

User's manual

HANDY-SUPER

aluminium façade scaffolding

9505.202.010

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GENERAL INSTRUCTIONS

General regulations and restrictions for the use of façade scaffolding and the CUSTERS® HANDY®-SUPER aluminium façade scaffolding system in particular are given below.

These regulations and restrictions are to be used as a further explanation of how to erect and use the CUSTERS® HANDY®-SUPER aluminium façade scaffolding system. Besides the manufacturer's regulations, you must also pay close attention to the legally applicable regulations and standards, particularly EN 2770 standard and the Dutch Health and Safety Act.

☞ All safety requirements concerning the assembly, dismantling and use of scaffolding must be unconditionally and strictly followed. Not observing or not fully observing the manufacturer's regulations and the legal regulations may lead to serious damage and/or serious physical injury.

- The maximum permitted length of the sections in the scaffolding is 2.5 m.
- The maximum permitted height of a scaffolding storey is 2.8 m.
- For the entire scaffolding construction, a maximum of 1 floor level may be replaced by horizontals.
- For the entire scaffolding construction, a maximum of 1 floor level may be placed under a maximum and evenly distributed load of 200 kg/m² or two floors, each placed under half of this load, etc.
- Anchor tubes must always be secured to both storey frame uprights.
- Brackets may only be fitted at the same height as the connection points on the storey frames according to the instructions given in the manual.
- The use of couplings and other components, not being an original Custers component, is not permitted.
- Legal regulations prevail in instances where they place restrictions on the use according to the manufacturer's specifications.

INTRODUCTION AND DESCRIPTION

CUSTERS® HANDY®-SUPER is a light, aluminium façade scaffolding, developed by Custers Hydraulica BV. It is suitable for carrying out work on façades, such as restoration, renovation, maintenance, pitching, inspection and cleaning.

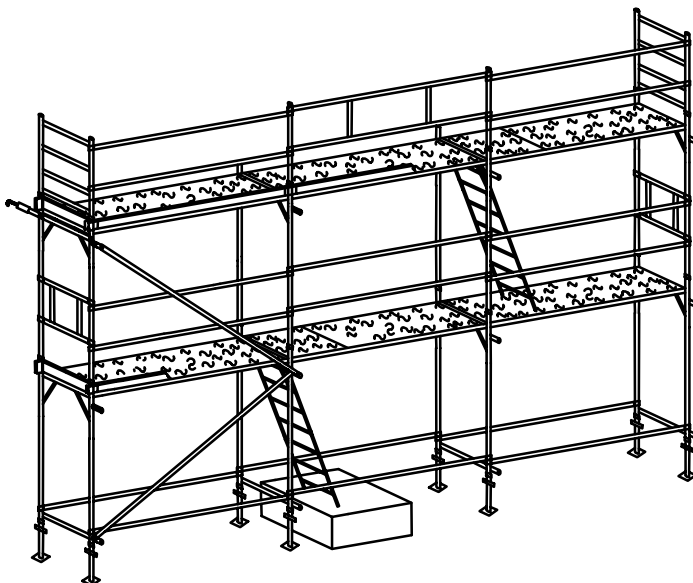
The frames, diagonals and horizontals are made from round aluminium tubes. The robust platforms are made from special profiles and anti-slip carrossplywood.

The extremely light weight of all the components, the automatic size and the Mecano construction principle means that the scaffolding can be assembled and disassembled quickly and efficiently. The instructions in part C of this manual must be observed when assembling and disassembling the scaffolding.

The scaffolding has been designed to satisfy Euro standards HD 1000 and DIN 4420 for a load of 200 kg/m² (group 3). The anchoring and all further details are explained in detail in part C. Our technical department will be pleased to answer any questions or discuss any comments you may have.

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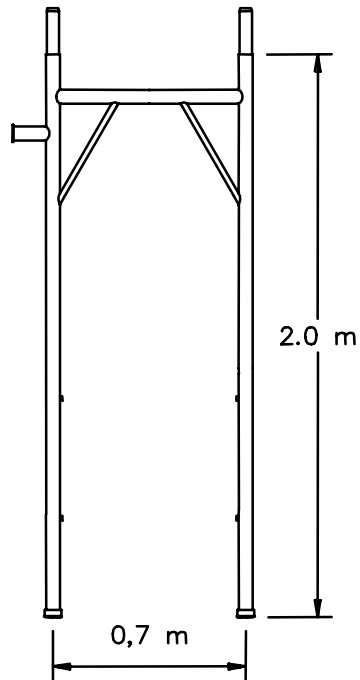
SUMMARY OF THE BASIC COMPONENTS
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Order number	Description	Dimensions(m)	Weight (kg)
520.010	Jack and base plate	0.7	3.3
200.017	Base frame	2.0 x 0.7	5.4
200.019	Storey frame	2.0 x 0.7	5.2
200.122 /.022	Guardrail frame / 4-rung frame	1.0 x 0.7	3.0 / 4.8
903.050	Guardrail post	1.0	1.0
410.162	Frame securing pin		
800.087	Toeboard holder		0.2
200.092	Top toeboard	0.7 x 0.16	1.2
903.040	End guardrail	0.7 x 0.5	2.0
800.330	Anchor tube with hook		4.2
800.335	Anchor fitting		0.9
800.340	Eye bolt		0.1
800.341	Plug		
320.025	Ladder platform	2.5 x 0.6	22.5
310.010 /.020	Platform	1.8 / 2.5 x 0.6	14.2 / 19.7
200.058 /.030	Horizontal	1.8 / 2.5	2.3 / 3.0
200.086 / .080	Side toeboard	1.8 / 2.5 x 0.16	3.4 / 4.8
800.044 / .040	Base diagonal	1.8 / 2.5 x 1.6	3.3
800.043/200.055	Storey diagonal	1.8 / 2.5 x 2.0	3.3

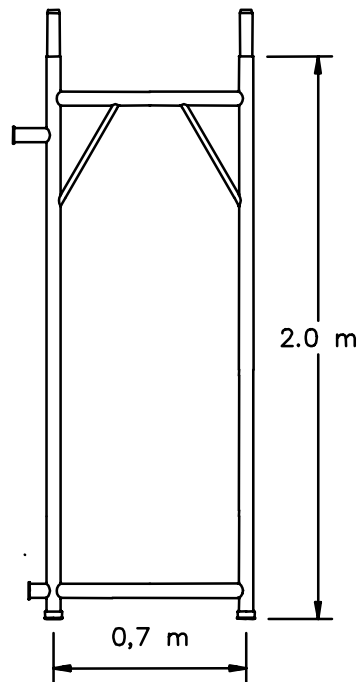
SUMMARY OF ADDITIONAL COMPONENTS

Order number	Description	Dimensions(m)	Weight (kg)
200.013	Storey frame with bracket holes	2.0 x 0.7	5.2
200.014	Base frame	0.8 x 0.7	3.6
200.018	Storey frame	0.8 x 0.7	3.5
902.090	Pedestrian frame	2.0 x 1.3	12.0
200.026	2-rung frame	0.5 x 0.7	2.6
800.047 /.048	Base diagonal	1.8 / 2.5 x 0.4	3.3
800.045 /.046	Storey diagonal	1.8 / 2.5 x 0.8	3.3
340.010 /.020	Bracket platform	1.8 / 2.5 x 0.3	9.3 / 12.9
800.058 /.030	Double guardrail	1.8 / 2.5 x 0.5	5.0 / 6.5
800.140	End guardrail	0.4 x 0.5	1.1
800.510	Bracket	2.0 x 0.7	4.7
800.520	Small bracket	0.4 x 0.3	1.6
800.610	Lattice beam	5.0 x 0.4	18.0
800.620	Lattice beam base frame	0.9 x 0.9	5.3
800.630	Lattice beam connector	0.7	0.9
800.342	Plug cap		
800.935	Swivle coupling		
800.115	Square welded coupling		

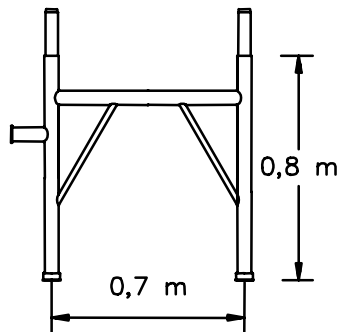
FRAMES



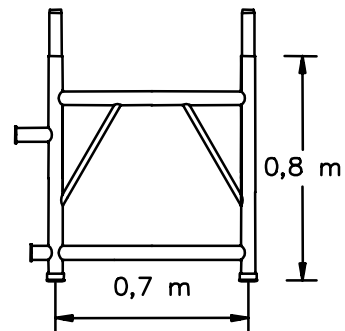
Storey frame 2,0 x 0,7 m
Weight : 5,2 kg
Partnumber: 200.019 (without bracket holes)
Partnumber: 200.013 (with bracket holes)



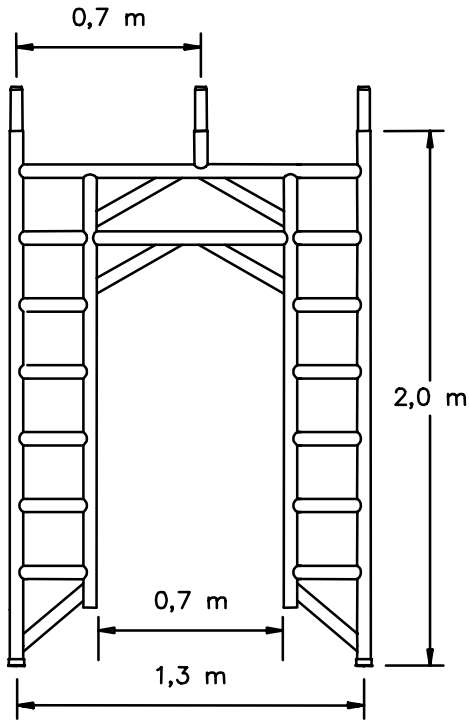
Base frame 2,0 x 0,7 m
Weight : 5,4 kg
Partnumber: 200.017



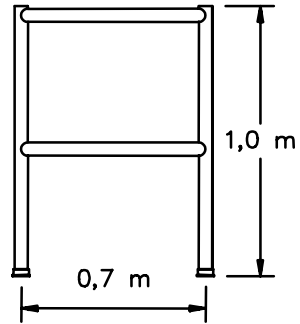
Storey frame 0,8 x 0,7 m
Weight : 3,5 kg
Partnumber: 200.018



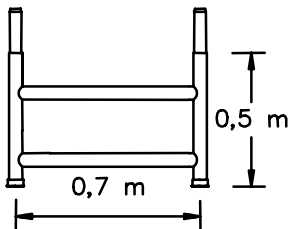
Base frame 0,8 x 0,7 m
Weight : 3,6 kg
Partnumber: 200.014



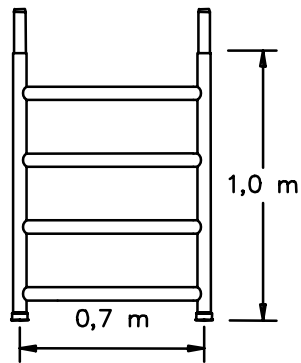
Pedestrian frame 2,0 x 1,3 m
 Weight : 12,0 kg
 Partnumber: 902.090



Guardrail frame 1,0 x 0,7 m
 Weight : 3,0 kg
 Partnumber: 200.122

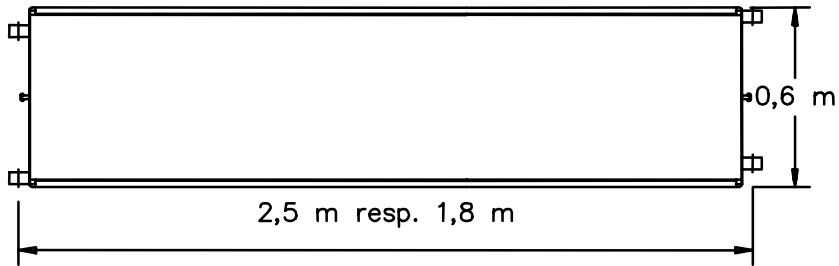


2-rung frame 0,5 x 0,7 m
 Weight : 2,6 kg
 Partnumber: 200.026



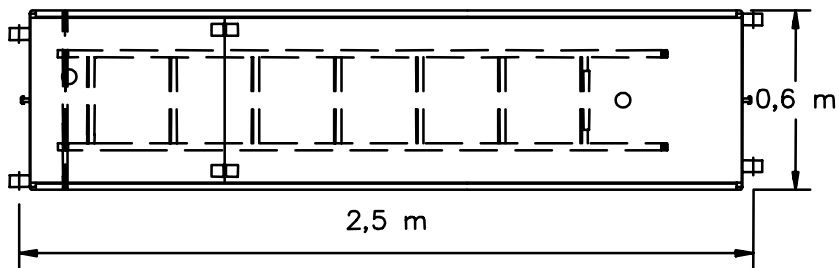
4-rung frame 1,0 x 0,7 m
 Weight : 4,8 kg
 Partnumber: 200.022

PLATFORMS

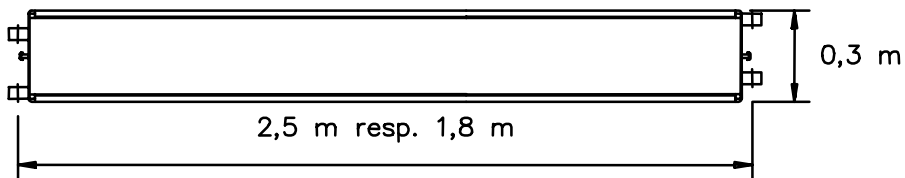


Platform 2,5 x 0,6 m
 Weight : 19,7 kg
 Partnumber: 310.020

Platform 1,8 x 0,6 m
 Weight : 14,2 kg
 Partnumber: 310.010



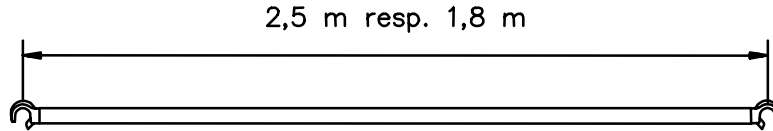
Ladder platform 2,5 x 0,6 m
 Weight : 22,5 kg
 Partnumber: 320.025



Bracket platform 2,5 x 0,3 m
 Weight : 12,9 kg
 Partnumber: 340.020

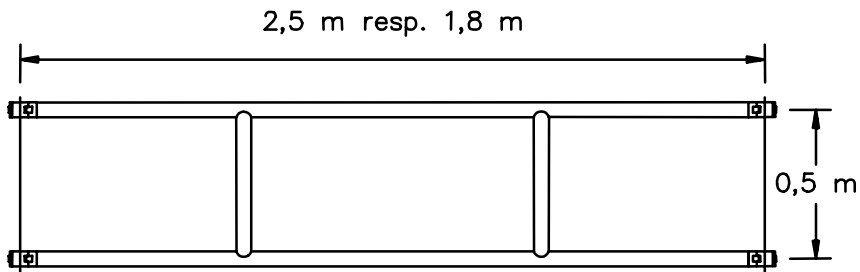
Bracket platform 1,8 x 0,3 m
 Weight : 9,3 kg
 Partnumber: 340.010

GUARDRAILS AND DIAGONALS



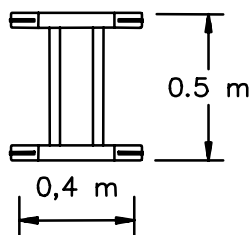
Horizontal 2,5 m
Weight : 3,0 kg
Partnumber: 200.030

Horizontal 1,8 m
Weight : 2,3 kg
Partnumber: 200.058

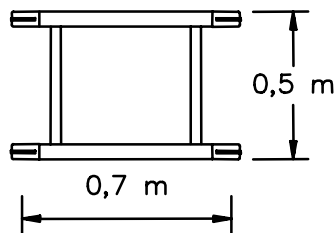


Double guardrail 2,5 x 0,5 m
Weight : 6,5 kg
Partnumber: 800.030

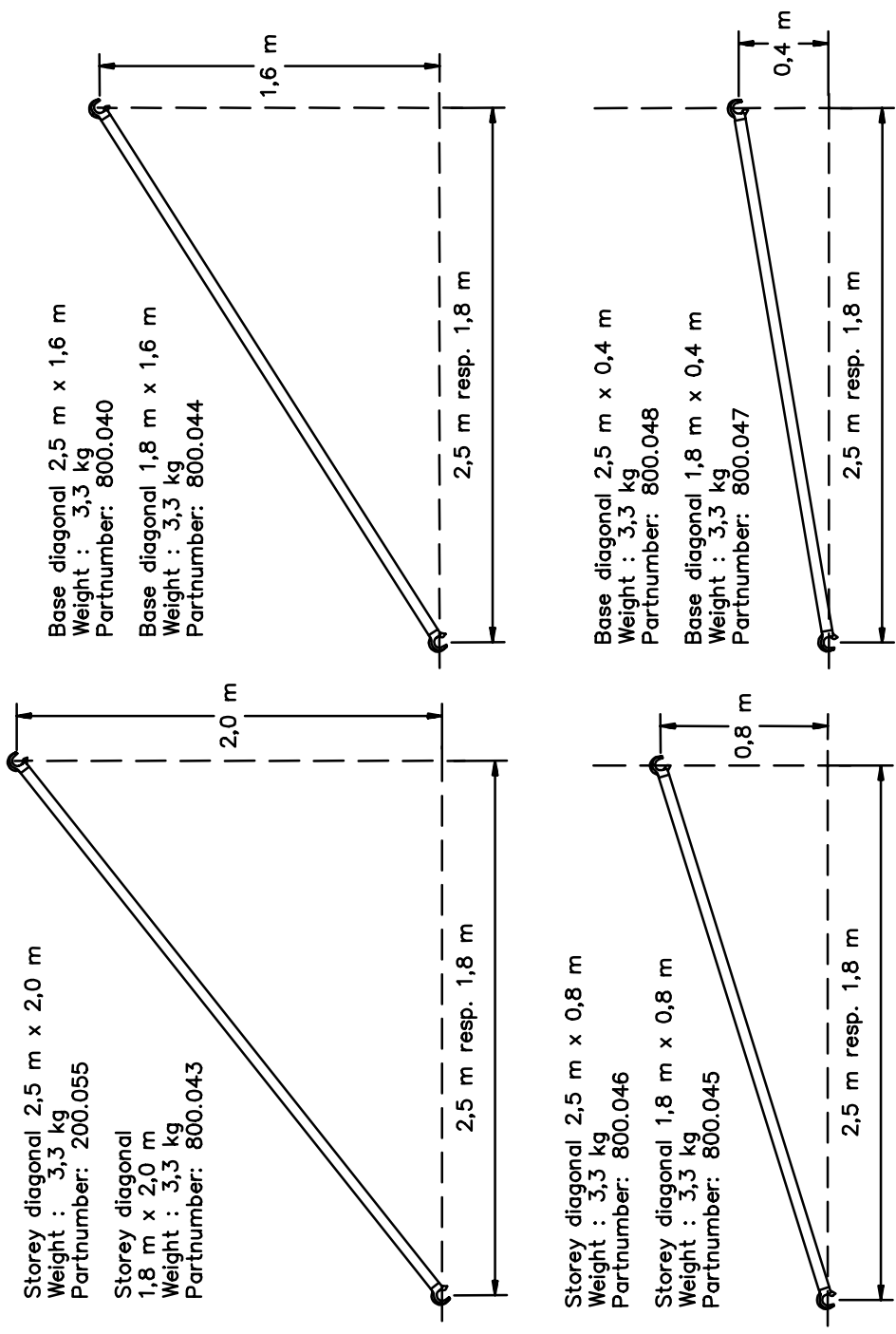
Double guardrail 1,8 x 0,5 m
Weight : 5 kg
Partnumber: 800.058



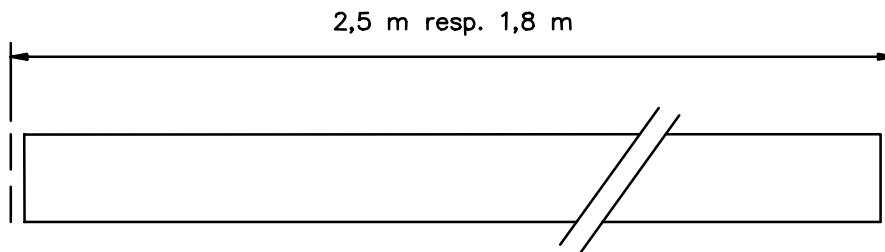
End guardrail 0,4 m
Weight : 1,1 kg
Partnumber: 800.140



End guardrail 0,7 m
Weight : 2,0 kg
Partnumber: 903.040

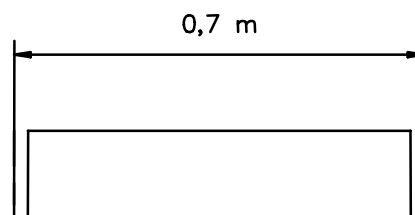


TOEBOARDS AND ACCESSORIES

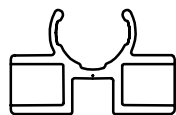


Side toeboard 2,5 m x 0,16 m
Weight : 4,8 kg
Partnumber: 200.080

Side toeboard 1,8 m x 0,16 m
Weight : 3,4 kg
Partnumber: 200.086

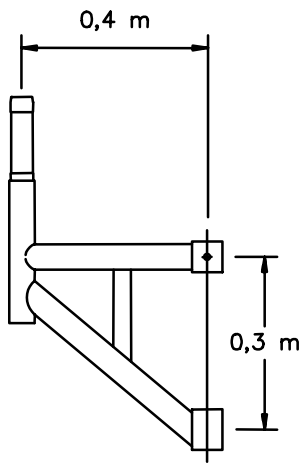


Top toeboard 0,7 x 0,16 m
Weight : 1,2 kg
Partnumber: 200.092

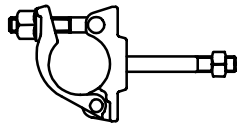


Toeboard holder
Weight : 0,2 kg
Partnumber: 800.087

OTHER COMPONENTS



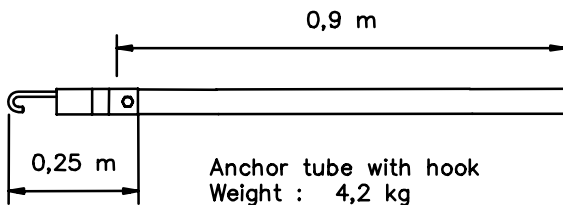
Small bracket
Weight : 1,6 kg
Partnumber: 800.520



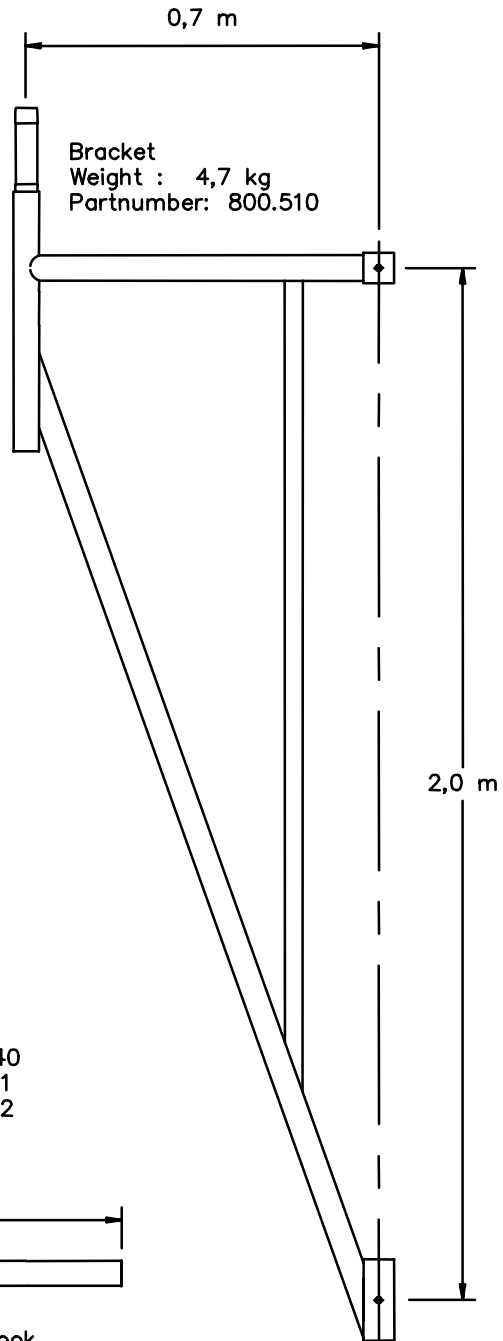
Anchor fitting
Weight : 0,9 kg
Partnumber: 800.335

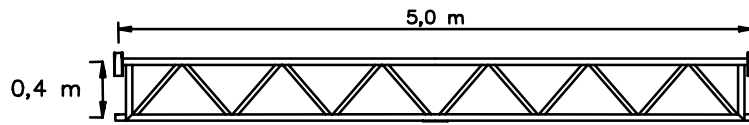


Eye bolt partnumber: 800.340
Plug partnumber: 800.341
Plug cap partnumber: 800.342

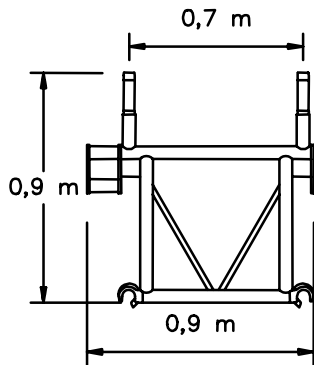


Anchor tube with hook
Weight : 4,2 kg
Partnumber: 800.330

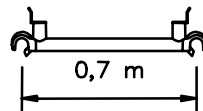




Lattice beam 5,0 x 0,4 m
 Weight : 18 kg
 Partnumber: 800.610



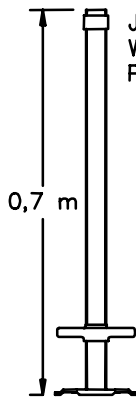
Lattice beam centre frame
 0,9 x 0,9 m
 Weight : 5,3 kg
 Partnumber: 800.620



Lattice beam connector 0,7 m
 Weight : 0,9 kg
 Partnumber: 800.630

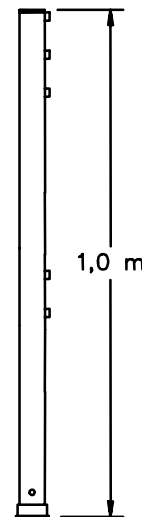


Frame securing pin
 Weight : 0,1 kg
 Partnumber: 410.162

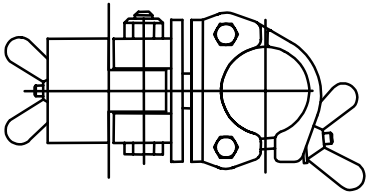


Jack & base plate 0,7 m
 Weight : 3,3 kg
 Partnumber: 520.010

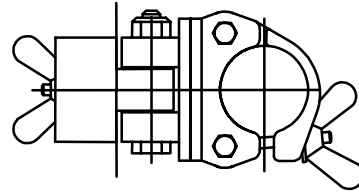
Guardrail post 1,0 m
 Weight : 1,0 kg
 Partnumber: 903.050



COUPLINGS



Swivle coupling
Weight : 1,5 kg
Partnumber: 800.935

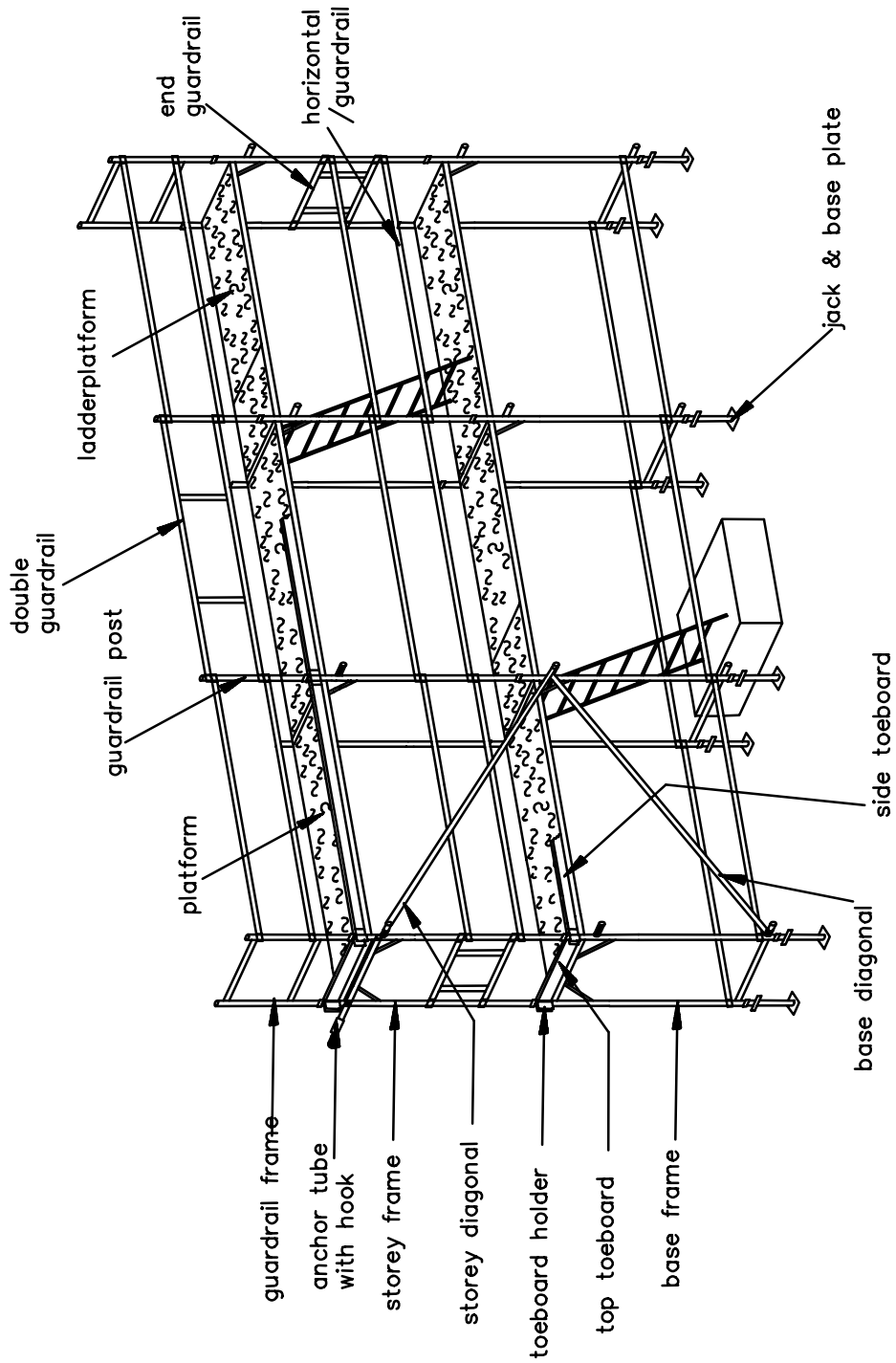


Square welded coupling
Weight : 1,5 kg
Partnumber: 800.115

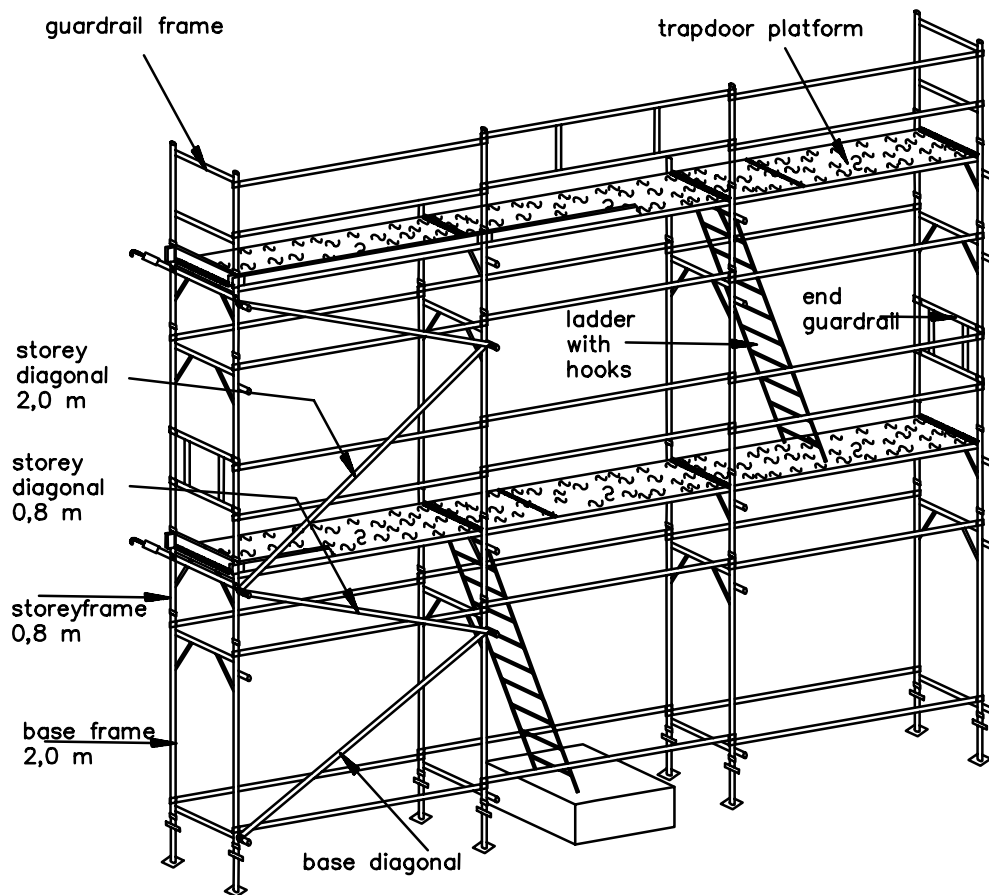
CALCULATION FUNDAMENTALS

- The CUSTERS® HANDY®-SUPER façade scaffolding calculations have been based on the Euro standards HD 1000 and DIN 4420. The standards for wind loads, steel constructions, aluminium constructions, extrusions, etc. have also been taken into consideration.
- The CUSTERS® HANDY®-SUPER is classed as being in Group 3 in accordance with these standards and, for this reason, the *permitted load is 200 kg/m²*. As an alternative, the calculation has taken into account a point load of 100 kg in the most unfavourable position or a concentrated load of 150 kg on an area of 0.5 x 0.5 m.
- At least all but one of the floor levels must have platforms. The maximum load may only be placed on one level, or on two levels which bear no more than half of the maximum load, or on three levels which bear no more than a third of the maximum load, etc.
- *The maximum height for the scaffolding is 30 m.* The scaffolding, and in particular the anchors and diagonals, must be assembled according to this manual. In the case of a greater height or a deviating construction, a separate calculation must be made.
- Only original Custers components may be used for anchoring. The use of standard steel scaffolding couplings on the aluminium frame posts is not permitted (see further). Under no circumstances may less anchors be used than stated in the regulations. At least one diagonal must be fitted in every 5th section, preferably in a zigzag construction, although other patterns may also be used.
- Only original Custers components may be used with the scaffolding.
- Please contact Custers or your dealer if you have any questions or encounter any special circumstances.

PERSPECTIVE OF 2.0 m STOREY HEIGHT



PERSPECTIVE AND CONSTRUCTION OF 2.8 m STOREY HEIGHT



The CUSTERS® HANDY®-SUPER can be increased to a 2.8 m storey height instead of a (traditional) 2.0 m storey height by adding separate additional frames. These 80 cm high frames (200.018) are used in combination with short diagonals to create a solid supporting pattern. To make the scaffolding more rigid, a standard horizontal is fitted at the top of each 2.0 m frame on both sides. When reducing the scaffolding from 2.8 m to 2.0 m, the horizontals are moved as well. They are then clamped to the usual position above the platform on the 0.8 m frame and the 2.0 m frame to create a professional railing.

ASSEMBLY REGULATIONS

All standard CUSTERS® HANDY® SUPER façade scaffolding components are listed with their reference number and weight at the beginning of this manual. Only original Custers components may be used in the scaffolding.

The CUSTERS® HANDY®-SUPER scaffolding is constructed layer by layer. The jack and base plates are first positioned a distance of 1.8 m or 2.5 m apart. The jack and base plates are roughly set to the right height in order to make the final levelling easier. The first layer of frames is then easily placed on the jacks. The diagonal pattern is chosen before the first layer of platforms is placed on the jacks (see further in this manual). A diagonal brace pattern must be fitted at least in the first and then every fifth section. The position of one or more ladder passageways is then chosen, so that this can be taken into account when fitting the platforms. Finally, the platform layer is then placed on the frames' transverse connections. All the swaying safety devices on the platforms must be carefully locked (2 per platform).

The second and further layers of frames and platforms can then be fitted. The railings and diagonals must also be fitted on the next levels. End guardrail frames (903.040) must be fitted at each end of each storey.

COMMENT:

The base frame (200.017, 200.014) may only be used in the *bottom* layer of the CUSTERS® HANDY®-SUPER façade scaffolding and must, therefore, not be used to replace a storey frame.

Wall anchors must be carefully fitted according to the chosen anchoring pattern. The top layer of the scaffolding is finished using guardrail posts, double guardrails / horizontals (at knee and hip height) and guardrail frames at the scaffold edges.

SPECIAL INSTRUCTIONS

1. The scaffolding may only be assembled and disassembled by at least two people who have read this manual and properly know its entire contents.
2. Never let components fall and never throw them onto the ground. Never use damaged components.
3. Do not use auxiliary scaffolding, stairs, ladders or similar devices on the scaffolding.
4. Never subject the components of the scaffolding to aggressive chemicals, such as acids.
5. Never place an excessive load on the scaffolding; ***maximum load 200 kg/m² (100% on max. 1 layer / 50% on max. 2 layers / 33% on max. 3 layers / etc.).***
6. The scaffolding must be levelled using the adjusting nut on the jacks. Make sure the scaffolding is placed on a hard, flat surface which can easily support the weight of the scaffolding and the load onto it. If necessary, use underlay plates.
7. Make sure the scaffolding is correctly anchored (see the anchoring patterns in this manual).
8. Make sure the diagonals are placed in the correct positions (see the diagonal patterns in this manual).
9. Make sure double guardrails or horizontals and toeboards are fitted around the platforms. When using horizontals, these braces must be fitted 0.5 m and 1.0 m above the platforms.
10. Make sure the claws on the horizontals and the diagonals are secured using the claw block locking device.
11. In the horizontal plane, continuous platforms must be fitted on each level.
12. Only open the trapdoor when climbing or descending the ladder. Keep the trapdoor closed at all other times.
13. Before using the scaffolding, inspect it according to the Custers manual.
14. The diagonals must be secured to the frames according to the regulations.

ANCHORING

In practice, different anchoring patterns may be used. The pattern used depends on the circumstances, i.e. the wind load which the scaffolding will be subjected to. The wind load, however, depends on the surface area of the façade or the building, which may be entirely or partially open. The influence of the wind load is, according to DIN-4420 Euro, part 1, expressed as a coefficient. This agrees with HD 1000.

ALTERNATIVE ANCHORING PATTERNS

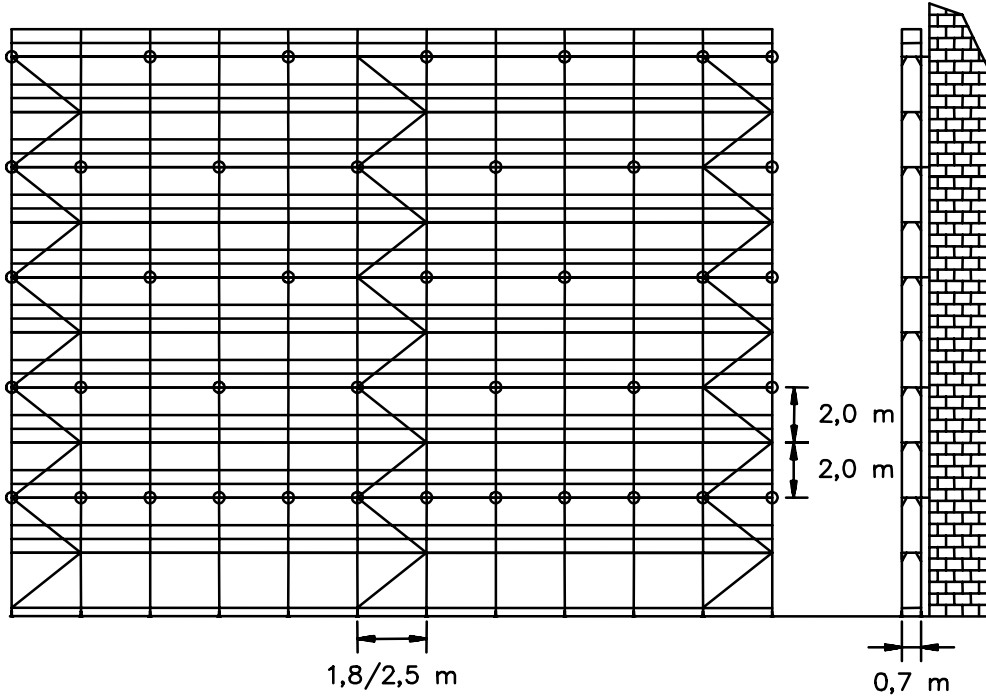
Anchoring pattern	Renovation closed façade partially open = 0%	Partially open façade < 30%	Building frame partially open façade > 88%
Coefficient	0.25	0.50	1.00
8 m (staggered)	X	X	--
4 m (non-staggering)	X	X	X
4 m staggered	--	X	X
2 m	--	X	X

The most common anchoring patterns are shown later in this manual. All the frame posts must be anchored at a height of 4.0 m. All the frame posts on the ends of the scaffolding must also be anchored every 4.0 m. The details for the anchoring are also given.

NOTE: Anchoring may only be carried out using original Custers anchors and the accompanying special couplings. It is not permitted to use the standard steel scaffolding couplings (also see elsewhere in this manual).

8.0 m ANCHORING PATTERN (STAGGERED)

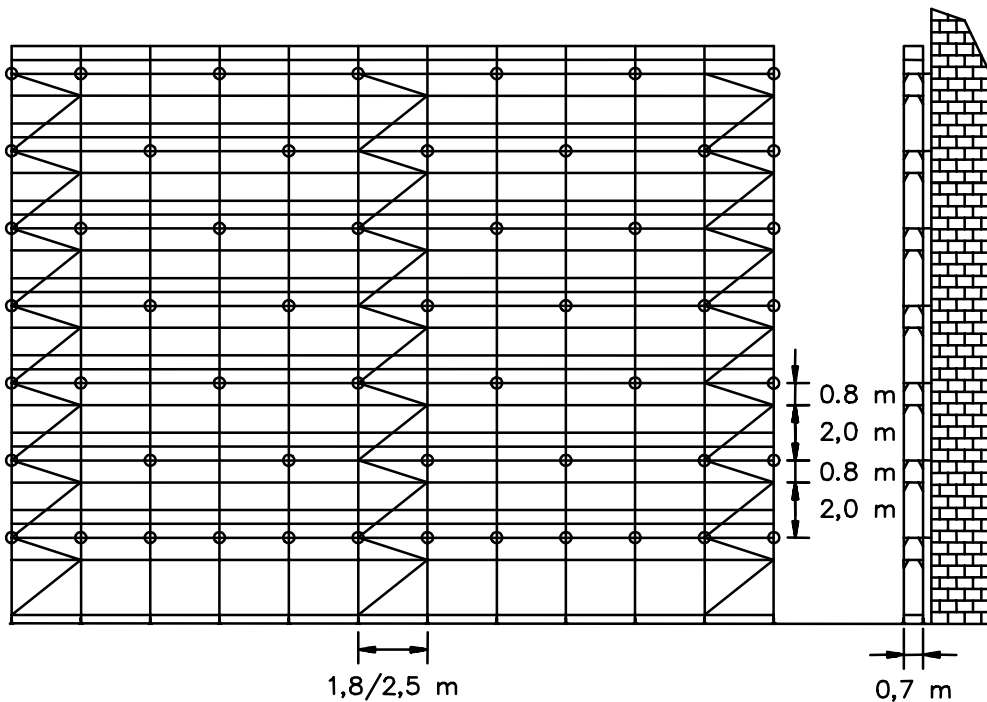
⊕ = anchoring



- The above anchoring pattern and diagonals pattern is a staggered 8.0 m pattern. The possibility of using this pattern, however, depends of the circumstances as explained earlier.
- ALL frame posts must be anchored at 4.0 m above ground level. The frame posts at the beginning and end of the scaffolding must be anchored every 4.0 m.
- A diagonal brace pattern must be placed in at least the first and every fifth section, from the bottom to the top of the scaffolding.
- Alternative anchoring patterns are also possible. Always consult the manufacturer before using a different anchoring pattern.

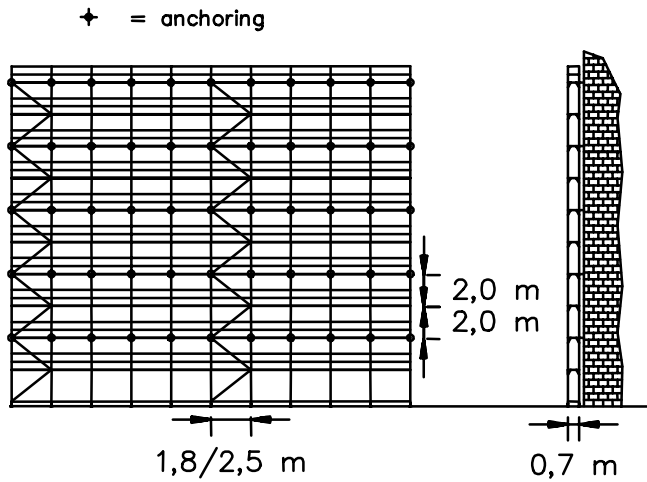
7.6 m ANCHORING PATTERN AT 2.8 m STOREY HEIGHT

⊕ = anchoring



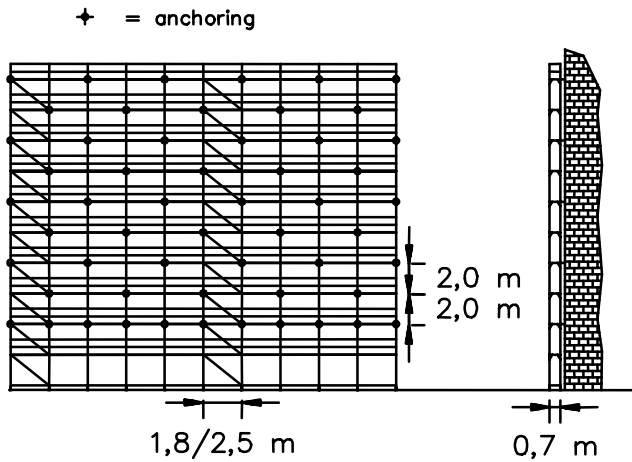
- The above anchoring pattern and diagonal brace pattern is a staggered 7.6 m pattern. The possibility of using this pattern, however, depends of the circumstances as explained earlier.
- ALL frame posts must be anchored at a height of 2.8 m above ground level. The frame posts at the beginning and end of the scaffolding must be anchored every 2.8 m.
- A diagonal brace pattern must be placed in at least the first and every fifth section in a flowing diagonal brace pattern: 0 m – 2.0 m – 2.8 m – 4.8 m – 5.6 m etc. from the bottom to the top of the scaffolding.
- Alternative anchoring patterns are also possible. Always consult the manufacturer before using a different anchoring pattern.

4.0 m ANCHORING PATTERN



4.0 m (non-staggered)

From a height of 4.0 m, each upright must be anchored every 4.0 m. Diagonal braces must be placed in every fifth section in a zigzag pattern.

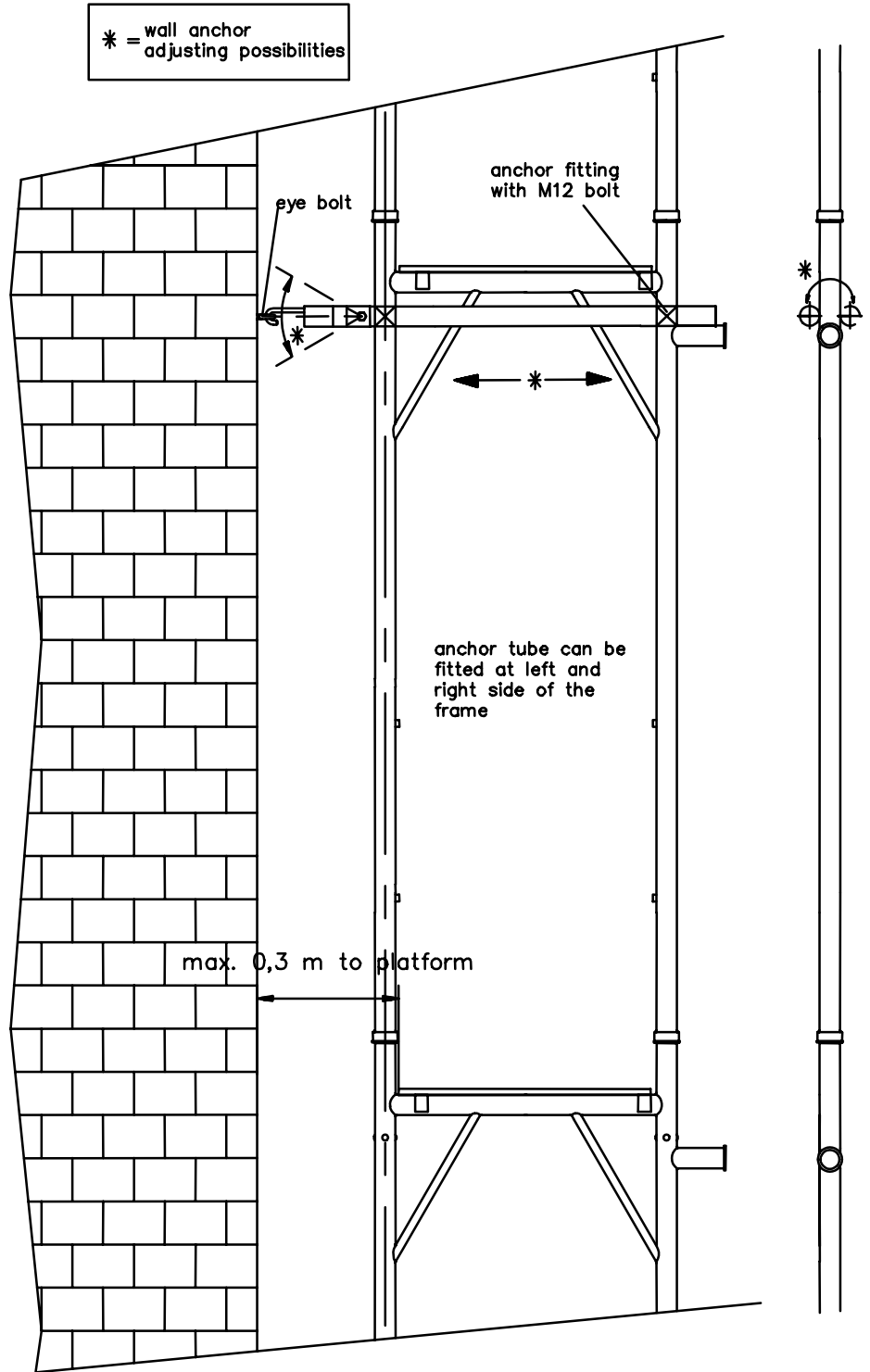


4.0 m (staggered)

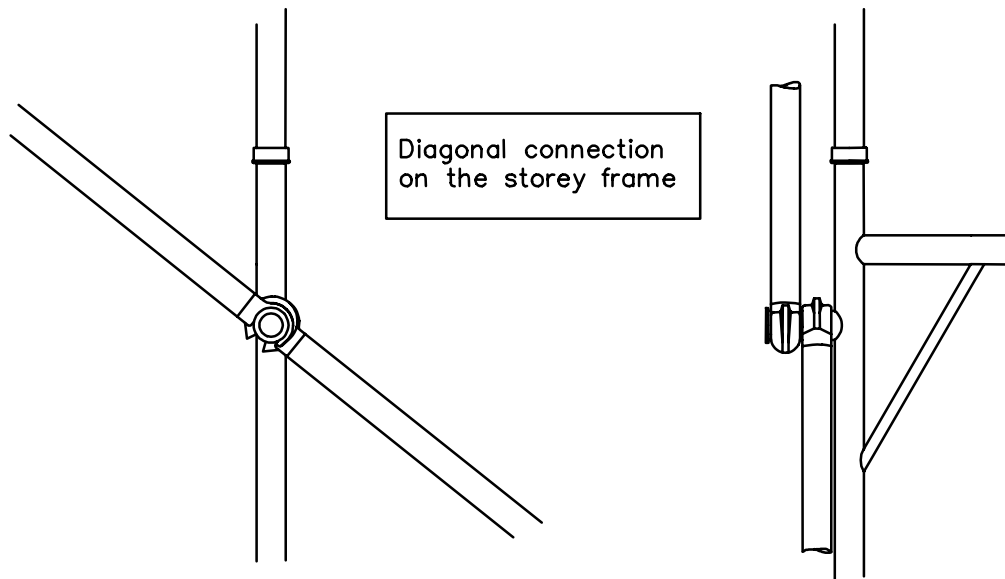
All the frame posts are anchored at a height of 4.0 m. An anchor will also be fitted every 4.0 m to every other frame post from a height of 6.0 m. The diagonal braces can also be fitted facing in the same direction.

Alternative anchoring patterns are also possible. ALWAYS CONSULT THE MANUFACTURER BEFORE USING A DIFFERENT ANCHORING PATTERN

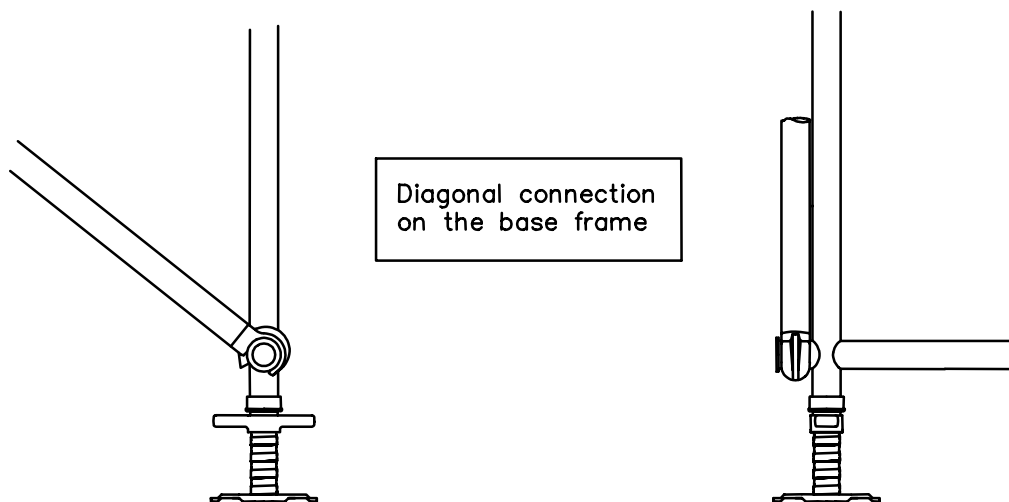
ANCHOR ATTACHMENTS



DIAGONAL CONNECTION



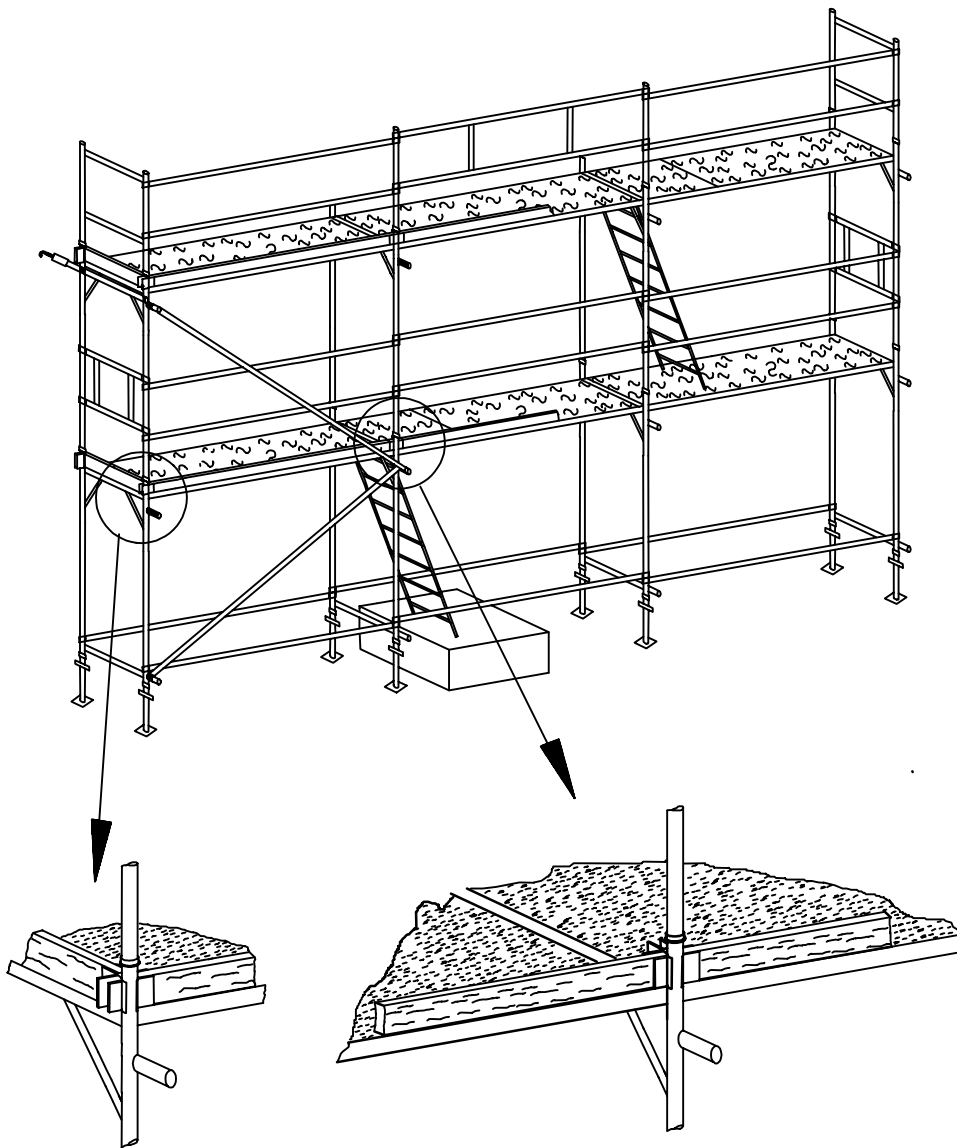
Depending on the use, a maximum of two diagonals can be connected to the cam of a frame (2.0 x 0.7 m - 200.019/200.013 or 0.8 x 0.7 m - 200.018). The claw connection closes automatically.



Diagonal brace connections for the base frame

A maximum of one diagonal brace can be connected to the cam of a base frame (2.0 x 0.7 m - 200.017 or 0.8 x 0.7 m - 200.014). The claw connection closes automatically.

TOEBOARDS

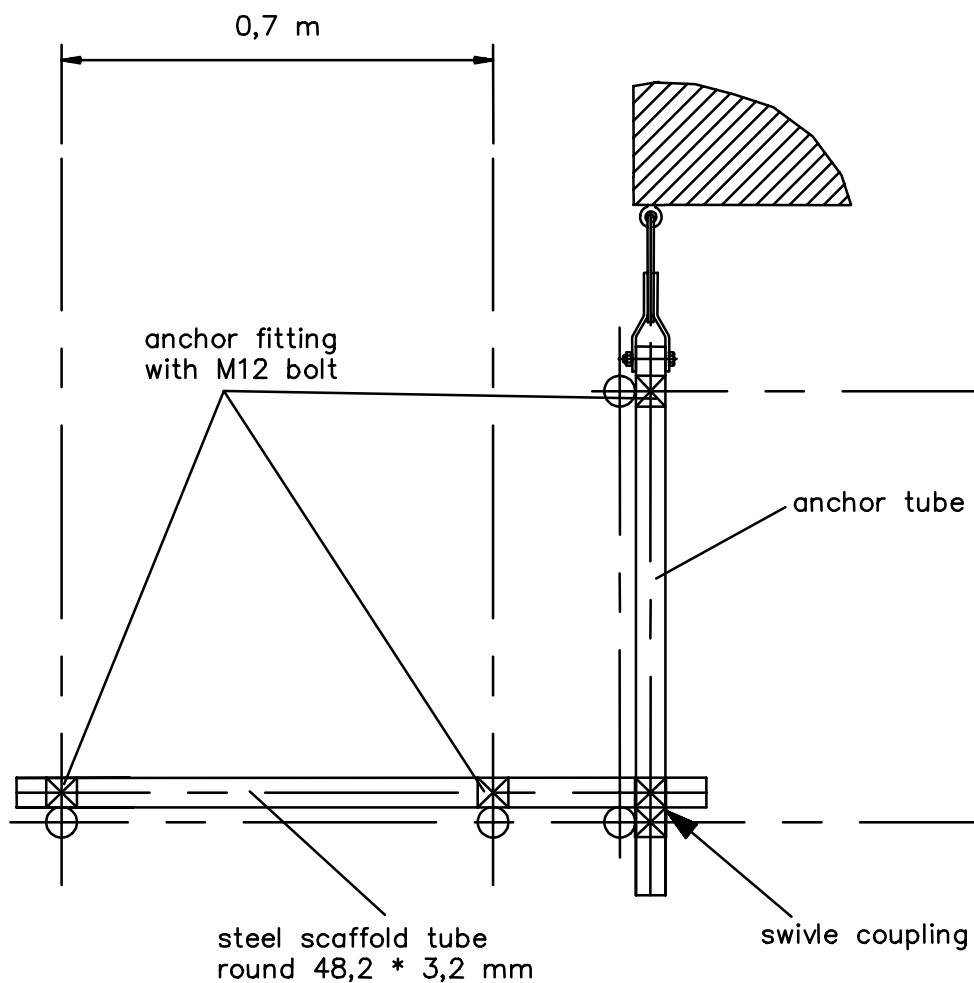


Toeboards prevent tools which are lying on the platform from falling off the scaffolding.

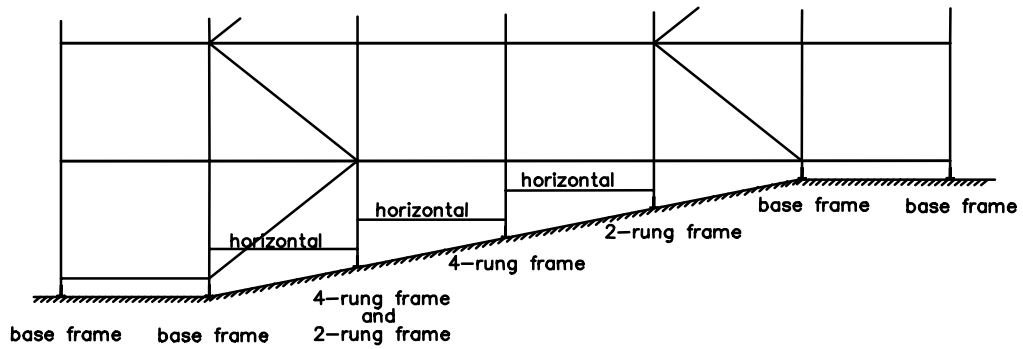
Toeboards must be fitted to all the storeys on which work is carried out. If the clearance between the scaffolding and the façade is greater than 10 cm, then toeboards must also be fitted on the side facing the façade.

CORNER SOLUTIONS

- Special attention must be given to a safe connection between two scaffolding constructions and the building. The outer storey frames are normally anchored to the building every 4.0 m.
- The posts of the foremost frames of the second scaffolding construction (at right angles to the first scaffolding construction) are aligned with the posts of the frames of the first scaffolding construction. This allows the two scaffolding constructions to be connected to each other using a Custers anchor, 4 Custers anchor couplings, one steel scaffolding pipe and one swivel coupling (as shown in the diagram).

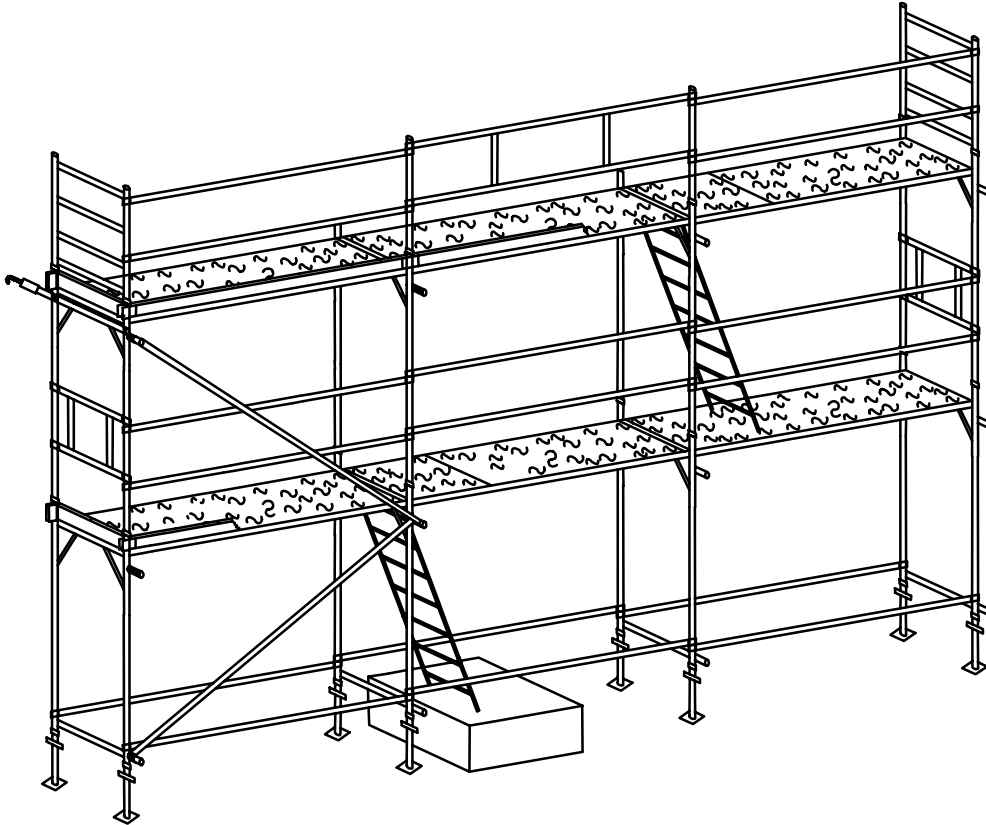


LEVELLING



- Since three different frame heights are available, the scaffolding can be erected on any incline.
- The jacks are altered depending on the incline and a combination of 2-rung and 4-rung frames is used. Make sure the horizontal forces are absorbed by the bottom of the scaffoldings via the diagonals.

ALTERNATIVE COMPONENTS



- A guardrail frame (200.122) or a 4-rung frame (200.022) can be replaced by a storey frame (200.019 / 200.013) with an end guardrail (903.040).
- A guardrail frame (200.122) or a 4-rung frame can be replaced by two 2-rung frames (200.026).
- A guardrail post (903.050) can be replaced by a storey frame (200.019 / 200.013).
- Two horizontals (200.058 / 200.030) can be replaced by one double guardrail (800.058 / 800.030).
- A platform of 2.5 x 0.6 m or 1.8 x 0.6 m can be replaced by two platforms of 2.5 x 0.3 m or 1.8 x 0.3 m.

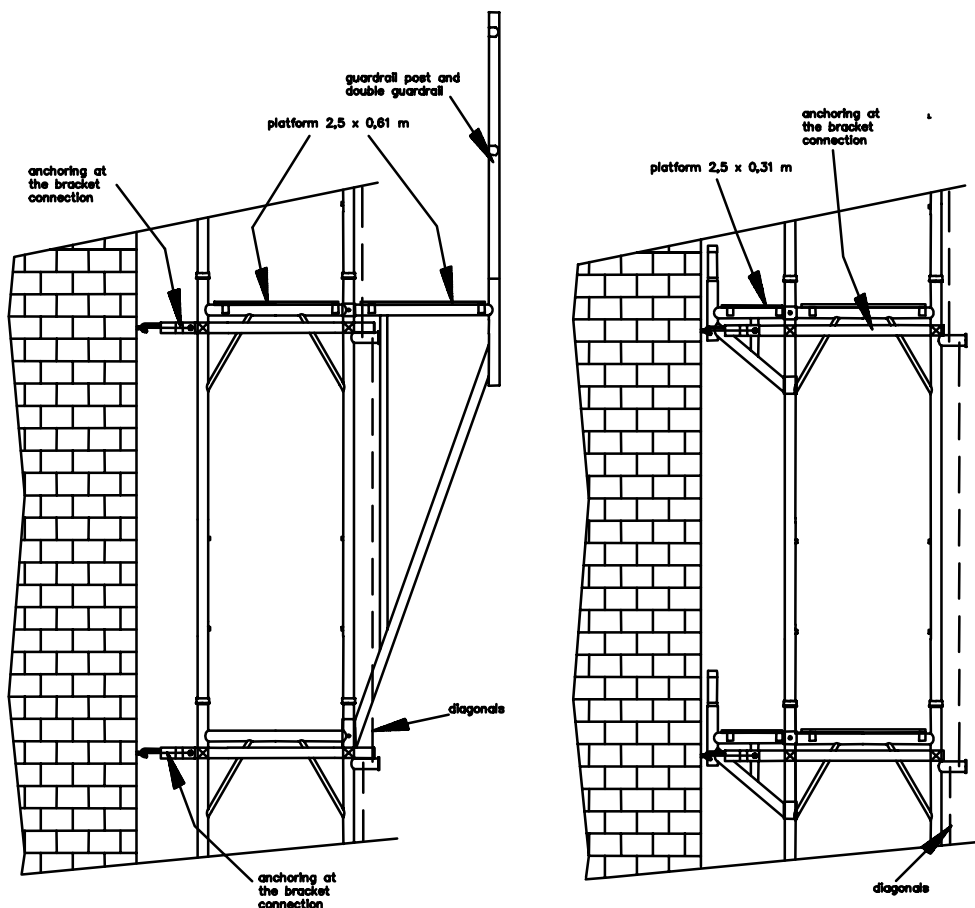
BRACKETS APPLICATION

A. LARGE bracket:

The large bracket is as wide as the scaffolding (0.7 m) and is used on the outside of the scaffolding. The bracket must be carefully locked into the 2 connection points using the pins. Standard platforms (2.5 x 0.6 m) fit onto these brackets. They must be secured against being blown about by the wind. Just as with the scaffolding, railings must be fitted for safety reasons. The scaffolding must be carefully anchored to the façade at the height of the bracket.

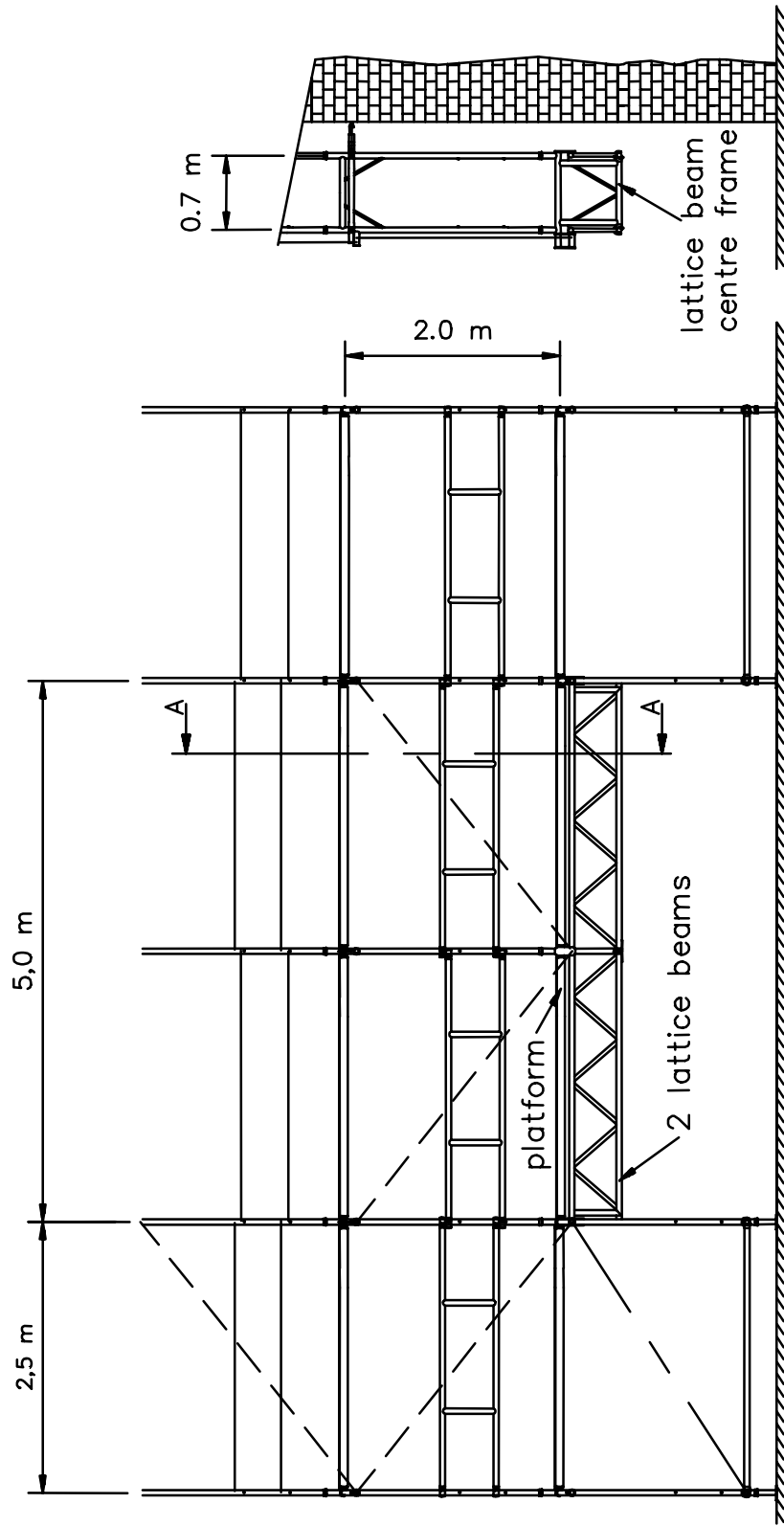
B. SMALL bracket:

Small brackets allow the scaffolding to be widened so that workers are able to get closer to the façade. A number of brackets can be fitted to the scaffolding at different levels at the same time. They are usually fitted on the inside of the scaffolding. The half-platforms (2.5 x 0.3 m and 1.8 x 0.3 m) fit onto these brackets. The brackets are secured to the frame's connection points using the pins. The anchoring pattern must be adjusted to suit the use of small brackets.

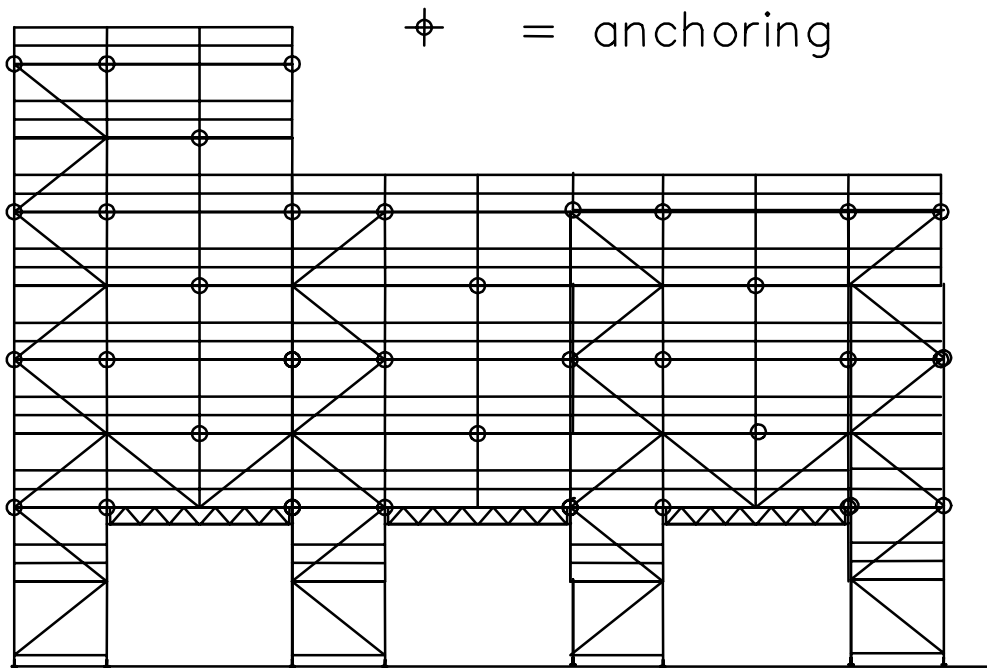


FREE PASSAGE / BRIDGING

- In order to make it possible to have one or more free passages in the scaffolding, two 5.0 m long aluminium lattice beams are used with the accompanying lattice beam base frame.
- The lattice beams are fitted one by one from the inside and are secured to the frame's connection point using the bolt of the anchor connection. After the two lattice beams have been fitted, the lattice beam base frame can then be positioned between them. The top of this lattice beam base frame is automatically aligned with the top of the storey frame, so that rest of the scaffolding construction can be erected as normal above the lattice beam base frame using storey frames.
- The lattice beams are supported along their sides using lattice beam connectors (0.7 m). These are fitted in both the top and bottom pipes before fitting the platforms.
- The platforms are continuous, also at the height of the lattice beams. Depending on the height of the scaffolding and the load placed on it, diagonals may also be fitted in order to support the middle of the lattice beams.



cross section A-A



- In order to maintain as much access as possible to the space at the rear of the scaffolding, a set of 5 m lattice beams can be fitted every 7.5 m. They must be fitted so that there is always at least one section with a base frame and accompanying horizontals and possibly a diagonal between such a bridging space.
- The anchoring pattern is altered accordingly. If the structure cannot be anchored 4.0 m above the jack , the anchor is fitted one section higher.
- The pattern for the diagonals is also altered. In the situation, diagonals are fitted in every column that touches the ground.
- Lattice beams can also be used at greater heights, also at the top of the scaffolding (if a guardrail is fitted), however not from or up to the side end of the scaffolding.

ANCHORING (random)

STANDARD RULE:

STANDARD SCAFFOLDING COUPLINGS MUST NOT BE FITTED DIRECTLY ONTO A FRAME.

The optimal construction of the CUSTERS® HANDY®-SUPER means that it is not necessary to use couplings on the aluminium frame. They are, therefore, not permitted. The following solutions are available when it is not possible to anchor in the connection point:

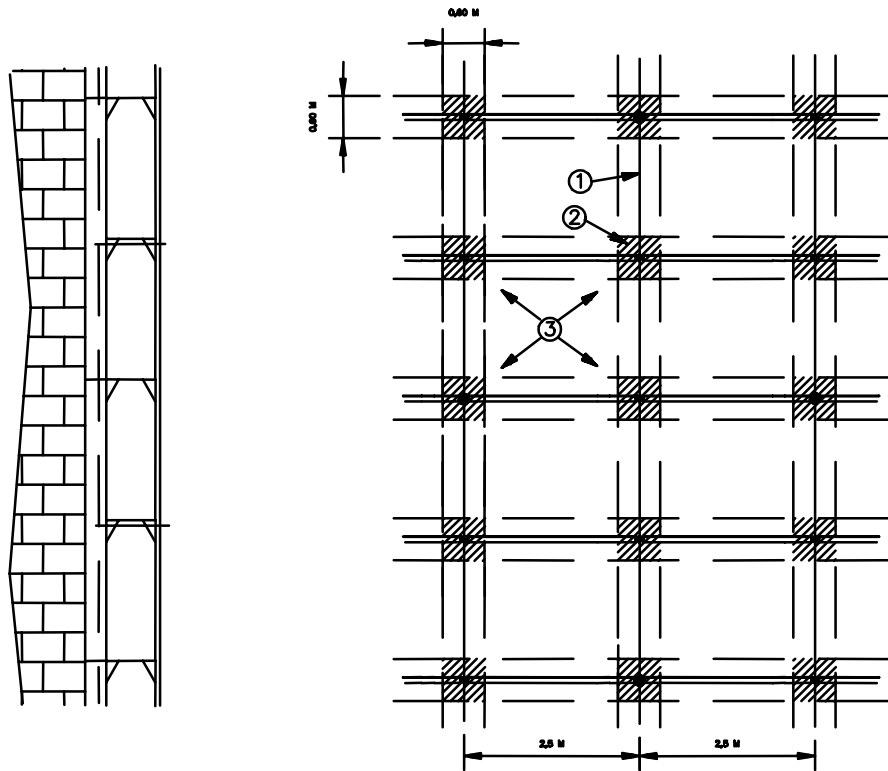
A. Anchor within the reach of the connection point:

Steel tubes (\varnothing 48.2 mm, 1.0 m long) are fitted in the connection points using the CUSTERS® HANDY®-SUPER anchor fittings. These tubes are then connected to each other by means of a vertical tube, so that anchors can be used the same as for standard scaffolding constructions.

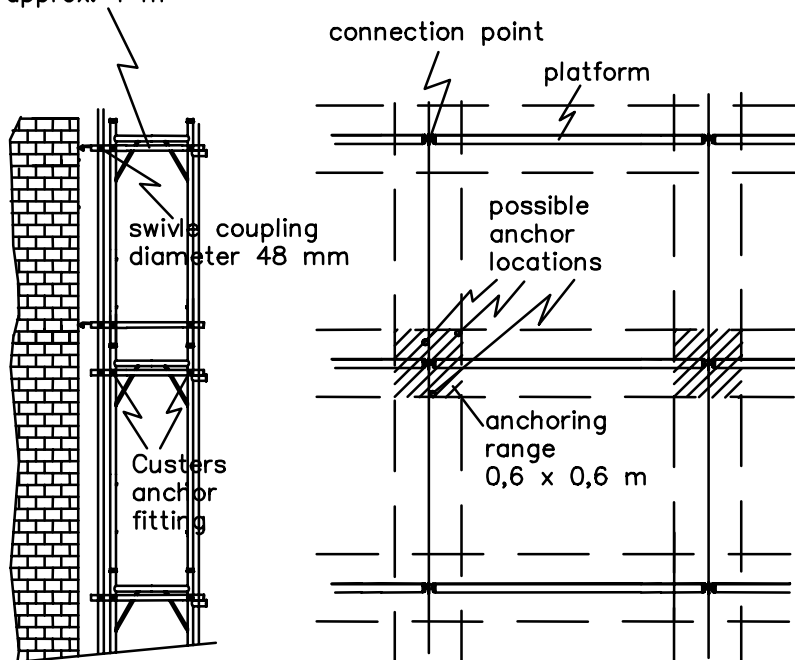
1. Vertical continuation in the middle of the frames.
2. Within the reach of the connection point (0.6 x 0.6 m) using additional horizontal brace connections.

B. Anchor outside of the reach of the connection point:

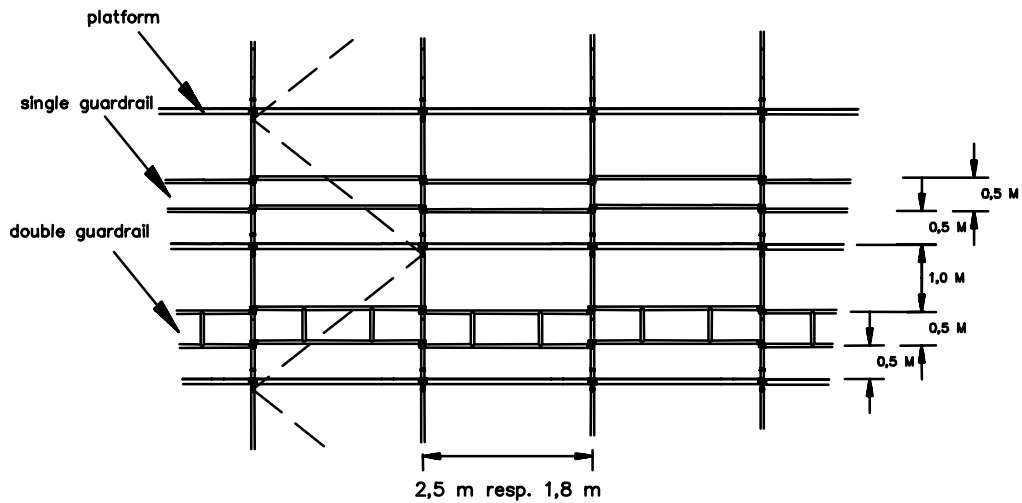
3. In the remaining 1.8 x 1.4 m sections using tubes and fittings as they would normally be used.



anchor tube diameter 48,2 mm
length approx. 1 m

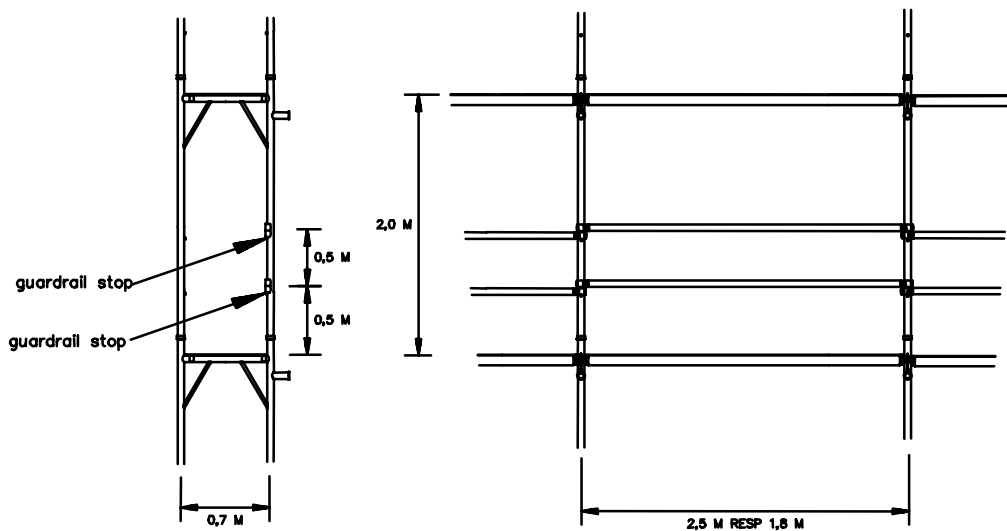


USE OF GUARDRAILINGS

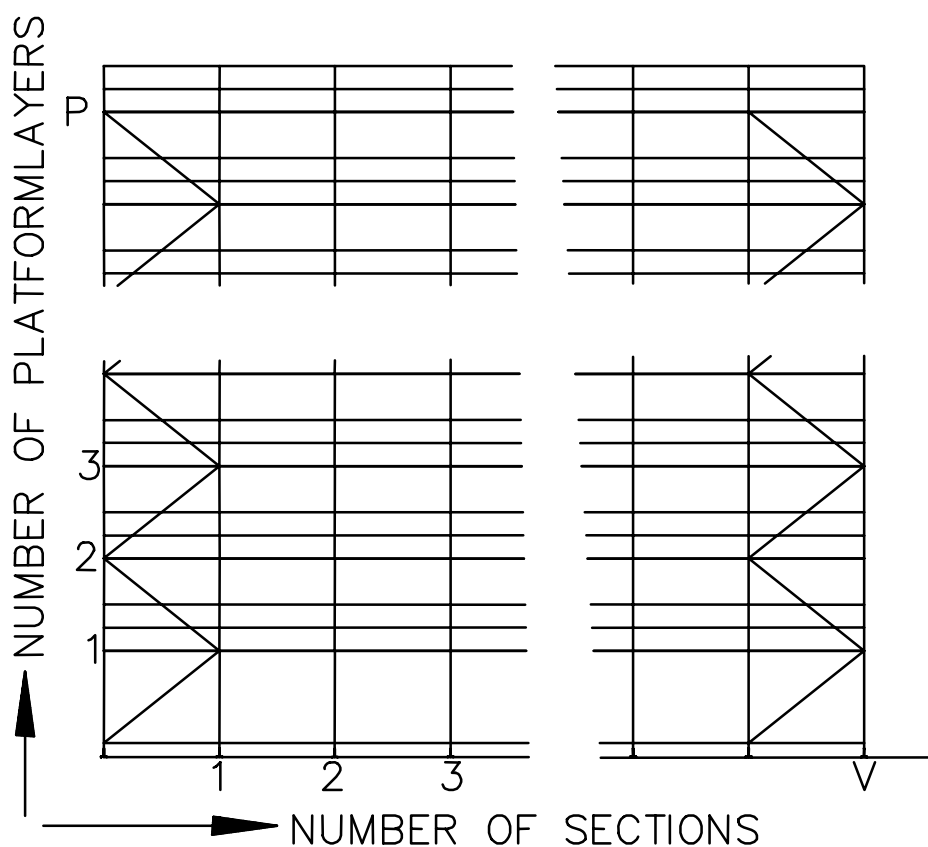


REGULATIONS FOR THE USE OF GUARDRAILINGS:

- Just as for all other scaffolding constructions, guardrailings must be fitted according to the DIN and NEN regulations. Two different designs are, therefore, used: two separate horizontal s or one double guardrail. Both fulfil the same function and are suitable for the possible loads.
- The guardrailings are quickly, easily and safely clamped onto the frames. Clearly visible stops are welded onto the frame posts at a height of 1.0 m and 0.5 m. The railing must not grip under the stops on the posts.
- As shown in the diagram, the double guardrail or the two horizontals in the adjacent section is / are clamped above the claws onto the posts so that a regularly staggered, symmetrical pattern is created.
- Railings must be fitted at every storey. **If the space between the scaffolding and the façade is greater than 10 cm, then guardrailings must also be fitted to the side facing the façade.**



CONSTRUCTION FORMULA FOR A 2.0 m STOREY HEIGHT



Comment

When using alternative components (see page 5), the components and number given below must be adjusted.

COMPONENT	PART NUMBER	NUMBER
Storey frame	200.019 / .013	$(V + 1) \times P$
Base frame	200.017	$V + 1$
Platform	310.010 / .020	$(V - 1) \times P$
Ladder platform	320.025	P
Horizontal	200.058 / .030	$2 \times V \times (P + 1)$
End guardrail	903.040	$2 \times P$
Toeboard	200.086 / .080	$V \times P$
Top toeboard	200.092	$2 \times P$
Toeboard holder	800.087	$(V + 1) \times P + 2 \times P$
Jack and base plate	520.010	$2 \times (V + 1)$

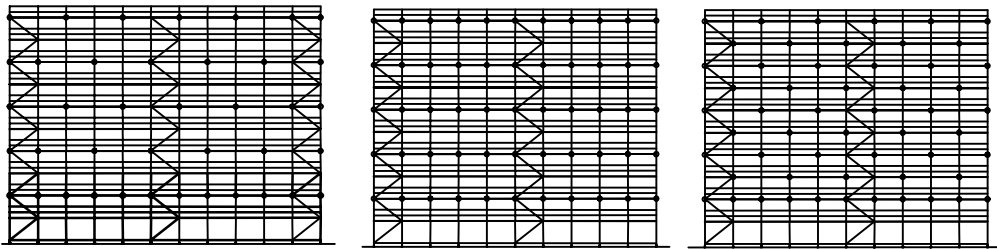
DIAGONALS

- A diagonal brace pattern must be fitted in at least the 1st and every 5th section, from the bottom to the top of the scaffolding construction.
- Base diagonals (800.044 / 800.040) are fitted in the base frames.
- Storey diagonals (800.043 / 200.055) are fitted in all storeys above.

COMPONENT	PART NUMBER	NUMBER			
		V=1-5	V= 6-10	V= 11-15	V= 16-20
Storey diagonal	800.043 / 200.055	P - 1	2 x (P - 1)	3 x (P - 1)	4 x (P - 1)
Base diagonal	800.044 / 800.040	1	2	3	4

WALL ANCHORS AND ACCESSORIES

- The number of wall anchors and accessories that must be used depends on the anchor pattern used. The following anchor patterns are used:



8.0 m (staggered)

Used on:
 - closed façades
 - partially open façades < 30%
 NOT used on open façades

4.0 m (staggered)

Used on:
 - open façades

4.0 m (non-staggered)

Used on
 - open façades

ANCHOR CONSTRUCTION

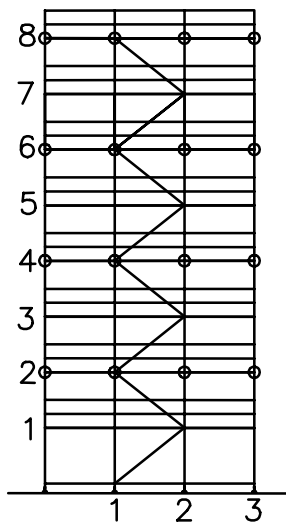
The following applies for all anchor patterns:

- All frame posts must be anchored at a height of 4.0 m.
- All frame posts at the ends of the scaffolding must be anchored every 4.0 m.

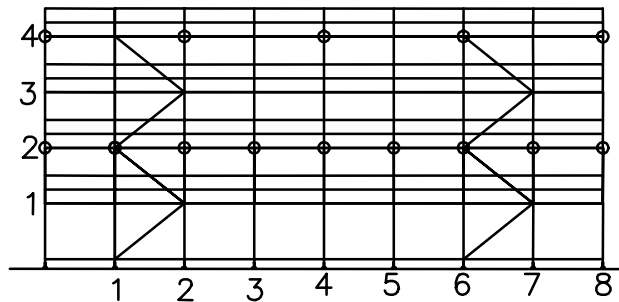
COMPONENT	PART NUMBER	NUMBER
		PER ANCHOR POINT
Anchor tube with hook	800.330	1
Anchor fitting	800.335	2
Eye bolt	800.340	1
Plug	800.341	1
Plug cap	800.342	(1)

EXAMPLES OF CONSTRUCTIONS FOR A 2.0 m HIGH STOREY

Examples:



Example 1:
 $V = 3$ and $P = 8$
 4.0 m (non-staggered)



Example 2:
 $V = 8$ and $P = 4$
 8.0 m (staggered)

Part number	Description	Number Example 1	Number Example 2
200.019/.013	Storey frame	32	36
200.017	Base frame	4	9
310.020	Platform	16	28
320.025	Ladder platform	8	4
200.030	Horizontal (guardrail)	54	80
903.040	End guardrail	16	8
200.080	Toeboard	24	32
200.092	Top toeboard	16	8
800.087	Toeboard holder	48	44
520.010	Jack and base plate	8	18
200.055	Storey diagonal	7	6
800.040	Base diagonal	1	2
800.330	Anchor tube with hook	16	14
800.335	Anchor fitting	32	28
800.340	Eye bolt	16	14
800.341	Plug	16	14
800.342	Plug cap	16	14