



German Formwork Technology

F o r m w o r k ■ S u p p o r t S y s t e m s ■ S e r v i c e s



Vito-Wall Panel System

Assembly and Application Guide

Product Information & Features

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Product Information

The following instructions for erection and use include detailed information on the handling and proper application of the products that are described and depicted. All instructions regarding technical operation and function have to be observed carefully. Exceptional use requires separate design calculation. With regard to safe and correct use of our products, all relevant safety, regulations and instructions of national institutes and/or local authorities have to be followed.

Damaged components have to be sorted out. In case of repairs, only original GFT spare parts must be used. Combined use of our formwork systems with equipment from other suppliers may involve certain dangers and, therefore, requires an additional checkup. For reasons of further technical development we emphatically reserve the right to revise, change or modify any of the product's components at any time without prior notice.

The Vito wall Panel System is designed and manufactured in accordance with BS EN 12812 : 2008, code of practice for Falsework

Product Features

The Vito formwork is a steel framed panel which is ready for use and very rugged.

The 2.70 m, 3.30 m and 1.20 m panels have various widths from 45 cm to 1.20 m and can be delivered in steps of 15 cm or 5 cm. Profitable giant panels are also available.

All Vito panels are based on sturdy 14 cm deep steel profiles for the edges. These edge profiles are prepared with a special shaping on the inside that allows application of the patented Vito connecting clamps.

Tie holes are provided in the vertical edge profiles. Exact alignment of the erected panel is made possible through the recess of the base edge profile by using a crow-bar (or nail-remover).

The 18 mm thick plywood sheet is supported by eight or ten intermediate bars of equal design. They also offer numerous possibilities for the attachment of Vito accessories.

The steel frame of the Vito panel is completely hot-dip galvanized.

All the panels can be combined in various ways, lying on their sides or standing upright. They can also be installed in a staggered arrangement as their interconnection is independent of any dimension modules.

A panel depth of 14 cm guarantees good load-bearing capacity (80 kN/m²)* so that for a single-storey formwork of 2.70 and 3.30 metres height, concrete pressure and rate of concrete placing need not be taken into consideration. The 18 mm thick plywood is glued 7-fold and coated with 350 g/m² phenol resin (on the concrete-sided surface). Because of this, a high number of applications and a long life span is guaranteed. The 10-fold steel frame support of the plywood (for a panel height of 2.70 m) reduces deflection and results in a smooth concrete finish.

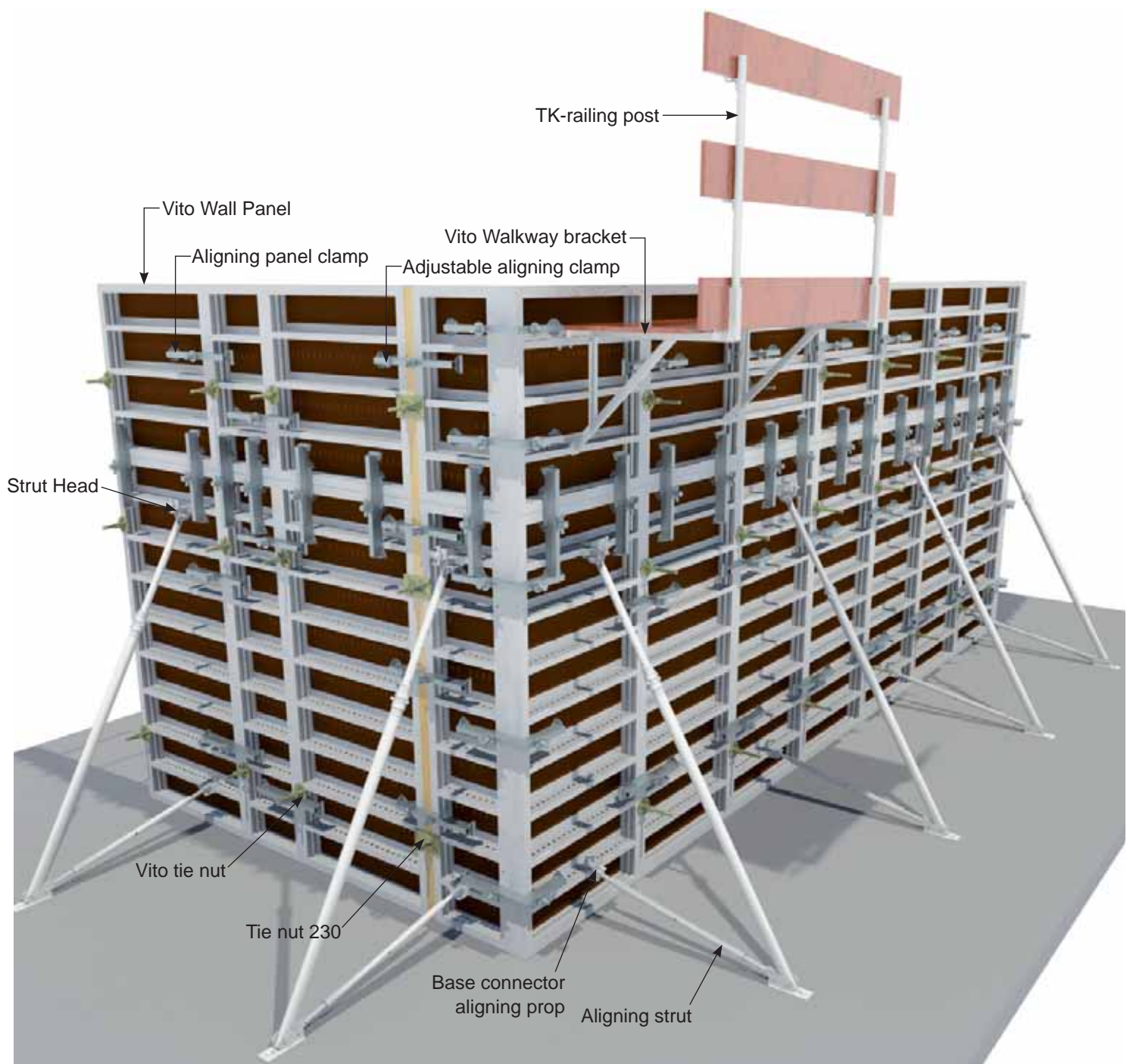
The use of aligning panel clamps to connect two panels, accelerates shuttering work. The joints are made absolutely tight and the panels are aligned perfectly without any mismatching.

The aligning panel clamp also permits the repositioning of large-area formwork elements without having to install any additional stiffening walers. It can be used with the Vito ratchet or with a hammer. Use of the ratchet allows less fatiguing work from ground level (for single-storey formwork) and, moreover, spares the material.

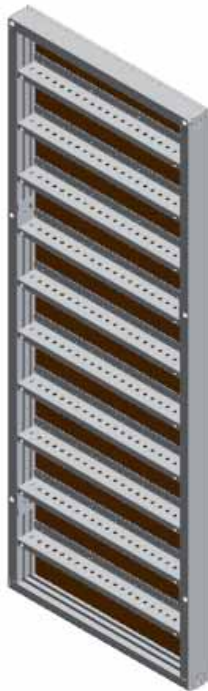

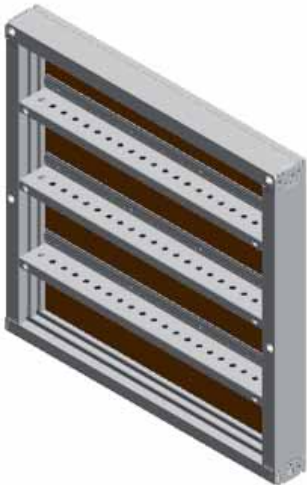
Using the components included in the basic system, you will be able to solve formwork problems in industrial and housing construction.

The parts included in the additional components widen the application possibilities of formwork and simplify concreting. All Vito formwork steel parts are hot-dip galvanized.

Product Overview



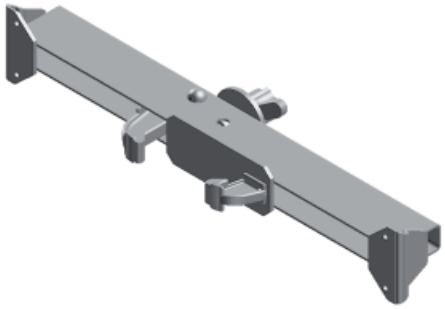
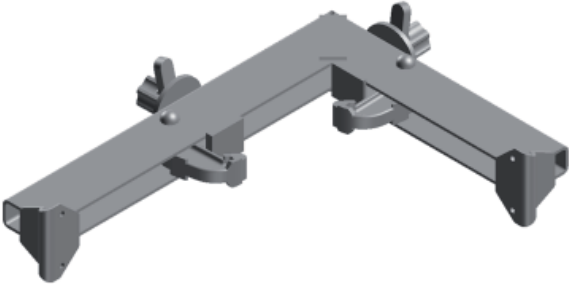
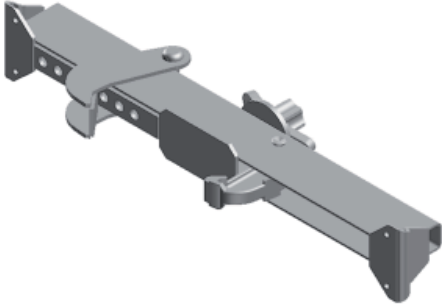

Components

			Art. No	Weight Kg/pc.	
Vito-Panel 120 x 330	(3.96 m²)		110010	179.48	
Vito-Panel 105 x 330	(3.47 m²)		110009	163.55	
Vito-Panel 90 x 330	(2.97 m²)		110008	146.05	
Vito-Panel 75 x 330	(2.48 m²)		110007	130.19	
Vito-Panel 70 x 330	(2.31 m²)		110006	124.78	
Vito-Panel 65 x 330	(2.15 m²)		110005	119.48	
Vito-Panel 60 x 330	(1.98 m²)		110004	114.16	
Vito-Panel 55 x 330	(1.82 m²)		110003	107.44	
Vito-Panel 45 x 330	(1.49 m²)		110002	96.92	
Vito-Panel 30 x 330	(0.99 m²)		110001	80.68	
					
Vito-Panel 120 x 270	(3.24 m²)		110030	162.27	
Vito-Panel 105 x 270	(2.84 m²)		110029	149.27	
Vito-Panel 90 x 270	(2.43 m²)		110028	120.01	
Vito-Panel 75 x 270	(2.03 m²)		110019	106.69	
Vito-Panel 70 x 270	(1.89 m²)		110018	102.16	
Vito-Panel 65 x 270	(1.76 m²)		110017	97.74	
Vito-Panel 60 x 270	(1.62 m²)		110016	93.3	
Vito-Panel 55 x 270	(1.49 m²)		110015	88.86	
Vito-Panel 45 x 270	(1.22 m²)		110014	80.07	
Vito-Panel 30 x 270	(0.81 m²)		110013	65.43	
					
Vito-Panel 120 x 120	(1.44 m²)		110050	72.83	
Vito-Panel 105 x 120	(1.26 m²)		110049	65.99	
Vito-Panel 90 x 120	(1.08 m²)		110048	59.18	
Vito-Panel 75 x 120	(0.90 m²)		110047	52.33	
Vito-Panel 70 x 120	(0.84 m²)		110046	49.99	
Vito-Panel 65 x 120	(0.78 m²)		110045	47.68	
Vito-Panel 60 x 120	(0.72 m²)		110044	45.37	
Vito-Panel 55 x 120	(0.66 m²)		110043	43.15	
Vito-Panel 45 x 120	(0.54 m²)		110042	38.56	
Vito-Panel 30 x 120	(0.36 m²)		110041	32.02	



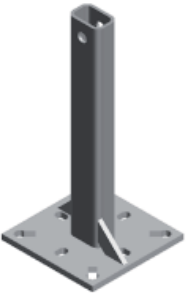
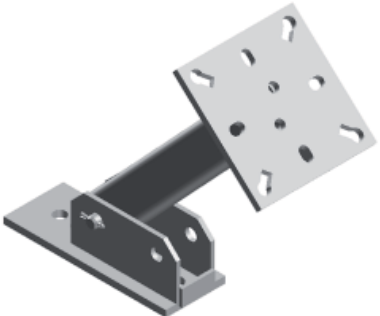

Components

			Art. No	Weight Kg/pc.	
Column Frame 90x270	(2.31 m²)	110319	160.60		
Column Frame 90x120	(1.89 m²)	110320	68.40		
Column Frame 90x60	(0.84 m²)	110321	46.10		
					
Vito-Inner corner 35/330	(2.31 m²)	110111	113.66		
Vito-Inner corner 35/270	(1.89 m²)	110112	94.27		
Vito-Inner corner 35/120	(0.84 m²)	110113	45.95		
					
Vito-Hinged corner 35/330		110121	135.12		
Vito-Hinged corner 35/270		110122	111.66		
Vito-Hinged corner 35/120		110123	54.16		
					
Vito-Outer corner 20/330		110124	84.10		
Vito-Outer corner 20/270		110125	69.30		
Vito-Outer corner 20/120		110126	31.40		

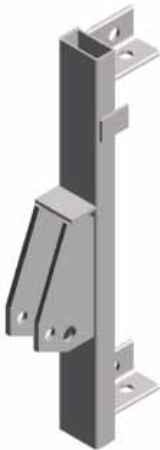



Components

	Art. No	Weight Kg/pc.	
<p>Aligning panel clamp For horizontally and vertically connecting the Vito panels.</p>	110181	5.50	
<p>Outer corner clamp The corner clamp connects two standard panels to one outer corner</p>	110182	8.80	
<p>Adjustable aligning clamp For horizontally and vertically connecting the Vito panels., but with additional adjustment area for adjustment widths of up to 15 cm</p>	110183	6.00	
<p>Aligning strut Used together with the strut connector for exact alignment of the formwork.</p>	110220	22.30	





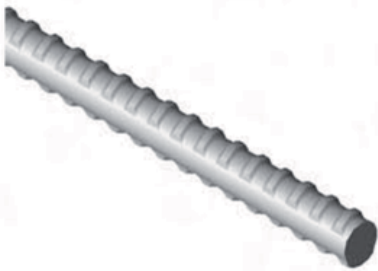

Components

	Art. No	Weight Kg/pc.	
<p>Strut connector</p> <p>Used for connecting aligning struts</p>	110219	8.90	
<p>Strut head</p> <p>Applicable to formwork heights $H < 3,90$ m. Used for connecting the strut adaptor or the wall strut</p>	110223	4.33	
<p>Strut adaptor</p> <p>Used for Europlus props and other attachments of raking props</p>	110221	4.88	
<p>Strut base</p> <p>Standard tubular steel props can simply be completed for supporting and aligning Vito formwork by using the above mentioned parts Connecting to the prop plate.</p>	110222	7.70	
<p>Bolt and nut M12 x 30</p> <p>For Connecting the strut adaptor and the strut base to the prop plate</p>	110224	0.06	




Components

	Art. No	Weight Kg/pc.	
<p>BKS strut connector</p> <p>To connect BKS-props at all shuttering heights from prop lengths 8.0 m and longer (max. load 34 kN).</p> <p>For each connection 2 bolts and nuts M20 x 40 1 bolt and nut M 20 x 80 are required</p>	110225	9.10	
<p>Base Connector align prop</p>	110226	4.33	
<p>Vito-walkway bracket 90</p> <p>TK-railing post</p>	110211 110213	12.97 4.50	
<p>Waler bold D 20 for connecting the walkway bracket</p> <p>Spring pin Secures the bolt D 20</p>	110331 110361	0.32 0.01	

Components

	Art. No	Weight Kg/pc.	
Vito tie nut (DW 15)	110241	1.26	
Tie nut 230 (DW 15)	110242	2.40	
Tie nut 150 (DW 20)	110252	1.51	
Waler spanner (30 cm)	110152	0.76	
Waler spanner L (50 cm)	110153	1.07	
Tension nut (DW 15)	110154	0.65	
To fasten the walers and panel.			
Tie rod 75 (DW 15)	110246	1.08	
Tie rod 100 (DW 15)	110247	1.44	
Tie rod 130 (DW 15)	110248	1.87	
Tie rod 175 (DW 15)	110249	2.52	
Tie rod 20/100 (DW 15)	110255	2.56	
Tie rod 20/130 (DW 15)	110256	3.33	
S-bolt For connecting column frames only	110322	1.90	

Components

	Art. No	Weight Kg/pc.	
Box-out	110288	2.60	
Platform beam 125-150	110287	55.00	
Platform beam 150-200	110286	68.60	
Platform beam 200-250	110285	82.00	
Platform beam 250-300	110284	95.40	
Platform beam 300-350	110283	108.00	
Platform beam 350-400	110282	122.20	
Vito Crane adaptor	110316	1.51	

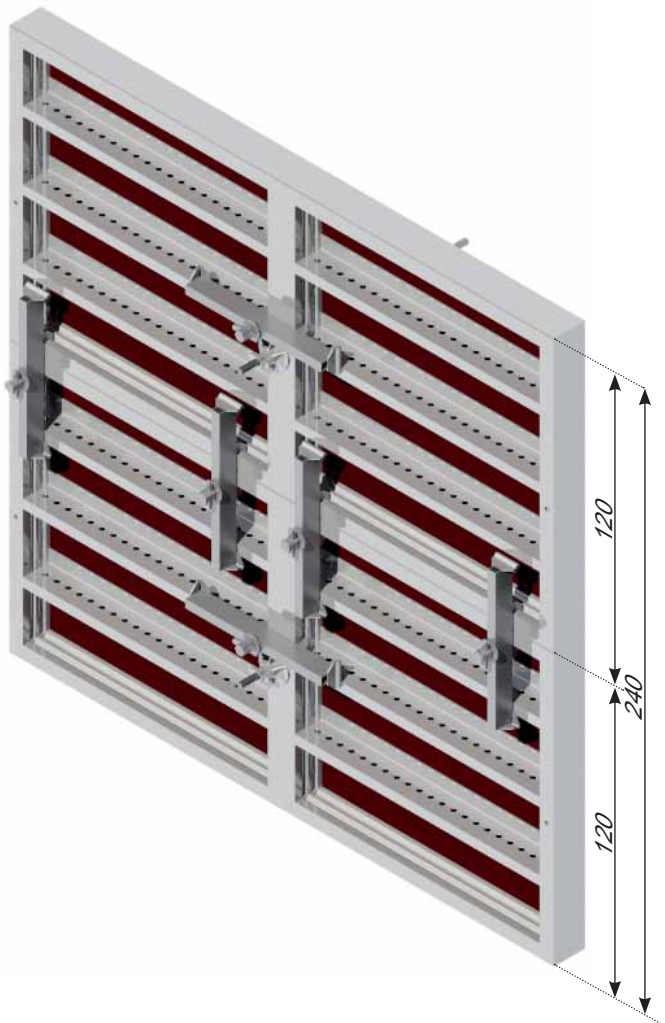
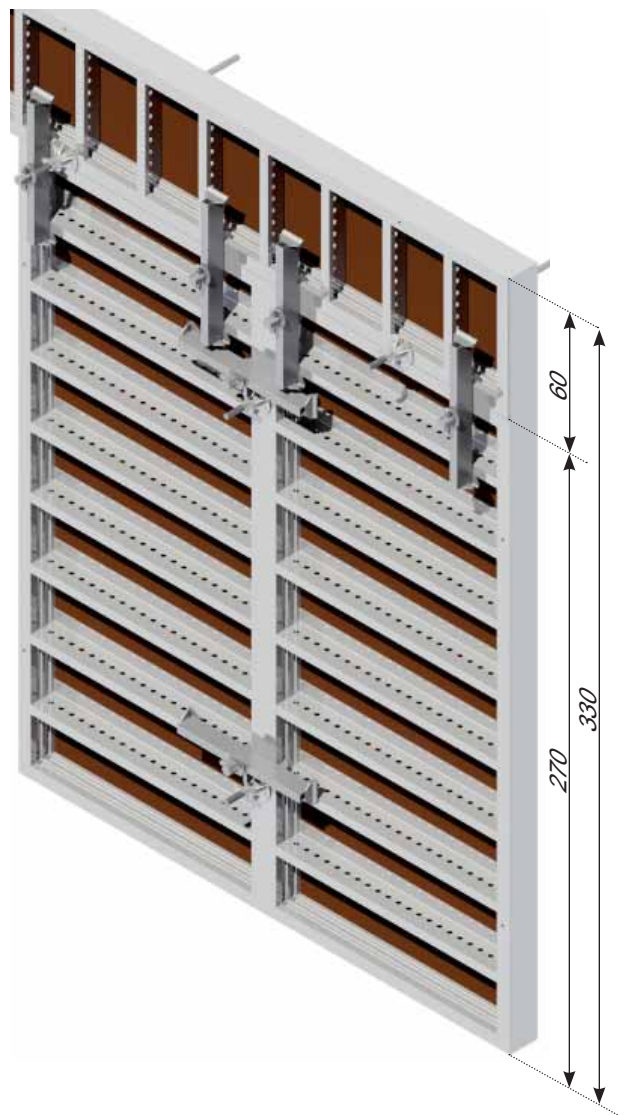
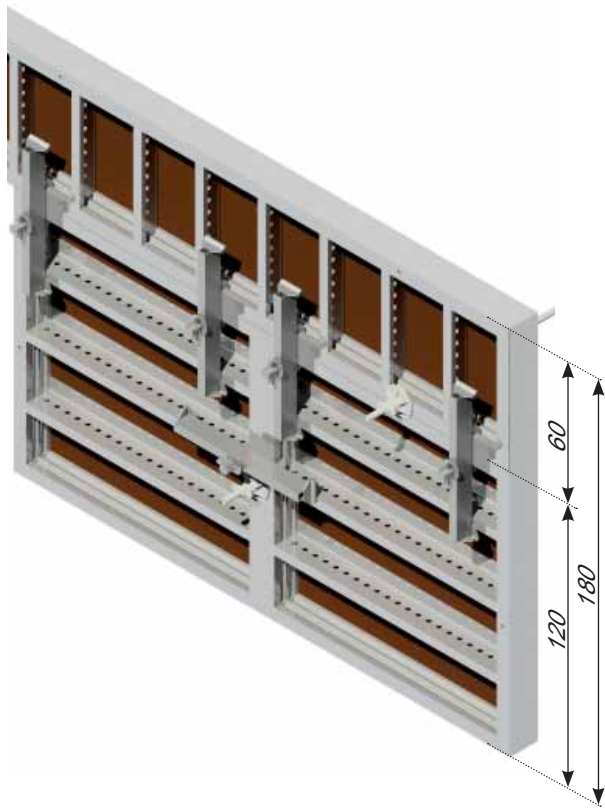
Panel Arrangement in Different Height

The Vito formwork panels are connected with the used of V-aligning panel clamp.

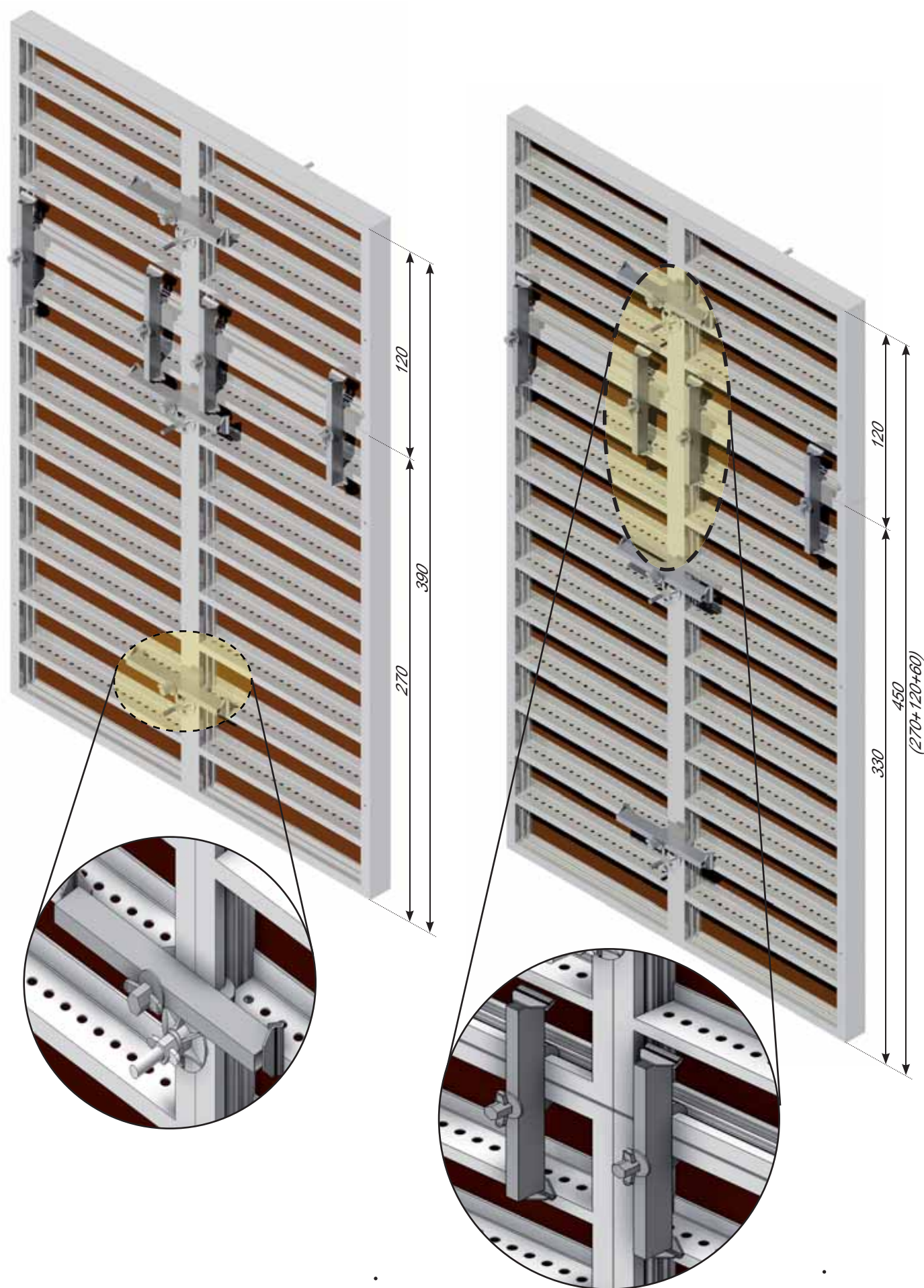
This connector creates tension-resistant, tight and aligned joints between formwork elements.

It can be used both on vertical panel joints and on horizontal joints on height-extended formwork.

Vito rachet is required for tightening and loosing vito connectors.



Panel Arrangement in Different Height



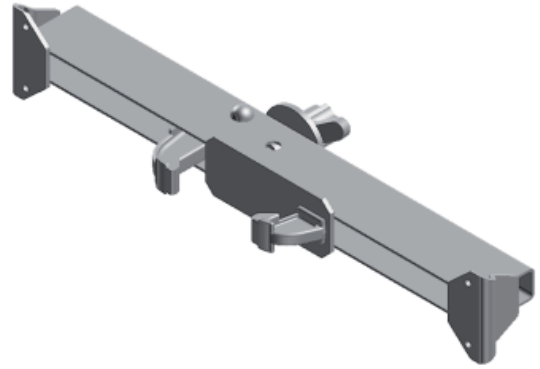
Panel Arrangement in Different Height



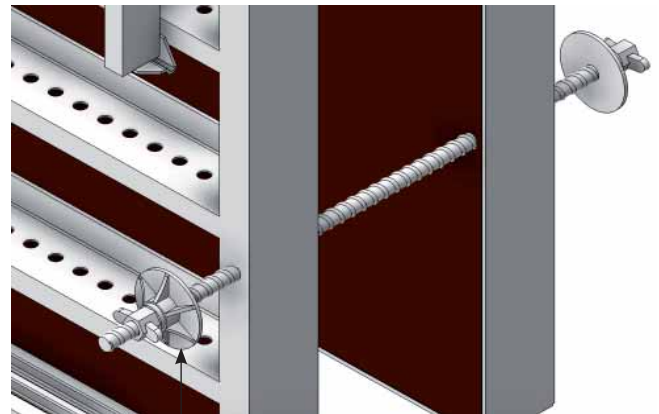
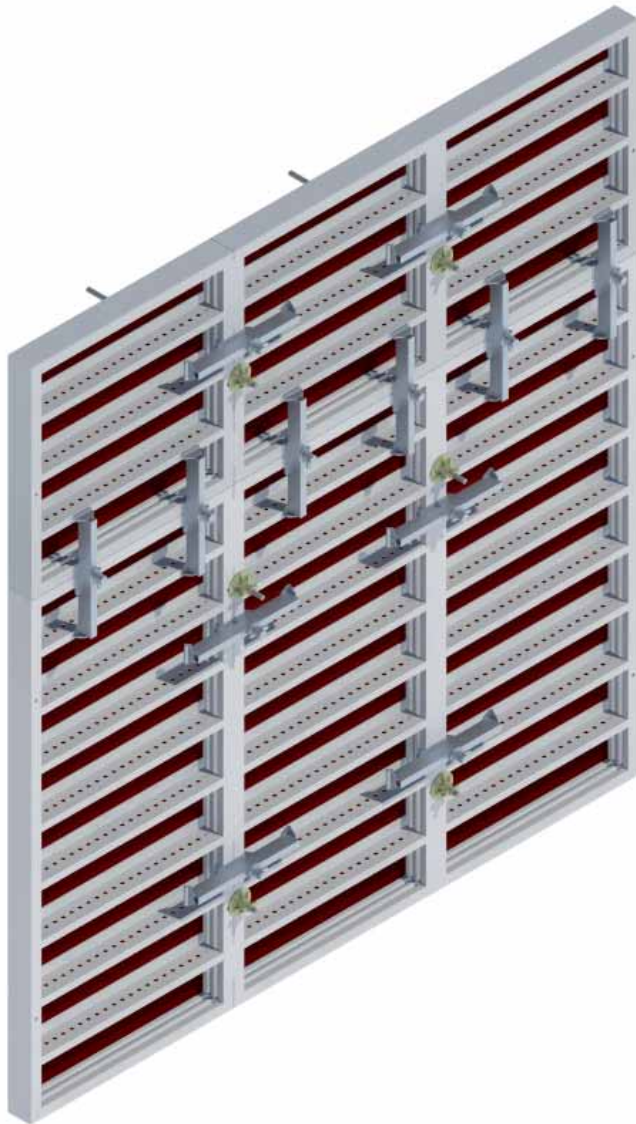
Application of Aligning Panel Clamp

The aligning panel clamp

Vito aligning panel clamp is used to join Vito panels horizontally and vertically regardless whether the panels are positioned standing, lying or staggered at height. The aligning panel clamp with its more than 63 cm long aligning profile provides an absolutely tight, flush-mounted and aligned panel joint.

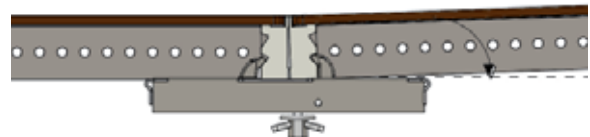


Vito formwork is tied via the tie holes provided in the panels. Plug must be removed before inserting the tierod. Unused tie holes should be sealed with plugs.



Vito tie nut

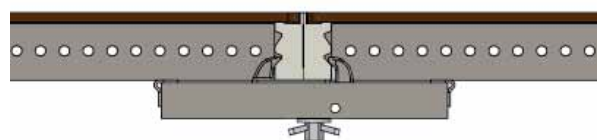
When tying the panel joint, the tie plate (13 cm dia) of the Vito tie nut extends across sufficiently to the neighbouring panel.



Slide **aligning panel clamp** onto the roughly aligned panels.

At a vertical panel joint with single-storey formwork both aligning panel clamps can be conveniently operated from ground level.

The use of the Vito ratchet makes the job fast, noiseless and easy on the components. No need to overtighten the toggle nut.

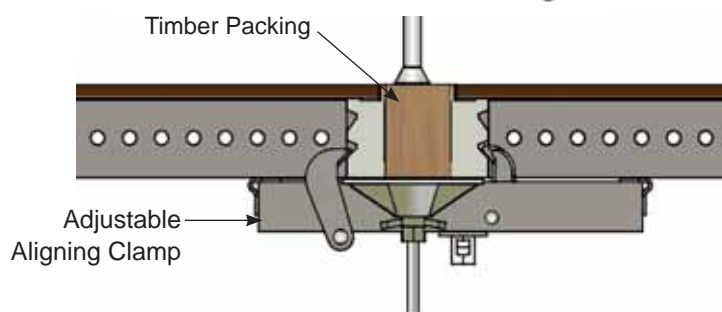
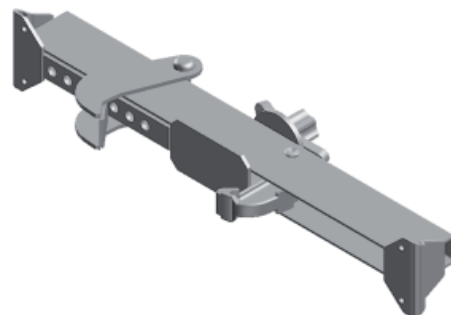


Tightening the toggle nut closes the joint and aligns the panels.

Application of Adjustable Aligning Clamp

The adjustable aligning clamp

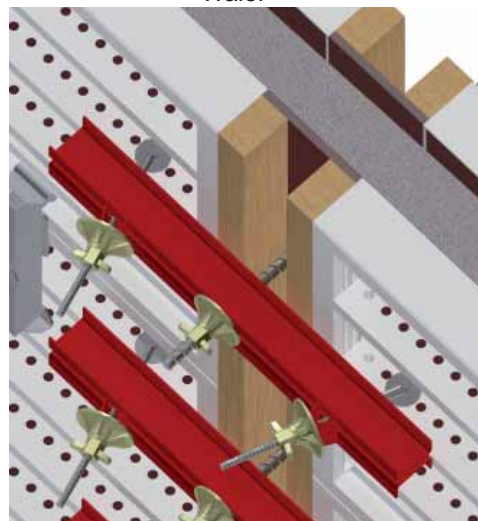
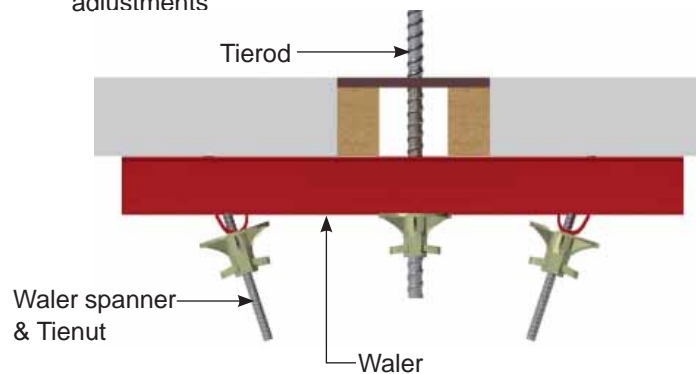
The adjustable aligning clamp connects Vito panels in the same way and perfection as the aligning panel clamp does. Moreover, its sliding claw permits a stepless length adjustment with Timber at the panel joint of 0 to 15 cm.



For an adjustment width of up to 10 cm the adjustment is used for tying purposes. Use large tie nut (e.g. tie nut 230) for this. For larger adjustments of 15cm both adjacent panels must be tied.

Adj. more than 15 cm

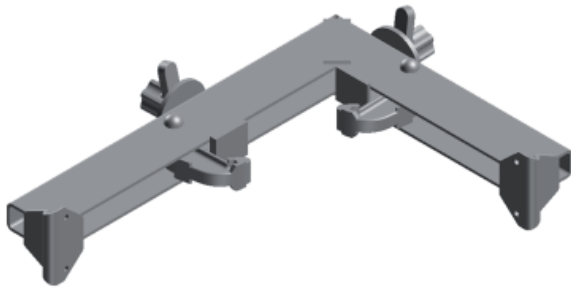
Length adjustments from 15 to 30 cm are shuttered by means of the vito waler is fastened at the panels profiles with 2 waler spanners each for an aligned, high tensile adjustments



Note:

Adjustable aligning clamp (install **three adjustable aligning clamps** on 3.30 m high panels).

Outer Corner Clamp



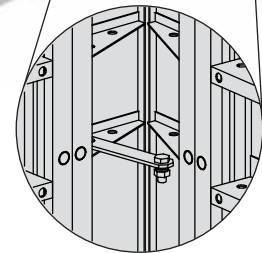
The right-angled outer corner is always composed of two Vito panels aligned and held together with outer corner clamps. The formwork can be adapted to wall thickness with the available elements of 30 to 90 cm and the 5 cm adjustment piece.

The number and arrangement of outer corner clamps and of the Vito clamps on the first joint of the outer corner depends on the thickness and height of the wall being shuttered



Inner Corner Panel

90° wall corners and T-walls are shuttered by means of the Vito inner corners. Adjustment to the desired wall thickness is carried out at the outer corners, which consist of standard panels and outer corner clamps.



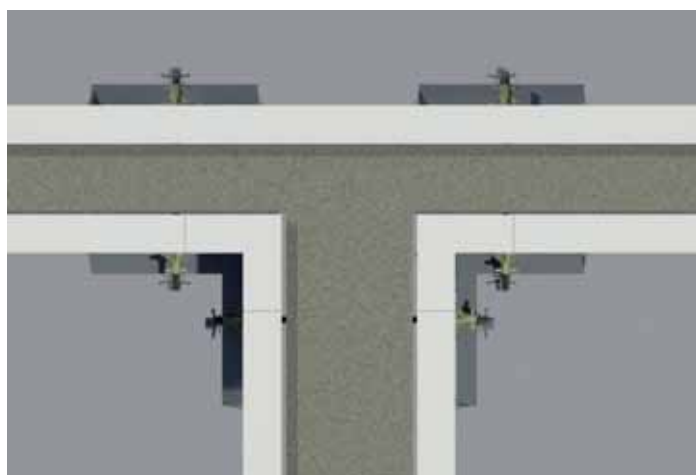
The possibility of reducing the 90° corner angle by about 2° assures easy and material-saving shuttering work.

At wall T-junctions, system shuttering can be simply used up to a wall thickness of 40 cm. Adaptation is possible with the various panel widths and the 5 cm wide corner adjustment piece.

The Vito waler is also used for shuttering a bulkhead. It is fastened with two waler spanners to the last Vito panels, which are tied in the usual manner.



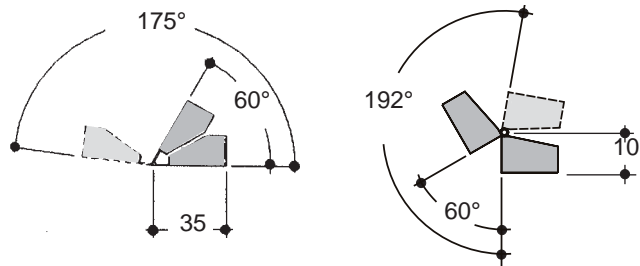
Stopends can also be formed with the Vito formwork by using the **outer corner clamps**. The maximum wall thickness is then **limited to 30 cm**. The corner clamps are to be assembled in the illustrated manner and quantity on the final panels.



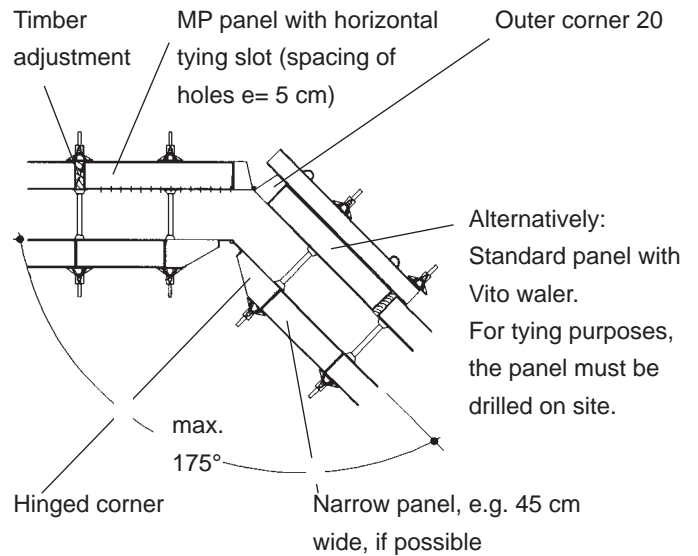
Application of Hinged & Outer Corner 20

Non-rectangular corners can simply be shuttered with hinged corners and the outer corners 20. The adjustment range of these components permits oblique angular corners from 60° to 175°. Adjusting members compensate for differing wall thicknesses.

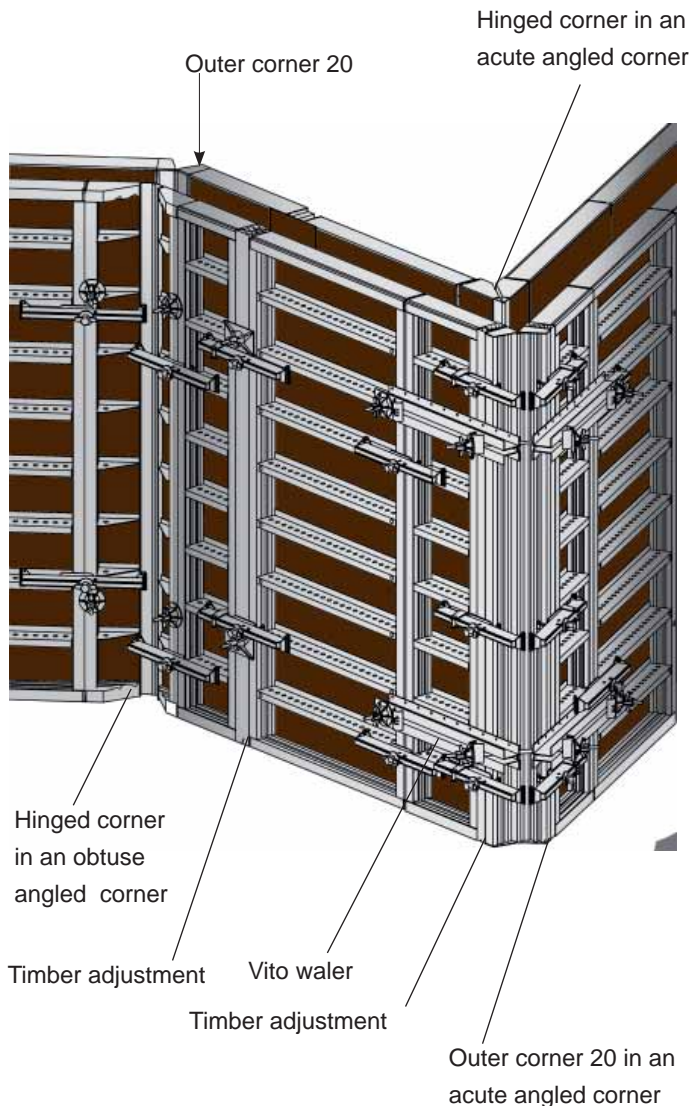
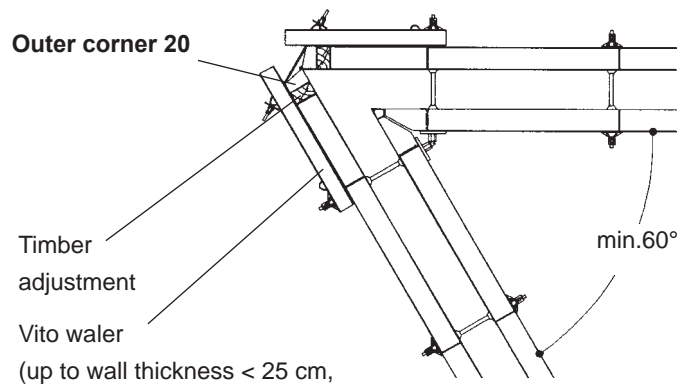
Adjustment ranges for the hinged corner and the outer corner 20:



Obtuse angled corner



Acute angled corner

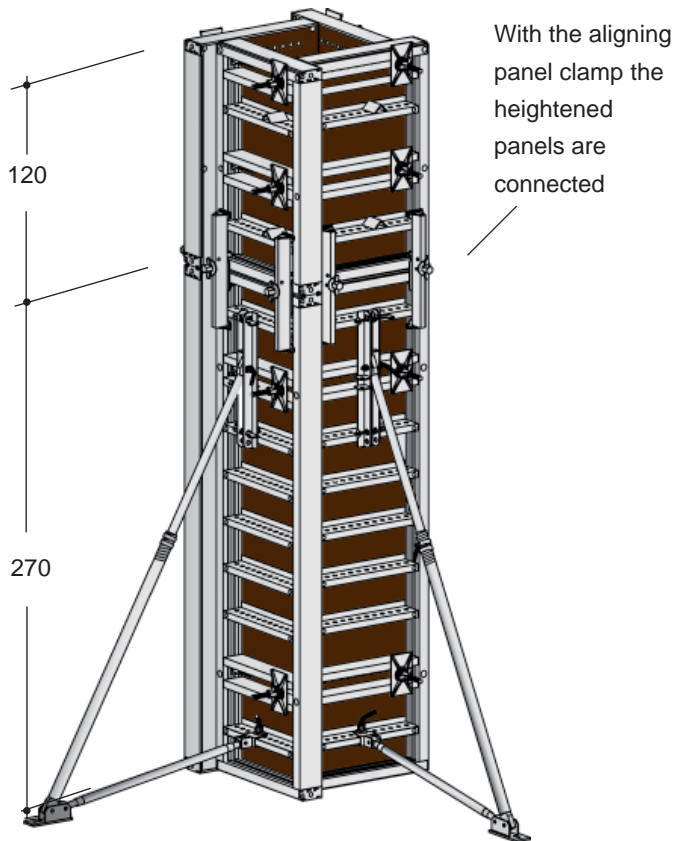


Column Formwork With MP Panels

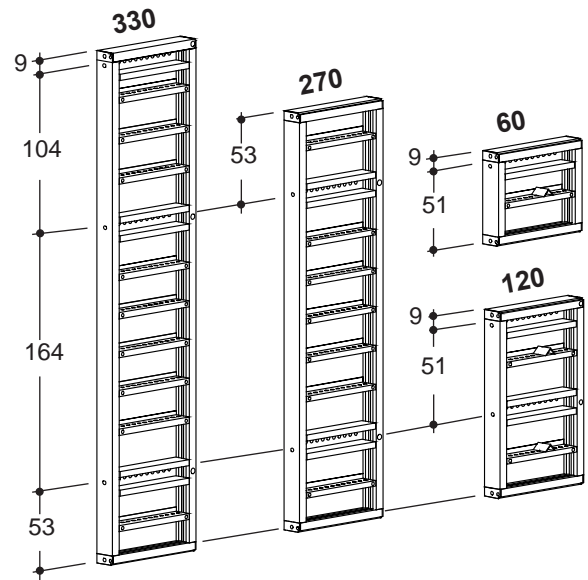
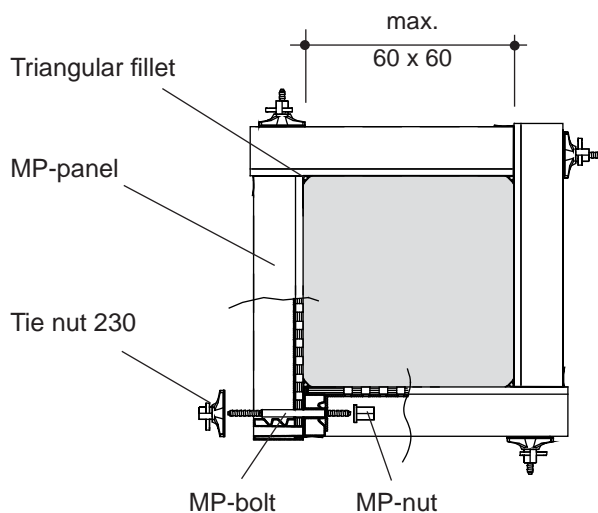
(Permissible concrete pressure = 80 kN/m²)

With their holes in 5 cm increments and the transverse hole in the edge profile, these panels are highly suitable for shuttering columns with square and rectangular cross-sections.

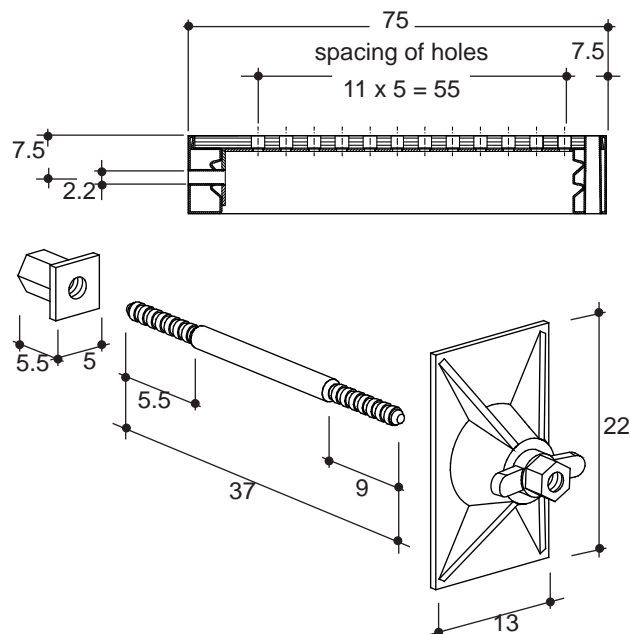
Four different MP panel lengths provide a height adjustment in 30 cm increments.



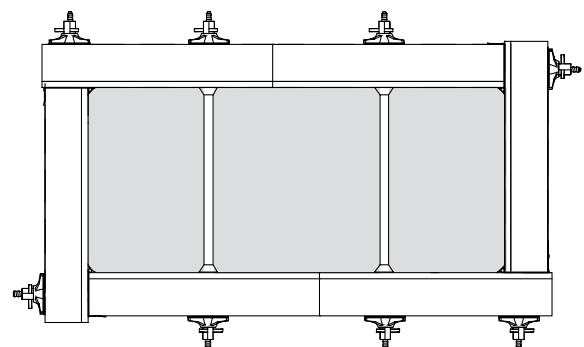
The panels are connected by means of the MP-bolt, the MP-nut and the tie nut 230. For shuttering heights of up to 2.70 m, only two spanning elements are required. Max. column cross section: 60 x 60 cm.



The spacing of the holes of the MP-panels



With additional ties and with further **MP-panels**, larger column cross-sections can be shuttered, too.

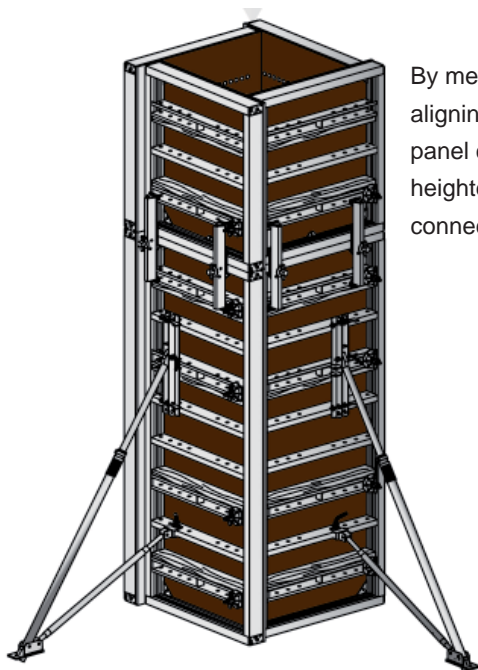


Column Formwork with Column Panels

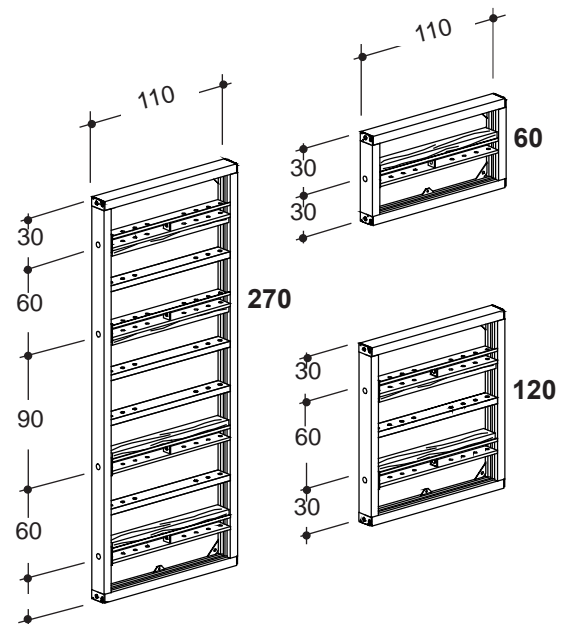
(permissible concrete pressure = 100 kN/m²)

A special column formwork for cross sections of up to 90 x 90 cm and an extremely high permissible concrete pressure. The column frames are supplied without shuttering skin. They can simply be covered (by means of the built-in wooden lath) on-site with an appropriate shuttering skin in the desired manner.

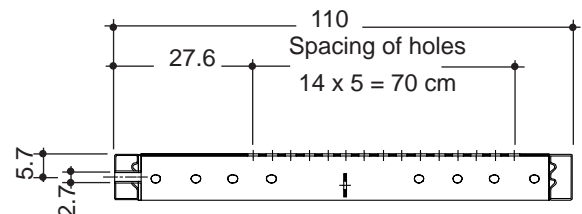
GFT also supplies shuttering skins in cut-to-size shape, with or without pre-drilled segment holes.



By means of the aligning panel clamp the heightened panels are connected.

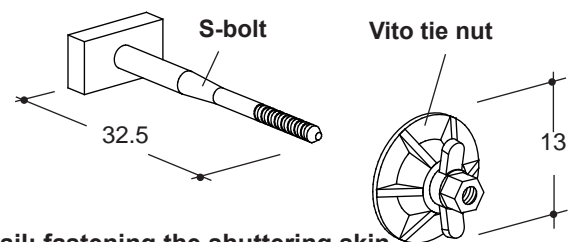


The hole increments of the column frames:



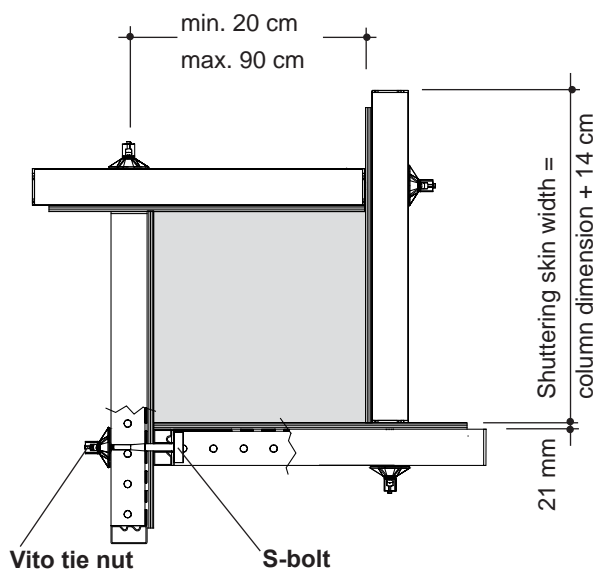
For each **S-bolt** a **Vito tie nut** is required.

A 2.70 m high column formwork requires 16, a 1.20 m heightening 8 and a 0.60 m heightening 4 **S-bolts** with **Vito tie nuts**.



Detail: fastening the shuttering skin

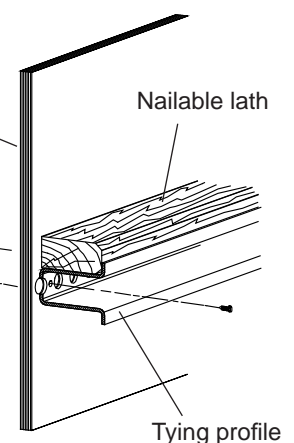
The shuttering skin can be screwed or nailed onto the nailable lath or screwed from the rear through the tying profile. Moreover, at the top and lower edge profile of the column frames fasteners are provided.



Shuttering skin 21 mm

Plywood screw or screw nail 6 x 60

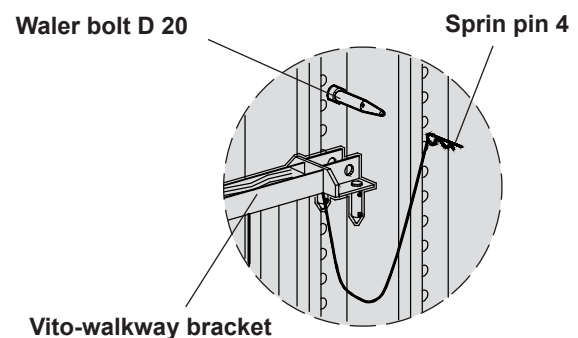
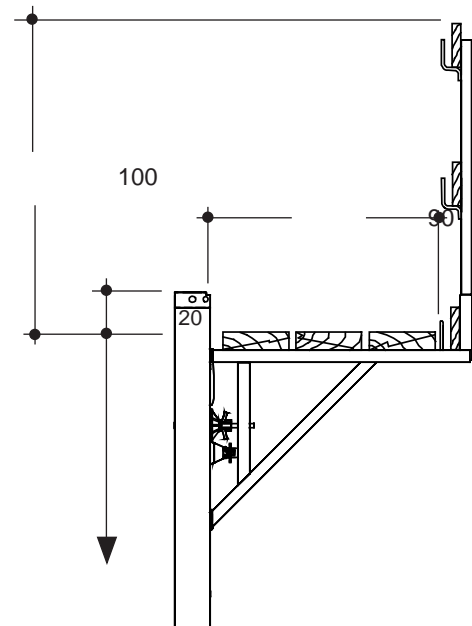
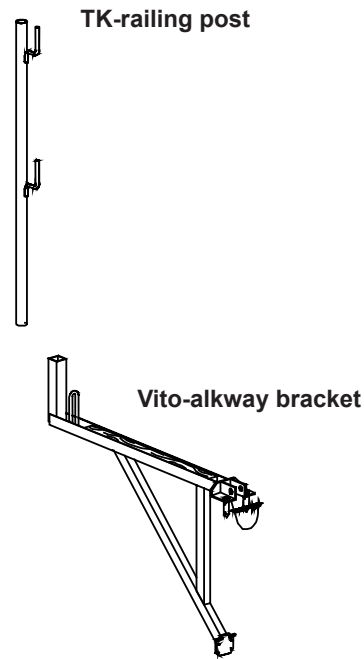
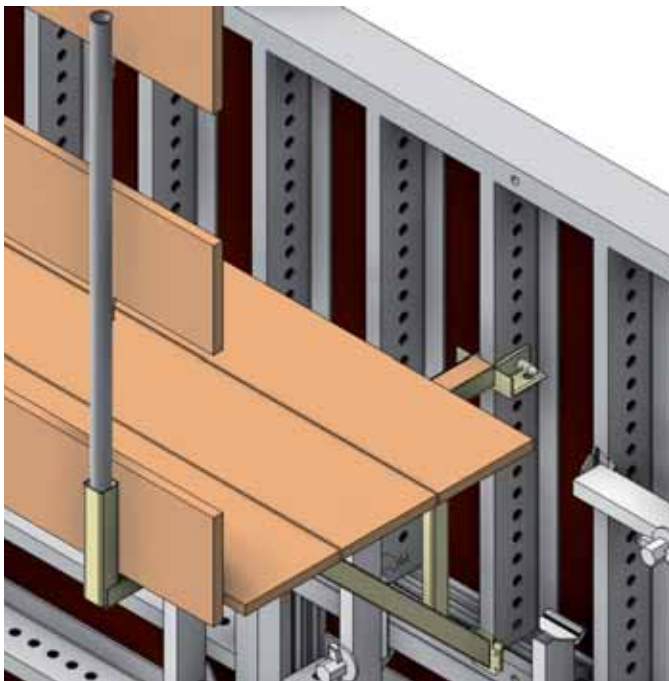
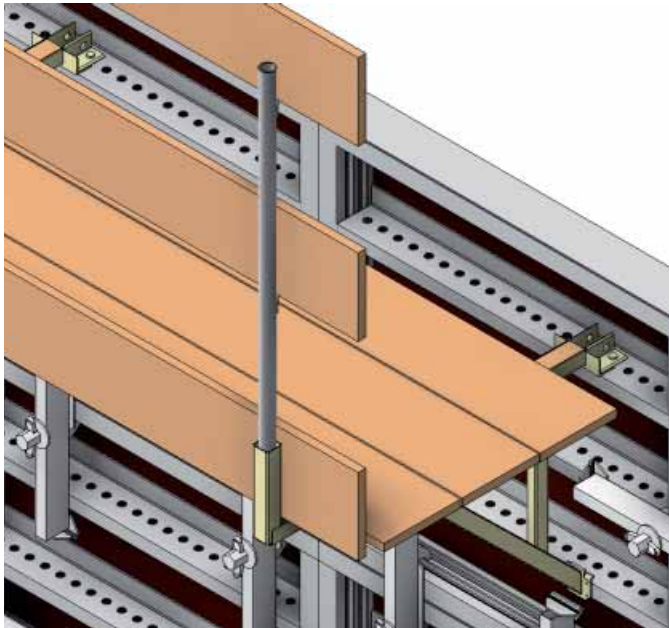
The 28 dia. plug closes the unused holes



Vito WalkWay Bracket

The stage for concreting is formed with the Vito-walkway bracket and the inserted TK-railing post. Simply hang the brackets with their receiving pins into the hole segment of the transverse ribs of the panels. Fastening with the unlosably attached spring pin secures the walkway bracket. The distances between the Vito-walkway brackets (freely selectable in 5 cm increments) must not exceed 2.50 m* at a permissible load of 1.5 kN/m². The planks can be nailed to the wooden lath built into the bracket's horizontal member.

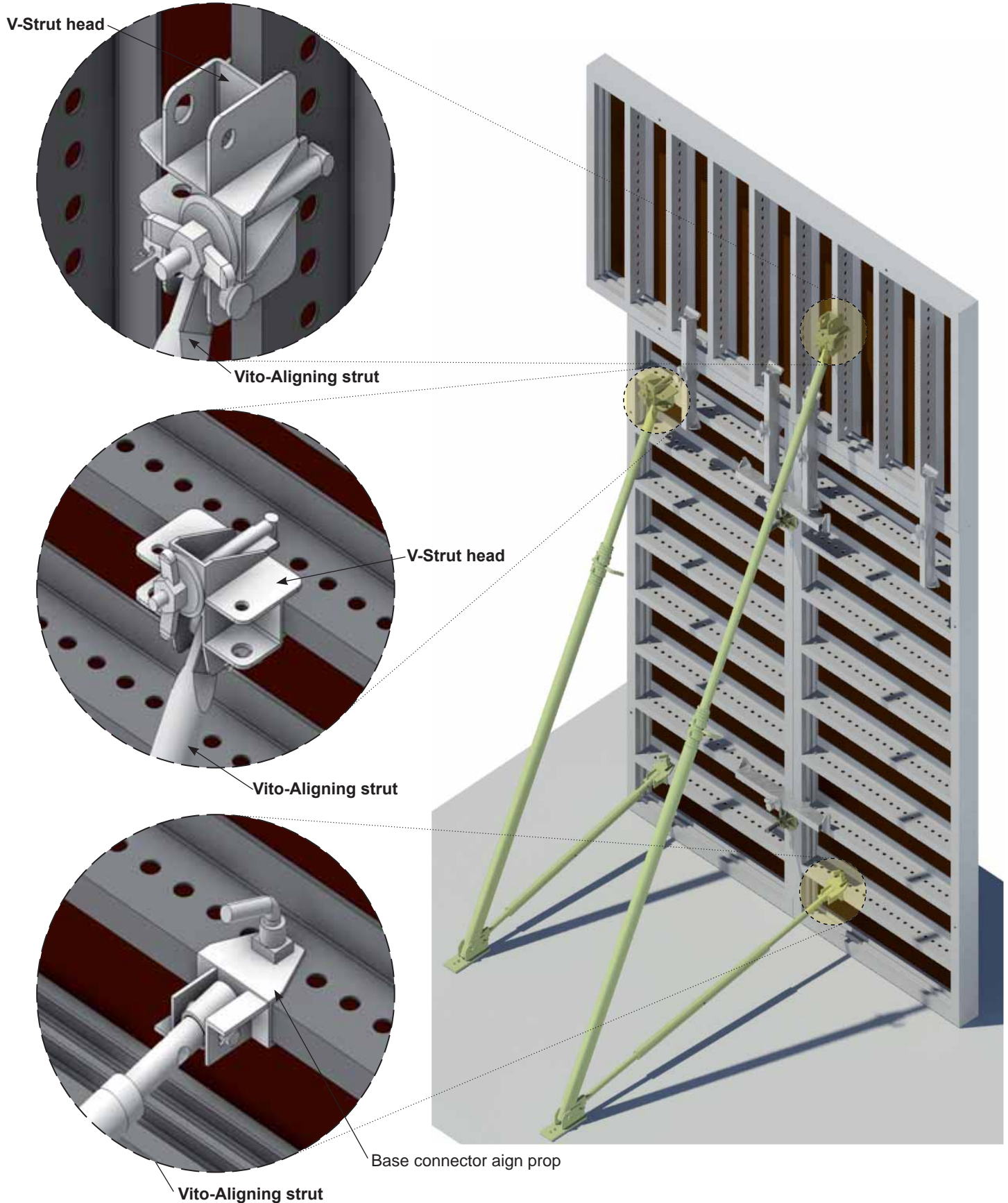
*For applications over ground level from 31.5 m - 100 m, the maximum distance is limited to 1.90 m.



The **Vito-walkway bracket** is connected to a lying panel with the aid of a **waler bolt D 20** to the vertically arranged ribs.

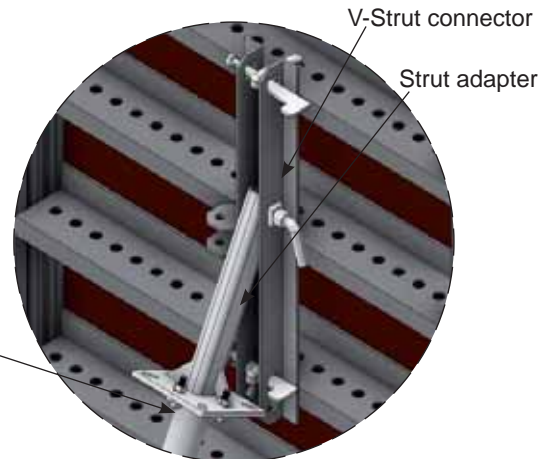
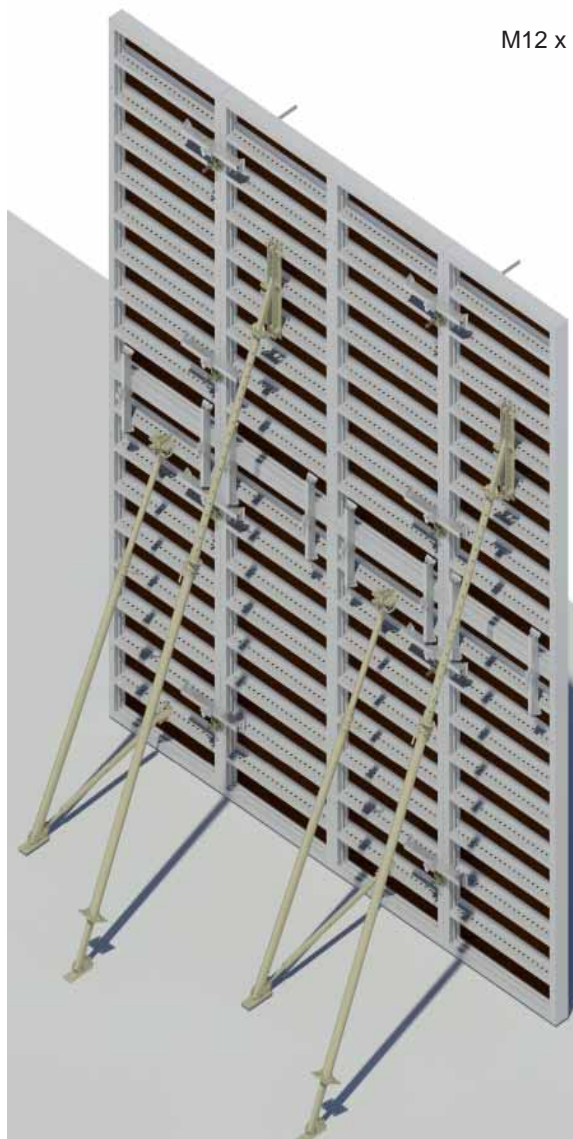
Formwork Strutting using Align Strut

For formwork heights of up to approx. $H = 3.90$ m the V-Strut head may be applied as depicted below. This connector is attached to one intermediate rib of the Vito panel only. Normally it should be positioned as close to the edge profile as possible (vertical panel).

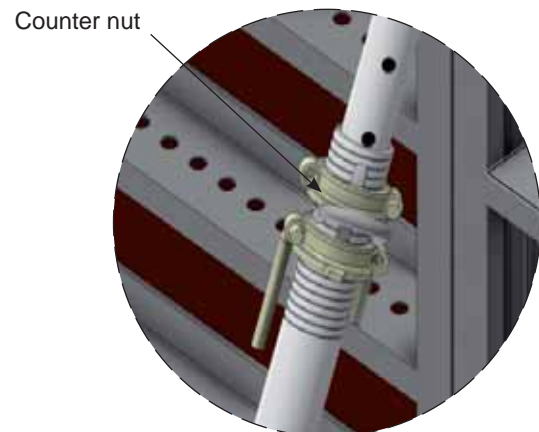


Formwork Strutting using Steel Prop

The V-Strut connector, the Strut adapter and the Strut base joint together with standard Europlus steel props can be used for additional bracing height-extended Vito formwork at shuttering heights of $H > 4.20$ m. The drill-holes provided in the connecting plates of the Strut adapter and Strut base joint allow all GFT steel props to be connected to them (always use 4 bolts M 12 x 30 with nuts for each joint).



Panel Connection detail



Locking with counter nut

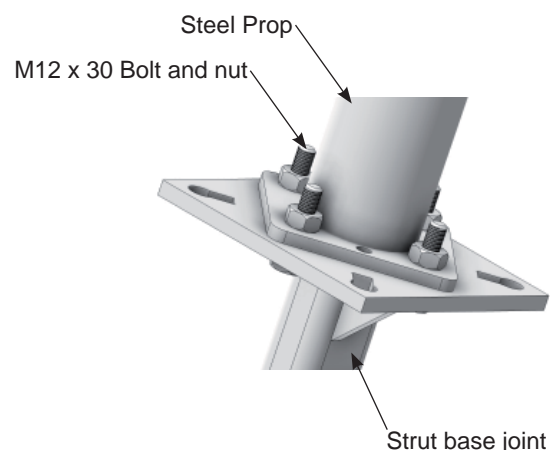
A counter nut A/DB, AS/DB or EC/DB (depending on the chosen type of tubular steel prop) makes the steel prop tensile and pressure resistant.

Counter nut A/DB 260/300
for Europlus 260, 300 DB/DIN.
Counter nut AS/DB 350/410
for Europlus 350 DB/DIN.
Counter nut EC 400/DC 550
for Europlus 400 EC, 550 DC.

Art. no.: 107107

Art. no.: 110186

Art. no.: 110374



The proper type and size of steel prop has to be selected accordingly to the loading, formwork height and the extension length of the prop.

There are steel props in the product line of GFT for all ranges between 1.50 m and 5.50 m (see also relevant Load Tables).

Important!

The **permissible tension load** of the steel prop is **at least 15 kN**.

Vito Shaft Formwork



Vito Shaft Formwork Image

CB240
(For outer formwork
Refer CB240 Catalogue)

Vito shaft formwork combined with additional GFT components such as the CB 240 for the outer formwork as well as a pawl locked platform for the inner formwork.

Note:

For the folding scaffold from **GFT**, individual instructions for erection and use are available.

Vito Shaft Formwork

Platform beam 125-150

Platform beam 150-200

Platform beam 200-250

Platform beam 250-300

Platform beam 300-350

Platform beam 350-400

The pawl-locked platform consists of platform beams onto which an on-site squared-timber and plank cover is laid. The platform beam is always project dimensioned.

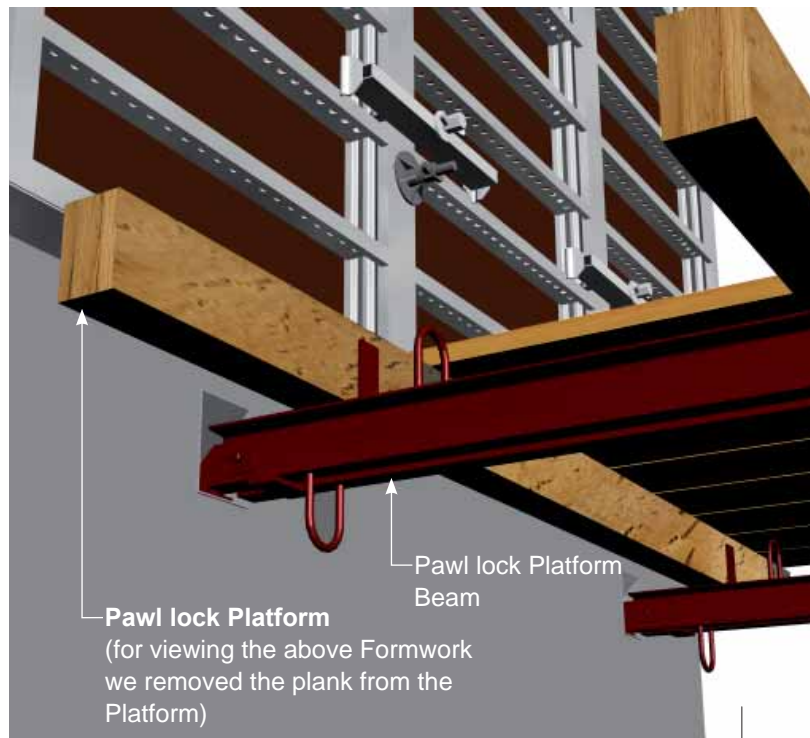
Articulated bearing claws are mounted at the ends of the double U-beam and automatically engage into the previously concreted box-outs. These can be re-used with the aid of a hang-on lag platform after shifting the pawl-locked platform.

Static assumptions:

1. Max. spacing of platform beams: 2.50 m. Max. height of the Vito formwork: 5.40 m.
2. Load-bearing capacity of the lag platform chain must be at least 10 kN, e.g. tension chain
3. Max. live load: either pawl-locked or lag platform
 $P = 1.50 \text{ kN/m}^2$.
 Alternative single load: $F = 1.0 \text{ kN}$ at an unfavourable position.
4. The articulated claws of the platform beams require a minimum strength of concrete of 1.50 kN/cm^2 (= B15).

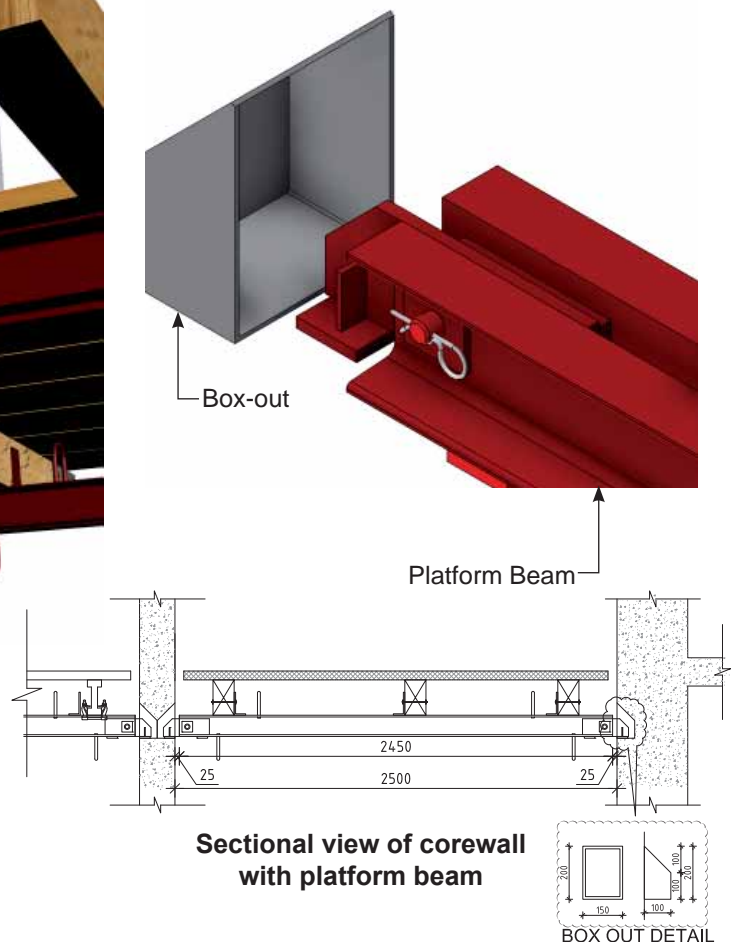
Dead weights:

Vito formwork	: approx. 60 kg/m ² ,
Pawl-locked platform	: approx. 70 kg/m ² ,



Here, the pawl of the platform beam rests in the opening of the cast-in box-out. The box-out can be removed and re-used after lifting the platform.

The correct cut-to-size length of the platform beam is calculated by the clear width of the room minus 50 mm ($2 \times 25 \text{ mm}$).

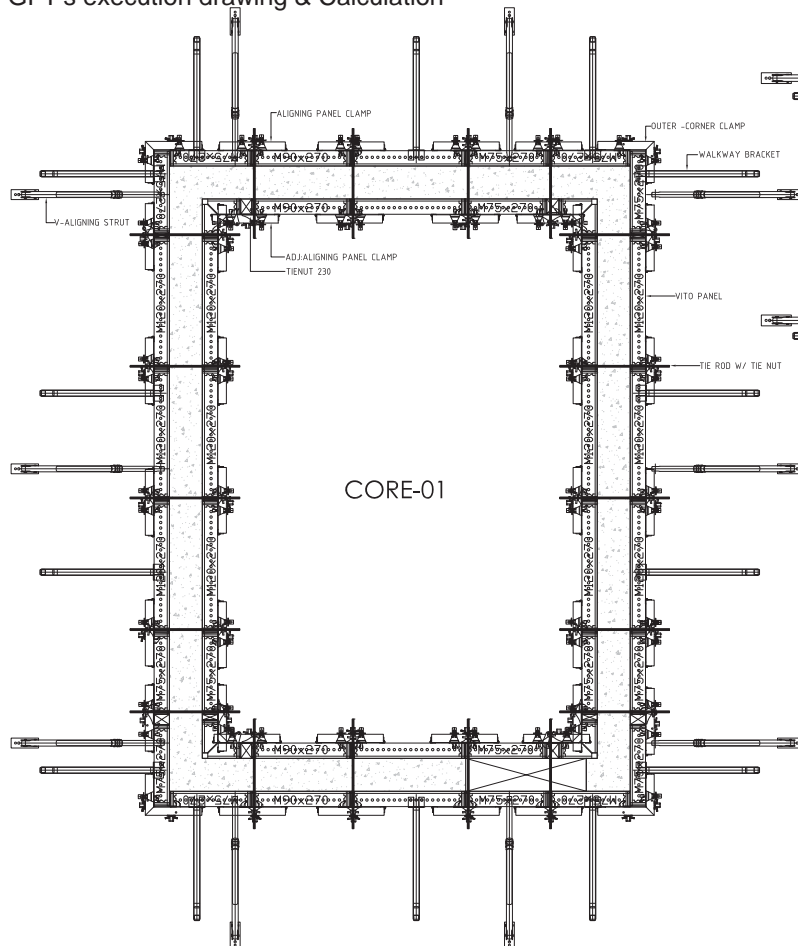


Engineering, Design & Drawing

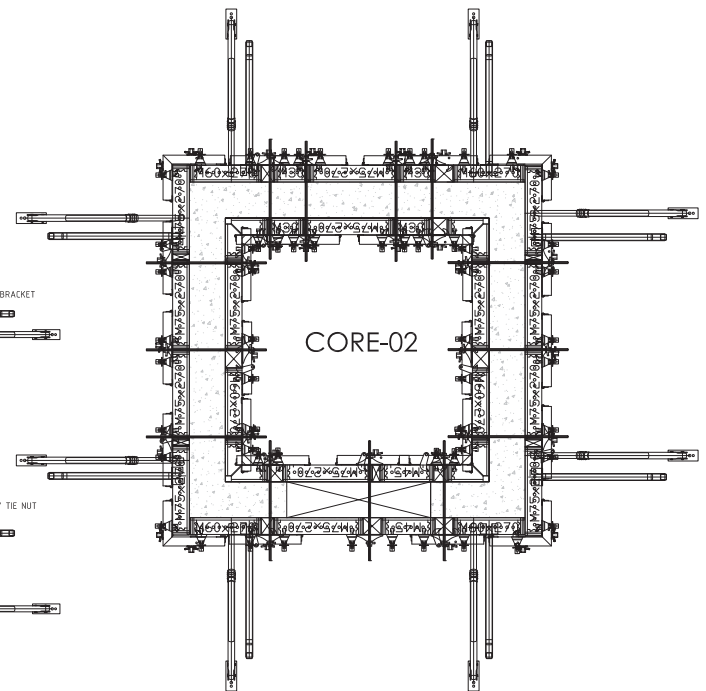
All the Shop drawing, Technical data & the Statical calculation will be Submitted by GFT in accordance with the structural drawing project requirement

The site erection should be done as per GFT's shop drawing and shall be supervised and inspected by GFT's formwork specialist

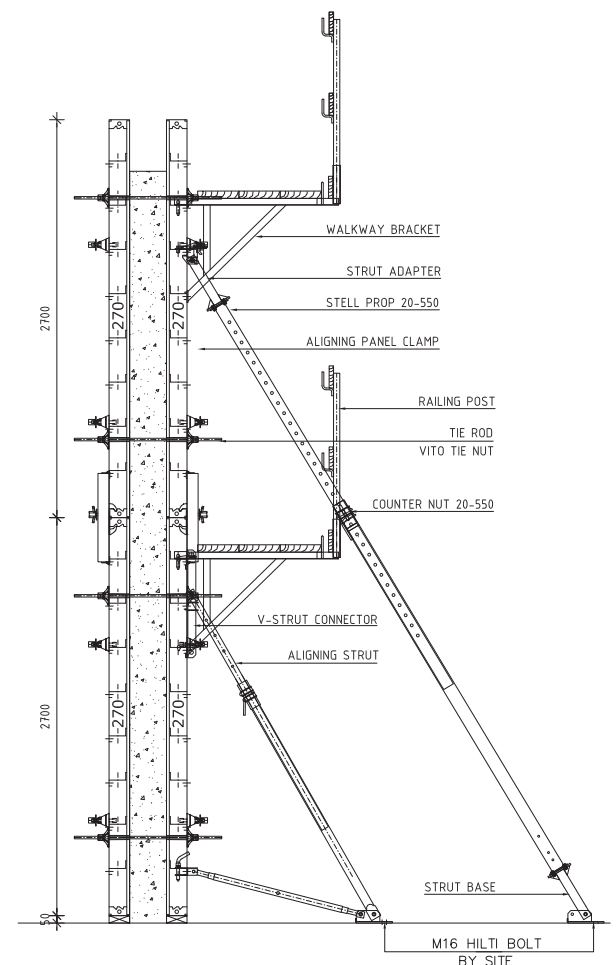
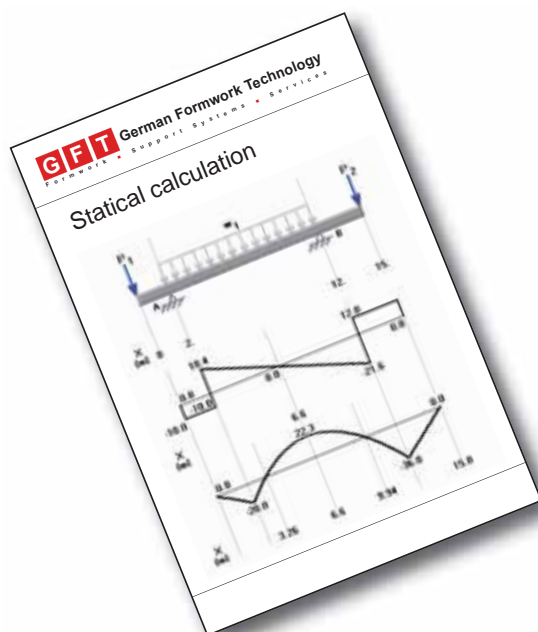
The spacing and positioning of the Formwork material are arranged based on the static requirements and as shown in the GFT's execution drawing & Calculation



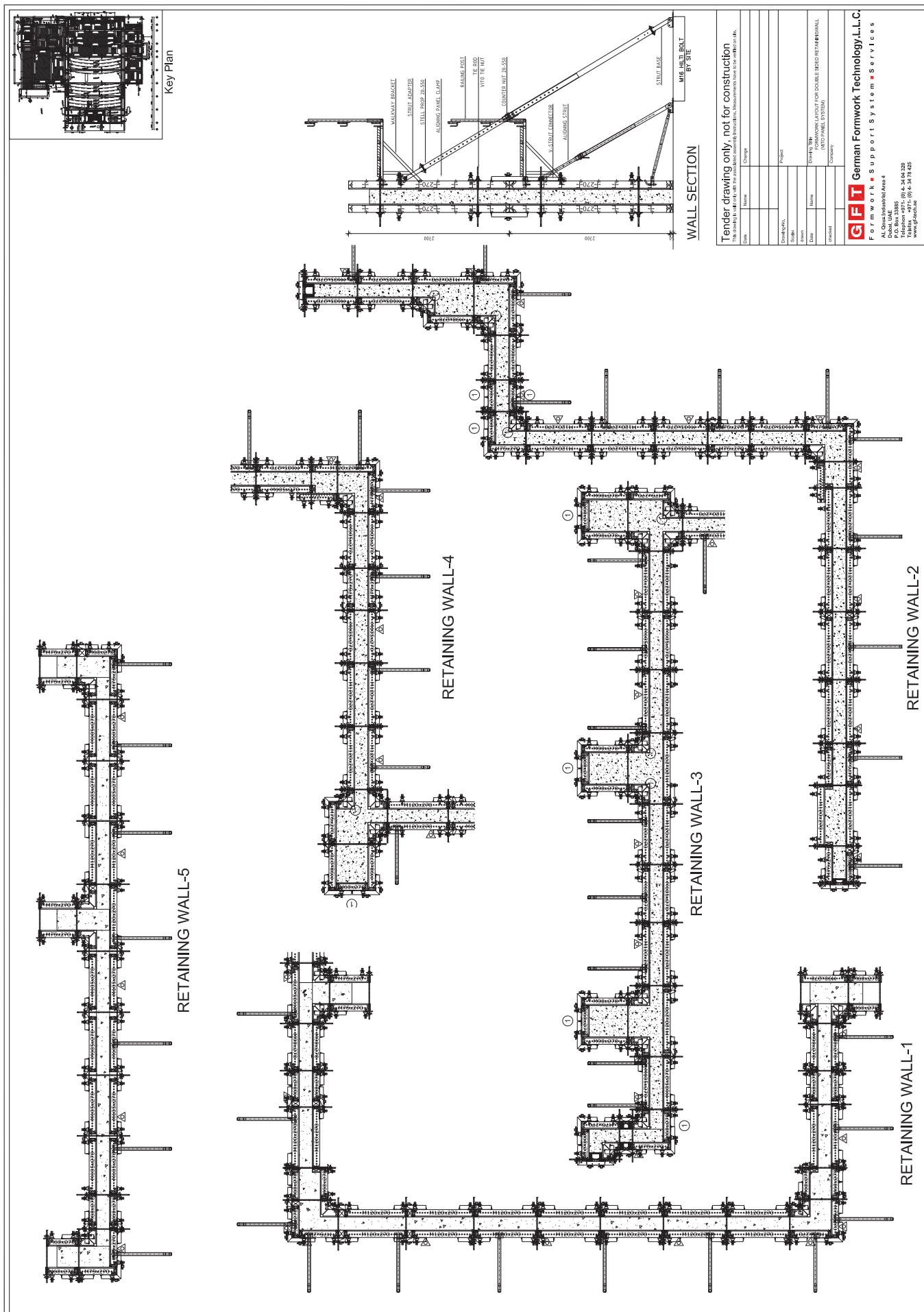
Formwork Layout of Corewall Using Vito Panel



Formwork Layout of Corewall Using Vito Panel



Typical Section





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