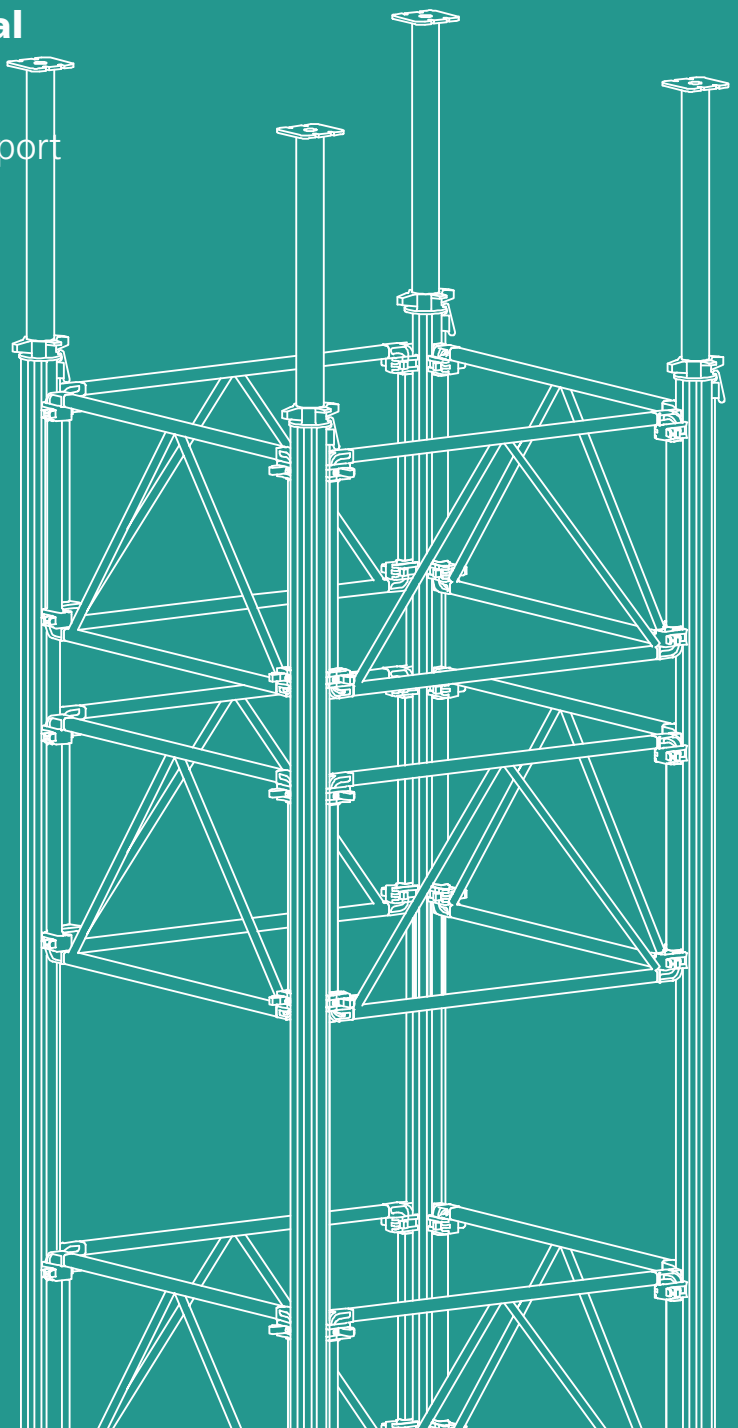
THE FORMWORK

NOE® prop

Dated: 02.2019

Assembly and Operating Manual

Type approved
according to Test Report
No. S-N/120040
LGA Nuremberg



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1. Safety advice, GSV guidelines

Advice on proper and safe use of formwork and falsework

The contractor is responsible for drawing up a comprehensive risk assessment and a set of installation instructions.
The latter is not usually identical to the assembly and use instructions.

- Risk assessment: The contractor is responsible for the compilation, documentation, implementation and revision of a risk assessment for each construction site. His employees are obliged to implement the measures resulting from this in accordance with all legal requirements.
- Installation instructions: The contractor is responsible for compiling a written set of installation instructions. The assembly instructions form part of the basis for the compilation of a set of installation instructions.
- Assembly and use instructions: Formwork is technical work equipment and is intended for commercial use only. It must be used properly and exclusively through trained specialist personnel and appropriately qualified supervising personnel. The assembly and use instructions are an integral component of the formwork construction. They comprise at least safety guidelines, details on the standard configuration and proper use, as well as the system description. The functional instructions (standard configuration) contained in the assembly instructions are to be complied with exactly as stated. Enhancements, deviations or changes represent a potential risk and therefore require separate verification (with the help of a risk assessment) or a set of installation instructions that comply with the relevant laws, standards and safety regulations. The same applies in those cases where formwork and/or falsework components are provided by others on site.
- Availability of the assembly and use instructions: The contractor must ensure that the assembly and use instructions provided by the manufacturer or formwork supplier are available at the place of use, that site personnel are informed of this before assembly and use takes place, and that they are available at all times.
- Representations: The representations (drawings, diagrams etc.) shown in the assembly instructions are, in part, situations of assembly and not always complete in terms of safety considerations. Any safety installations that may not have been shown in these representations must nevertheless be available.
- Storage and transportation: Any special requirements relating to transportation procedures and storage of the formwork constructions must be complied with. An example would be the use of the appropriate lifting gear.
- Material check: Formwork and falsework material deliveries are to be checked on arrival at the construction site/place of destination as well as before each use to ensure that they are in perfect condition and function correctly. Changes to the formwork materials are not permitted.
- Spare parts and repairs: Only original components may be used as spare parts. Repairs are to be carried out by the manufacturer or at authorised repair facilities only.
- Use of other products: Combining formwork components from different manufacturers carries certain risks. They are to be individually verified and can result in the compilation of a separate set of assembly instructions required for the installation of the equipment.
- Use of other products: Individual safety symbols are to be complied with. Examples:

Safety information: Non-compliance can lead to damage to materials or risk to the health of site personnel (also life).

Visual check: The intended operation is to be subject to a visual check.

Note: Supplementary information for safe, correct and professional execution of work activities.

- Miscellaneous: We reserve the right to make amendments in the course of technical development. All current country-specific laws, standards and other safety regulations are to be complied with without exception for the safe application and use of the products. They form a part of the obligations of employers and employees regarding industrial safety. This gives rise to, among other things, the responsibility of the contractor to ensure the stability of the formwork and falsework constructions as well as the structure during all stages of construction, which also includes the basic assembly, dismantling and the transport of the formwork and falsework constructions or their components. The complete construction is to be checked during and after assembly.

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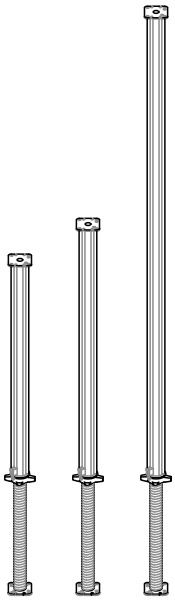
Postfach 104160, 40852 Ratingen
info@www.gsv-betonschalungen.de
www.gsv-betonschalungen.de

2. Overview of NOEprop frame support system

2.1 NOEprop



NOEprop T30	1.90 - 3.00 m	(Part No. 697551)
NOEprop E40	2.20 - 4.00 m	(Part No. 697552)
NOEprop D55	4.00 - 5.80 m	(Part No. 697553)

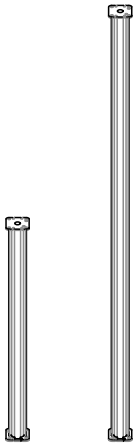
To open or close a NOEprop under load, use the NOEprop spanner Part No. 391900.

Do not strike with a hammer.

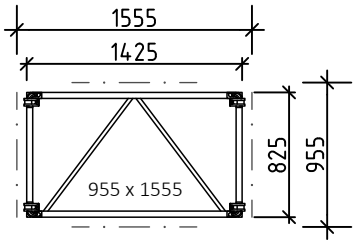
2.2 NOEprop adapter

NOEprop adapter 1.80 m (Part No. 697559)

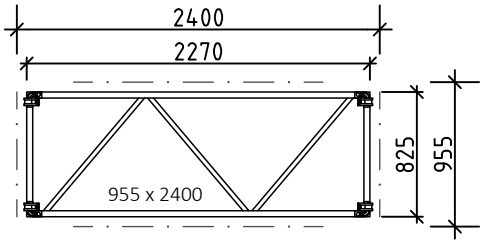
NOEprop adapter 3.60 m (Part No. 697558)



2.3 NOEprop frame



NOEprop frame 955x1555 Part No. 890865
(assembled with NOEclamp Part No. 890885)
NOEprop frame 955x2400 Part No. 890871
(assembled with NOEclamp Part No. 890886)

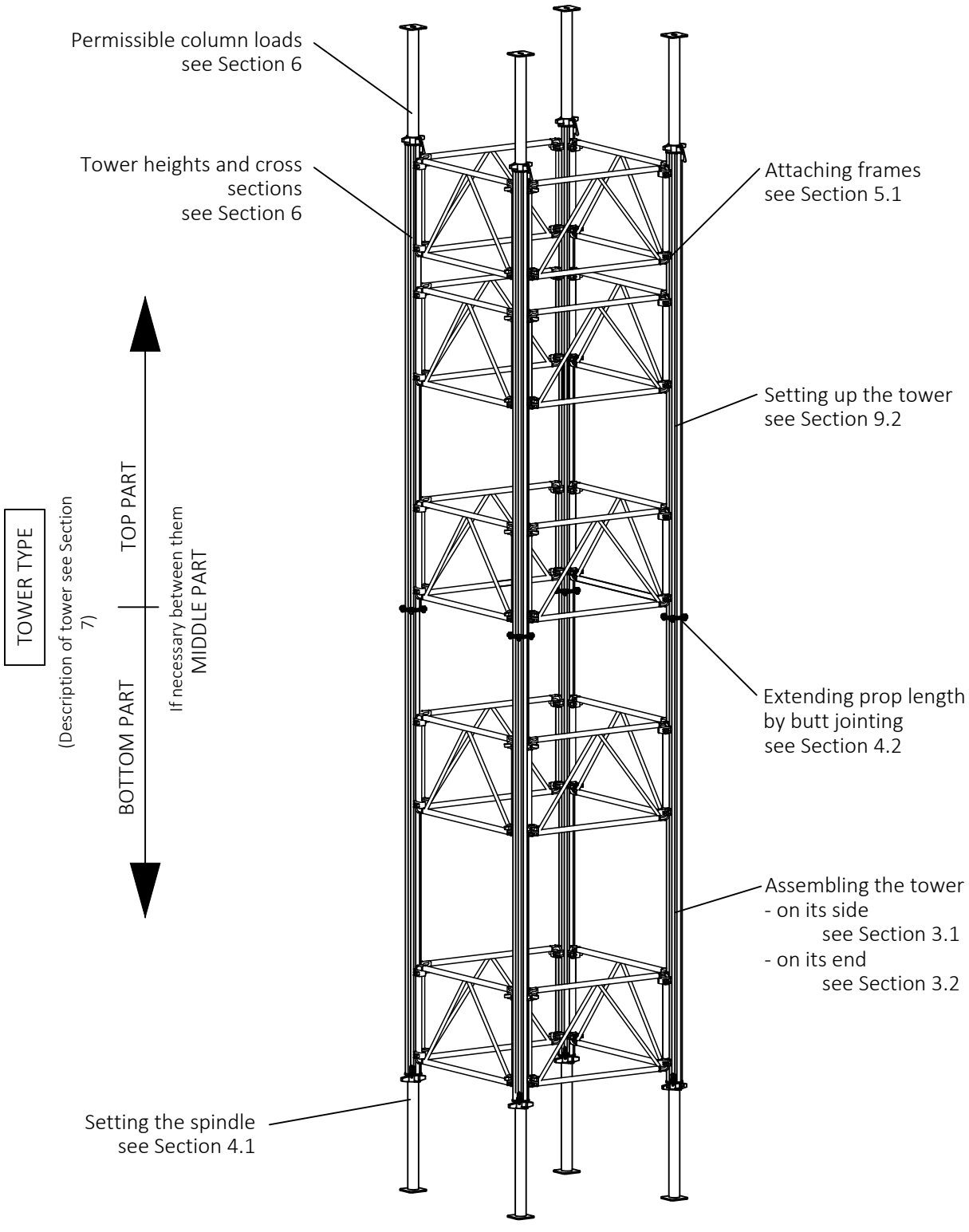


Possible plan layouts with these frames:
955 x 955 frame vertical
1555 x 1555 frame horizontal
1555 x 2400 frame horizontal
2400 x 2400 frame horizontal

2.4 NOEprop frame support system

NOEprops can be used as individual supports or as part of a frame support system.

Heights up to 15.20 m and widths of 955, 1555 and 2400 mm can be achieved using standard construction.



3. Assembly instructions NOEprop frame support system

Before installing a NOEprop frame support system, it must first be designed. In other words, the tower type, its plan layout, tower spacings and height are derived from the value of the height to the supported element, the applicable dynamic wind pressure, and the site-specific arrangements for load transfer. The type of NOEprop frames, props and adapters follow from the tower type.

The tower divides into a top part (K1-K4), middle part (M1-M4) and bottom part (U1-U4). The description and spacings are taken from Section 7. This information forms the basis for the installation.

Before using the formwork, please read through the Assembly and Operating Manual. The safety advice contained in each chapter must be observed!
All persons who work with the product must be instructed by suitably qualified site supervisory staff.

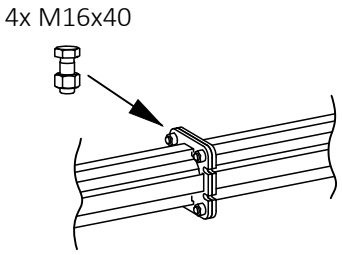
A risk analysis must be performed for all situations on site by a responsible person.
Only defect-free materials are to be used. Therefore each component must be visually inspected or tested during all steps in the work!

The individual steps are shown schematically below. Where more detailed information on construction is available in the later sections, this is indicated by symbol →

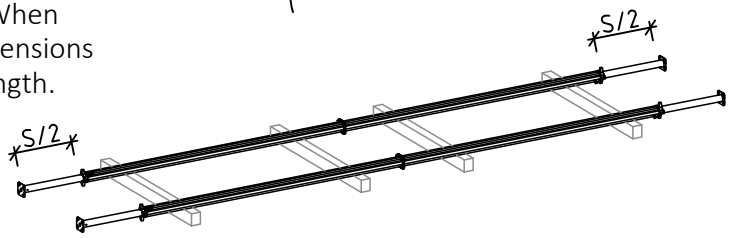
3.1 Assembling a tower horizontally

We recommend that the tower is preassembled on its side on level ground and then raised to the vertical with a crane. The assembly of the example tower from Section 2 follows below.

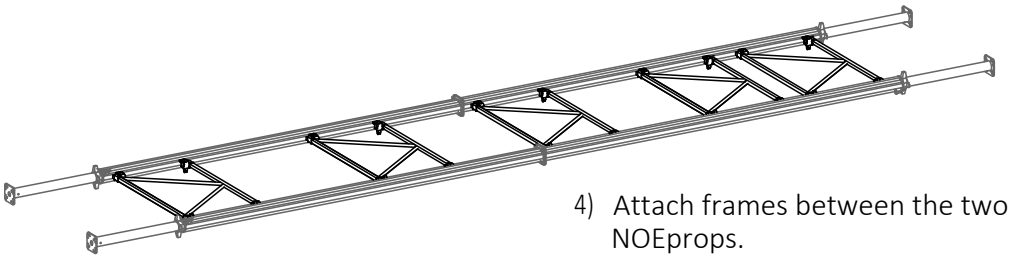
1) Extending with another NOEprop: butt the end plates together and fasten with 4 M16x40 8.8 bolts.
→ see Section 4.2



2) Drawing out the NOEprop to length. When doing this, ensure that the spindle extensions at the top and bottom are of equal length.
→ see Section 4



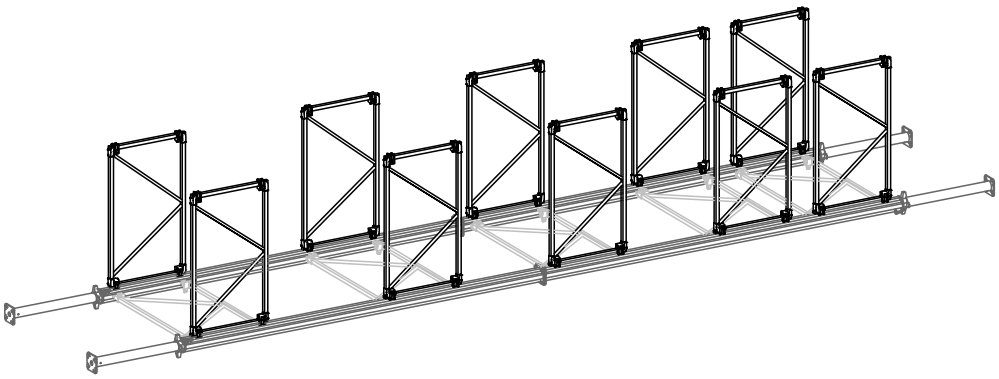
3) On a piece of clear and level ground, place 2 butt jointed and set to length NOEprops next to one another, if necessary on wooden sleepers. The frame size of the selected tower gives the distance between the axes of the props. In the case of a rectangular plan layout, assemble the longer side first.
→ see Section 2.3 and 6



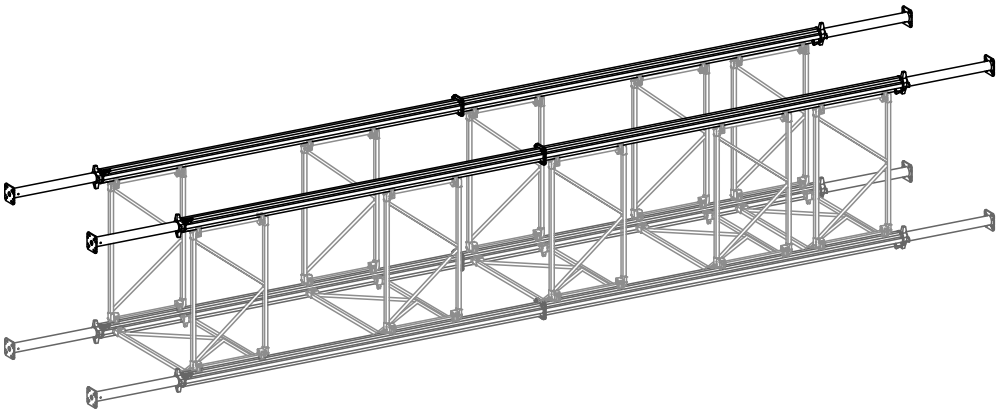
4) Attach frames between the two NOEprops.

→ For how to fasten the frames see Section 5.1

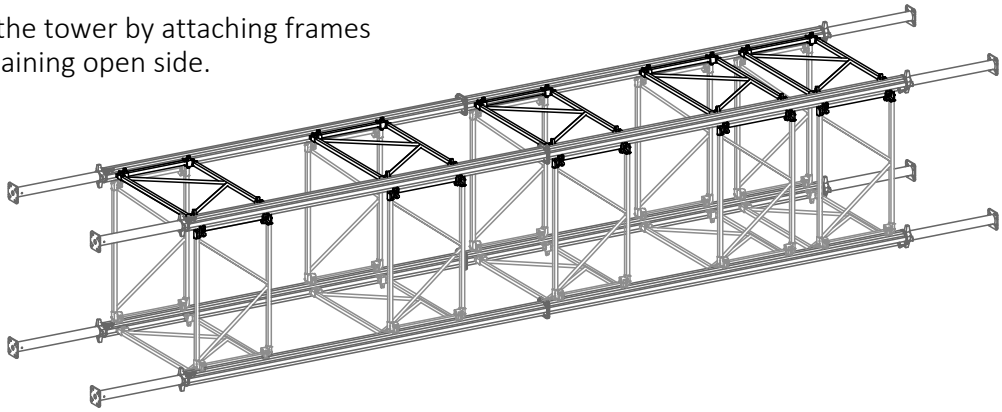
5) Attach the frames of each transverse side to the right and left NOEprops.



6) Attach two further NOEprops to the frames.

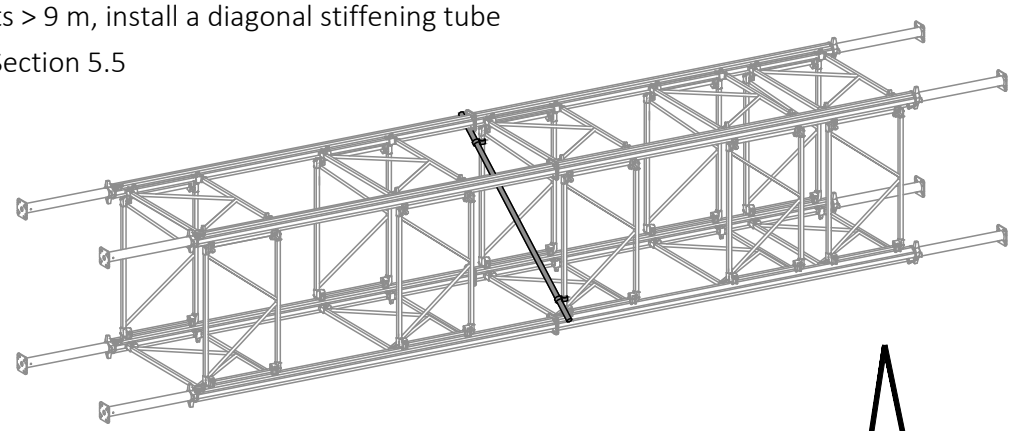


7) Complete the tower by attaching frames to the remaining open side.



8) For heights > 9 m, install a diagonal stiffening tube

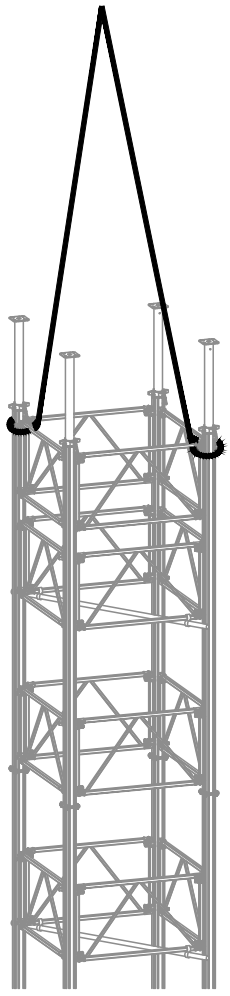
→ see Section 5.5



9) To erect the tower, sling the crane suspension around the NOEprops and the two pairs of opposing top frames and bring the tower slowly into the vertical position.

Stand up, align and if necessarily brace or attach stays to the tower.

After checking the stability of the structure, remove the lifting tackle. Remove the lifting tackle while standing on an elevating access platform or similar. Other means of releasing the lifting tackle may be used, such as by a remote control device, if indicated by the results of a risk analysis performed by the appropriate staff on site.

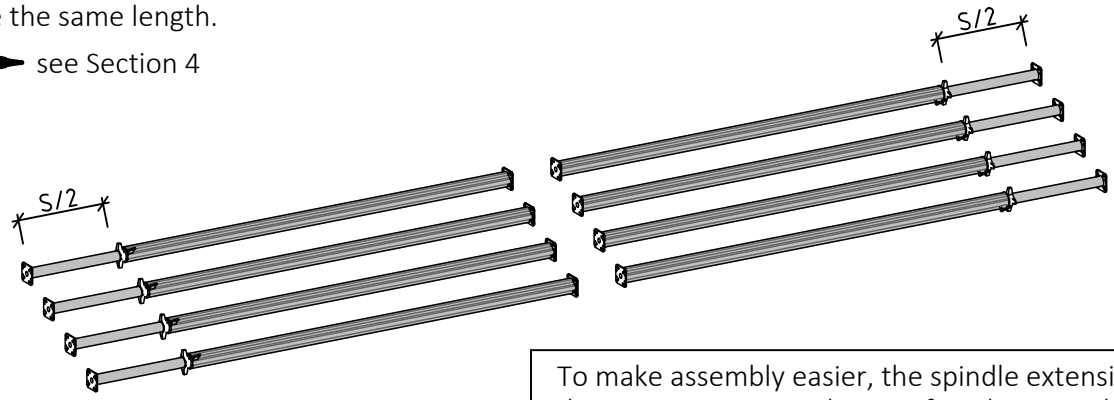


3.2 Assembling a tower on its end

The NOEprop frame support system can also be assembled on its end. In this case, for safety reasons the assembly involves more steps, which are described below. The example tower in Section 2.4 is used to illustrate this.

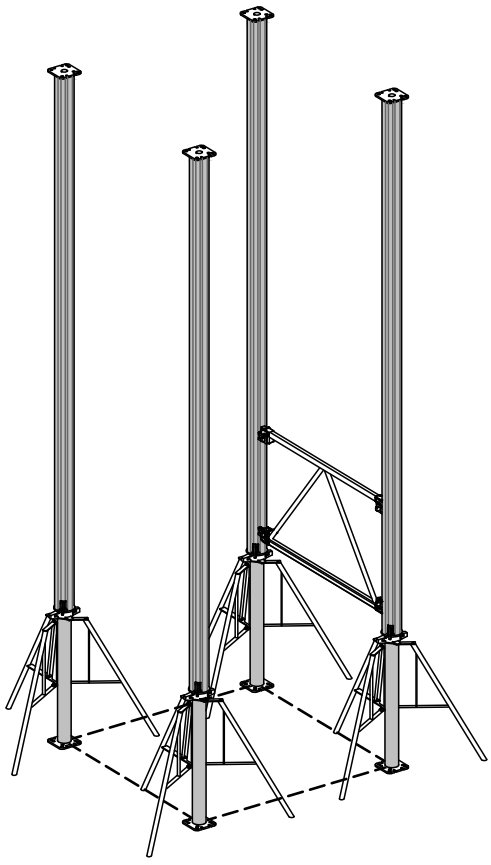
1) The NOEprops are drawn out to the required length before assembly begins. The spindle extensions top and bottom must be the same length.

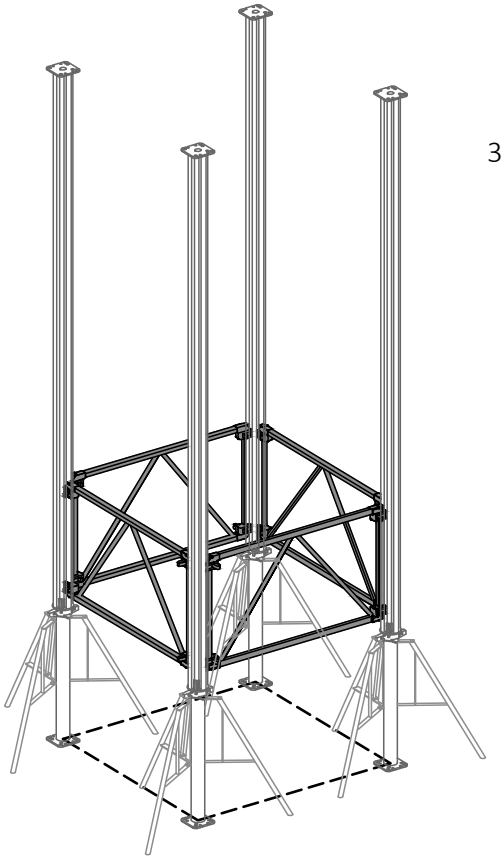
→ see Section 4



To make assembly easier, the spindle extension on the top NOEprop can be set after the props have been butted together and the frames attached.

2) After choosing a suitable place to start erecting the formwork, stand the NOEprops of the first tower in the corner positions and stabilise using e.g. tripods. The spindles are at the bottom.



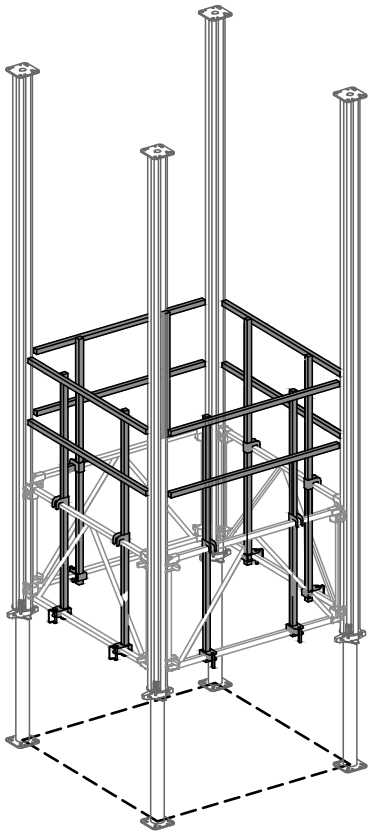


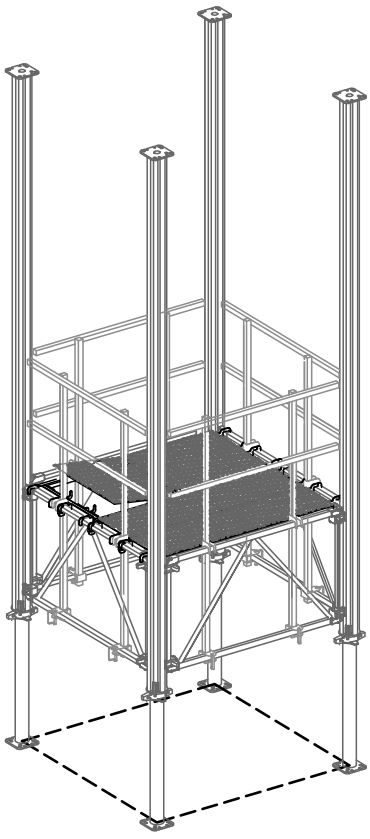
3) Connect the props with 4 NOEprop frames.

→ see Section 5.1

4) Attach guard rails to the 4 NOEprop frames.

→ see Section 8.1

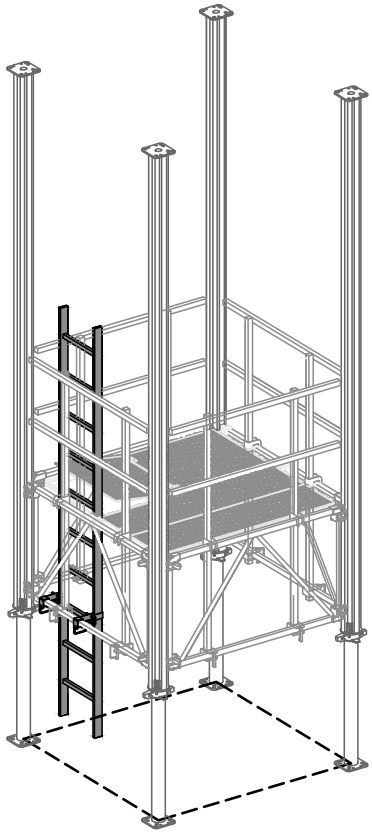




◆ 5) Install the platform boarding

→ see Section 8.2 and 8.3

In accordance with EN 12811-1:2001(D), the boarding must be capable of supporting a uniformly distributed load of 0.75 kN/m².



6) Place a ladder through the boarding with hatch, attach the 2 ladder supports and secure the ladder.

→ see Section 8.4

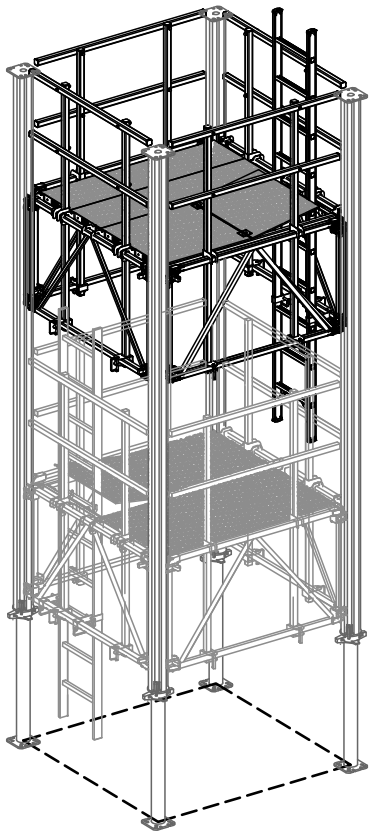
Climb up to the platform using the ladder and continue assembly.

7) Install a further set of frames, i.e.

- Attach 4 frames
- Attach 4 guard rails
- Fit boarding (staggered)
- Install ladder and 2 ladder supports

→ see assembly stages 3)-6)

If necessary, repeat this step.

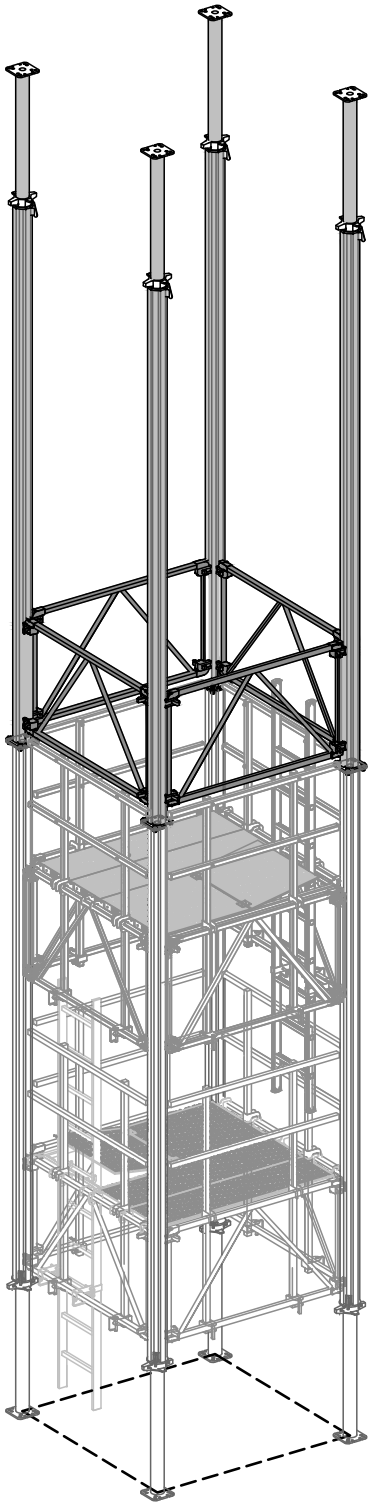


For tower types differing from the example tower:

- The bottom part U1 does not require this step because it has only one set of frames.
- If extending NOEprop by butting on an adapter as called for in the usage rules in 7.3, then the next step is as described in Section 8).

8) Butting on the next props and attaching the next set of frames

→ see Section 4.2 and 5.1

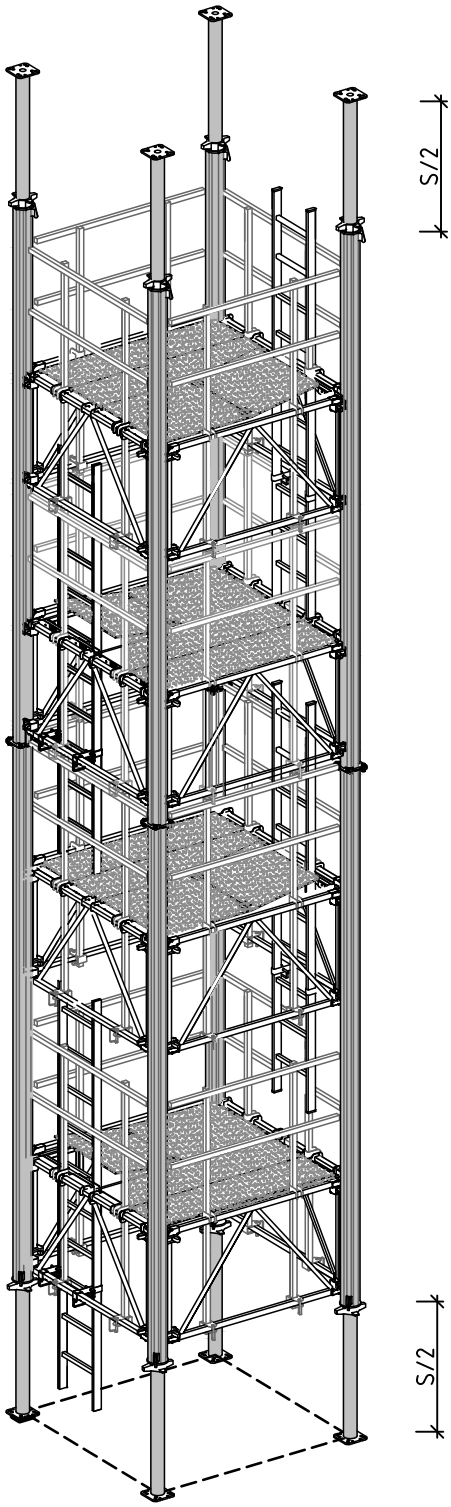


To make assembly easier, the spindle extension can be set after the NOEprops have been butted together and the frames attached. The top and bottom spindle extensions must be of equal length.

For tower types with a middle part, the adapters are attached at this point. Then follow assembly steps 3)-6) . The NOEprops are attached after the middle part is in place.

9) Repeat these steps until the required tower type is complete.

→ Description of tower type see Section 7



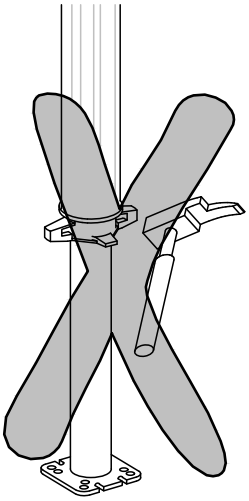
10) For heights > 9 m, install a diagonal stiffening tube

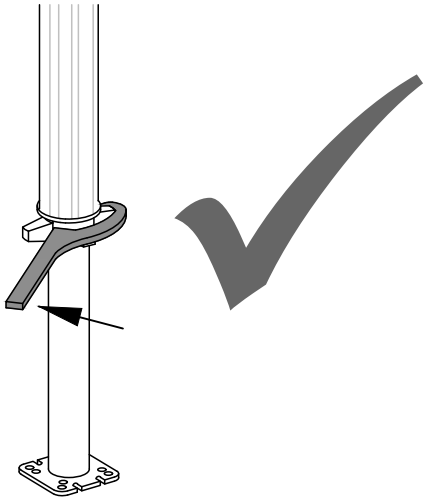
→ see Section 5.5

After assembly is complete, the guard rails, boarding and ladders can be removed so that they are available for the next tower.

3.3 Dismantling the formwork

1) Attach the guard rails, boarding, ladders and ladder support device to ensure the formwork and falsework can be dismantled safely. In addition, please refer to the instructions on assembling a tower on its end in Section 3.2.
2) Wind in the spindles using the NOEprop spanner. Do not strike with a hammer. The spanner can be extended with a Ø48 scaffold tube.





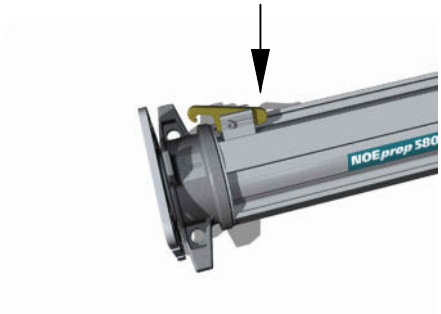
Lower using the spanner!

3) Repeat the erection steps from Section 3.2 in reverse order
   - Detach set of frames
   - Remove ladder and ladder support
   - Remove boarding
   - Remove guard rails

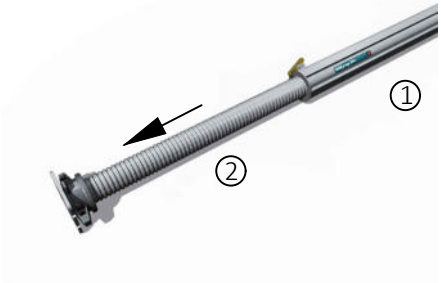
   Where necessary, remove the butted NOEprops and adapters by unbolting the 4 M16 bolts.

4. NOEprop props

4.1 Screw out and secure the spindle



To screw out the spindle, press the NOEprop hook to open the lock.



Screw out the spindle and turn the quick jack nut upwards.

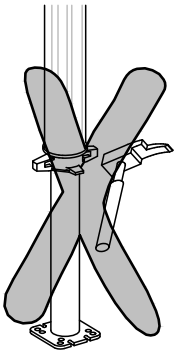
Press the NOEprop hook, turn the quick jack nut as far as it will go.

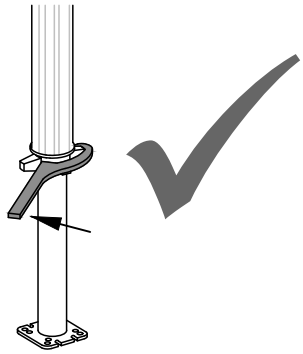
Release the NOEprop hook, it automatically locks the spindle to prevent it being inadvertently screwed out.

Turn the quick jack nut to finely adjust the prop. To turn the quick jack nut under load use the NOEprop spanner (Part No. 391900).

1 External tube NOEprop
2 Spindle NOEprop
3 NOEprop hook open
4 NOEprop hook closed
5 Quick jack nut

To screw in or screw out the spindles, use the spanner to apply the necessary force. Do strike with a hammer (see 3.3 Dismantling the formwork).

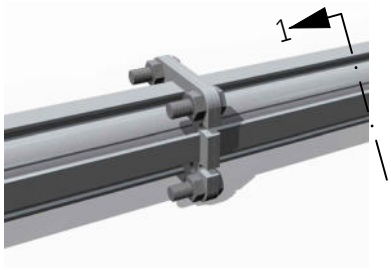




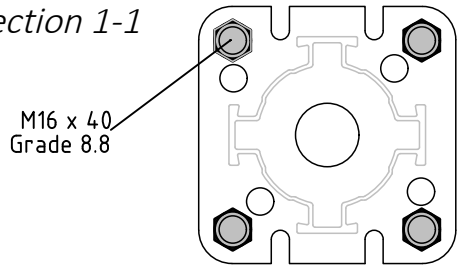
Lower using the spanner!

4.2 Butt jointing NOEprops

To butt joint two NOEprops, place their end plates together and fasten with 4 M16x40 bolts (Part No. 313400).



Section 1-1



> The torque for the bolts must be 50 Nm. Deviations of +/- 10 % are permissible.
>
> To be used only as part of a frame support system , not as stand-alone supports!!!

4.3 Spindle extension

Because the spindle extension has a considerable effect on the loadbearing behaviour of the columns, the extension of the top and bottom spindles must be of equal length.

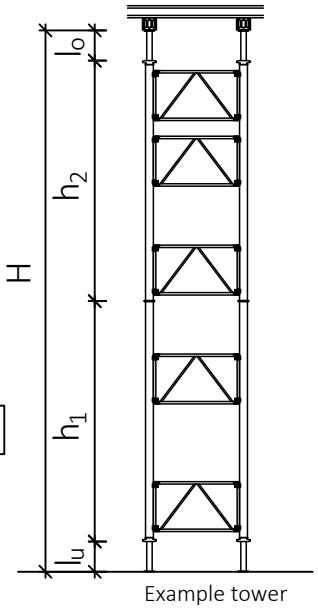
Calculation:

$$\text{Spindle extension } l_u \text{ or } l_b = \frac{\text{Formwork support height H} - \Sigma\ h}{2}$$

Value of h:

h=1.90 m	for	Part No. 697551	NOEprop 1.90-3.00 m
h=2.20 m	for	Part No. 697552	NOEprop 2.20-4.00 m
h=4.00 m	for	Part No. 697553	NOEprop 4.00-5.80 m
h=1.80 m	for	Part No. 697559	Adapter 1.80 m
h=3.60 m	for	Part No. 698558	Adapter 3.60 m

$l_o = l_u$



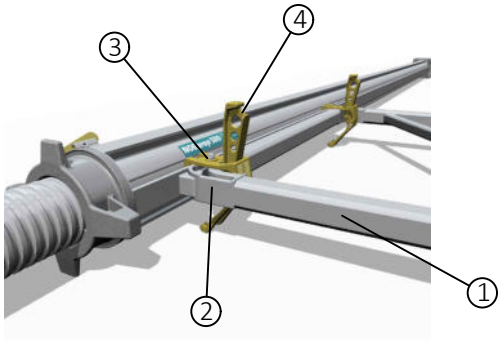
Example tower

5. NOEprop frame

5.1 Attaching a frame to a prop

When used as part of a frame support system, NOEprop frames must be attached to NOEprops. They are attached with clamps, specifically NOEclamps, directly to the profile of the prop. The NOEclamp can be mounted on the frame or be removable for use on its own.

> Frames cannot be clamped to a spindle.

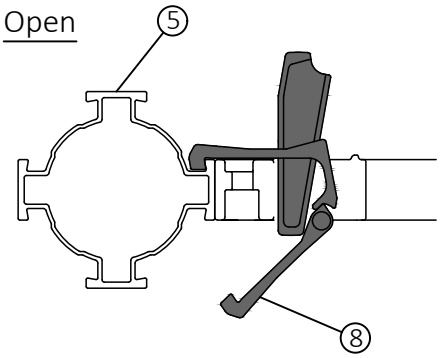


Place the NOEclamp on the corner piece or in the case of a mounted NOEclamp move it into the desired position and engage the clamping jaws in the profile on the NOEprop's external tube.

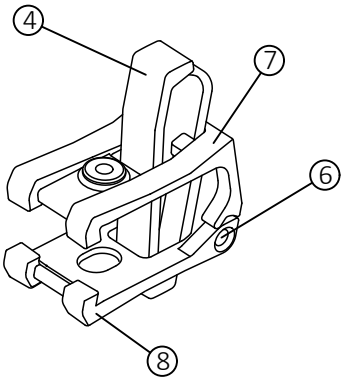
Lock the wedge by striking it with a 500 g hammer until it rebounds.

> Always use the NOEclamp on the corner piece of the frame!

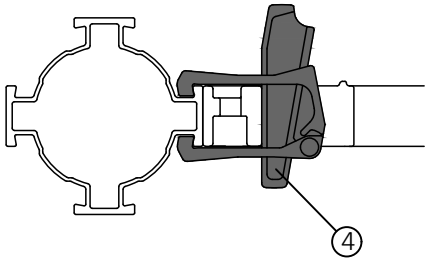
Open



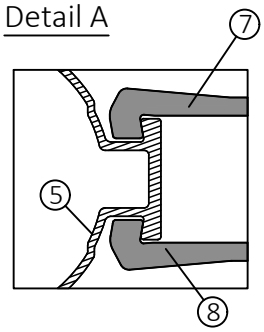
NOEclamp



Closed



Detail A

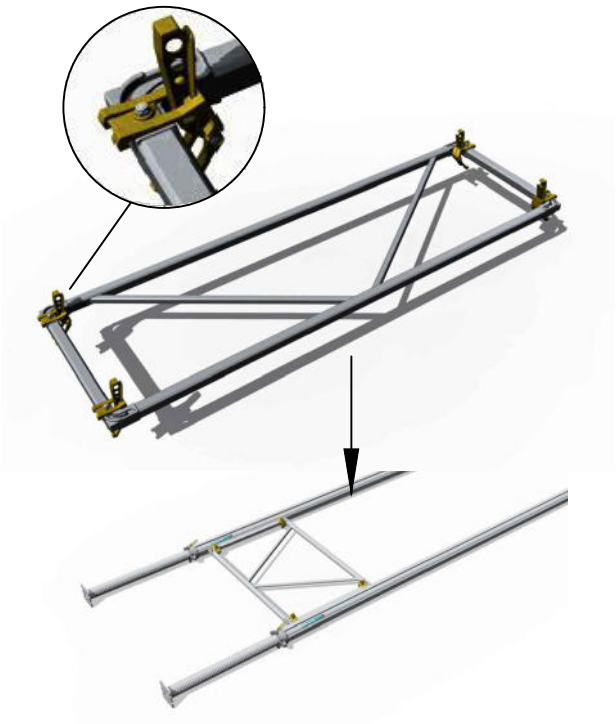


> Always perform a visual inspection to see that both claws are fully engaged in the external tube profile (see Detail A).

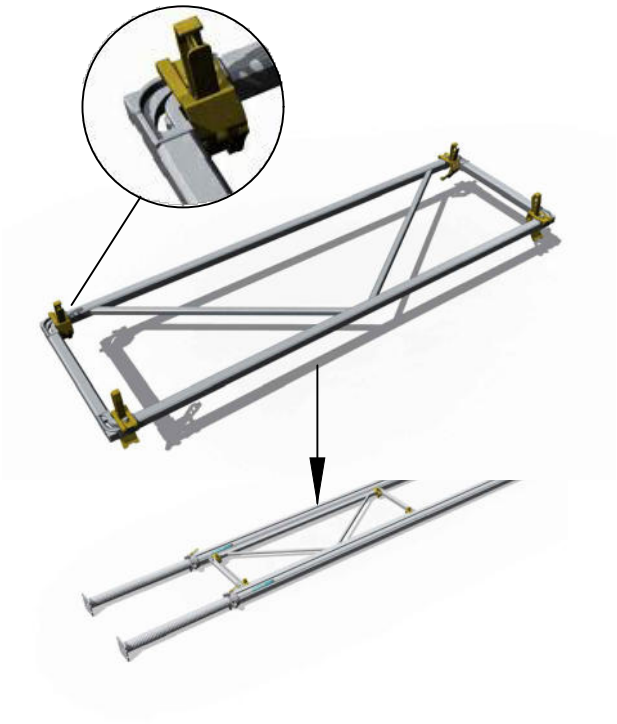
1 NOEprop frame
2 Corner piece
3 NOEclamp
4 Wedge
5 Outer tube/adapter
6 Pivot pin
7 Claw 1
8 Claw 2

5.2 Using frames horizontally or vertically

The frames can be used horizontally (side-on) as well as vertically (end-on). To allow this, the NOEclamp is moved round to a different position in the frame's end piece (see 5.4). Clamping is done as described in Section 5.1.



If the frame is used horizontally, then the NOEclamps on the corner piece are placed on the short side of the frame.

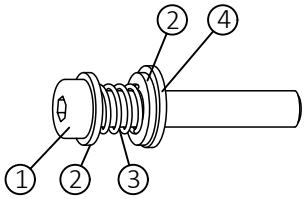


If the frame is used vertically, then NOEclamps on the corner piece are placed on the long side of the frame.

5.3 Attaching the NOEclamp

If the clamp is not to be detachable, it is fastened in place as follows:

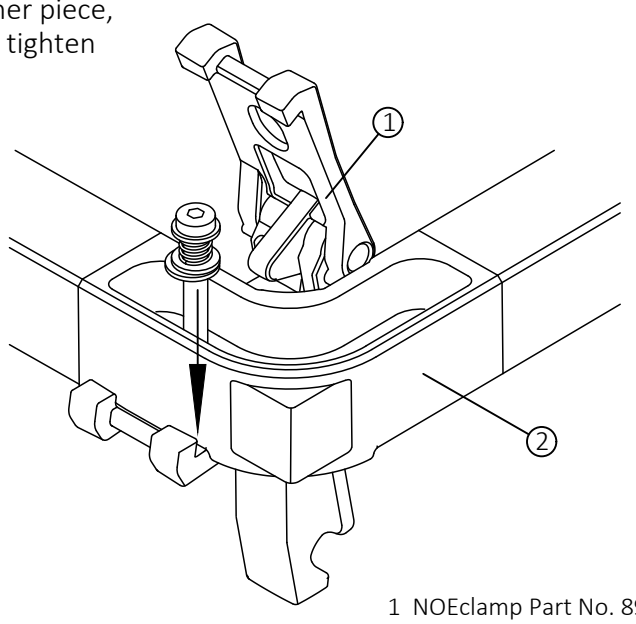
◆ Preparing the bolt



1 Hexagon socket head cap bolt M8x50
Part No. 369000
2 Washer M8 Part No. 380018
3 Pressure spring Part No. 890852
4 Washer M10 Part No. 380020

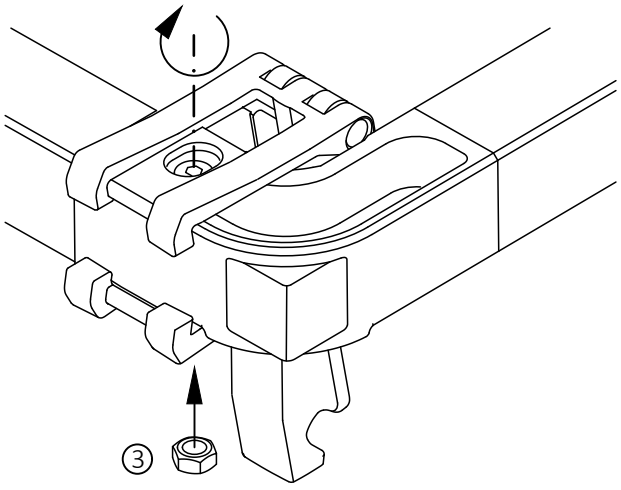
(Part Nos. for hexagon socket head cap bolts and washers relate to package size, see 10.4)

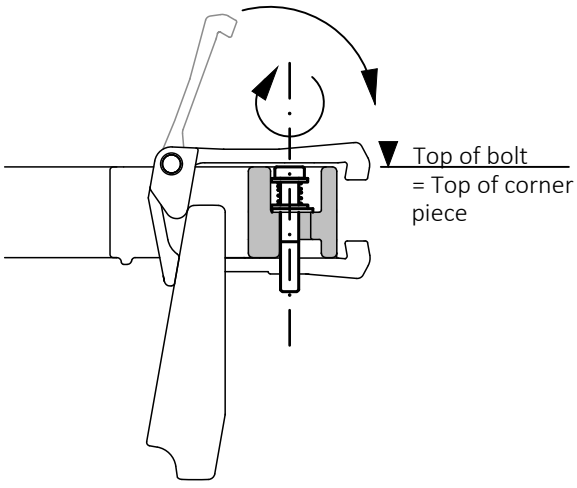
- Place the NOEclamp on the corner piece, thread in the prepared bolt and tighten



1 NOEclamp Part No. 890850
2 Corner piece in NOEprop frame
3 Hexagonal nut M8

- Close the clamp jaws and screw in the hexagon socket head cap bolt using the Allen key, until the head is flush with the corner piece.

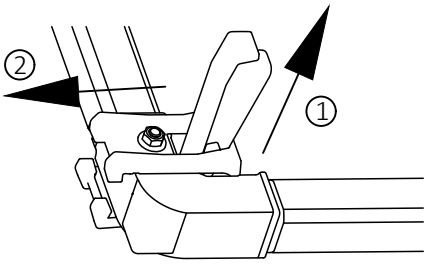


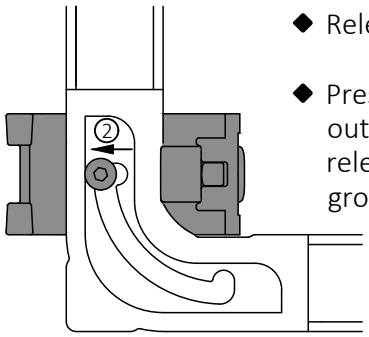


- Screw on the lock nut to secure.

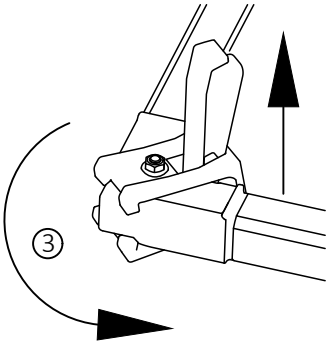
5.4 Turning the mounted NOEclamp in the corner piece

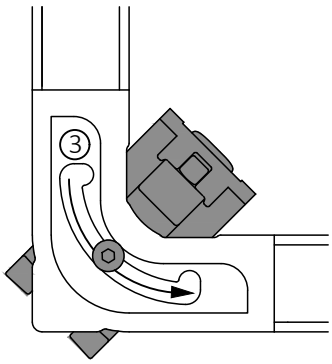
Depending on how the frame is used, the NOEclamp is placed on one side or other of the corner piec
Clamps mounted on the frame must be turned as follows:





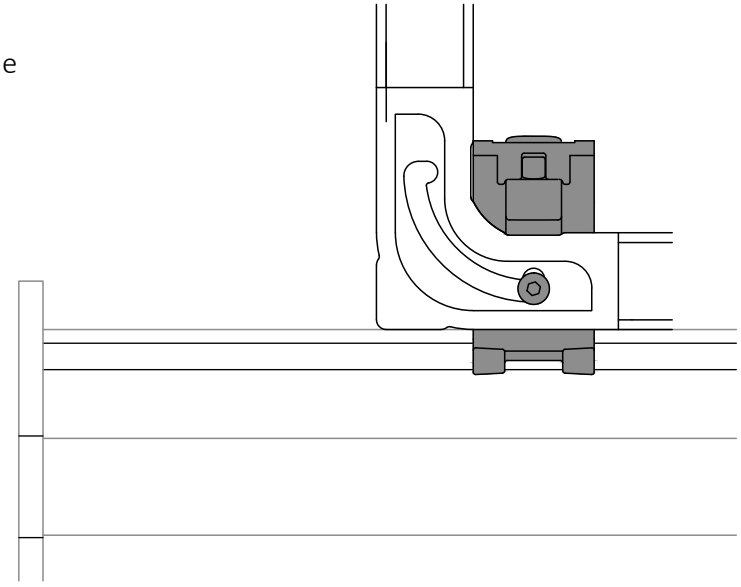
- Release wedge (1)
- Press the NOEclamp towards th outside edge of the frame, the releases itself from the recess i groove (2)





- Pull the NOEclamp upwards and move and turn it along the raised section to the other side (3).

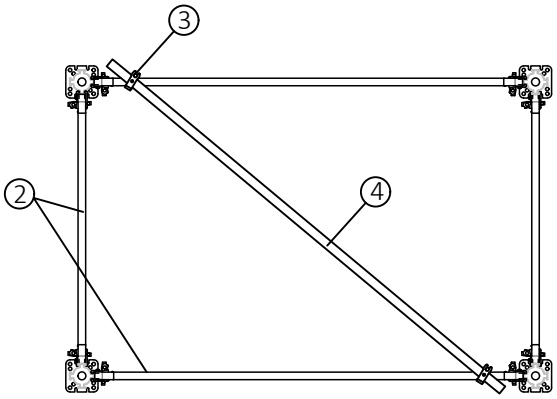
- The frame can now be attached to the prop or coupled to another frame.



5.5 Installation of stiffening scaffold tube for height > 9 m

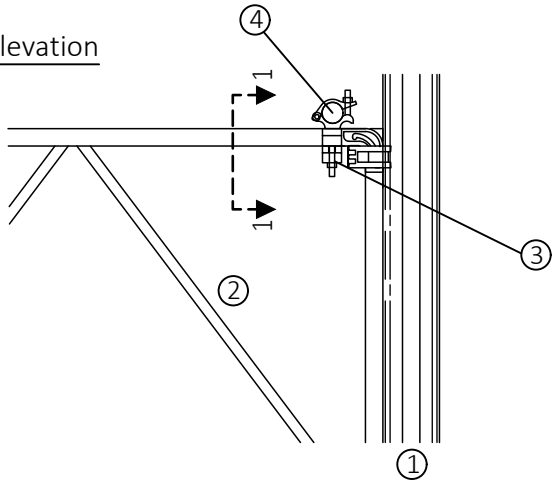
For towers with a height > 9 m, a diagonal stiffening tube must be attached with swivel couplers. It must be positioned in the middle third of the tower and can be attached to the frames.

Plan view

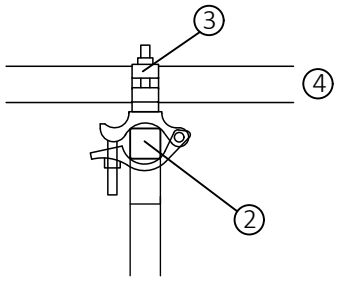


1 NOEprop
2 Frame
3 Coupler
4 Diagonal stiffening tube

Elevation



Section 1-1



The coupler for the stiffening tube should be attached near the connection point.

6. Permissible loads, possible tower dimensions and tower structure

6.1 Permissible prop loads when used as individual supports

When using the tables, please note whether the NOEprop is used either with the spindle pointing upwards or downwards.

Classification	T30		E40		D55	
prop length (m)	NOEprop 300		NOEprop 400		NOEprop 580	
	external tube at bottom	spindle at bottom	external tube at bottom	spindle at bottom	external tube at bottom	spindle at bottom
	F_{perm} [kN]	F_{perm} [kN]	F_{perm} [kN]	F_{perm} [kN]	F_{perm} [kN]	F_{perm} [kN]
1,9	140,2	160,6				
2,0	130,0	157,4				
2,1	119,9	154,2				
2,2	110,5	150,1	139,3	161,6		
2,3	103,4	143,3	129,2	155,8		
2,4	96,3	136,5	119,1	150,0		
2,5	90,7	129,2	109,0	144,1		
2,6	86,6	121,4	98,9	138,3		
2,7	82,5	113,5	91,1	130,9		
2,8	76,7	102,9	85,7	121,9		
2,9	70,3	91,4	80,2	112,8		
3,0	63,9	79,9	74,7	103,8		
3,1			69,3	94,8		
3,2			64,3	86,6		
3,3			59,4	78,4		
3,4			54,5	70,2		
3,5			49,6	62,0		
3,6			45,6	55,8		
3,7			42,7	51,7		
3,8			39,9	47,6		
3,9			37,0	43,5		
4,0			34,1	39,4	80,5	74,8
4,1					75,9	71,6
4,2					71,3	68,4
4,3					66,7	65,3
4,4					62,2	62,1
4,5					57,8	58,9
4,6					53,6	55,7
4,7					49,4	52,4
4,8					45,3	49,2
4,9					41,1	46,0
5,0					38,6	43,4
5,1					36,0	40,8
5,2					33,5	38,2
5,3					31,0	35,7
5,4					28,9	33,4
5,5					27,2	31,4
5,6					25,6	29,3
5,7					23,9	27,3
5,8					22,2	25,3

For further information about use see Approval Z-8.312-918.

6.2 Load charts for determining tower type

The towers are constructed in accordance with a specific system that predetermines the tower type. The permissible live load and the associated tower type are read from the charts below.

The standard construction versions cover heights up to 15.20 m and widths of 955, 1555 and 2400 mm.

1. Select the chart corresponding to the calculated dynamic wind pressure q.

   The charts are subdivided into q = 0.0 / 0.65 / 1.1 kN/m² and are further split into
   - Towers with horizontal frames (tower width 1.555 and 2.40 m) and
   - Towers with vertical frames (tower width 0.955 m).

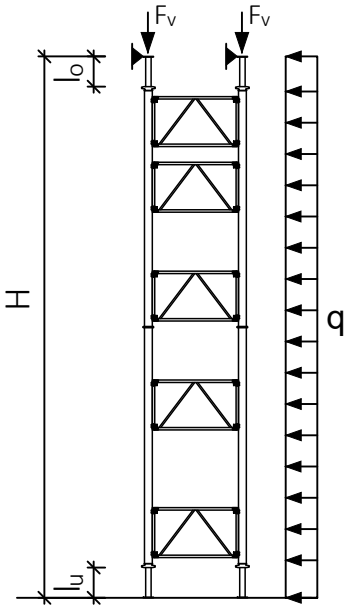
2. For a specified height H, the tower type and the permissible vertical load can be read from the chart. Refer to the example below.

   The charts apply for the following tower plan sizes:

   955 x 955 Frames vertical
   1555 x 1555 Frames horizontal
   1555 x 2400 Frames horizontal
   2400 x 2400 Frames horizontal

   The loads given relate to the most unfavourable tower plan layout. Loads for the less unfavourable geometries can be taken from the manufacturer's officially approved standard design calculations.

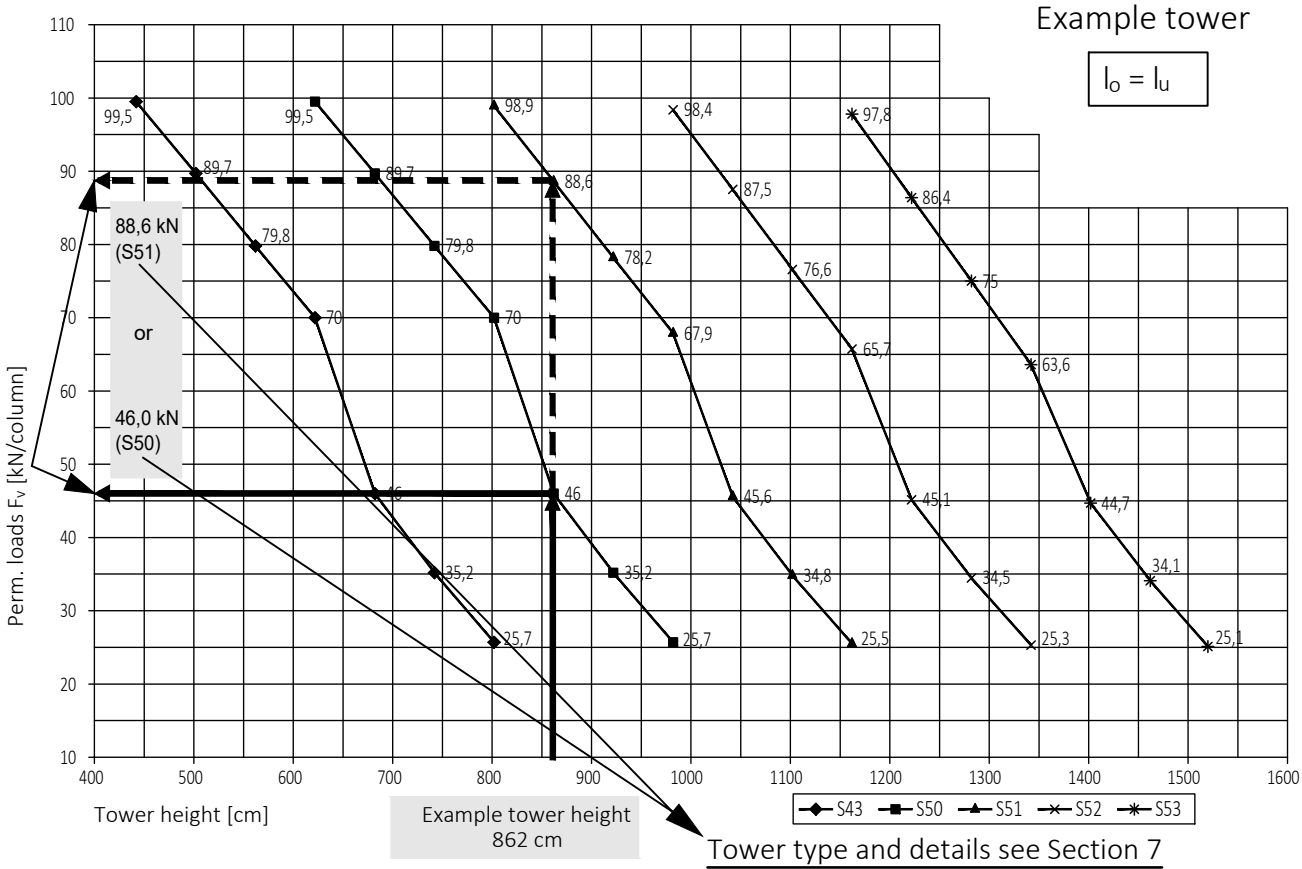
3. Read off the further details from Table 7.1 e.g. tower type and composition. Assemble and erect the tower elements.



Example tower

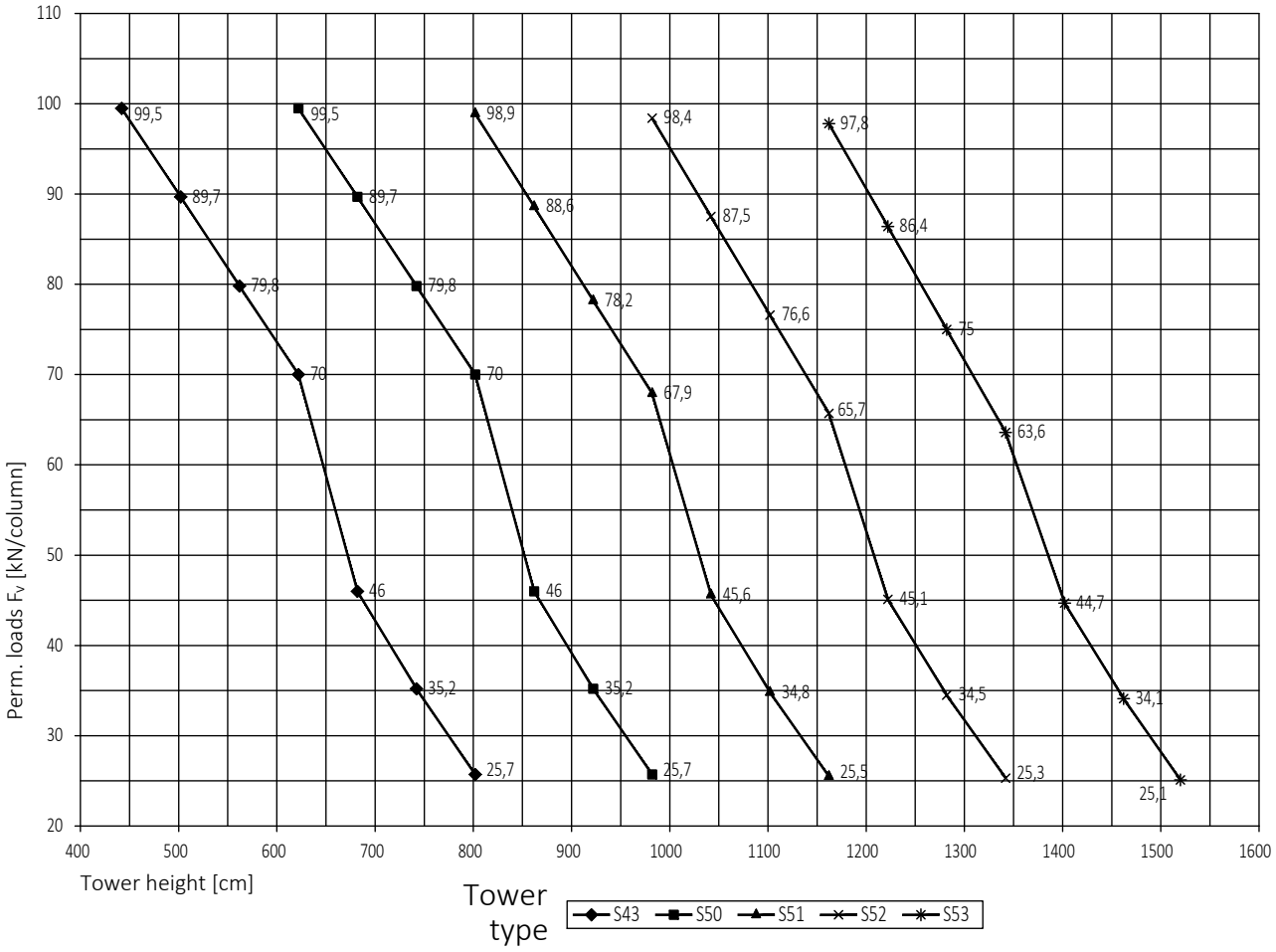
$l_o = l_u$

Charts of prop loads - Metering example

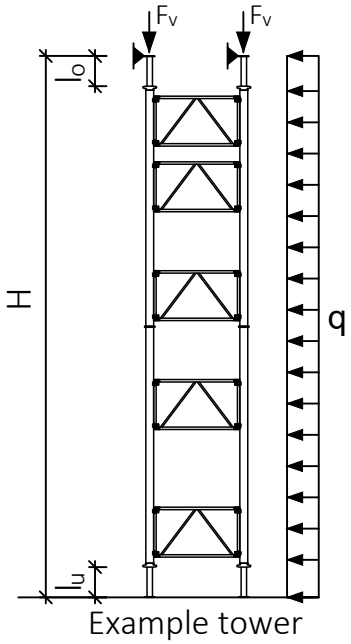


Tower type and details see Section 7

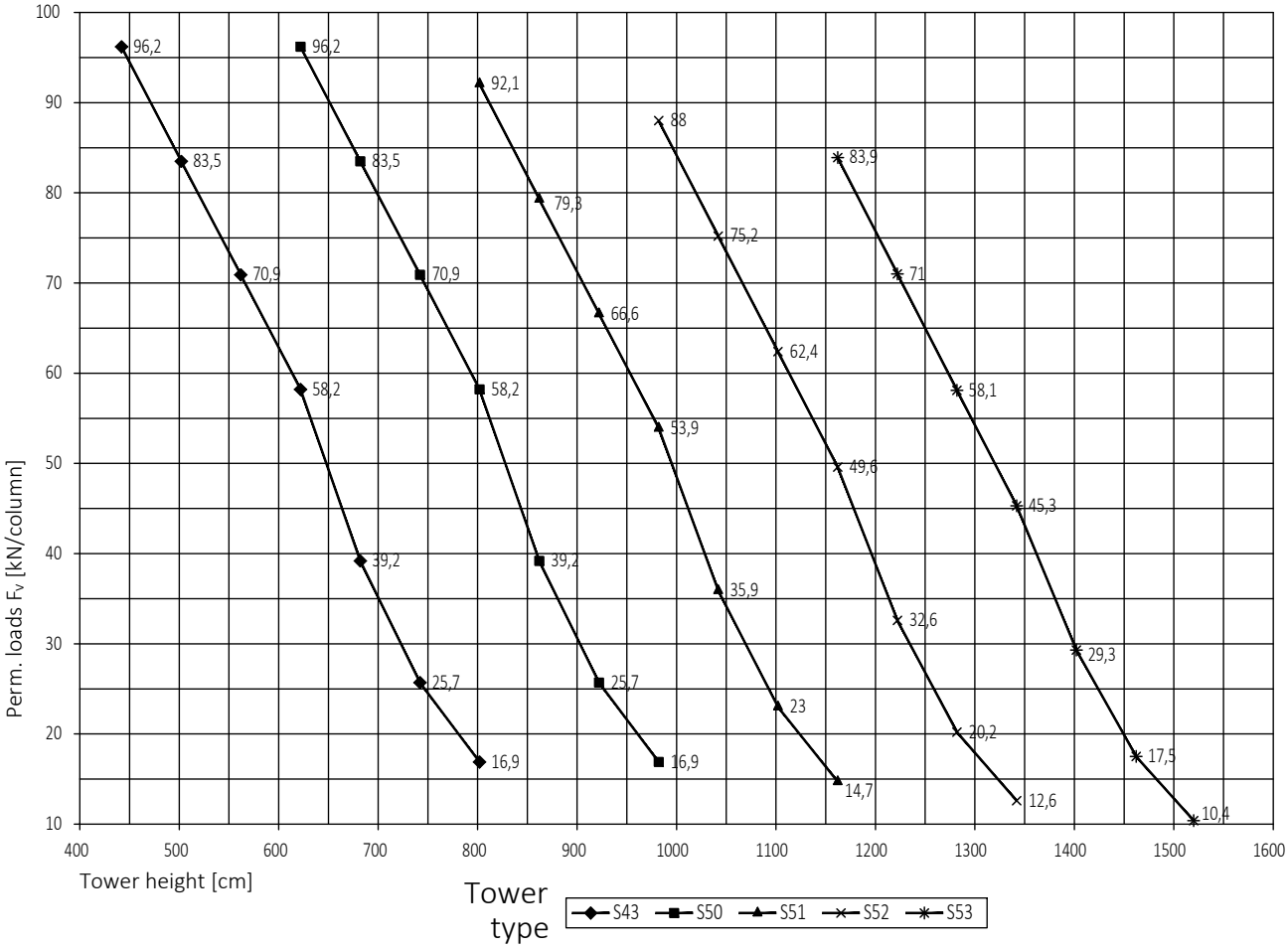
6.2.1 Permissible load for dynamic wind pressure q=0.0 kN/m² - frame HORIZONTAL



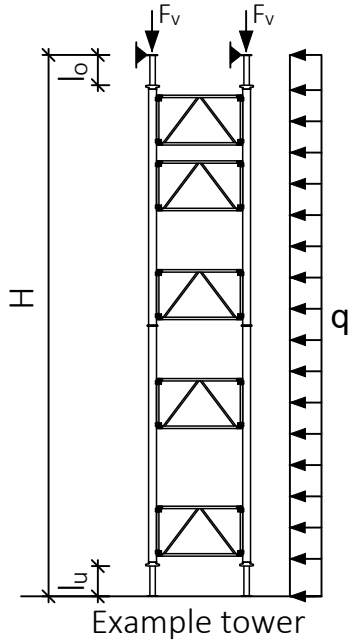
$l_o = l_u$



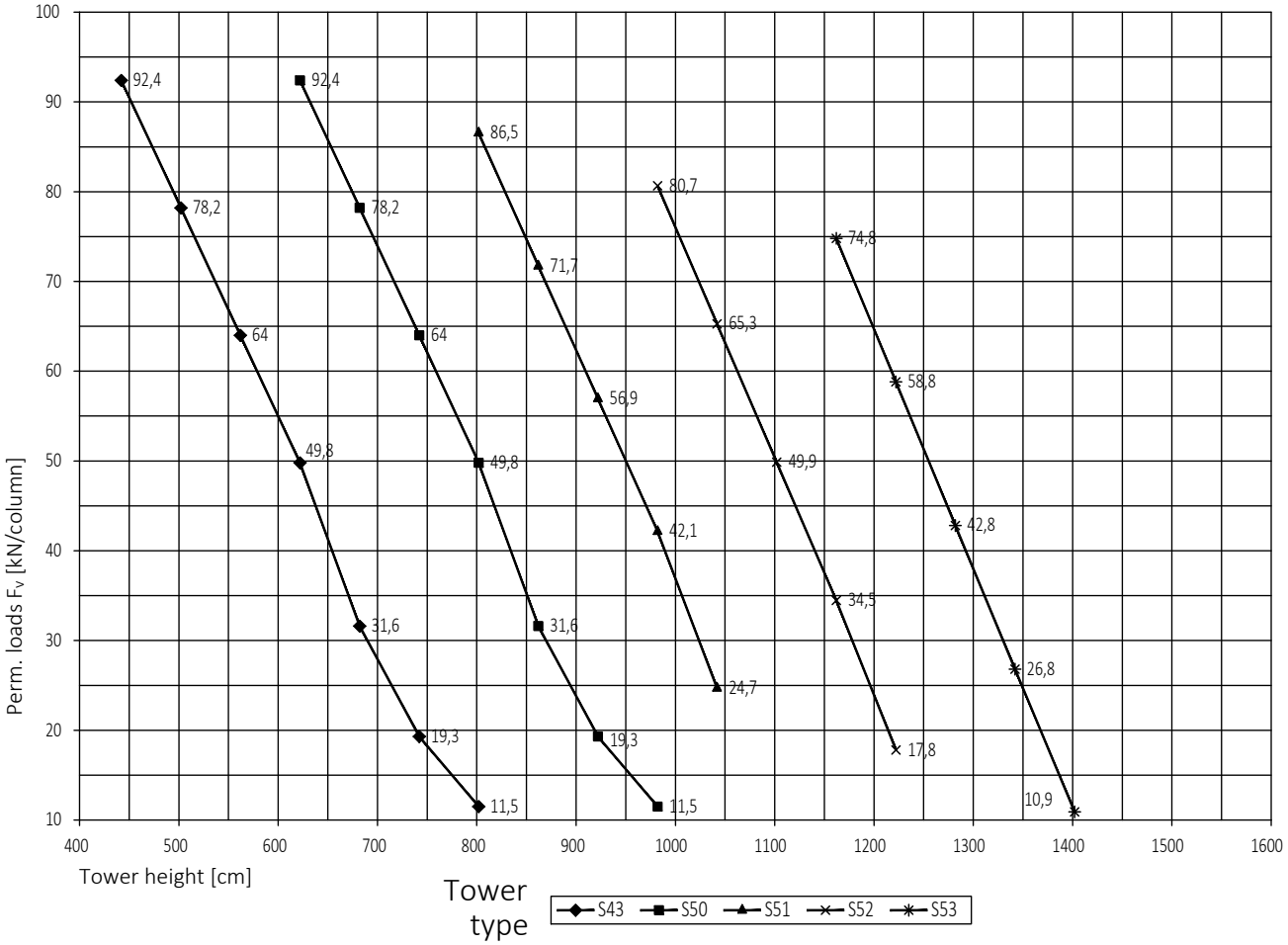
6.2.2 Permissible load for dynamic wind pressure q=0.65 kN/m² - frame HORIZONTAL



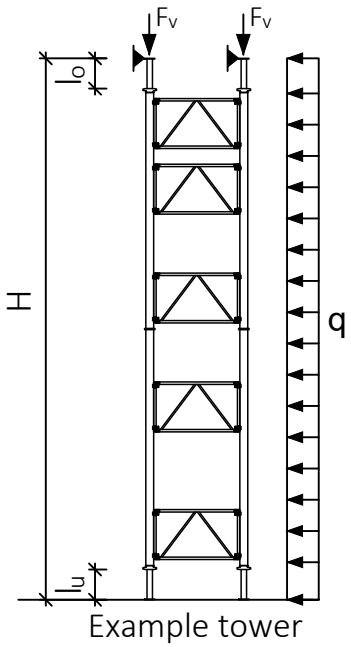
$l_o = l_u$



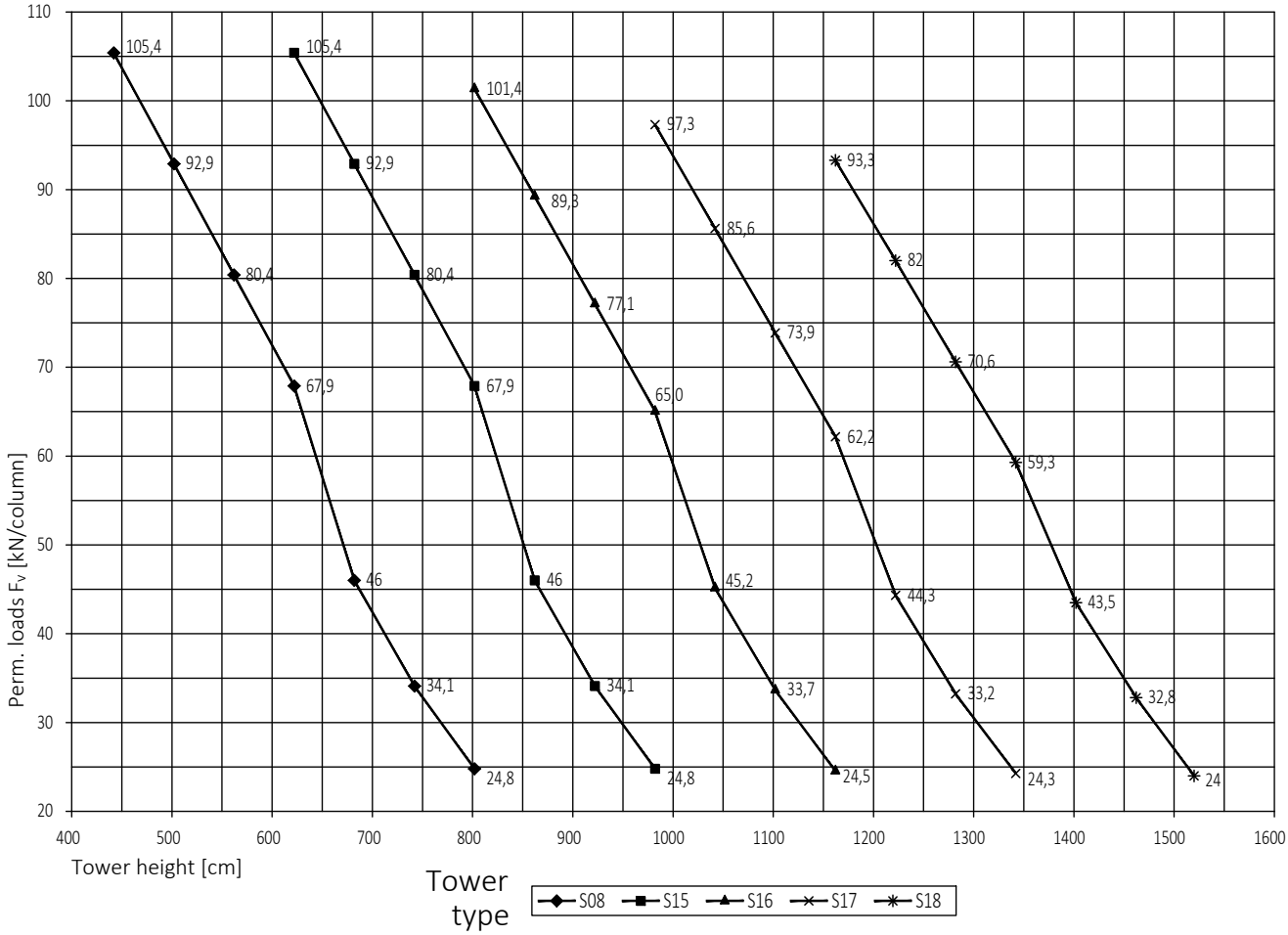
6.2.3 Permissible load for dynamic wind pressure q=1.1 kN/m² - frame HORIZONTAL



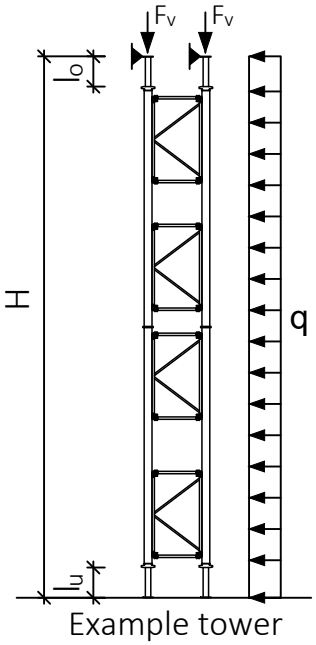
$l_o = l_u$



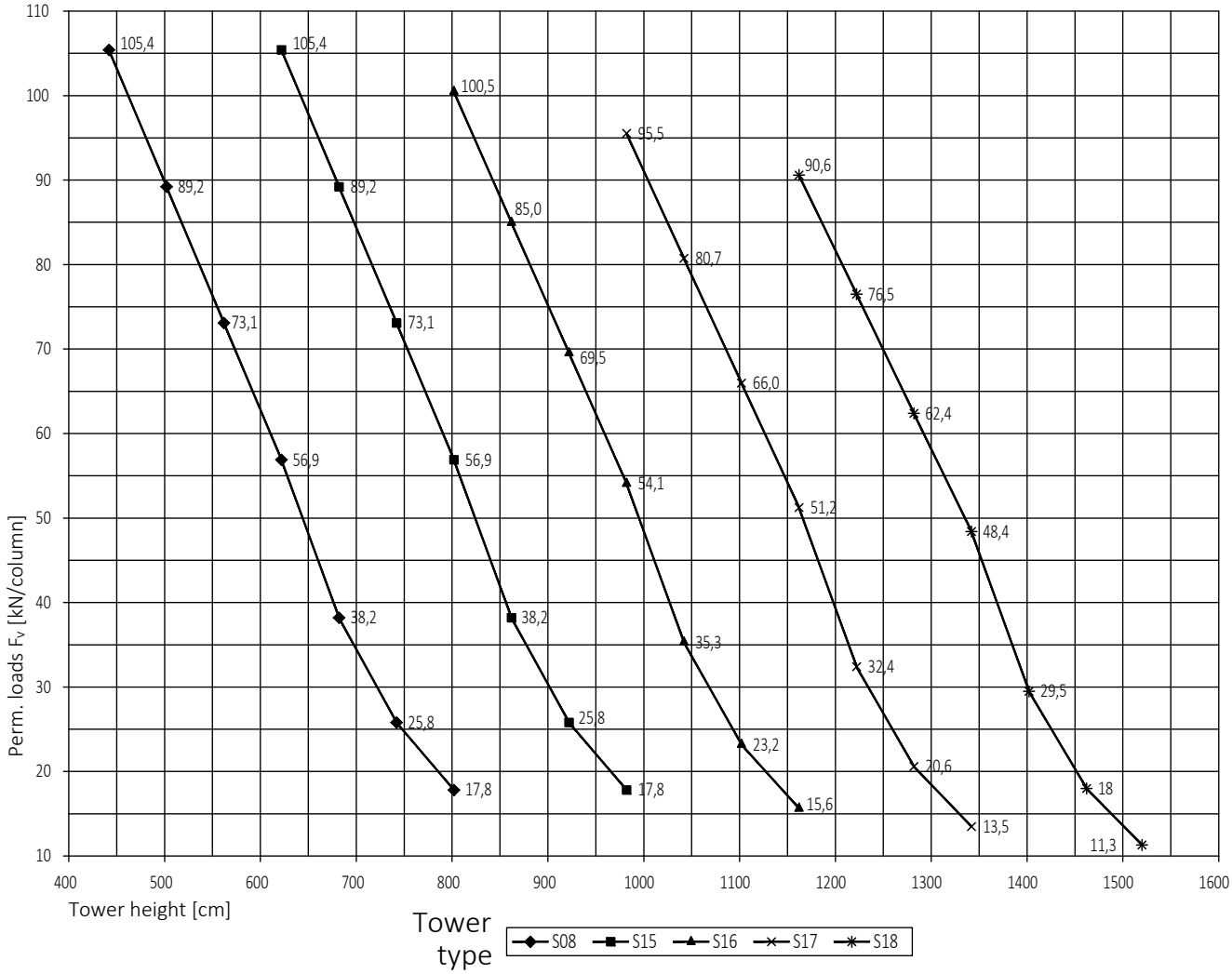
6.2.4 Permissible load for dynamic wind pressure q=0.0 kN/m² - frame VERTICAL



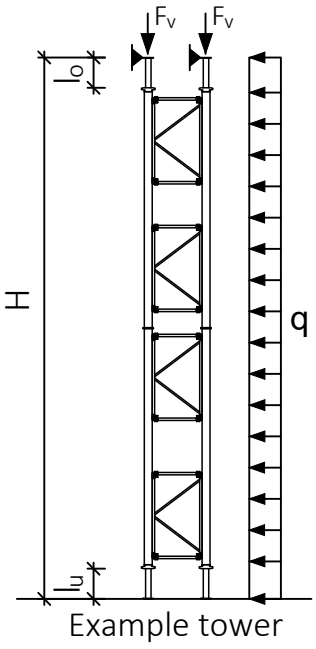
$l_o = l_u$



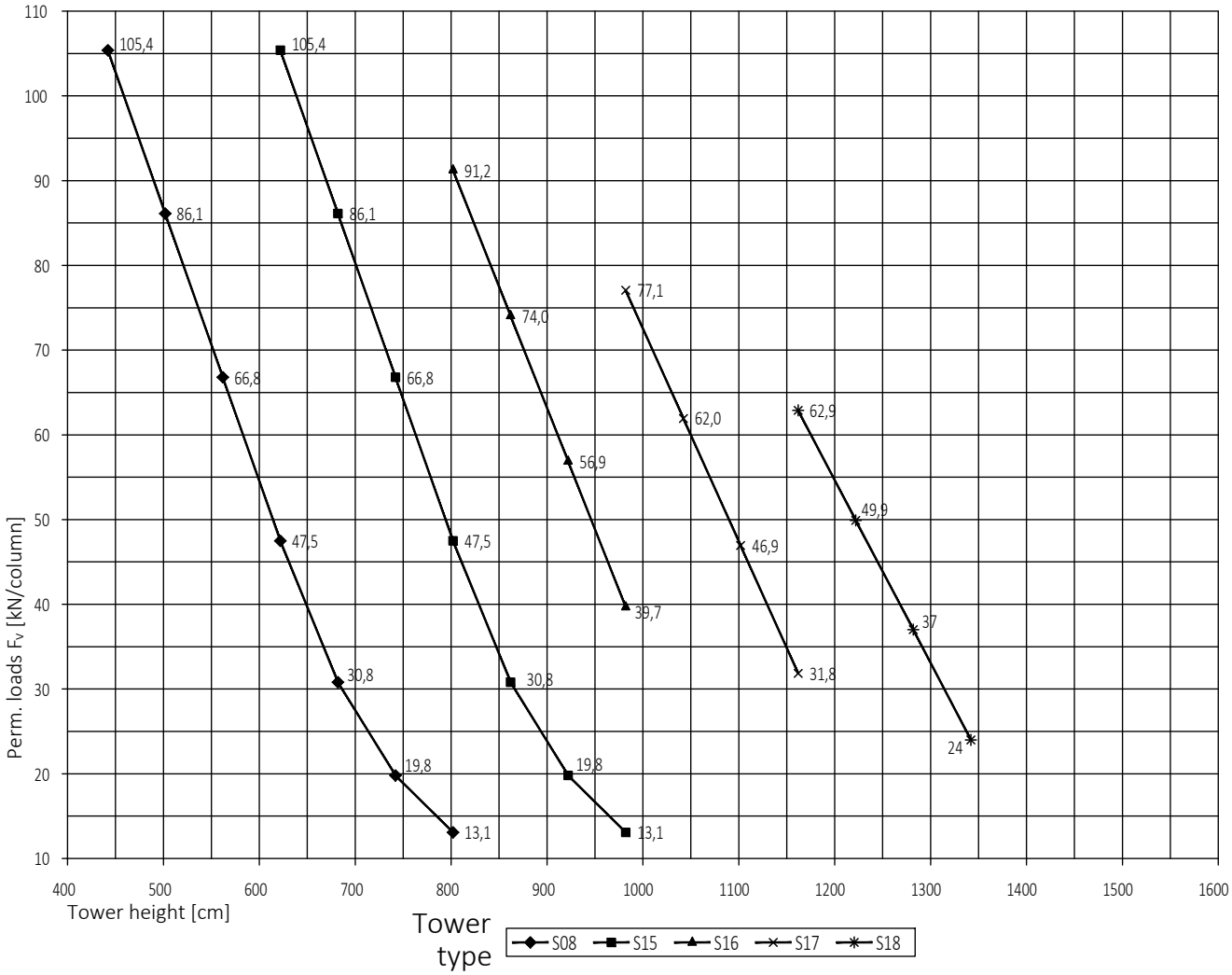
6.2.5 Permissible load for dynamic wind pressure q=0.65 kN/m² - frame VERTICAL



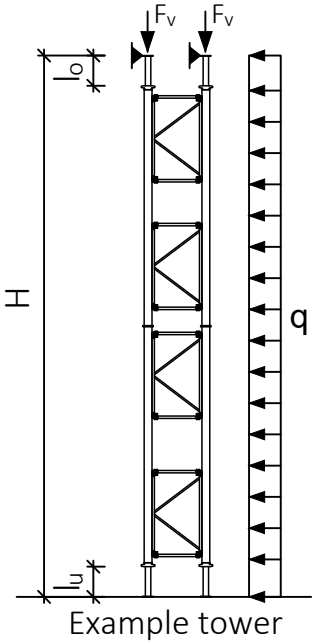
$l_o = l_u$



6.2.6 Permissible load for dynamic wind pressure q=1.1 kN/m² - frame VERTICAL



$l_o = l_u$



7. Description of tower type and tower elements

The tower type has now been derived from the above charts. The towers are assembled from the specific tower elements:

TOWER TYPE (S) = BOTTOM PART (U) + MIDDLE PART (M) + TOP PART (K)

Tower elements

7.1 Composition of tower elements

Tower type		Height [m]	Width [m]	Tower elements											
				Bottom part				Middle part				Top part			
				U1	U2	U3	U4	M1	M2	M3	M4	K1	K2	K3	K4
S43	Frame horizontal	4,40-8,00	1,555 or 2,40	1	-			-	-			1	-		
S50		6,20-9,80		-	1			-	-			1	-		
S51		8,00-11,60		-	1			-	-			-	1		
S52		9,80-13,40		-	1			1	-			-	1		
S53		11,60-15,20		-	1			-	1			-	1		
S08	Frame vertical	4,40-8,00	0,955			1	-			-	-			1	-
S15		6,20-9,80				-	1			-	-			1	-
S16		8,00-11,60				-	1			-	-			-	1
S17		9,80-13,40				-	1			1	-			1	-
S18		11,60-15,20				-	1			-	1			-	1

Example application from Section 6.2:
Tower type S51 is chosen from the chart. The following values can be read from the table:

- Height of frame support system 8.00-11.60 m
- Frame arrangement horizontal
- Possible dimensions 1555x1555, 1555x2400 or 2400x2400 mm
- The tower is made up of the bottom part U2 and the top part K2, a middle part is not necessary. Because the frames are installed horizontally, the descriptions of U2 and K2 are taken from Section 7.2. This page also applies for the assembly, because the height of the frames is shown here.
- If the NOEprop shown here is replaced by a smaller one plus an adapter, then this must be checked in accordance with the usage rules in Section 7.5.

7.2 Description of tower elements frame HORIZONTAL

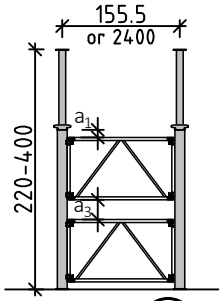
a_1	=	10 cm
a_2	=	10 cm
a_3	=	26 cm
a_4	=	128.5 cm
a_5	=	97.5 cm

(see 7.3)

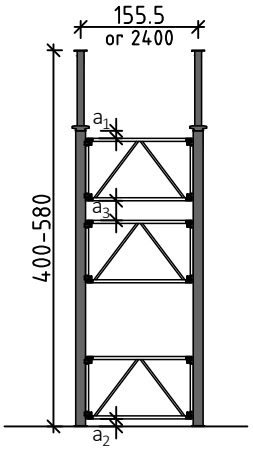
All. tolerance
+/- 1 cm

Tower = Bottom part + Middle part + Top part

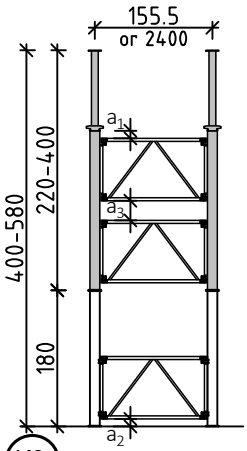
Top part



Top part K1

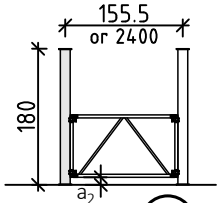


Top part K2

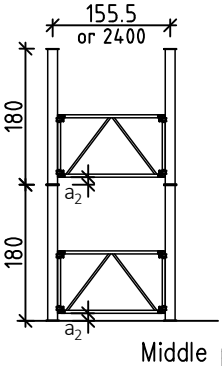


+

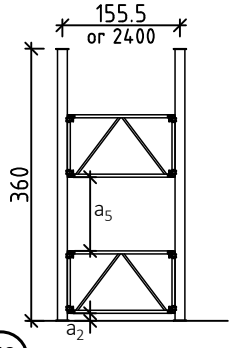
Middle part



Middle part M1

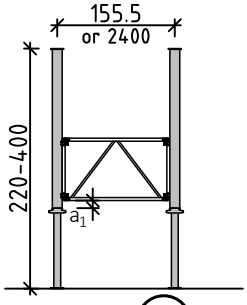


Middle part M2

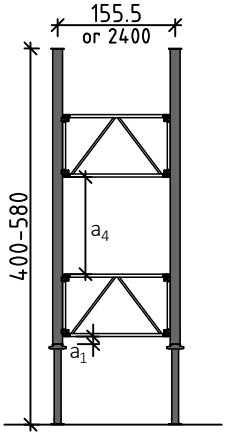


+

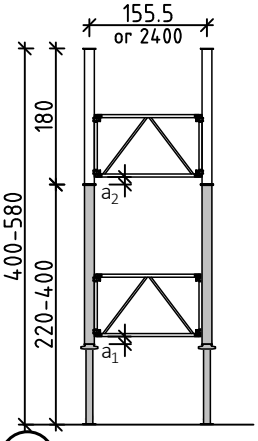
Bottom part



Bottom part U1



Bottom part U2



Observe the rules and information given in 7.4 and 7.5 during disassembly.

7.3 Description of tower elements frame VERTICAL

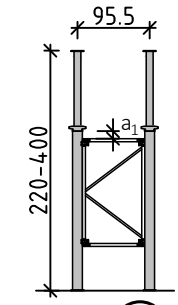
a_1	=	10 cm
a_2	=	10 cm
a_6	=	190 cm
a_7	=	68,5 cm

(see 7.3)

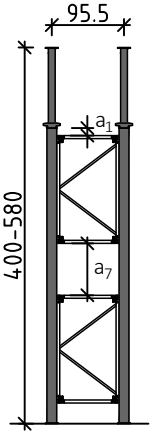
All. tolerance
+/- 1 cm

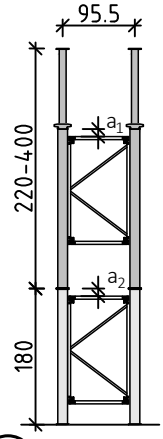
Tower = Bottom part + Middle part + Top part

Top part



Top part K3

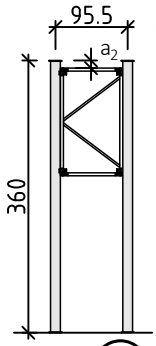




Top part K4

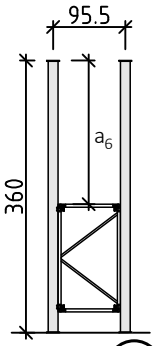
+

Middle part



Middle part M3

If the top part K3 is placed directly on the middle part, then the frame is installed at the top as shown in M3.

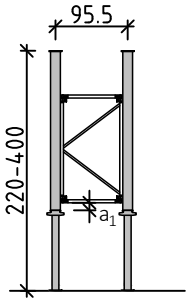


Middle part M4

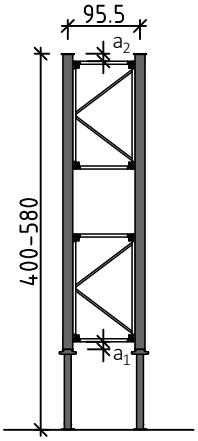
If the top part K4 is attached the frame in the middle part is installed at the bottom (see M4).

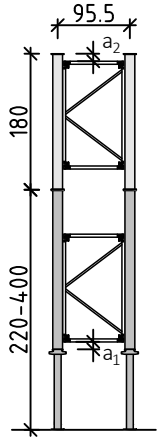
+

Bottom part



Bottom part U3



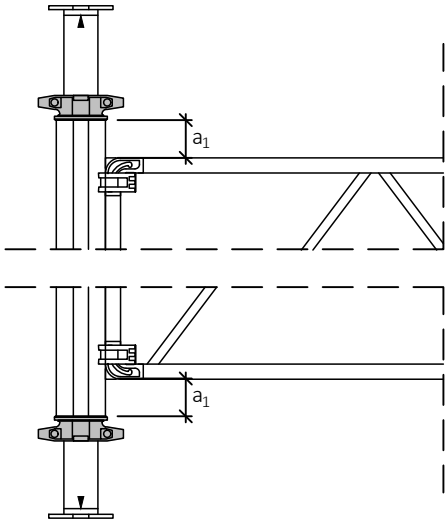


Bottom part U4

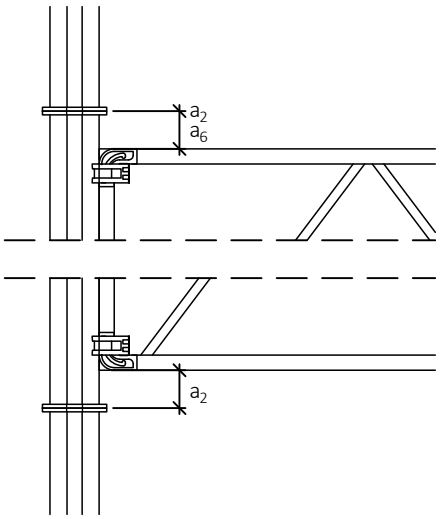
Observe the rules and information given in 7.4 and 7.5 during disassembly.

7.4 Reference point for distances

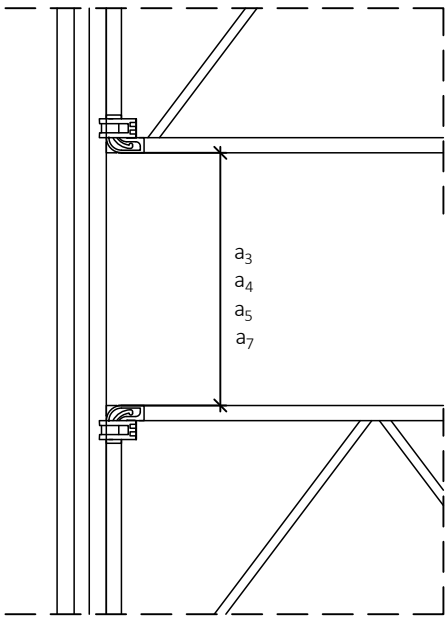
- a_1 = Distance from frame to top of quick jack nut



- a_2, a_6 = Distance from frame to top of head plate



- a_3, a_4, a_5, a_7 = clear distance between frames



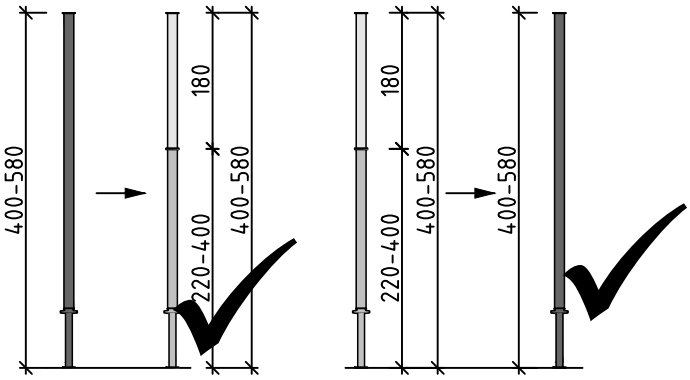
a_1	=	10	cm
a_2	=	10	cm
a_3	=	26	cm
a_4	=	128,5	cm
a_5	=	97,5	cm
a_6	=	190	cm
a_7	=	68,5	cm

The maximum tolerance during installation is +/- 1 cm.

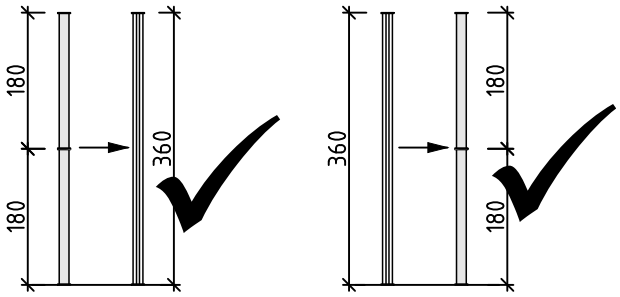
7.5 Usage rules for NOEprop

The NOEprop and adapter used in 7.3 and 7.4 can in some circumstances be replaced by other combinations. Observe the following rules when doing this.

◆ Frames installed horizontally (Tower types S43, S50-S53)

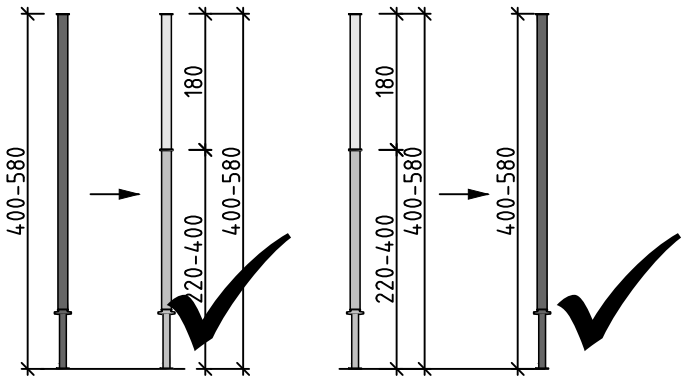


When using the frame horizontally, the prop 4.00-5.80 can be replaced by NOEprop 2.20-4.00 and the adapter 1.80 m and vice versa.
This also applies to the bottom and top parts.

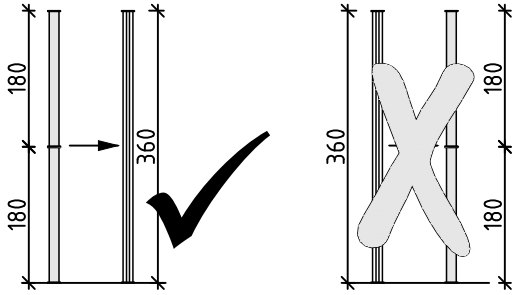


When using the frame horizontally, 2 adapters 1.80 m can be replaced by one adapter 3.60 m and vice versa.

◆ Frames installed vertically



When using the frame vertically, the prop 4.00-5.80 can be replaced by NOEprop 2.20-4.00 and the adapter 1.80 m and vice versa.
This also applies to the bottom and top parts.



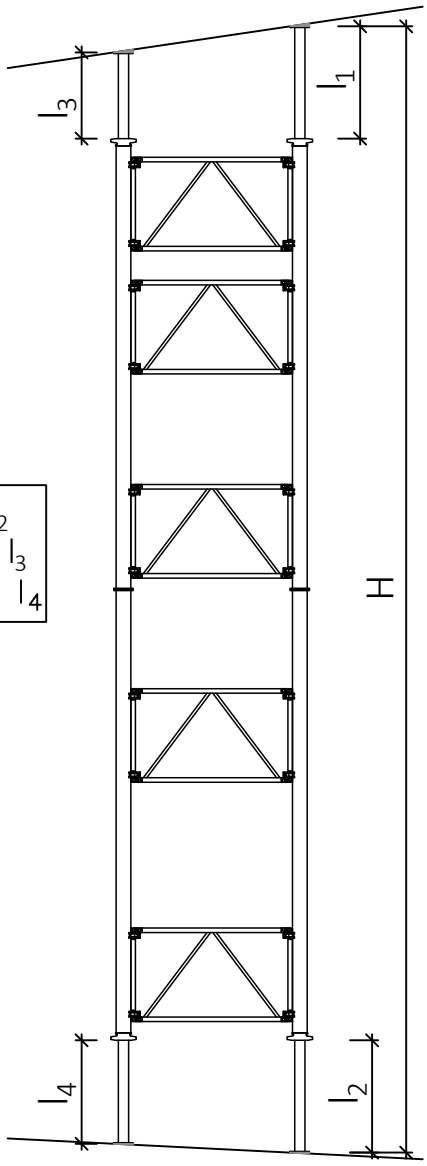
When using the fame vertically, 2 adapters 1.80 m can be replaced by one adapter 3.60 m. However this is not applicable vice versa. The frame configuration must be retained.

7.6 Special aspects for sloping ground and formwork superstructure

Sloping ground and formwork superstructure

- In different directions

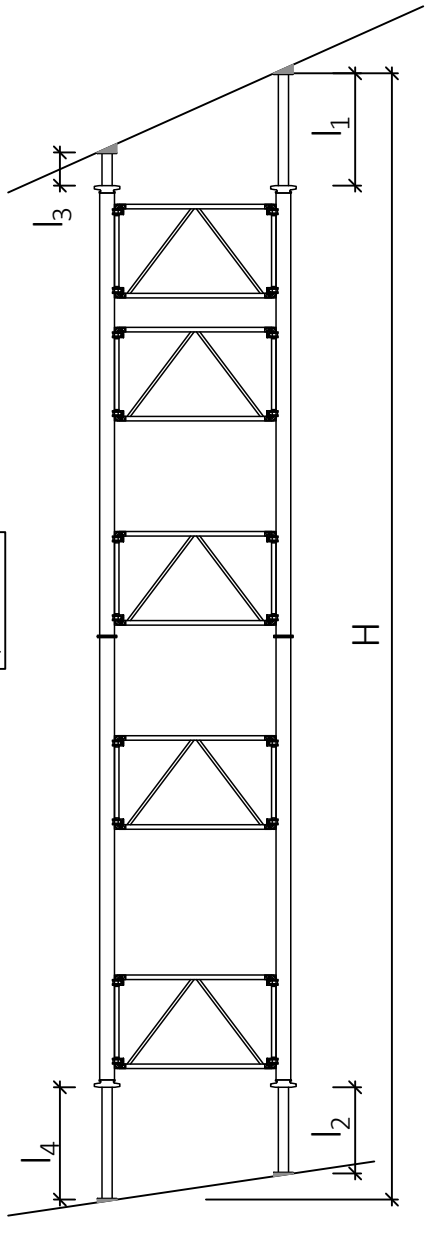
$l_1 = l_2$
$l_1 \geq l_3$
$l_2 \geq l_4$



Example tower

- In the same direction

$l_1 = l_4$
$l_1 \geq l_3$
$l_2 \leq l_4$



H is the determinant height for reading the permissible vertical load from the load capacity charts.

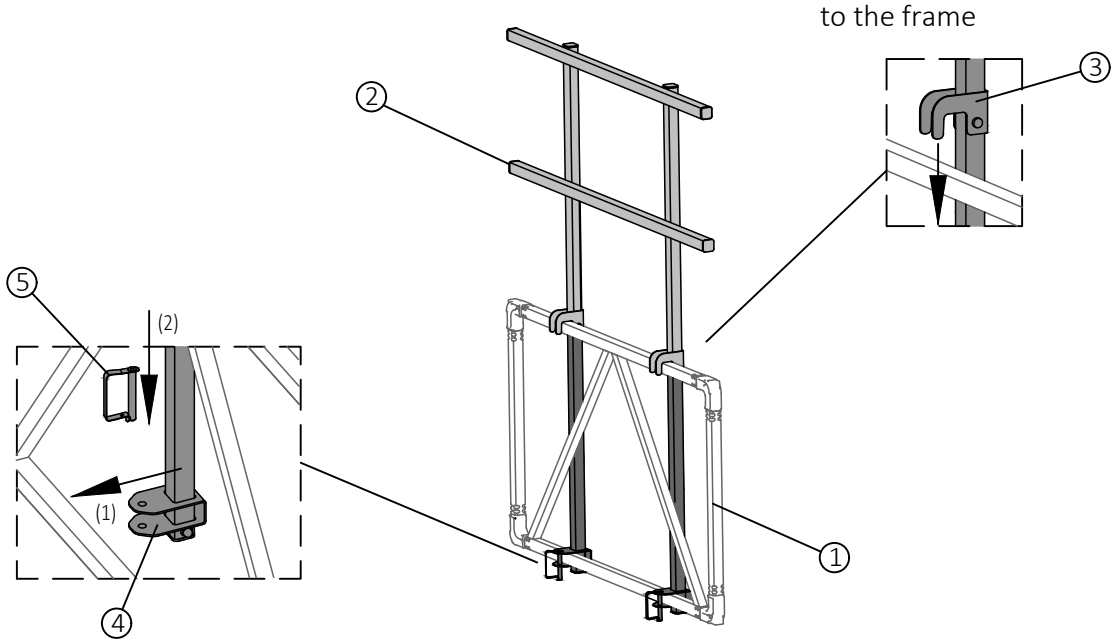
The props must be wedged over their complete surface!

8. Attaching guard rails, boarding and ladder for 1555x1555 towers

8.1 Attaching the guard rails

(Simplified drawing, frames and guard rails only)

◆ Fit the guard rail hooks on to the frame



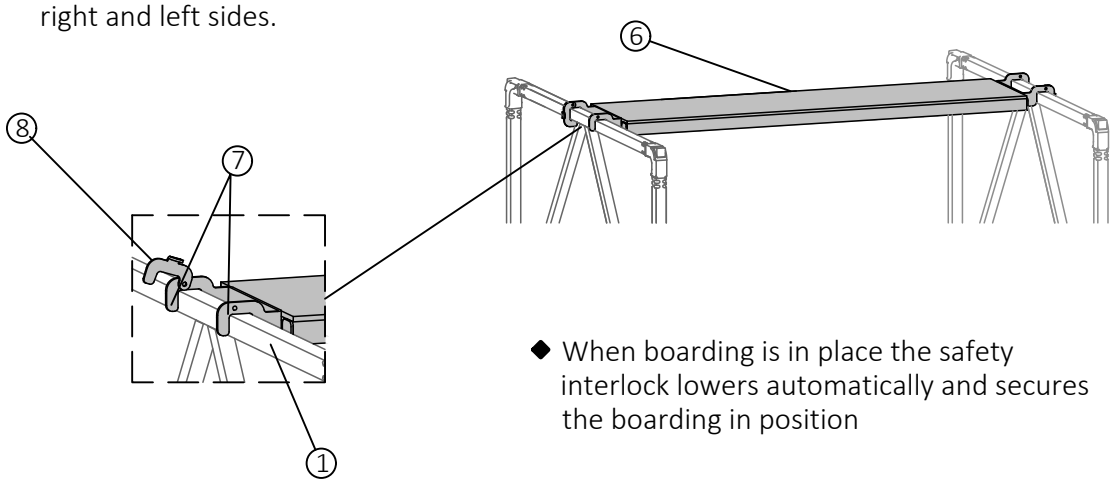
◆ Guide the guard rail brackets at the bottom over the frame and secure with the spring pin

1 NOEprop frame 955x1555
2 NOEprop guard rail
3 Guard rail hook
4 Guard rail bracket
5 Spring pin
6 Boarding
7 Suspension hook
8 Safety interlock

8.2 Attaching the boarding

(Simplified drawing, frames and boarding only)

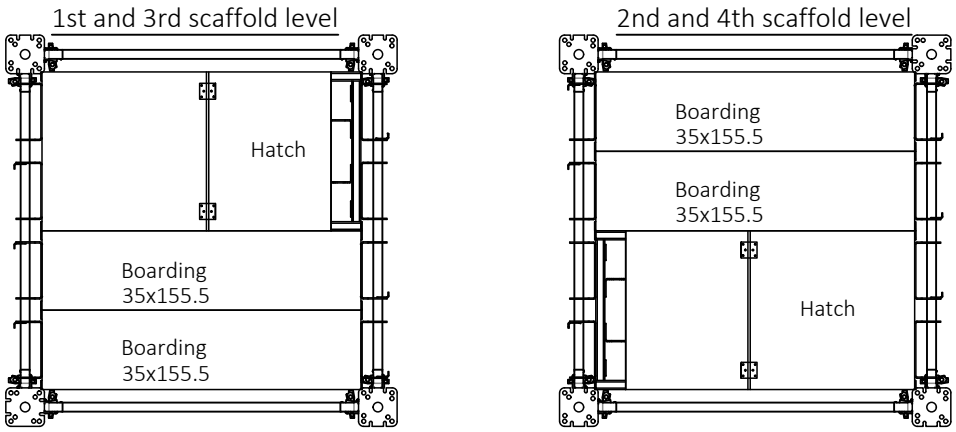
◆ Put the boarding in place by lifting the safety interlock and engaging the suspension hooks on the frame at the right and left sides.



◆ When boarding is in place the safety interlock lowers automatically and secures the boarding in position

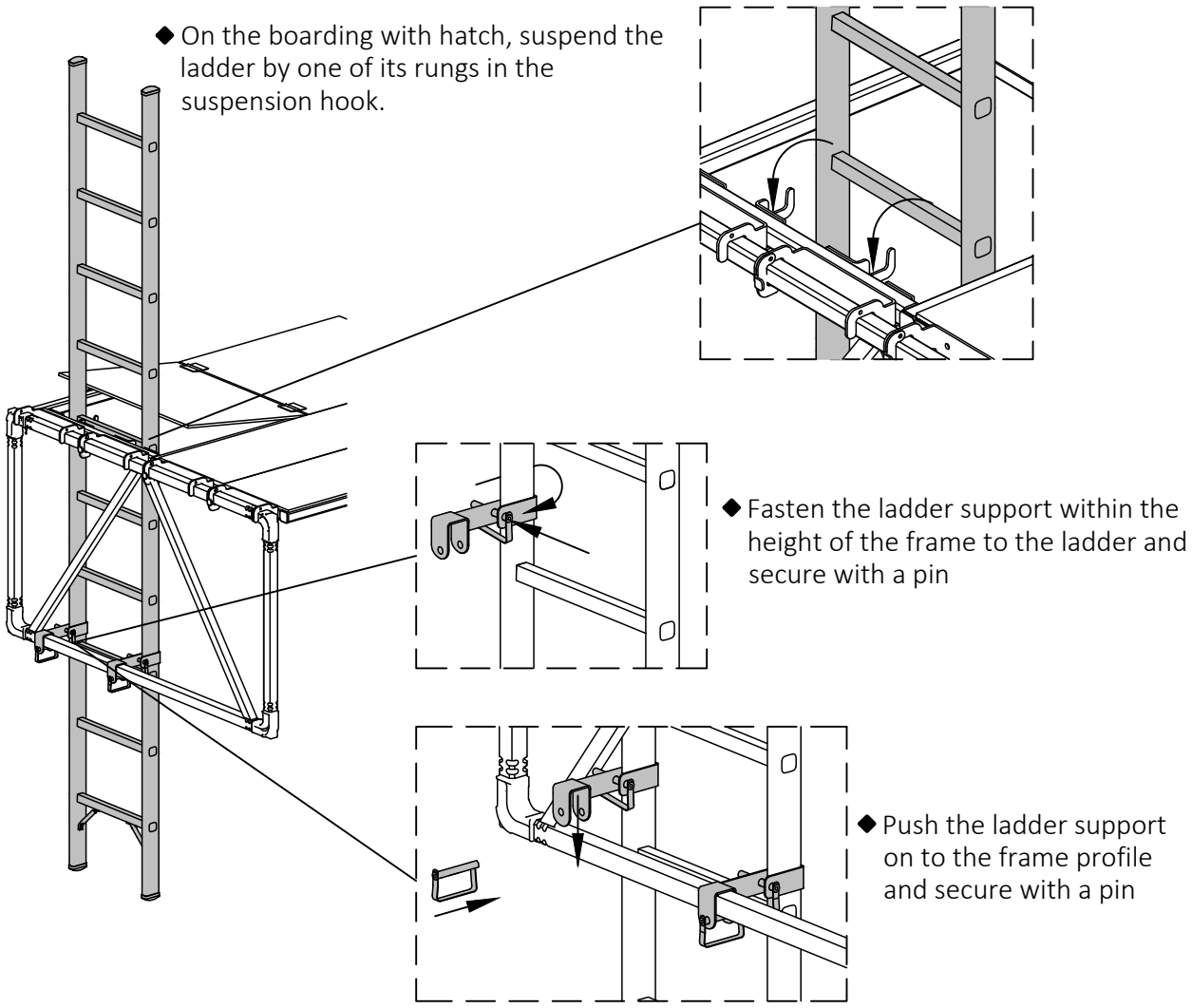
8.3 Special aspects of attaching the boarding with hatch

For assembly sequence see 8.2. It is important to note that the boarding with hatch, the hatch on any one level is installed diagonally opposite the hatch on the levels above and below. I.e. to the left or right alternately, so that the hatches are diagonally opposite each other (see the following plan views).



8.4 Attaching the ladder and ladder support

(Simplified drawing, frames, boarding ladder and ladder support only)



9. Crane transport and standing up towers

9.1 Crane transport

To stand up and transport the tower, the crane suspension must be slung around the NOEprops and the two adjacent top frames.

Guide ropes can be used when relocating the tower. Remove or secure all loose parts before moving the tower. The tower must never be moved together with the supported formwork under any circumstances.

Before the lifting tackle is removed, the tower must be checked for structural stability. Work from a lifting platform or similar equipment when removing the lifting tackle.
Other means of releasing the lifting tackle may be used, such as by a remote control device, if indicated by the results of a risk analysis performed by the appropriate staff on site.

9.2 Standing up the tower

- The foundation support for the towers must be designed to suite the local circumstances and conditions. The towers must stand on a flat surface with an adequate loadbearing capacity.
- The spindles must be loaded in compression only.
- No horizontal forces must act on the tower.

Foundations

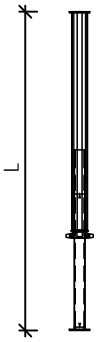
The requirements are usually satisfied if the towers are set up on concrete foundations or ground slabs. If they are set up on natural ground, then they must rest on a suitably strong load-spreading subconstruction, e.g. large timber beams in layers crossing perpendicular to one another etc. The foundation must be designed to ensure the support conditions assumed in the system calculations are achieved.

Horizontal loads

The design must avoid applying horizontal loads to the NOEprop tower. The structure must be wedged against existing building components, e.g. walls, that are capable of carrying horizontal loads. If the tower is built to stand freely or brought into the standing position and can be acted upon by wind loads, it must be secured against being overturned by wind.

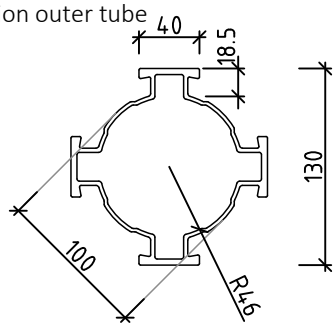
10. Individual parts

10.1 NOEprop

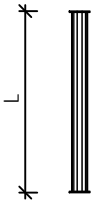


Part No.	Length L [mm] min.	Length L [mm] max.	Weight [kg]
697551	1900	3000	20,7
697552	2200	4000	26,3
697553	4000	5800	34,3

Section outer tube



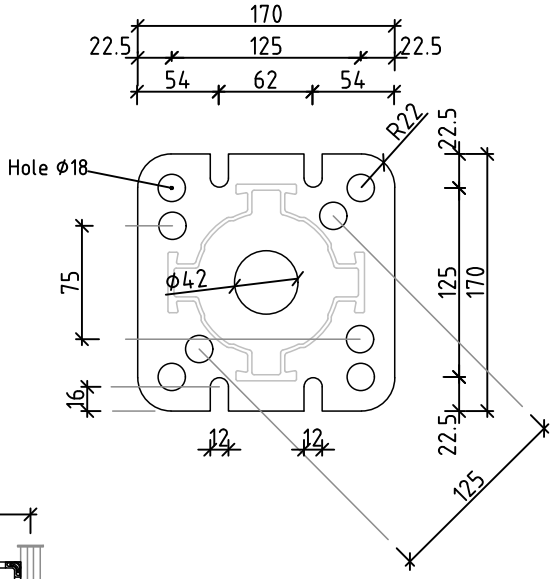
10.2 NOEprop adapter



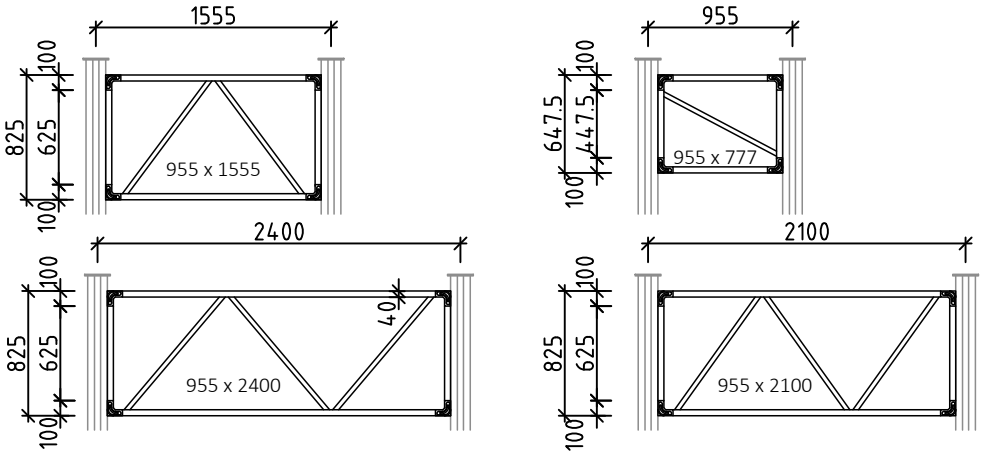
NOEprop adapter consisting of an external tube and 2 head plates:

Part No.	Length L [mm]	Weight [kg]
697559	1800	9,2
697558	3600	17,2

Plan top plate

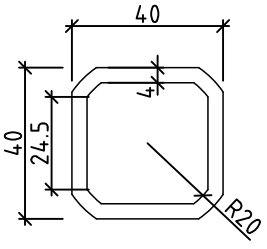


10.3 NOEprop frame



System dimension (mm)	Frame * without NOEclamp Part No.	Frame * without NOEclamp Weight [kg]	Frame with NOEclamp Part No.	Frame with NOEclamp Weight [kg]
955 x 1555	890865	9,07	890885	12,32
955 x 2400	890871	12,90	890886	14,84
955 x 777 **	890863	6,95	890883	10,20
955 x 2100 **	890870	10,12	890890	13,37

Section frame profile



* Fastening the frame requires an additional 4 NOEclamps Part No. 890850.

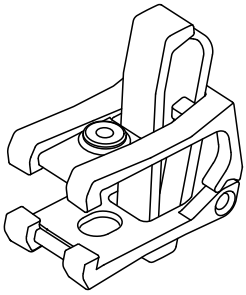
** Frame 955x777 or 2100 can be used

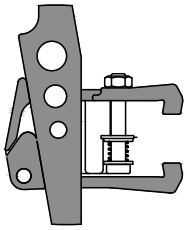
10.4 Miscellaneous accessories

NOEclamp

The NOEclamps used for fastening the frames to the NOEprop can be detachable or directly fastened to the frames (see Fastenings).

Part No. 890850
Weight kg 0.78 kg





Fastenings

If the NOEclamp is bolted permanently to the frames, the following additional parts are required:

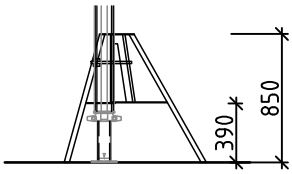
	Number	Part No. Container	No. per container
NOEprop pressure spring	1	890852	1
Hexagon bolt M8x50 8.8	1	369000	200
Washer M10	1	380020	500
Washer M8	2	380018	1000
Hex. nut M8	1	370016	1000

Ordering of individual parts is done by container size.

NOE folding tripod

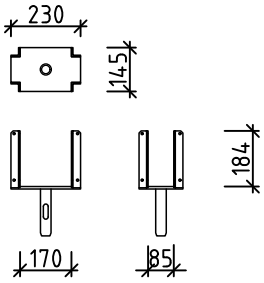
For props with external diameter 90-120 mm

Part No. 900073
Weight 18.2 kg



NOE fork head

Part No. 110715
Weight 4.1 kg



NOEprop spanner

For locking and releasing the quick jack nut

Part No. 391900
Weight 2.94 kg

A scaffold tube Ø 48 can be placed over the end to act as an extension handle.

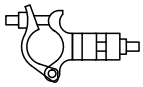
M16x40

Part No. 313400
Weight kg 0.13 kg

Coupler 48/48

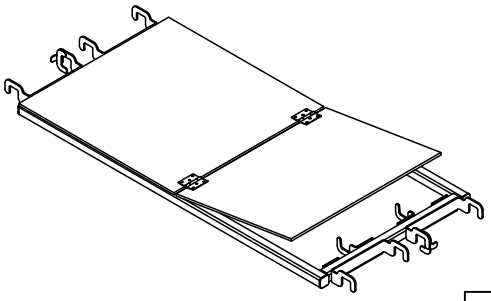
For attaching the tube coupler to the frame

Part No. 510300
Weight 1.3 kg



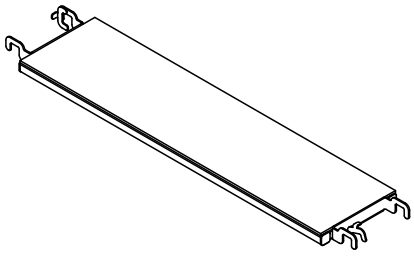
NOEprop boarding with hatch

Width 700 mm
for frame size 1555 mm
Part No. on request
Weight kg 16.7 kg



NOEprop boarding

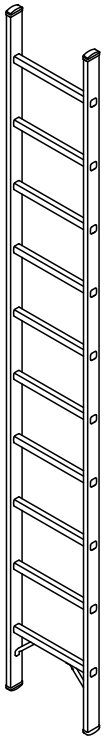
Width 350 mm
for frame size 1555 mm
Part No. on request
Weight kg 10.4 kg



The boarding is designed for a uniformly distributed load of 0.75 kN/m² in accordance with EN 12811-1:2001(D).

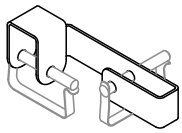
NOEprop ladder 3 m

Part No. 601110
Weight kg 5.2 kg



NOEprop ladder support

Part No. on request
Weight kg 0.64 kg
including 2 pins

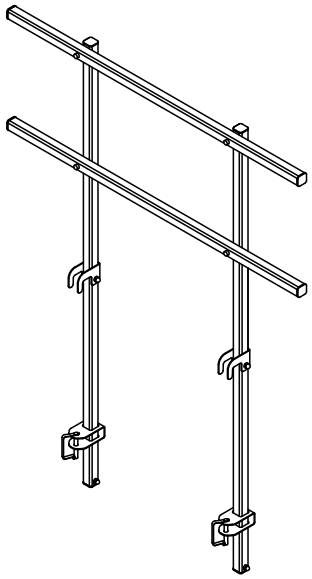


Each ladder requires 2 supports.

NOEprop guard rails

For suspending on the frame

Part No. on request
Weight kg 11.2 kg
including 2 pins



THE FORMWORK

NOE-Schaltechnik
Georg Meyer-Keller GmbH + Co. KG

Kuntzestr. 72, 73079 Suessen, Germany
T + 49 7162 13-1
F + 49 7162 13-288
info@noe.de
www.noe.eu

Austria
NOE Schaltechnik
www.noe.eu
noe@noe-schaltechnik.at

Belgium
NOE Bekistingtechniek N.V.
www.noe.eu
info@noe.be

France
NOE France
www.noe.eu
info@noefrance.fr

Netherlands
NOE Bekistingtechniek b.v.
www.noe.eu
info@noe.nl

Poland
NOE PL Sp Zo.o.
www.noe.pl
noe@noe.pl

Switzerland
NOE Schaltechnik
www.noe.eu
info@noe.ch

2019-02