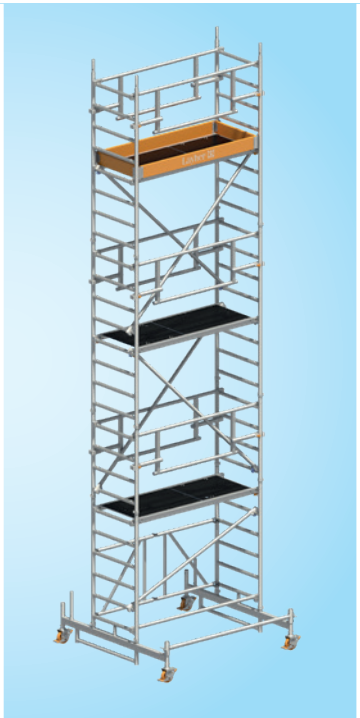
Layher®

Mehr möglich. Das Gerüst System.

LAYHER ZIFA
INSTRUCTIONS FOR ASSEMBLY AND USE

SAFETY STRUCTURE P2,
SAFETY STRUCTURE P2 WITH UNI TELESCOPING GUARDRAIL
AND SAFETY STRUCTURE P2 SAFETY[PLUS]

DIN EN 1004-2-DE



Edition 09.2024
Ref. No. 8107.140

Mobile Working Platforms
According to DIN EN 1004-1:2021
Working platform 0.75 x 1.80 m

Max. working height
In closed areas: 8.60 m
In the open: 8.60 m
Permissible load capacity 2.0 kN/m²
on max. one working level
(Load class 3 according to
DIN EN 1004-1:2021)

CONTENTS

ROLLING TOWERS WITH SAFETY STRUCTURE P2

▸ Go directly to page 8

ROLLING TOWERS WITH SAFETY STRUCTURE P2 WITH UNI TELESCOPING GUARDRAIL

▸ Go directly to page 22

ROLLING TOWERS WITH SAFETY STRUCTURE P2 SAFETY^{PLUS} WITH DOUBLE GUARDRAIL

▸ Go directly to page 34

NOTE

The DIN EN 1004-2-de-compliant products or assembly variants shown in these Instructions for Assembly and Use (IAU) may be subject to country-specific regulations. Subject to local regulations, we reserve the right not to supply all of the products illustrated here.

Beyond the currently valid General Terms of Sale of Wilhelm Layher GmbH & Co KG, **no liability is assumed for damage of whatever nature that has been incurred due to the following reasons:**

- Non-compliance with instructions
- Improper assembly, and use of the product not for its intended purpose
- Use of non-original and damaged Layher components
- Unauthorised structural changes
- Improperly performed repairs, above all when non-original Layher spare parts are used
- Events caused by force majeure (disasters, foreign objects)

The respective user shall ensure on their own responsibility that the points as stated and also the current safety regulations are complied with and that use for the intended purpose is assured.

These Instructions for Assembly and Use must:

- be available at the place of use of the Mobile Working Platform.
- be fully implemented during the assembly, modification and dismantling of the Mobile Working Platform, including all specifications they contain. No modifications to them are permitted, o are permissible only after consultation with the manufacturer.

These instructions cannot cover all the possible applications. If you have any questions about specific applications, please contact your local Layher partner. This contact person will be happy to provide advice and answers to all questions relating to the products, to their use or to specific assembly regulations.

EXPLANATION OF SYMBOLS

Additional information and notes on the assembly, modification, dismantling and use of Mobile Working Platforms and situations in which it is necessary to consult with the manufacturer are indicated by the symbol opposite.

When assembling, modifying, dismantling or using Mobile Working Platforms, failure to observe the present Instructions for Assembly and Use and the applicable work safety regulations may result in a variety of hazards and/or require increased attention on the part of the user. Situations in which such hazards may arise and/or in which users must be required to pay increased attention are indicated by the symbol opposite.

When assembling, modifying, dismantling or using Mobile Working Platforms, failure to observe the present Instructions for Assembly and Use and the applicable work safety regulations may result in risks due to electrical voltages. Situations in which risks due to electrical voltages may arise are indicated by the symbol opposite.

When assembling, modifying, dismantling or using Mobile Working Platforms, failure to observe the present Instructions for Assembly and Use and the applicable work safety regulations may result in risks of falling. Situations in which risks of falling may arise are indicated by the symbol opposite.

1. INTRODUCTION

General

These Instructions for Assembly and Use relate to the assembly, modification and dismantling of the **Zifa** Mobile Working Platform with Safety Structure P2, Safety Structure P2 with Uni Telescoping Guardrail and Safety Structure P2 SAFETY^{PLUS} made by Wilhelm Layher GmbH & Co KG of Gueglingen-Eibensbach, Germany.

Number of persons required for assembly, modification and dismantling: ▸ 2 persons

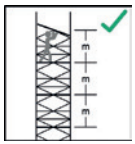
Caution: Layher Zifa may only be assembled, modified and dismantled under the supervision of a person who has been qualified, trained and authorised for operations involving "Mobile Working Platforms".

2. GENERAL NOTES ON ASSEMBLY AND USE

The Mobile Working Platform may be used for the specified load class in accordance with the stipulations of DIN EN 1004 and taking into account the appropriate sections of the German Ordinance on Industrial Safety and Health (BetrSichV).

The user of the Mobile Working Platform must comply with the following instructions:

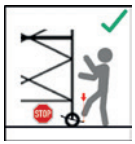
- The user must verify the suitability of the selected Mobile Working Platform for the work to be performed (Section 4 of BetrSichV).
- The maximum platform height for Mobile Working Platforms in accordance with DIN EN 1004 is
  - inside buildings: 12.00 m
  - outside buildings: 8.00 m
- Assembly, modification or dismantling of the Mobile Working Platform in accordance with the present Instructions for Assembly and Use may only be performed under the supervision of a qualified person or by professionally suitable employees after special instruction. Only the models shown in these Instructions for Assembly and Use may be built and also used. The Mobile Working Platform must be inspected before, after or during assembly, but no later than before it is put into service (Section 14 of BetrSichV). During assembly, modification or dismantling, the Mobile Working Platform must be marked with a prohibition sign indicating "no entry" (BetrSichV Annex 1, Para. 3).
- It must first be checked that all parts, auxiliary tools and safety equipment for assembling the Mobile Working Platform are available at the site.
- All ladder frame joints must always be secured using spring clips.
- The access hatches must be kept shut whenever they are not in use.
- Mobile Working Platforms are not designed to be covered. Mobile Working Platforms are not designed to be used as side protection.
- If stipulated, the base must be widened by means, for example, of mobile beams or stabilisers or outriggers and ballast must be installed.
- Stability **must be ensured during every phase** of assembly and dismantling as well as when the platform is moved. **The necessary ballast weights and/or wall supports** (see corresponding sections in these Instructions for Assembly and Use) **must generally be attached before any risk of falling arises.**
- The adjustable mobile beams may only be inserted in conformity with the Instructions for Assembly and Use. Any ballasting that is required must be installed prior to adjustment, in accordance with the ballast specifications in the section on "Tower models".
- To assemble the upper platforms, the individual parts must be passed up from one level to the next. Small quantities of tools and materials can be carried up by the personnel, or failing that hoisted to the working level using transport ropes.
- In the case of intermediate platforms used solely for ascent, toe boards can be dispensed with.
- Working on two or more working levels at the same time is not permitted. In the event of exceptions, the manufacturer must be consulted. When work is being done on several levels, they must be completely fitted with three-part side protection.
- Horizontal and vertical loads that can cause the Mobile Working Platform to topple over should be avoided, for example:
  - due to pushing against the side protection **(max. 30 kg).**
  - due to additional wind loads (tunnel effect of through-type buildings, unclad buildings and corners).
- Before installation, all parts must be inspected to ensure they are in flawless condition. Only undamaged original parts of the Mobile Working Platforms from Layher may be used. Components such as snap-on claws and spigots must be cleaned of dirt after use. Components must be secured against slipping and impacts when transported by truck. Components must be handled in such a way that they are not damaged.
- The Mobile Working Platforms must not be subjected to any aggressive fluids or gases.
- Couplers in the structures must be tightened to 50 Nm.



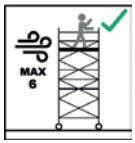
The maximum distance between the platforms must not exceed 2.25 m. Exception: The distance between the assembly level (the ground) and the first platform. The maximum distance permitted here is 3.40 m.

Mobile Working Platforms must be set to the perpendicular using the adjusting spindles or by inserting suitable materials underneath them. The max. permitted inclination is 1 % (in horizontal direction = scaffolding length / 100).

Movement is only permitted on sufficiently firm ground with a max. inclination of 4 % (approx. 2.5°) in the longitudinal direction or perpendicular to this, and the speed must not exceed normal walking pace (4 km/h). All impacts must be avoided.

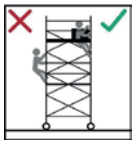


After movement, the castors must be locked by pressing down the brake lever.

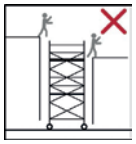


When used in the open air or in open buildings, any **work on the Mobile Working Platform must be stopped immediately if the wind strength exceeds 6 on the Beaufort scale.** At these wind speeds or at the end of a shift, Mobile Working Platforms must be moved to a location where they are protected from the wind or suitable measures must be taken to secure them against toppling over.

A wind strength of more than 6 can be recognized by noticeable difficulty in walking. If possible, Mobile Working Platforms used outside buildings must be securely fastened to the building itself or to another structure. It is recommended that Mobile Working Platforms be anchored if they are left unattended.



Upward access to Mobile Working Platforms is permitted only on the inside of the scaffolding structure. External access is not permitted.

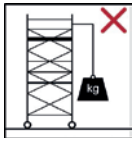


It is not permitted to climb onto and across different Mobile Working Platforms, to climb onto Mobile Working Platforms from other objects or structures or to jump onto deck surfaces.

Due to the maximum load-bearing capacity of the structure, there may be a limit to the number of persons allowed to be present on a working level at any given time. This maximum load on the working level due to persons, tools and material must be checked in advance and be limited if necessary.

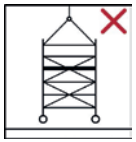
Failure to respect the maximum load limit can overload the structure and/or cause it to collapse. Serious or fatal injuries are possible.

It is not permitted to increase the platform height by using ladders, boxes or other mechanisms.



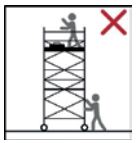
It is not permitted to lift heavy objects by attaching and using lifting gear at Mobile Working Platforms.

It is not permitted to lift Mobile Working Platforms using mechanical equipment.



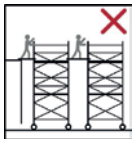
In the standard version, Mobile Working Platforms are not designed to be lifted or suspended.

In certain cases, and following consultation with the manufacturer, it may be possible to reinforce the structure by replacing the appropriate components.



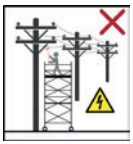
It is not permitted to move the Mobile Working Platform when persons and/or loose objects are present on it.

It is not permissible to stand and move around on unsecured levels/platforms of Mobile Working Platforms.



In the standard version, it is not permitted to establish bridges between different Mobile Working Platforms or between Mobile Working Platforms and other objects or structures.

In certain cases, and following consultation with the manufacturer, it may be possible to reinforce the structure by replacing corresponding components (special construction form) in conjunction with a special verification of stability or a structural strength calculation.



When working with Mobile Working Platforms at or in the vicinity of electrical equipment and overhead cables, it is necessary to respect the following additional instructions.

It is only permissible to assemble and use Mobile Working Platforms if:

- the system has been deactivated.
- the deactivated equipment has been secured against being switched back on.
- the system has been checked for the absence of voltage.
- adjacent live parts have been secured by means of protective devices.
- n the case of work performed in the vicinity of overhead electrical cables, an adequate safety distance as specified in VDE 0105-100 can be / is respected.

3.1 ROLLING TOWERS WITH SAFETY STRUCTURE P2

3.1.1 MEASURES FOR FALL PROTECTION

Suitable measures for fall protection must be taken during assembly, modification or dismantling of the scaffolding structure. Safety Structure P2 implements these protective measures in full.

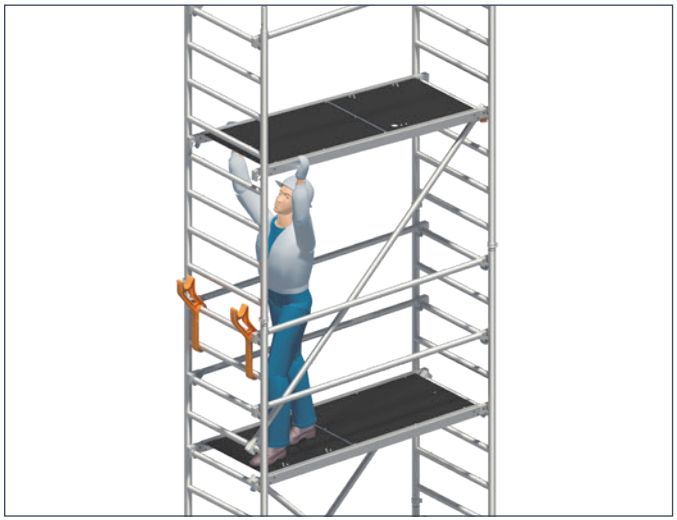
Safety Structure P2

- Platforms with vertical spacing of 2 m.
- Safer design with integrated and collective side protection.

Thanks to the platforms, which are assembled 2 m apart, the handrails can already be fitted from the level underneath and intermediate rails can be fitted from the secured area of the access hatch, so that when the next platform up is accessed there is already a two-part side protection in place on all sides.

1. Attach the first ladder frame.
Attach the Uni assembly hooks and position the second ladder frame in order to fit the guardrails.

2. Swivel the ladder frame with guardrail upwards and fit it in place.



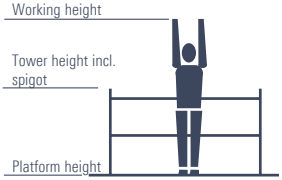
3. Insert diagonal braces and access deck.

4. Assemble the intermediate rails from a secured position in the area of the access hatch.

3.1.2 TOWER MODELS

1406200, 1406310, 1406213 – 1406216

For **assembly outdoors**, comply with the height restriction!



1406200

1406310

1406213

1406214

1406215

1406216

Tower model	1406200	1406310	1406213	1406214	1406215	1406216
Working height [m]	2.86	3.61	4.76	5.76	6.76	7.76
Tower height [m]	1.84	2.84	3.99	4.99	5.99	6.99
Platform height [m]	0,86**	1.61	2.76	3.76	4.76	5.76
Weight [kg] (without ballast)	41.9	75.9	141.7	170.8	193.4	219.2
Ballasting (stated in units)						
Indoors						
Assembly, central	**I4 r4***	I6 r6	0	I2 r2	I4 r4	I4 r4
Assembly, off-centre	X	X	L0 R2	L0 R4	L0 R6	L0 R8
Assembly, off-centre with wall bracing	**I4 r0***	I6 r0	0	L2 R0	L6 R0	L8 R0
Outdoors						
Assembly, central	**I4 r4***	I6 r6	0	I2 r2	I4 r4	I4 r4
Assembly, off-centre	X	X	L0 R2	L0 R6	L0 R8	X
Assembly, off-centre with wall bracing	**I4 r0***	I6 r0	0	L4 R0	L8 R0	L16 R0

* The specified ballast weights are only necessary when the ladder frame is used for external access (e.g. standard is swung out).
** Maximum platform height in model by hooking the platform into the third rung. If the platform is moved downwards then the height is reduced by 25 cm per rung (platform height if connected at the 2nd rung = 0.61 m / in 1st rung = 0.36 m).

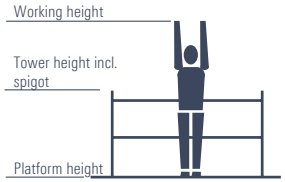
X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each.

The weights are fastened quickly and securely at the right place using the handwheel coupler. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**

Example: I2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
In the case of off-centre assembly, r and R always relate to the side facing away from the tower; I and L relate to the side facing the tower.

1406233 – 1406237
with stabilisers, extendible

For **assembly outdoors**, comply with the height restriction!



1406233 1406234 1406235 1406236 1406237

Tower model	1406233	1406234	1406235	1406236	1406237
Working height [m]	4.61	5.61	6.61	7.61	8.61
Tower height [m]	3.84	4.84	5.84	6.84	7.84
Platform height [m]	2.61	3.61	4.61	5.61	6.61
Weight [kg] (without ballast)	144.6	174.1	196.7	222.5	245.1
Ballasting (stated in units)					
Indoors					
Assembly, central	0	0	0	l2 r2	l2 r2
Assembly, off-centre	L0 R4	L0 R6	L0 R8	L0 R10	L0 R14
Assembly, off-centre with wall bracing	0	0	0	0	0
Outdoors					
Assembly, central	0	0	l2 r2	l4 r4	l8 r8
Assembly, off-centre	L0 R6	L0 R10	L0 R12	L0 R18	L0 R22
Assembly, off-centre with wall bracing	0	0	0	0	0

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each. The weights are fastened quickly and securely at the right place using the handwheel coupler. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**

Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
In the case of off-centre assembly, r and R always relate to the side facing away from the tower; l and L relate to the side facing the tower.

3.1.3 PARTS LIST

Safety Structure P2, tower models 1406200, 1406310, 1406213 – 1406216

Tower model	Ref. No.	1406200	1406310	1406213	1406214	1406215	1406216
Guardrail 1.80 m	1205.180	0	4	4	9	8	13
Diagonal brace 2.50 m	1208.180	0	0	1	2	4	4
Diagonal brace 1.95 m	1208.195	0	0	0	1	0	1
Basic tube 1.80 m	1211.180	0	0	1	1	1	1
Deck 1.80 m	1241.180	1	0	1	0	1	0
Access deck 1.80 m	1242.180	0	1	1	2	2	3
Spring clip	1250.000	0	4	8	12	12	16
Ladder frame 75/4 - 1.00 m	1297.004	0	2	0	2	0	2
Ladder frame 75/8 - 2.00 m	1297.008	0	0	2	2	4	4
Zifa 75 basic tower 1.80 m x 0.75 m	1300.006	1	1	1	1	1	1
Uni assembly hook	1300.010	0	0	1	1	1	1
Castor 400 - 4 kN	1301.150	4	4	4	4	4	4
Mobile beam 1.80 m with ledger	1323.180	0	0	2	2	2	2
End toe board 0.75 m	1438.075	0	2	2	2	2	2
Toe board 1.80 m with claw	1439.180	0	2	2	2	2	2
Ballast	1249.000	For number of ballast weights, see Section 3.1.2: Tower models					

Safety Structure P2 with stabiliser, extendable
Tower models 1406233 – 1406237

Tower model	Ref. No.	1406233	1406234	1406235	1406236	1406237
Guardrail 1.80 m	1205.180	4	9	8	13	12
Diagonal brace 2.50 m	1208.180	1	2	4	4	6
Diagonal brace 1.95 m	1208.195	0	1	0	1	0
Deck 1.80 m	1241.180	1	0	1	0	1
Access deck 1.80 m	1242.180	1	2	2	3	3
Telescoping stabiliser - 2.60m	1248.260	4	4	4	4	4
Rotation lock for stabiliser	1248.261	4	4	4	4	4
Spring clip	1250.000	4	8	8	12	12
Ladder frame 75/4 - 1.00 m	1297.004	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	2	4	4	6
Zifa 75 basic tower 1.80 m x 0.75 m	1300.006	1	1	1	1	1
Uni assembly hook	1300.010	1	1	1	1	1
Castor 400 - 4 kN	1301.150	4	4	4	4	4
End toe board 0.75 m	1438.075	2	2	2	2	2
Toe board 1.80 m with claw	1439.180	2	2	2	2	2
Ballast	1249.000	For number of ballast weights, see Section 3.1.2: Tower models				

3.4 ASSEMBLY SEQUENCE SAFETY STRUCTURE P2

Observe the general directions for assembly and use on pages 5 – 7. The assembly examples shown are intended for use up to a maximum platform height of 12 m indoors and up to a maximum platform height of 8 m outdoors. Snap the snap-on claws of all parts into the ladder frames from above. Level the scaffolding structure after basic assembly.

The castors must be locked during assembly, modification or dismantling and while there is anybody on the scaffolding structure.

Hammer home the wedges in the system until the blow bounces off. Always tighten the screw couplers well (50 Nm).

At the top level, instead of two guardrails **19**, it is also possible to fit a double guardrail **20** or a tower beam **23**. In this case, please note that additional guardrails **19** for an entire level must be present for assembly and dismantling in order to ensure collective side protection as required for the employed assembly variant. These can be removed again after inserting the double guardrails **20** or the tower beam **23**.

The **item numbers** for the components relate to the component list on pages 51 – 54.

BASIC ASSEMBLY
Tower model1406200

Pursuant to the national regulation ASR-2.1 which is applicable in Germany and in the light of DGUV regulation 38 (German accident prevention regulations), Mobile Working Platforms with a platform height of less than 1 m can also be used without the three-part side protection required by standard DIN EN 1004-1.

1. Pull the basic tower **15** open and firmly snap in the joints in the folding part.

2. Insert the castors **1** into the ladder frames **15** of the basic tower and secure them against falling out using the associated bolts and nuts.

3. Snap the deck **29** into the cross-rungs of the basic tower **15**. To do so, only the 1st, 2nd or 3rd rung from below may be used.

At a platform height of less than 1 m, and providing that the necessary ballasting is present, the working level can be accessed by swinging out a standard; alternatively, access is possible by rising from a sitting position from the centre of the working level. In both cases, it is essential to avoid tilting the structure.

BASIC ASSEMBLY
Tower model1406310

1. Pull the basic tower **15** open and firmly snap in the joints in the folding part.

2. Insert the castors **1** into the ladder frames of the basic tower**15** and secure them against falling out using the associated bolts and nuts.

3. Snap the access deck **30** into the top cross-rung of the basic tower **15**.

4. Fit two ladder frames 75/4 **16** onto the basic tower **15** and brace them with four guardrails **19**. Secure the ladder frame joints with spring clips **18**.

5. To complete the working platform, attach toe boards with claw **32** and end toe boards **33**.

BASIC ASSEMBLY
Tower models 1406213 and 1406215

1. Insert the castors **1** into the mobile beams **8/9** and secure them against falling out with the associated bolts and nuts.

2. The mobile beams **8/9** must be connected with a basic tube **10** or optionally with a basic strut **11**.

3. Pull open the basic tower **15**, firmly snap in the joints in the folding part and fit onto the mobile beams **8/9**.

3. Snap the deck **29** into the second rung of the basic tower **15**.

Further assembly is performed as per page 16, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1406214 and 1406216

1. Insert the castors **1** into the mobile beams **8/9** and secure them against falling out with the associated bolts and nuts.
2. The mobile beams **8/9** must be connected with a basic tube **10** or optionally with a **11**.
3. Pull open the basic tower **15**, firmly snap in the joints in the folding part and fit onto the mobile beams **8/9**.
4. Brace the basic tower **15** by installing a guardrail **19** at the bottom rung.
5. Fit an access deck **30** at the top rung of the basic tower **15**.
6. Attach a diagonal brace **25** at the second rung from the top and at the second rung from the bottom of the basic tower ladder frame opposite.
7. Mount two ladder frames 75/4 **16** and connect them using two guardrails **19** each on each side. Secure the ladder frame joints with spring clips **18**.

Further assembly is performed as per page 16, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1406233, 1406235 and 1406237

1. Pull the basic tower **15** open and firmly snap in the joints in the folding part.
2. Insert the castors **1** into the ladder frames **15** of the basic tower and secure them against falling out using the associated bolts and nuts.
3. Snap the deck **29** into the second rung from the bottom of the basic tower **15**.

Further assembly is performed as per page 16, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1406234 and 1406236

1. Pull the basic tower **15** open and firmly snap in the joints in the folding part.

2. Insert the castors **1** into the ladder frames of the basic tower**15** and secure them against falling out using the associated bolts and nuts.

3. Brace the basic tower **15** by installing a guardrail **19** at the bottom rung.

4. Snap the access deck **30** into the top cross-rung of the basic tower.

5. Attach a diagonal brace **25** at the second rung from the top and at the second rung from the bottom of the basic tower ladder frame opposite.

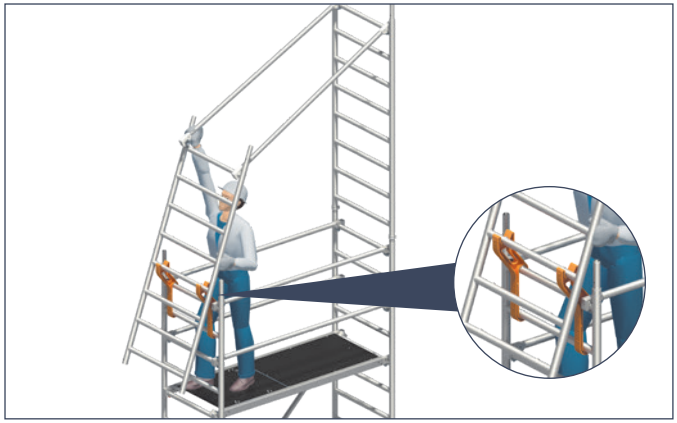
6. Mount two ladder frames 75/4 **16** and connect them using two guardrails **19** each on each side. Secure the ladder frame joints with spring clips **18**.

Further assembly is performed as per page 16, “Assembly of intermediate platforms”.

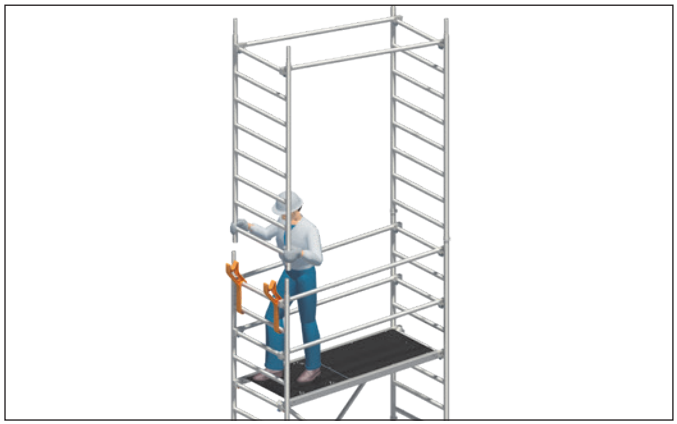
ASSEMBLY OF INTERMEDIATE PLATFORMS
All tower models with Safety Structure P2

Repeat the following assembly steps 1 to 5 several times depending on the assembly height.

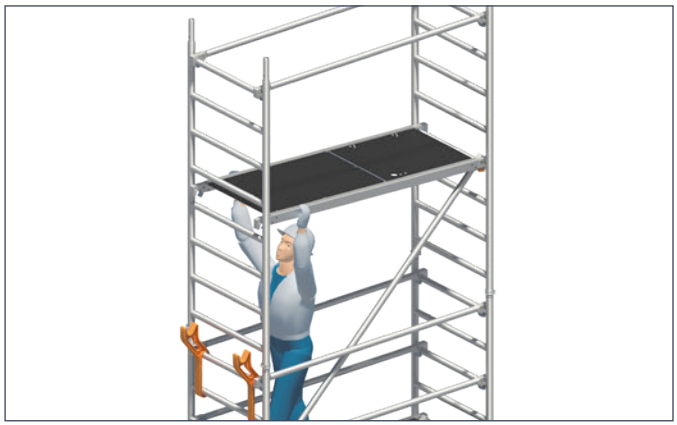
1. Mount the first ladder frame 75/8 **17** and secure it using spring clips **18**.



2. Attach the Uni assembly hooks **31** and position the second ladder frame 75/ 8 **17** in order to fit the guardrails **19**.



3. Swivel the ladder frame 75/8 **17** with guardrails **19** upwards, fit it in place and secure it with spring clips **18**.

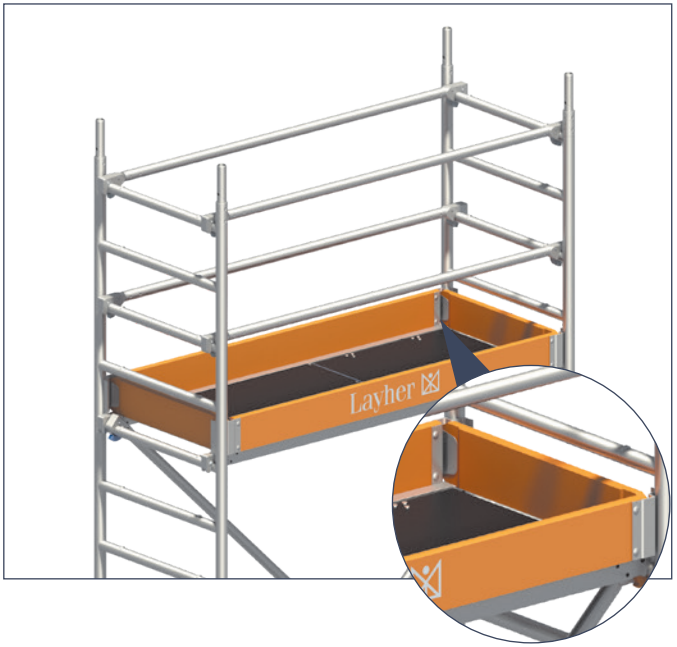


4. Insert diagonal braces **24** and access deck **30**.

*Make sure that the diagonal braces **25** cross over one another and ascend as a tower-like structure (in a zigzag) on both sides.*

5. Climb up on the inside using the rungs of the ladder frame and through the access hatch provided. While sitting in the access hatch opening, protected from falling by the sides of the access deck **30**, assemble the intermediate rail of the next level: to do so, fit the guardrails **19** to the second rungs above the standing surface.

COMPLETING THE WORKING PLATFORM
All tower models for creating the required working platform



To complete the working platform, attach toe boards with claw **32** and end toe boards **33**.

If an intermediate platform is used as a working platform, it is also necessary to attach toe boards here.

3.1.5 DISMANTLING SEQUENCE SAFETY STRUCTURE P2

Repeat the following dismantling steps 1 to 7 or 14 several times depending on the assembly height.

Dismantling is performed in the reverse order to assembly.

When dismantling, do not remove the bracing elements such as diagonal braces, guardrails, decks or access decks until the ladder frames above them have been dismantled.

To lift out the individual parts, open the snap-on claws by pressing their locking clips.

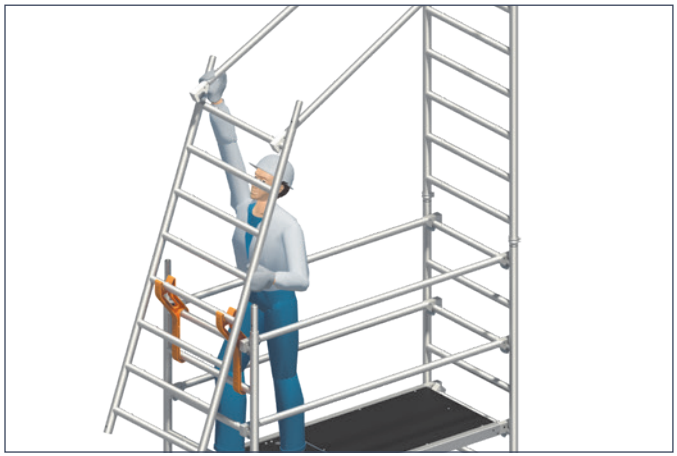
1. Dismantle the toe boards **32/33** (only necessary on the working platform).

2. Dismantle the intermediate rails of the relevant level while sitting in the trapdoor opening, protected from falls by the sides of the access deck **30**. To do this, remove the guardrails **19** at the second rungs above the standing surface. If the snap-on claws of the guardrails **19** are not reachable from the sitting position in the access hatch opening, dismantle as described in **8**. below.

3. Dismantle the access deck **30** and diagonal braces **24**.

4. Attach the Uni assembly hooks **31** at the side of the access hatch opening above and remove the spring clips **18** on one side.

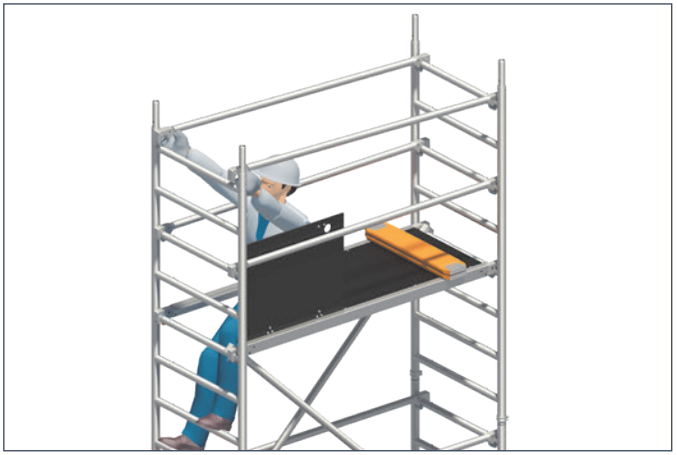
5. Lift out the ladder frame 75/8 **17** on the side of the Uni assembly hooks, swivel downwards with the guardrail and position in the previously mounted Uni assembly hooks **31**.



6. Detach the guardrails on one side **19** from the positioned ladder frame.

7. Dismantle the guardrails **19** by opening the snap-on claw using one of the intermediate rails dismantled under point **2.**. Place the loose guardrail **19** from above onto the second rung and use it as a lever for opening the snap-on claw (see detail).

ALTERNATIVE DISMANTLING SEQUENCE



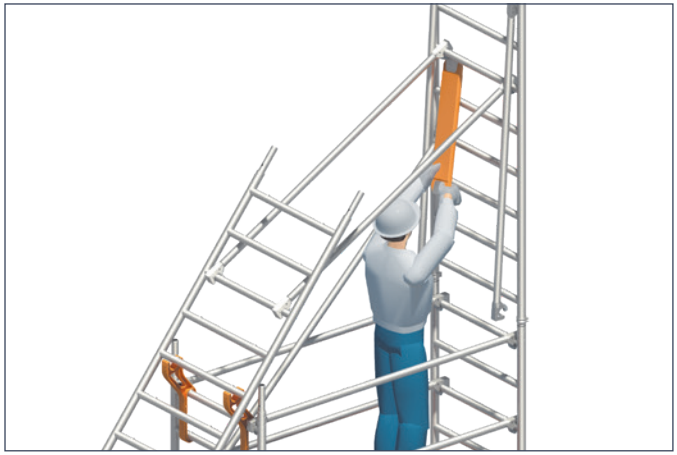
8. While sitting in the access hatch opening, protected from falling by the sides of the access deck **30**, dismantle and put down the snap-on claws of both handrails on one side, the side of the access hatch, 1 metre above the standing surface.

9. After climbing down to the platform underneath, dismantle the access deck **30** and the diagonal braces **24**.

10. Attach the Uni assembly hooks **31** at the side of the access hatch opening above and remove the spring clips **18** on one side.

11. Lift out the ladder frame 75/8 **17** on the Uni assembly hook side and swivel it downwards with the handrails released on one side under 8. and with the still attached intermediate rails, in order to position this unit into the previously fitted Uni assembly hooks **31**. When swivelling it down, make sure that the guardrails **19** released on one side at the top rung of the ladder frame are able to slide outwards, allowing the complete unit to be positioned in the Uni assembly hooks **31**.

12. Moving the upper guardrails **19**, already released on one side, on the outside past the upper ends of the ladder frame positioned in the Uni assembly hooks **31** allows these to be positioned for later dismantling.



13. Using the end toe board **33** or an additionally available guardrail to act as extensions, release the locking clip of the snap-on claws on one of the still attached intermediate rails or guardrails **19** about 2.5 metres up in order to lift out the snap-on claw on one side. After that, release the guardrail **19** released on one side, at the side in which it is positioned in the Uni assembly hooks **31**, and remove it by rotating it 90° about its own axis.

14. Lift out the second remaining intermediate rail or guardrail **19** on one side, the side in which it is positioned in the Uni assembly hooks, and swivel the ladder frame 75/8 **17** into the Uni assembly hooks **31** into a vertical position, so that the three guardrails **19** still remaining can then be removed using the guardrail **19** already removed under **8.** as an extension. Place the loose guardrail **19** onto the rung underneath, for use as a lever to open the locking clip of the snap-on claw (see detail).

3.2 ROLLING TOWERS WITH SAFETY STRUCTURE P2 WITH UNI TELESCOPING GUARDRAIL

3.2.1 MEASURES FOR FALL PROTECTION

Suitable measures for fall protection must be taken during assembly, modification or dismantling of the scaffolding structure. Safety Structure P2 with Uni telescoping guardrail implements these protective measures in full.

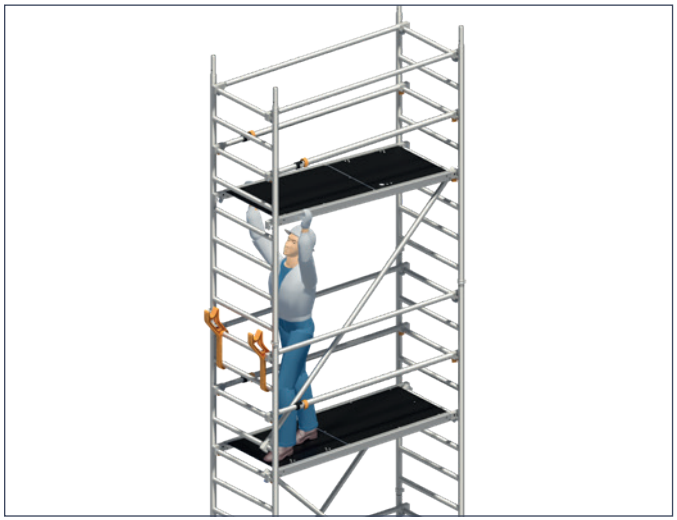
Safety Structure P2 with Uni telescoping guardrail

- Platforms with vertical spacing of 2 m.
- Safer design with integrated and collective advancing side protection.

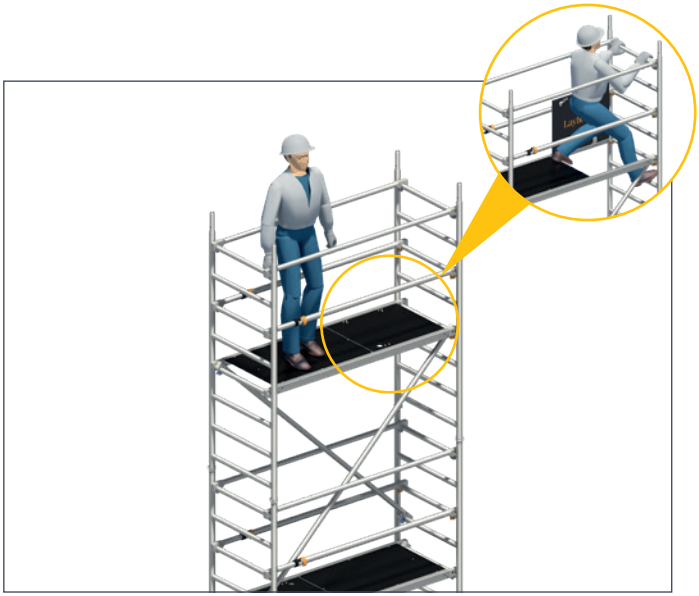
Thanks to the platforms, which are assembled 2 m apart, both the handrails andthe intermediate rails (Uni Telescoping Guardrail) can be fitted from the level underneath it, so that when the next-up platform is accessed there is already a double side protection in place on all sides.

1. Attach the first ladder frame. Attach the Uni assembly hooks and position the second ladder frame in order to fit the guardrails and the Telescoping Guardrails as intermediate rails.

2. Swivel the ladder frame with the guardrails and Uni telescoping guardrails upwards and mount on the ladder frame underneath.



3. Insert diagonal braces and access deck.

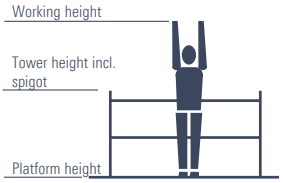


4. Access to the already secured level.

3.2.2 TOWER MODELS

1416213 – 1416216

For **assembly outdoors**, comply with the height restriction!



1406200: no Safety Structure P2 required – see Section 3.1

1406310: no Safety Structure P2 required – see Section 3.1

1416213

1416214

1416215

1416216

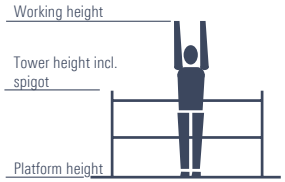
Tower model	1416213	1416214	1416215	1416216
Working height [m]	4.76	5.76	6.76	7.76
Tower height [m]	3.99	4.99	5.99	6.99
Platform height [m]	2.76	3.76	4.76	5.76
Weight [kg] (without ballast)	146.5	178.7	201.3	230.2
Ballasting (stated in units)				
Indoors				
Assembly, central	0	l2 r2	l4 r4	l4 r4
Assembly, off-centre	L0 R2	L0 R4	L0 R6	L0 R8
Assembly, off-centre with wall bracing	0	L2 R0	L6 R0	L8 R0
Outdoors				
Assembly, central	0	l2 r2	l4 r4	l4 r4
Assembly, off-centre	L0 R2	L0 R6	L0 R8	X
Assembly, off-centre with wall bracing	0	L4 R0	L8 R0	L16 R0

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each.
The weights are fastened quickly and securely at the right place using the handwheel coupler. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**
Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
In the case of off-centre assembly, r and R always relate to the side facing away from the tower; l and L relate to the side facing the tower.

1416233 – 1416237

with Uni telescoping guardrail and stabilisers, extendable

For **assembly outdoors,** comply with the height restriction!



1416233 1416234 1416235 1416236 1416237

Tower model	1416233	1416234	1416235	1416236	1416237
Working height [m]	4.61	5.61	6.61	7.61	8.61
Tower height [m]	3.84	4.84	5.84	6.84	7.84
Platform height [m]	2.61	3.61	4.61	5.61	6.61
Weight [kg] (without ballast)	149.8	182.0	204.6	233.5	256.1
Ballasting (stated in units)					
Indoors					
Assembly, central	0	0	0	l2 r2	l2 r2
Assembly, off-centre	L0 R4	L0 R6	L0 R8	L0 R10	L0 R14
Assembly, off-centre with wall bracing	0	0	0	0	0
Outdoors					
Assembly, central	0	0	l2 r2	l4 r4	l8 r8
Assembly, off-centre	L0 R6	L0 R10	L0 R12	L0 R18	L0 R22
Assembly, off-centre with wall bracing	0	0	0	0	0

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each. The weights are fastened quickly and securely at the right place using the handwheel coupler. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**

Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
In the case of off-centre assembly, r and R always relate to the side facing away from the tower; l and L relate to the side facing the tower.

3.2.3 PARTS LIST

Safety Structure P2 with Uni telescoping guardrail, tower models 1416213 – 1416216

Tower model	Ref. No.	1416213	1416214	1416215	1416216
Uni telescoping guardrail	1204.180	2	4	4	6
Guardrail 1.80 m	1205.180	2	5	4	7
Diagonal brace 2.50 m	1208.180	1	2	4	4
Diagonal brace 1.95 m	1208.195	0	1	0	1
Basic tube 1.80 m	1211.180	1	1	1	1
Deck 1.80 m	1241.180	1	0	1	0
Access deck 1.80 m	1242.180	1	2	2	3
Spring clip	1250.000	8	12	12	16
Ladder frame 75/4 - 1.00 m	1297.004	0	2	0	2
Ladder frame 75/8 - 2.00 m	1297.008	2	2	4	4
Zifa 75 basic tower	1300.006	1	1	1	1
Uni assembly hook	1300.010	1	1	1	1
Castor 400, D=150 mm	1301.150	4	4	4	4
Mobile beam with bar	1323.180	2	2	2	2
End toe board	1438.075	2	2	2	2
Toe board with claw	1439.180	2	2	2	2
Ballast	1249.000	Number of ballast weights, see Section 3.2.2: Tower models			

Safety Structure P2 with Uni telescoping guardrail with stabiliser, extendable
Tower models 1416233 – 1416237

Tower model	Ref. No.	1416233	1416234	1416235	1416236	1416237
Uni telescoping guardrail	1204.180	2	4	4	6	6
Guardrail 1.80 m	1205.180	2	5	4	7	6
Diagonal brace 2.50 m	1208.180	1	2	4	4	6
Diagonal brace 1.95 m	1208.195	0	1	0	1	0
Deck 1.80 m	1241.180	1	0	1	0	1
Access deck 1.80 m	1242.180	1	2	2	3	3
Stabiliser, extendable	1248.260	4	4	4	4	4
Rotation lock for stabiliser	1248.261	4	4	4	4	4
Spring clip	1250.000	4	8	8	12	12
Ladder frame 75/4 - 1.00 m	1297.004	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	2	4	4	6
Zifa 75 basic tower	1300.006	1	1	1	1	1
Uni assembly hook	1300.010	1	1	1	1	1
Castor 400, D=150 mm	1301.150	4	4	4	4	4
End toe board	1438.075	2	2	2	2	2
Toe board with claw	1439.180	2	2	2	2	2
Ballast	1249.000	Number of ballast weights, see Section 3.2.2: Tower models				

3.2.4 ASSEMBLY SEQUENCE SAFETY STRUCTURE P2 WITH UNI TELESCOPING GUARDRAIL

Observe the general directions for assembly and use on pages 5 – 7. The assembly examples shown are intended for use up to a maximum platform height of 12 m indoors and up to a maximum platform height of 8 m outdoors. Unless explicitly stated in the text, snap-on claws should generally be snapped onto the ladder frames from above. Level the scaffolding structure after basic assembly. This is done using the threaded spindles of the castors.

The castors must be locked during assembly, modification or dismantling and while there is anybody on the scaffolding structure.

Hammer home the wedges in the system until the blow bounces off. Always tighten the screw couplers well (50 Nm).

At the top level, instead of two guardrails **19**, it is also possible to fit a double guardrail **20** or a tower beam **23**. Please remember in this case that two additional guardrails **19** and two additional Uni telescoping guardrails **22** must be provided for assembly and dismantling in order to ensure collective two-part side protection. These can be removed again after inserting the double guardrails **20** or the tower beams **23**.

The **item numbers** for the components relate to the component list on pages 51 – 54.

BASIC ASSEMBLY
Tower models 1416213 and 1416215

1. Insert the castors **1** into the mobile beams **8/9** and secure them against falling out with the associated bolts and nuts.

2. The mobile beams **8/9** must be connected with a basic tube **10** or optionally with a basic strut **11**.

3. Pull open the basic tower **15**, firmly snap in the joints in the folding part and fit onto the mobile beams **8/9**.

3. Snap the deck **29** into the second rung of the basic tower ladder frames.

Further assembly is performed as per page 30, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1416214 and 1416216

1. Insert the castors **1** into the mobile beams **8/9** and secure them against falling out with the associated bolts and nuts.

2. The mobile beams **8/9** must be connected with a basic tube **10** or optionally with a **11**.

3. Pull open the basic tower **15**, firmly snap in the joints in the folding part and fit onto the mobile beams **8/9**.

4. Brace the basic tower **15** by installing a guardrail **19** at the bottom rung.

5. Fit an access deck **30** at the top rung of the basic tower **15**.

6. Attach a diagonal brace **25** at the second rung from the top and at the second rung from the bottom of the basic tower ladder frame opposite.

7. Mount two ladder frames 75/4 **16** and connect with two guardrails **19** at the top rung and with two Uni telescoping guardrails **22**, each two rungs below them. Secure the ladder frame joints with spring clips **18**.

Further assembly is performed as per page 30, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1416233, 1416235 and 1416237

1. Pull the basic tower **15** open and firmly snap in the joints in the folding part.

2. Insert the castors **1** into the ladder frames **15** of the basic tower and secure them against falling out using the associated bolts and nuts.

3. Snap the deck **29** into the second rung from the bottom of the basic tower **15**.

Further assembly is performed as per page 30, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1416234 and 1416236

1. Pull the basic tower **15** open and firmly snap in the joints in the folding part.

2. Insert the castors **1** into the ladder frames of the basic tower **15** and secure them against falling out using the associated bolts and nuts.

3. Brace the basic tower **15** by installing a guardrail **19** at the bottom rung.

4. Snap the access deck **30** into the top cross-rung of the basic tower **15**.

5. Attach a diagonal brace **25** at the second rung from the top and at the second rung from the bottom of the basic tower ladder frame opposite.

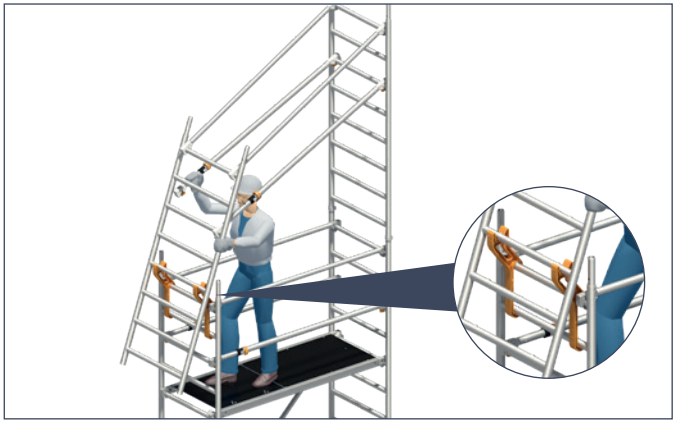
6. Mount two ladder frames 75/4 **16** and connect with two guardrails **19** at the top rung and with two Uni telescoping guardrails **22**, each two rungs below them. Secure the ladder frame joints with spring clips **18**.

Further assembly is performed as per page 30, “Assembly of intermediate platforms”.

ASSEMBLY OF INTERMEDIATE PLATFORMS
All tower models with Safety Structure P2 with Uni telescoping guardrail

Repeat the following assembly steps 1 to 5 several times depending on the assembly height.

1. Mount the first ladder frame 75/8 **17** and secure using spring clips **18**.

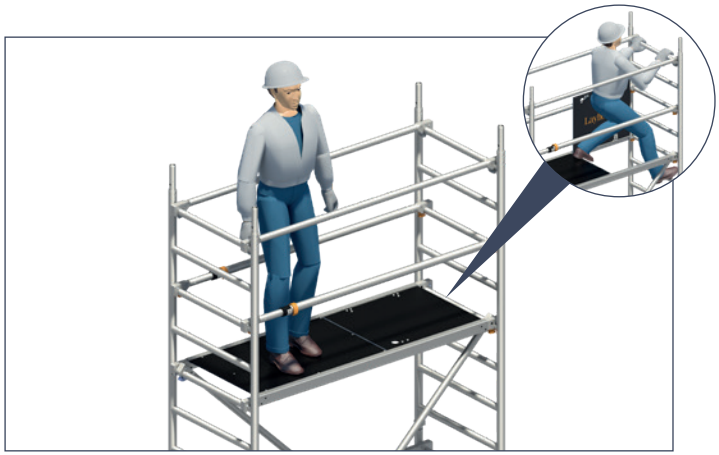


2. Attach the Uni assembly hooks **31** and position the second ladder frame 75/8 **17**. Hook in two guardrails **19**, each at the top rung of the corresponding mounted ladder frame 75/8 **17** and connect it to a second ladder frame 75/8 **17**. Hook in two Uni telescoping guardrails **22**, both two rungs below the guardrails **19**, and connect these to the second ladder frame 75/8 **17** at the corresponding rung.

3. Swivel the second ladder frame 75/8 **17** together with the preassembled side protection upwards and secure using spring clips **18**.

4. Insert both diagonal braces **24** and the access deck **30**.

*Make sure that the diagonal braces **24** cross over one another and ascend as a tower-like structure (in a zigzag) on both sides.*



5. Move onto the next platform up, which is already completely secured by means of two-part side protection.

COMPLETING THE WORKING PLATFORM
All tower models for creating the required working platform

To complete the working platform, attach toe boards with claw **32** and end toe boards **33**.

If an intermediate platform is used as a working platform, it is also necessary to attach toe boards here.

3.2.5 ASSEMBLY SEQUENCE SAFETY STRUCTURE P2 WITH UNI TELESCOPING GUARDRAIL

Repeat the following dismantling steps 1 to 6 several times depending on the assembly height.

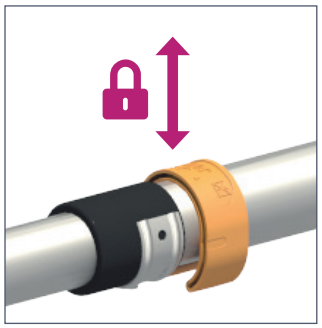
Dismantling is performed in the reverse order to assembly.

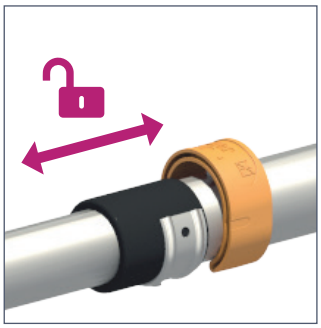
When dismantling, do not remove the bracing elements such as diagonal braces, guardrails, decks or access decks until the ladder frames above them have been dismantled.

To lift out the individual parts, open the snap-on claws by pressing their locking clips.

1. Dismantle the toe boards **32/33** (only necessary on the working platform).

2. Before coming down, make sure that the plastic spring clips of the Uni telescoping guardrails **22** are released so that the guardrail is able to telescope (see detailed images).

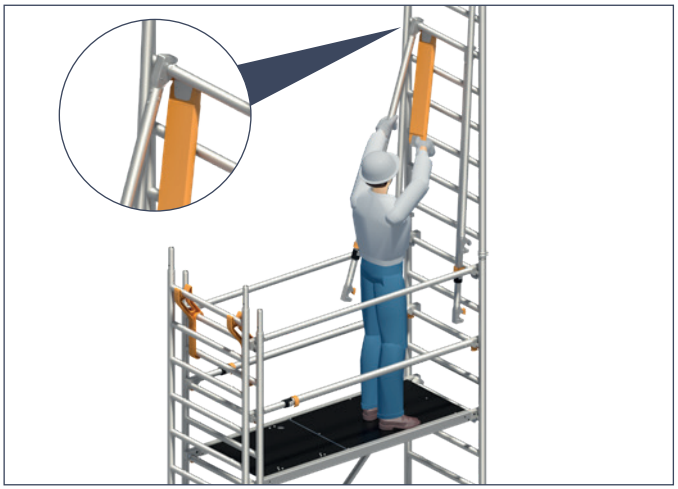




3. After climbing down to the platform underneath, dismantle the access deck **30** and the diagonal braces**24**.

4. Attach the Uni assembly hooks **31** on one side and remove the spring clips **18** on the same side.

5. Lift out the ladder frame 75/8 **17** on the Uni assembly hook side, swing downwards together with the still assembled side protection and position in the Uni assembly hooks **31**.



6. Dismantling the side protection. Release all the snap-on claws of the Uni telescoping guardrails **22** and the guardrails **19** from the rungs of the ladder frame 75/8 **17** on the side positioned in the Uni assembly hooks **31**. All the guardrails can be left suspended at the opposite ladder frame 75/8 **17** and remain there until the ladder frame positioned in the Uni assembly hook **31** has been secured against falling or tipping. The side protection can then be completely dismantled. Using an end toe board **33** or an additionally available guardrail **19** to act as an extension, first release the locking clips of the snap-on claws from the Uni Telescoping Guardrails **22** about 2.5 metres up in order to lift out the snap-on claw from the rungs. Next, dismantle the guardrail **19** fitted above it in the same way.

3.3 ROLLING TOWERS WITH SAFETY STRUCTURE P2 SAFETY[PLUS] WITH DOUBLE GUARDRAIL

3.3.1 FALL PROTECTION MEASURES

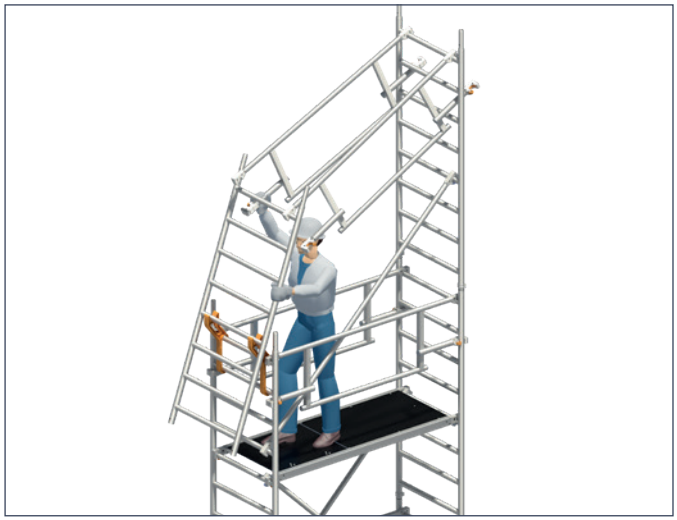
Suitable measures for fall protection must be taken during assembly, modification or dismantling of the scaffolding structure. Safety Structure P2 SAFETY[PLUS] with double guardrail implements these protective measures in full.

Safety Structure P2 SAFETY[PLUS]

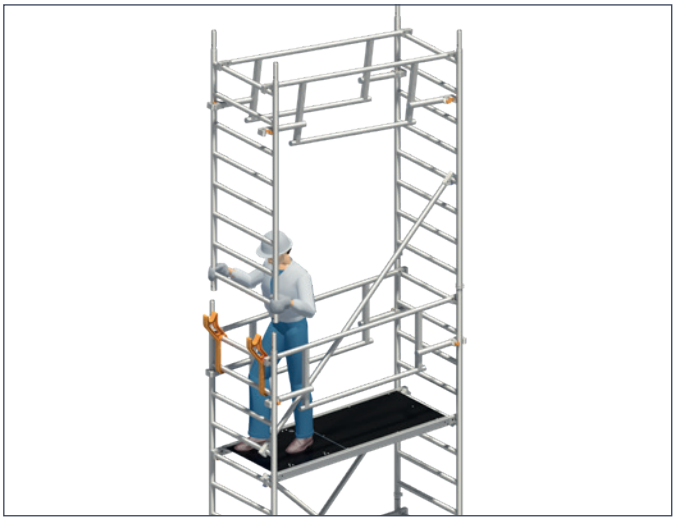
with double guardrail

- Platforms with vertical spacing of 2 m.
- Safer design with integrated and collective advancing side protection.

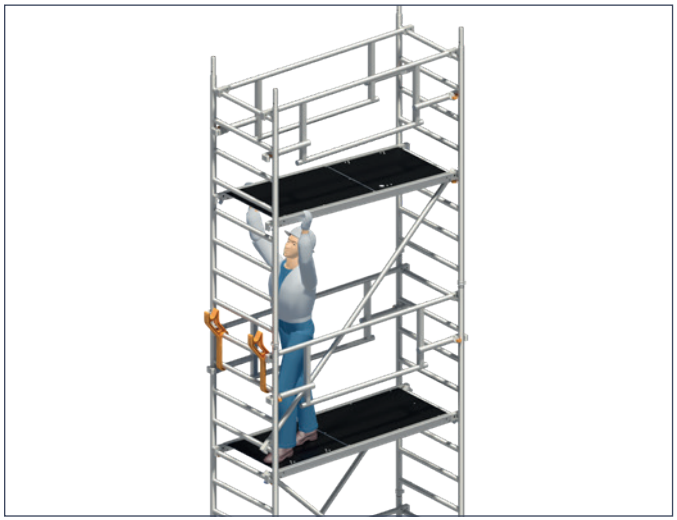
Thanks to the platforms, which are assembled 2 m apart, the required side protection can be assembled and dismantled only and unavoidably from the already secured level below it, so that there is already a double side protection in place on all sides when both accessing and leaving the next-up platform.



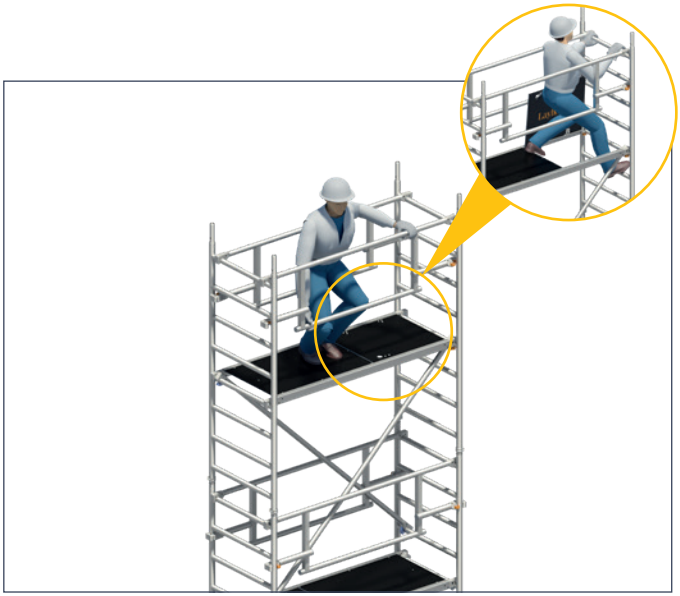
1. Attach the first ladder frame. Attach the Uni assembly hooks and position the second ladder frame in order to fit the double guardrail on both sides.



2. Swivel the ladder frame with double guardrail upwards and fit it on the ladder frame below.



3. Insert diagonal braces and access deck.

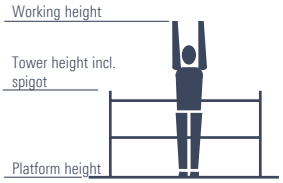


4. Access to the already secured level and final snapping into place of the double guardrail (lower snap-on claws) into the ladder frame.

3.3.2 TOWER MODELS

1426213 – 1426216

For **assembly outdoors**, comply with the height restriction!



1406200: no Safety Structure P2 required – see Section 3.1

1406310: no Safety Structure P2 required – see Section 3.1

1426213

1426214

1426215

1426216

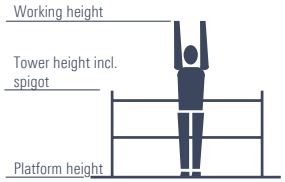
Tower model	1426213	1426214	1426215	1426216
Working height [m]	4.76	5.76	6.76	7.76
Tower height [m]	3.99	4.99	5.99	6.99
Platform height [m]	2.76	3.76	4.76	5.76
Weight [kg] (without ballast)	147.1	179.7	202.34	231.7
Ballasting (stated in units)				
Indoors				
Assembly, central	0	l2 r2	l4 r4	l4 r4
Assembly, off-centre	L0 R2	L0 R4	L0 R6	L0 R8
Assembly, off-centre with wall bracing	0	L2 R0	L6 R0	L8 R0
Outdoors				
Assembly, central	l2 r2	l4 r4	l4 r4	X
Assembly, off-centre	L0 R6	L0 R8	X	X
Assembly, off-centre with wall bracing	L4 R0	L8 R0	L16 R0	X

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each.
The weights are fastened quickly and securely at the right place using the handwheel coupler. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**
Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
In the case of off-centre assembly, r and R always relate to the side facing away from the tower; l and L relate to the side facing the tower.

1426233 – 1426237

with double guardrail and stabilisers, extendable

For **assembly outdoors**, comply with the height restriction!



1426233 1426234 1426235 1426236 1426237

Tower model	1426233	1426234	1426235	1426236	1426237
Working height [m]	4.61	5.61	6.61	7.61	8.61
Tower height [m]	3.84	4.84	5.84	6.84	7.84
Platform height [m]	2.61	3.61	4.61	5.61	6.61
Weight [kg] (without ballast)	150.3	183.0	205.6	235.0	257.6
Ballasting (stated in units)					
Indoors					
Assembly, central	0	0	0	l2 r2	l2 r2
Assembly, off-centre	L0 R4	L0 R6	L0 R8	L0 R10	L0 R14
Assembly, off-centre with wall bracing	0	0	0	0	0
Outdoors					
Assembly, central	0	l2 r2	l4 r4	l8 r8	X
Assembly, off-centre	L0 R10	L0 R12	L0 R18	L0 R22	X
Assembly, off-centre with wall bracing	0	0	0	0	X

X = not permissible / not possible 0 = no ballast required For ballasting, use Layher ballast weights, Ref. No. 1249.000, of 10 kg each. The weights are fastened quickly and securely at the right place using the handwheel coupler. All heights stated without possible spindle extension! The max. spindle extension of the relevant assembly variants can be found in the corresponding section! **Do not use any liquid or granular ballast substances. The ballast weights must be distributed evenly to all ballasting fixing points.**

Example: l2, r2 → Fasten 2 ballast weights of 10 kg each to the ladder frame on its left-hand side, and 2 ballast weights of 10 kg each on its right-hand side.
L6, R16 → Fasten 6 ballast weights of 10 kg each to the mobile beam on its left-hand side, and 16 ballast weights of 10 kg each on its right-hand side
In the case of off-centre assembly, r and R always relate to the side facing away from the tower; l and L relate to the side facing the tower.

3.3.3 PARTS LIST

Safety Structure P2 SAFETY[PLUS] with double guardrail, tower models 1426213 – 1426216

Tower model	Ref. No.	1426213	1426214	1426215	1426216
Guardrail 1.80 m	1205.180	0	1	0	1
Diagonal brace 2.50 m	1208.180	1	2	4	4
Diagonal brace 1.95 m	1208.195	0	1	0	1
Basic tube 1.80 m	1211.180	1	1	1	1
Safety double guardrail	1216.180	2	4	4	6
Deck 1.80 m	1241.180	1	0	1	0
Access deck 1.80 m	1242.180	1	2	2	3
Spring clip	1250.000	8	12	12	16
Ladder frame 75/4 - 1.00 m	1297.004	0	2	0	2
Ladder frame 75/8 - 2.00 m	1297.008	2	2	4	4
Zifa 75 basic tower	1300.006	1	1	1	1
Uni assembly hook	1300.010	1	1	1	1
Castor 400, D=150 mm	1301.150	4	4	4	4
Mobile beam with bar	1323.180	2	2	2	2
End toe board	1438.075	2	2	2	2
Toe board with claw	1439.180	2	2	2	2
Ballast	1249.000	For number of ballast weights, see Section 3.3.2: Tower models			

Safety Structure P2 SAFETY[PLUS] with double guardrail with stabiliser, extendable
Tower models 1426233 – 1426237

Tower model	Ref. No.	1426233	1426234	1426235	1426236	1426237
Guardrail 1.80 m	1205.180	0	1	0	1	0
Diagonal brace 2.50 m	1208.180	1	2	4	4	6
Diagonal brace 1.95 m	1208.195	0	1	0	1	0
Safety double guardrail	1216.180	2	4	4	6	6
Deck 1.80 m	1241.180	1	0	1	0	1
Access deck 1.80 m	1242.180	1	2	2	3	3
Stabiliser, extendable	1248.260	4	4	4	4	4
Rotation lock for stabiliser	1248.261	4	4	4	4	4
Spring clip	1250.000	4	8	8	12	12
Ladder frame 75/4 - 1.00 m	1297.004	0	2	0	2	0
Ladder frame 75/8 - 2.00 m	1297.008	2	2	4	4	6
Zifa 75 basic tower	1300.006	1	1	1	1	1
Uni assembly hook	1300.010	1	1	1	1	1
Castor 400, D=150 mm	1301.150	4	4	4	4	4
End toe board	1438.075	2	2	2	2	2
Toe board with claw	1439.180	2	2	2	2	2
Ballast	1249.000	For number of ballast weights, see Section 3.3.2: Tower models				

3.3.4 ASSEMBLY SEQUENCE SAFETY STRUCTURE P2 SAFETY^{PLUS} WITH DOUBLE GUARDRAIL

Observe the general directions for assembly and use on pages 5 – 7. The assembly examples shown are intended for use up to a maximum platform height of 12 m indoors and up to a maximum platform height of 8 m outdoors. The snap-on claws of the parts should generally be fully engaged. Level the scaffolding structure after basic assembly. This is done using the threaded spindles of the castors.

The castors must be locked during assembly, modification or dismantling and while there is anybody on the scaffolding structure.

Hammer home the wedges in the system until the blow bounces off. Always tighten the screw couplers well (50 Nm).

The **item numbers** for the components relate to the component list on pages 51 – 54.

BASIC ASSEMBLY
Tower models 1426213 and 1426215

1. Insert the castors **1** into the mobile beams **8/9** and secure them against falling out with the associated bolts and nuts.

2. The mobile beams **8/9** must be connected with a basic tube **10** or optionally with a basic strut **11**.

3. Pull open the basic tower **15**, firmly snap in the joints in the folding part and fit onto the mobile beams **8/9**.

3. Snap the deck **29** into the second rung of the basic tower ladder frames.

Further assembly is performed as per page 42, “Assembly of intermediate platforms”.

BASIC ASSEMBLY
Tower models 1426214 and 1426216

1. Insert the castors **1** into the mobile beams **8/9** and secure them against falling out with the associated bolts and nuts.

2. The mobile beams **8/9** must be connected with a basic tube **10** or optionally with a **11**.

3. Pull open the basic tower **15**, firmly snap in the joints in the folding part and fit onto the mobile beams **8/9**.

4. Brace the basic tower **15** by installing a guardrail **19** at the bottom rung.

5. Fit a ladder frame 75/4 **16**.Hook two safety double guardrails **21** onto the topmost rung using the snap-on housings at the top handrail and connect to a second ladder frame 75/8 **17** that has previously been positioned on the opposite side at an angle to the outside, again at the topmost rung.

In each case, make sure that the claws come up against the rung's shift preventer on the inside (bulge on the top side of the rung) in order to allow the lower claws to swivel freely.

Then swivel the second ladder frame 75/8 **17** upwards and fit *into the spigots of the mobile beam* **8/9**

6. Fit an access deck **30** at the top rung of the basic tower **15**.

7. Attach a diagonal brace **25** at the second rung from the top and at the second rung from the bottom of the basic tower ladder frame opposite.

8. Move up and onto the next platform up, which is already completely secured by means of two-part side protection. Fix the safety double guardrail **21** by pressing gently towards the outside in order to engage the lower claws in the upright tube of the ladder frames.

Further assembly is performed as per page 42, "Assembly of intermediate platforms".

BASIC ASSEMBLY
Tower models 1426234 and 1426236

1. Pull the basic tower **15** open and firmly snap in the joints in the folding part.

2. Insert the castors **1** into the ladder frames of the basic tower**15** and secure them against falling out using the associated bolts and nuts.

3. Brace the basic tower **15** by installing a guardrail **19** at the bottom rung.

4. Fit a ladder frame 75/4 **16**.Hook two safety double guardrails **21** onto the topmost rung using the snap-on housings at the top handrail and connect to a second ladder frame 75/4 **16** that has previously been positioned on the opposite side at an angle to the outside, again at the topmost rung.

In each case, make sure that the claws come up against the rung's shift preventer on the inside (bulge on the top side of the rung) in order to allow the lower claws to swivel freely.

Then swivel the second ladder frame 75/4 **16** upwards and fit *into the spigots of the mobile beam* **8 / 9**

5. Snap the access deck **30** into the top cross-rung of the basic tower **15**.

6. Attach a diagonal brace **25** at the second rung from the top and at the second rung from the bottom of the basic tower ladder frame opposite.

7. Move up and onto the next platform up, which is already completely secured by means of two-part side protection. Fix the safety double guardrail **21** by pressing gently towards the outside in order to engage the lower claws in the upright tube of the ladder frames.

Further assembly is performed as per page 42, "Assembly of intermediate platforms".

BASIC ASSEMBLY
Tower models 1426233, 1426235 and 1426237

1. Pull the basic tower **15** open and firmly snap in the joints in the folding part.

2. Insert the castors **1** into the ladder frames **15** of the basic tower and secure them against falling out using the associated bolts and nuts.

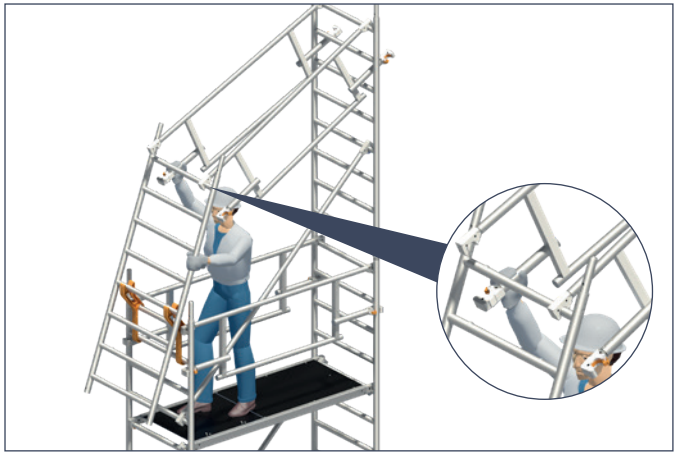
3. Snap the deck **29** into the second rung from the bottom of the basic tower **15**.

Further assembly is performed as per page 42, "Assembly of intermediate platforms".

ASSEMBLY OF INTERMEDIATE PLATFORMS
All tower models with Safety Structure P2 SAFETY PLUS with double guardrail

Repeat the following assembly steps 1 to 5 several times depending on the assembly height.

1. Mount the first ladder frame 75/8 **17** and secure it using spring clips **18**.



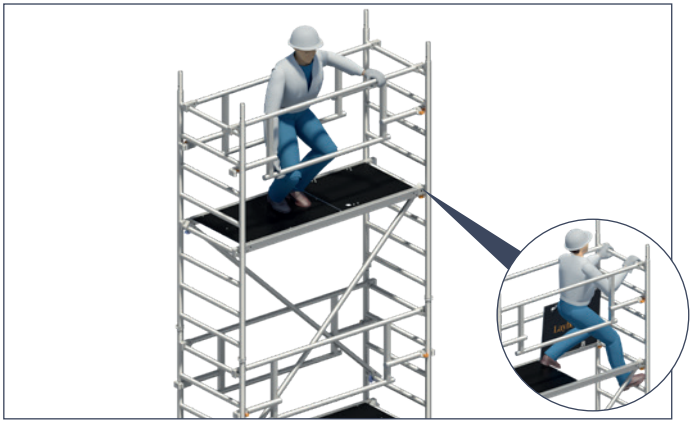
2. Attach the Uni assembly hooks **31** and position the second ladder frame 75/8 **17**, install a diagonal brace **24** rising from the ladder frame 75/8 **17** on the Uni assembly hook side **31** to the already mounted ladder frame 75/8 **17**, hook two safety double guardrails **21** with the snap-on housings at the top handrail in the top rung of the fitted ladder frame 75/8 **17** and connect them to the second ladder frame 75/8 **17**, which was previously positioned in the Uni assembly hook **31**, again at the top rung.

It must be ensured here that the claws each contact the inside of the shift preventer on the rung (bulge on the top of the rung) to allow the lower claws to swivel freely.

3. Swivel the ladder frame 75/8 **17** upwards out of its position in the Uni assembly hooks **31**, mount it and secure it using spring clips **18**.

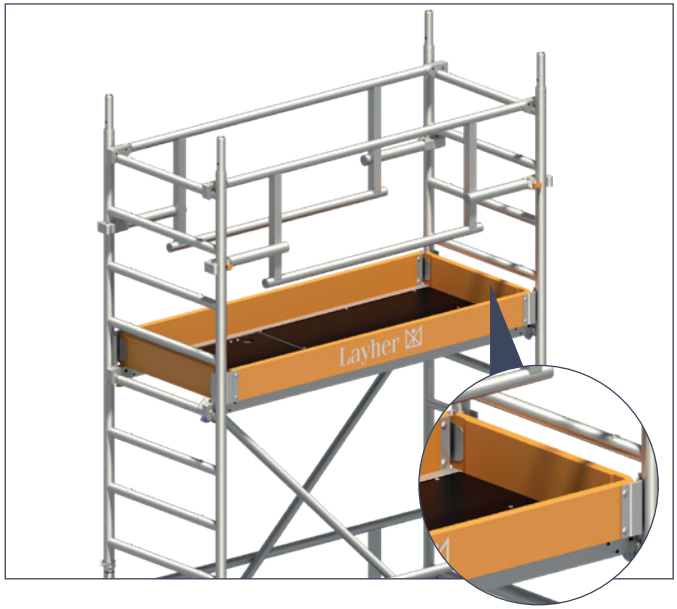
4. Insert the second diagonal brace **24** and the access deck **30**.

*Make sure that the diagonal braces **24** cross over one another and ascend as a tower-like structure (in a zigzag) on both sides.*



5. Move up and onto the next platform up, which is already completely secured by means of two-part side protection. Fix the safety double guardrails **21** by pressing gently towards the outside in order to engage the lower claws in the upright tube at the ladder frames.

COMPLETING THE WORKING PLATFORM
All tower models for creating the required working platform



To complete the working platform, attach toe boards with claw **32** and end toe boards **33**.

If an intermediate platform is used as a working platform, it is also necessary to attach toe boards here.

3.3.5 DISMANTLING SEQUENCE SAFETY STRUCTURE P2 SAFETY[PLUS] WITH DOUBLE GUARDRAIL

Repeat the following assembly steps 1 to 5 several times depending on the assembly height.

Dismantling is performed in the reverse order to assembly.

When dismantling, do not remove the bracing elements such as diagonal braces, guardrails, decks or access decks until the ladder frames above them have been dismantled.

To lift out the individual parts, open the snap-on claws by pressing their locking clips.

1. Dismantle the toe boards **32/33** (only necessary on the working platform).

2. Before coming down, make sure that the fastening of the safety double guardrail **21** has been undone by releasing the lower claws at the upright tube of the ladder frame 75/8 **17**. This is easier if you lift it slightly when unlocking it. After releasing the fastening, position each of the safety double guardrails **21** with the upper claws inside at the rung's shift preventer (bulge at the top of the rung) again in order to allow the lower claws to swivel freely.

3. After climbing down to the platform below, attach the Uni assembly hooks **31** and you can remove the spring clips **18** above.

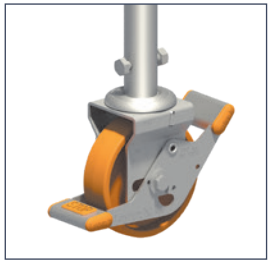
4. Dismantle the access deck **30** and the diagonal brace **24** that climbs upwards in the direction of the previously mounted Uni assembly hooks **31**.

5. Lift out the ladder frame 75/8 **17** on the Uni assembly hook side and swivel it downwards together with the two safety double guardrails **21** and then position it in the Uni assembly hooks **31**.

6. Lift the two safety double guardrails **21** out of the ladder frame 75/8 **17** positioned in the Uni assembly hooks **31** and place down suspended on one side at the ladder frame 75/8 **17** opposite. Secure the ladder frame positioned in the Uni assembly hooks **31** against falling or tipping and then remove the safety double guardrail **21** from its suspended position. Dismantle the second diagonal brace **24** so that the ladder frame 75/8 **17** that is still mounted can be removed.

4. CASTORS

OPERATING THE CASTOR



During assembly and while working, lock the castors by pressing down the brake lever labelled STOP. When the brake is locked, the lever labelled STOP must be in the down position. To move the structure, unlock the castors by pressing the opposite lever.

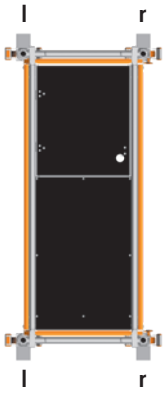
5. BALLASTING

Attachment of ballast weights

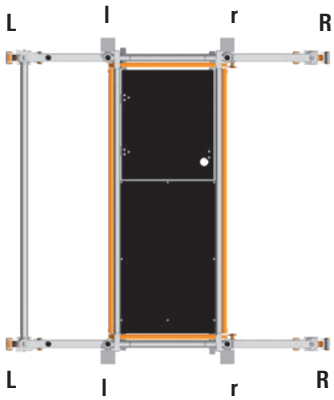
Ballasting does not depend on the assembly variant, and applies for the tower models stated in each case. The figures are shown by way of example and refer to Safety Structure P2.

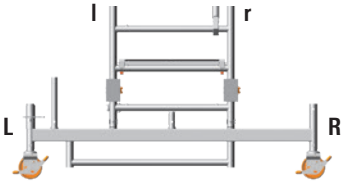
Assembly, central:

Models:
1406200
1406310



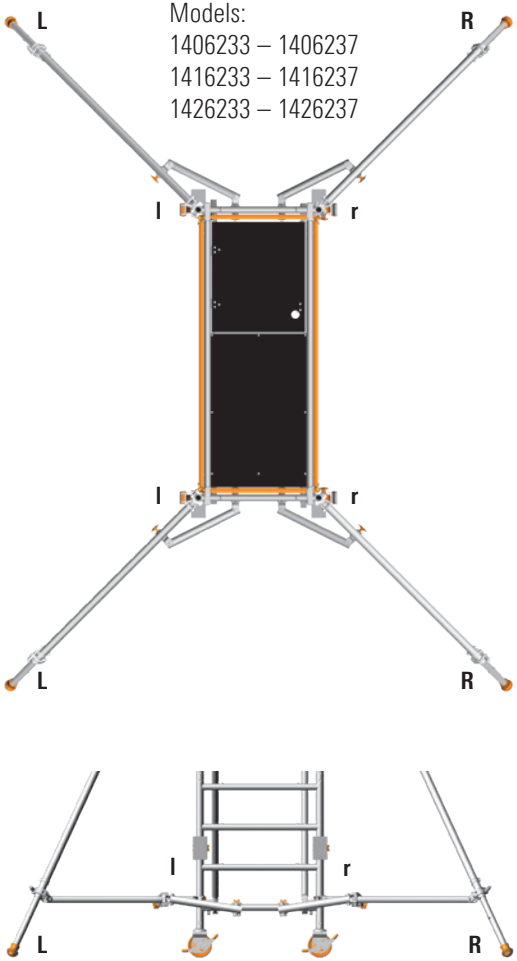
Models:
1406213 – 1406216
1416213 – 1416216
1426213 – 1426216





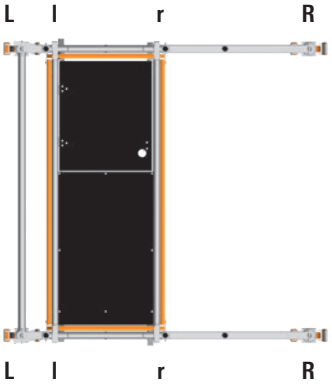
When attaching large numbers of the ballast weights required in any given case, it is possible that additional tubular components with a tube diameter of 48.3 mm may be needed as extensions at or in close proximity to the fixing points. These components (e.g. Uni distance tube, couplers, basic strut or basic tube) are not counted in the number of ballast weights in the model description or the parts lists and must be taken into account for the respective model and associated assembly site and be included as part of the assembly.

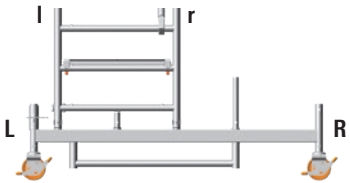
Models:
1406233 – 1406237
1416233 – 1416237
1426233 – 1426237



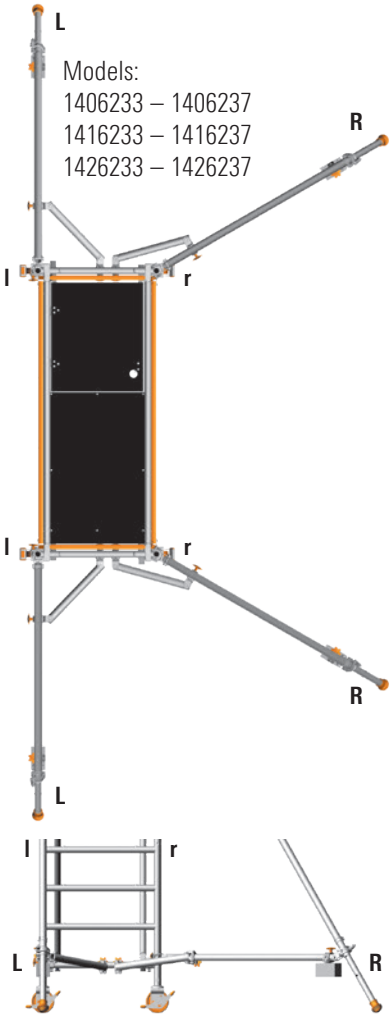
Assembly, off-centre:

Models:
1406213 – 1406216
1416213 – 1416216
1426213 – 1426216





Models:
1406233 – 1406237
1416233 – 1416237
1426233 – 1426237



For the off-centre assembly variant with wall bracing the bracing must always be attached on the side “L”.

Example for assembly of model 1406215

Assembly outdoors in central position

Ballast: see corresponding “Tower models” section

Tower model	1406215
Working height [m]	6.76
Tower height [m]	5.98
Platform height [m]	4.76
Weight [kg] (without ballast)	191.4
Ballasting	
Indoors	
Assembly, central	I4 r4
Assembly, off-centre	L0 R6
Assembly, off-centre with wall bracing	L6 R0
Outdoors	
Assembly, central	I4 r4
Assembly, off-centre	L0 R8
Assembly, off-centre with wall bracing	L8 R0

The ballasting is independent of the assembly variant. The figure is shown by way of example and refers to Safety Structure P2.

6. ATTACHING THE STABILISERS

Before assembly, please note Section "Basic assembly for rolling tower models without mobile beams". With this assembly form, the fixed and adjustable mobile beams are dispensed with. They are replaced by extendable stabilisers.

Ballasting does not depend on the assembly variant. The figures are shown by way of example and refer to Safety Structure P2.

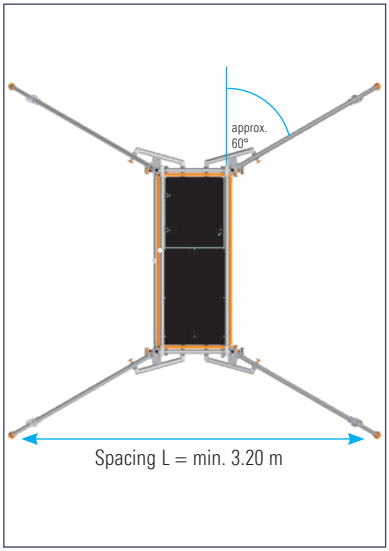
Attach a stabiliser **34** to each stile of the ladder frame **16/17** as follows. Position the upper half-coupler of the stabiliser **34** at the appropriate height on the ladder frame **16/17**. Then, before finally tightening the handwheels, position the transverse tube by means of the half-coupler, also at the appropriate height on the ladder frame **16/17**. After alignment of the stabilisers in the correct position (against wall or free-standing) and ensuring a firm stand on the ground, tighten the half-couplers using the handwheels. It must be ensured that the spring clips safely engage in the telescoping parts of the extendable stabiliser.

Set the alignment of the stabilisers as follows:
Free-standing assembly:
in each case about 60° to the tower longitudinal side (Fig. left).
Assembly against a wall
On the wall side about 90° to the tower end face.
Side facing away from the wall about 60° to the tower longitudinal side (Fig. right).

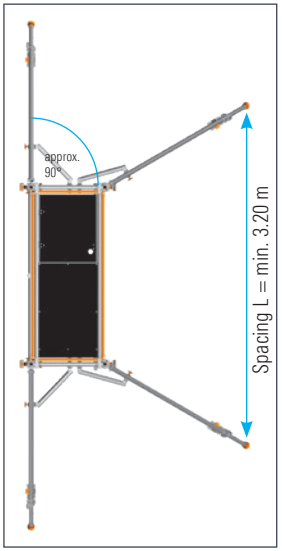
The specified angles can be checked after attachment of the stabilizers on the basis of the length dimensions "Spacing L". To ensure that the position of the stabilisers cannot change, for example due to inadvertent rotation, attach the tower rotation lock **35** to the stabiliser **34**. Position the tower rotation lock between the ladder frame and the stabiliser **34** such that one half-coupler is fastened to the transverse tube of the stabiliser and the second half-coupler to the ladder frame rung. After positioning, tighten the half-couplers using the handwheels. When moving the Mobile Working Platform, do not lift the stabiliser more than 2 cm off the ground.

Correct ballasting of the individual models is specified in the table for ballasting (see the corresponding “Tower models” section). For work performed on a load-bearing wall, wall bracing can be fitted on both sides of the tower, allowing a reduction of the ballasting in accordance with the table.

Free-standing assembly



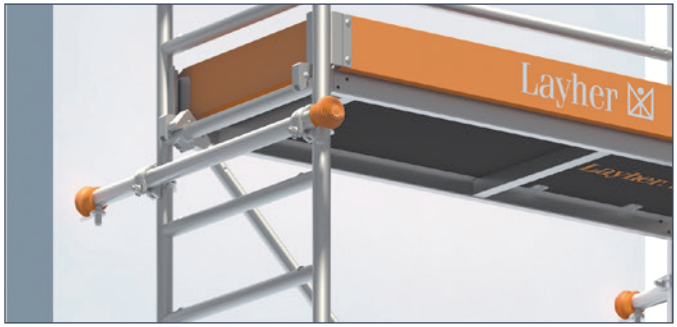
Assembly against a wall



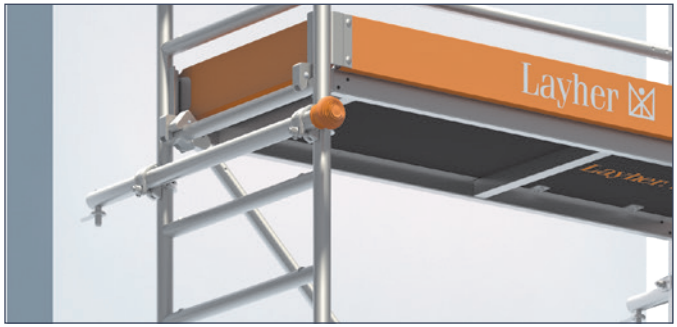
7. WALL BRACING (under compression) ANCHORING (under compression and tension)

For work performed on a load-bearing wall, ballasting can be reduced in accordance with the **Ballasting** table (see pages 10 – 12). In this case, wall bracing or anchoring must be installed on both sides of the tower. Use the Uni distance tube **27** and fix it to the ladder frame **16/17** using two couplers **28** in each case. Position the rubber mount at the wall (see detail A) to provide support. Use the Uni distance tube, rotated by 180°, for anchoring and fit it into an eyebolt (see detail B) which was attached to the wall previously. The mobile beams must be installed so that they project from the side facing away from the wall. Attach the wall supports / anchoring at the height of the top working platform or at most 1 m below that.

Wall bracing / anchoring does not depend on the assembly variant. The figures are shown by way of example and refer to Safety Structure P2.



Detail A



Detail B

8. COMPONENTS OF THE SYSTEM

1

1301.150 Castor 400, D=150 mm
Plastic wheel, with twin brake lever, permissible load: 4 kN (≈ 400 kg)

Functioning predecessor article 1308.150 (not shown) can remain in use.

2

1303.150 Castor 400, D=150 mm with polyurethane tyre
Plastic wheel with polyurethane tyre, special wheel for sensitive floors, permissible load: 4 kN (≈ 400 kg)

Functioning predecessor article 1309.150 (not shown) can remain in use.

3

1300.150 Castor, D=150 mm with base plate 250
Plastic wheel, with base plate, adjustment range 0.2 – 0.35 m, spindle nut with lock, wheel with twin brake lever and load centring when braked, permissible load capacity: 7 kN (≈ 700 kg)

4

1359.200 Castor 700
Plastic wheel, D=200 mm. With base plate, adjustment range 0.30 – 0.60 m, spindle nut with lock, castor with twin brake lever and load centring when braked, permissible load: 7.0 kN (≈ 700 kg)

Functioning predecessor article 1259.200 / 1259.201 (not shown) can remain in use.

5

1358.200 Castor 700 with polyurethane tyre
Plastic wheel, D=200 mm. With base plate, adjustment range 0.30 – 0.60 m, spindle nut with lock, castor with twin brake lever and load centring when braked, permissible load: 7.0 kN (≈ 700 kg)

Functioning predecessor article 1268.200 / 1259.201 (not shown) can remain in use.

6

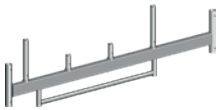
1260.201 Castor 1000
Plastic wheel, D=200 mm of polyamide. With base plate, adjustment range 0.30 – 0.60 m, spindle nut with lock, castor with twin brake lever and load centring when braked, permissible load: 10 kN (≈ 1,000 kg)

Functioning predecessor article 1260.200 (not shown) can remain in use.

7

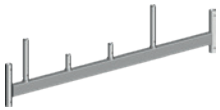
1260.202 Castor 1000 with electrically conductive polyurethane tyre
Plastic wheel, D=200 mm of polyamide with tyre of electrically conductive polyurethane. With base plate, adjustment range 0.30 – 0.60 m, spindle nut with lock, castor with twin brake lever and load centring when braked. Permissible load 10 kN (≈ 1,000 kg). Special castor for sensitive floors and, thanks to electrical conductivity, usable in explosion-proof or in ESD-risk areas, electrical leakage resistance as per DIN EN 12526 < 10^4 Ω.

8



1323.180 Mobile beam with access ledger
Steel rectangular tube, hot-dip-galvanised, for base widening in towers

9



1214.180 Mobile beam
Steel rectangular tube, hot-dip-galvanised, for base widening in towers

10

1211.180 Basic tube
Steel tube, hot-dip-galvanised

11

1324.180 Basic strut
with 2 half-couplers, steel tube hot-dip-galvanised.

12

1344.002 Access ledger
Aluminium

13

1249.000 Ballast (10 kg)
Steel, hot-dip-galvanised with half-coupler

14

1337.000 Spigot, adjustable
Steel, hot-dip-galvanized.
For system structures in combination with Ref. No. 1338.320

15

1300.006 Zifa 75 basic tower
Aluminium, dimensions when folded: 0.95 x 1.50 x 0.30 m

16

1297.004 Ladder frame
Aluminium, rungs with non-slip grooving

17

1297.008 Ladder frame
Aluminium, rungs with non-slip grooving

18

1250.000 Spring clip
Steel

19

1205.180 Guardrail
Aluminium

20

1206.180 Double guardrail
Aluminium

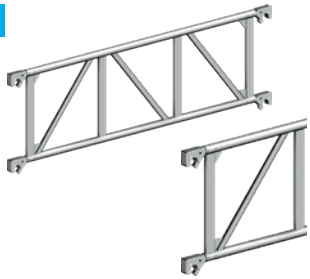
21

1216.180 Safety double guardrail
Double guardrail 1.80 m, aluminium

22

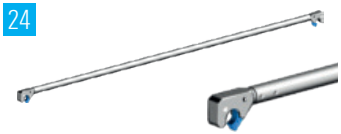
1204.180 Uni telescoping guardrail
1.80 m + 2.85 m

23



1207.180 Beam
Aluminium for use as support element in scaffolding construction kit or as double side protection.

24

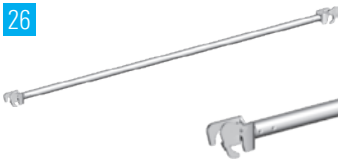


1208.180 Diagonal brace
Aluminium

25

1208.195 Diagonal brace
Aluminium

26



1347.250 Deck diagonal brace
Aluminium

27

1275.110 Uni distance tube
Aluminium tube with hook and rubber mount.

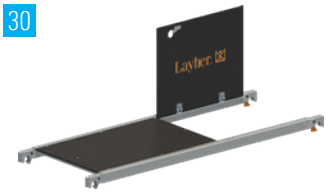
28

4700.019 / 4700.022 Double coupler
Steel, galvanised

29

1241.180 Deck
Aluminium frame, with plywood deck with phenolic resin coating

30

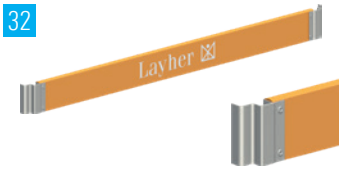


1242.180 Access deck
Aluminium frame, with plywood deck and hatch with phenolic resin coating

31

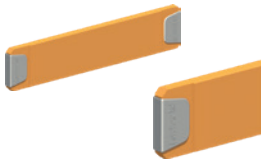
1300.010 Uni assembly hook
Pair

32



1439.180 Toe board with claw
Wood

33



1438.075 End toe board
Wood

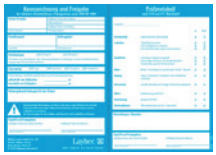
34

1248.260 Stabiliser, extendable
Aluminium

35

1248.261 Rotation lock for stabiliser

36



6344.400 Tower identification block
Block consisting of 50 units.

37

6344.011 See-through pocket
for Ref. No. 6344.400, 10 items with integr. prohibition sign

9. CERTIFICATE

In order to ensure up-to-date documentation, you can obtain the appropriate certificate on request using the contact details stated overleaf.

The currently available certificate applies to the assembly form **3.1 Rolling towers with Safety Structure P2. Assembly forms 3.2 Rolling towers with Safety Structure P2 with Uni telescoping guardrail and 3.3 Rolling towers with Safety Structure P2 SAFETY**PLUS are currently undergoing certification and the corresponding certificates will be made available as soon as they have been issued.

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