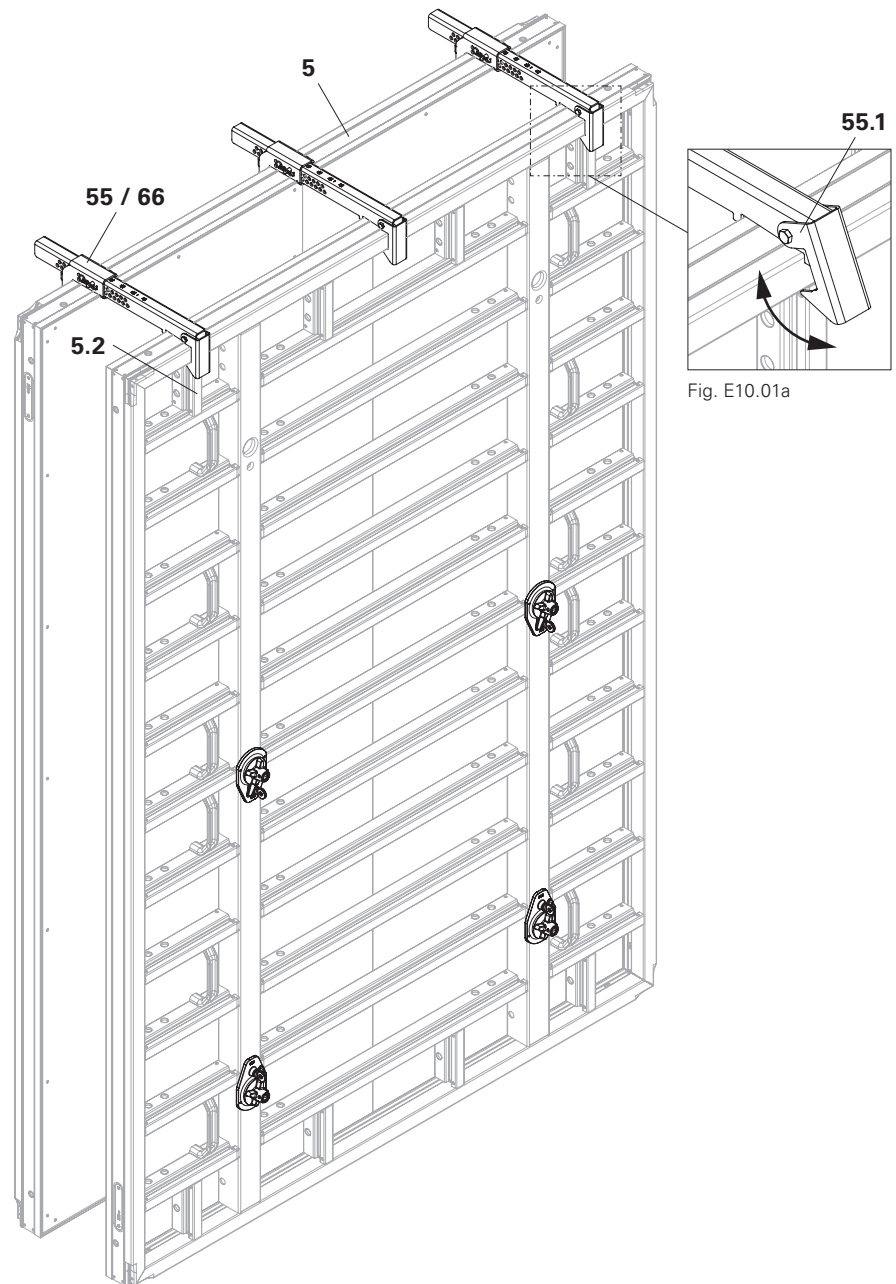


Fig. E10.01

KATHREIN

EU Declaration of Conformity (DoC)

Company name **KATHREIN Sachsen GmbH**
 Postal address **Lindenstraße 3**
 Postcode and city **09241 Mühlau**
 Country **Germany**

Declare that the DoC is issued under our sole responsibility and belongs to the following product (object of declaration):

Product **Transponder mounted in a PERI SKYMAX aluminium or PERI MAXIMO steel profile**
 Type **RFID Transponder**
 Order number **52010442**

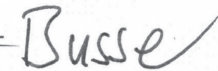
The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

- a) Radio equipment directive – RED (2014/53/EU)
 Applied harmonized standard: EN 302 208 V3.3.1:2020
- b) Restriction of the use of certain hazardous substances – RoHS-II (2011/65/EU)
 Applied harmonized standard: DIN EN IEC 63000:2019-05

Place, Date: Mühlau, 12/11/2024



Daniel Schkalda
 Managing Director



Holger Busse
 Head of Development



Michael Rund
 Head of Quality Management

www.kathrein-sachsen.de | info@kathrein-sachsen.de

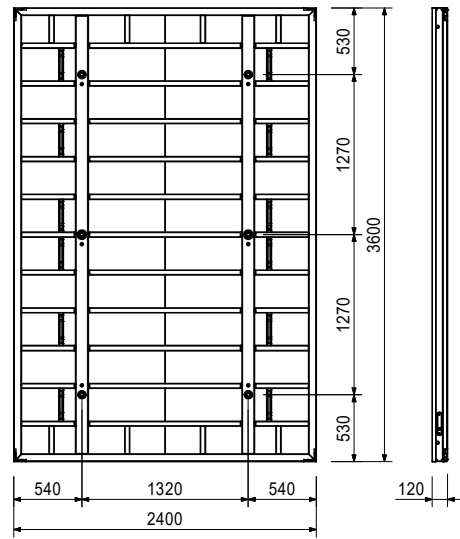
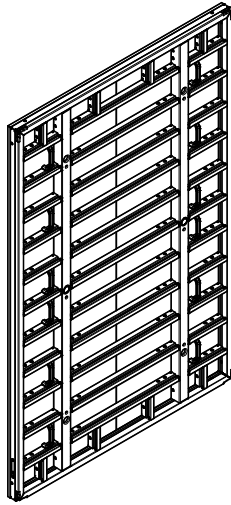
KATHREIN Sachsen GmbH, Lindenstraße 3, 09241 Mühlau, Germany, Phone: +49 3722 6073 10, Fax: +49 3722 6073 24

MAXIMO MX-2 18 and MX18 Panel Formwork



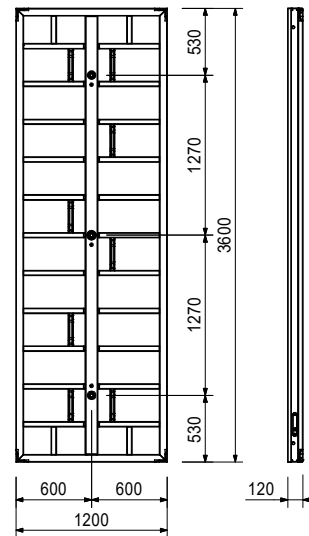
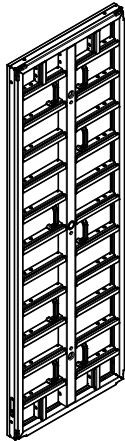
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 360x240				
139272	468.000	Panel MX-2 18 Robu 360x240	120	2400
141202	469.000	Panel MX-2 18 FPIy 360x240	120	2400

8.640 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 360x120				
139279	258.000	Panel MX-2 18 Robu 360x120	120	1200
141203	259.000	Panel MX-2 18 FPIy 360x120	120	1200

4.320 m² Panel with 18 mm plywood.

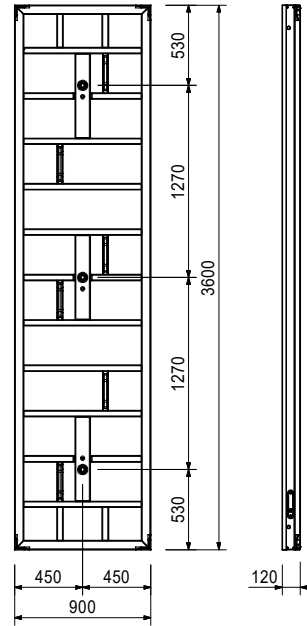
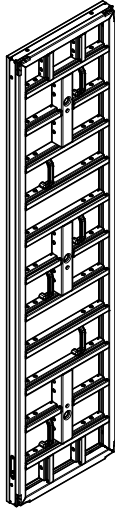


MAXIMO MX-2 18 and MX18 Panel Formwork



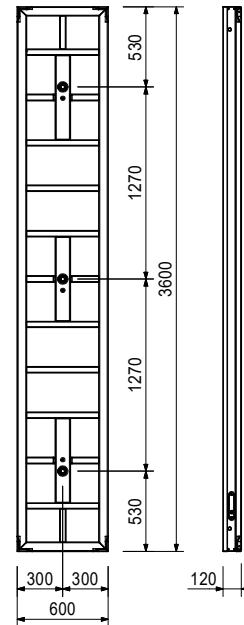
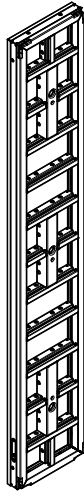
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 360x90				
139304	197.000	Panel MX-2 18 Robu 360x90	120	900
141204	197.000	Panel MX-2 18 FPIy 360x90	120	900

3.240 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 360x60				
139309	153.000	Panel MX-2 18 Robu 360x60	120	600
141205	153.000	Panel MX-2 18 FPIy 360x60	120	600

2.160 m² Panel with 18 mm plywood.

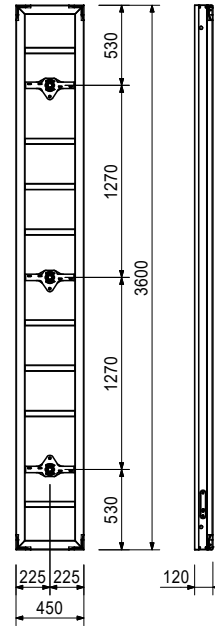
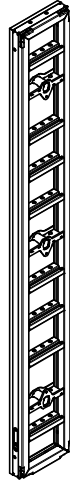


MAXIMO MX-2 18 and MX18 Panel Formwork



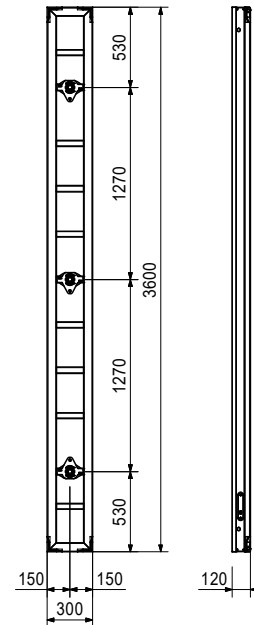
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 Robu 360x45				
139321	109.000	Panel MX-2 18 Robu 360x45	120	450
141206	109.000	Panel MX-2 18 FPIy 360x45	120	450

1.600 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 360x30				
139328	87.700	Panel MX-2 18 Robu 360x30	120	300
141207	87.700	Panel MX-2 18 FPIy 360x30	120	300

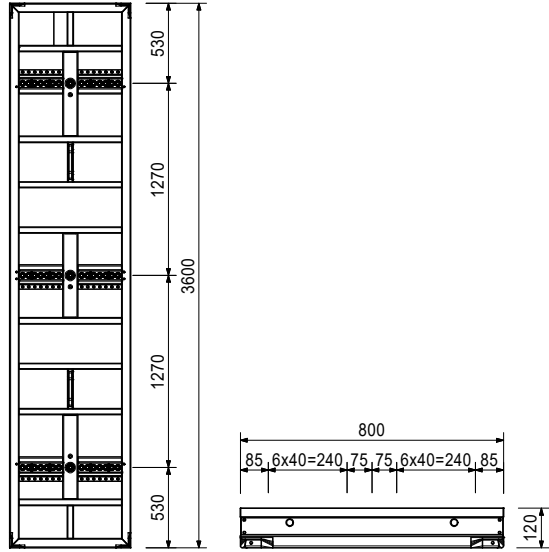
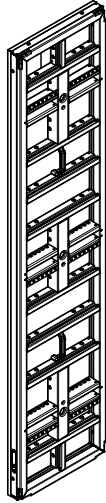
1.080 m² Panel with 18 mm plywood.



MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 360x80				
139736	213.000	M-Panel MXM-2 18 Robu 360x80	120	800
141368	212.000	M-Panel MXM-2 18 FPIy 360x80	120	800

2.880 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

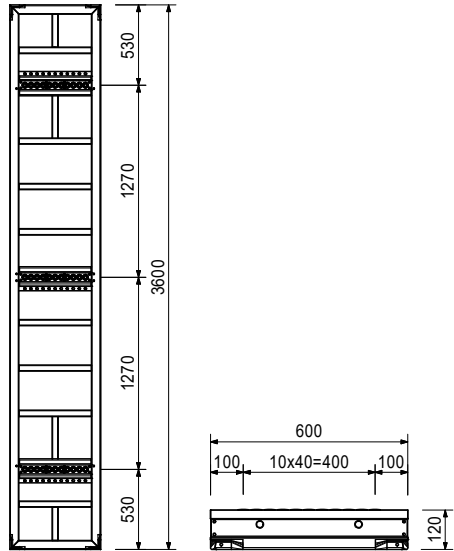
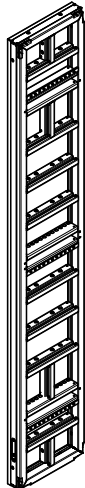


Included in delivery

125099 Plug MXM18 Ø27.6mm 45 pc

Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 360x60				
139724	159.000	M-Panel MXM-2 18 Robu 360x60	120	600
141367	157.000	M-Panel MXM-2 18 FPIy 360x60	120	600

2.160 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



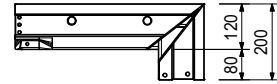
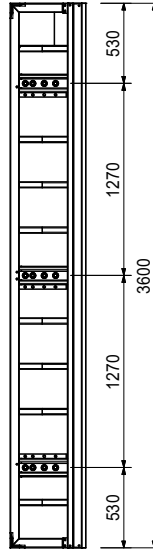
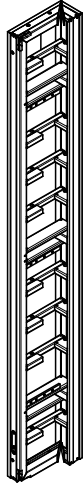
Included in delivery

125099 Plug MXM18 Ø27.6mm 33 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI-2 18 360x50/20		
140259	147.000	I-Cor. MXI-2 18 Robu 360x50/20	120	500
141388	145.000	I-Cor. MXI-2 18 FPIy 360x50/20	120	500

2.520 m² Panel with 18 mm plywood. For 90° internal corners.

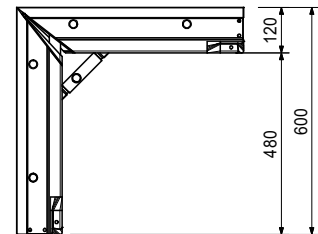
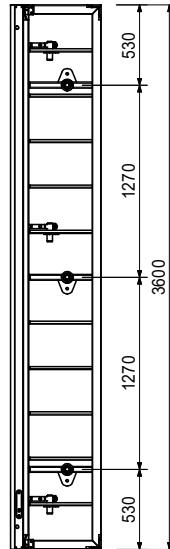
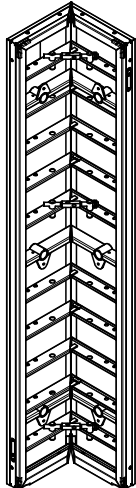


Included in delivery

125099 Plug MXM18 Ø27.6mm 12 pc

Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI-2 18 360x60		
166792	213.000	I-Cor. MXI-2 18 Robu 360x60	120	600
141399	212.000	I-Cor. MXI-2 18 Fply 360x60	600	600

4.320 m² Panel with 18 mm plywood. For 90° internal corners.

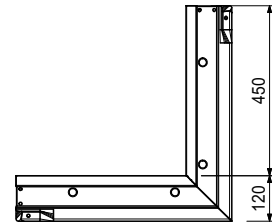
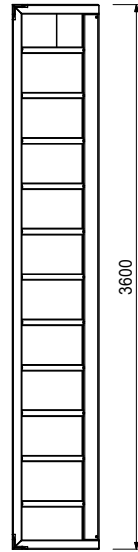
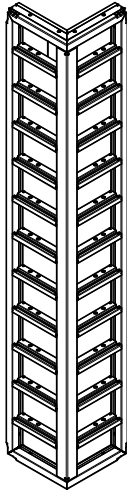


MAXIMO MX-2 18 and MX18 Panel Formwork



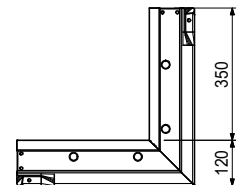
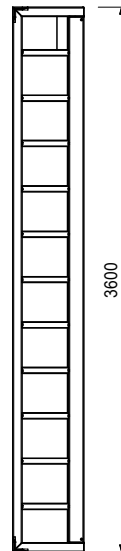
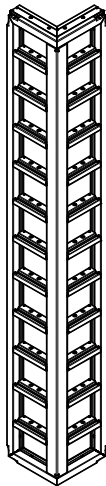
Art no.	Weight [kg]		W [mm]	L [mm]
		Outs. Cor. MXA-2 360x45		
139856	217.000	Outs. Cor. MXA-2 Robu 360x45	120	450
141276	219.000	Outs. Cor. MXA-2 FPLY 360x45	120	450

3.240 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
		Outs. Cor. MXA-2 360x35		
139863	192.000	Outs. Cor. MXA-2 Robu 360x35	120	350
141277	190.000	Outs. Cor. MXA-2 FPLY 360x35	120	350

2.520 m² Panel with 18 mm plywood. For 90° external corners.

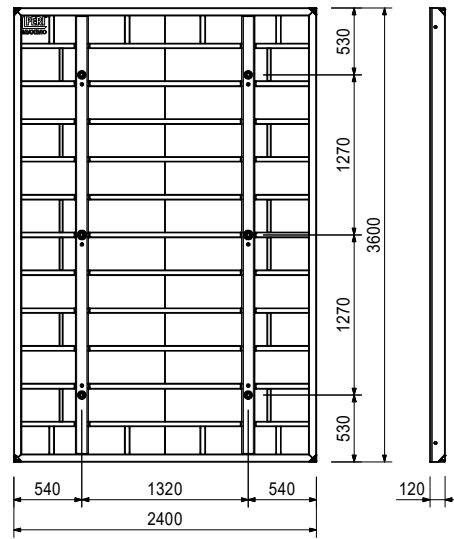
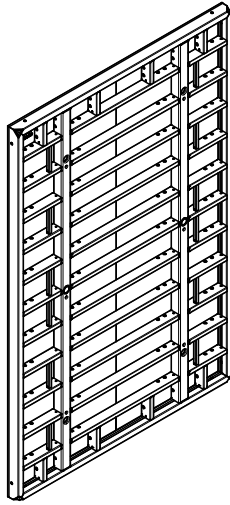


MAXIMO MX-2 18 and MX18 Panel Formwork



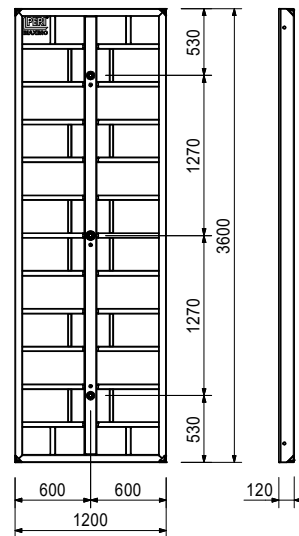
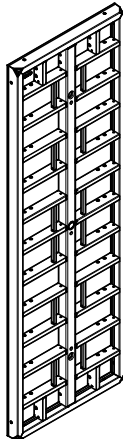
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 360x240				
128117	473.000	Panel MX18 360x240	120	2400
133860	483.000	Panel MX18 AL 360x240	120	2400

8.640 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 360x120				
128123	271.000	Panel MX18 360x120	120	1200
133864	277.000	Panel MX18 AL 360x120	120	1200

4.320 m² Panel with 18 mm plywood.

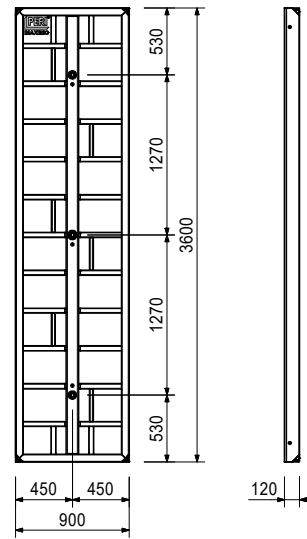
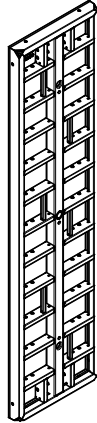


MAXIMO MX-2 18 and MX18 Panel Formwork



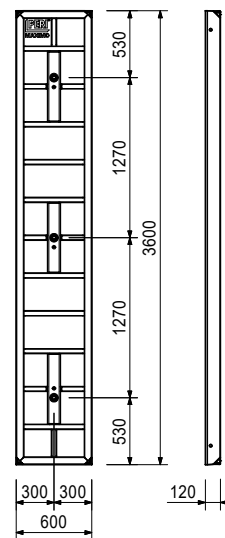
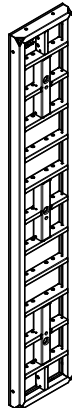
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 360x90				
128131	207.000	Panel MX18 360x90	120	900
133867	212.000	Panel MX18 AL 360x90	120	900

3.240 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 360x60				
128138	139.000	Panel MX18 360x60	120	600
133870	144.000	Panel MX18 AL 360x60	120	600

2.160 m² Panel with 18 mm plywood.

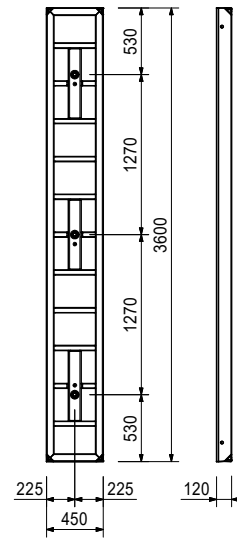


MAXIMO MX-2 18 and MX18 Panel Formwork



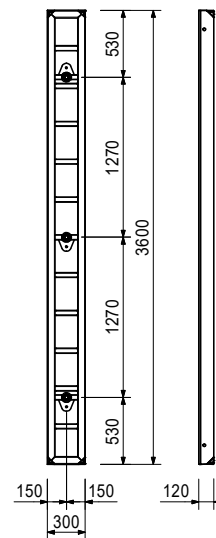
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 360x45				
128145	121.000	Panel MX18 360x45	120	450
133873	124.000	Panel MX18 AL 360x45	120	450

1.600 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 360x30				
128151	84.100	Panel MX18 360x30	120	300
133876	86.500	Panel MX18 AL 360x30	120	300

1.080 m² Panel with 18 mm plywood.

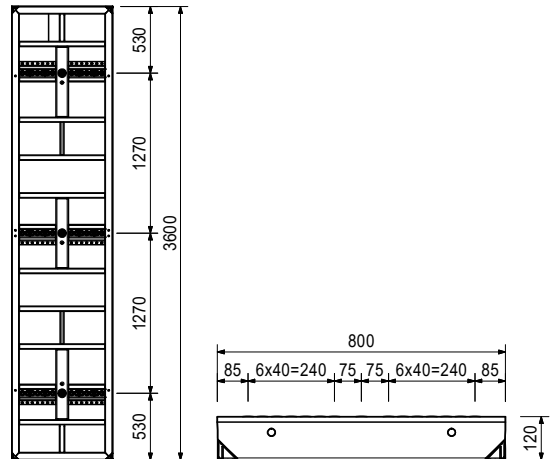
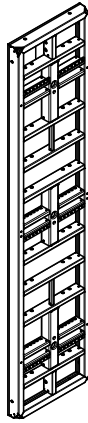


MAXIMO MX-2 18 and MX18 Panel Formwork

Art no. Weight [kg]

136672 208.000 **Multi Panel MXM18 360x80**

2.880 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



Included in delivery

125099 Plug MXM18 Ø27.6mm 45 pc

Art no. Weight [kg]

Multi Panels MXM18 360x60

128159 148.000 **Multi Panel MXM18 360x60**

133879 150.000 **Multi Panel MXM18 AL 360x60**

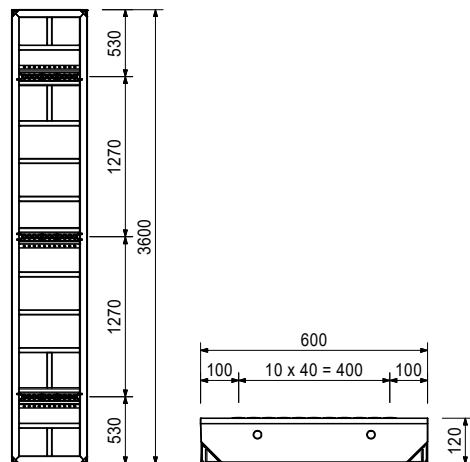
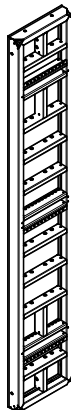
W [mm]

L [mm]

120 600

120 600

2.160 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



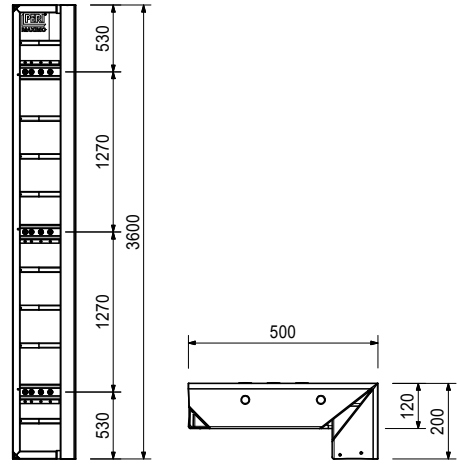
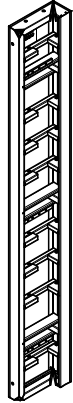
Included in delivery

125099 Plug MXM18 Ø27.6mm 33 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI18 360x50/20		
128189	137.000	I-Cor. MXI18 360x50/20	120	500
133887	140.000	I-Cor. MXI18 AL 360x50/20	120	500

2.520 m² Panel with 18 mm plywood. For 90° internal corners.

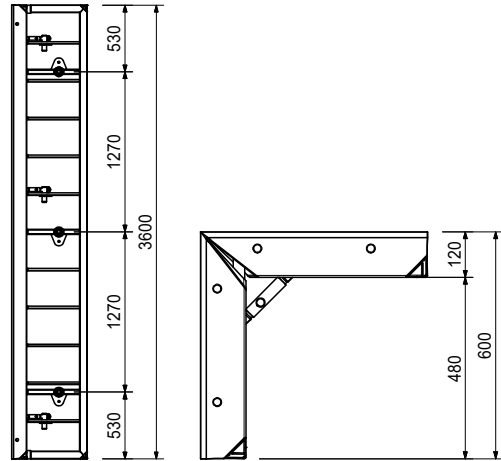
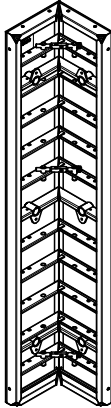


Included in delivery

125099 Plug MXM18 Ø27.6mm 12 pc

Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI18 360x60		
128180	208.000	I-Cor. MXI18 360x60	120	600
133890	210.000	I-Cor. MXI18 AL 360x60	120	600

4.320 m² Panel with 18 mm plywood. For 90° internal corners.

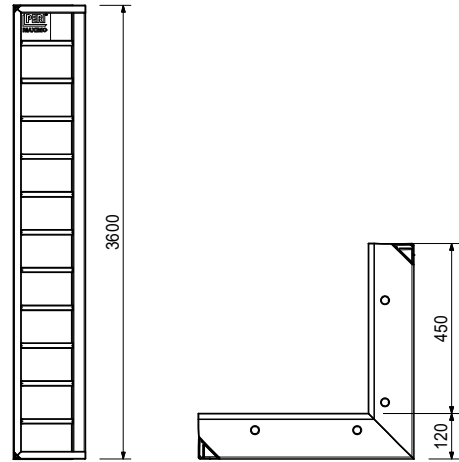
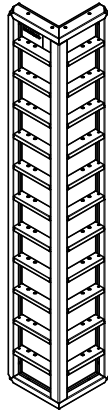


MAXIMO MX-2 18 and MX18 Panel Formwork



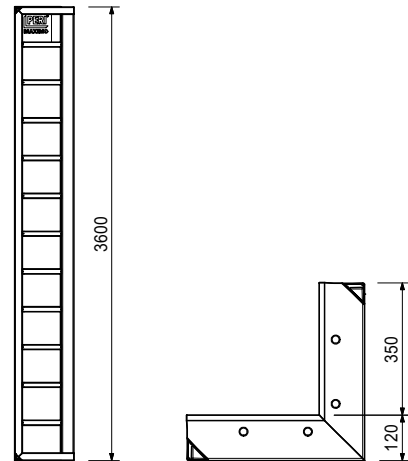
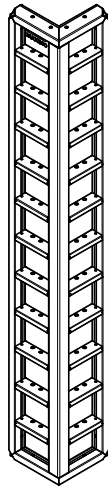
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 360x45				
128166	210.000	Outs. Corner MXA 360x45	120	450
133835	210.000	Outs. Corner MXA ga 360x45	120	450
133894	211.000	Outs. Corner MXA AL 360x45	120	450

3.240 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 360x35				
128172	184.000	Outs. Corner MXA 360x35	120	350
133840	184.000	Outs. Corner MXA ga 360x35	120	350
133897	187.000	Outs. Corner MXA AL 360x35	120	350

2.520 m² Panel with 18 mm plywood. For 90° external corners.

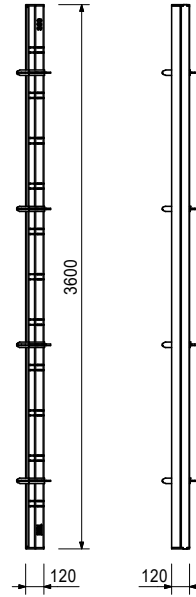


MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

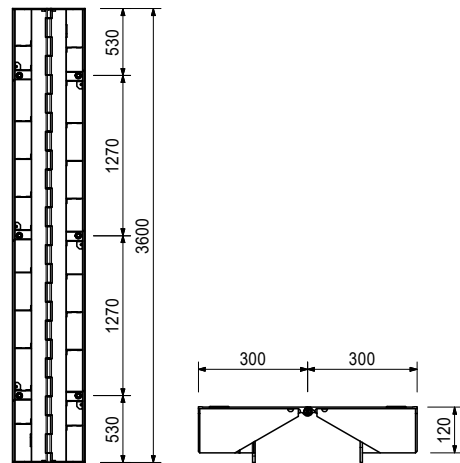
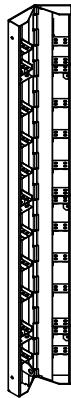
137194 57.300 **Ext. Corner Profile-2 MX 360**



Art no. Weight [kg]

128197 82.800 **Artic. Corner MXG118 360**

2.160 m² Made of aluminium. For oblique angles from 75° upwards, internal.



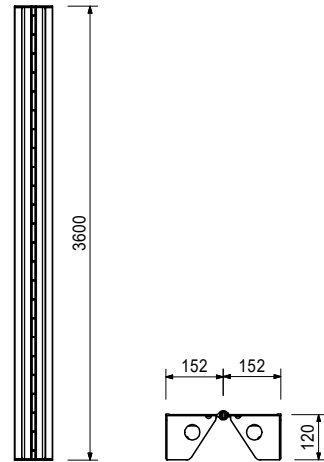
MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

128203 55.500 **Artic. Corner MXGA 360**

1.094 m² Made of aluminium, for oblique angles for 75° upward, external.



Art no. Weight [kg]

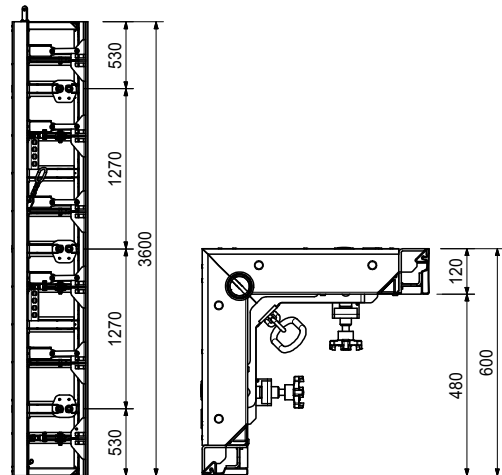
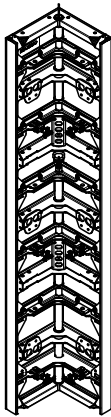
Shaft Corners MXSE18 360

Art no.	Weight [kg]	W [mm]	L [mm]
128012	404.000	120	600
139040	404.000	120	600
134088	405.000	120	600

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.



Included in delivery

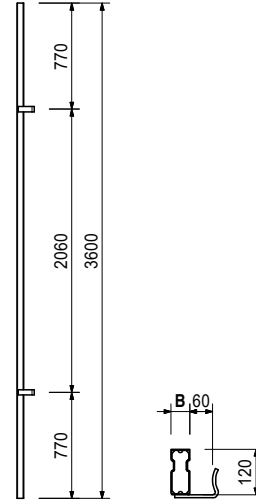
126263 Position Latch MXSE 4 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



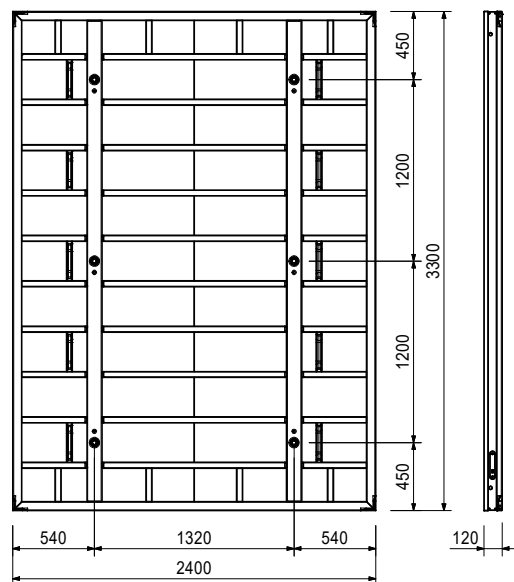
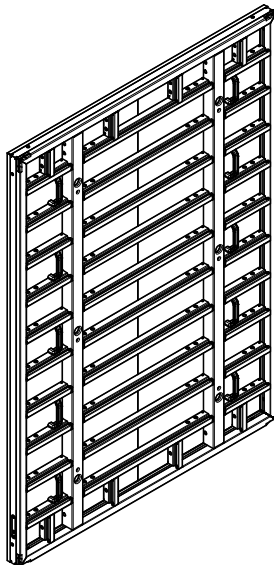
Art no.	Weight [kg]		W [mm]
		Wall Thick.Comp. MX 360	
128207	19.300	Wall Thick.Comp. MX 360x4	40
128212	20.500	Wall Thick.Comp. MX 360x5	50
128216	21.900	Wall Thick.Comp. MX 360x6	60
128220	13.100	Wall Thick.Comp. MX 360x10 Alu	100

For adjusting to wall thicknesses.



Art no.	Weight [kg]		W [mm]	L [mm]
		Panels MX-2 18 330x240		
141085	435.000	Panel MX-2 18 Robu 330x240	120	2400
141119	435.000	Panel MX-2 18 FPLY 330x240	120	2400

7.920 m² Panel with 18 mm plywood.

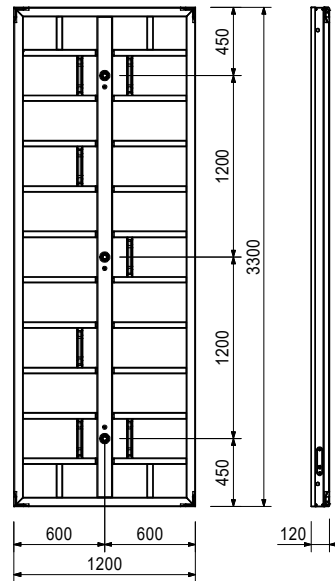
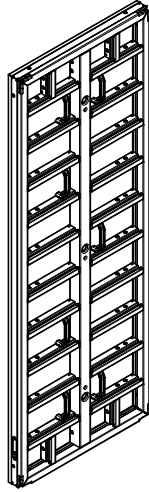


MAXIMO MX-2 18 and MX18 Panel Formwork



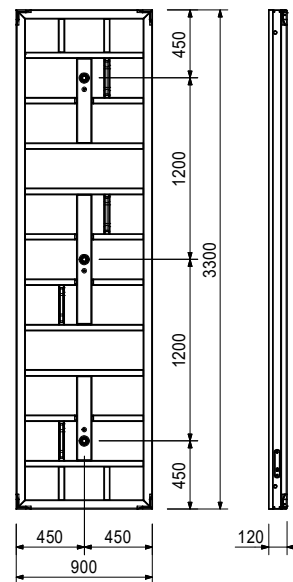
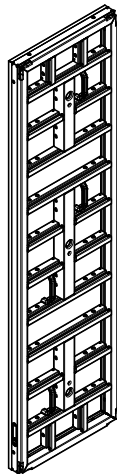
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 330x120				
141086	239.000	Panel MX-2 18 Robu 330x120	120	1200
141121	239.000	Panel MX-2 18 FPIy 330x120	120	1200

3.960 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 330x90				
141087	187.000	Panel MX-2 18 Robu 330x90	120	900
141123	187.000	Panel MX-2 18 FPIy 330x90	120	900

2.970 m² Panel with 18 mm plywood.

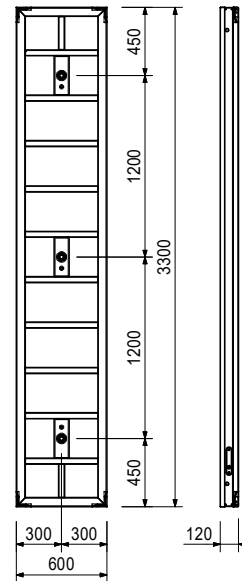
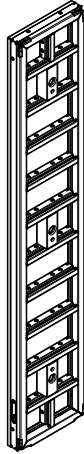


MAXIMO MX-2 18 and MX18 Panel Formwork



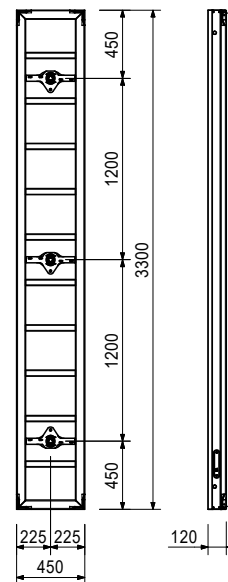
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 330x60				
141089	131.000	Panel MX-2 18 Robu 330x60	120	600
141125	131.000	Panel MX-2 18 FPIy 330x60	120	600

1.980 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 330x45				
141103	108.000	Panel MX-2 18 Robu 330x45	120	450
141127	108.000	Panel MX-2 18 FPIy 330x45	120	450

1.485 m² Panel with 18 mm plywood.

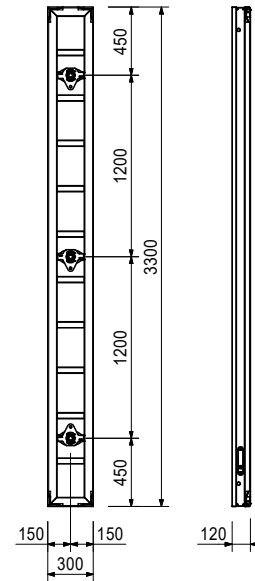


MAXIMO MX-2 18 and MX18 Panel Formwork



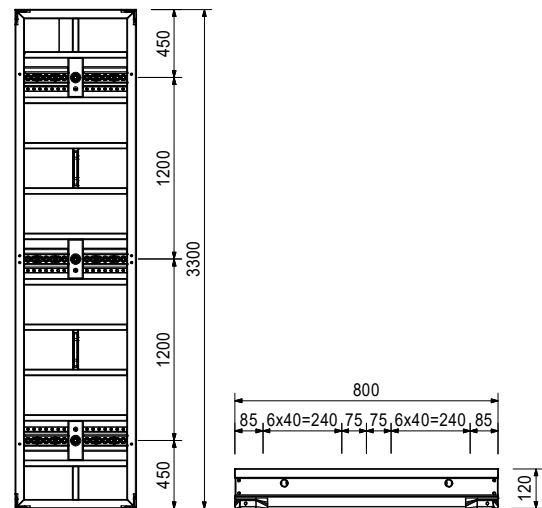
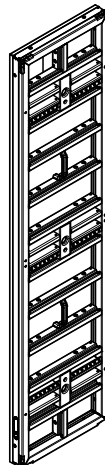
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 330x30				
141104	84.900	Panel MX-2 18 Robu 330x30	120	300
141129	84.900	Panel MX-2 18 FPIy 330x30	120	300

0.990 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 330x80				
166796	201.000	M-Panel MXM-2 18 Robu 330x80	120	800
141372	198.000	M-Panel MXM-2 18 FPIy 330x80	120	800

2.640 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



Included in delivery

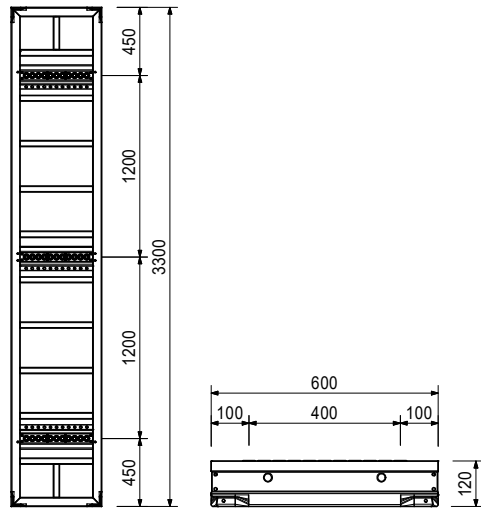
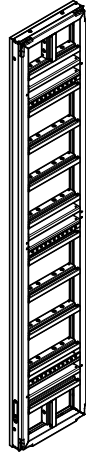
125099 Plug MXM18 Ø27.6mm 45 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 330x60				
166794	154.000	M-Panel MXM-2 18 Robu 330x60	120	600
141370	154.000	M-Panel MXM-2 18 FPly 330x60	120	600

1.980 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

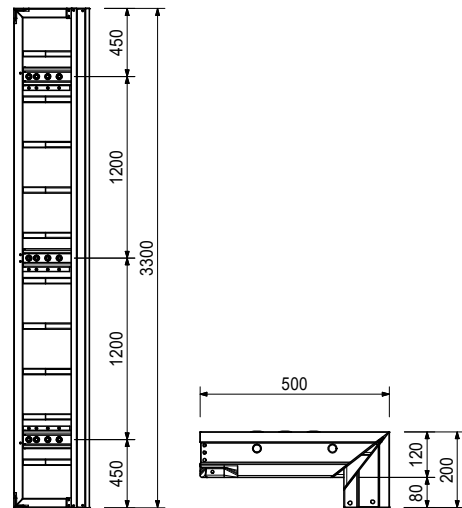
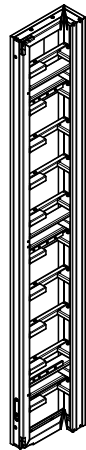


Included in delivery

125099 Plug MXM18 Ø27.6mm 33 pc

Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 330x50/20				
141390	145.000	I-Cor. MXI-2 18 Robu 330x50/20	120	500
141437	144.000	I-Cor. MXI-2 18 FPly 330x50/20	120	500

2.310 m². Panel with 18 mm plywood. For 90° internal corners.



Included in delivery

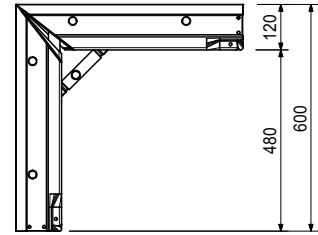
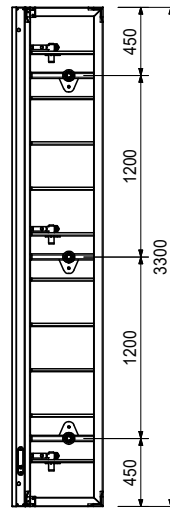
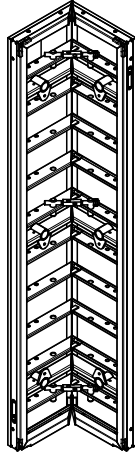
125099 Plug MXM18 Ø27.6mm 12 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



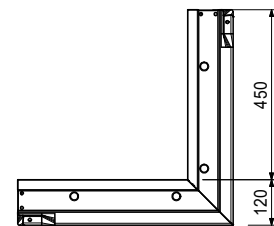
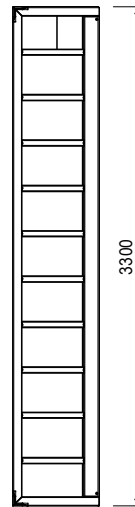
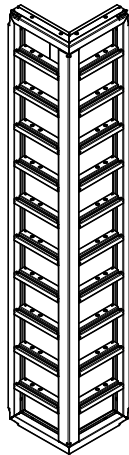
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 330x60				
141396	203.000	I-Cor. MXI-2 18 Robu 330x60	120	600
141398	203.000	I-Cor. MXI-2 18 FPIy 330x60	120	600

3.960 m² Panel with 18 mm plywood. For 90° internal corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 330x45				
139820	199.000	Outs. Cor. MXA-2 Robu 330x45	120	450
141278	198.000	Outs. Cor. MXA-2 FPIy 330x45	120	450

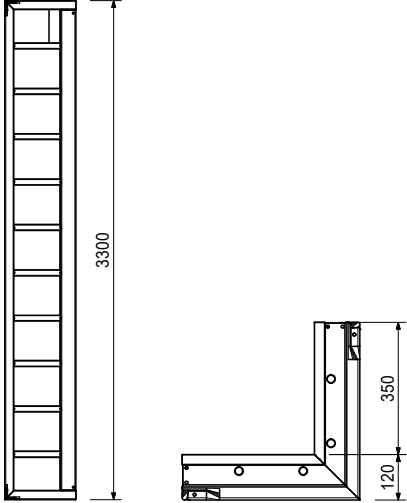
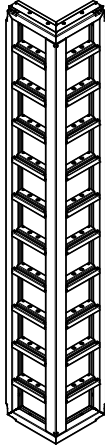
2.970 m² Panel with 18 mm plywood. For 90° external corners



MAXIMO MX-2 18 and MX18 Panel Formwork

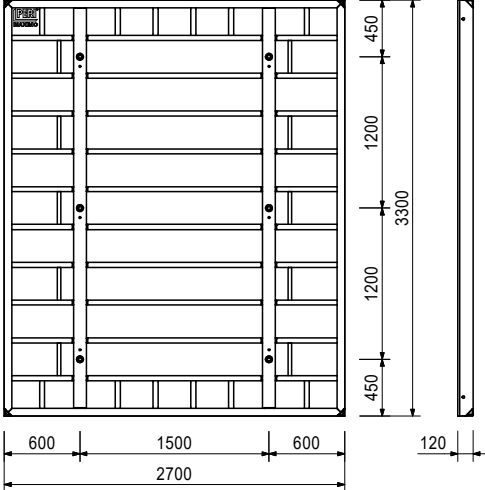
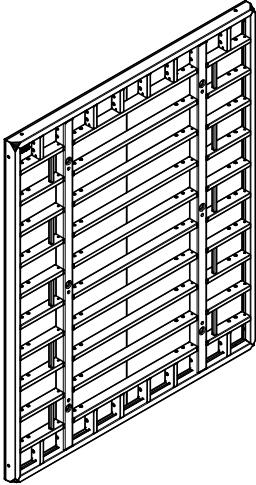
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 330x35				
139825	176.000	Outs. Cor. MXA-2 Robu 330x35	120	350
141279	175.000	Outs. Cor. MXA-2 FPLY 330x35	120	350

2.310 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 330x270				
124131	446.000	Panel MX18 330x270	120	2700
132086	470.000	Panel MX18 AL 330x270	120	2700

8.910 m² Panel with 18 mm plywood.

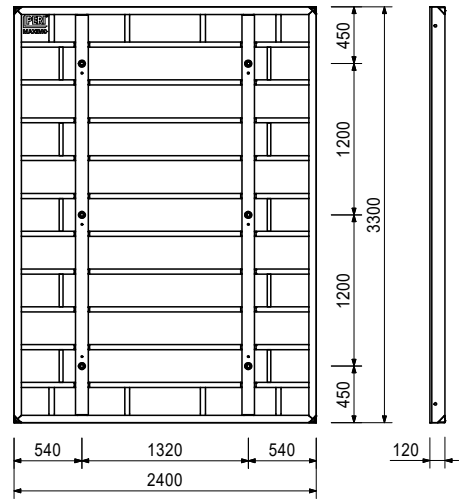
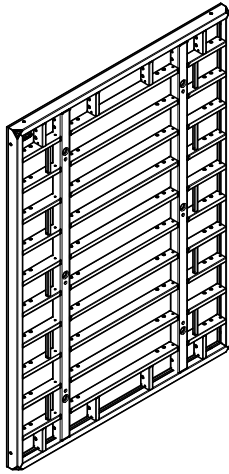


MAXIMO MX-2 18 and MX18 Panel Formwork



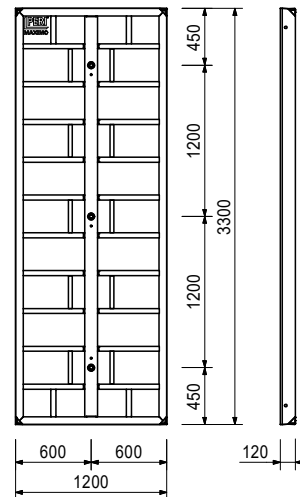
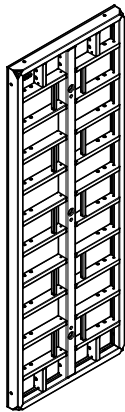
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 330x240				
124093	408.000	Panel MX18 330x240	120	2400
139365	408.000	Panel MX18 Robu 330x240	120	2400
132088	430.000	Panel MX18 AL 330x240	120	2400

7.920 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 330x120				
124126	226.000	Panel MX18 330x120	120	1200
139367	226.000	Panel MX18 Robu 330x120	120	1200
132090	240.000	Panel MX18 AL 330x120	120	1200

3.960 m² Panel with 18 mm plywood.

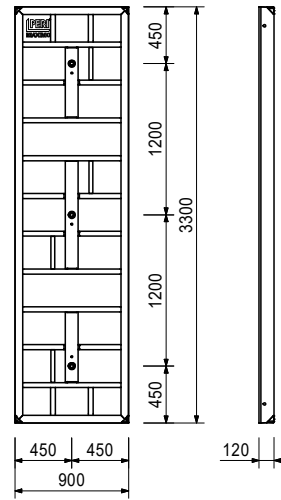
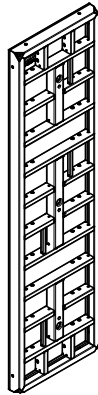


MAXIMO MX-2 18 and MX18 Panel Formwork



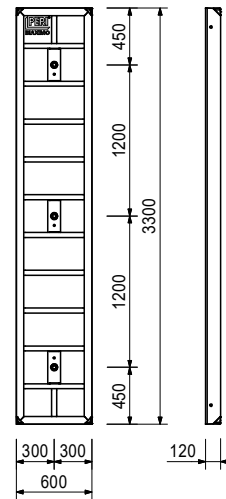
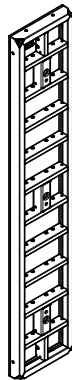
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 330x90				
124127	171.000	Panel MX18 330x90	120	900
139369	171.000	Panel MX18 Robu 330x90	120	900
132092	186.000	Panel MX18 AL 330x90	120	900

2.970 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 330x60				
124128	118.000	Panel MX18 330x60	120	600
139371	119.000	Panel MX18 Robu 330x60	120	600
132094	127.000	Panel MX18 AL 330x60	120	600

1.980 m² Panel with 18 mm plywood.

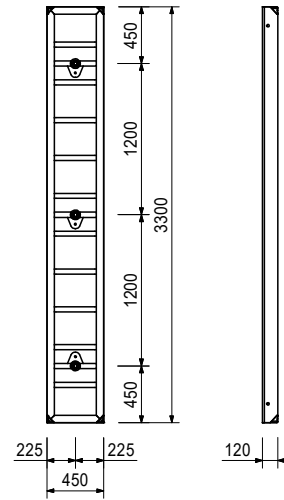


MAXIMO MX-2 18 and MX18 Panel Formwork



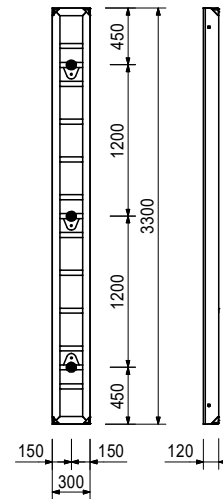
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 330x45				
124129	99.800	Panel MX18 330x45	120	450
139385	99.900	Panel MX18 Robu 330x45	120	450
132096	106.000	Panel MX18 AL 330x45	120	450

1.485 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX15 330x30				
114457	78.600	Panel MX15 330x30	120	300
116582	78.700	Panel MX15 Robu 330x30	120	300
124767	79.800	Panel MX15 AL 330x30	120	300

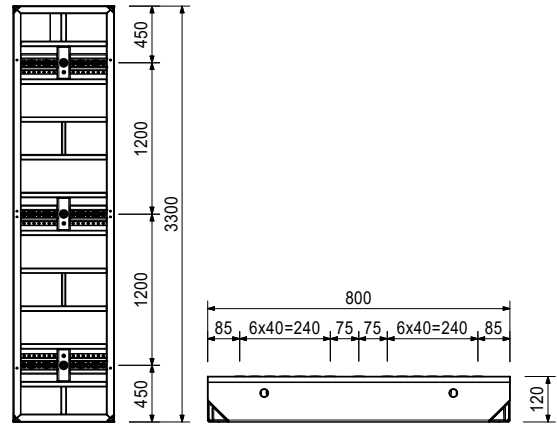
0.990 m² Panel with 18 mm plywood.



MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
Multi Panels MXM18 330x80				
136659	194.000	Multi Panel MXM18 330x80	120	800
139646	197.000	Multi Panel MXM18 Robu 330x80	120	800

2.640 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

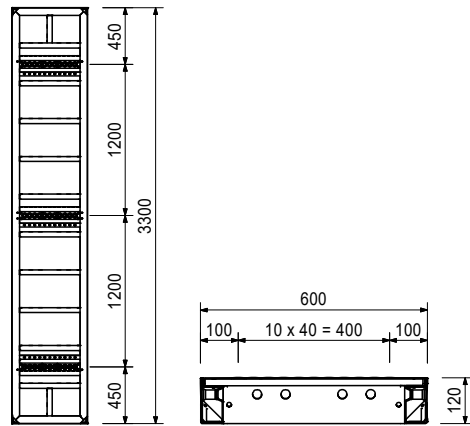
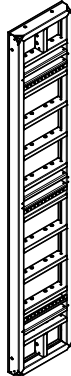


Included in delivery

125099 Plug MXM18 Ø27.6mm 45 pc

Art no.	Weight [kg]		W [mm]	L [mm]
Multi Panel MXM 18 330x60				
124163	144.000	Multi Panel MXM18 330x60	120	600
139643	144.000	Multi Panel MXM18 Robu 330x60	120	600
132099	150.000	Multi Panel MXM18 AL 330x60	120	600

1.980 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



Included in delivery

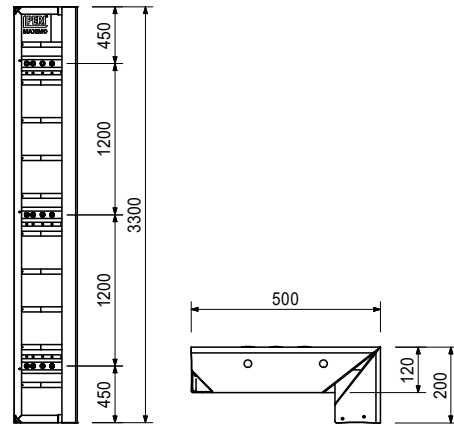
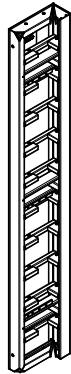
125099 Plug MXM18 Ø27.6mm 33 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI18 330x50/20		
124190	136.000	I-Cor. MXI18 330x50/20	120	500
139673	136.000	I-Cor. MXI18 Robu 330x50/20	120	500
132100	143.000	I-Cor. MXI18 AL 330x50/20	120	500

2.310 m². Panel with 18 mm plywood. For 90° internal corners.

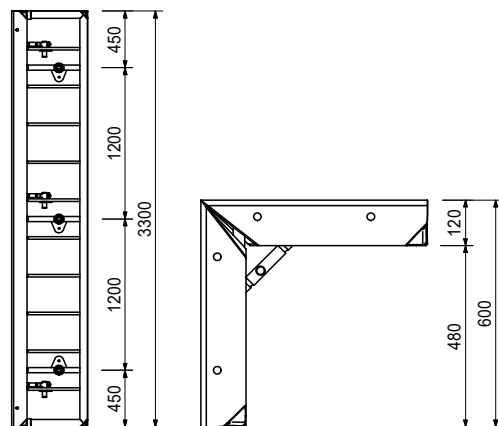
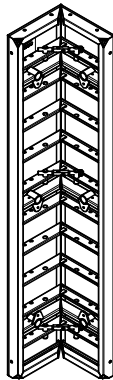


Included in delivery

125099 Plug MXM18 Ø27.6mm 12 pc

Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI18 330x60		
124195	199.000	I-Cor. MXI18 330x60	120	600
132102	207.000	I-Cor. MXI18 AL 330x60	120	600

3.960 m² Panel with 18 mm plywood. For 90° internal corners.

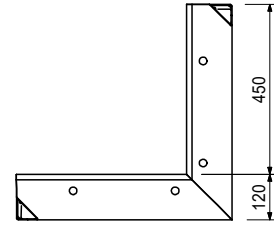
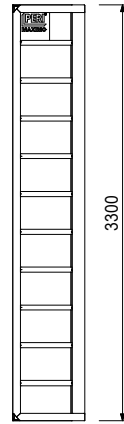
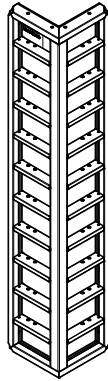


MAXIMO MX-2 18 and MX18 Panel Formwork



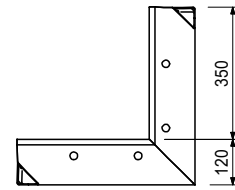
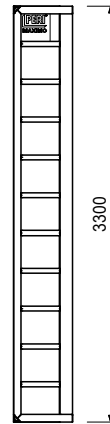
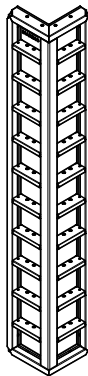
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 330x45				
114478	190.000	Outs. Corner MXA 330x45	120	450
123893	190.000	Outs. Corner MXA Robu 330x45	120	450
124890	196.000	Outs. Corner MXA AL 330x45	120	450

2.970 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 330x35				
114486	168.000	Outs. Corner MXA 330x35	120	350
123896	168.000	Outs. Corner MXA Robu 330x35	120	350
124894	172.000	Outs. Corner MXA AL 330x35	120	350

2.310 m² Panel with 18 mm plywood. For 90° external corners.

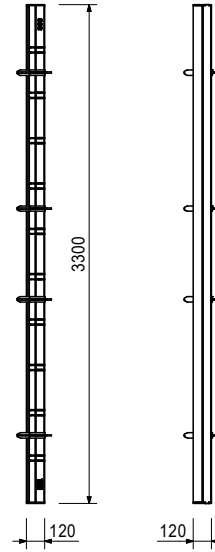
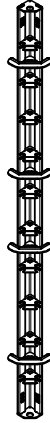


MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

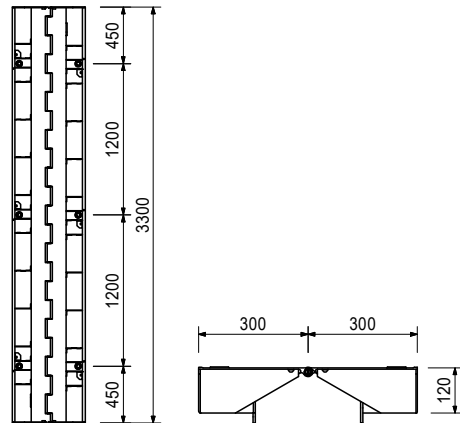
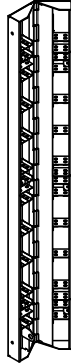
137189 53.000 **Ext. Corner Profile-2 MX 330**



Art no. Weight [kg]

124202 89.000 **Artic. Corner MXGI18 330**

1.980 m² Made of aluminium. For oblique angles from 75° upwards, internal.



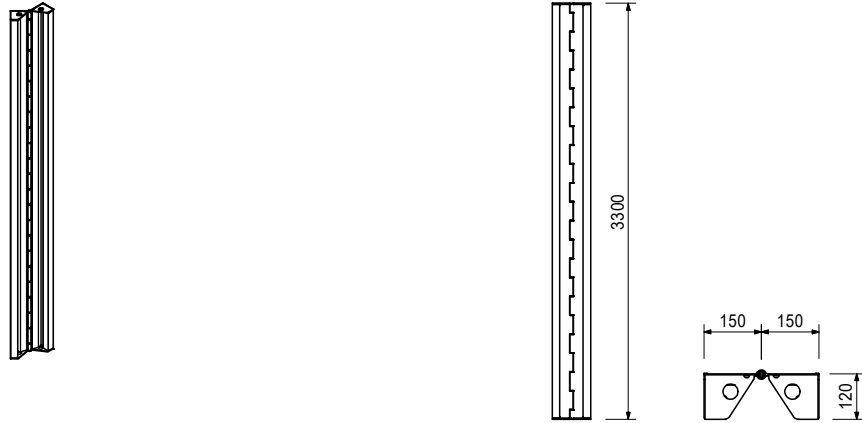
MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

114607	51.100	Artic. Corner MXGA 330
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0.990 m² Made of aluminium, for oblique angles from 75° upwards, external.



Art no. Weight [kg]

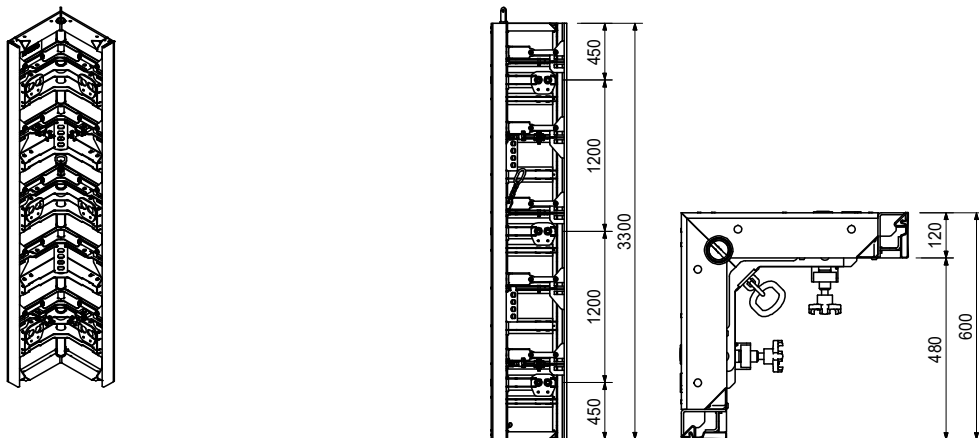
Shaft Corners MXSE18 330

125284	393.000	Shaft Corner MXSE18 330
139042	393.000	Shaft Corner MXSE18 Robu 330
134075	394.000	Shaft Corner MXSE18 AL 330

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.



Included in delivery

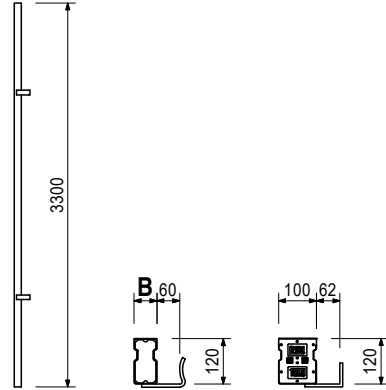
126263 Position Latch MXSE 4 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



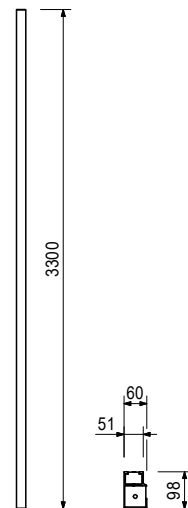
Art no.	Weight [kg]		W [mm]
		Wall Thick.Comp. MX 330	
114842	17.800	Wall Thick.Comp. MX 330x4	40
114826	18.900	Wall Thick.Comp. MX 330x5	50
114846	20.200	Wall Thick.Comp. MX 330x6	60
114394	12.000	Wall Thick.Comp. MX 330x10 Alu	100

For adjusting to wall thicknesses.



Art no.	Weight [kg]	
101829	9.820	Filler Profile TPP 330 Alu

For compensation with 21 mm filler plates.

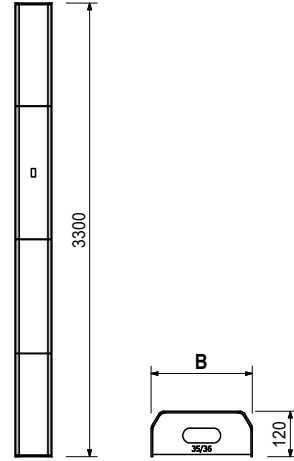


MAXIMO MX-2 18 and MX18 Panel Formwork



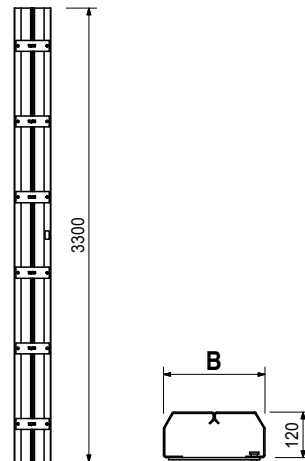
Art no.	Weight [kg]		W [mm]
Stop. Panels TRIO MT 330			
131152	32.400	Stop. Panel TRIO MT 330x20	118
131158	44.500	Stop. Panel TRIO MT 330x30	218
131155	37.200	Stop. Panel TRIO MT 330x24/25	158
131161	50.500	Stop. Panel TRIO MT 330x35/36	268

Without waterstop bar installation for stopend formwork.



Art no.	Weight [kg]		W [mm]
Stop. Panels TRIO MTF 330			
131165	35.600	Stop. Panel TRIO MTF 330x20	118
131173	46.900	Stop. Panel TRIO MTF 330x30	218
131169	40.900	Stop. Panel TRIO MTF 330x24/25	158
131177	52.000	Stop. Panel TRIO MTF 330x35/36	268

Centre piece with waterstop bar installation for stopend formwork.



MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

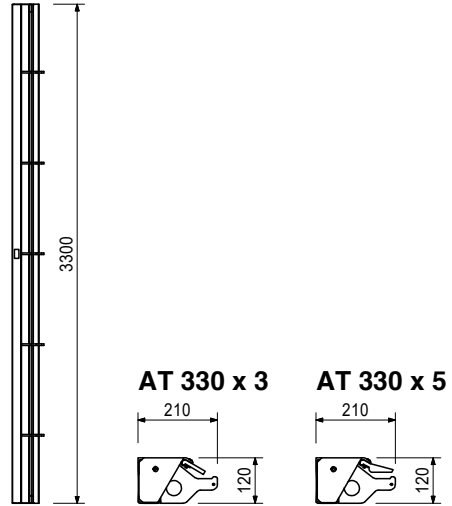
Stop. Panels TRIO AT 330

131147	21.000	Stop. Panel TRIO AT 330/3
131149	23.200	Stop. Panel TRIO AT 330/5

External piece for stopend formwork.

Notes

Concrete cover approx. 30 or 50 mm.



Art no. Weight [kg]

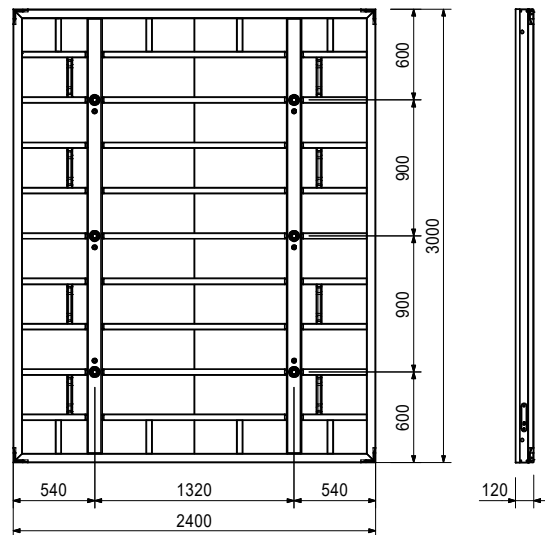
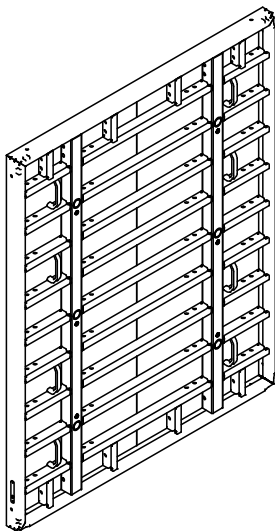
W [mm]

L [mm]

Panels MX-2 18 300x240

141105	413.000	Panel MX-2 18 Robu 300x240	120	2400
141139	413.000	Panel MX-2 18 FPLY 300x240	120	2400

7.200 m² Panel with 18 mm plywood.

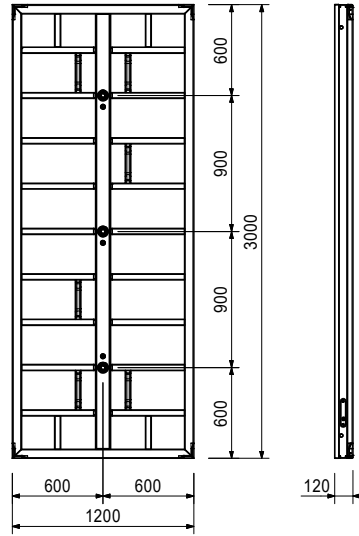
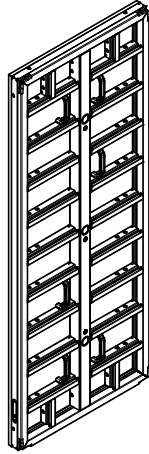


MAXIMO MX-2 18 and MX18 Panel Formwork



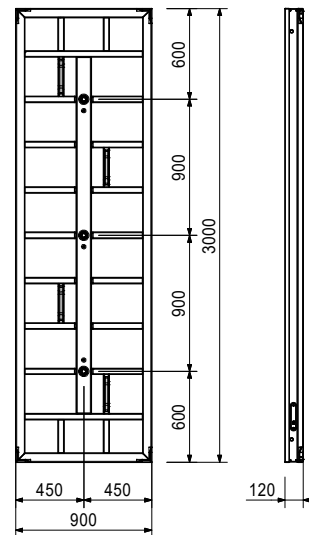
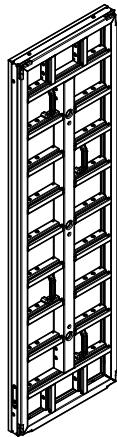
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 300x120				
141151	226.000	Panel MX-2 18 Robu 300x120	120	1200
141141	227.000	Panel MX-2 18 FPLY 300x120	120	1200

3.600 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 300x90				
141152	179.000	Panel MX-2 18 Robu 300x90	120	900
141143	179.000	Panel MX-2 18 FPLY 300x90	120	900

2.700 m² Panel with 18 mm plywood.

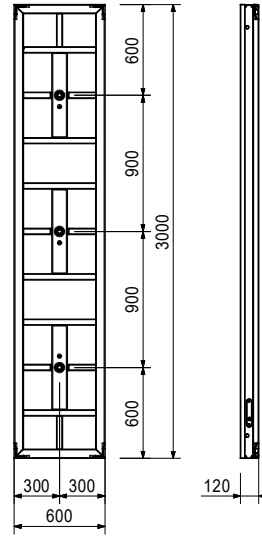
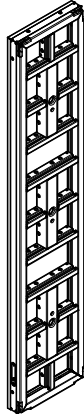


MAXIMO MX-2 18 and MX18 Panel Formwork



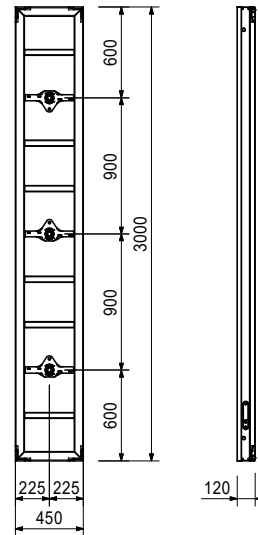
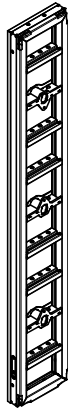
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 300x60				
141154	133.000	Panel MX-2 18 Robu 300x60	120	600
141145	133.000	Panel MX-2 18 FPIy 300x60	120	600

1.800 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 300x45				
141155	92.200	Panel MX-2 18 Robu 300x45	120	450
141147	92.200	Panel MX-2 18 FPIy 300x45	120	450

1.350 m² Panel with 18 mm plywood.

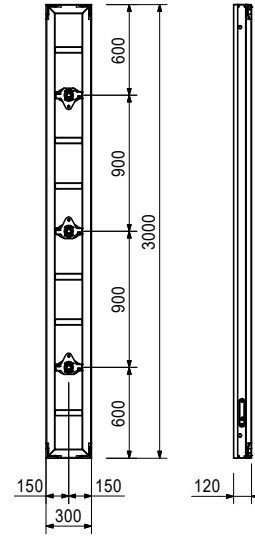


MAXIMO MX-2 18 and MX18 Panel Formwork



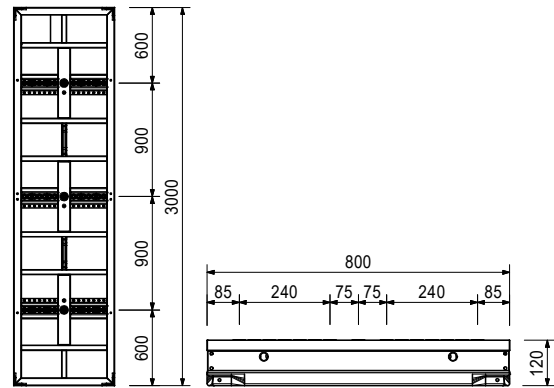
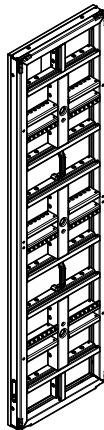
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 300x30				
141156	74.500	Panel MX-2 18 Robu 300x30	120	300
141149	74.500	Panel MX-2 18 FPIy 300x30	120	300

0.900 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 300x80				
166798	188.000	M-Panel MXM-2 18 Robu 300x80	120	800
141376	186.000	M-Panel MXM-2 18 FPIy 300x80	120	800

2.400 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



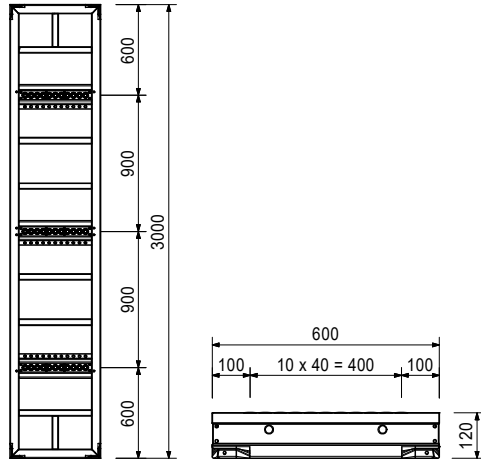
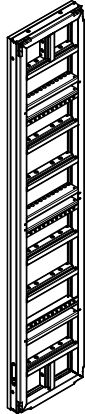
Included in delivery

125099 Plug MXM18 Ø27.6mm 45 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 300x60				
166797	136.000	M-Panel MXM-2 18 Robu 300x60	120	600
141374	135.000	M-Panel MXM-2 18 FPLY 300x60	120	600

1.800 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

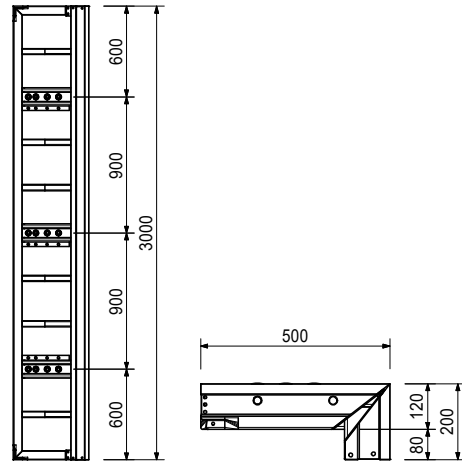
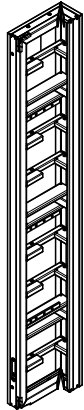


Included in delivery

125099 Plug MXM18 Ø27.6mm 33 pc

Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 300x50/20				
141439	128.000	I-Cor. MXI-2 18 Robu 300x50/20	120	500
141442	126.000	I-Cor. MXI-2 18 FPLY 300x50/20	200	500

2.100 m² Panel with 18 mm plywood. For 90° internal corner.



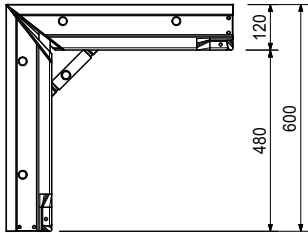
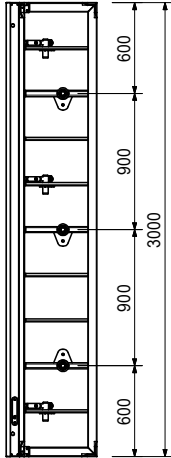
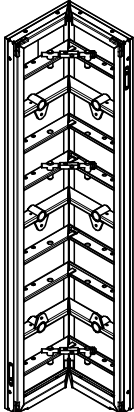
Included in delivery

125099 Plug MXM18 Ø27.6mm 12 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

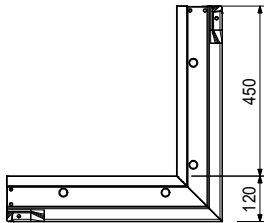
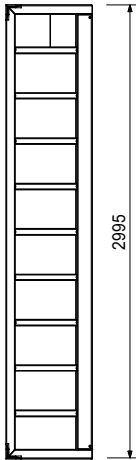
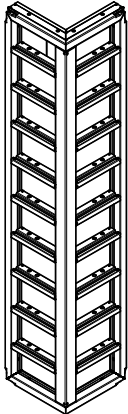
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 300x60				
141409	179.000	I-Cor. MXI-2 18 Robu 300x60	120	600
141457	179.000	I-Cor. MXI-2 18 FPIy 300x60	120	600

3.600 m² Panel with 18 mm plywood. For 90° internal corner.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 300x45				
139831	182.000	Outs. Cor. MXA-2 Robu 300x45	120	450
141280	181.000	Outs. Cor. MXA-2 FPIy 300x45	120	450

2.700 m² Panel with 18 mm plywood. For 90° external corners.

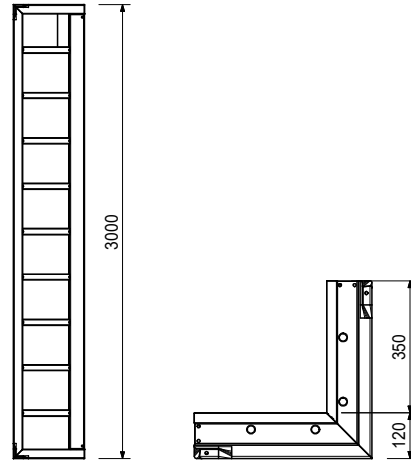
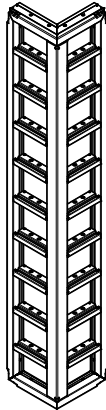


MAXIMO MX-2 18 and MX18 Panel Formwork



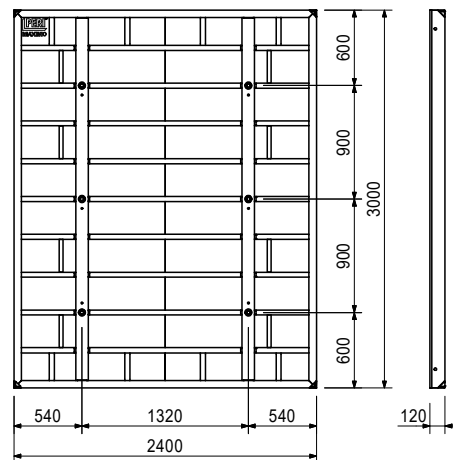
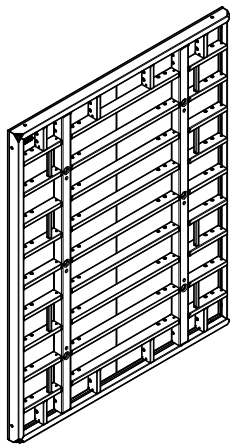
Art no.	Weight [kg]		W [mm]	L [mm]
		Outs. Cor. MXA-2 300x35		
139836	161.000	Outs. Cor. MXA-2 Robu 300x35	120	350
141281	160.000	Outs. Cor. MXA-2 FPLY 300x35	120	350

2.100 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
		Panels MX18 300x240		
127849	403.000	Panel MX18 300x240	120	2400
138154	403.000	Panel MX18 Robu 300x240	120	2400
133640	410.000	Panel MX18 AL 300x240	120	2400

7.200 m² Panel with 18 mm plywood.

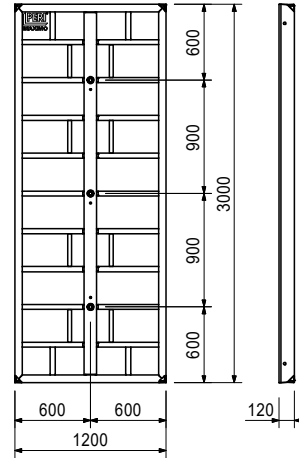
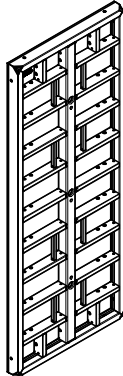


MAXIMO MX-2 18 and MX18 Panel Formwork



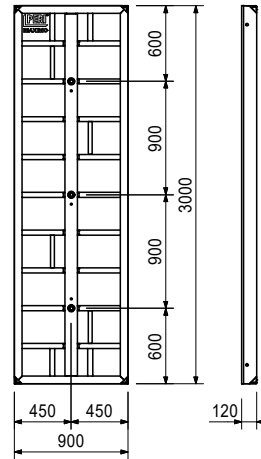
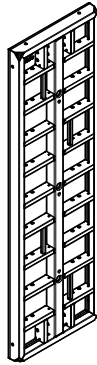
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 300x120				
127857	229.000	Panel MX18 300x120	120	1200
138156	229.000	Panel MX18 Robu 300x120	120	1200
133958	234.000	Panel MX18 AL 300x120	120	1200

3.600 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 300x90				
127866	175.000	Panel MX18 300x90	120	900
138158	175.000	Panel MX18 Robu 300x90	120	900
133960	178.000	Panel MX18 AL 300x90	120	900

2.700 m² Panel with 18 mm plywood.

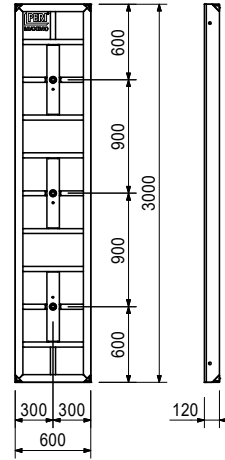
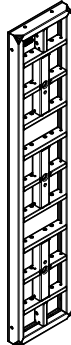


MAXIMO MX-2 18 and MX18 Panel Formwork



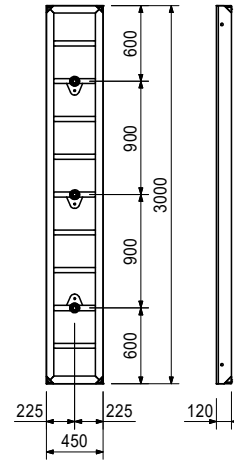
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 300x60				
127872	121.000	Panel MX18 300x60	120	600
138145	121.000	Panel MX18 Robu 300x60	120	600
133964	126.000	Panel MX18 AL 300x60	120	600

1.800 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 300x45				
127891	87.300	Panel MX18 300x45	120	450
138142	87.300	Panel MX18 Robu 300x45	120	450
133967	89.200	Panel MX18 AL 300x45	120	450

1.350 m² Panel with 18 mm plywood.

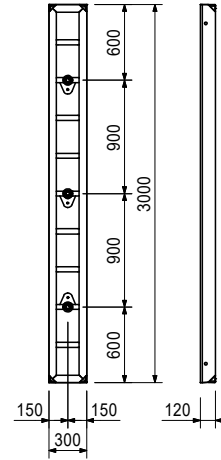


MAXIMO MX-2 18 and MX18 Panel Formwork



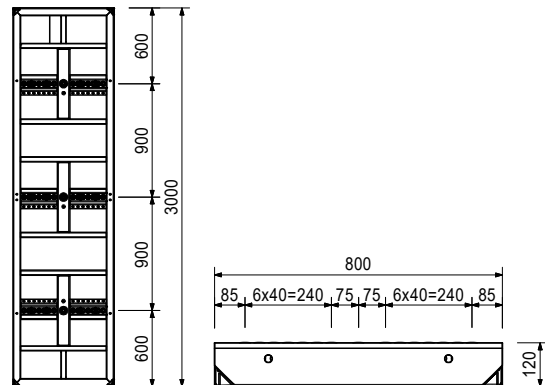
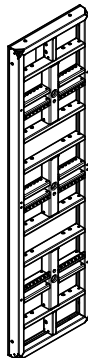
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 300x30				
127897	70.000	Panel MX18 300x30	120	300
138139	69.900	Panel MX18 Robu 300x30	120	300
133970	72.100	Panel MX18 AL 300x30	120	300

0.900 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Multi Panels MXM18 300x80				
136665	184.000	Multi Panel MXM18 300x80	120	800
138146	185.000	Multi Panel MXM18 Robu 300x80	120	800

2.400 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



Included in delivery

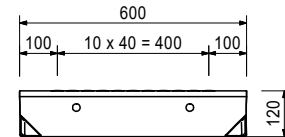
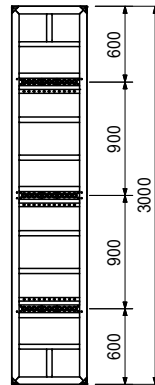
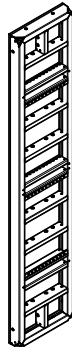
125099 Plug MXM18 Ø27.6mm 45 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]		W [mm]	L [mm]
Multi Panels MXM18 300x60				
127904	127.000	Multi Panel MXM18 300x60	120	600
138135	129.000	Multi Panel MXM18 Robu 300x60	120	600
133973	129.000	Multi Panel MXM18 AL 300x60	120	600

1.800 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

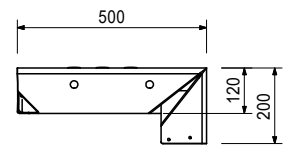
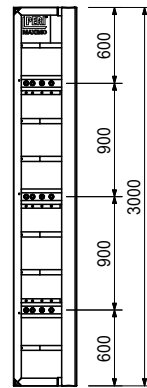
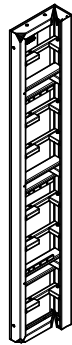


Included in delivery

125099 Plug MXM18 Ø27.6mm 33 pc

Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI18 300x50/20				
127984	118.000	I-Cor. MXI18 300x50/20	120	500
138132	118.000	I-Cor. MXI18 Robu 300x50/20	120	500
133980	120.000	I-Cor. MXI18 AL 300x50/20	120	500

2.100 m² Panel with 18 mm plywood. For 90° internal corner.



Included in delivery

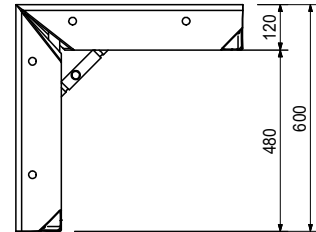
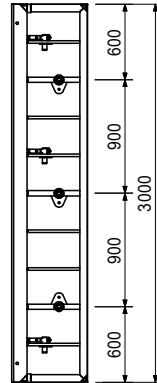
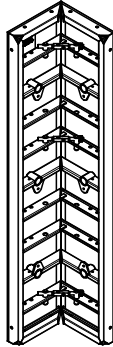
125099 Plug MXM18 Ø27.6mm 12 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



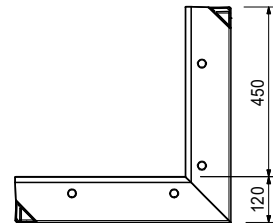
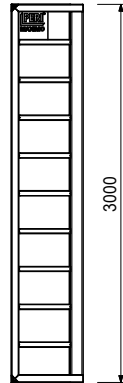
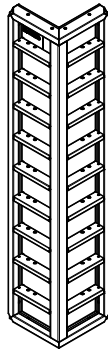
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI18 300x60				
127975	178.000	I-Cor. MXI18 300x60	120	600
138128	178.000	I-Cor. MXI18 Robu 300x60	120	600
133985	175.000	I-Cor. MXI18 AL 300x60	120	600

3.600 m² Panel with 18 mm plywood. For 90° internal corner.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 300x45				
127911	174.000	Outs. Corner MXA 300x45	120	450
138125	174.000	Outs. Corner MXA Robu 300x45	120	450
138218	177.000	Outs. Corner MXA AL 300x45	120	450

2.700 m² Panel with 18 mm plywood. For 90° external corners.

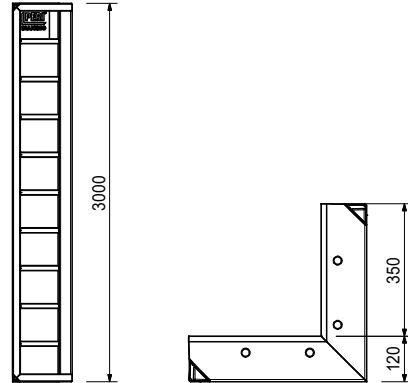
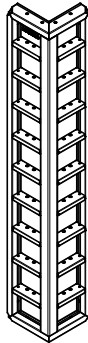


MAXIMO MX-2 18 and MX18 Panel Formwork

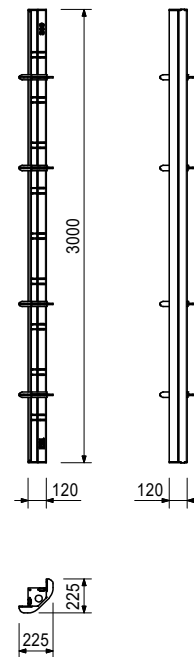


Art no.	Weight [kg]		W [mm]	L [mm]
		Outs. Corners MXA 330x35		
127917	155.000	Outs. Corner MXA 300x35	120	350
138121	154.000	Outs. Corner MXA Robu 300x35	120	350
138217	157.000	Outs. Corner MXA AL 300x35	120	350

2.100 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]	
137184	48.700	Ext. Corner Profile-2 MX 300



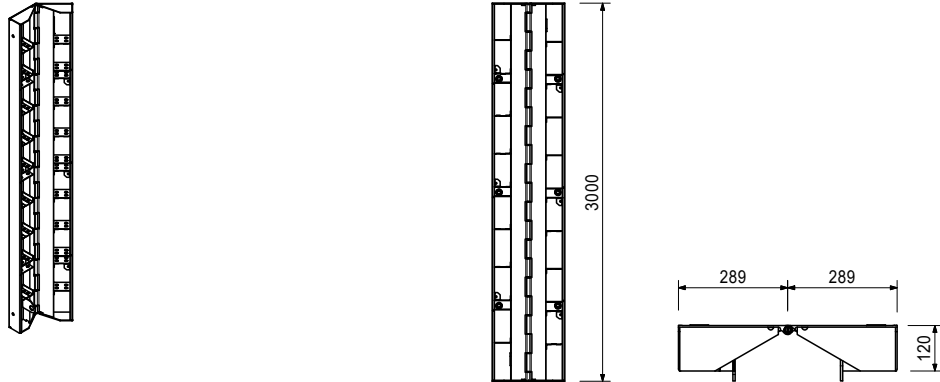
MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

128035 69.500 **Artic. Corner MXGI18 300**

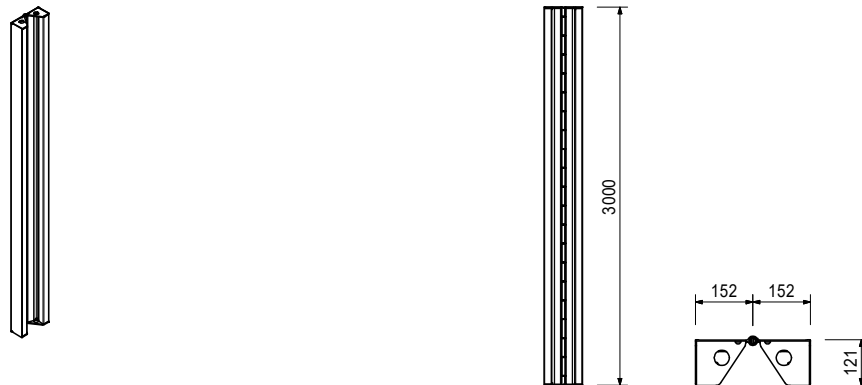
1.734 m² Made of aluminium, for oblique angles from 75° upwards, internal.



Art no. Weight [kg]

128041 46.400 **Artic. Corner MXGA 300**

0.912 m² Made of aluminium, for oblique angles from 75° upwards, external.



Art no. Weight [kg]

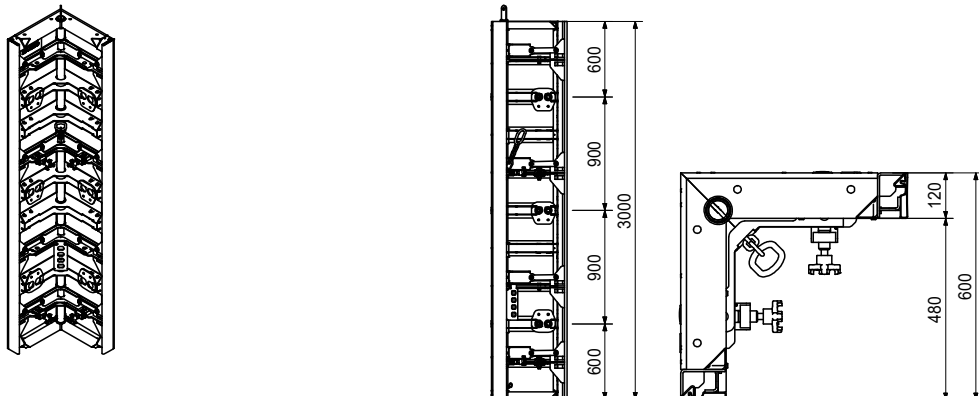
Shaft Corners MXSE18 300

Art no.	Weight [kg]	W [mm]	L [mm]
127957	324.000	120	600
139093	318.000	120	600
134095	324.000	120	600

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.



Included in delivery

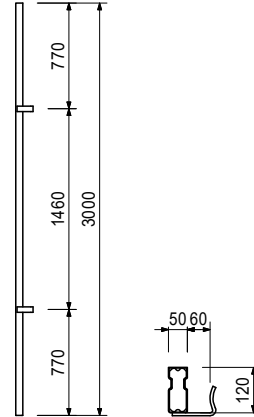
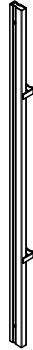
126263 Position Latch MXSE 4 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



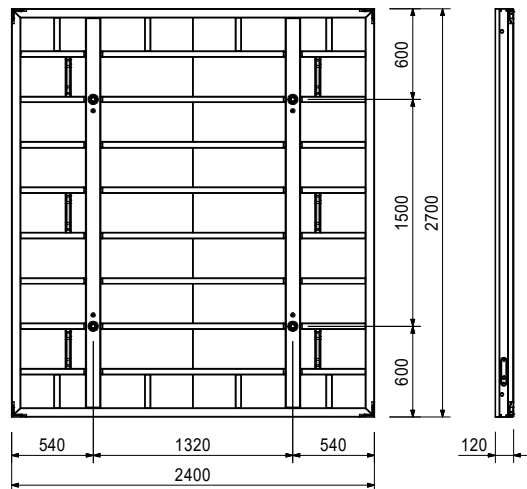
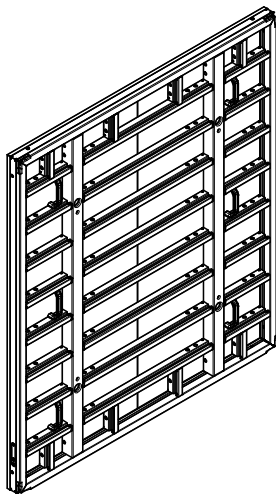
Art no.	Weight [kg]		W [mm]
Wall Thick.Comp. MX 300			
127921	16.300	Wall Thick.Comp. MX 300x4	40
127926	17.300	Wall Thick.Comp. MX 300x5	50
127931	18.500	Wall Thick.Comp. MX 300x6	60
127935	10.900	Wall Thick.Comp. MX 300x10 Alu	100

For adjusting to wall thicknesses.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 270x240				
140768	363.000	Panel MX-2 18 Robu 270x240	120	2400
141107	358.000	Panel MX-2 18 FPLY 270x240	120	2400

6.480 m² Panel with 18 mm plywood.

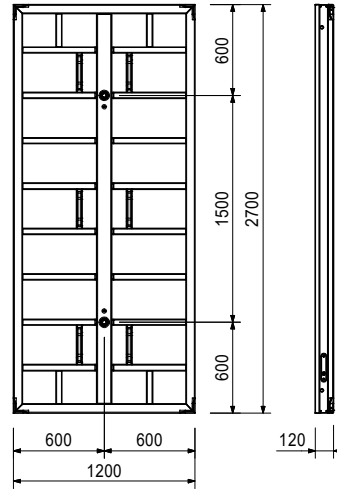
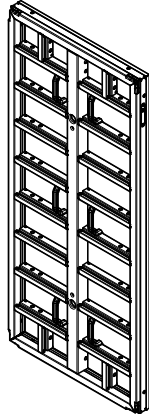


MAXIMO MX-2 18 and MX18 Panel Formwork



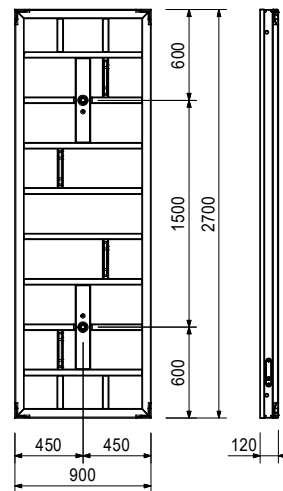
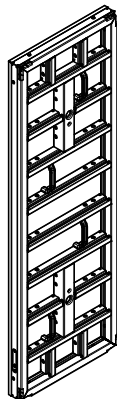
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 270x120				
140769	200.000	Panel MX-2 18 Robu 270x120	120	1200
141109	198.000	Panel MX-2 18 FPIy 270x120	120	1200

3.240 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 270x90				
140770	151.000	Panel MX-2 18 Robu 270x90	120	900
141111	149.000	Panel MX-2 18 FPIy 270x90	120	900

2.430 m² Panel with 18 mm plywood.

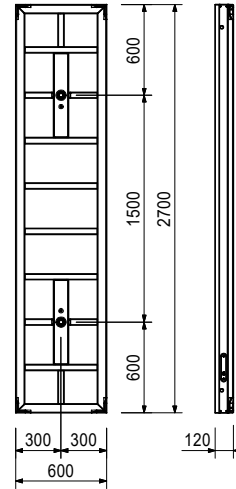
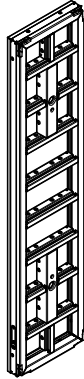


MAXIMO MX-2 18 and MX18 Panel Formwork



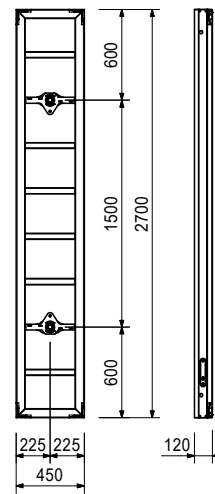
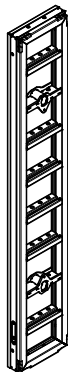
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 270x60				
140862	116.000	Panel MX-2 18 Robu 270x60	120	600
141113	115.000	Panel MX-2 18 FPIy 270x60	120	600

1.620 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 270x45				
140863	83.500	Panel MX-2 18 Robu 270x45	120	450
141115	82.600	Panel MX-2 18 FPIy 270x45	120	450

1.215 m² Panel with 18 mm plywood.

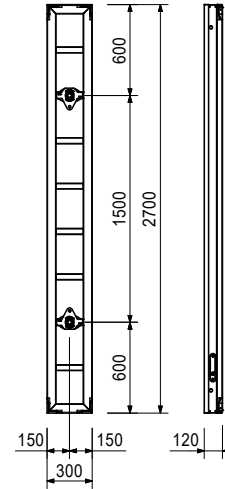


MAXIMO MX-2 18 and MX18 Panel Formwork



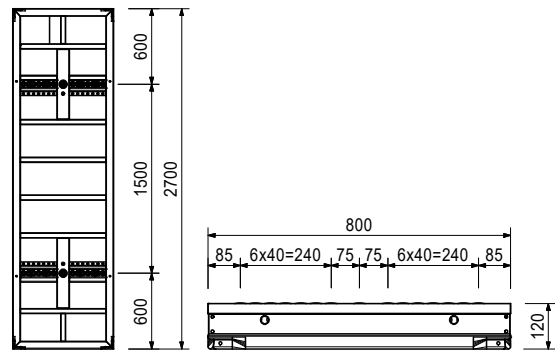
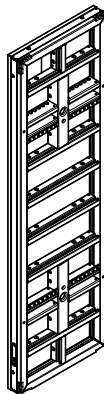
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 270x30				
140864	67.000	Panel MX-2 18 Robu 270x30	120	300
141117	66.300	Panel MX-2 18 FPIy 270x30	120	300

0.810 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 270x80				
166793	156.000	M-Panel MXM-2 18 Robu 270x80	120	800
141366	154.000	M-Panel MXM-2 18 FPIy 270x80	120	800

2.160 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



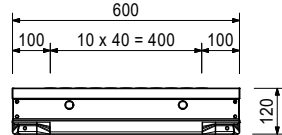
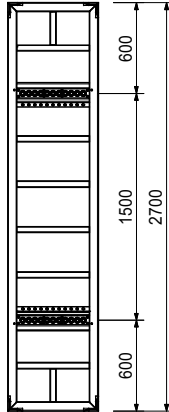
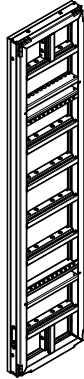
Included in delivery

125099 Plug MXM18 Ø27.6mm 30 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 270x60				
166795	137.000	M-Panel MXM-2 18 Robu 270x60	120	600
141364	116.000	M-Panel MXM-2 18 FPLY 270x60	120	600

1.620 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

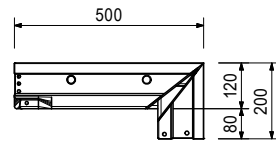
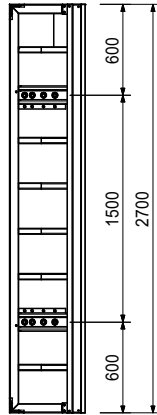
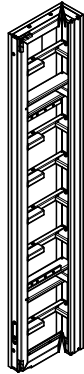


Included in delivery

125099 Plug MXM18 Ø27.6mm 22 pc

Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 270x50/20				
141384	111.000	I-Cor. MXI-2 18 Robu 270x50/20	120	500
141383	110.000	I-Cor. MXI-2 18 FPLY 270x50/20	120	500

1.890 m² Panel with 18 mm plywood. For 90° internal corners.



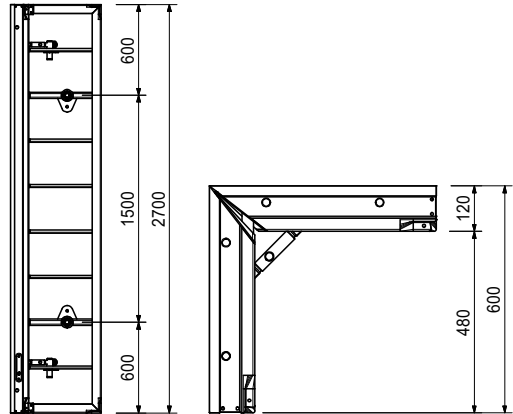
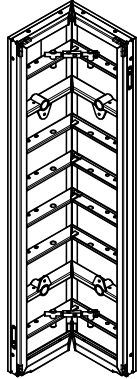
Included in delivery

125099 Plug MXM18 Ø27.6mm 8 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

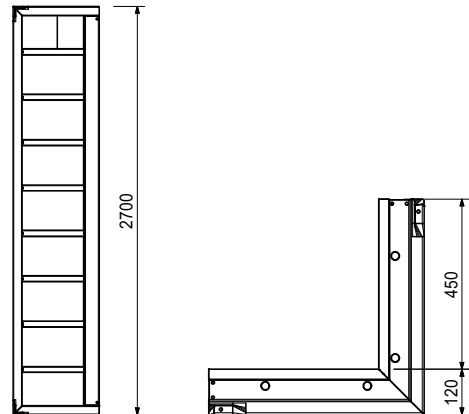
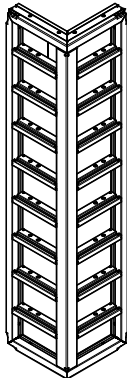
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 270x60				
141386	157.000	I-Cor. MXI-2 18 Robu 270x60	120	600
141391	154.000	I-Cor. MXI-2 18 FPIy 270x60	120	600

3.240 m² Panel with 18 mm plywood. For 90° internal corners.



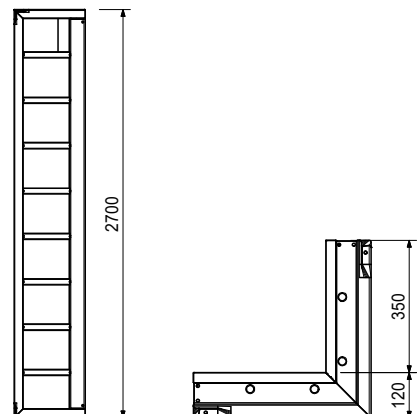
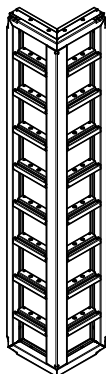
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 270x45				
139804	166.000	Outs. Cor. MXA-2 Robu 270x45	120	450
141274	163.000	Outs. Cor. MXA-2 FPIy 270x45	120	450

2.430 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 270x35				
139815	148.000	Outs. Cor. MXA-2 Robu 270x35	120	350
141275	144.000	Outs. Cor. MXA-2 FPIy 270x35	120	350

1.890 m² Panel with 18 mm plywood. For 90° external corners.

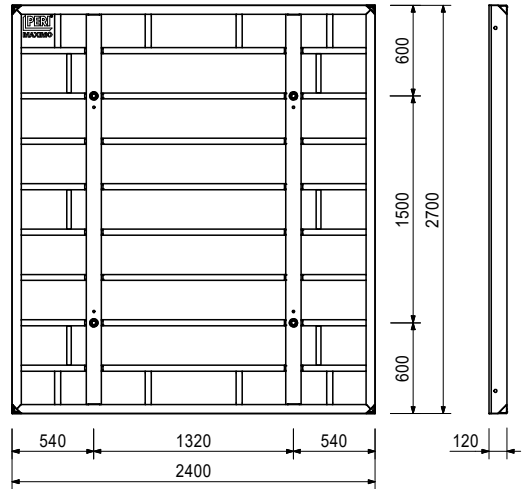
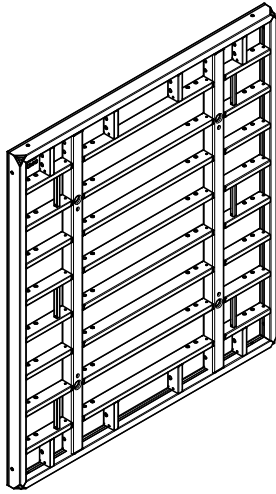


MAXIMO MX-2 18 and MX18 Panel Formwork



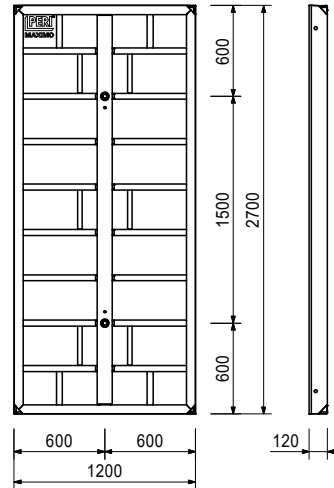
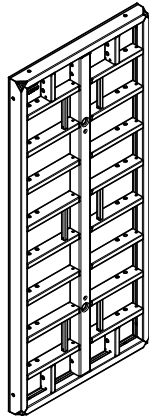
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 270x240				
124132	336.000	Panel MX18 270x240	120	2400
139391	342.000	Panel MX18 Robu 270x240	120	2400
132065	356.000	Panel MX18 AL 270x240	120	2400

6.480 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 270x120				
124134	186.000	Panel MX18 270x120	120	1200
139393	189.000	Panel MX18 Robu 270x120	120	1200
132067	197.000	Panel MX18 AL 270x120	120	1200

3.240 m² Panel with 18 mm plywood.

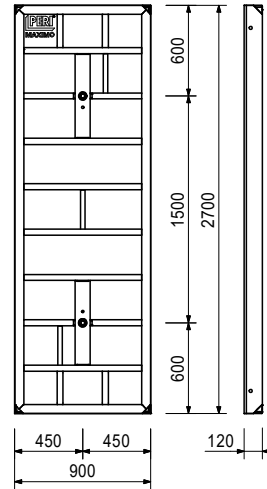
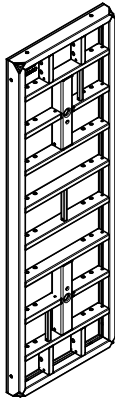


MAXIMO MX-2 18 and MX18 Panel Formwork



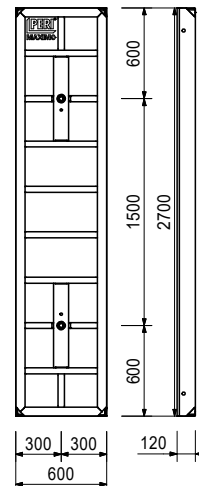
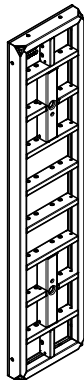
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 270x90				
124138	138.000	Panel MX18 270x90	120	900
139396	138.000	Panel MX18 Robu 270x90	120	900
132069	148.000	Panel MX18 AL 270x90	120	900

2.430 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 270x60				
124135	104.000	Panel MX18 270x60	120	600
139398	105.000	Panel MX18 Robu 270x60	120	600
132071	111.000	Panel MX18 AL 270x60	120	600

1.620 m² Panel with 18 mm plywood.

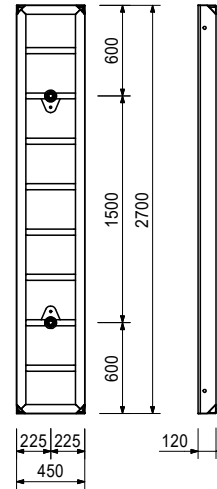
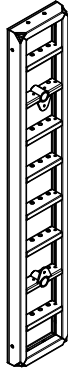


MAXIMO MX-2 18 and MX18 Panel Formwork



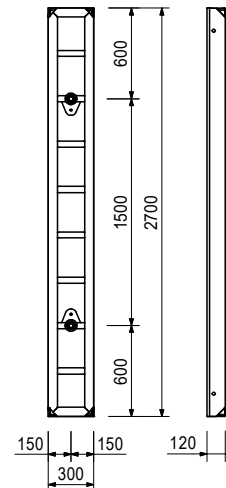
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 270x45				
124136	77.500	Panel MX18 270x45	120	450
139400	78.400	Panel MX18 Robu 270x45	120	450
132080	81.900	Panel MX18 AL 270x45	120	450

1.215 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 270x30				
124137	61.800	Panel MX18 270x30	120	300
139402	62.500	Panel MX18 Robu 270x30	120	300
132074	66.200	Panel MX18 AL 270x30	120	300

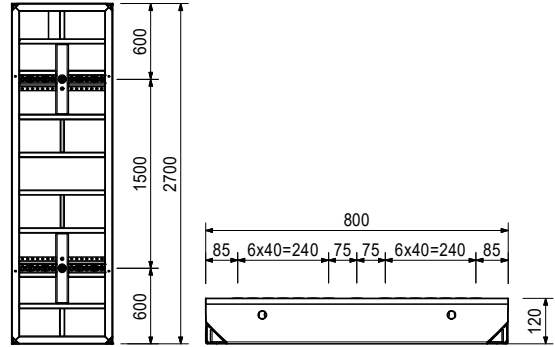
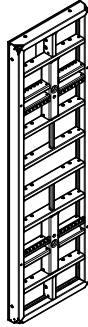
0.810 m² Panel with 18 mm plywood.



MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
Multi Panels MXM18 270x80				
136658	153.000	Multi Panel MXM18 270X80	120	800
139647	155.000	Multi Panel MXM18 Robu 270x80	120	800

2.160 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

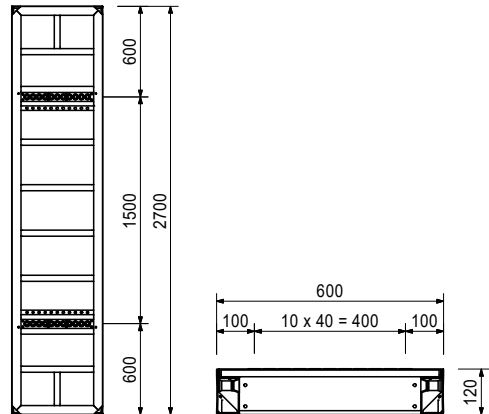
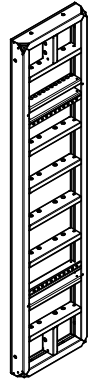


Included in delivery

125099 Plug MXM18 Ø27.6mm 30 pc

Art no.	Weight [kg]		W [mm]	L [mm]
Multi Panels MXM18 270x60				
124188	109.000	Multi Panel MXM18 270x60	120	600
139644	131.000	Multi Panel MXM18 Robu 270x60	120	600

1.620 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.



Included in delivery

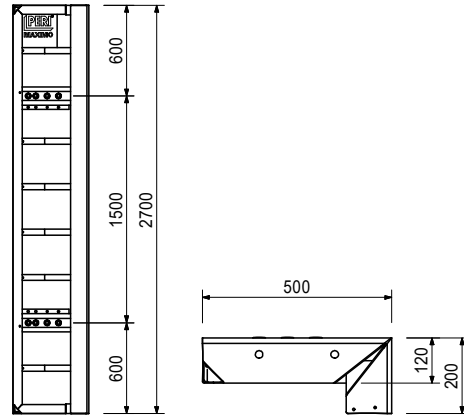
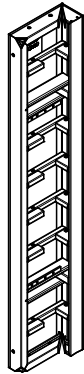
125099 Plug MXM18 Ø27.6mm 22 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI18 270x50/20		
124191	103.000	I-Cor. MXI18 270x50/20	120	500
139675	104.000	I-Cor. MXI18 Robu 270x50/20	120	500
132077	108.000	I-Cor. MXI18 AL 270x50/20	120	500

1.890 m² Panel with 18 mm plywood. For 90° internal corners.

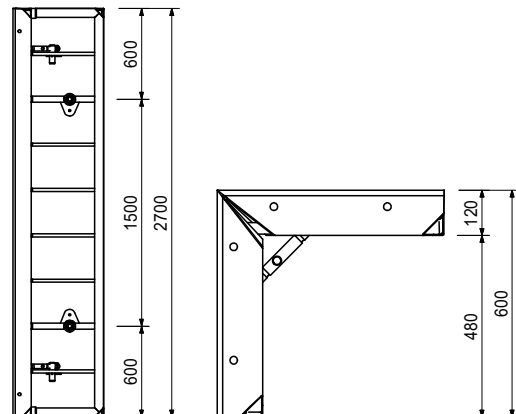
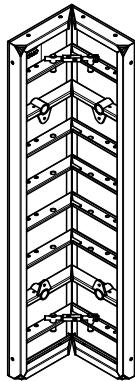


Included in delivery

125099 Plug MXM18 Ø27.6mm 8 pc

Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI18 270x60		
124196	150.000	I-Cor. MXI18 270x60	120	600
132079	156.000	I-Cor. MXI18 AL 270x60	120	600

3.240 m² Panel with 18 mm plywood. For 90° internal corners.

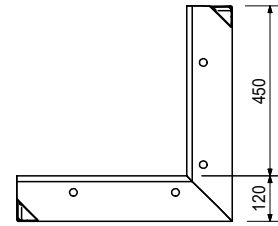
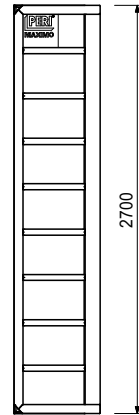
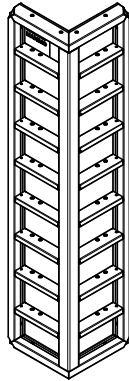


MAXIMO MX-2 18 and MX18 Panel Formwork



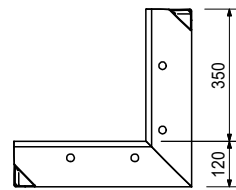
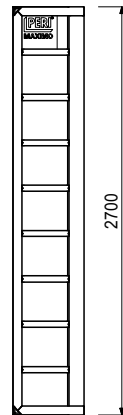
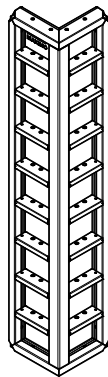
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 270x45				
112806	157.000	Outs. Corner MXA 270x45	120	450
115687	156.000	Outs. Corner MXA Robu 270x45	120	450
116508	161.000	Outs. Cor. MXA AL 270x45	120	450

2.430 m² Panel with 18 mm formlining. For 90° outside corners.



Art no.	Weight [kg]	
112667	139.000	Outs. Corner MXA 270x35

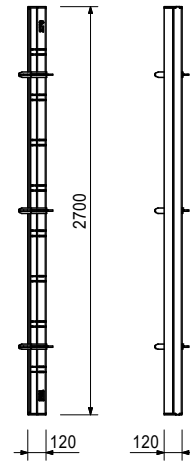
1.890 m² Panel with 18 mm plywood. For 90° external corners.



MAXIMO MX-2 18 and MX18 Panel Formwork

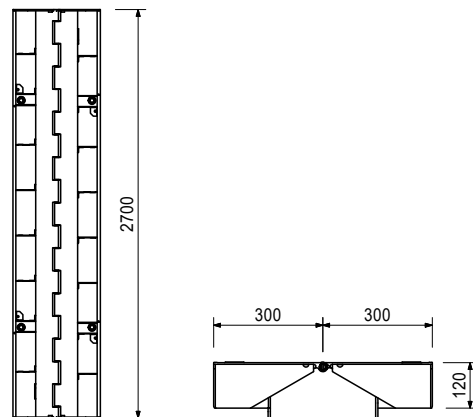
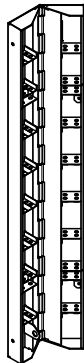


Art no.	Weight [kg]	
137171	43.000	Ext. Corner Profile-2 MX 270



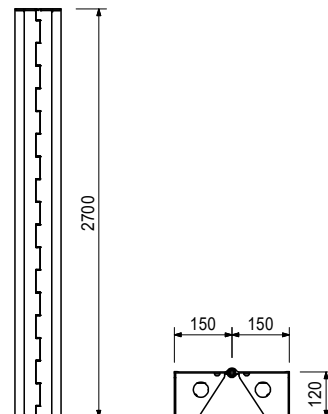
Art no.	Weight [kg]	
124200	69.600	Artic. Corner MXGI18 270

1.620 m² Made of aluminium. For oblique angles from 75° upwards, internal.



Art no.	Weight [kg]	
111872	41.800	Artic. Corner MXGA 270

0.810 m² Made of aluminium, for oblique angles from 75° upwards, external.



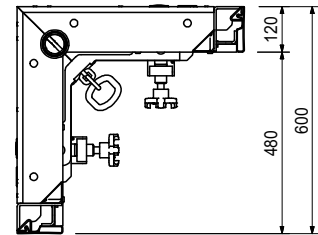
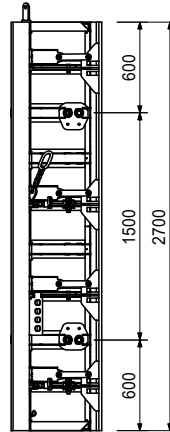
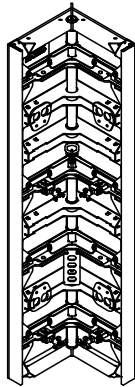
MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
Shaft Corners MXSE18 270				
125286	296.000	Shaft Corner MXSE18 270	120	600
139044	299.000	Shaft Corner MXSE18 Robu 270	120	600
134078	297.000	Shaft Corner MXSE18 AL 270	120	600

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.

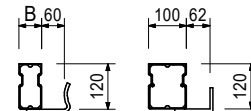
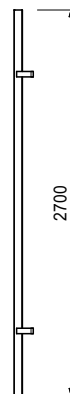


Included in delivery

126263 Position Latch MXSE 4 pc

Art no.	Weight [kg]		W [mm]
Wall Thick.Comp. MX 270			
114165	14.700	Wall Thick.Comp. MX 270x4	40
114186	15.700	Wall Thick.Comp. MX 270x5	50
114174	16.800	Wall Thick.Comp. MX 270x6	60
114128	9.920	Wall Thick.Comp. MX 270x10 Alu	100

For adjusting to wall thicknesses.

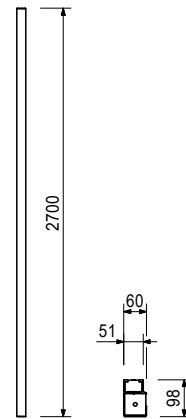


MAXIMO MX-2 18 and MX18 Panel Formwork



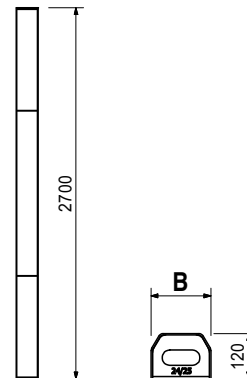
Art no.	Weight [kg]	
101813	8.040	Filler Profile TPP 270 Alu

For compensation with 21 mm filler plates.



Art no.	Weight [kg]		W [mm]
Stop. Panels TRIO MT 270			
023061	26.500	Stop. Panel TRIO MT 270x20	118
023062	30.400	Stop. Panel TRIO MT 270x24/25	158
023064	36.300	Stop. Panel TRIO MT 270x30	218
023065	41.300	Stop. Panel TRIO MT 270x35/36	268

Centre piece without waterstop bar installation for stopend formwork.

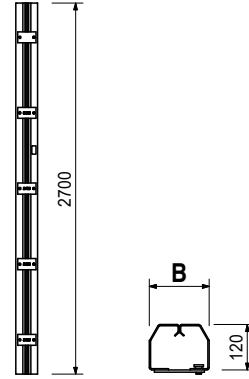


MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]		W [mm]
Stop. Panels TRIO MTF 270			
023074	29.200	Stop. Panel TRIO MTF 270x20	118
023077	38.600	Stop. Panel TRIO MTF 270x30	218
023075	33.400	Stop. Panel TRIO MTF 270x24/25	158
023076	42.500	Stop. Panel TRIO MTF 270x35/36	268

Centre piece with waterstop bar installation for stopend formwork.

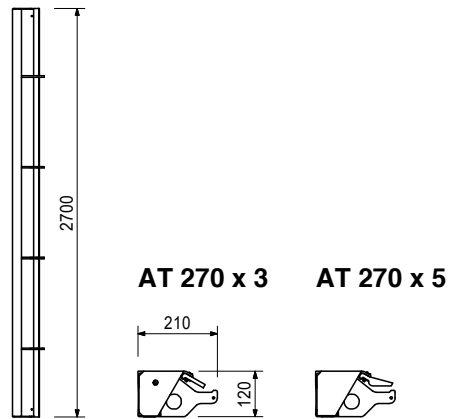


Art no.	Weight [kg]	
Stop. Panels TRIO AT 270		
023060	17.200	Stop. Panel TRIO AT 270x3
105953	19.000	Stop. Panel TRIO AT 270x5

External piece for stopend formwork.

Notes

Concrete cover approx. 30 or 50 mm.

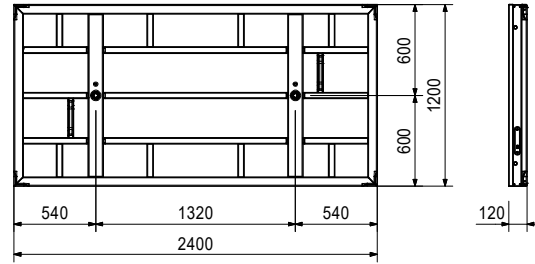
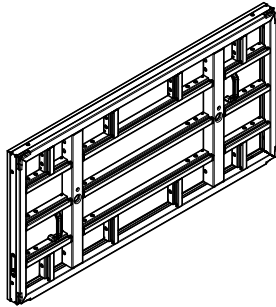


MAXIMO MX-2 18 and MX18 Panel Formwork



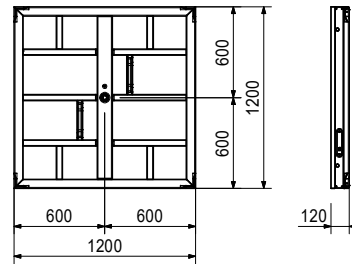
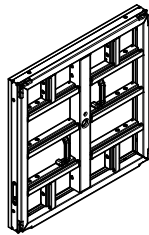
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 120x240				
141157	179.000	Panel MX-2 18 Robu 120x240	120	2400
141209	176.000	Panel MX-2 18 FPLY 120x240	120	2400

2.880 m² Panel with 18 mm plywood.



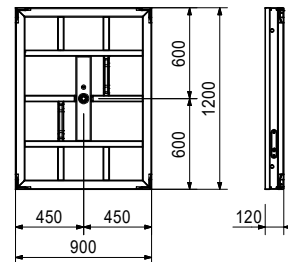
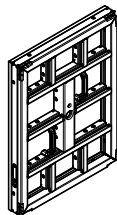
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 120x120				
141158	97.500	Panel MX-2 18 Robu 120x120	120	1200
141211	96.300	Panel MX-2 18 FPLY 120x120	120	1200

1.440 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 120x90				
141159	76.100	Panel MX-2 18 Robu 120x90	120	900
141213	75.200	Panel MX-2 18 FPLY 120x90	120	900

1.080 m² Panel with 18 mm plywood.

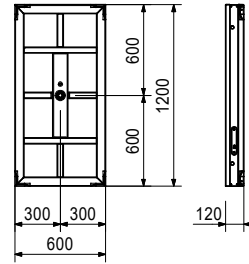
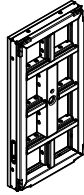


MAXIMO MX-2 18 and MX18 Panel Formwork



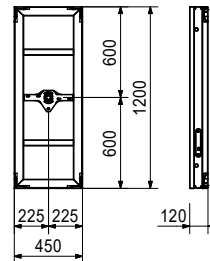
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 120x60				
141257	57.300	Panel MX-2 18 Robu 120x60	120	600
141215	56.700	Panel MX-2 18 FPIy 120x60	120	600

0.720 m² Panel with 18 mm plywood.



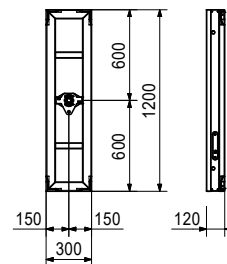
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 120x45				
141258	39.700	Panel MX-2 18 Robu 120x45	120	450
141217	39.200	Panel MX-2 18 FPIy 120x45	120	450

0.540 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 120x30				
141259	31.700	Panel MX-2 18 Robu 120x30	120	300
141219	31.400	Panel MX-2 18 FPIy 120x30	120	300

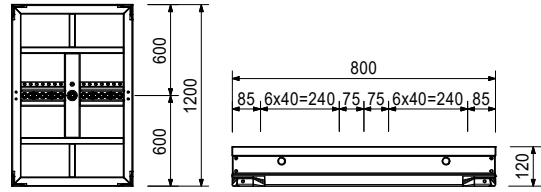
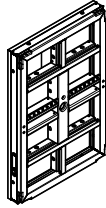
0.360 m² Panel with 18 mm plywood.



MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 120x80				
166800	77.500	M-Panel MXM-2 18 Robu 120x80	120	800
141380	76.700	M-Panel MXM-2 18 FPLY 120x80	120	800

0.960 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

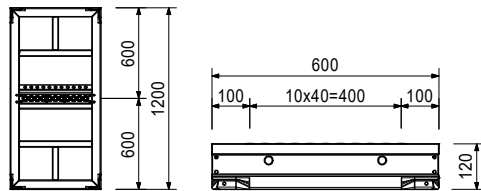
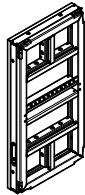


Included in delivery

125099 Plug MXM18 Ø27.6mm 15 pc

Art no.	Weight [kg]		W [mm]	L [mm]
M-Panels MXM-2 18 120x60				
166799	79.200	M-Panel MXM-2 18 Robu 120x60	120	600
141378	57.100	M-Panel MXM-2 18 FPLY 120x60	120	600

0.720 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

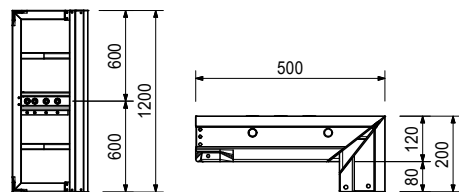
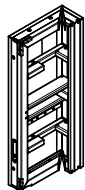


Included in delivery

125099 Plug MXM18 Ø27.6mm 11 pc

Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 120x50/20				
141443	54.500	I-Cor. MXI-2 18 Robu 120x50/20	120	500
141446	53.900	I-Cor. MXI-2 18 FPLY 120x50/20	120	500

0.840 m² Panel with 18 mm plywood. For 90° internal corners.



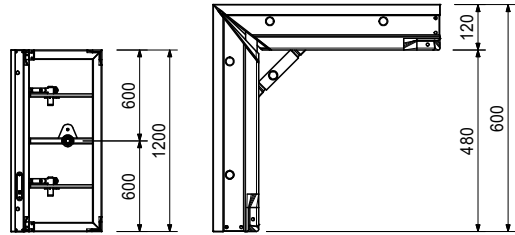
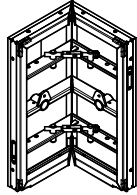
Included in delivery

125099 Plug MXM18 Ø27.6mm 4 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

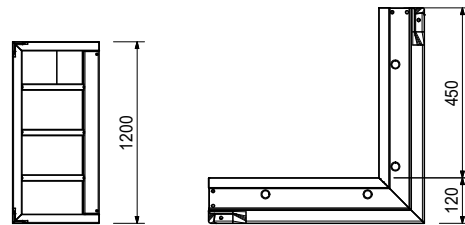
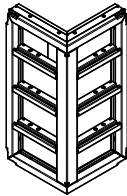
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 120x60				
141401	83.400	I-Cor. MXI-2 18 Robu 120x60	120	600
141403	82.200	I-Cor. MXI-2 18 FPLY 120x60	120	600

1.440 m² Panel with 18 mm plywood. For 90° internal corners.



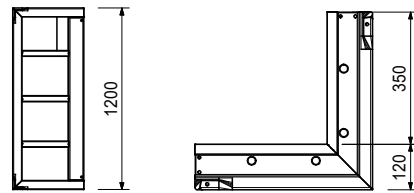
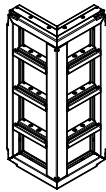
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 120x45				
139842	80.500	Outs. Cor. MXA-2 Robu 120x45	450	450
141282	78.000	Outs. Cor. MXA-2 FPLY 120x45	570	570

1.080 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 120x35				
139879	70.900	Outs. Cor. MXA-2 Robu 120x35	120	350
141283	68.600	Outs. Cor. MXA-2 FPLY 120x35	120	350

0.840 m² Panel with 18 mm plywood. For 90° external corners.

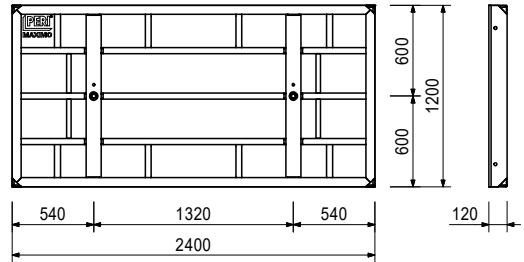
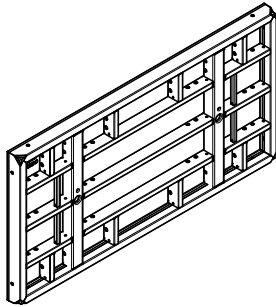


MAXIMO MX-2 18 and MX18 Panel Formwork



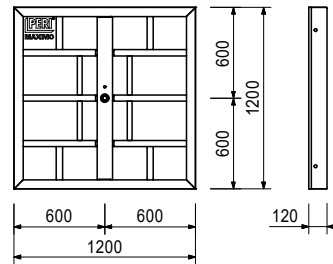
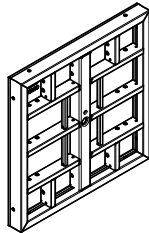
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 120x240				
124139	165.000	Panel MX18 120x240	120	2400
139404	168.000	Panel MX18 Robu 120x240	120	2400
133293	176.000	Panel MX18 AL 120x240	120	2400

2.880 m² Panel with 18 mm plywood.



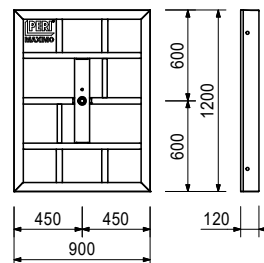
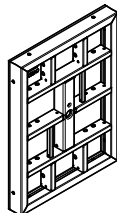
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 120x120				
124142	90.800	Panel MX18 120x120	120	1200
139616	92.000	Panel MX18 Robu 120x120	120	1200
133295	95.900	Panel MX18 AL 120x120	120	1200

1.440 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 120x90				
124143	67.700	Panel MX18 120x90	120	900
139618	68.600	Panel MX18 Robu 120x90	120	900
133297	73.700	Panel MX18 AL 120x90	120	900

1.080 m² Panel with 18 mm plywood.

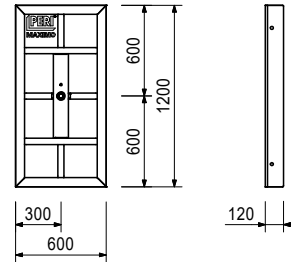
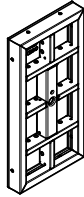


MAXIMO MX-2 18 and MX18 Panel Formwork



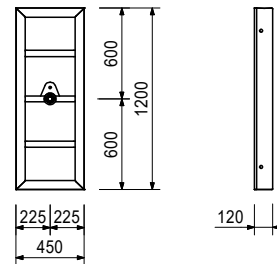
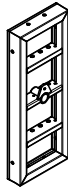
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 120x60				
124144	51.200	Panel MX18 120x60	120	600
139379	51.800	Panel MX18 Robu 120x60	120	600
133299	54.600	Panel MX18 AL 120x60	120	600

0.720 m² Panel with 18 mm plywood.



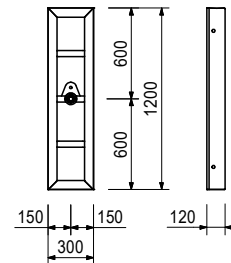
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 120x45				
124145	37.100	Panel MX18 120x45	120	450
139381	37.600	Panel MX18 Robu 120x45	120	450
133301	38.700	Panel MX18 AL 120x45	120	450

0.540 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 120x30				
124146	28.900	Panel MX18 120x30	120	300
139383	29.200	Panel MX18 Robu 120x30	120	300
133303	30.700	Panel MX18 AL 120x30	120	300

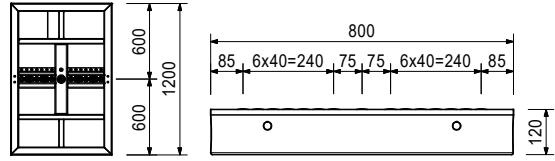
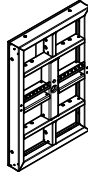
0.360 m² Panel with 18 mm plywood.



MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
Multi Panels MXM18 120x80				
136660	75.700	Multi Panel MXM18 120X80	120	800
139671	76.500	Multi Panel MXM18 Robu 120x80	120	800

0.960 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

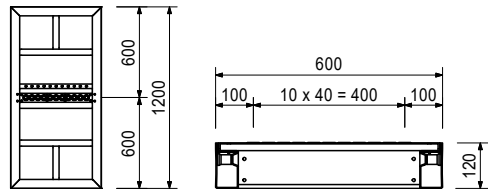
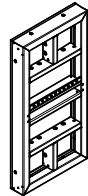


Included in delivery

125099 Plug MXM18 Ø27.6mm 15 pc

Art no.	Weight [kg]		W [mm]	L [mm]
Multi Panels MXM18 120x60				
124189	54.200	Multi Panel MXM18 120x60	120	600
139645	76.300	Multi Panel MXM18 Robu 120x60	120	600
133304	55.600	Multi Panel MXM18 AL 120x60	120	600

0.720 m² Panel with 18 mm plywood. For oblique angles, wall connections etc.

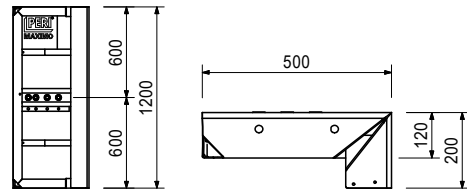
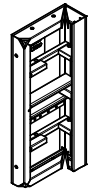


Included in delivery

125099 Plug MXM18 Ø27.6mm 11 pc

Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI18 120x50/20				
125277	48.800	I-Cor. MXI18 120x50/20	120	500
139677	49.600	I-Cor. MXI18 Robu 120x50/20	120	500
133306	51.600	I-Cor. MXI18 AL 120x50/20	120	500

0.840 m² Panel with 18 mm plywood. For 90° internal corners.



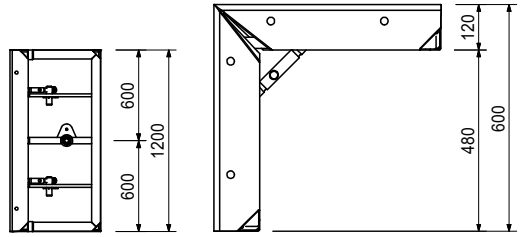
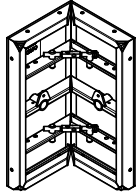
Included in delivery

125099 Plug MXM18 Ø27.6mm 4 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

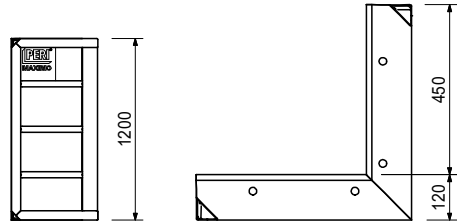
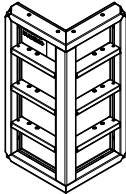
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI18 120x60				
124197	79.500	I-Cor. MXI18 120x60	120	600
133308	81.200	I-Cor. MXI18 AL 120x60	120	600

1.440 m² Panel with 18 mm plywood. For 90° internal corners.



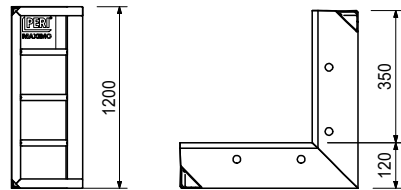
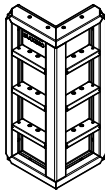
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 120x45				
112830	74.500	Outs. Corner MXA 120x45	120	450
115698	73.700	Outs. Corner MXA Robu 120x45	120	450
116511	75.700	Outs. Corner MXA AL 120x45	120	450

1.080 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 120x35				
112761	65.600	Outs. Corner MXA 120x35	120	350
115699	64.800	Outs. Corner MXA Robu 120x35	120	350
116502	66.300	Outs. Corner MXA AL 120x35	120	350

0.840 m² Panel with 18 mm plywood. For 90° external corners.

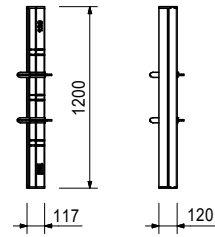


MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

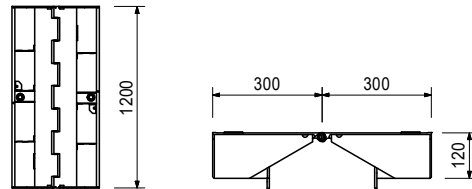
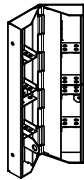
137166 20.200 **Ext. Corner Profile-2 MX 120**



Art no. Weight [kg]

124201 31.400 **Artic. Corner MXGI18 120**

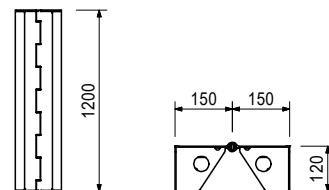
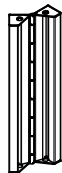
0.720 m² Made of aluminium, for oblique angles from 75° upwards, internal.



Art no. Weight [kg]

111850 19.000 **Artic. Corner MXGA 120**

0.360 m² Made of aluminium, for oblique angles from 75° upwards, external.



MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

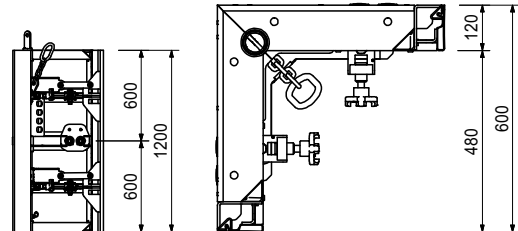
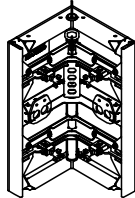
Shaft Corners MXSE18 120

125288	146.000	Shaft Corner MXSE18 120
139046	147.000	Shaft Corner MXSE18 Robu 120
134080	146.000	Shaft Corner MXSE18 AL 120

For 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.



Included in delivery

126263 Position Latch MXSE 4 pc

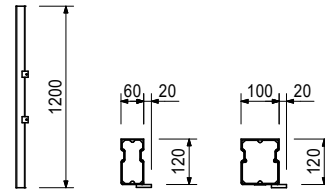
Art no. Weight [kg]

W [mm]

Wall Thick.Comp. MX 120

114212	6.410	Wall Thick.Comp. MX 120x4	40
114191	6.970	Wall Thick.Comp. MX 120x5	50
114181	7.470	Wall Thick.Comp. MX 120x6	60
114142	4.450	Wall Thick.Comp. MX 120x10 Alu	100

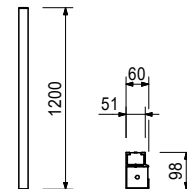
For adjusting to wall thicknesses.



Art no. Weight [kg]

Filler Profile TPP 120 Alu

For compensation with 21 mm filler plates.



MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

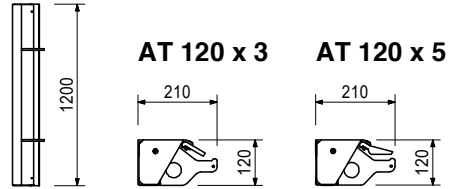
Stop. Panels TRIO AT 120

023067	7.790	Stop. Panel TRIO AT 120x3
105978	8.590	Stop. Panel TRIO AT 120x5

External piece for stopend formwork.

Notes

Concrete cover approx. 30 mm.



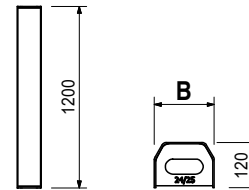
Art no. Weight [kg]

W [mm]

Stop. Panels TRIO MT 120

023068	11.800	Stop. Panel TRIO MT 120x20	118
023069	13.500	Stop. Panel TRIO MT 120x24/25	158
023071	16.300	Stop. Panel TRIO MT 120x30	218
023072	18.500	Stop. Panel TRIO MT 120x35/36	268

Centre piece without waterstop bar installation for stopend formwork.



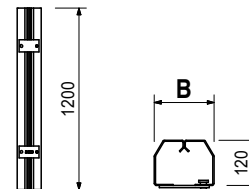
Art no. Weight [kg]

W [mm]

Stop. Panels TRIO MTF 120

023081	12.800	Stop. Panel TRIO MTF 120x20	118
023080	14.700	Stop. Panel TRIO MTF 120x24/25	158
023078	16.800	Stop. Panel TRIO MTF 120x30	218
023079	18.600	Stop. Panel TRIO MTF 120x35/36	268

Centre piece with waterstop bar installation for stopend formwork.

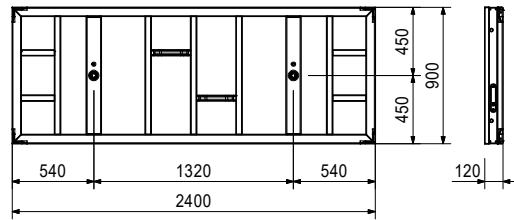
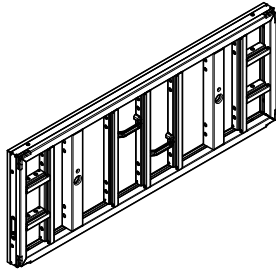


MAXIMO MX-2 18 and MX18 Panel Formwork



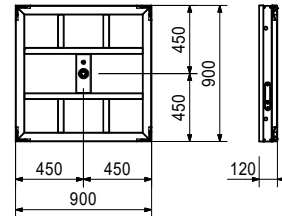
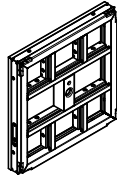
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 90x240				
141260	134.000	Panel MX-2 18 Robu 90x240	120	2400
141221	132.000	Panel MX-2 18 FPIy 90x240	120	2400

2.160 m² Panel with 18 mm plywood.



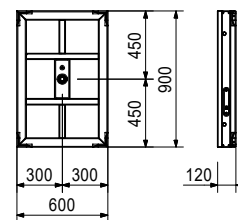
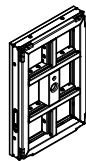
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 90x90				
141261	58.000	Panel MX-2 18 Robu 90x90	120	900
141223	57.300	Panel MX-2 18 FPIy 90x90	120	900

0.810 m² Panel with 18 mm plywood.



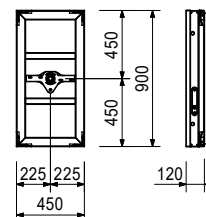
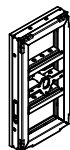
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 90x60				
141262	44.500	Panel MX-2 18 Robu 90x60	120	600
141225	43.000	Panel MX-2 18 FPIy 90x60	120	600

0.540 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 90x45				
141263	33.600	Panel MX-2 18 Robu 90x45	120	450
141227	33.300	Panel MX-2 18 FPIy 90x45	120	450

0.405 m² Panel with 18 mm plywood.

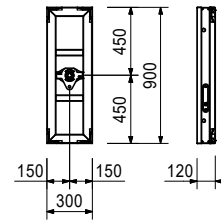


MAXIMO MX-2 18 and MX18 Panel Formwork



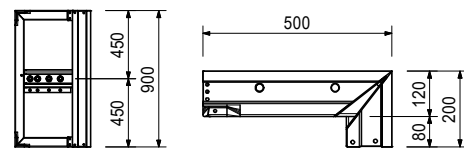
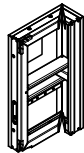
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 90x30				
141264	26.200	Panel MX-2 18 Robu 90x30	120	300
141229	25.900	Panel MX-2 18 FPLY 90x30	120	300

0.270 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 90x50/20				
141447	41.600	I-Cor. MXI-2 18 Robu 90x50/20	120	500
141450	41.100	I-Cor. MXI-2 18 FPLY 90x50/20	120	500

0.630 m² Panel with 18 mm plywood. For 90° internal corners.

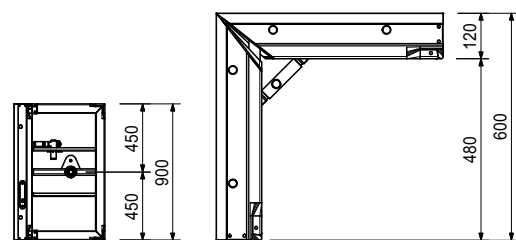
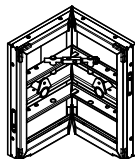


Included in delivery

125099 Plug MXM18 Ø27.6mm 4 pc

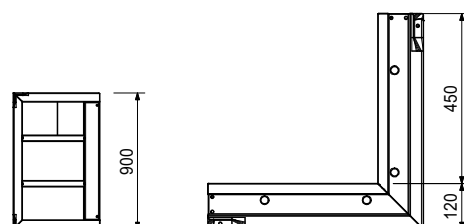
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 90x60				
141411	70.000	I-Cor. MXI-2 18 Robu 90x60	120	600
141413	69.000	I-Cor. MXI-2 18 FPLY 90x60	120	600

1.080 m² Panel with 18 mm plywood. For 90° internal corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 90x45				
139848	63.100	Outs. Cor. MXA-2 Robu 90x45	120	450
141284	61.000	Outs. Cor. MXA-2 FPLY 90x45	120	450

0.808 m² Panel with 18 mm plywood. For 90° external corners.

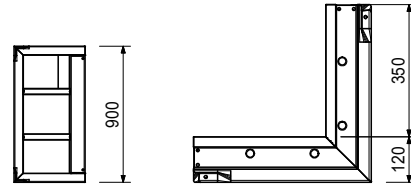
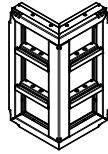


MAXIMO MX-2 18 and MX18 Panel Formwork



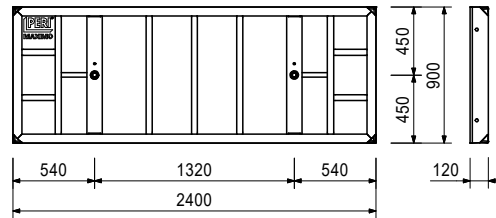
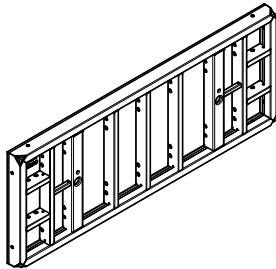
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 90x35				
139884	54.500	Outs. Cor. MXA-2 Robu 90x35	120	350
141285	53.500	Outs. Cor. MXA-2 FPIy 90x35	120	350

0.630 m² Panel with 18 mm plywood. For 90° external corners.



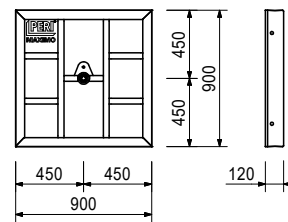
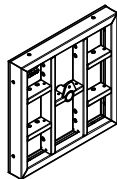
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 90x240				
124147	120.000	Panel MX18 90x240	120	2400
139620	120.000	Panel MX18 Robu 90x240	120	2400
133319	129.000	Panel MX18 AL 90x240	120	2400

2.160 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 90x90				
124148	48.900	Panel MX18 90x90	120	900
139622	49.500	Panel MX18 Robu 90x90	120	900
133321	57.700	Panel MX18 AL 90x90	120	900

0.810 m² Panel with 18 mm plywood.

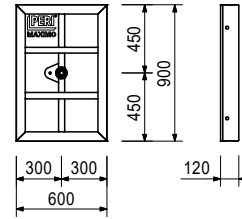
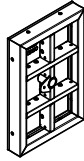


MAXIMO MX-2 18 and MX18 Panel Formwork



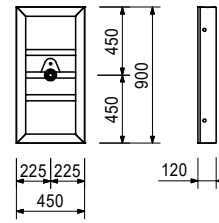
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 90x60				
124149	36.600	Panel MX18 90x60	120	600
139623	37.000	Panel MX18 Robu 90x60	120	600
133323	39.500	Panel MX18 AL 90x60	120	600

0.540 m² Panel with 18 mm plywood.



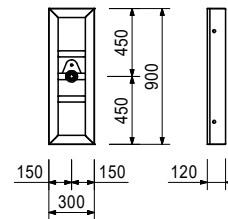
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 90x45				
124150	31.100	Panel MX18 90x45	120	450
139626	31.400	Panel MX18 Robu 90x45	120	450
133325	32.200	Panel MX18 ga 90x45	120	450

0.405 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 90x30				
124151	23.400	Panel MX18 90x30	120	300
139628	23.700	Panel MX18 Robu 90x30	120	300
133327	25.000	Panel MX18 AL 90x30	120	300

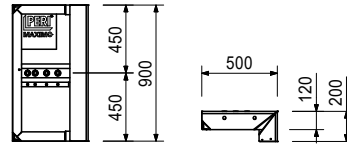
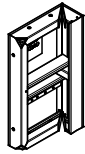
0.270 m² Panel with 18 mm plywood.



MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI18 90x50/20				
124192	36.400	I-Cor. MXI18 90x50/20	120	500
139679	37.000	I-Cor. MXI18 Robu 90x50/20	120	500
133329	38.600	I-Cor. MXI18 AL 90x50/20	120	500

0.630 m² Panel with 18 mm plywood. For 90° internal corners.

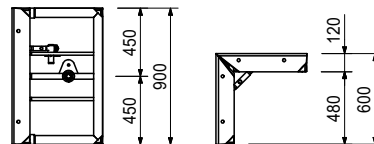
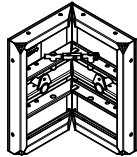


Included in delivery

125099 Plug MXM18 Ø27.6mm 4 pc

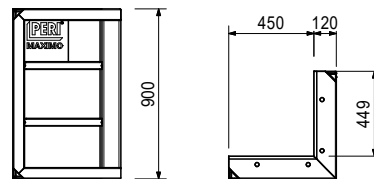
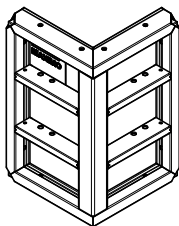
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI18 90x60				
124198	64.600	I-Cor. MXI18 90x60	120	600
133331	67.400	I-Cor. MXI18 AL 90x60	120	600

1.080 m² Panel with 18 mm plywood. For 90° internal corners.



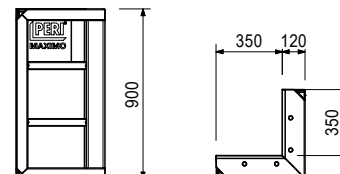
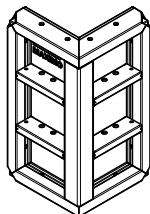
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 90x45				
126923	58.000	Outs. Corner MXA 90x45	120	450
138575	57.700	Outs. Corner MXA Robu 90x45	120	450
125796	58.500	Outs. Corner MXA AL 90x45	120	450

0.808 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Corners MXA 90x35				
126917	50.800	Outs. Corner MXA 90x35	120	350
138578	50.400	Outs. Corner MXA Robu 90x35	120	350
125696	51.000	Outs. Corner MXA AL 90x35	120	350

0.630 m² Panel with 18 mm plywood. For 90° external corners.

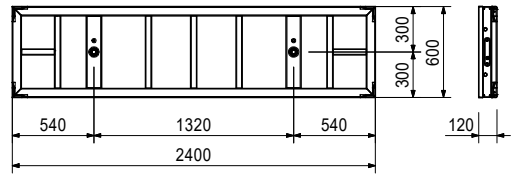
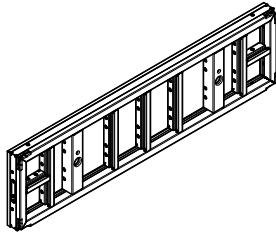


MAXIMO MX-2 18 and MX18 Panel Formwork



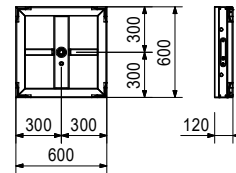
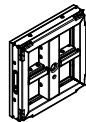
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 60x240				
141265	98.900	Panel MX-2 18 Robu 60x240	120	2400
141231	97.000	Panel MX-2 18 FPLY 60x240	120	2400

1.440 m² Panel with 18 mm plywood.



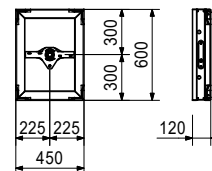
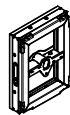
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 60x60				
141266	33.100	Panel MX-2 18 Robu 60x60	120	600
141233	32.800	Panel MX-2 18 FPLY 60x60	120	600

0.360 m² Panel with 18 mm plywood.



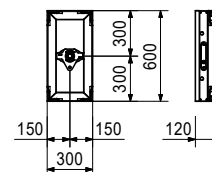
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 60x45				
141268	22.600	Panel MX-2 18 Robu 60x45	120	450
141235	22.400	Panel MX-2 18 FPLY 60x45	120	450

0.270 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 60x30				
141267	18.100	Panel MX-2 18 Robu 60x30	120	300
141237	17.900	Panel MX-2 18 FPLY 60x30	120	300

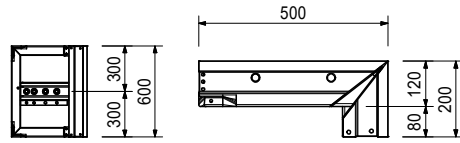
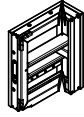
0.180 m² Panel with 18 mm plywood.



MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 60x50/20				
141451	34.200	I-Cor. MXI-2 18 Robu 60x50/20	120	500
141454	33.900	I-Cor. MXI-2 18 FPLY 60x50/20	120	500

0.420 m² Panel with 18 mm plywood. For 90° internal corners.

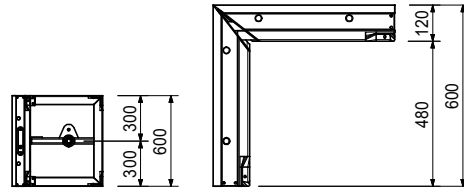
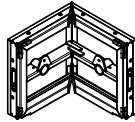


Included in delivery

125099 Plug MXM18 Ø27.6mm 4 pc

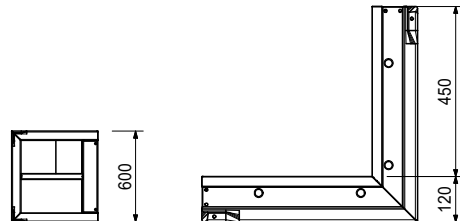
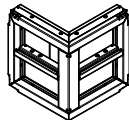
Art no.	Weight [kg]		W [mm]	L [mm]
I-Cor. MXI-2 18 60x60				
141416	49.200	I-Cor. MXI-2 18 Robu 60x60	120	600
141455	48.500	I-Cor. MXI-2 18 FPLY 60x60	120	600

0.720 m² Panel with 18 mm plywood. For 90° internal corners.



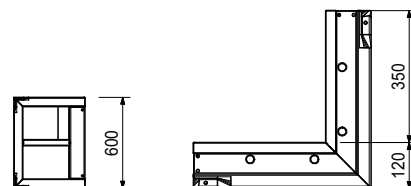
Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 60x45				
139869	45.800	Outs. Cor. MXA-2 Robu 60x45	120	450
141286	43.700	Outs. Cor. MXA-2 FPLY 60x45	120	450

0.540 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
Outs. Cor. MXA-2 60x35				
139874	40.200	Outs. Cor. MXA-2 Robu 60x35	120	350
141287	38.300	Outs. Cor. MXA-2 FPLY 60x35	120	350

0.420 m² Panel with 18 mm plywood. For 90° external corners.

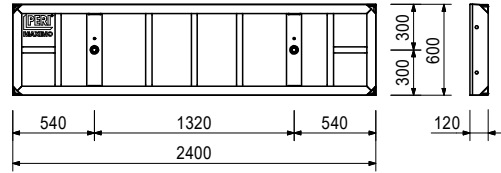
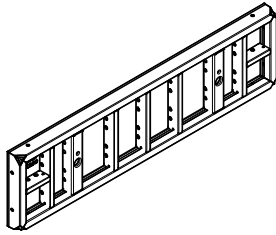


MAXIMO MX-2 18 and MX18 Panel Formwork



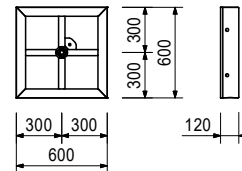
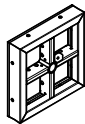
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 60x240				
124157	89.100	Panel MX18 60x240	120	2400
139631	90.200	Panel MX18 Robu 60x240	120	2400
133390	95.700	Panel MX18 AL 60x240	120	2400

1.440 m² Panel with 18 mm plywood.



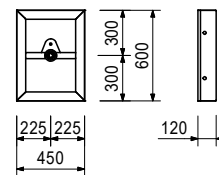
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 60x60				
124158	28.400	Panel MX18 60x60	120	600
139633	28.700	Panel MX18 Robu 60x60	120	600
133392	30.100	Panel MX18 AL 60x60	120	600

0.360 m² Panel with 18 mm plywood.



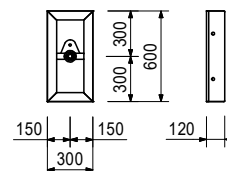
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 60x45				
124160	21.900	Panel MX18 60x45	120	450
139636	22.100	Panel MX18 Robu 60x45	120	450
133394	22.300	Panel MX18 AL 60x45	120	450

0.270 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 60x30				
124159	16.200	Panel MX18 60x30	120	300
139638	16.400	Panel MX18 Robu 60x30	120	300
133384	17.300	Panel MX18 AL 60x30	120	300

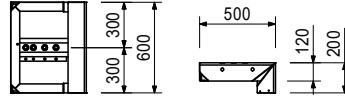
0.180 m² Panel with 18 mm plywood.



MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI18 60x50/20		
124193	29.600	I-Cor. MXI18 60x50/20	120	500
139681	30.000	I-Cor. MXI18 Robu 60x50/20	120	500
133386	31.500	I-Cor. MXI18 AL 60x50/20	120	500

0.420 m² Panel with 18 mm plywood. For 90° internal corners.

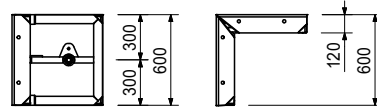
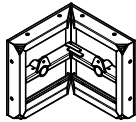


Included in delivery

125099 Plug MXM18 Ø27.6mm 4 pc

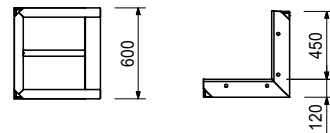
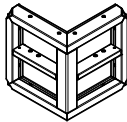
Art no.	Weight [kg]		W [mm]	L [mm]
		I-Cor. MXI18 60x60		
124199	44.000	I-Cor. MXI18 60x60	120	600
133388	46.300	I-Cor. MXI18 AL 60x60	20	600

0.720 m² Panel with 18 mm plywood. For 90° internal corners.



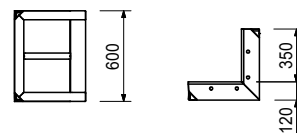
Art no.	Weight [kg]		W [mm]	L [mm]
		Outs. Corner MXA 60x45		
112837	41.300	Outs. Corner MXA 60x45	120	450
115713	40.400	Outs. Corner MXA Robu 60x45	120	450
116514	41.500	Outs. Corner MXA AL 60x45	120	450

0.540 m² Panel with 18 mm plywood. For 90° external corners.



Art no.	Weight [kg]		W [mm]	L [mm]
		Outs. Corner MXA 60x35		
112778	36.000	Outs. Corner MXA 60x35	120	350
115714	35.000	Outs. Corner MXA Robu 60x35	120	350
116505	35.900	Outs. Corner MXA AL 60x35	120	350

0.420 m² Panel with 18 mm plywood. For 90° external corners.

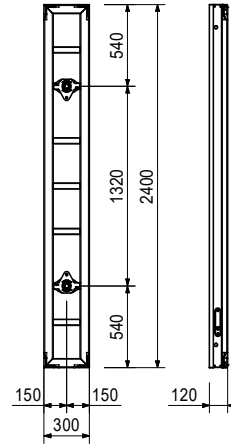


MAXIMO MX-2 18 and MX18 Panel Formwork



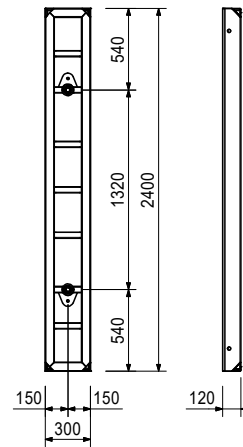
Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX-2 18 30x240				
141290	61.100	Panel MX-2 18 Robu 30x240	120	300
141245	59.700	Panel MX-2 18 FPIy 30x240	120	2400

0.720 m² Panel with 18 mm plywood.



Art no.	Weight [kg]		W [mm]	L [mm]
Panels MX18 30x240				
124162	55.700	Panel MX18 30x240	120	2400
139641	56.300	Panel MX18 Robu 30x240	120	2400
133396	59.700	Panel MX18 AL 30x240	120	2400

0.720 m² Panel with 18 mm plywood.

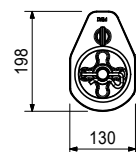
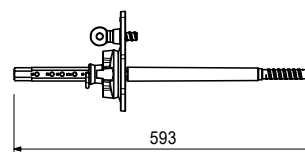
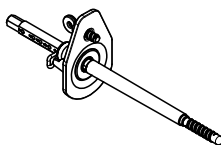


Art no.	Weight [kg]			
123901	4.880	Tie MX18 15-25		

For wall thicknesses 15 – 25 cm.

Notes

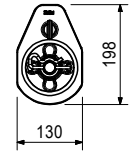
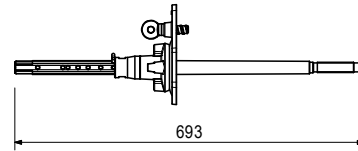
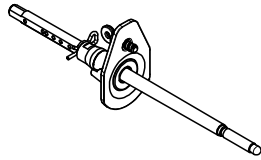
Spray with release agent before every use to ensure easier striking.
Permissible tension force 130.0 kN.



MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]		W [mm]	L [mm]
141516	5.960	Tie MX18 15-30	130	693

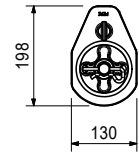
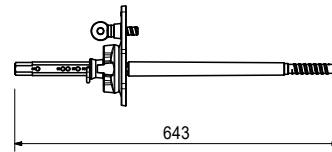
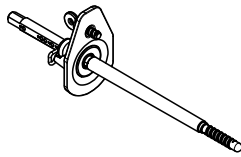


Art no.	Weight [kg]		W [mm]	L [mm]
123902	5.080	Tie MX18 20-30	130	643

For wall thicknesses 20 – 30 cm.

Notes

Spray with release agent before every use to ensure easier striking.
Permissible tension force 130.0 kN.

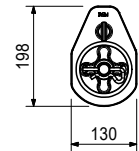
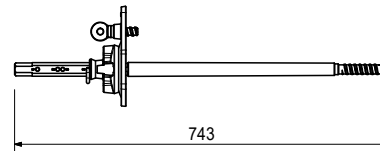
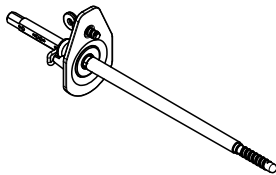


Art no.	Weight [kg]		W [mm]	L [mm]
123903	5.490	Tie MX18 30-40	130	743

For wall thicknesses 30 – 40 cm.

Notes

Spray with release agent before every use to ensure easier striking.
Permissible tension force 130.0 kN.

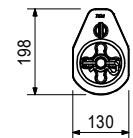
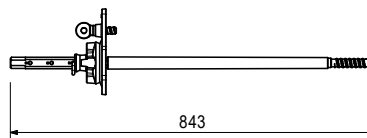
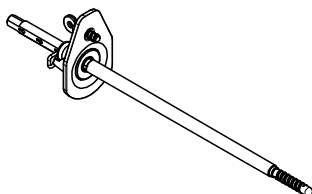


Art no.	Weight [kg]		W [mm]	L [mm]
123904	5.900	Tie MX18 40-50	130	843

For wall thicknesses 40 – 50 cm.

Notes

Spray with release agent before every use to ensure easier striking.
Permissible tension force 130.0 kN.



MAXIMO MX-2 18 and MX18 Panel Formwork



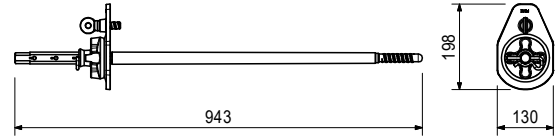
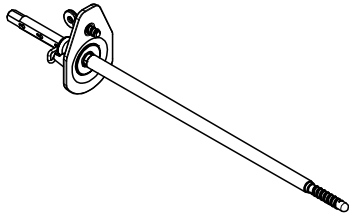
Art no. Weight [kg]

123905 6.310 **Tie MX18 50-60**

For wall thicknesses 50 – 60 cm.

Notes

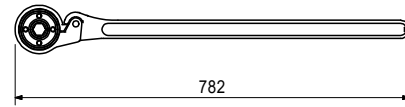
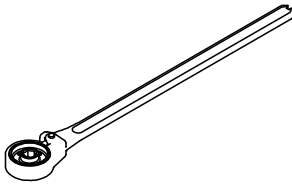
Spray with release agent before every use to ensure easier striking.
Permissible tension force 130.0 kN.



Art no. Weight [kg]

108719 3.640 **Tie Rod Spanner MX18**

For Anchor TRH.



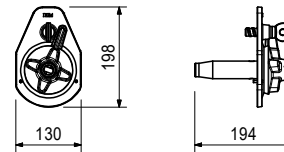
Art no. Weight [kg]

123900 3.570 **Wingnut MX18**

Counter nut for Tie MX18.

Notes

Permissible tension force 130.0 kN.



Art no. Weight [kg]

141201 2.430 **Tie Adjustment Plate MX**

W [mm]

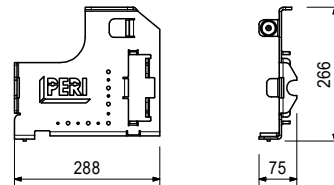
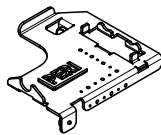
L [mm]

141201

2.430

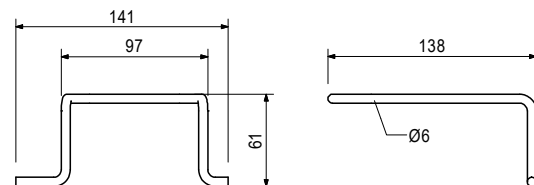
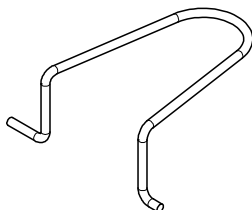
266

288



Art no. Weight [kg]

130402 0.099 **Tie Hanger MX**



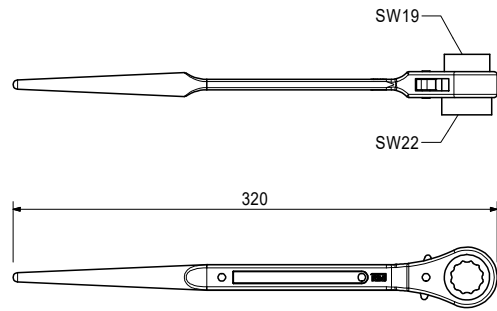
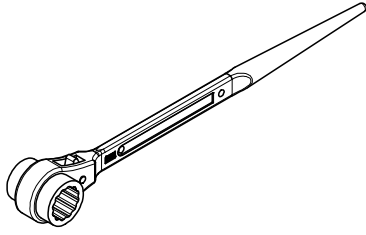
MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

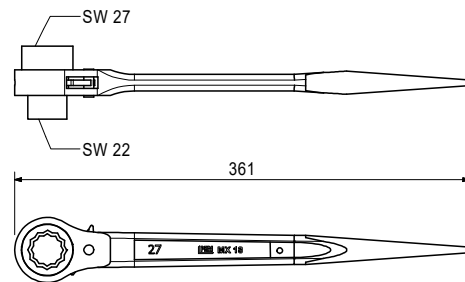
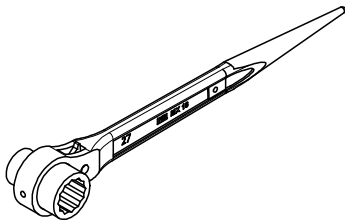
796061 0.434 **Scaff. Build. Ratchet SW19/22**

Scaffold Builder Ratchet in wrench size SW19 and SW22.



Art no. Weight [kg]

130799 0.800 **Ratchet MX18**



MAXIMO MX-2 18 and MX18 Panel Formwork

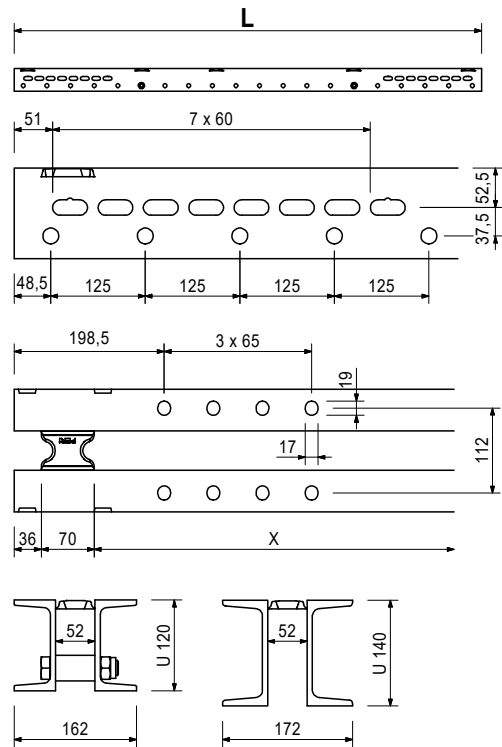
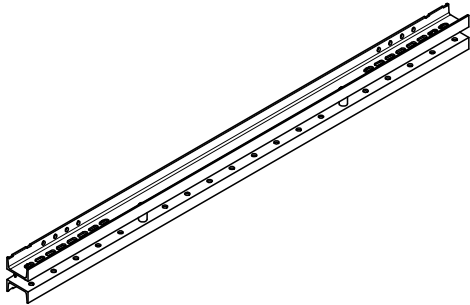


Art no.	Weight [kg]		L [mm]
Steel Walers SRU U120			
103874	30.900	Steel Waler SRU 122 U120	1222
103892	65.600	Steel Waler SRU 247 U120	2472

Universal steel waler profiles with profile U120 used as waling for girder wall formwork and for diverse special applications. With adjustable spacers.

Notes

Steel grade according to DIN EN 10025 or 10027: S235JR
 SRU 120 $W_y = 121.4 \text{ cm}^3$, $I_y = 728 \text{ cm}^4$.
 SRU 140 $W_y = 172.8 \text{ cm}^3$, $I_y = 1210 \text{ cm}^4$.



Art no.	Weight [kg]	
125099	0.006	Plug MXM18 Ø27.6mm

For Multi Panels MXM 18, Internal Corners MXI 18 50/20 and standard panels for single faced use.



Art no.	Weight [kg]	
125300	0.003	Plug MX18 Ø24-28 mm

For closing MX18 tie holes in the concrete.



MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

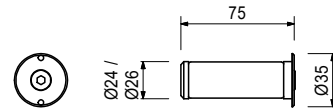
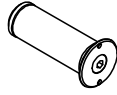
Stoppers MX18-75 MF

127430	0.104	Stopper MX18-75 MF-S
127488	0.114	Stopper MX18-75 MF-L

For closing MX Tie Holes in the concrete.

Notes

Use with pressing water (waterproof concrete). Test report available!



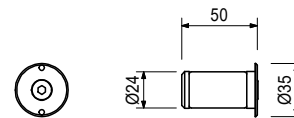
Art no. Weight [kg]

127589	0.082	Stopper MX18-50 MF LS
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For closing MX Tie Holes in the concrete.

Notes

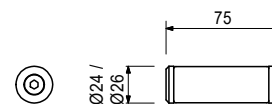
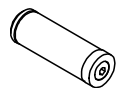
Use for non-pressing water.



Art no. Weight [kg]

Stoppers MX18-75 OF

127432	0.099	Stopper MX18-75 OF-S
127490	0.107	Stopper MX18-75 OF-L



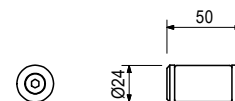
Art no. Weight [kg]

127590	0.077	Stopper MX18-50 OF LS
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For closing MX Tie Holes in the concrete if the flange should not be visible.

Notes

Use for non-pressing water.



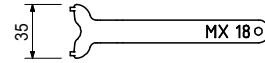
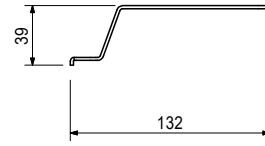
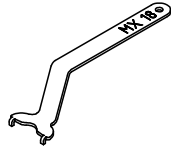
MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

127434 0.038 **Stud Spanner MX18**

Contained within the packaging units.



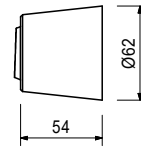
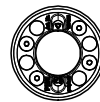
Art no. Weight [kg]

127425 0.160 **Magnetic Cone MX18**

For use with MAXIMO.
Use with Anchor MX.

Notes

For use with waterproofed concrete or architectural concrete.



Accessory (not included)

126696 Magnetic Cone Spanner MX15/18

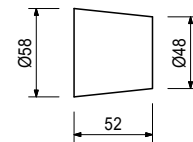
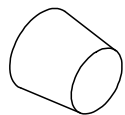
Art no. Weight [kg]

031643 0.225 **Concrete Cone DK Ø58x52mm uni**

For closing anchor points with Sealing Cone DK DW15 55mm, DW20 55mm, DW26 55mm, Anchor Cone SK-2 DW15, Magnet Cone MX15, Magnet Cone MX18 and Arch. Leading Cone M24.

Notes

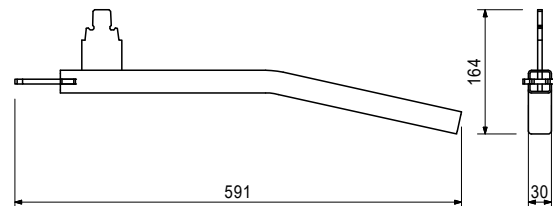
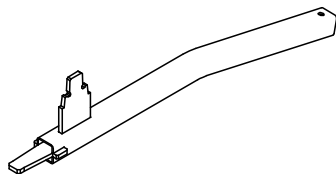
Delivery unit 50 pieces.



Art no. Weight [kg]

126696 1.220 **Magnetic Cone Spanner MX15/18**

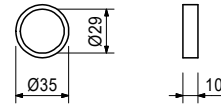
For dismantling Magnet Cone MX15 and MX18.



MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]	
125438	0.024	Spacer MX18 10mm

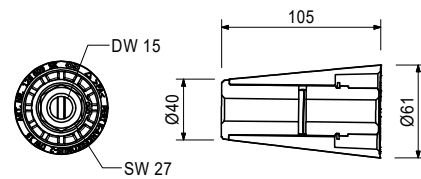
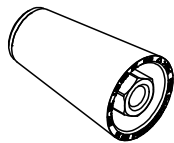


Art no.	Weight [kg]	
126609	0.593	Anchor Cone-2 SK DW15

For waterproof, fire-resistant, soundproof and radiation-proof anchor points with Tie Rod DW15. Suitable for security tracts.

Notes

Permissible tension force 90.0 kN.
Tie rod length = wall thickness - 2 x 55 mm.

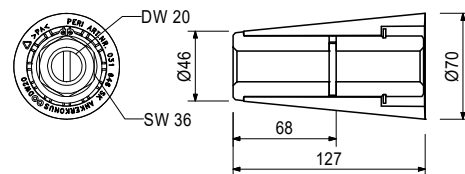
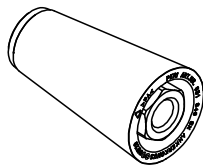


Art no.	Weight [kg]	
031646	1.030	Anchor Cone SK DW20

For waterproof, fire-resistant, soundproof and radiation-proof anchor points with Tie Rod DW20. Suitable for security tracts.

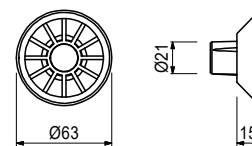
Notes

Permissible tension force 150.0 kN.
Tie rod length = wall thickness - 2 x 65 mm.



Art no.	Weight [kg]	
125299	0.013	Cone-2 MX Ø22mm

For the use of DW15 Tie Rods. Fits Tubes Ø22mm rough.



MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

031636 0.063 **Sealing Cone DK DW15 54mm**

For waterproof, fire-resistant and soundproof anchor points with Tie Rod DW15.
Used with Tube Ø22mm rough.

Notes

Delivery unit 50 pieces.



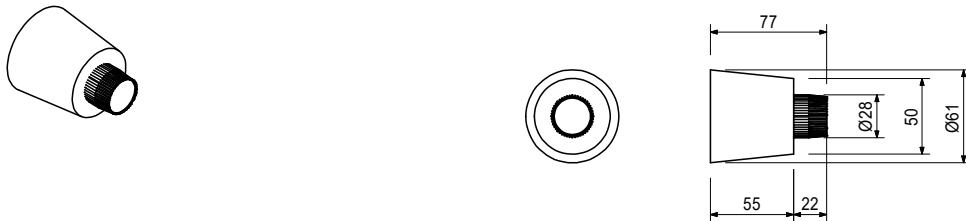
Art no. Weight [kg]

031637 0.055 **Sealing Cone DK DW20 55 mm**

For waterproof, fire-resistant and soundproof anchor points with Tie Rod DW20. Use with Tube Ø28mm rough.

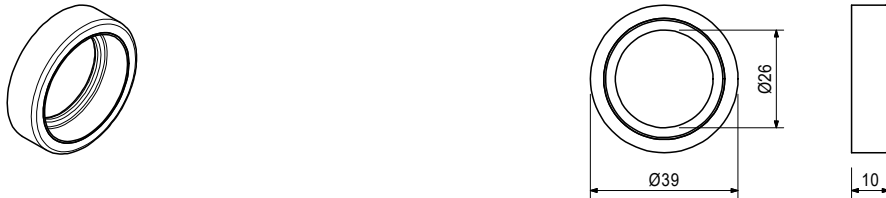
Notes

Delivery unit 50 pieces.



Art no. Weight [kg]

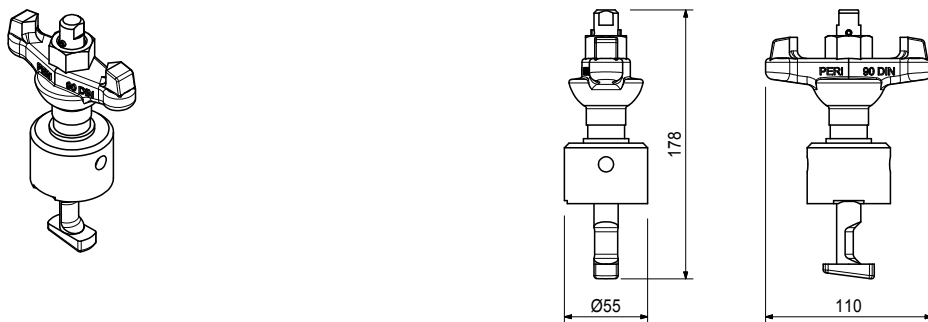
123604 0.015 **Washer MX18**



Art no. Weight [kg]

125337 1.390 **Extraction Tool MX Sealing**

For removing the sealing sleeve.



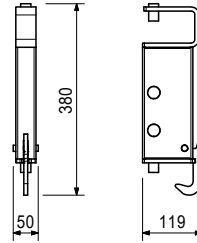
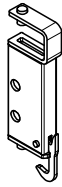
MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]		W [mm]	L [mm]
138315	2.590	Adaptor MXE 330	119	378

For outside corner solutions with Panels MX 330 using Steel Waler Universal SRU U120

Notes

The adaptor may only be used in conjunction with the steel waler if it is anchored through.

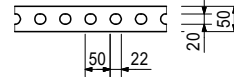
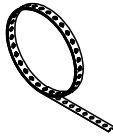


Art no.	Weight [kg]	
023020	16.900	Perforated Foundation Tie 25m

For use with Foundation Tie Clamp MX/TR, DOMINO, LIWA and HANDSET.

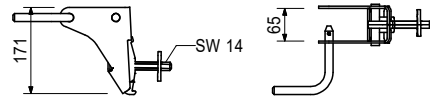
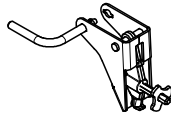
Notes

Permissible tension force 12.9 kN.



Art no.	Weight [kg]	
023010	2.330	Foundation Tie Clamp MX/TR

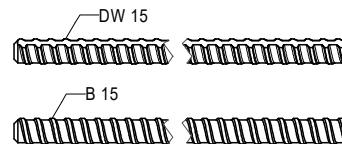
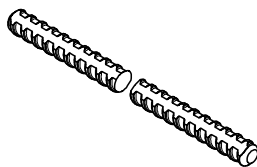
For anchoring foundation formwork in combination with the Perforated Foundation Tie.



Art no.	Weight [kg]	
		Tie Rods DW15
030030	1.440	Tie Rod DW15 spec. Length
030050	0.000	Cutting Cost DW15/B15

Notes

Weldable! Observe Approval! Permissible tension force 90.0 kN.



MAXIMO MX-2 18 and MX18 Panel Formwork



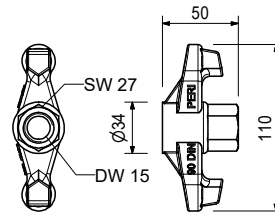
Art no. Weight [kg]

030100 0.439 **Wingnut DW15 ga**

For anchoring with Tie Rod DW15 or B15.

Notes

Permissible load 90.0 kN.



Art no. Weight [kg]

030370 1.660 **Wingnut Pivot Plate DW15 ga**

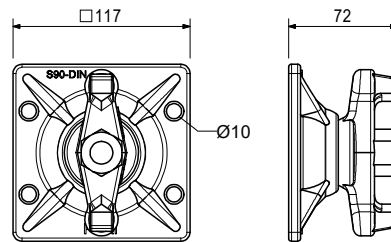
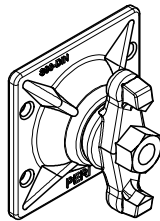
For anchoring with Tie Rod DW15 or B15.

With articulated, captive nut. Maximum inclination of anchor: +/- 8°.

Notes

Wrench size SW27.

Permissible load 90.0 kN.



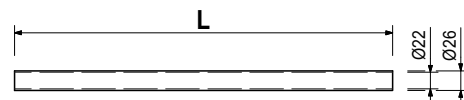
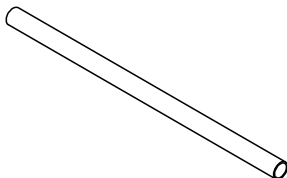
Art no. Weight [kg]

L [mm]

Tubes Ø22mm rough

065030	0.039	Tube Ø22mm 21 rough	210
065031	0.050	Tube Ø22mm 27 rough	270
065027	0.359	Spacer Tube Ø22mm 200 Rough	2000

Plastic Spacer Tube for DW15 or B15.



MAXIMO MX-2 18 and MX18 Panel Formwork



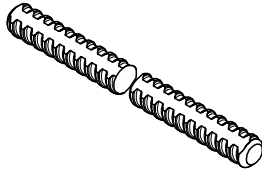
Art no. Weight [kg]

Tie Rods DW20

030700	2.560	Tie Rod DW20 spec. Length
030050	0.000	Cutting Cost DW15/B15

Notes

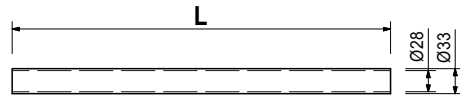
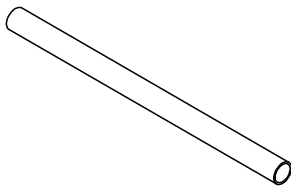
Weldable! Observe Approval! Permissible tension force 150.0 kN.



Art no. Weight [kg]

031626	0.886	Tube Ø28mm 300 rough
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Plastic Spacer Tube for DW20 or B20.



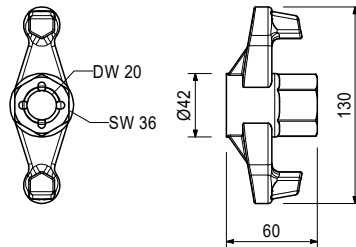
Art no. Weight [kg]

030990	0.786	Wingnut DW20 ga
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For anchoring with Tie Rod DW20 or B20.

Notes

Permissible load 150.0 kN.



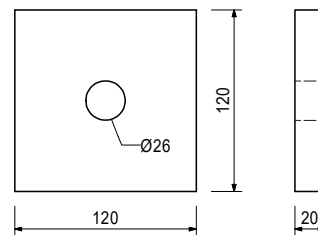
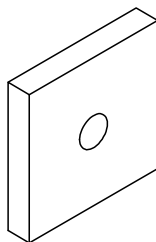
Art no. Weight [kg]

030830	2.180	Counterplate DW20 120x120x20mm
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For anchoring with Tie Rod DW20 or B20.

Notes

Permissible load 150.0 kN.

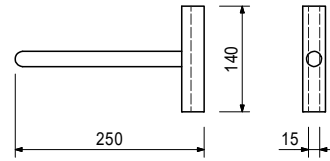
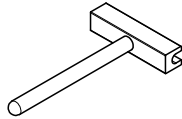


MAXIMO MX-2 18 and MX18 Panel Formwork



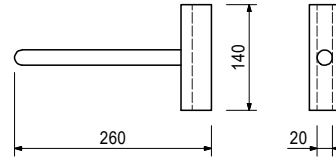
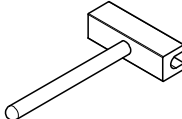
Art no.	Weight [kg]	
031070	1.260	Tie Rod Wrench DW15

For easy handling of Tie Rod DW15.



Art no.	Weight [kg]	
031050	1.780	Tie Rod Wrench DW20

For easy handling of Tie Rod DW20.

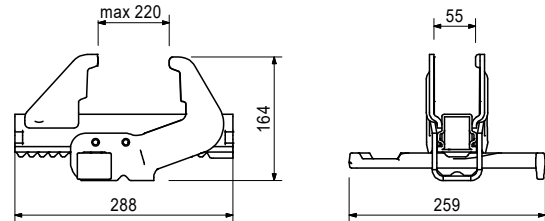
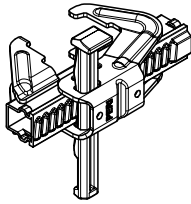


Art no.	Weight [kg]	
023500	4.580	Alignment Coupler BFD

For all panel connections for MAXIMO, TRIO and RUNDIFLEX. Fillers up to 10 cm.

Notes

Permissible tension force 20.0 kN.

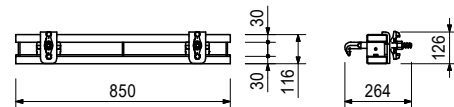
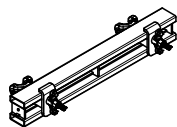


Art no.	Weight [kg]		W [mm]	L [mm]	perm. p [kN/m]
140096	14.100	Compensation Waler-4 MAR 85	264	850	5.2

For longitudinal compensation, height extensions, stopend formwork and with MAXIMO. With captive connecting components.

Notes

Permissible bending moment 5.2 kN/m.



MAXIMO MX-2 18 and MX18 Panel Formwork

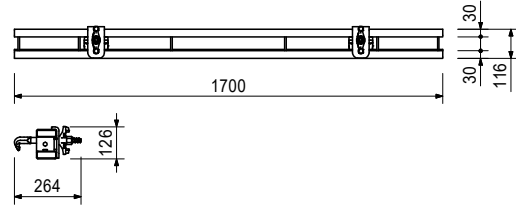
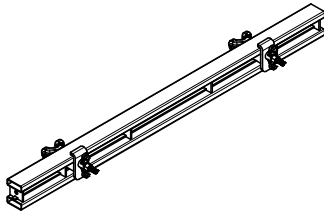


Art no.	Weight [kg]		W [mm]	L [mm]	perm. p [kN/m]
140101	23.400	Compensation Waler-4 MAR 170	264	1700	5.5

For longitudinal compensation, height extensions, stopend formwork and special applications with MAXIMO. With captive connecting components.

Notes

Permissible bending moment 5.5 kN/m.

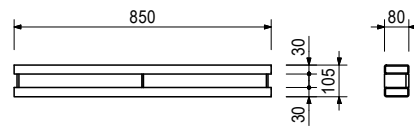
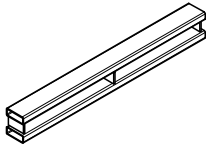


Art no.	Weight [kg]				
023551	8.520	Waler 85			

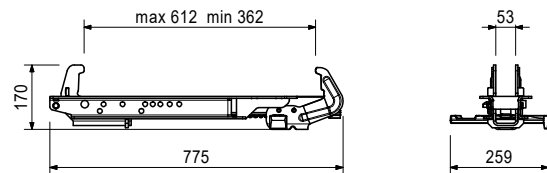
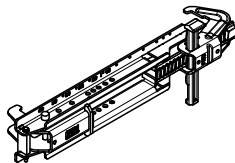
Equivalent to Compensation Waler TAR 85, but without mounting hooks.

Notes

Permissible bending moment 4.4 kNm.



Art no.	Weight [kg]				
127732	11.000	Stopend Waler MX 15-40			

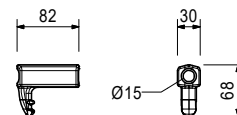


Art no.	Weight [kg]				
023820	0.375	Hook Tie Head DW15 ga			

For connecting accessories to MAXIMO and TRIO Panels. DW15 Thread.

Notes

Permissible tension force 20.0 kN.



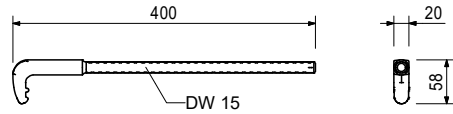
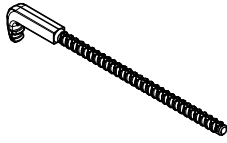
MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]	
023650	0.769	Hook Tie DW15x400mm ga

For connecting accessories to MAXIMO and TRIO Panels. DW15 Thread.

Notes

Permissible tension force 20.0 kN.

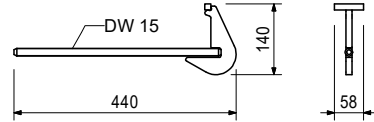
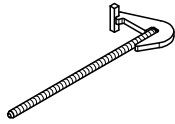


Art no.	Weight [kg]	
023640	1.140	Bulkhead Tie MX/TR ga

For force application from the stopend formwork in MAXIMO and TRIO Panels. DW15 Thread.

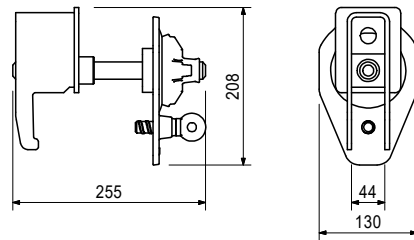
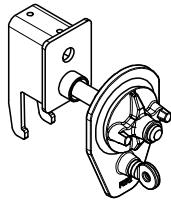
Notes

Permissible tension force 20.0 kN.



Art no.	Weight [kg]	
115640	5.980	Bulkhead Tie MX DW20

For forming wall offsets with MAXIMO in connection with the Multi Panel MXM.



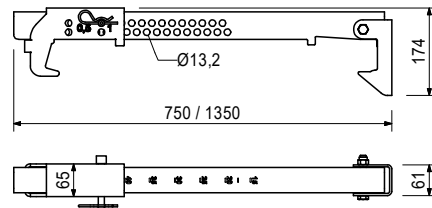
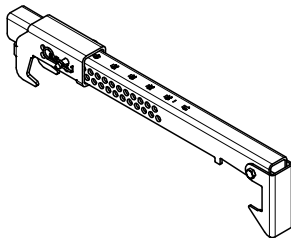
Art no.	Weight [kg]	
Push-Pull Spreaders MX		
115350	6.310	Push-Pull Spreader MX 15-40
123842	9.070	Push-Pull Spreader MX 15-100

For use with MAXIMO and TRIO.

Notes

Adjustable in 0.5 cm increments from 15 to 40 cm, or in 0.5 cm increments from 15 to 100 cm.

Permissible tensile and compressive force 9.0 kN.



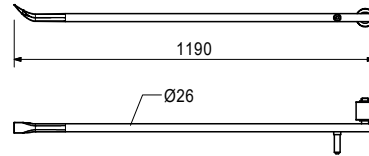
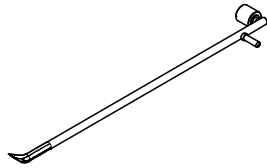
Included in delivery

- 115331 Bolt Ø12x96mm coat 1 pc
- 018060 Cotter Pin 4/1 ga 1 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]	
112588	5.450	Stripping Lever MX/TR

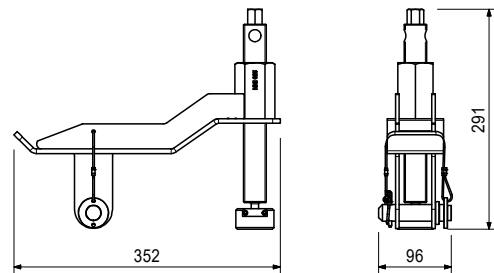
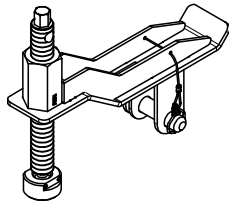


Art no.	Weight [kg]		W [mm]	L [mm]
139979	4.800	Stripping Aid MX/TR	96	352

Stripping Aid MX/TR is used to release MAXIMO or TRIO Panels.

Notes

At least two stripping aids must always be used for releasing. The stripping aids are attached to the panel to be released!



Art no.	Weight [kg]	
023630	2.080	Tie Holder-2 AH ga

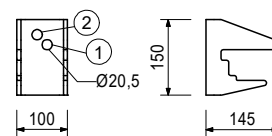
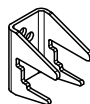
For grid-independent anchoring outside of the panel, especially for foundations and height extensions.

Notes

Permissible anchor pull:

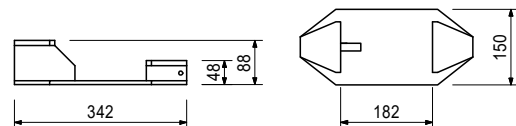
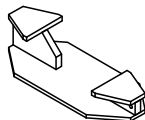
Hole 1 = 30.0 kN

Hole 2 = 15.0 kN



Art no.	Weight [kg]	
023800	4.840	Foundation Strap MX/TR

For connecting MAXIMO and TRIO panels with 6 cm wide edge profiles, assembled in a "windmill" configuration.



MAXIMO MX-2 18 and MX18 Panel Formwork



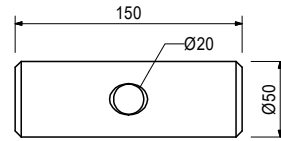
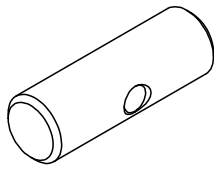
Art no. Weight [kg]

022030 2.170 **Tie Yoke SW ga**

For anchoring with Tie Rod DW15 and B15.

Notes

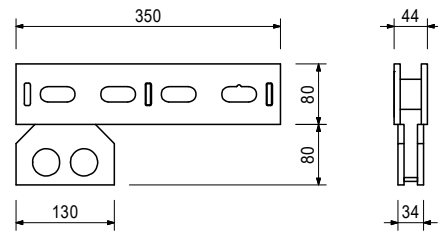
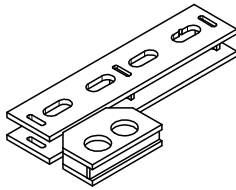
Permissible load 90.0 kN.



Art no. Weight [kg]

023930 4.100 **Waler Stop**

For use with Universal Waler 245 or Steel Waler SRU.



Accessory (not included)

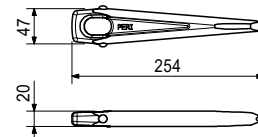
024240 Wedge KZ tensionproof

022030 Tie Yoke SW ga

Art no. Weight [kg]

024240 0.805 **Wedge KZ tensionproof**

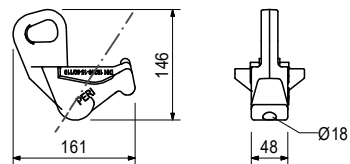
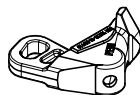
For connecting panels with VARIO Couplings or Tie Yoke SKZ.



Art no. Weight [kg]

024210 2.180 **Tie Yoke SKZ**

For tensioning on external corners with Steel Waler SRZ, SRU, U100 – U140 and VARIO couplings.



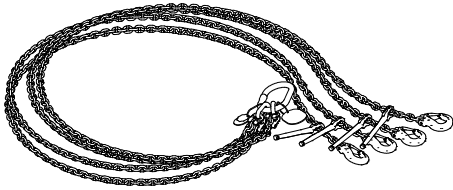
MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]	
117321	31.000	Lifting Gear Combi MX

For transporting stacks of MAXIMO and TRIO panels. For attaching Lifting Hook MX 1.5 t and Stacking Device MX.

Notes

Follow Instructions for Use!

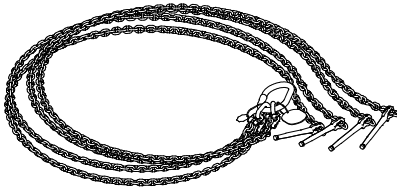


Art no.	Weight [kg]	
117322	25.000	Lifting Gear MX

For transporting stacks of MAXIMO and TRIO panels.

Notes

Follow Instructions for Use!



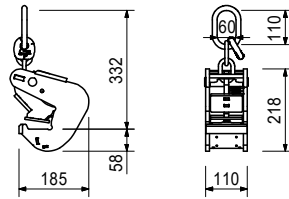
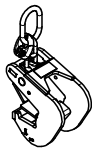
Art no.	Weight [kg]	
115168	6.950	Lifting Hook MX 1.5t

For transporting MAXIMO and TRIO panels.

Notes

Follow Instructions for Use!

Permissible load-bearing capacity: Steel elements 1.5 t. Aluminium elements 750.0 kg.



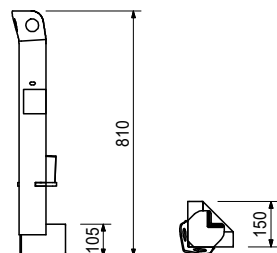
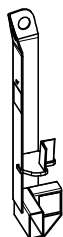
Art no.	Weight [kg]	
115058	7.450	Stacking Device MX

For stacking and transportation of 2 – 5 MAXIMO or TRIO panels of all sizes. Suitable for crane and fork-lift transport.

Notes

Follow Instructions for Use!

Permissible load-bearing capacity 650.0 kg per stanchion, 2.6 t per stack.

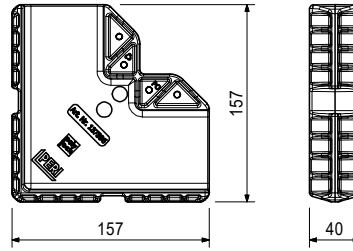
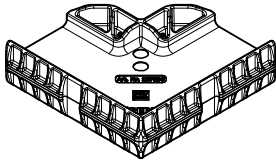


MAXIMO MX-2 18 and MX18 Panel Formwork



Art no. Weight [kg]

137396 0.205 **Stacking Device MX18 POLY**



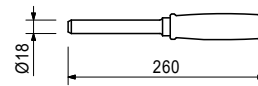
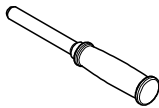
Art no. Weight [kg]

124288 0.068 **Stacking Device MX18 red**

Art no. Weight [kg]

023440 0.312 **Lifting Pin MX/TR**

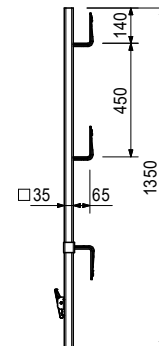
For carrying TRIO Panels easily.



Art no. Weight [kg]

126360 4.920 **Guardrail Post MXK**

As guardrail for MAXIMO and TRIO.



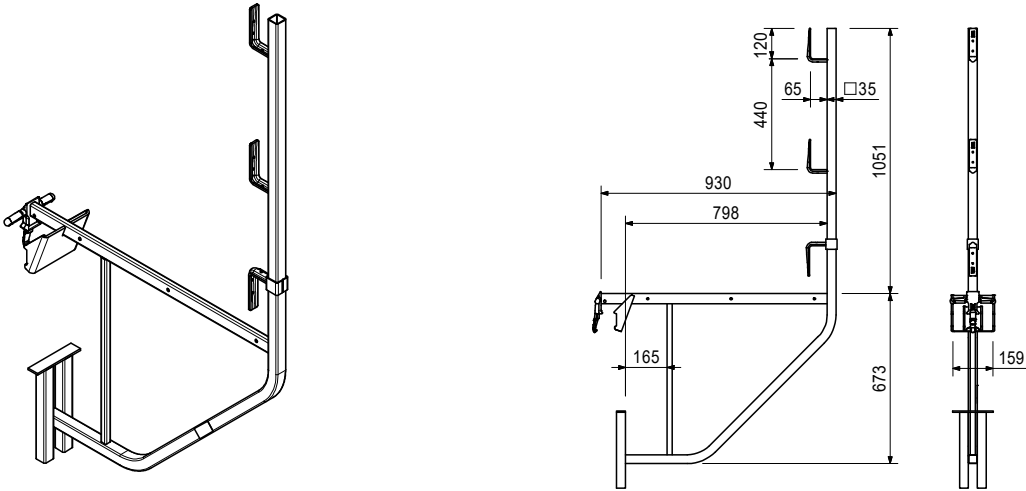
MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]	
023670	12.500	Scaffold Bracket TRG 80

For assembly of a working and concreting scaffold at MAXIMO or TRIO Panels.
It is possible to mount on horizontal or vertical struts.

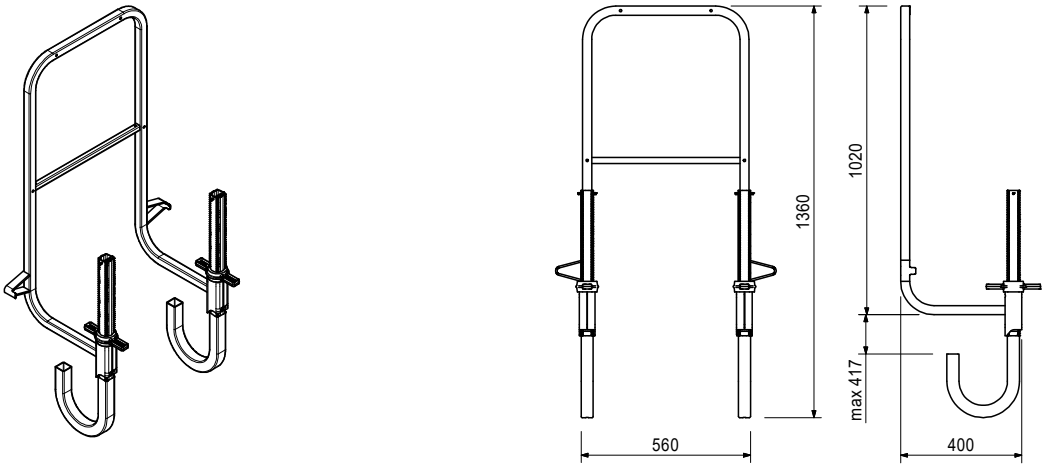
Notes

Permissible load 150.0 kg/m² with maximum width of influence 1.35 m.



Art no.	Weight [kg]	
065066	14.800	End Guardrail Frame 55

End guardrail for clamping to all PERI Scaffold Platforms and Climbing Systems.

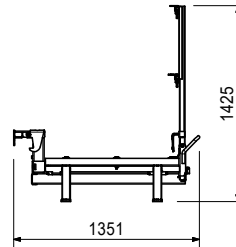
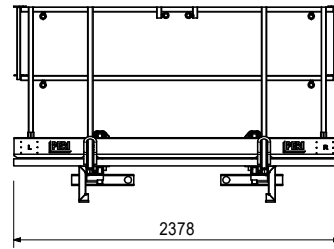
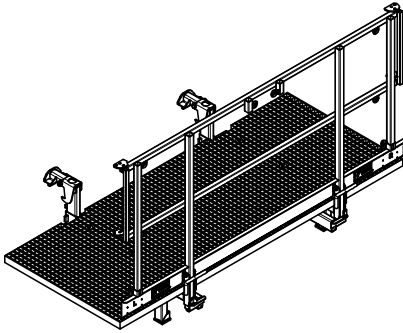


MAXIMO MX-2 18 and MX18 Panel Formwork

Art no. Weight [kg]

127273 194.000 **Conc.Platform MX 100x240**

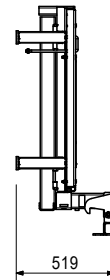
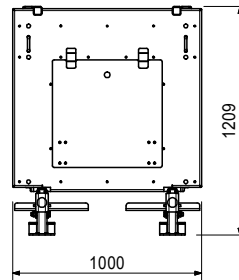
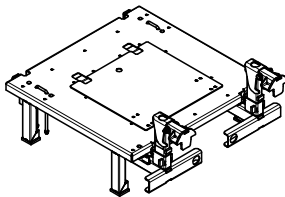
Working and concreting platform for MAXIMO and TRIO. Attached from above to the panel, self-securing.



Art no. Weight [kg]

127885 71.600 **Conc.Platform Hatch MX 100x100**

Working and concreting platform for MAXIMO and TRIO. Attached from above to the panel, self-securing.



Art no. Weight [kg]

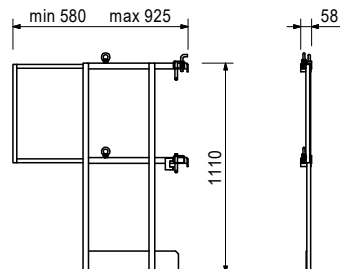
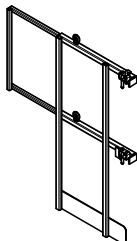
Side Guardrails MXP

115945 10.700 **Side Guardrail MXP left**

115946 10.700 **Side Guardrail MXP right**

For MAXIMO Platforms MXP and Concrete Platforms MX 100x240.

Drawing shows End Guardrail MXP left.



Included in delivery

722802 Eye Bolt DIN 580-M10-ga 2 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



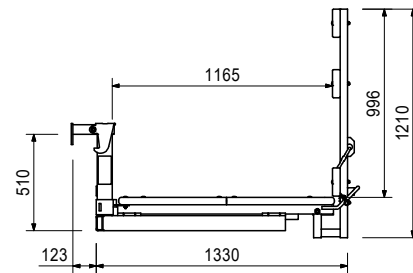
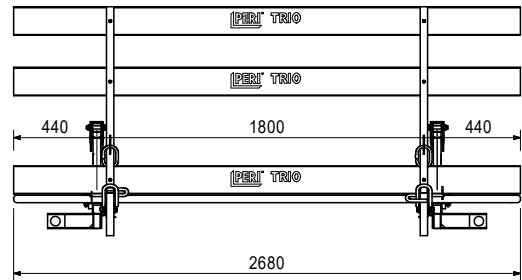
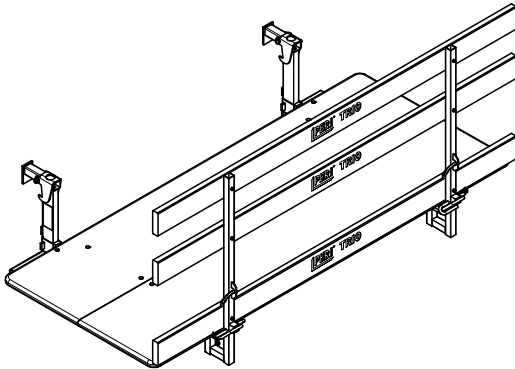
Art no. Weight [kg]

022950 129.000 **Conc.Platform TRIO 120x270**

Working and concreting platform for MAXIMO and TRIO. Attached from above to the panel, self-securing.

Notes

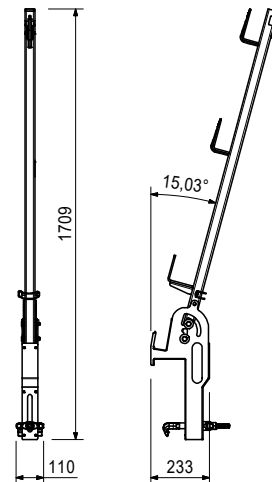
Permissible load 150.0 kg/m².



Art no. Weight [kg]

129960 12.100 **Opposite Guardrail Holder MX**

For mounting a guardrail on MAXIMO and TRIO panels.



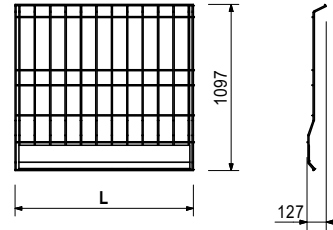
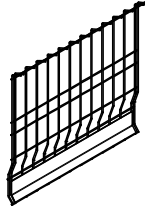
MAXIMO MX-2 18 and MX18 Panel Formwork



Art no.	Weight [kg]		L [mm]
Side Mesh Barriers PMB			
126381	7.140	Side Mesh Barrier PMB 90	900
126376	9.260	Side Mesh Barrier PMB 120	1200
126371	17.700	Side Mesh Barrier PMB 240	2400

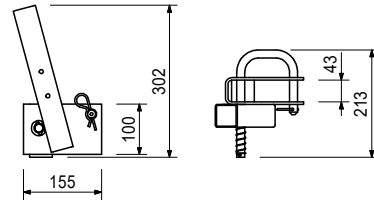
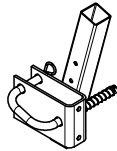
Notes

Maximum distance with side mesh barrier: PMB 260 max. 2.40 m.



Art no.	Weight [kg]	
101592	2.810	Guardrail-Post Holder TRIO

For mounting a guardrail to MAXIMO and TRIO Panels.



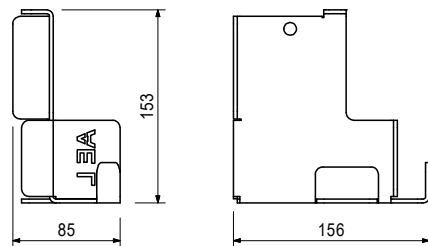
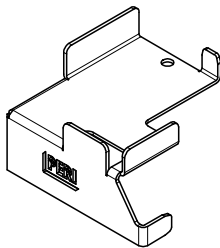
Accessory (not included)

116292 Guardrail Post-2 HSGP

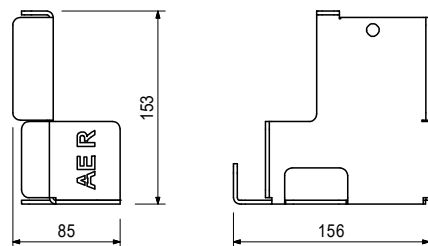
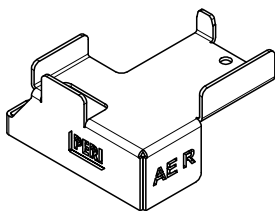
Included in delivery

018060 Cotter Pin 4/1 ga 1 pc

Art no.	Weight [kg]	
118103	0.700	Stacking Device MXA left



Art no.	Weight [kg]	
118105	0.699	Stacking Device MXA right

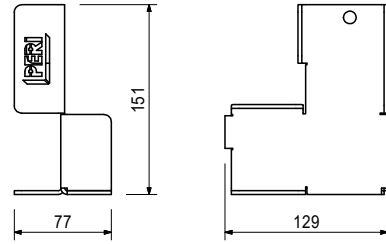
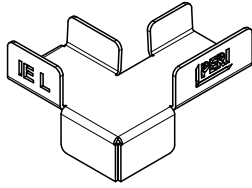


MAXIMO MX-2 18 and MX18 Panel Formwork



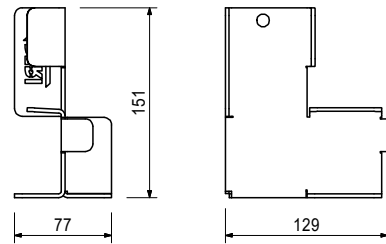
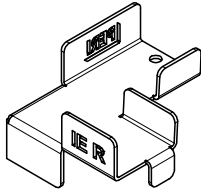
Art no. Weight [kg]

118110 0.614 **Stacking Device MXI left**



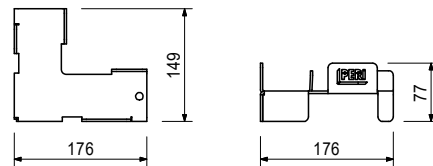
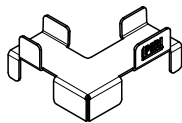
Art no. Weight [kg]

118112 0.613 **Stacking Device MXI right**



Art no. Weight [kg]

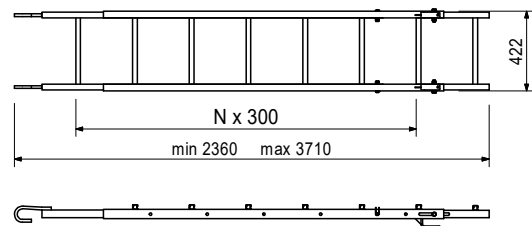
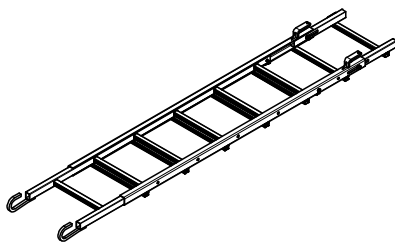
118100 0.652 **Stacking Device MX flat**



Art no. Weight [kg]

107738 23.100 **Ladder 240-360**

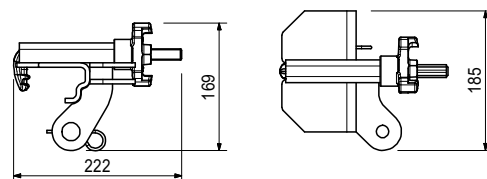
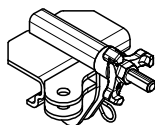
Adjustable from 2.40 m to 3.60 m.



Art no. Weight [kg]

023660 3.290 **Brace Connector-2 MX/TR**

For connecting push-pull props and kicker braces to MAXIMO and TRIO Panels. Mounted on vertical and horizontal struts.



Included in delivery

027170 Pin Ø16x42mm ga 1 pc

018060 Cotter Pin 4/1 ga 1 pc

MAXIMO MX-2 18 and MX18 Panel Formwork



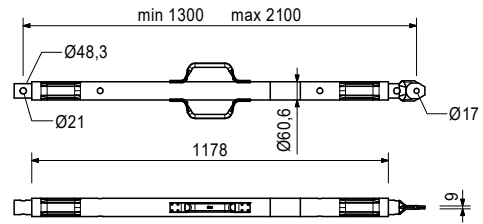
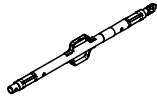
Art no. Weight [kg]

117466 10.600 **Push-Pull Prop RS 210 ga**

Extension length L = 1.30 – 2.10 m.
For aligning PERI Formwork Systems and precast concrete elements.

Notes

For the permissible load, see Instructions for Assembly and Use.



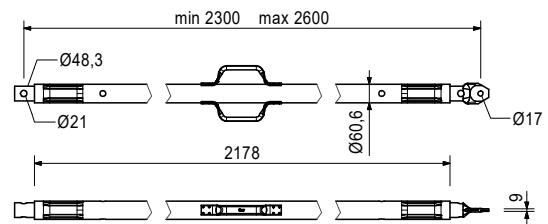
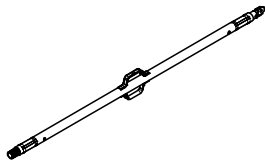
Art no. Weight [kg]

118238 12.100 **Push-Pull Prop RS 260 ga**

Extension length L = 2.30 – 2.60 m.
For aligning PERI Formwork Systems and precast concrete elements.

Notes

For the permissible load, see Instructions for Assembly and Use.



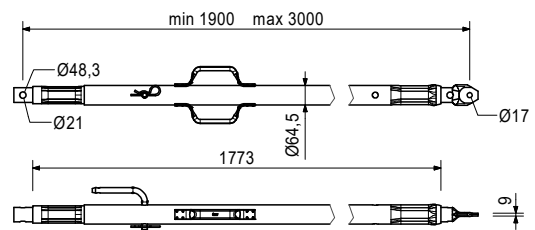
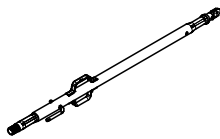
Art no. Weight [kg]

117467 15.500 **Push-Pull Prop RS 300 ga**

Extension length L = 1.90 – 3.00 m.
For aligning PERI Formwork Systems and precast concrete elements.

Notes

For the permissible load, see Instructions for Assembly and Use.



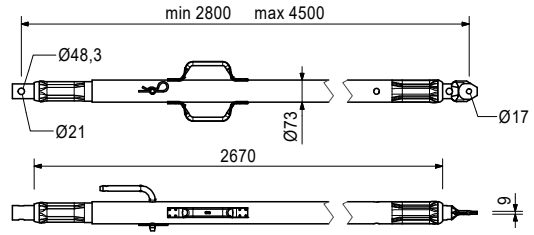
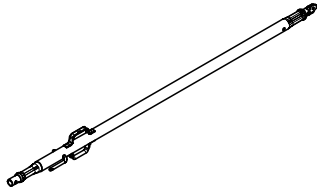
MAXIMO MX-2 18 and MX18 Panel Formwork

Art no.	Weight [kg]	
117468	23.000	Push-Pull Prop RS 450 ga

Extension length L = 2.80 – 4.50 m.
 For aligning PERI Formwork Systems and precast concrete elements.

Notes

For the permissible load, see Instructions for Assembly and Use.

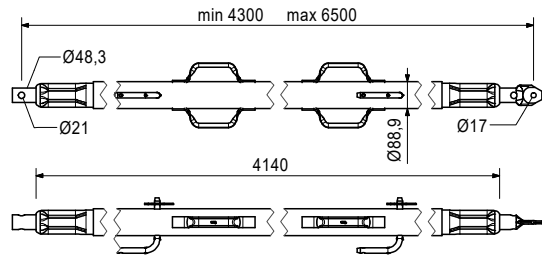
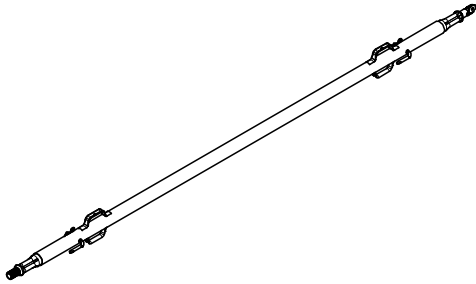


Art no.	Weight [kg]	
117469	39.900	Push-Pull Prop RS 650 ga

Extension length L = 4.30 – 6.50 m.
 For aligning PERI Formwork Systems.

Notes

For the permissible load, see Instructions for Assembly and Use.

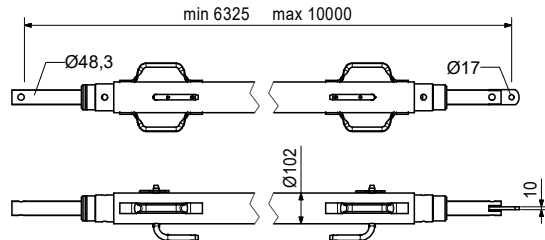
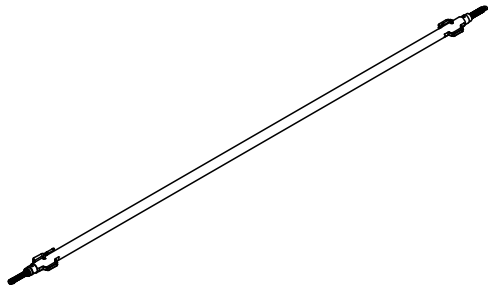


Art no.	Weight [kg]	
028990	115.000	Push-Pull Prop RS 1000 ga

Extension length L = 6.40 – 10.00 m.
 For aligning PERI Formwork Systems.

Notes

For the permissible load, see Instructions for Assembly and Use.



MAXIMO MX-2 18 and MX18 Panel Formwork



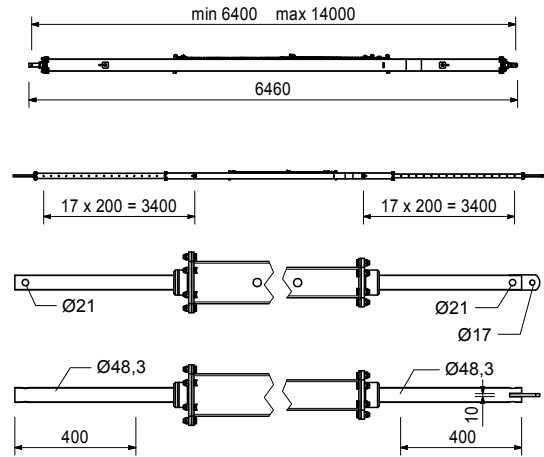
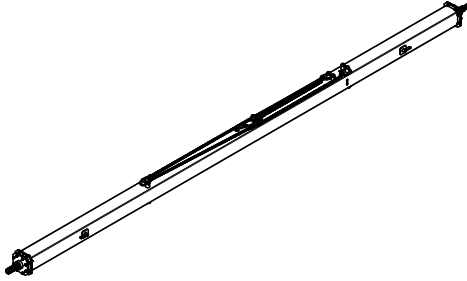
Art no. Weight [kg]

103800 271.000 **Push-Pull Prop RS 1400 ga**

Extension length L = 6.40 – 14.00 m.
For aligning PERI Formwork Systems.

Notes

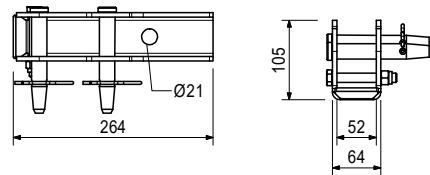
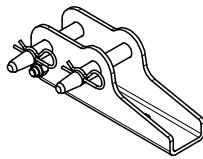
For the permissible load, see Instructions for Assembly and Use.
Chain can be operated from bottom.



Art no. Weight [kg]

126666 3.040 **Base Plate-3 f. RS 210-1400**

For assembly of Push-Pull Props RS 210, 260, 300, 450, 650, 1000 and 1400.



Accessory (not included)

124777 Anchor Bolt AF24 Ø14/20x130 TG

Included in delivery

113063 Screw ISO 4014-M12x80-8.8-ga 1 pc
113064 Hex groove ISO 7040-M12-8-ga 1 pc
105400 Pin Ø20x140mm ga 2 pc
018060 Cotter Pin 4/1 ga 2 pc

MAXIMO MX-2 18 and MX18 Panel Formwork

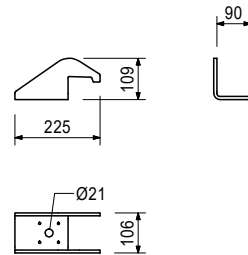


Art no.	Weight [kg]	
124640	2.250	Frame Holder MX/TR

Versatile Frame Holder that can be used to secure panels, for example, to an existing wall with T-junction or fixed and anchored to the base slab/concrete slab.

Notes

For application, observe PI sheet 491!



Accessory (not included)

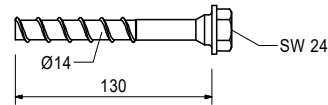
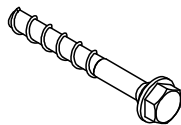
124777 Anchor Bolt AF24 Ø14/20x130 TG

Art no.	Weight [kg]	
124777	0.210	Anchor Bolt AF24 Ø14/20x130 TG

For temporary attachment of construction site facilities in concrete.

Notes

Take the PERI Data Sheet into consideration!
Hole Ø 14 mm.

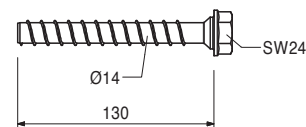
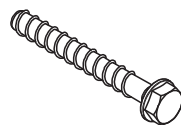


Art. no.	Weight [kg]		W [mm]	L [mm]
141466	0.210	Anchor Bolt AF24 Ø14/20x130 HC	24	142

For temporary fixation to reinforced concrete structures.

Notes

See PERI Data Sheet!





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