



**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



# Single Sided Support Frame

Assembly and Application Guide

# Product Information & Features

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## Product Features

The Single Sided Support Frame designed to be used through the formwork elements to tie them to the opposing formwork, This situation occurs, for example:

- A. • Stop-end formwork for foundation slabs.
- B. • Slurry walls and sheet-pile walls.
- C. • Forming single sided retaining walls.
- D. • Casting against masonry walls.
- E. • Casting against insulating layers.
- F. • In Underground - railway construction projects where a subsequent concrete split-duct is cast against a bored diaphragm wall.

The Single Sided Support Frame also used in the low-heat mass concrete field:

- A. e.g. In power - station construction projects where wall thicknesses are so great that the elongation of the tie-rods that would take place means that it is no longer technically or economically viable to place through-ties.
- B. For supporting starter - block formwork used in dam-building.

We have developed two system :

- A. UVR frame supporting system:** Is an easy way to make Single sided support for Wall formwork of up to 4.00 m max. height.
- B. HD frame supporting system:** Is a heavy duty single sided wall formwork for height above 4.00 upto 9.00 m

The loads resulting from the pouring of the walls are transferred by the frames into the base structure through the cast-in loop tie anchors at the front base of the formwork and through the compressive jacks at the rear of the Single Sided Support Frames. Therefore, it is essential to determine whether the structural components such as base slabs or foundations are capable to carry these loads. Moreover, the opposite side of the single sided wall formwork (either existing structural parts or shoring) must be able to carry the concrete pressure as well.

The arrangement of the loop ties and distances between the permanent anchors must be determined based on the calculated statical values and the anchors must be positioned as accurately as possible prior to pouring the floor slab.

Please note that Tie Rods which are used for anchoring the FFI Single Sided Support Frames must never be welded or heated at all.

## Important Remarks

The succeeding instructions for assembly and application has to be carefully read as it contains detailed information on the proper application and handling of the GFT Single Sided Support Frame. All instructions concerning technical operation and function have to be observed carefully. Please note that exceptional use of the GFT Single Sided Support Frame requires a separate design calculation.

In order to ensure a technical and safe use of our product, all relevant national safety rules and regulations and safety instructions of national institutes and/or local authorities have to be observed. In general, only undamaged material and components which are in proper condition must be used

It is important that damaged components are sorted out and removed from the construction site. In case of repairs, only original spare parts of GFT must be used.

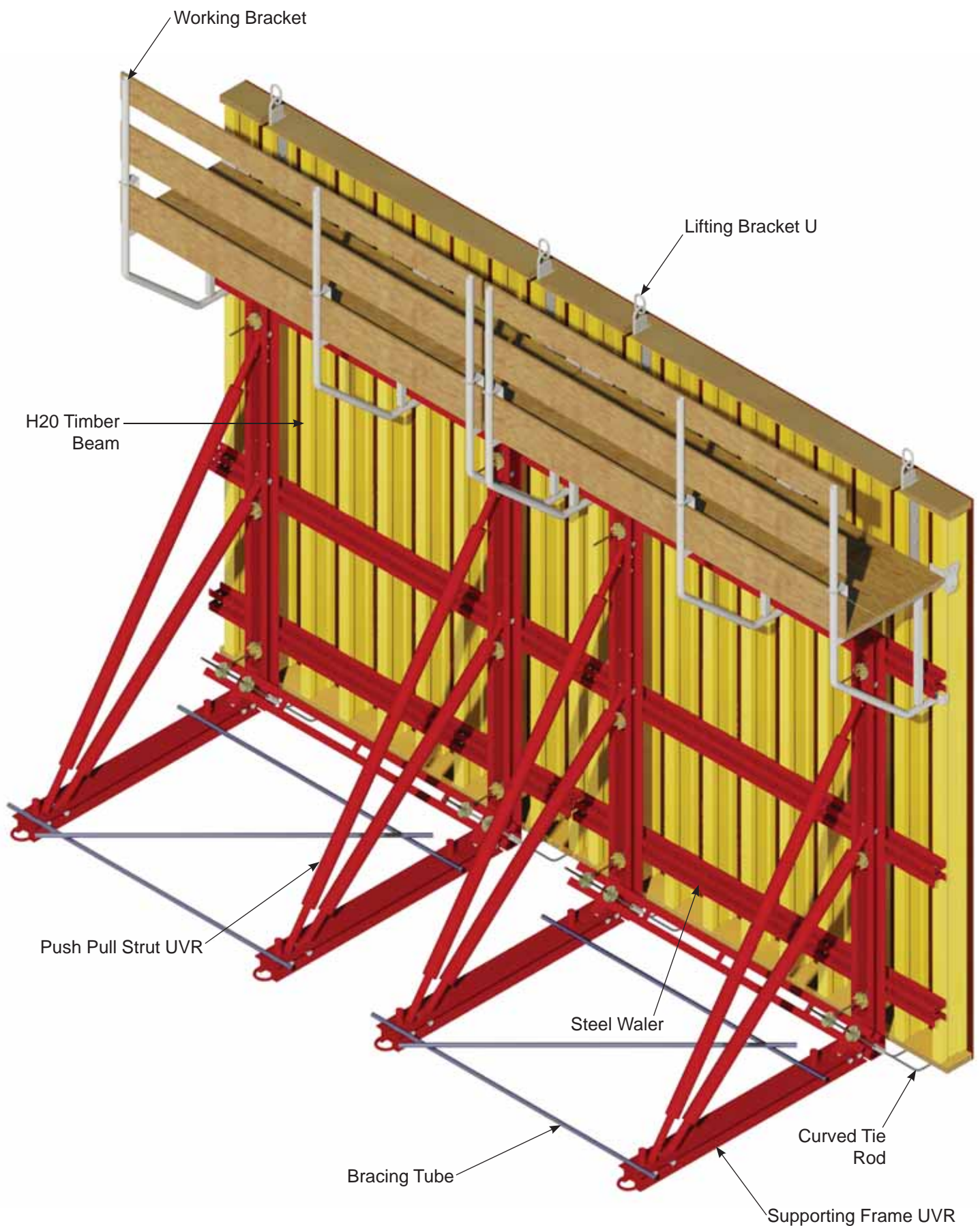
The use of GFT formwork systems combined with other supplier's materials may involve certain dangers and therefore require an additional inspection and quality check by our formwork specialist.

Due to technical development of our system, we would like to emphasize that GFT reserves the right to revise, change, or modify any of the product's components at any time without prior notice.

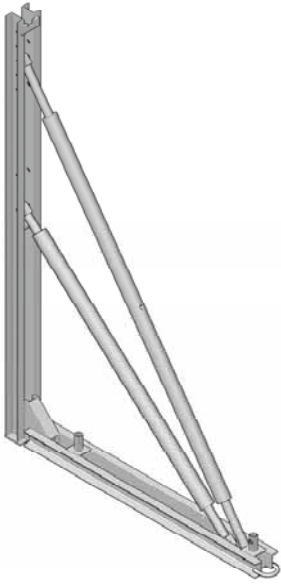

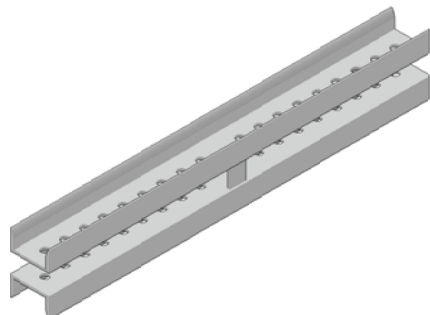
The Single Sided Support Frame is designed and manufactured in accordance with BS EN 12812 : 2008, code of practice for Falsework

# Product Overview


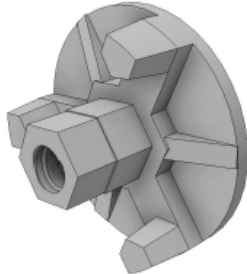

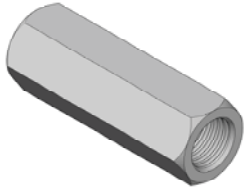

## UVR Frame Supporting System



# Components

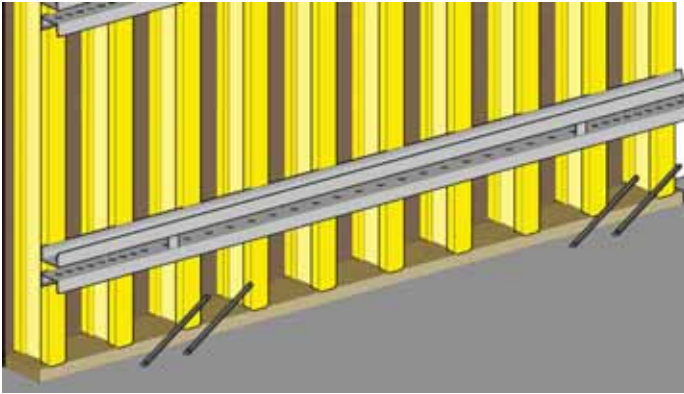
	Art. No	Weight Kg/pc.	
<b>Supporting Frame UVR</b> With height of 3.30m.	<b>103FU350</b>	<b>196.10</b>	
<b>Push Pull Strut UVR</b> 2.00-2.85m.	<b>103PU285</b>	<b>34.05</b>	
<b>Push Pull Strut UVR</b> 2.40-3.30m.	<b>103PU330</b>	<b>38.45</b>	
<b>Steel Walers</b>			
Steel Waler-100/050 Steel Waler-100/075 Steel Waler-100/100 Steel Waler-100/125 Steel Waler-100/150 Steel Waler-100/200 Steel Waler-100/250 Steel Waler-100/300 Steel Waler-100/375 Steel Waler-100/500 Steel Waler-100/600	101SW050 101SW075 101SW100 101SW125 101SW150 101SW200 101SW250 101SW300 101SW375 101SW500 101SW600	10.26 15.39 20.55 25.77 31.09 41.63 52.04 62.58 78.31 104.34 125.42	
			Walers are connected by means of Waler Connectors which provide a tension and pressure resistant element connection. The element connections are tight and precisely aligned.

# Components

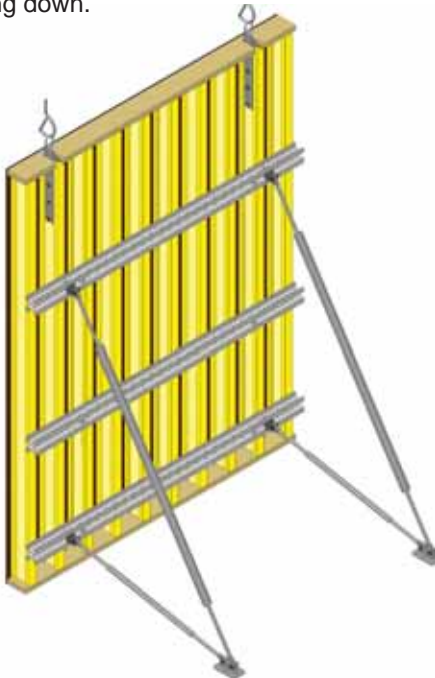
	Art. No	Weight Kg/pc.	
<b>Waler Holder Hook U</b> Connects the Formwork to the Single Sided Supporting Frame.	<b>101FH014</b>	<b>1.62</b>	
<b>Flange nut 3 wing 100 V</b> Used for tying and connecting purposes. with a max. permissible load of 90 kN.	<b>315FN120</b>	<b>0.59</b>	
Tie Rod 50    15mm dia./D&W Tie Rod 75    15mm dia./D&W Tie Rod 100   15mm dia./D&W Tie Rod 130   15mm dia./D&W Tie Rod 175   15mm dia./D&W Tie rod with max. permissible load of 90kN	<b>110333</b> <b>110246</b> <b>110247</b> <b>110248</b> <b>110249</b>	<b>0.7</b> <b>1.05</b> <b>1.40</b> <b>1.82</b> <b>2.45</b>	
<b>Hexagonal Coupler Galv.</b> SW 30 L-100mm. Fastens the cast-in and reusable anchor elements	<b>FFIHC100</b>	<b>0.43</b>	
<b>Curved Tie Rod V</b> Is cast-in concrete and transfers the Tensile Force in to the Building Structure.	<b>FFITR012</b>	<b>1.87</b>	

# Erection procedure

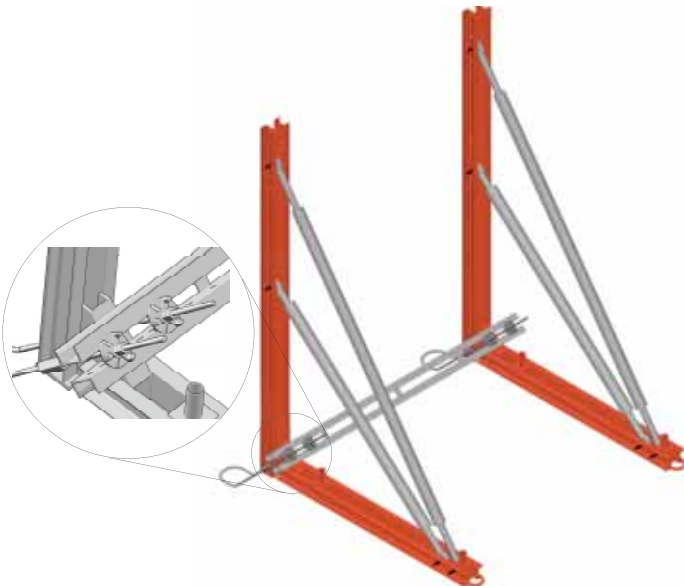
A. Fix and leave the Curved tie rod (Lost item) before casting the previous concrete slab.



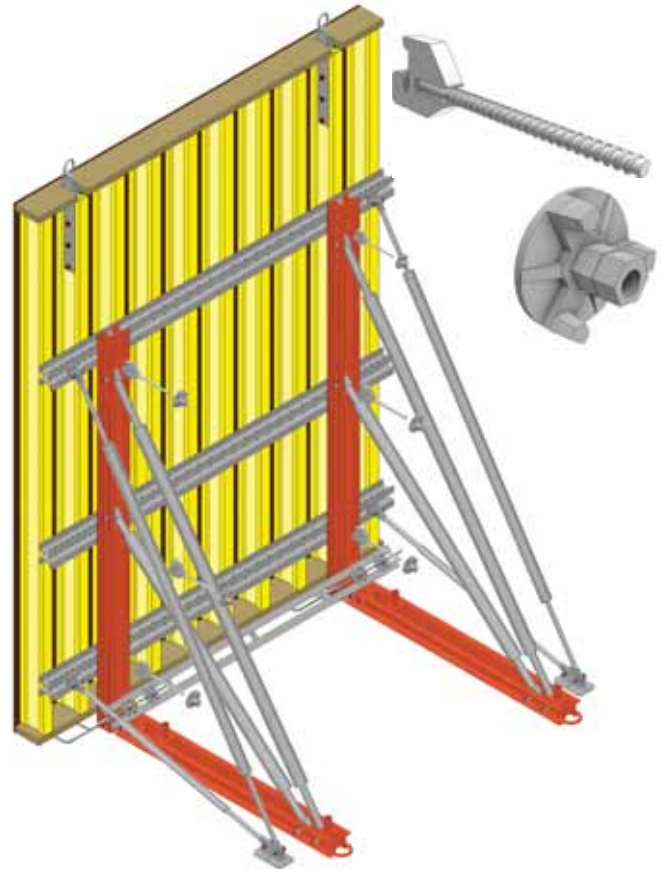
B. Take the pre-assembled formwork panel, stand it upright then use any site support for stabilize the panel from falling down.



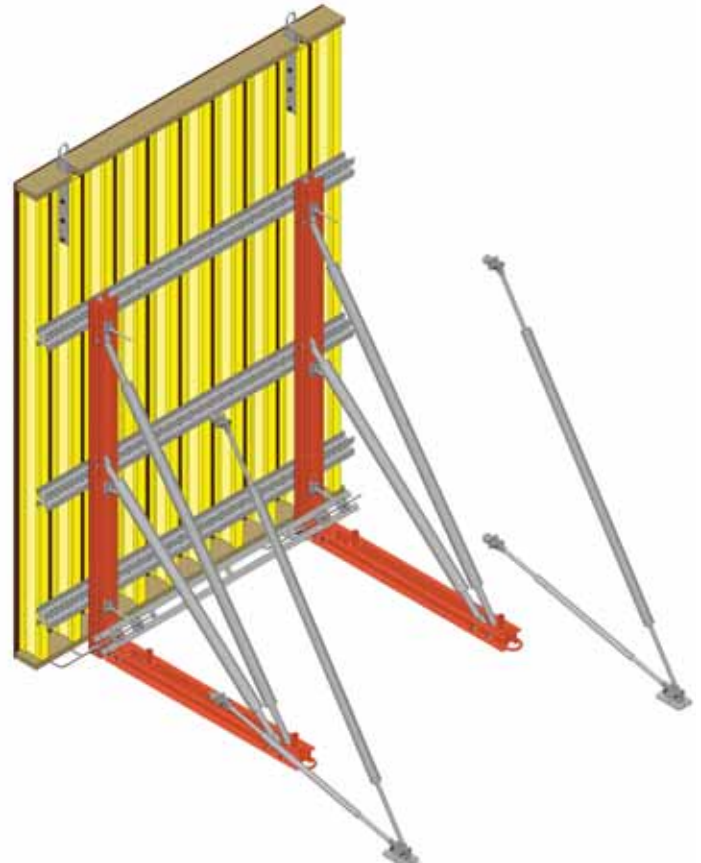
C. Assemble the Support Frame the right distance apart.



D. Connect the Support Frame to the upright formwork panel using the Waler Holder Hook U.

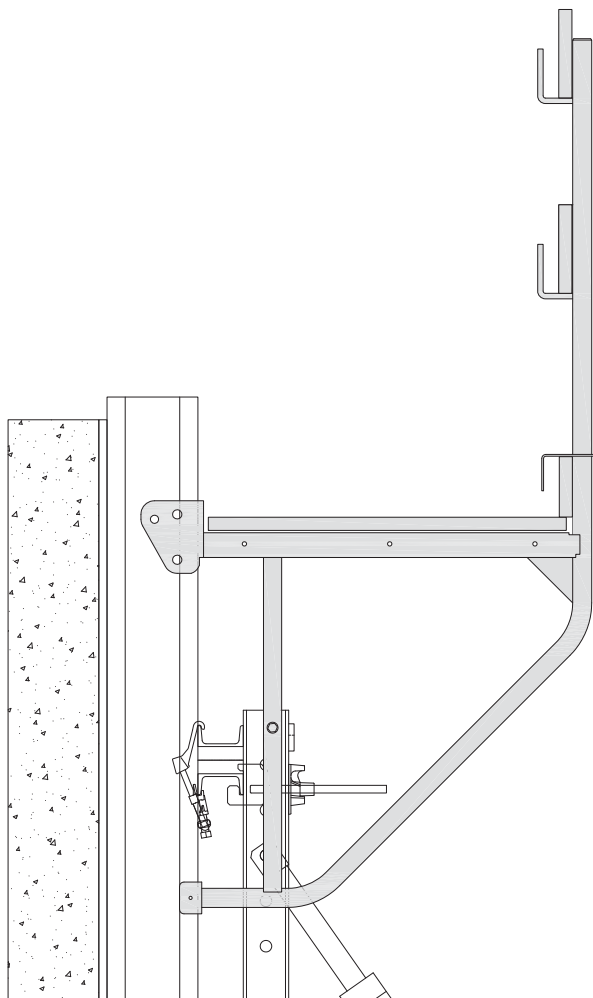


E. Remove the Push Pull Strut 2 sets.

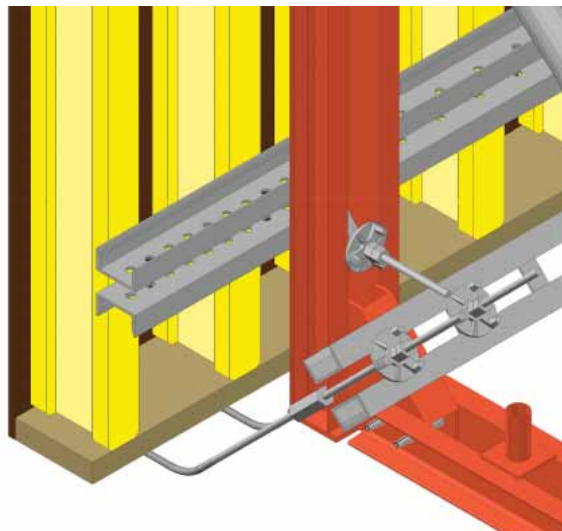


# Erection procedure

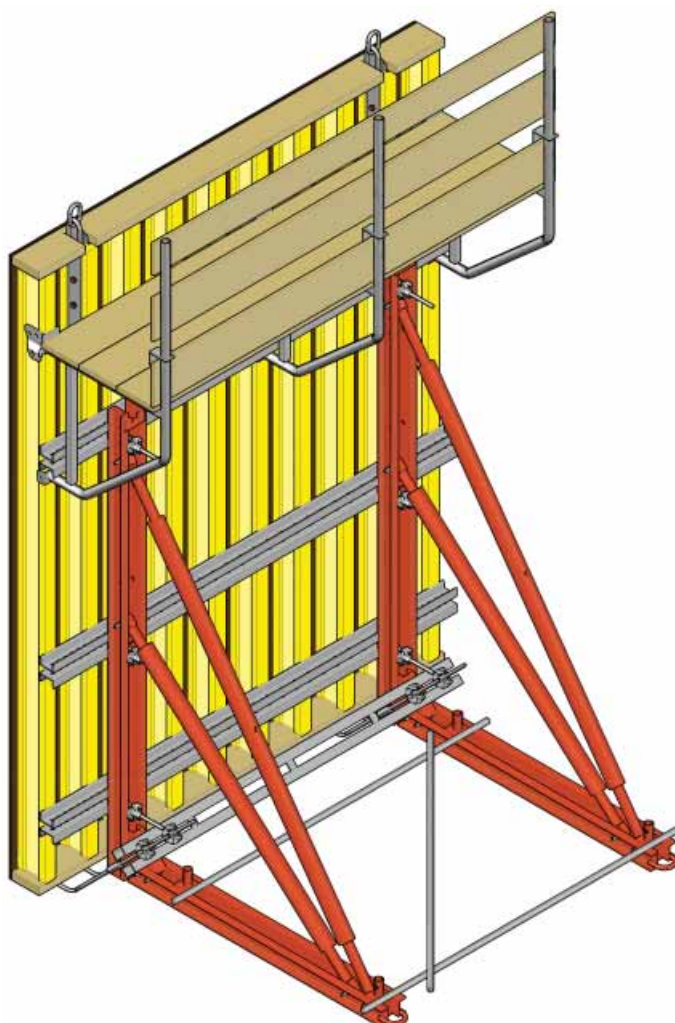
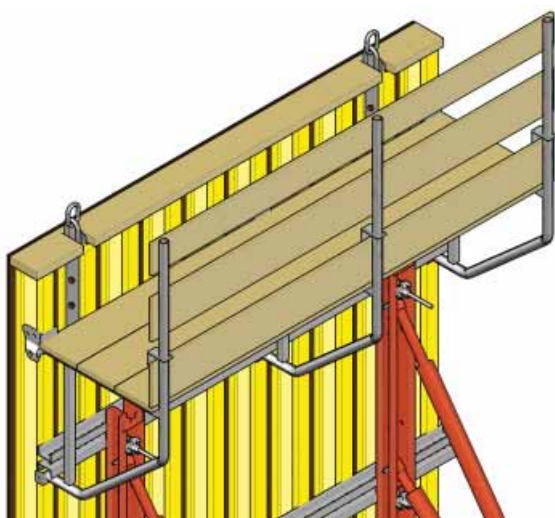
## F. Install the working platform



- G. Curved tie rod is extended using 100 mm Hexagonal coupler and 75mm tie rod extension. These components can be re-used.  
Tight the support frame to the lost anchors.



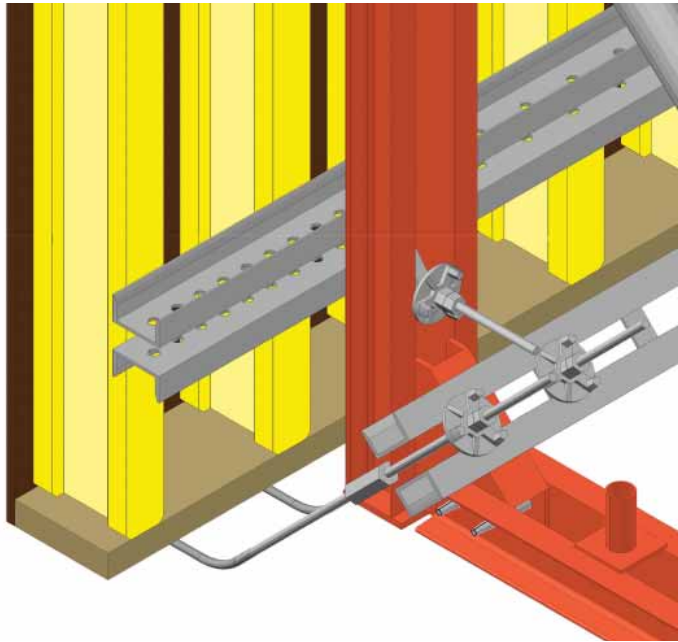
- H. Brace support Frames together using scaffold tubes and couplers in case of lifting the entire unit by cranes



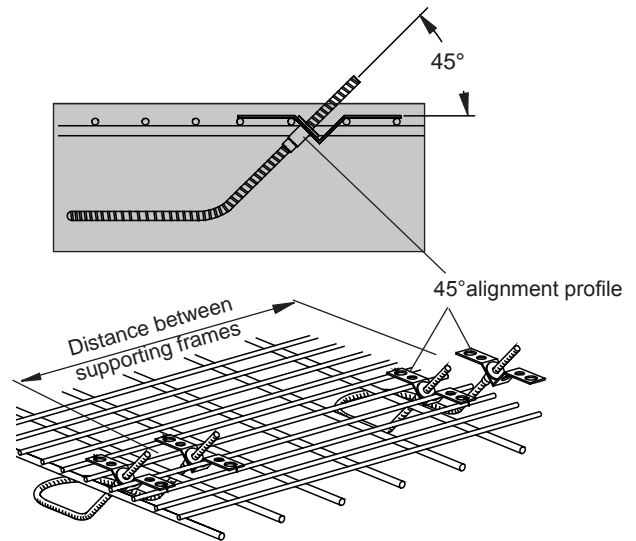
# Anchoring Details

The Single Sided Support Frame is anchored by the Tying Bar which transfers the tensile loads into the cast-in Curved Tie using two Tie Rods. The Tying Bar position on the Single Sided Support Frame may vary.

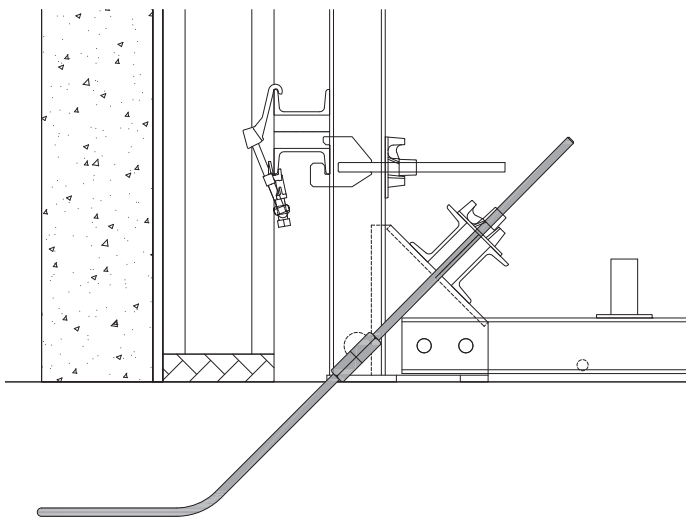
The cast-in Curved Tie is selected according to the statical calculation and expected corresponding tensile loads.



The exact position of the cast-in Curved Tie which remains in the concrete must be determined based on the principle as shown in the drawing.



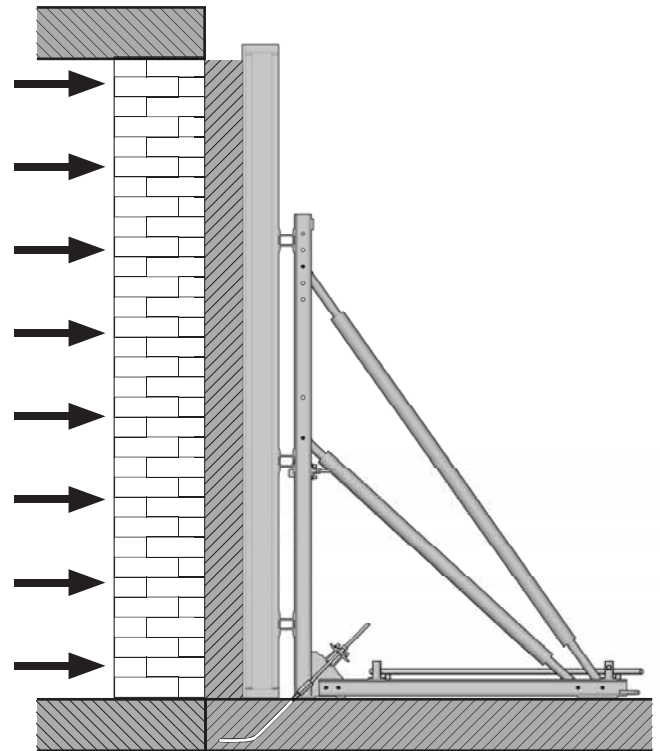
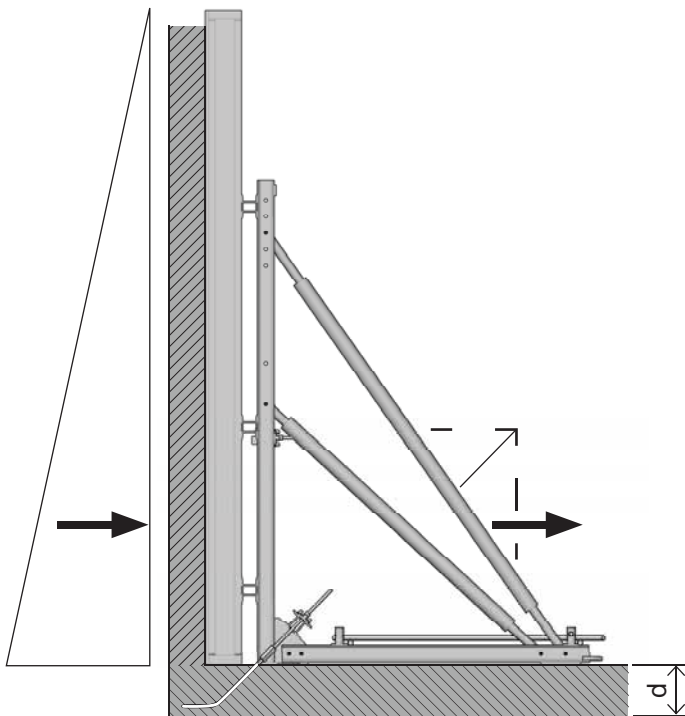
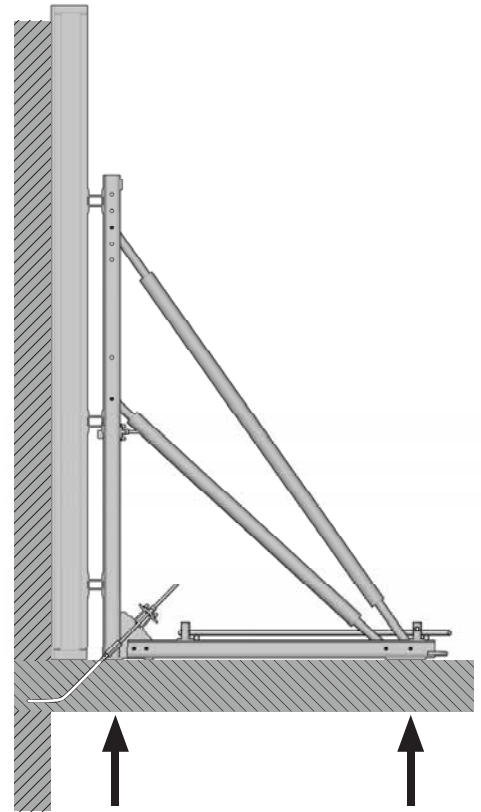
To prevent the selected anchor components from moving, it should be properly fixed to the reinforcing mesh. Arrange them based on length which is the spacing between the Single Sided Support Frame and the projection angle.

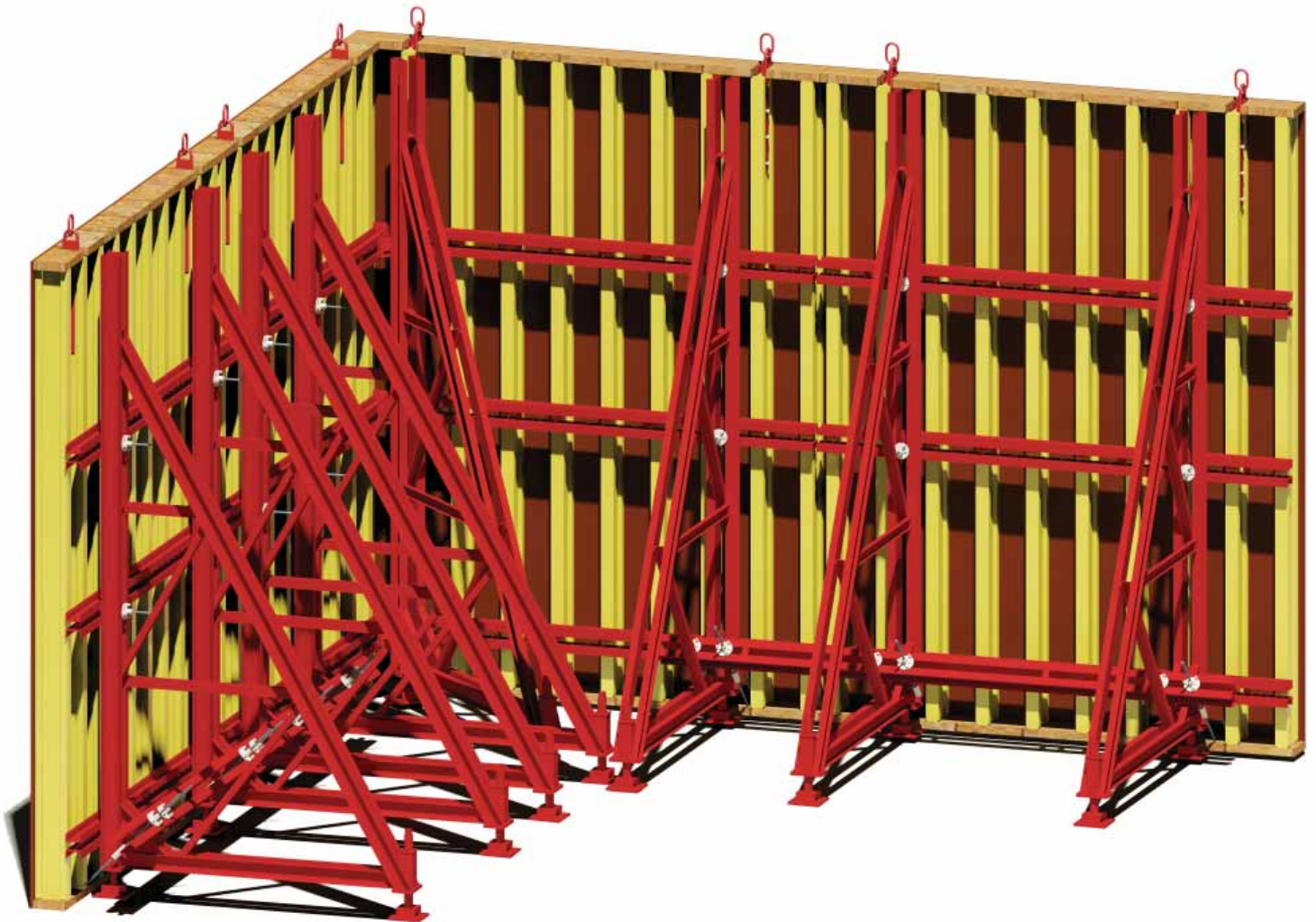


# Forces Transferring Precautions.

The high anchoring and bearing-forces which occur when Supporting frames are used necessitate a number of additional safety precautions.


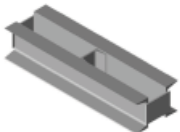

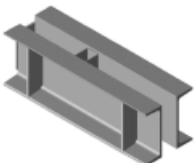
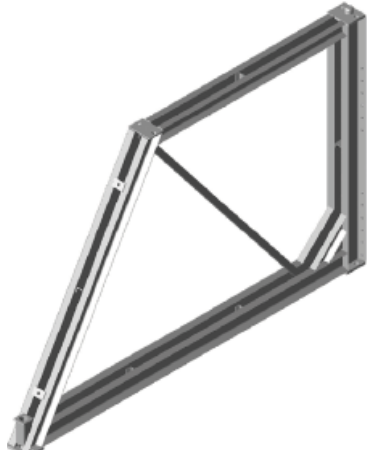
- A. For tensile anchorages, choose the GFT form-tie system that is most suitable for the tensile forces occurring. Only use approved anchoring components.
- B. Reinforce all structural components sufficiently.
- C. The forces can only be transferred safely into the anchorage foundation where the concrete slab is sufficiently thick.
- D. Check the stability of each of the structural components, and if necessary the entire structure.
- E. Erection on floor slabs: Use adequately dimensioned Supports to transfer the loads to the floors below, and ultimately to the foundations, to the extent necessary to enable all floor slabs to withstand the load imposed on them by the Supporting frame.
- F. If necessary, do a calculation regarding "punching-through".
- G. Check the capacity of the "opposing side" (walls, rock) and secure with separate shoring if necessary.








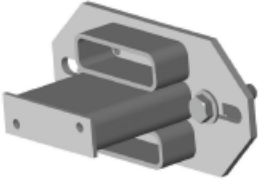



HD Frame Supporting System

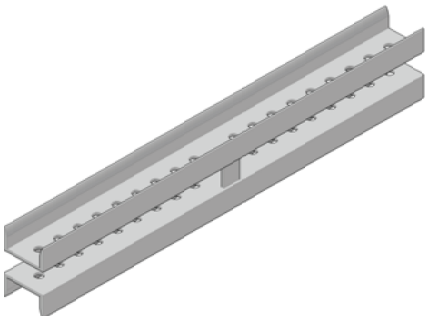
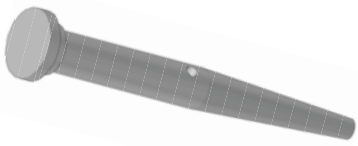
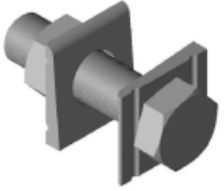
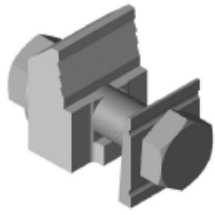


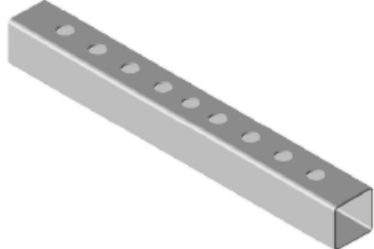
# Components

	Art. No	Weight Kg/pc.	
<p><b>Single Sided Support Frame 325</b> With maximum height of 3.25m.</p>	410011	170.6	
<p><b>Tying Bar 12/60</b> The loads arising during concreting using the Single Sided Support Frame 325 are transferred via the tying bar into the ground.</p>	410012	18.2	
<p><b>Single Sided Support Frame 500</b> With maximum height of 5.00m</p>	410013	304.9	
<p><b>Tying Bar 24/75</b> The loads arising during concreting using the Single Sided Support Frame 500 are transferred via the tying bar into the ground.</p>	410016	59.4	
<p><b>Lower Part 200</b> Used in connection with the Single Sided Support Frame 500 for Single Sided wall formwork up to a maximum height of 6.60m. The Base Jacks of the Single Sided Support Frame 500 are fixed to the Base Frame 200 and both parts are connected to each other with four Bolts M27 X 70 and A29 Washers.</p>	410014	308.5	

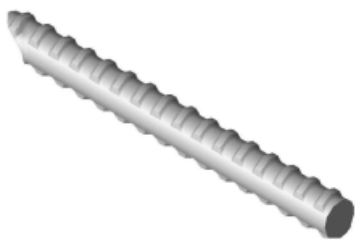
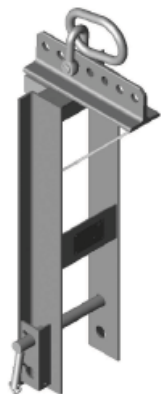

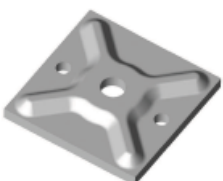

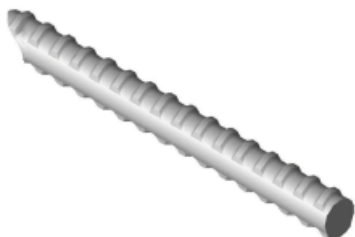
# Components

	Art. No	Weight Kg/pc.	
<b>Base Frame 200/2</b> Used in connection with the Single Sided Support Frame 500 and the Lower Part 200 for formwork heights of up to 8.60 m. Please note that a special proof of the structural strength is required for determining the distance between the Single Sided Support Frame and anchoring loads.	410015	511.5	
<b>Bolt M27x70 with Nut and A29 Washer</b> Used for fixing Support Frame 500 to Lower part 200 and Base Frame 200/2. Four Bolts and Nuts for each connection and two w.a.f. 41 wrenches are required.	410017 410018	0.6 0.1	
<b>Tie Bearing</b> Using the tie bearing, the loads are always accurately transferred into the Anchor Bars, with the anchor angle between 35°-55°.	410019	3.0	
<b>Half Coupler 48 / M20x30</b> Fixed to the single sided supporting frame, the half couplers allow bracing by tubes and couplers in order to stiffen the formwork structure. For this, w.a.f. 22 socket wrench or ratchet wrench with extension is required	410081	0.9	
<b>Component for Fixing the Formwork</b>			
<b>Extension Bar</b> Used for extending the Single Sided Support Frame 500 to support a 5.40m high Vito formwork unit (2 x 2.70m). Please note that Single Sided Support Frame must always be placed on the joint of formwork panels and fastened with one tension Nut.	410020	23.5	
<b>Distance Keeper</b> Provide distance between the steel frame panel formwork and Single Sided Support Frame. A10 cm waler profile (with a profile gap of 50 mm) can also be fixed so that the arrangement of the Single Sided Support Frame is independent from the formwork system.	410021	5.5	
<b>Corner part</b> Fastens the Steel Waler 240 together in 90° angled corners and allows the arrangement of a diagonal Single Sided Support Frame	410023	7.6	








# Components

Steel Walers			
	Steel Waler-100/050	101SW050	10.26
	Steel Waler-100/075	101SW075	15.39
	Steel Waler-100/100	101SW100	20.55
	Steel Waler-100/125	101SW125	25.77
	Steel Waler-100/150	101SW150	31.09
	Steel Waler-100/200	101SW200	41.63
	Steel Waler-100/250	101SW250	52.04
	Steel Waler-100/300	101SW300	62.58
	Steel Waler-100/375	101SW375	78.31
	Steel Waler-100/500	101SW500	104.34
	Steel Waler-100/600	101SW600	125.42
			
Connecting Pin U 20x190 Used for various types of connections.	101PE190	0.40	
Connection Bolt Used for fixing the Steel Walers 240 to the Single Sided Support Frame 500 and to the Base Frame 200 through the holes in the vertical profile by means of Bolt M16 x 60 MuZ with two 18 DIN 434 washers.	410024	0.2	
Clamping Bolt Used for Clamping the Steel Walers 240 to the front of the vertical steel profile of the support frames by means of Bolt M16 x 60 with Nut and one 18 DIN 434 Washer, one 18 Z DIN 126 Washer and one clamping element with matching washer.	410025	0.3	
Waler Spanner 50 Can be hooked into the holed vertical profiles of the Vito framework formwork in order to connect the formwork to the Single Sided Support Frames. One Tension Nut to be ordered additionally.	110153	1.1	
Tension Nut 15mm dia./D&W Used to fasten the formwork jointly with the Waler Spanner 50 or Tie Rod 15.	110154	0.7	
Centre Tube 50 Used as a cross member behind the support frame profile to enable fastening to the wall formwork.	110351	3.4	

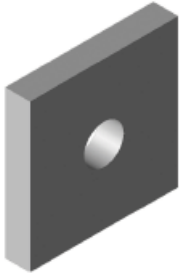
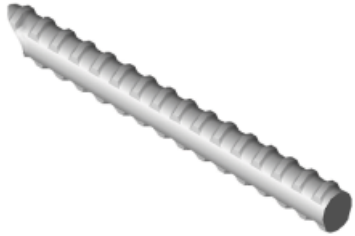
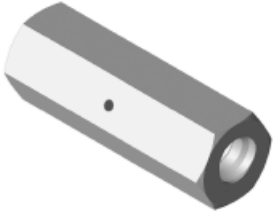

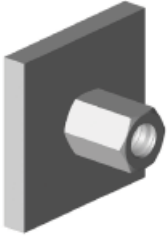
# Components

	Art. No	Weight Kg/pc.	
<b>Tie Rod 60 Galvanized</b> Used in combination with the Center Tube 50 for the same purpose. Two Tie Rods for Center Tube 50 are required.	110267	0.9	
<b>SF Shifting Hook</b> Used for shifting the pre-assembled units with the ideal center of gravity. It fits both Single Sided Support Frames 325 and 500. Two SF Shifting Hooks per job site are required.	410027	28.8	
<b>Wing Nut 15</b> Used in combination with Galvanized Plate 12/12 and tightened with w.a.f. 27 wrench, hammer or round bar.	180173	0.3	
<b>Galvanized Plate 12/12</b> Used in combination with Wing Nut 15 as described above.	180174	1.0	
<b>Vito Tie Nut</b> Used as a substitute to Wing Nut 15 and Galvanized Plate 12/12. This is only one-piece and is quick to release.	110241	1.4	
Tie Rod 50    15mm dia./D&W Tie Rod 75    15mm dia./D&W Tie Rod 100   15mm dia./D&W Tie Rod 130   15mm dia./D&W Tie Rod 175   15mm dia./D&W  Used for extending the cast-in anchor stirrup element to the Tie Nut.	110333 110246 110247 110248 110249	0.7 1.05 1.40 1.82 2.45	

# Components

	Art. No	Weight Kg/pc.	
<b>Hexagon Nut 15/90 with Pin</b> Fastens the cast-in and re-usable anchor elements.	<b>410028</b>	<b>0.4</b>	
<b>Loop Tie 15</b> Is cast-in in the concrete and transfers the tensile forces into the building structure. The maximum allowable load is 2 x 90 kN.	<b>410029</b>	<b>2.5</b>	
DW 20 anchor materials with maximum allowable tensile load to DIN 18216 = 150 kN			
<b>Tie Nut 150</b> One-piece and quick to release (w.a.f. 36).	<b>110252</b>	<b>1.4</b>	
<b>Tie Rod 20/100</b> For extending the cast-in anchor stirrup element to the Tie Nut.	<b>110255</b>	<b>2.6</b>	
<b>Hexagon Nut 20/130 with Pin</b> Fastens cast-in (anchor loop) and re-usable anchor elements (Tie Rod).	<b>410031</b>	<b>0.7</b>	
<b>Loop Tie 20/60</b> Is cast-in and transfers the tensile loads into the building structure with maximum allowable load of 2x150 kN.	<b>410032</b>	<b>4.0</b>	
Dywidag 26.5 anchor materials with maximum allowable tensile load to DIN 18216=250 kN			
<b>Hexagon Nut 26.5 / 60</b> Used jointly with Galvanized Plate 12/12/2 w.a.f. 46.	<b>410033</b>	<b>0.5</b>	

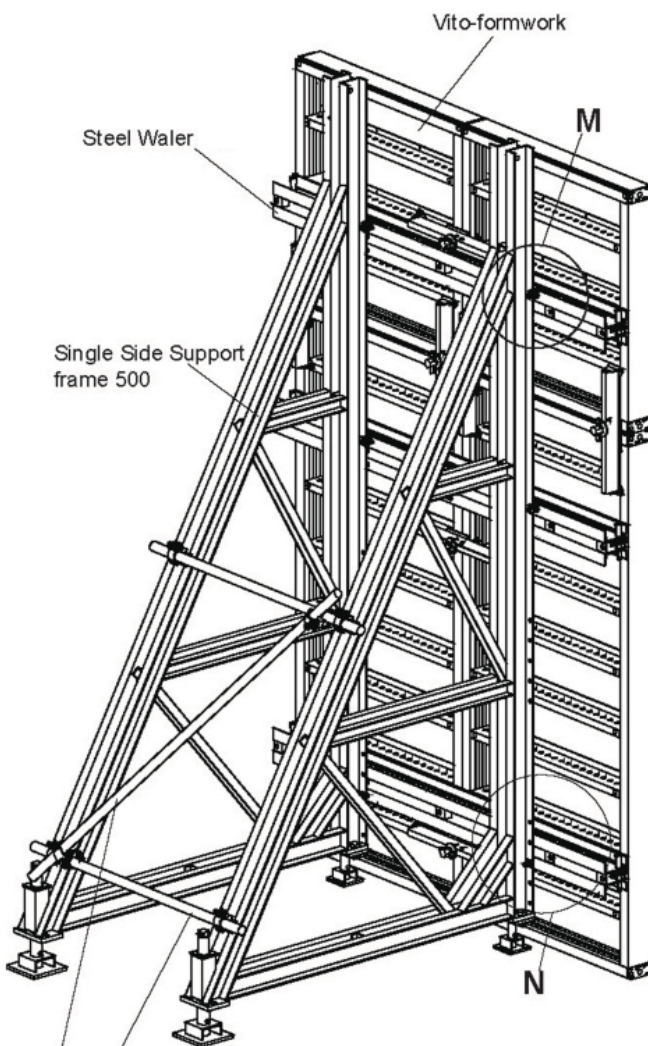
# Components

<p>Galvanized Plate 12/12/2</p> <p>Used as an anchor plate together with the Hexagon Nut 26/60.</p>	<p>Art. No</p> <p>410035</p>	<p>Weight Kg/pc.</p> <p>2.2</p>	
<p>Tie Rod 26.5 / 40</p> <p>Tie Rod 26.5 / 100</p> <p>Can be cast-in and re-used for anchor elements of the Single Sided Support Frames.</p>	<p>410036</p> <p>410037</p>	<p>1.8</p> <p>4.5</p>	
<p>Hexagon Nut 26.5 / 120</p> <p>Fastens cast-in element to the re-usable anchor elements w.a.f. 46.</p>	<p>410038</p>	<p>1.1</p>	
<p>Loop Tie 26.5 / 80</p> <p>Is cast-in and transfers the tensile loads into the building structure with maximum allowable load of 2 x 250 kN.</p>	<p>410034</p>	<p>9.2</p>	
<p>Tie Plate with Nut 26.5</p> <p>Transfers tensile loads into the building structure and is left permanently in the concrete with a Tie Rod.</p>	<p>410039</p>	<p>3.6</p>	

# Application Samples

The Illustration below shows a formwork unit consisting of:

- A. 2 Single Sided Support Frames
- B. Steel Walers
- C. Two 1.20 m wide Vito formwork panels with a height of 3.9 m (2.7 m high x 1.2 m wide and 1.2 m high x 1.2 m wide)
- D. Single Sided Support Frame 500

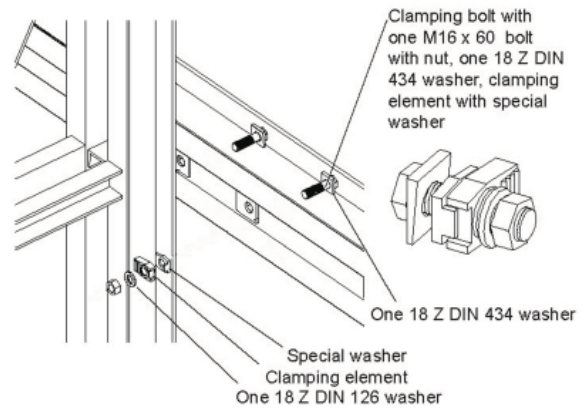


Bracing by Tubes and Couplers include 48.3 dia. x 3.2 mm Scaffold Tubes which are connected by Half-Couplers to the Single Sided Support Frame. Diagonal Scaffold Tubes have to be fixed by means of 2 Swivel Couplers.

## Detail “M”

Other Steel Walers are connected to the Single Sided Support Frame 500 or Base Frame 200/2 by means of 2 Clamping Bolts at each connection point.

The Clamping Bolt is comprised of 1 M16 x 60 Bolt with Nut, one 18 mm Washer and clamping element with special washer

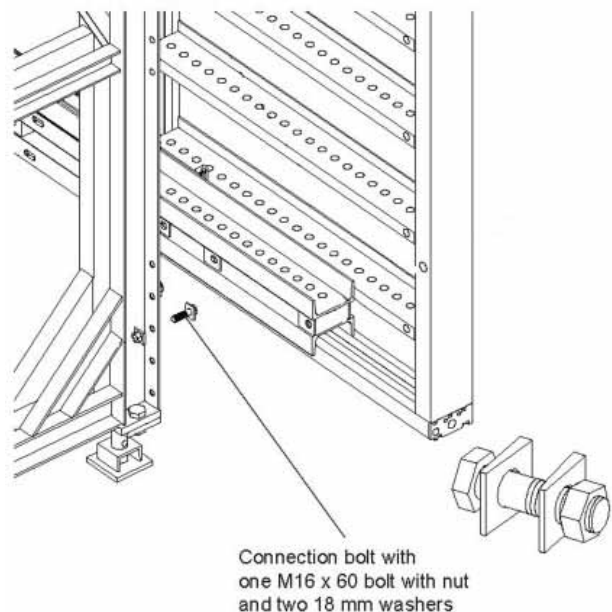


## Detail “N”

The Steel Waler is fixed to the Vito wall formwork panels with the Waler Bolt which is passed through the tie holes of the Vito Panel and fixed with the Wedge.

The Wedge must be inserted in the hole at the end of the Waler and into the Waler Bolt. The Steel Waler at the bottom is connected to the Single Sided Support Frame by 2 Connection Bolts per fixing point. Always insert the third last hole in the vertical double profile of the Single Sided Support Frame 500 or Base Frame 200/2.

The Steel Waler must be fixed according to the below illustrated position.



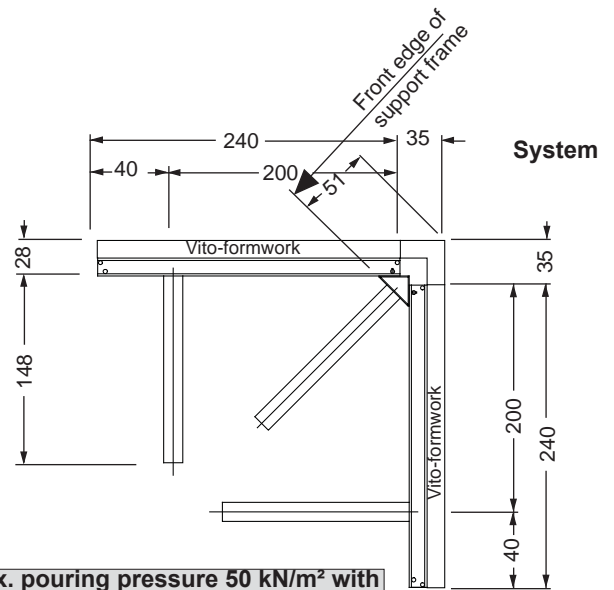
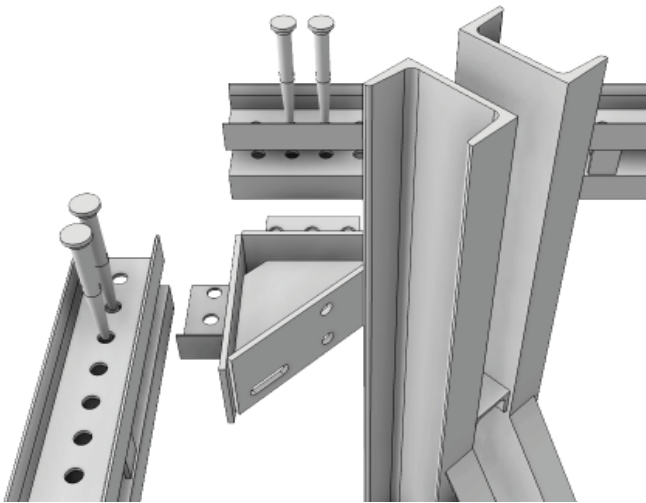
# Corner Applications

Using Single Sided Support Frame 500 with Steel Walers, and the specially designed Corner Part, the Single Sided Wall with an inner corner can be arranged.

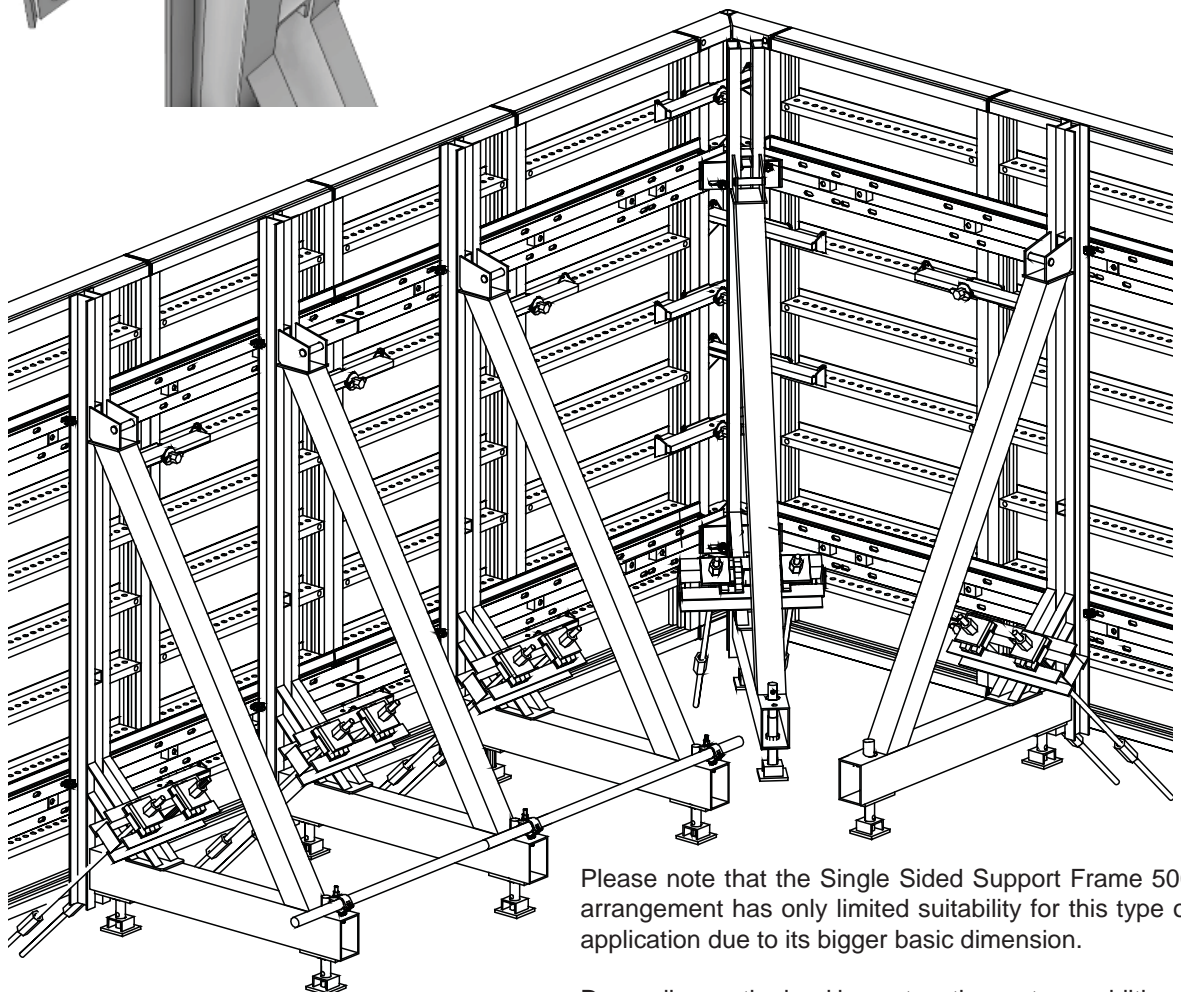
The special Corner Part fastens the Steel Walers in the corner and provides the required supporting point for a diagonal arrangement of the Support Frame.

The maximum concrete pressure for this type of Support Frame arrangement is 50 kN/m<sup>2</sup>.

## Principal Arrangement of a Typical Inner Corner



When positioning the cast-in anchoring components (Tie Rods with Anchor Plates or Loop Ties), the increased distance between Single Sided Support Frames have to be considered due to the diagonal support frame in the corner.



Please note that the Single Sided Support Frame 500 arrangement has only limited suitability for this type of application due to its bigger basic dimension.

Depending on the load impact on the system, additional rows of Walers may be required due to larger spans.

# Anchoring Details

The Single Sided Support Frame is anchored by the Tying Bar which transfers the tensile loads into the cast-in Loop Tie using two Tie Rods. The Tying Bar position on the Single Sided Support Frame may vary. Using the Tie Bearing, tensile loads can be efficiently transferred with anchor angles varying from 35° to 55°. Furthermore, the position of the Tie Bearings may also differ on the Tying Bar. For Single Sided Support Frame, two Tie Bearings are required.

The cast-in Loop Tie is selected according to the statical calculation and expected corresponding tensile loads. The following three Dywidag anchor systems are available:

As illustrated, the cast-in anchor components may either be Loop Ties or Tie Rods with screwed-on anchor plates.

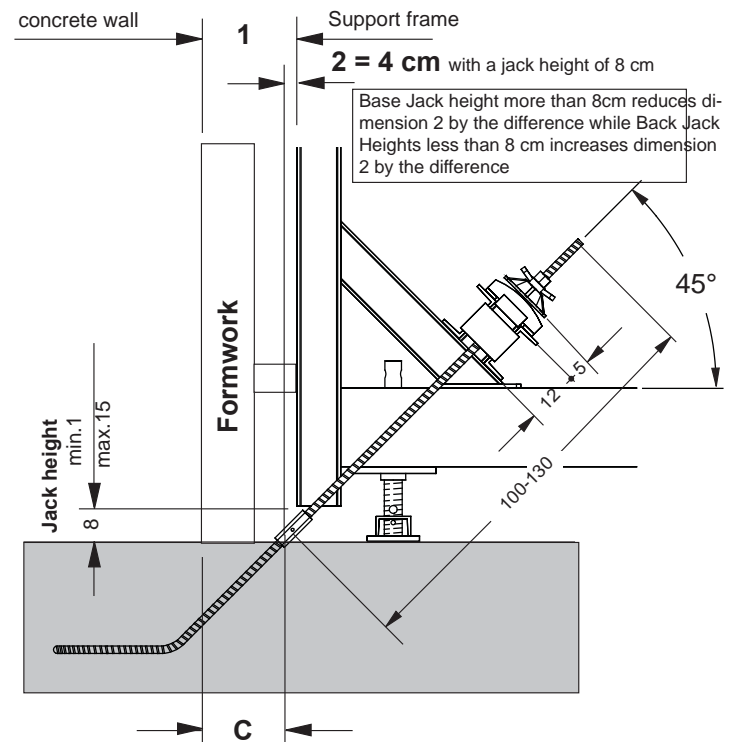
D&W 15mm dia. with 2 x 90 kN = 180 kN allowed tensile load

D&W 20mm dia. with 2 x 150 kN = 300 kN allowed tensile load

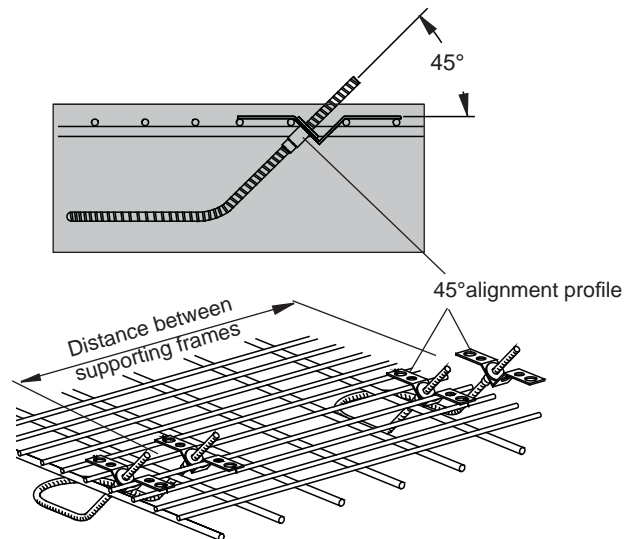
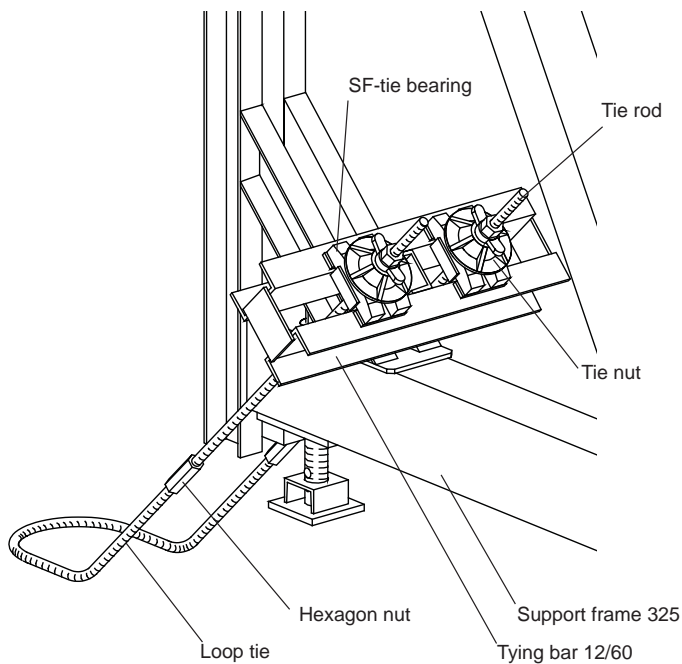
D&W 26.5mm dia. with 2 x 250 kN = 500 kN allowed tensile load

- A. Thickness of formwork + Steel Waler or Distance Keeper.
- B. Horizontal projected distance of anchor components from the edge of the formwork panel.
- C. 1-2 = Horizontal projected distance of anchor components from edge of concrete wall.

## Support frame 325



The exact position of the cast-in Loop Tie which remains in the concrete must be determined based on the principle as shown in the drawing.



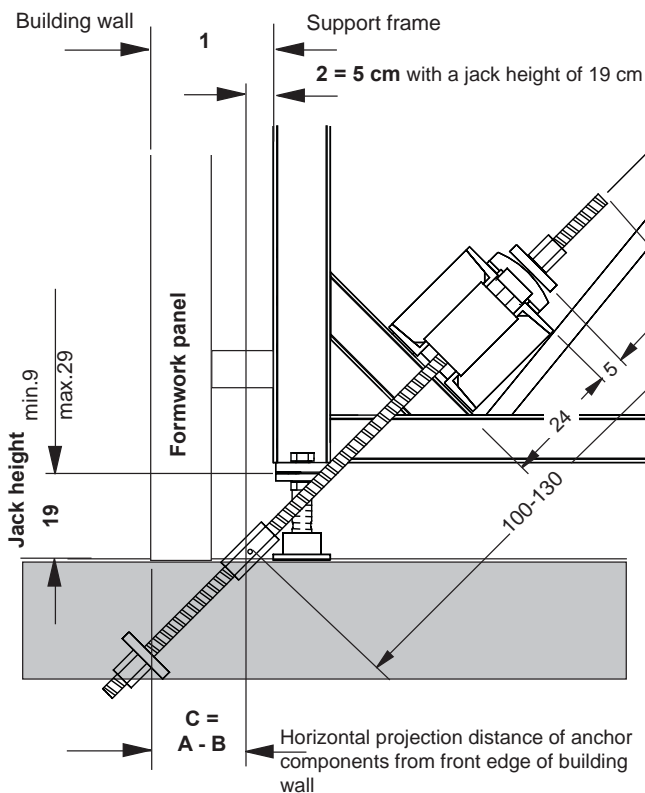
To prevent the selected anchor components from moving, it should be properly fixed to the reinforcing mesh. Arrange them based on length 3 which is the spacing between the Single Sided Support Frame and the projection angle.

A 45° alignment profile for anchor components with the D&W 15 thread is used to fasten these parts in the reinforcing mesh and also aligns the Loop Tie at a 45° angle.

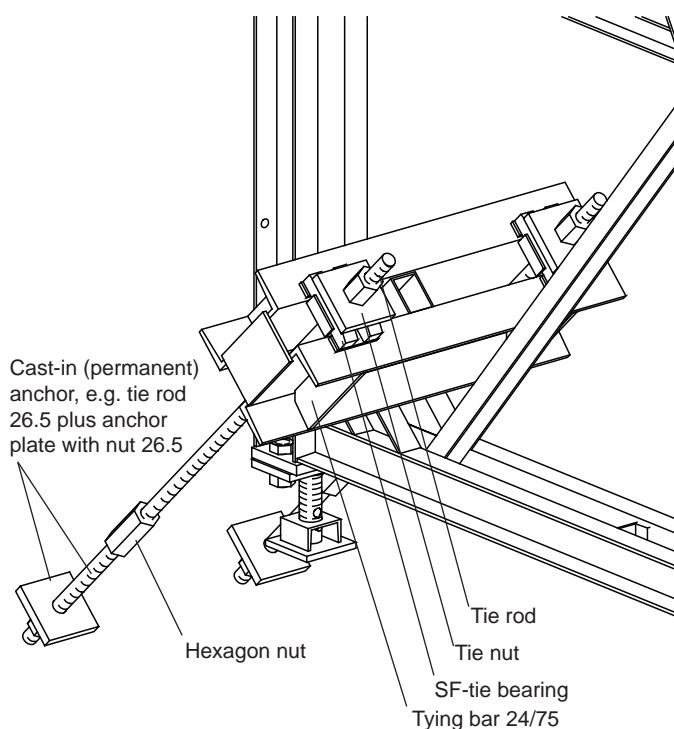
# Anchoring Details

## Anchor Details for Single Sided Support Frame 500 in Combination with Lower Part 200

The Tying Bar 24/75 is used to anchor the Single Sided Support Frame 500, Lower Part 200 and Base Frames 200/2.



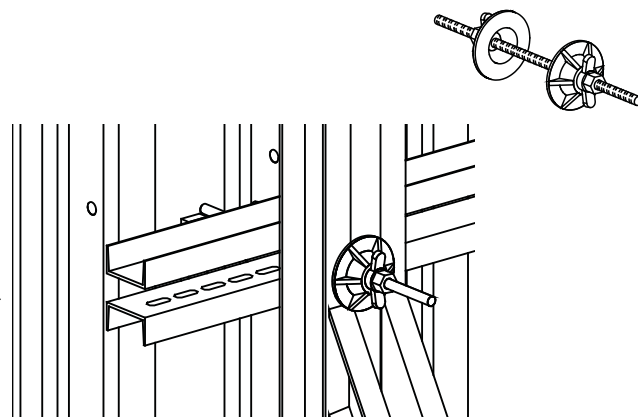
Base jack height more than 19 cm reduce dimension 2 by the difference while base jack heights less than 19cm increases dimension 2 by the difference.



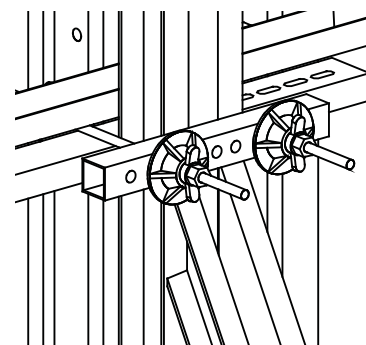
## Timber Beam Formwork Connection

The vertical profile of the Single Sided Support Frames allows an independent grid connection to the horizontal waler profiles of the H20 beam formwork system.

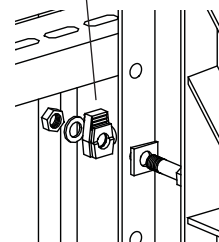
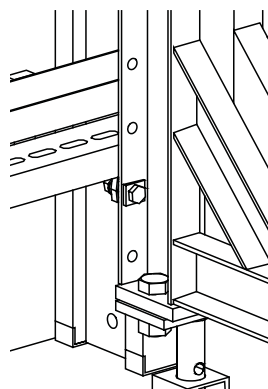
For example, a Tie Rod 60 cm with 2 Vito Tie Nuts are sufficient for this type of connection.



In case the H20 Timber Beams do not allow a threaded connection through the profile of the Single Sided Support Frame, connection can be made by the perforated Center Tube 50 with two Tie Rod 60.



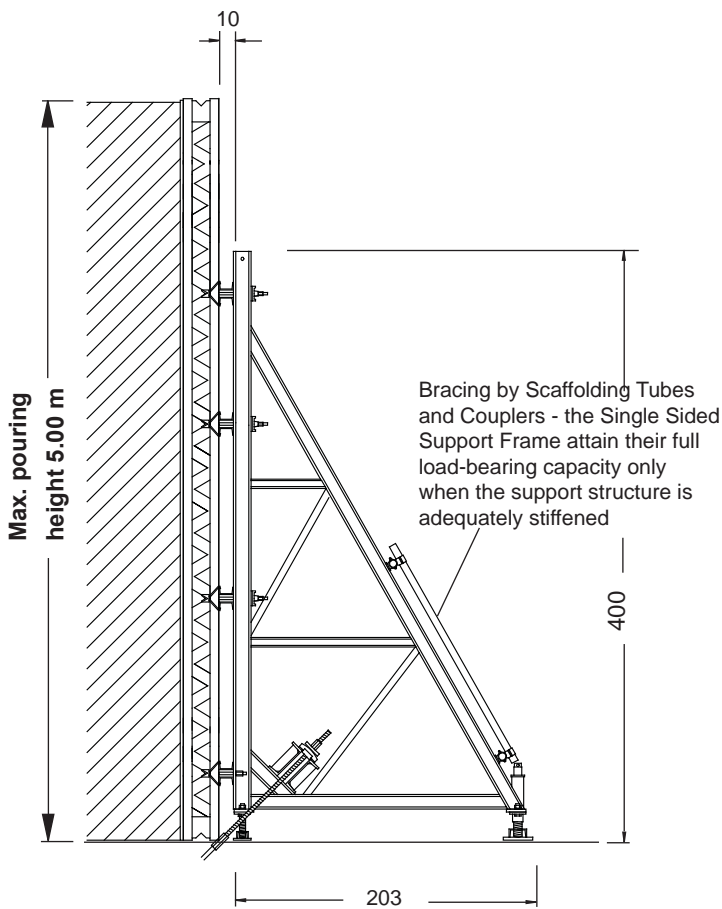
Clamping bolt consisting of one M16 x 60 bolt and nut, one 18 Z DIN 434 washer, clamping element with special washer



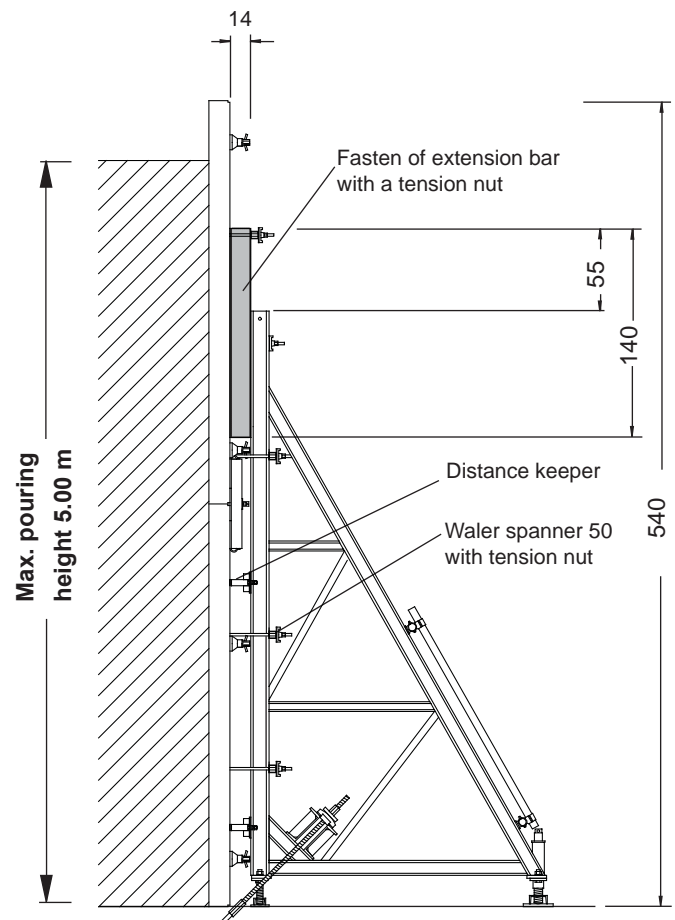
The Clamping Bolt holds in place the bottom Waler profile of the H20 Timber Beam formwork. The clamping element of the Clamping Bolt must be aligned resting on the bottom Waler profile.

# Maximum Pouring Height

## Single Sided Support Frame 500



Arrangement of Single Sided Support Frame 500 behind a lattice girder formwork element fastened by Tie Rods and Tie Nuts.

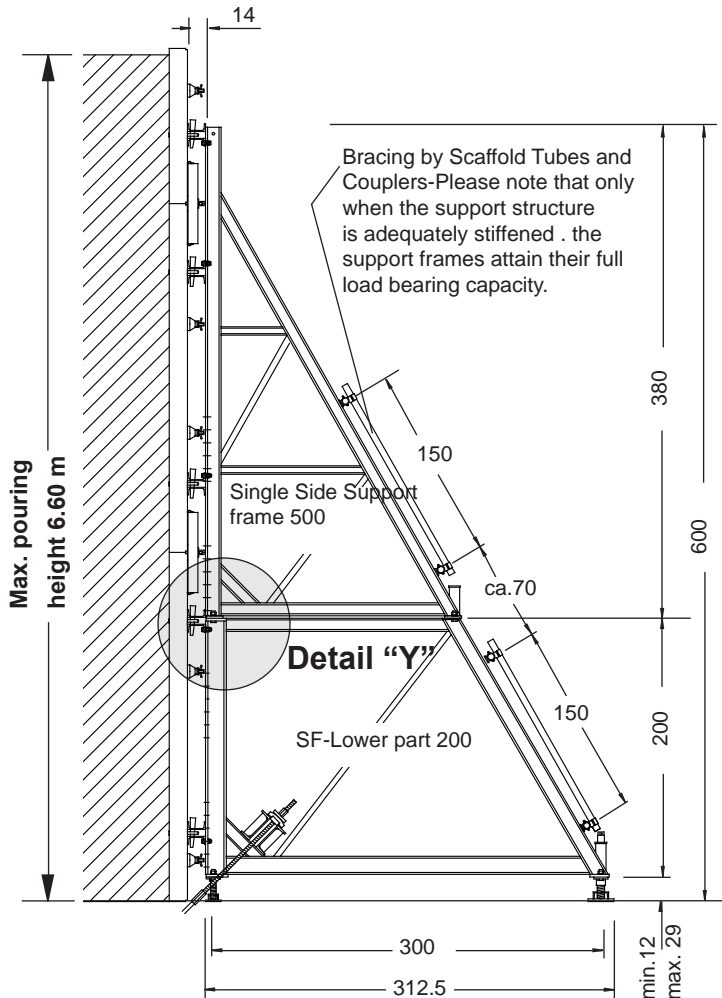


Using the Single Sided Support Frame 500 in combination with the Extension Bar, it is possible to support a 5.40 m height Vito wall formwork. In this case, the Single Sided Support Frames must always be placed at the joint of the formwork panels. Please note that the maximum pouring height is limited to 5.00 m.

# Maximum Pouring Height

## Single Sided Support Frame 500 with Lower Part 200

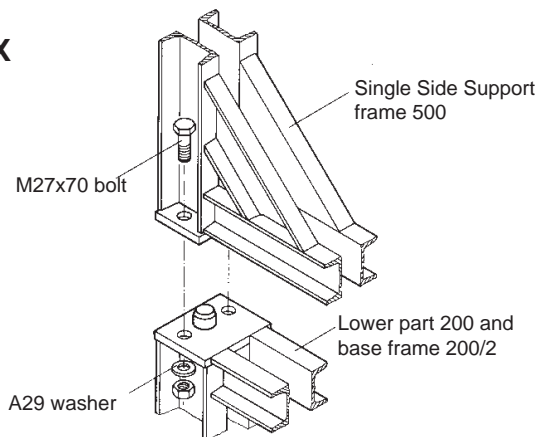
Shown below is the Single Sided Support Frame 500 with the height extended by means of the Lower Part 200. Between the support frame and the Vito steel framed panels, Steel Walers 240 are horizontally secured in alignment with the tie holes of the formwork system.



The maximum allowable concrete pouring height of 6.60 m is achievable due to extension using the Lower Part 200. The Base Jacks of the Single Sided Support Frame 500 are fixed to the Lower Part 200.

The Single Sided Support Frame 500 and Lower Part 200 are connected by four extra Bolts M27 x 70 with Nuts, A29 Washers and two w.a.f. 41 wrenches.

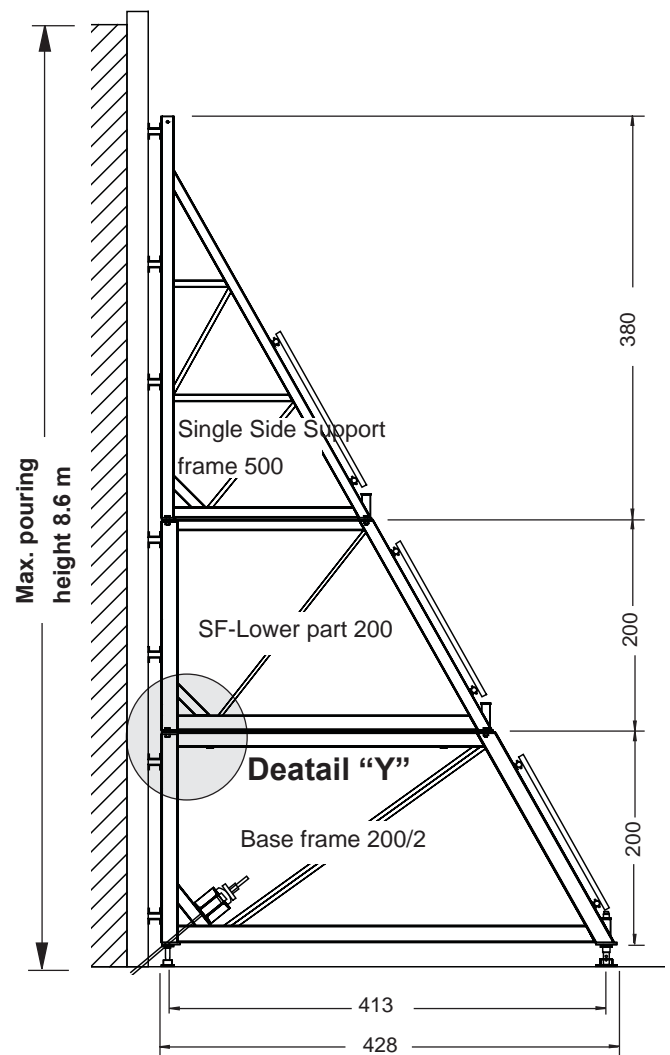
### Detail X



## Single Sided Support Frame 500 with Lower Part 200 and Base Frame 200/2

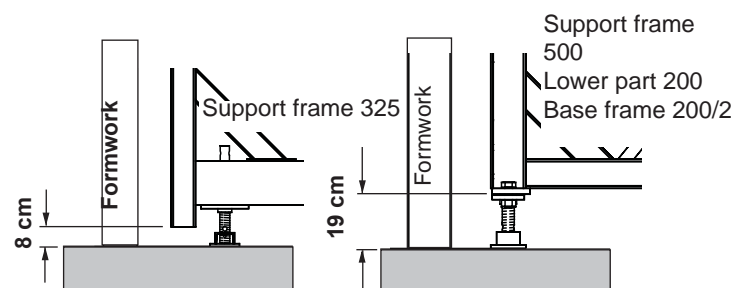
Using the Single Sided Support Frame 500 with the Lower Part 200 and the Base Frame 200/2, the assembly of a supporting structure for single sided walls of up to 8.40 m high can be achieved.

During the assembly, the jacks of the Single Sided Support Frame 500 have to be fixed to the lower Base Frame 200/2. The Single Sided Support Frame 500, Lower Part 200 and the Lower Part 200 are connected to the Base Frame 200/2 by four M27 Bolts with Nuts and A29 Washers. Note that the whole supporting structure must be sufficiently braced with tubes and couplers. A proof of structural strength and stability must always be provided for the application of this type of supporting structure



### Measurement

The below illustrated ideal dimensions between the support frames and the wall formwork should also be considered.



# Crane Lifting

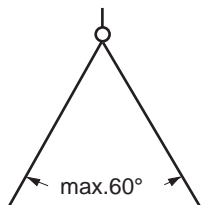
## Single Sided Support Frame 500 with Lower Part 200

Carrying and lowering formwork by crane is made possible using two SF Shifting Hooks on site. Fastened to the crane ropes, simply attach the hook on top of the Single Sided Support Frame with the included pin.

The maximum load capacity of the SF Shifting Hook is 15 kN which is sufficient to carry a formwork unit of maximum 16 m<sup>2</sup> with attached Single Sided Support Frames.

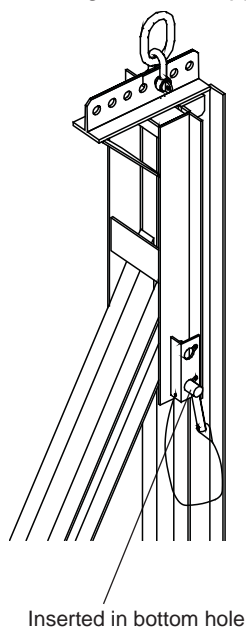
The SF Shifting Hook can also be connected to the Single Sided Support Frame 500 as well as the Single Sided Support Frame 325.

The crane ropes should not be suspended at an extreme angle.

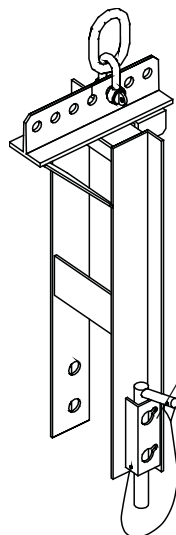


The SF Shifting Hook can be attached to:

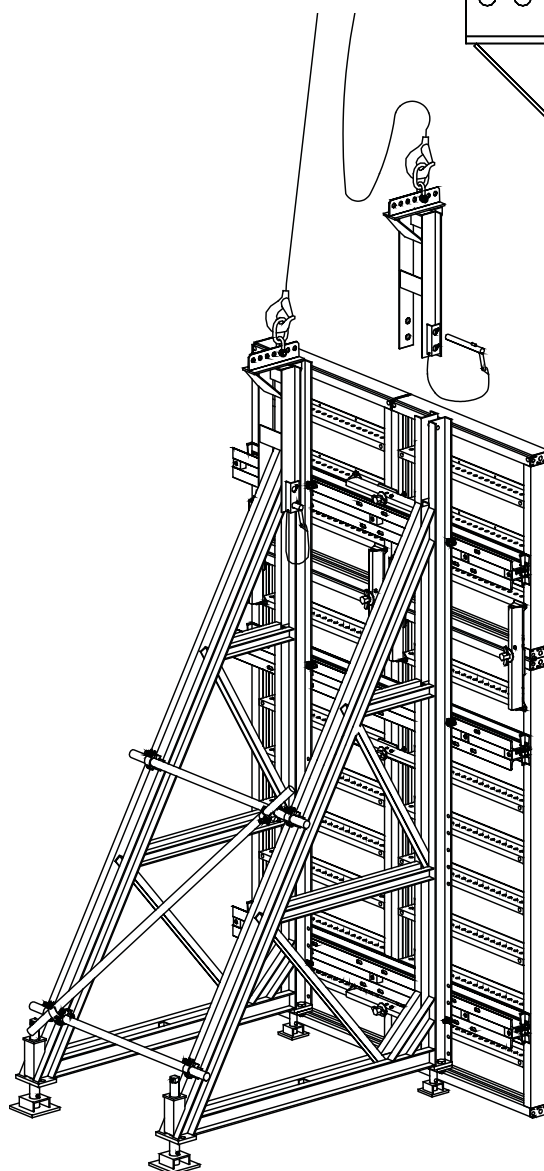
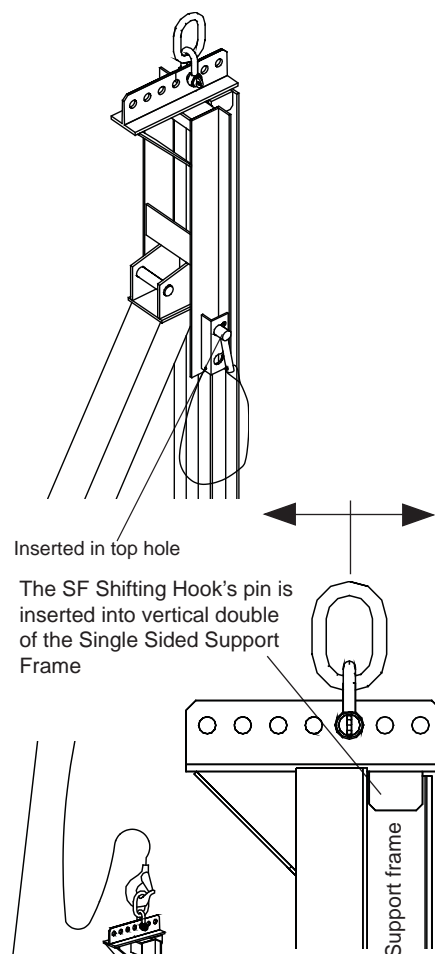
- A. the Single Sided Support Frame 500
- B. the Single Sided Support Frame 325



A suspension ring with shackle is attached to the horizontal profile of the SF Shifting Hook. By adjusting the position of the ring and shackle, the best possible center of gravity can be selected for the suspended formwork unit.



Position of pin when hook is unused.



# Loading Details

## Single Sided Support Frame 325 Less than 45° anchor angle

Concrete Pressure kN/m <sup>2</sup>	Concrete Pressure HT (m)	Reaction force			Max. distances between frames (m)
		$W_a$ (kN/m)	$W_{j1}$ (kN/m)	$W_{j2}$ (kN/m)	
40	2.50	96	31	37	1.87
	2.75	110	28	51	1.63
	3.00	124	22	66	1.45
	3.25	138	14	84	1.24
50	2.50	106	38	38	1.70
	2.75	123	35	52	1.45
	3.00	142	31	70	1.27
	3.25	159	23	90	1.13
60	2.50	110	41	37	1.63
	2.75	132	41	52	1.37
	3.00	152	38	71	1.18
	3.25	174	32	92	1.03

## Single Sided Support Frame 500 Less than 45° anchor angle

Concrete Pressure kN/m <sup>2</sup>	Concrete Pressure HT (m)	Reaction force			Max. distances between frames (m)
		$W_a$ (kN/m)	$W_{j1}$ (kN/m)	$W_{j2}$ (kN/m)	
40	3.50	153	34	74	2.16
	4.00	181	24	104	1.80
	4.50	209	8	140	1.55
	5.00	238	-8	181	0.97
50	3.50	177	45	80	1.88
	4.00	212	34	115	1.55
	4.50	247	17	158	1.31
	5.00	282	-2	207	0.97
60	3.50	195	54	85	1.72
	4.00	238	45	123	1.39
	4.50	280	27	170	1.16
	5.00	322	2	226	0.97

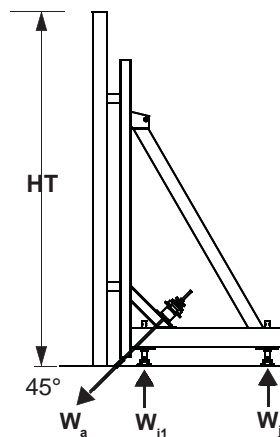
## Single Sided Support Frame 500 with Lower part 200 Less than 45° anchor angle

Concrete Pressure kN/m <sup>2</sup>	Concrete Pressure HT (m)	Reaction force			Max. distances between frames (m)
		$W_a$ (kN/m)	$W_{j1}$ (kN/m)	$W_{j2}$ (kN/m)	
40	5.50	266	60	128	1.74
	6.00	294	49	159	1.56
	6.50	328	31	200	0.97
50	5.50	318	78	147	1.45
	6.00	354	66	183	1.30
	6.50	396	47	233	0.97
60	5.50	365	97	161	1.27
	6.00	407	85	203	1.13
	6.50	458	63	260	0.97

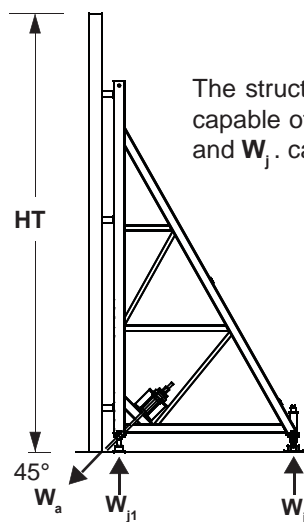
## Single Sided Support Frame 500 with Lower part 200 and Base Frame 200/2 Less than 45° anchor angle

Concrete Pressure kN/m <sup>2</sup>	Concrete Pressure HT (m)	Reaction force			Max. distances between frames (m)
		$W_a$ (kN/m)	$W_{j1}$ (kN/m)	$W_{j2}$ (kN/m)	
40	7.00	319	25	176	1.56
	7.50	345	12	206	1.44
	8.00	371	7	239	1.34
	8.60	402	-16	281	0.97
50	7.00	386	37	206	1.29
	7.50	418	21	243	1.19
	8.00	451	2	282	1.10
	8.60	489	-14	334	0.97
60	7.00	448	51	232	1.11
	7.50	487	32	274	1.02
	8.00	525	10	301	0.95
	8.60	571	-7	327	0.87

A separate proof of structural strength should be provided in case of deviations from the figures mentioned in the tables. This applies in particular to the anchor angle and concrete pressure.

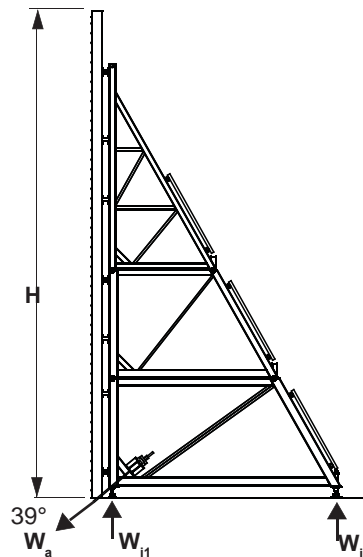
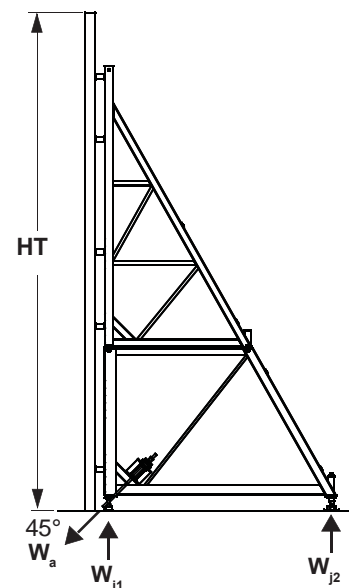


Please note that the Single Sided Support Frame only attain its full load-bearing capacity when the support structure is adequately stiffened by Scaffold Tube and Coupler bracing.



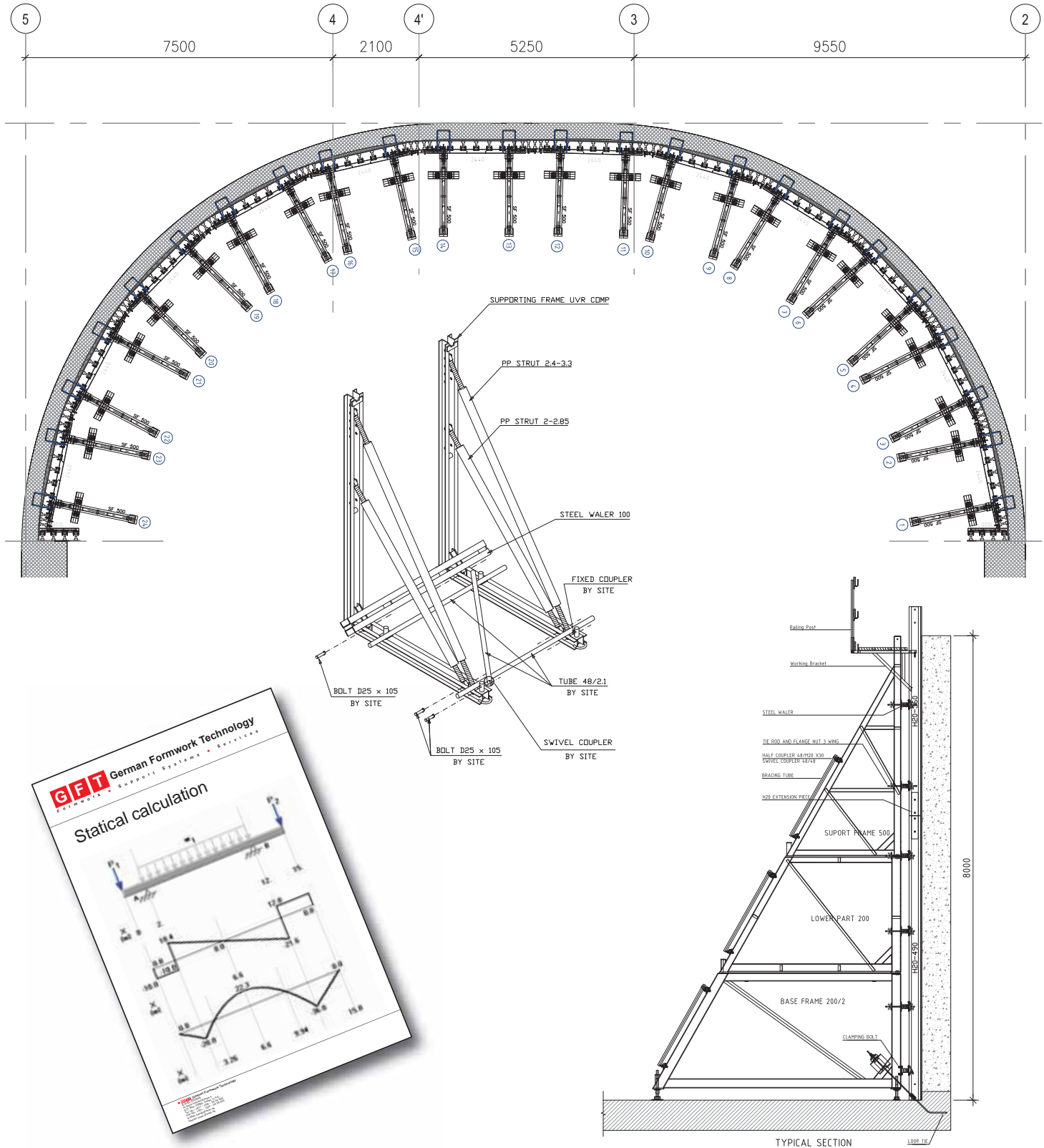
The structural parts must be capable of carrying loads  $W_a$  and  $W_{j1}$  calculated here.

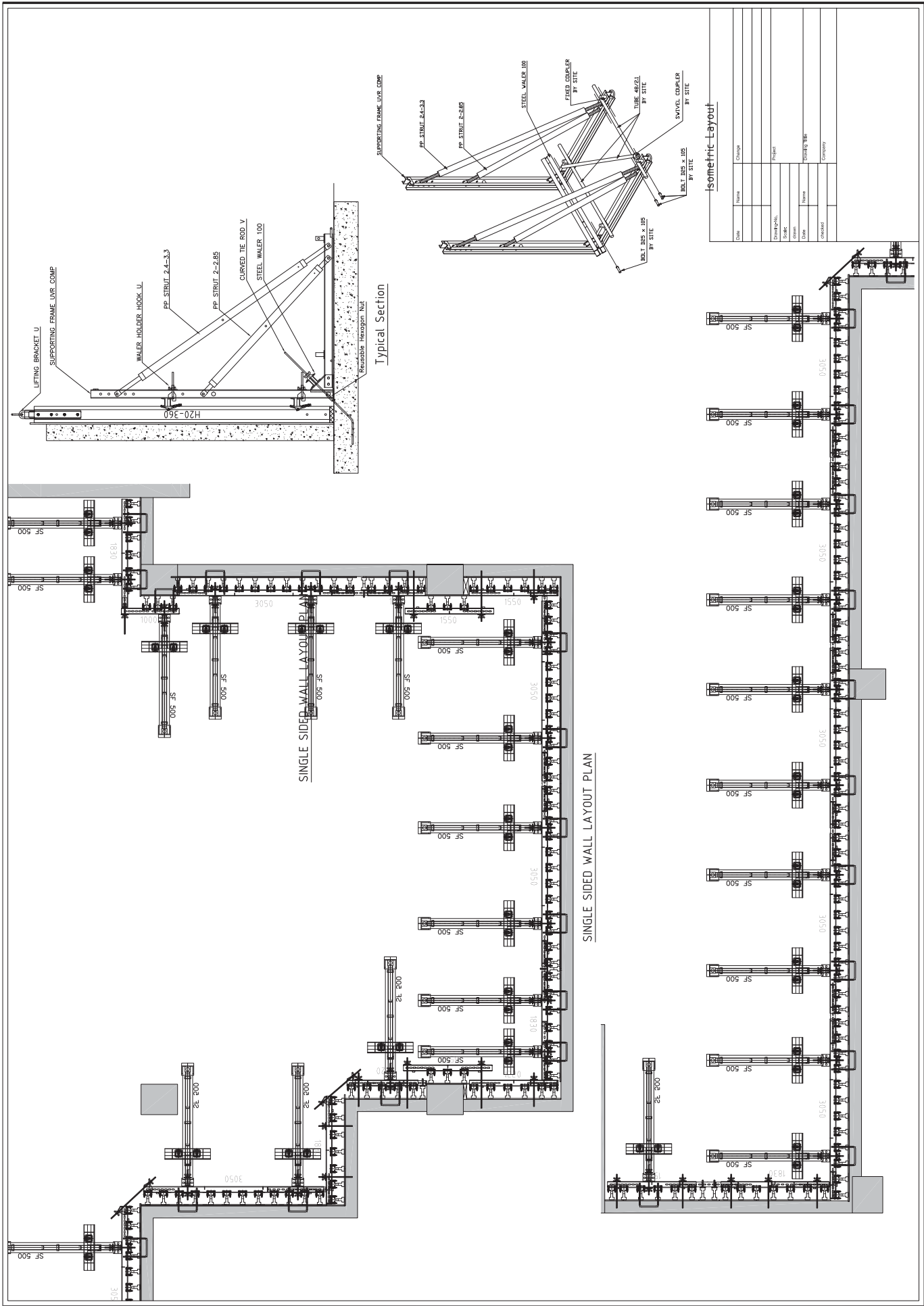
Sufficient temporary weight must be provided to prevent the support structure from moving up in case the Base Jack forces  $W_{j1}$  is in the minus range.

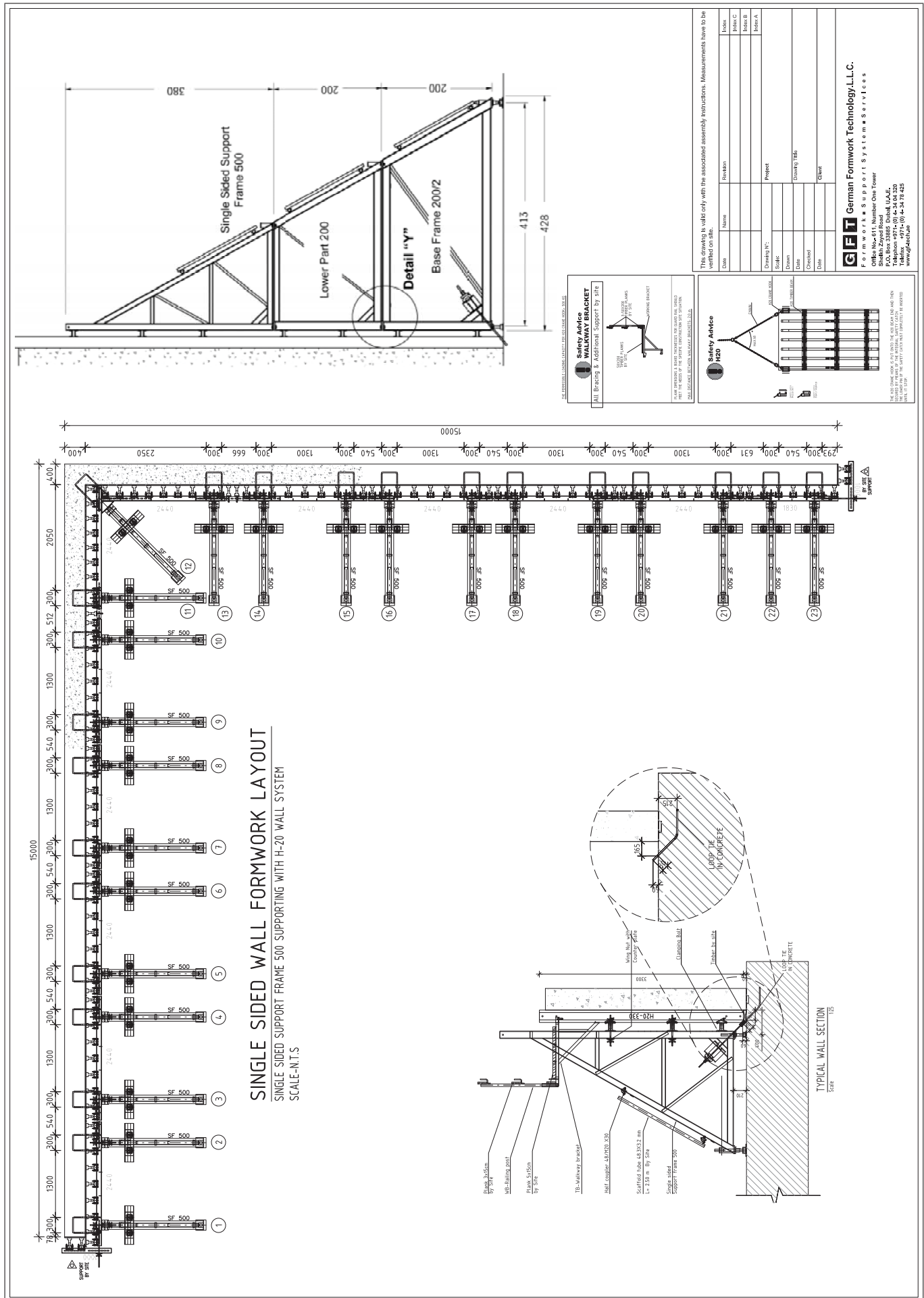


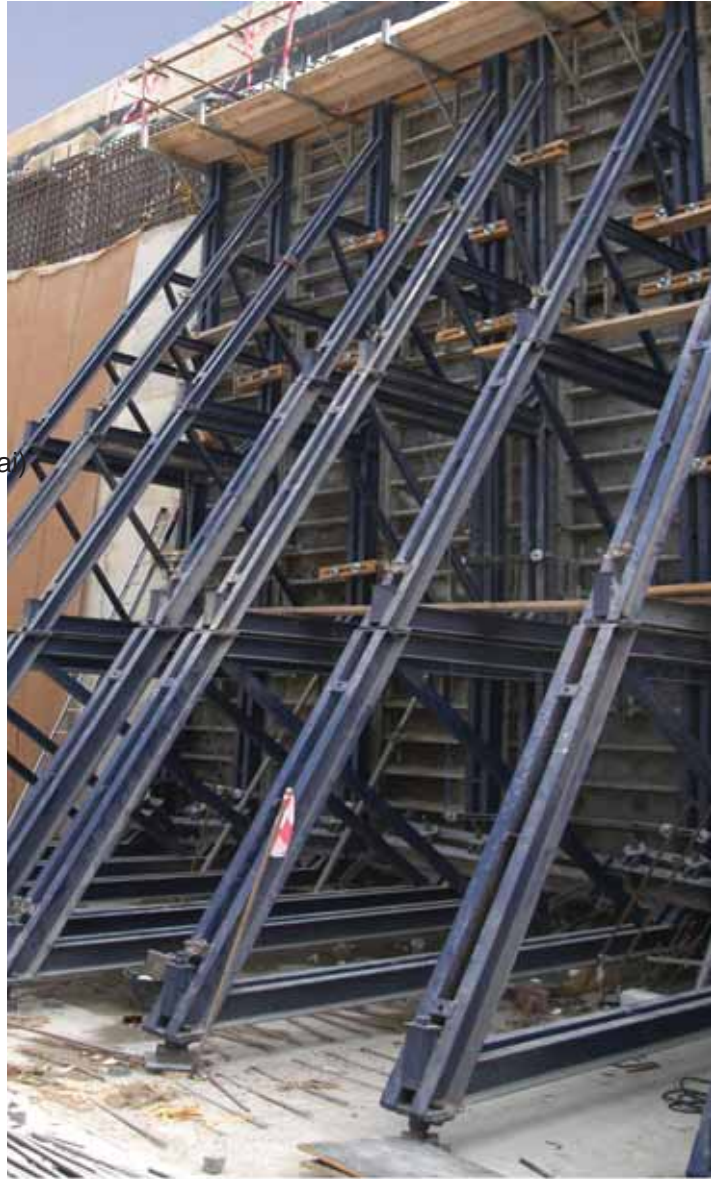
# Engineering, Design & Drawing

- 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 statical requirements and as shown in the GFT's execution drawing & Calculation









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