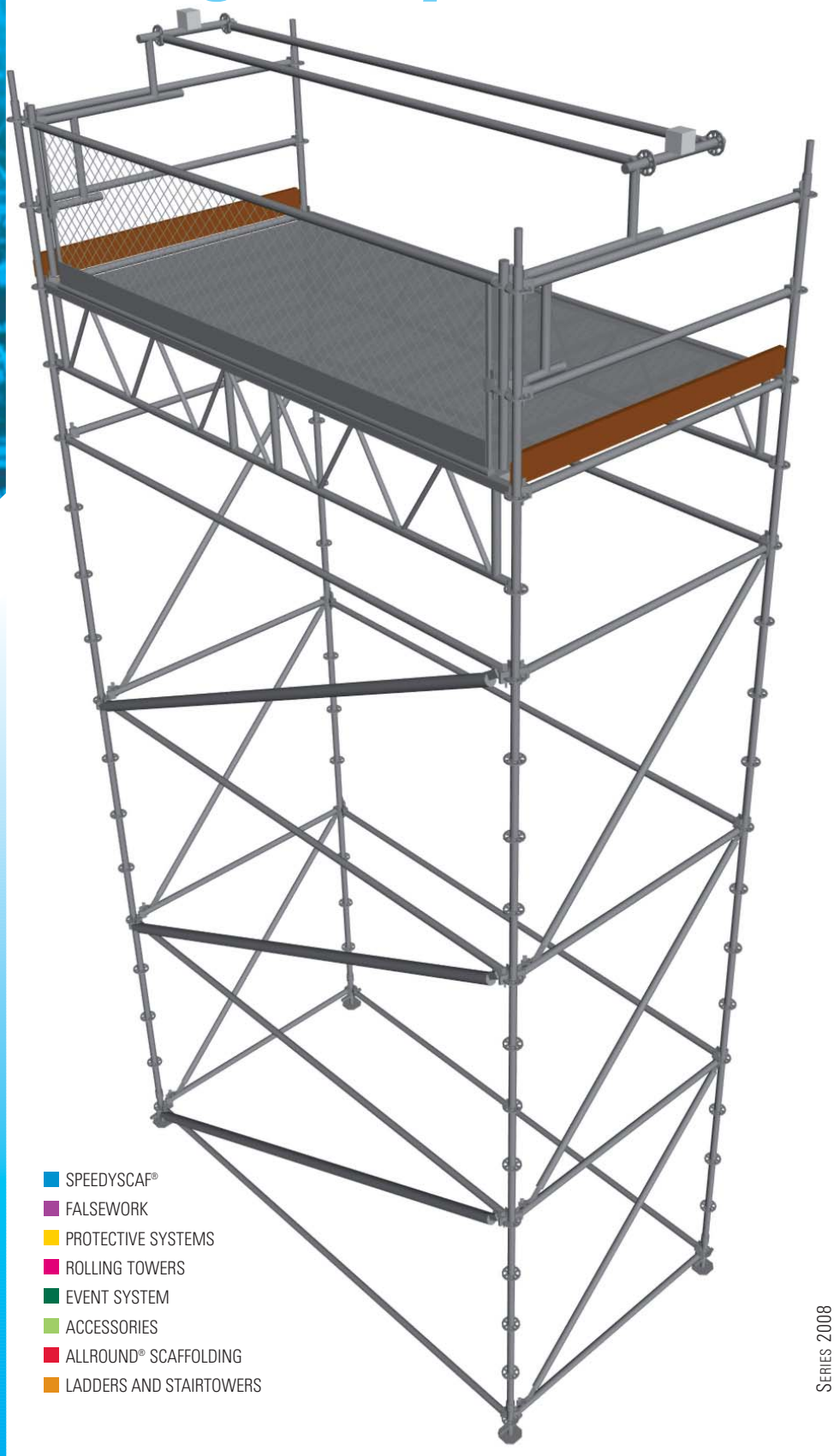
Update

Layher®

Loading towers and gate systems



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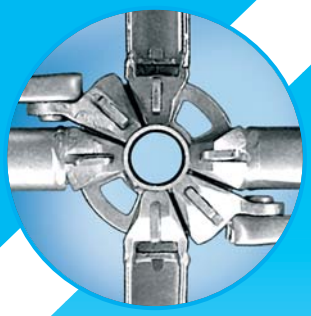
- LADDERS AND STAIRTOWERS

SERIES 2008

Proven systems from the number 1 in Europe



Massive capacity with a host of features

Key features

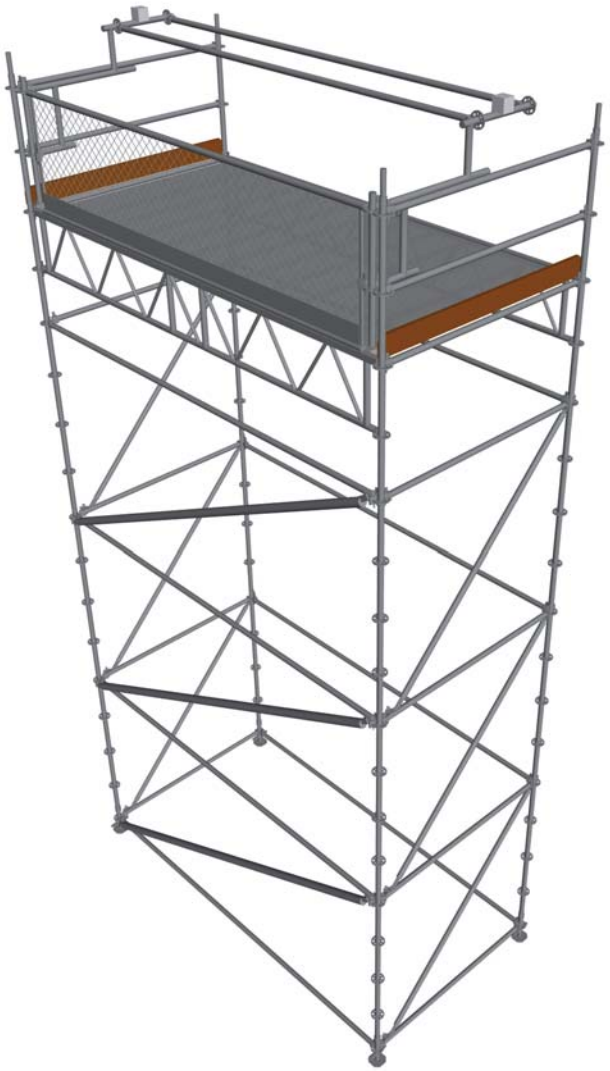
- More material available for use when it's needed, where it's needed.
- Constructed entirely from Layher parts, with no investment required for special, bespoke components.
- All parts usable in other scaffolding applications, maximising versatility.
- Wide tower dimensions – up to 4.14 m – provides maximum space and simplifies large, awkward load movement.
- Less material and erection time means greater workforce productivity and reduced down time.
- Design overcomes potential complications of conventional tube and fitting towers.

The Layher range of loading towers will allow more efficient use of your plant and workforce, saving you time and money. With over 50% more load carrying capacity than conventional towers and requiring 50% less parts and reduced labour time, the Layher range has a massive capacity of up to 15 kN/m². Importantly, this excellent loading capacity can be achieved from standard Layher Allround® parts – enhancing component versatility and maximising cost effectiveness – simply offering you more possibilities.

Design Every aspect of the Layher loading tower and gate range is the result of meticulous analysis and design input. From ease of erection and dismantling, to ensuring the maximum possible working area is available – and with simplicity of handling a key consideration – every installation benefits from a commitment to design and testing that is at the heart of Layher's 60 years' success.

Manufacture From material specification to testing procedures and comprehensive traceability, every original Layher component is guaranteed to simplify use and maximise effectiveness. With a commitment to combining high strength with light weight, all Layher loading tower and gate systems leave our factory ready for the most demanding of installations.

Safety The Layher commitment to safety is paramount with every aspect of design and manufacture and is fully echoed in the range of training courses and the installation guidance available to all users. Full equipment compliance with appropriate standards – benefiting from close and established working relationships with the leading organisations in the field – helps to put safe erection, use and dismantling at the heart of every installation.



Support The well-established Layher UK office in Letchworth, fully supported by our head office in Germany, ensures the support that one would expect of a leader in the industry is available to users of every Layher system. This applies directly to the range of loading towers and gates and can include a list of services from site visits to working drawings and from installation advice to training. With ongoing access to our extensive experience, we believe our back up and support capability is second to none.

15 kN/m² TOWER

U-Lattice girder configuration

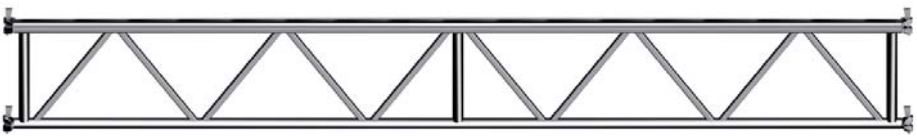
A loading tower with a highly versatile **15 kN/m²** bay loading capacity can be specified using the Layher U-Lattice girder construction. Strength is enhanced by a design that uses four Wedge Heads and features the Layher U profile top cord which allows Layher Steel Decking to be fitted directly into the girder. Where more than one gate is required, the loading tower pivots within a 2.5 m lift.

Bay sizes

4.14 x 1.57 **2.57 x 1.57**
3.07 x 1.57

Tower parts required

2603.2.00/3.00/4.00	Layher Standards
2620.1.57/2.57/ 3.07/4.14	Layher Diagonal Brace 1.57m/2.57m/3.07m/4.14m
2607.1.57/2.07/2.57/ 3.07/4.14	Layher Ledger 1.57m/2.07m/2.57m/3.07m/4.14m
2656.2.57/3.07/4.14	Layher U-Lattice Girder 2.57m/3.07m/4.14m
3812.1.57	Layher Steel Decks 1.57m
2634.1.57/2.07/2.57/ 3.07/4.14	Layher L.A.L.O 1.57m/2.07m/2.57m/3.07m/4.14m
1757.1.57/2.07/2.57/ 3.07/4.14	Layher Universal Toe board 1.57m/2.07m/2.57m/3.07m/4.14m
1249.000	10Kg Ballast
0714.419	20Kg Ballast



10 kN/m² TOWER

U-Lattice girder configuration

Bay sizes

4.14 x 2.07 **2.57 x 2.07**
3.07 x 2.07

Tower parts required

2603.2.00/3.00/4.00	Layher Standards
2620.1.57/2.57/ 3.07/4.14	Layher Diagonal Brace 1.57m/2.57m/3.07m/4.14m
2607.1.57/2.07/2.57/ 3.07/4.14	Layher Ledger 1.57m/2.07m/2.57m/3.07m/4.14m
2656.2.57/3.07/4.14	Layher U-Lattice Girder 2.57m/3.07m/4.14m
3812.2.07	Layher Steel Decks 2.07m
2634.1.57/2.07/2.57/ 3.07/4.14	Layher L.A.L.O 1.57m/2.07m/2.57m/3.07m/4.14m
1757.1.57/2.07/2.57/ 3.07/4.14	Layher Universal Toe board 1.57m/2.07m/2.57m/3.07m/4.14m
1249.000	10Kg Ballast
0714.419	20Kg Ballast

Purlin configuration

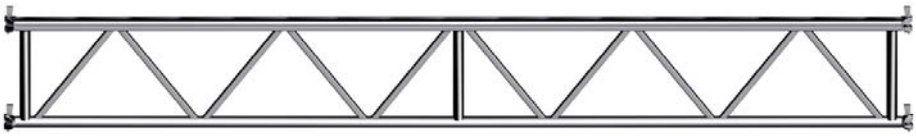
Bay sizes

2.07 x 1.57 **2.07 x 2.07**
2.57 x 1.57 **2.57 x 2.07**
3.07 x 1.57 **3.07 x 2.07**

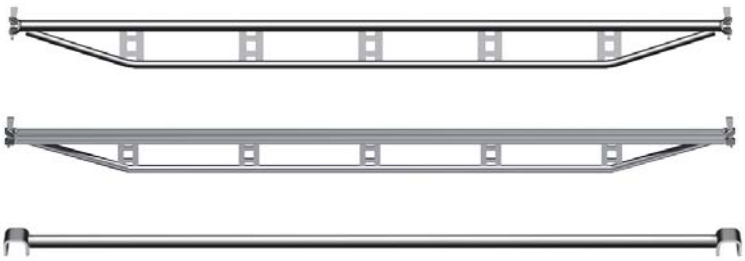
Tower parts required

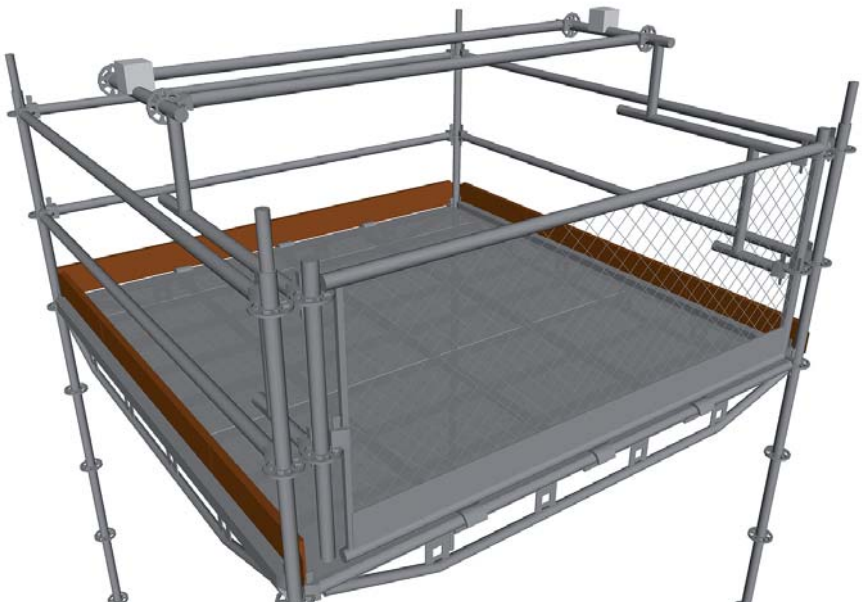
2603.2.00/3.00/4.00	Layher Standards
2620.1.57/2.57/ 3.07/4.14	Layher Diagonal Brace 1.57m/2.57m/3.07m/4.14m
2607.1.57/2.07/2.57	Layher Ledger 1.57m/2.07m/2.57m
2624.2.07/2.57	Layher U-Bridging Ledger 2.07m/2.57m
2625.2.07/2.57	Layher O-Bridging Ledger 2.07m/2.57m
0721.383/384	Layher Purlin 1.57m/2.07m
3812.2.07/2.57/3.07	Layher Steel Decks 2.07m/2.57m/3.07m
2634.1.57/2.07/2.57	Layher L.A.L.O 1.57m/2.07m/2.57m
1757.1.57/2.07/2.57	Layher Universal Toe board 1.57m/2.07m/2.57m
1249.000	10Kg Ballast
0714.419	20Kg Ballast

The Layher U-Lattice girder can also be used where the loading tower with a **10 kN/m²** bay loading is required. Featuring a larger platform than its 15 kN/m² stablemate due to the length of steel deck used, the slightly reduced load capacity allows a deeper platform to be constructed giving more room for larger loads. Where more than one gate is required, the loading tower pivots within a 2.5 m lift.



10 kN/m² capacity towers can also be constructed without the use of the U-Lattice girder. Standard U-Bridging and O-Bridging ledgers as well as Layher's purlins can be utilised to give a higher load capacity tower than can be achieved with standard tower configurations. The main advantage of this tower design sees gates that can pivot within a 2.0 m lift, allowing them to be located on every 2.0 m decked lift if required.





Wide choice of capacities

Loading bay capacities

kN/m²

Length of Support Ledger	Length of Decks					
	1.09	1.40	1.57	2.07	2.57	3.07
1.09**	25.00	22.00	18.00	11.40	7.50	5.00
1.40**	19.11	14.90	13.27	10.07	7.50	5.00
1.57*	25.00	21.66	18.00	11.40	7.50	5.00
2.07*	15.87	12.36	11.02	8.36	6.73	5.00
2.57*	9.39	7.31	6.52	4.95	3.98	3.33
3.07*	6.59	5.13	4.57	3.47	2.79	2.34

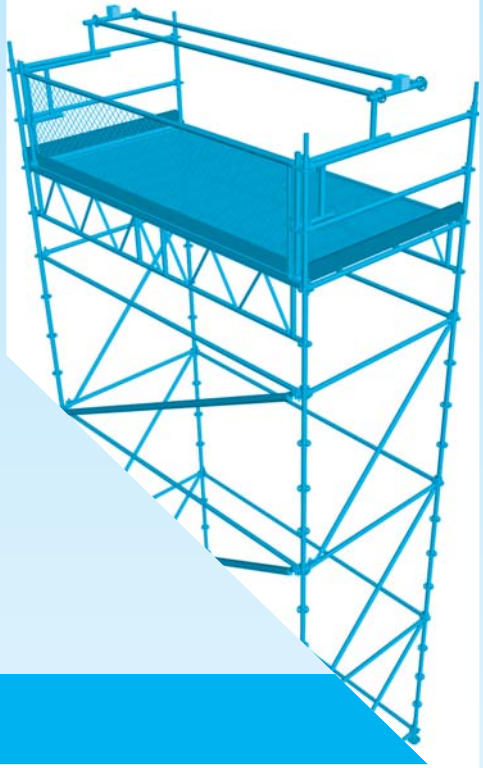
* U-bridging ledger
** Reinforced U-transom

Loading bay capacities

Total safe load kN (uniformly distributed)

Length of Support Ledger	Length of Decks					
	1.09	1.40	1.57	2.07	2.57	3.07
1.09	29.70	33.57	30.80	25.72	21.01	16.73
1.40	29.16	29.20	29.17	29.18	26.99	21.49
1.57	42.78	47.61	44.37	37.05	30.26	24.10
2.07	35.81	35.82	35.81	35.82	35.80	31.77
2.57	26.30	26.30	26.31	26.33	26.29	26.27
3.07	22.05	22.05	22.03	22.05	22.01	22.05

Loads shown are for single bay application only and do not apply to birdcage structures

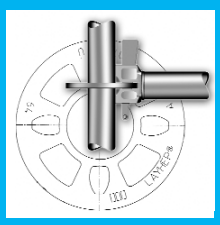


Safety first

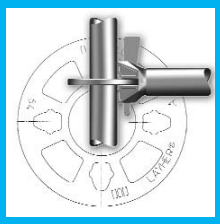
Correctly assembled, Layher loading towers and gates will provide years of reliable and effective performance. As with all equipment, safety is paramount particularly with regard to the following key factors –

- Caution should be taken during assembly, alteration and dismantling of all Layher Allround® scaffolding to ensure there is no risk of falls. Scaffolding assembly work should be performed to avoid the risk of falls as far as possible and to ensure that the residual risk is minimised. Assembly situations where there is a risk of falls are indicated in equipment instructions.
- Wedges must be hammered home immediately after assembly of the components using a 500 g metal hammer until the blow bounces off.
- The wedge couple must be hammered tight using a 500 g metal hammer until the blow bounces off. Screw couplers must be tightened with a 50 Nm torque.
- Scaffolding must only be erected on sufficiently strong surfaces. Before assembling Layher Allround® structures, the surface must be checked for sufficient load-bearing capacity. Suitable load-distributing bases must be selected.
- The maximum spindle extension lengths must not be exceeded. One-sided positioning of the base plate can cause excessive stresses in its cross-section and collapse of the scaffolding.
- Anchoring must be installed continually as scaffolding assembly progresses. In the case of free-standing structures, the maximum ratios of height to width must not be exceeded. If necessary, stability must be assured by ballasting or bracing.
- Decks must be prevented from being lifted out by lift-off preventers. Only the temporary boards intended for this purpose may be used here, in compliance with their maximum span and loading capacity.
- No personal or loose objects may be on rolling towers when these are being moved. The wheels of the mobile tower must be locked unless the tower is being moved. Mobile towers may only be used on flat surfaces.

Please note that with Allround® scaffolding of steel the following two variants must be distinguished –



Variant II – made until 1999



K2000+ – made starting 2000

Loading tower – erection guidance

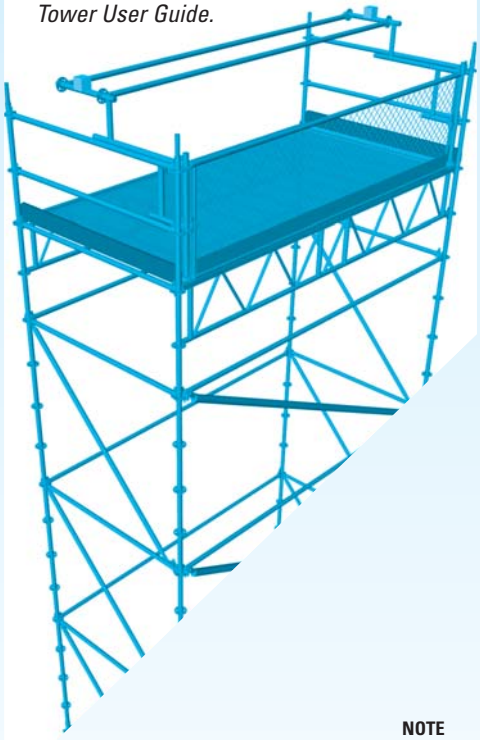
Loading tower scaffolding can be used extensively for –

- Inspection work in industrial plant, shipyards and similar locations.
- As mobile towers (supplemented by Layher rolling tower wheels).
- As the basis for birdcage scaffolding.
- For dissipating vertical loads as support scaffolding (supplemented by Layher jacks).

Because Layher Allround® equipment is automatically erected as a rectangle, correct installation ensures rapid, safe and economical assembly and dismantling.

It is important that the surfaces are checked for sufficient load bearing capacity and that the layout is suitable for load-distributing bases.

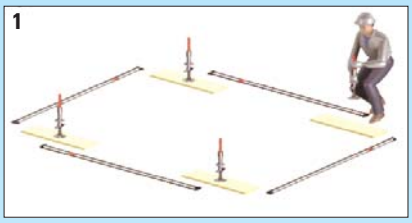
For full details of erection, refer to the *Layher Allround® Scaffolding Instructions for Assembly and Use* and the *Loading Tower User Guide.*



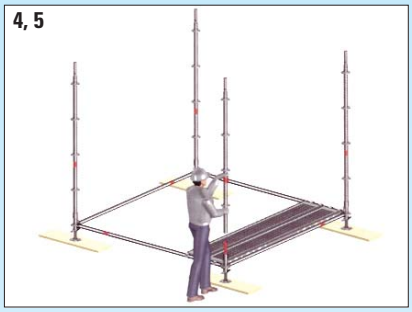
NOTE

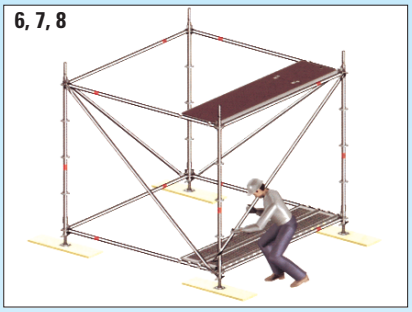
The products or assembly variants shown in these instructions for assembly and use may be subject to country specific regulations. The product user bears the responsibility for compliance with such regulations. Subject to local regulations, we reserve the right not to supply all the products illustrated here. Your local Layher partner will be happy to provide advice and answers to all questions relating to the product and to its use or specific assembly regulations.

Simple, quick, safe…

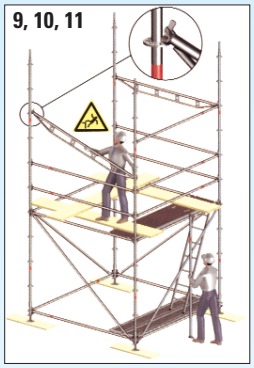


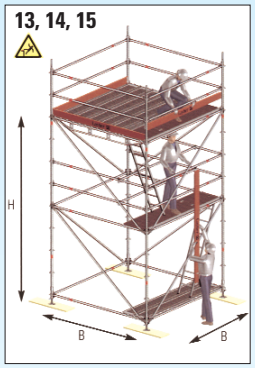
1 Lay out ledgers and place load-distributing bases at the corners.
2 Position adjustable baseplates with attached base collars on load-distributing bases.
3 Connect ledgers in the small holes of the rosettes, align the base frame of the tower scaffolding using a spirit level, and knock in the wedges.





4 Insert decks in the access area.
5 Fit vertical standards.
6 Fit ledgers.
7 Insert the access deck, close the lift-off preventer.
8 Stiffen all four sides of the scaffolding using vertical diagonal braces.



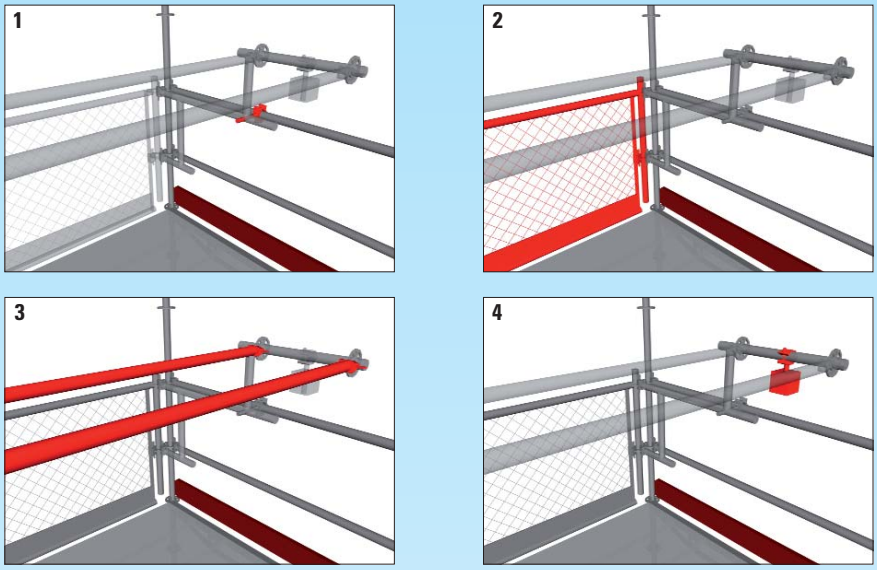


9 Lay temporary boards, complying with their maximum span.
10 Assemble the two-piece side protection at the intermediate level as shown.
11 Fit the bridging ledgers and other ledgers of the working level. If constructing the 10 kN/m² purlin tower, substitute the two ledgers for O-bridging ledgers and three Layher tower purlins of the required size.
12 Fit access deck and steel decks, then close the lift-off preventer.
13 Install vertical diagonal braces on all four sides of the intermediate level.
14 Attach support ledgers as side protection on the inside of the access deck in the intermediate level. Knock in the wedge to prevent the support ledger from shifting.
15 On the working level, install the three-part side protection all the way round.

The stability of the tower scaffolding must be verified in every individual case. If necessary, stability must be assured by anchoring, ballasting, bracing or widening of the scaffolding. Tower scaffolding made of Layher Allround® steel scaffolding components is considered stable when –

- The ratio of height H to lowest base width B is no more than 3:1 – in the case of open-air construction where the height does not exceed 8 m.
- Or not more than 4:1 in the case of construction in closed rooms – where the height does not exceed 12 m.

Loading gate – erection guidance



1 Insert the pivot into one of the holes in the loading gate arm and secure in place with a spring clip either side of the gate arm.

Note: The lower hole is for use with tube and fitting loading bays. The upper hole is for use with Layher Allround® Loading bays.

2 Attach the gate posts to each end of the loading bay gate and secure the wedges with a firm hammer blow from a minimum 500 g metal hammer.

Loosen the half coupler nut slightly and slide the arm to the front of the loading bay.

Locate the wedges into the rosettes on the gate posts. Secure wedges with a firm hammer blow from a minimum 500 g metal hammer.

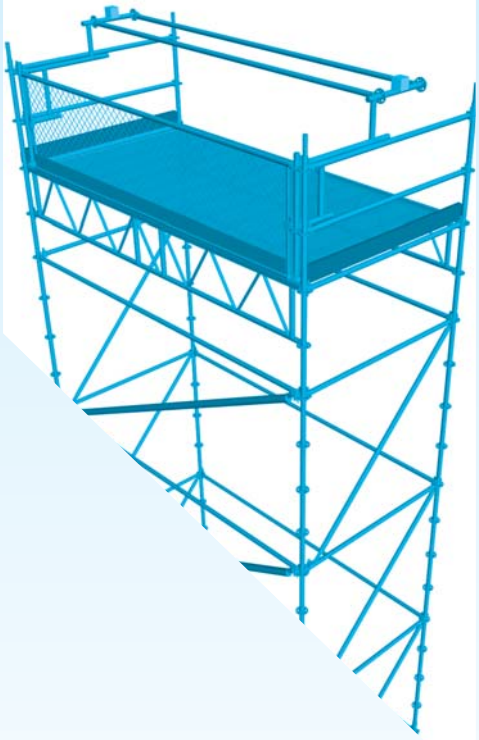
3 Install ledgers into rosettes at back of gate. Secure wedges with a firm hammer blow from a minimum 500 g metal hammer.

4 Offer ballast blocks up to vertical post at rear of loading gate arm. Secure blocks tightly using hand pressure (for 10 kg blocks) or 19 mm spanner (for 20 kg blocks).

Note: Ballast block requirements

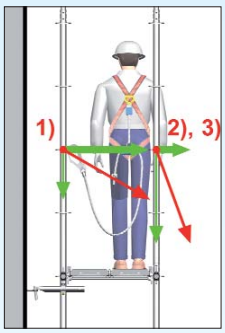
2.07 m Gate – No Ballast	3.07 m Gate – 2 x 10 kg blocks required
2.57 m Gate – 2 x 10 kg blocks required	4.14 m Gate – 2 x 20 kg blocks required

Note: Layher 'Lay Guards' are available for all the system sizes illustrated.

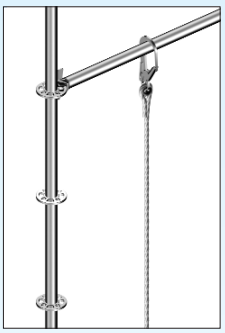


Attachment points

For full details of erection refer to *Layher Allround® Scaffolding Instructions for Assembly and Use* brochure and *Loading Tower User Guide.*



Attachment points on the rosette (bay length maximum 3.07m)



Connection to the Allround® ledger

Attachment in small or large hole of the rosette is possible

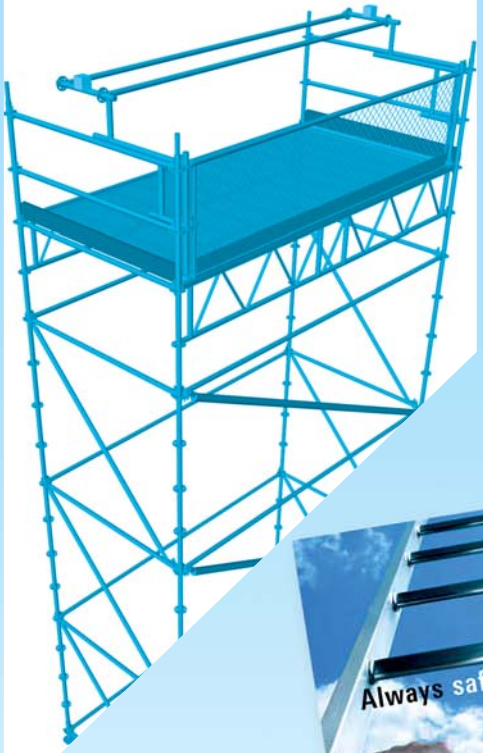
Vertical Standard

- On a vertical standard on the inside (against the façade), full length at the height of the scaffolding level, not abutting, maximum 1 m above the scaffolding level.
- On a vertical standard on the outside, 1 m above the scaffolding level.
- On any rosette in a completely assembled scaffolding layer.

Ledger

- On a ledger on the outside (at the risk-of-fall edge), maximum 1 m above the scaffolding level. Vertical standards projecting 2 m above the scaffolding level are shown; the connection of the ledger to vertical standards protruding 1 m is also permissible.
- On a ledger at the height of the scaffolding level.

Extensive choice



To take full advantage of our range, experience and commitment – contact us now...

Layher®

More Possibilities. The Scaffolding System.

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