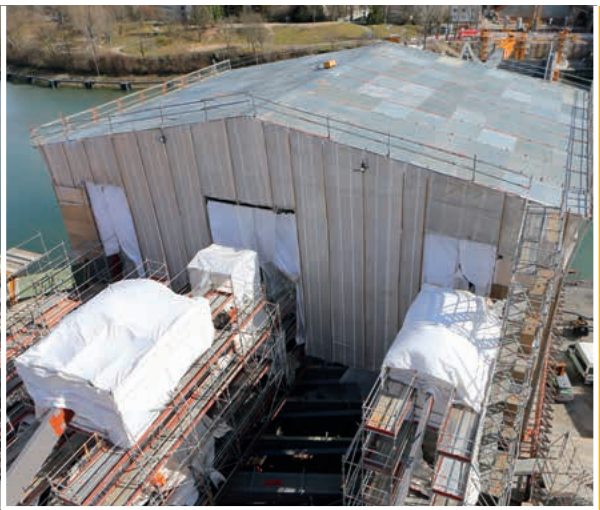
Layher®

More Possibilities. The Scaffolding System.

LAYHER PROTECTIVE SYSTEMS CATALOGUE



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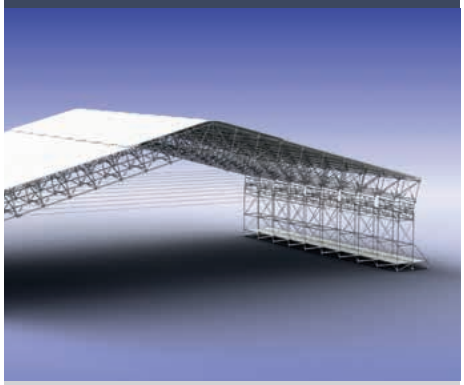
Quality management certified according to DIN EN ISO 9001

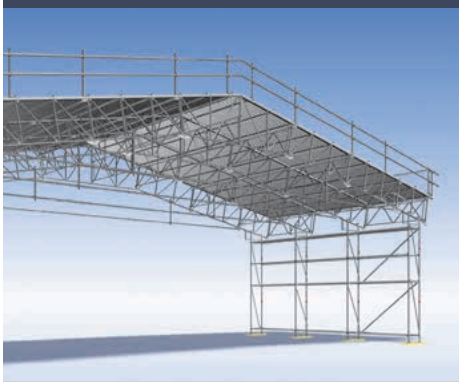
ALLROUND FW SYSTEM ROOF

FROM PAGE 8



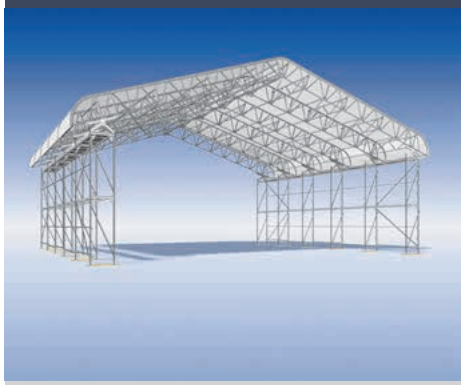
CASSETTE ROOF

FROM PAGE 12



KEDER ROOF XL

FROM PAGE 26



MIXED REALITY

In this catalogue, you can find images highlighted with the symbol for mixed reality.

By using the Layher App, you bring these scaffolding structures to life. Learn more and download the app:
app-en.layher.com

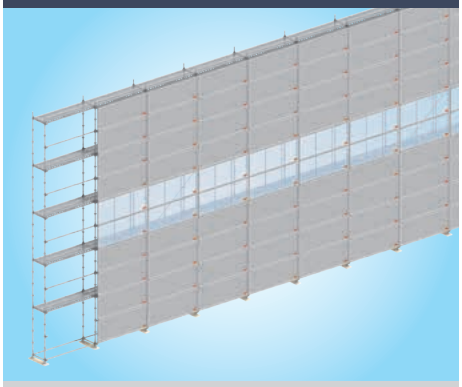
PRODUCT PORTFOLIO

The Layher product range – all catalogues at a glance

SpeedyScaf	Ref. No. 8102.260
Allround Scaffolding	Ref. No. 8116.256
System-free Accessories	Ref. No. 8103.258
Protective Systems	Ref. No. 8121.258
Event Systems	Ref. No. 8111.231
Access Technology	Ref. No. 8118.230

MOVABLE ROOFS
FROM PAGE 38

PROTECT SYSTEM
FROM PAGE 42



NOTICE

All dimensions and weights are guideline values. Subject to technical modification.

Steel components are galvanized according to EN ISO 1461 and DASt guideline 022. Connection parts are galvanized according to EN ISO 4042.

Our deliveries shall be made exclusively in accordance with our currently valid General Terms of Sale. These include the following provisions: The place of performance is Gueglingen-Eibensbach. Title to the delivered goods shall be retained until full payment has been made.

Please request the specific instructions for assembly and use when ordering. Protected by copyright. Not to be reproduced, either in whole or in part. Misprints and errors excepted.

QUALITY MADE BY LAYHER

Headquarters in Eibensbach

Plant 2 in Gueglingen

HERE IS THE BEATING HEART OF LAYHER.

Quality made by Layher comes from Gueglingen-Eibensbach. Our company has set down deep local roots since it was established. Right up until today, development, production, logistics and management are all in one place, where the conditions are best for achieving quality made by Layher: in Gueglingen-Eibensbach. The two locations together cover a surface area of 318,000 m². This includes more than 148,000 m² of covered production and storage areas. This is where our scaffolding systems are created by highly automated production. Short distances and short reaction times mean we can adapt production to suit our customers' requirements, flexibly and at any time.

MORE POSSIBILITIES. THE SCAFFOLDING SYSTEM.

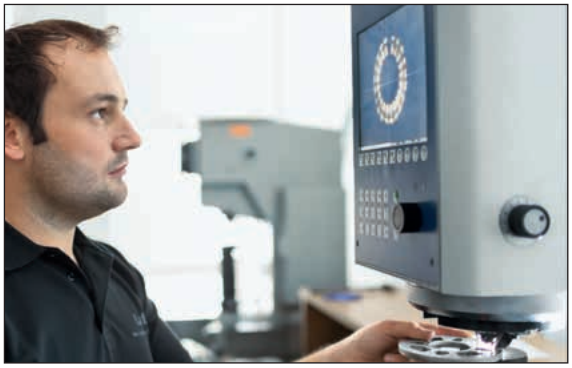
This brand promise made by Layher is the expression of a brand philosophy that we've been living by for over 70 years. More speed, more safety, more proximity, more simplicity and more future: values with which we strengthen our customers' competitiveness in the long term. With our innovative systems and solutions, we're working all the time on making scaffolding construction even simpler, even more economical and, above all, even safer. With comprehensive services, a permanent range of training courses and an ethos of customer focus, more than 1,900 dedicated Layher employees are creating more possibilities for our customers every single day. In 40 countries all over the world.

MORE INFORMATION

Discover the world of Layher in its company film at:
yt-image-en.layher.com

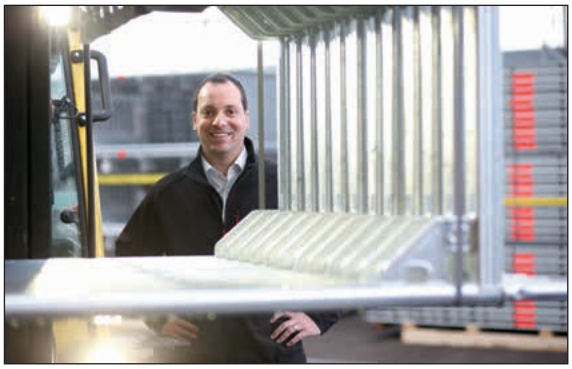
MORE SPEED

High level of material availability, effective delivery service and quick assembly and dismantling of the scaffolding systems thanks to 100% fitting accuracy.



MORE SAFETY

Outstanding quality and precision coupled with a long service life – confirmed internationally through independent certifications, inspections and approvals. Continuity and long-term partnership.



MORE PROXIMITY

Comprehensive personal consultation and close-knit delivery network. Global presence through our own subsidiaries. Family-owned company that works closely with its customers.

MORE SIMPLICITY

Economical scaffolding systems that have been proven in practice, available with an extensive product range. Cross-system combinations for versatile use. Rapid decision making thanks to efficient structures and processes.

MORE FUTURE

Thanks to permanent product innovations and the improvement of existing parts. By opening up new areas of business. With an integrated system to ensure high profitability and retention of investment value. Through an extensive range of training opportunities and seminars to ensure that customers are always right up-to-date with the latest technical and commercial developments.

Layher LayPLAN
Time and material are crucial factors in scaffolding construction. To make the most efficient use of both, the Layher range includes the practical LayPLAN scaffolding planning software.

With the serveral software packages LayPLAN CLASSIC and LayPLAN CAD, it is possible to plan scaffolding structures from simple, small facade scaffolding up to complex industrial scaffolding or protective roofs and grandstands.

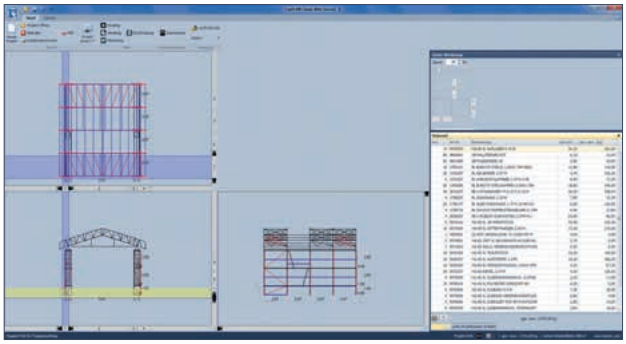
LayPLAN CLASSIC
With the LayPLAN CLASSIC modules for Allround Scaffolding and SpeedyScaf, individualised scaffolding solutions can be configured quickly and easily: whether they're for circular or facade scaffolding made from SpeedyScaf, for birdcage scaffolding and free-standing towers made from Allround Scaffolding, or for structures with temporary roofs. Once the dimensions and the required assembly variant have been entered, LayPLAN CLASSIC delivers within seconds a scaffolding proposal, including anchoring, bracing and side protection. During the design phase, the overall length, standing heights and areas are continuously calculated and displayed to reflect the current plan. A materials list can also be created at the click of a button and then printed out, together with an assembly sketch for the area to be enclosed in scaffolding plus the total weight. This also helps with the logistics – the required material is guaranteed to be there where it's needed. Scaffolding erectors benefit from more certainty when planning the commercial and technical details, from optimised use of stocks, and from full cost transparency at every stage of the project.

After finalisation of the scaffolding proposal, the LayPLAN Material Manager provides you with complete lists of required parts to ensure you always have precisely the material you need at the site.

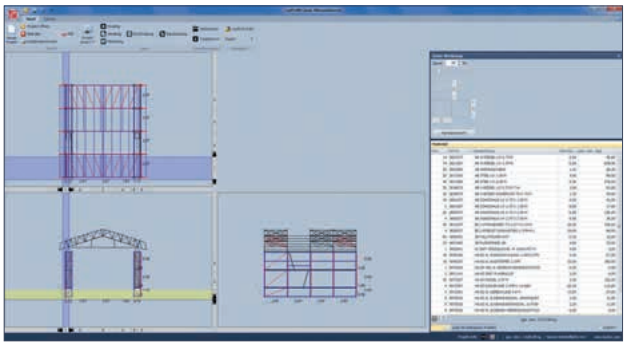
LayPLAN CAD
For more complex structures, LayPLAN CAD is available. This is a plug-in for Autodesk AutoCAD. It enables 3-dimensional planning of scaffolding structures of all types.

Thanks to integration into the LayPLAN system, the basic planning can be handled in automated form using the proven LayPLAN CLASSIC. Project data can be quickly recorded using input masks, ensuring a time saving for every order. The data are then simply exported into the AutoCAD program, which offers further possibilities for detailed 3D planning. A visual collision check is possible with the aid of volume rendering. Using a convenient search function with preview image, scaffolding planners will find not only an extensive library of individual Layher parts, but also assemblies already prefabricated for even faster design work. The detailed drawings can then be printed out. A transfer to visualisation or animation software is also possible without any problem. This allows projects not only to be planned economically and also adapted precisely to actual requirements, but also to be presented professionally to customers.

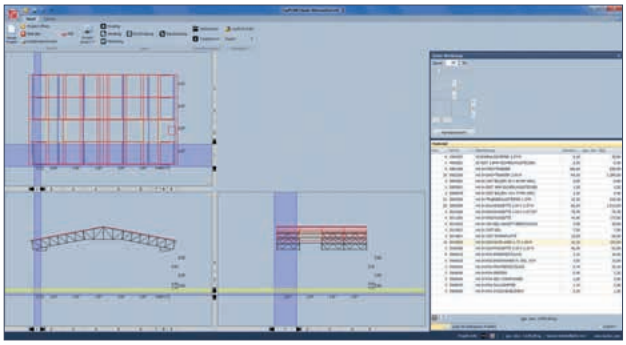
LayPLAN CLASSIC



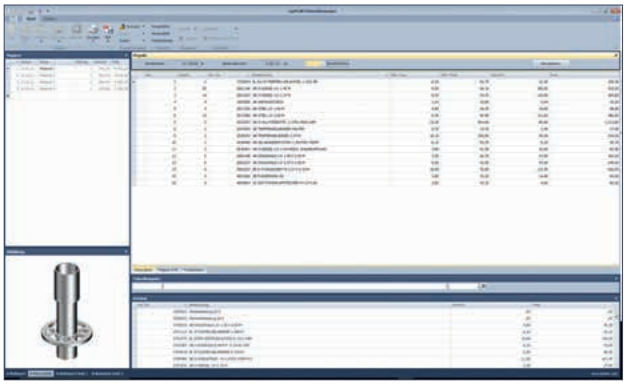
Keder Roof XL with SpeedyScaf as substructure



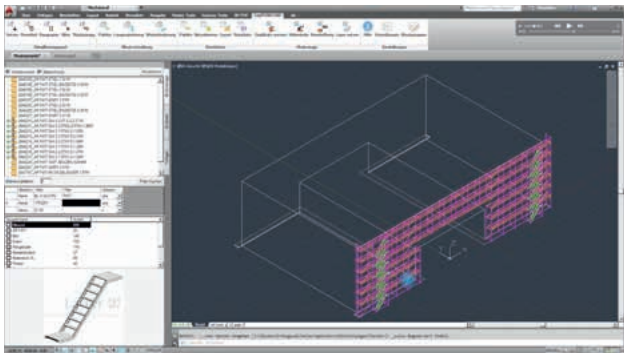
Keder Roof XL with Allround Scaffolding as substructure



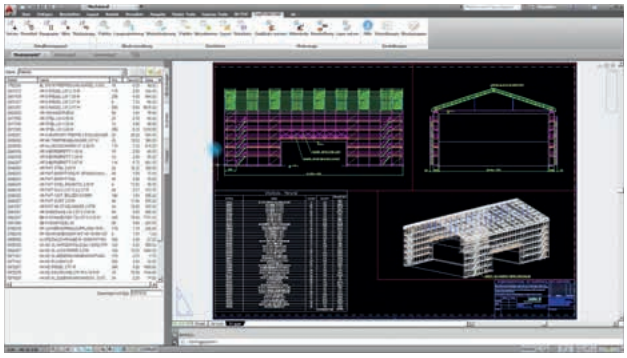
Cassette Roof



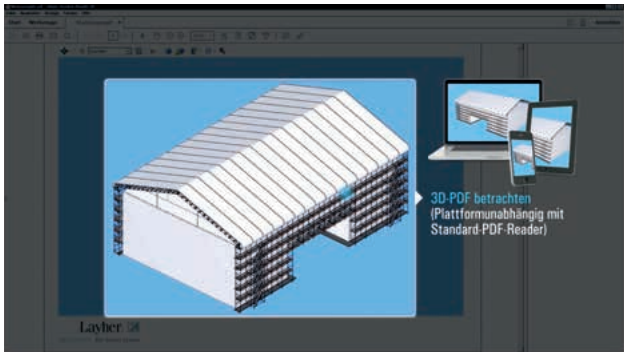
Component images in LayPLAN Material Manager
Part of LayPLAN CLASSIC and LayPLAN CAD



Planning of individualised scaffolding structures in LayPLAN CAD



Creation of planning documents with integral material lists in LayPLAN CAD



Enhanced use of 3D Models in 3D Viewers or 3D PDF.

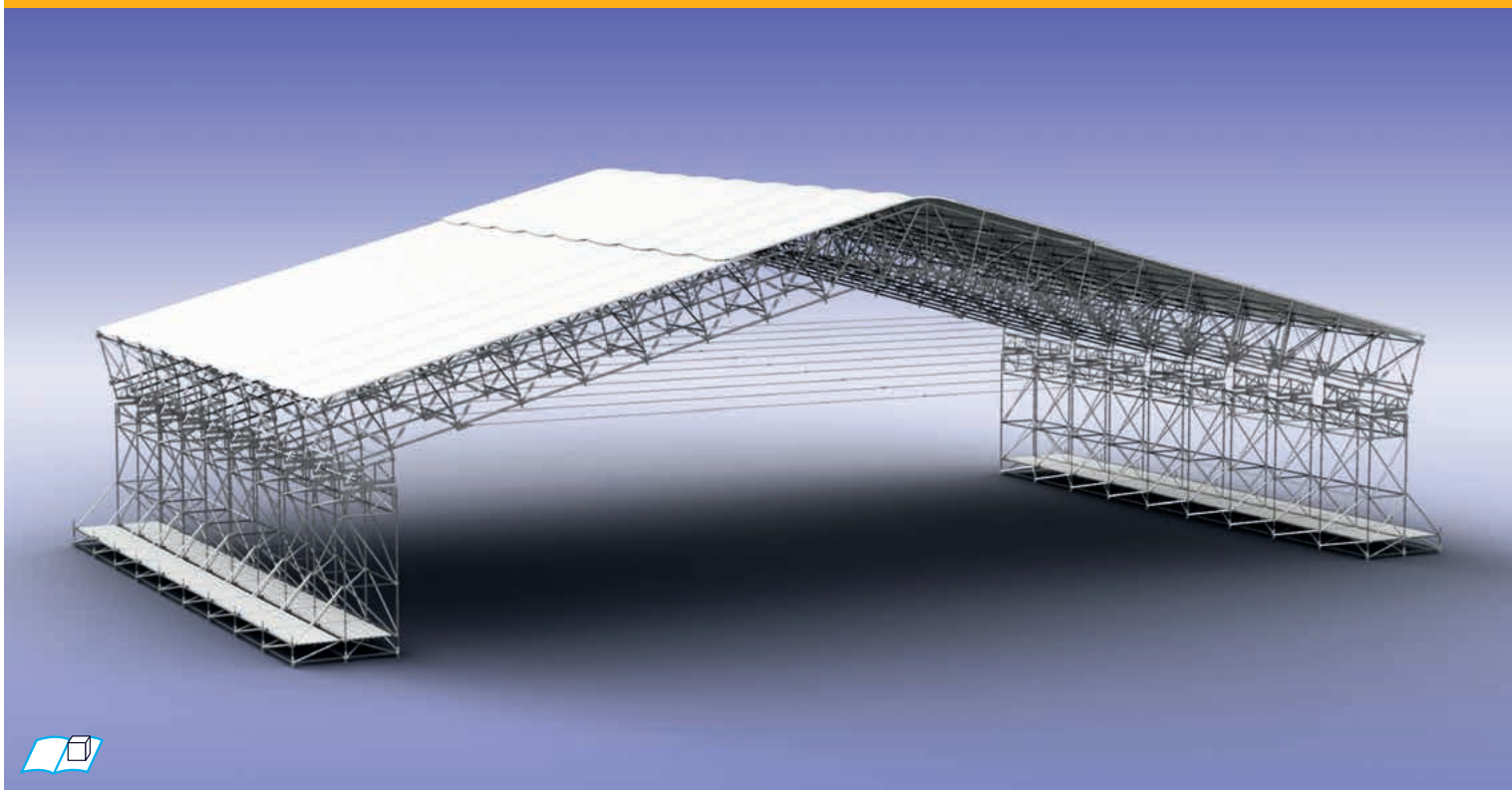
How can I acquire LayPLAN?
Registration and all the ordering processes can be conveniently accessed at the Layher website: http://software.layher.com
A contact form gives you the data to access our software portal, where you can download a 30-day test version and also find the order form for the full version.

Pos.	Description	Ref. No.
1	**LayPLAN CLASSIC** scaffolding configurator for SpeedyScaf, Allround Scaffolding, weather protection roofs and rolling towers	**6345.102**
2	**LayPLAN CAD** plug-in for AutoCAD, for designing complex scaffolding in 3D and for developing scaffolding proposals from LayPLAN CLASSIC	**6345.103**

WS = wrench size **PU** = packaging unit = available ex works = delivery time on request = only available in this packaging unit

ALLROUND FW SYSTEM ROOF

FOR SPANS OF OVER 45 METRES.



Notice: Potentially neccessary stabilizing measurement are not illustrated.

The Allround FW System can be used for a wide variety of applications, for example **bridging** or **bracing,** and also for roof supporting structure for temporary weather protection roofs. Previously unmatched spans of more than 45 metres, depending on local effects such as wind forces and snow loads, can be achieved as a result.

Thanks to the **bolt-free connection** and the proven **Allround wedge head technology,** preassembly of the roof trusses on the ground is quick and easy to handle.

The roof trusses, braced using Allround standard components, are then positioned **by crane** onto the shoring. Thanks to Layher's standardised system dimensions, no tiresome measurement is needed. The system can be assembled as a classic double-pitch roof or as a mono-pitch roof with a roof angle of 15°. For supplying materials to the sign, the Allround FW System roof can be opened by bays.

It is also possible to attach walkways made of Layher's standard scaffolding decks to the roof truss. That makes assembly, maintenance and any snow-clearing work that might be needed easier to manage.

YOUR BENEFITS AT A GLANCE

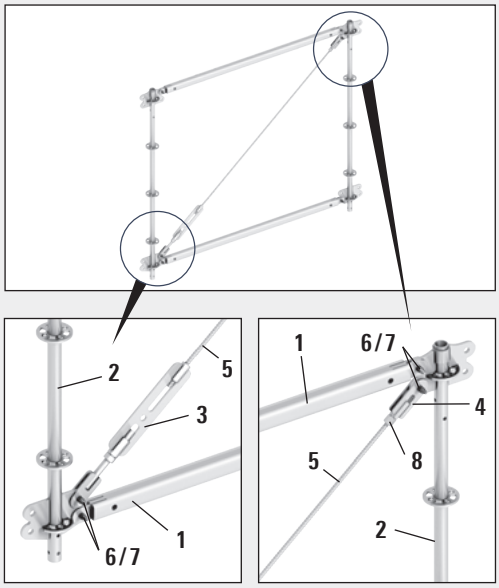
- Lattice system with great structural height permits high roof widths of more than 45 m, depending on local wind and snow load conditions.
- Thanks to the many flexible applications of the Allround FW System for weather protection roofs, bridging and bracing for work scaffolding, it is now being used very frequently.
- The FW System is assembled with just 3 additional expansion parts for Allround Scaffolding, and can be integrated into Allround structures without misalignment. The components are inside the system axes in all 3 directions.





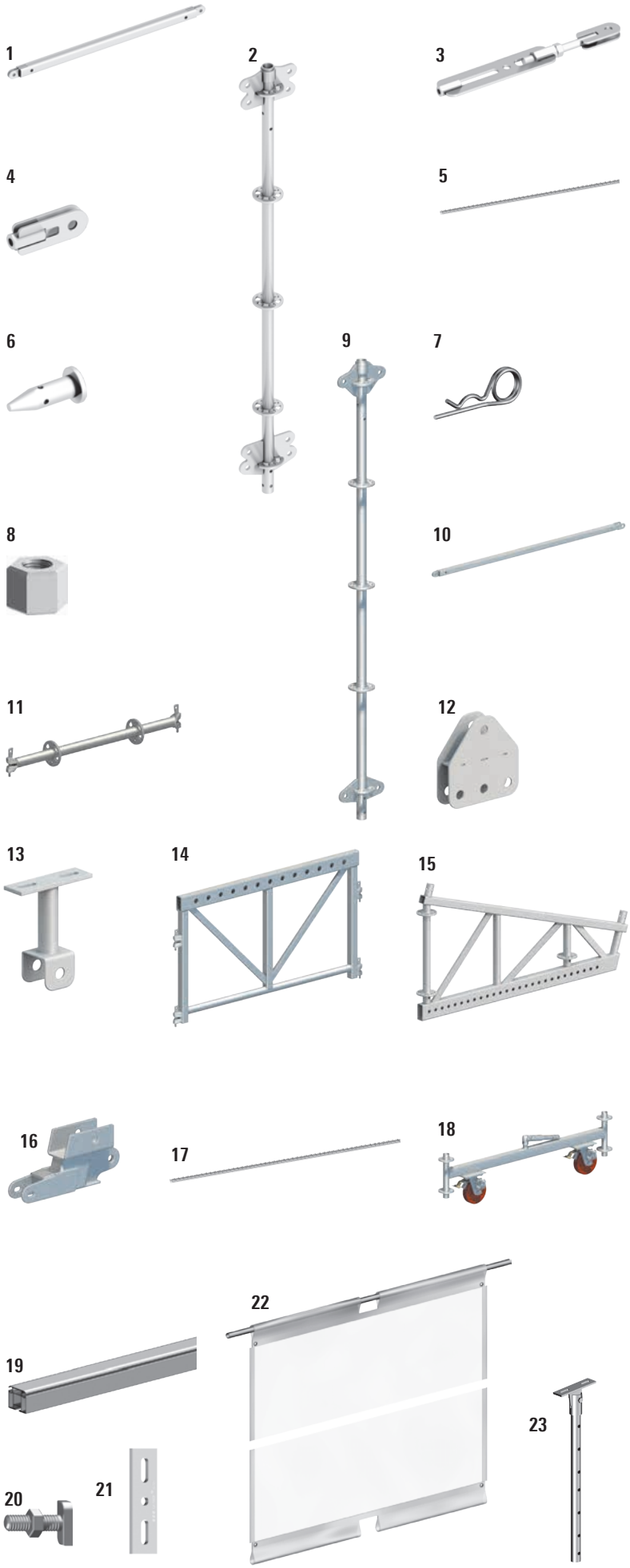

To provide wide-span bridging too, or to support heavier loads, the Layher range now includes the **Allround FW System (FW).** This additional Allround component is a modular-designed lattice beam of high load-bearing capacity that can be completely integrated into the Allround construction kit thanks to the standardised system dimensions. For lattice structures, only three essential supplementary components are needed, and they can be rapidly connected using pins: **an Allround FW post 2, a sturdy Allround FW chord 1** as the top and bottom chord, and a length-adjustable **Allround FW diagonal rod** consisting of **3/4/5/8**. The cross-bracing is made by serial Allround equipment. By its structural height a high load-transmission is guaranteed.

A further special feature is the stepless adjustment of the diagonal rods using **a turnbuckle 3** – for example to build slightly higher structures. This compensates for unwelcome sagging. A crossed diagonal configuration is also possible for transmitting both positive and negative lateral forces.



To fix the tarpaulins, the bending stiff **Keder rails 3000 19** will be assembled on the FW System roof binders.

Application possibilites, assembly information and possible spans can be found in the **Instructions for assembly and use for the FW System.**

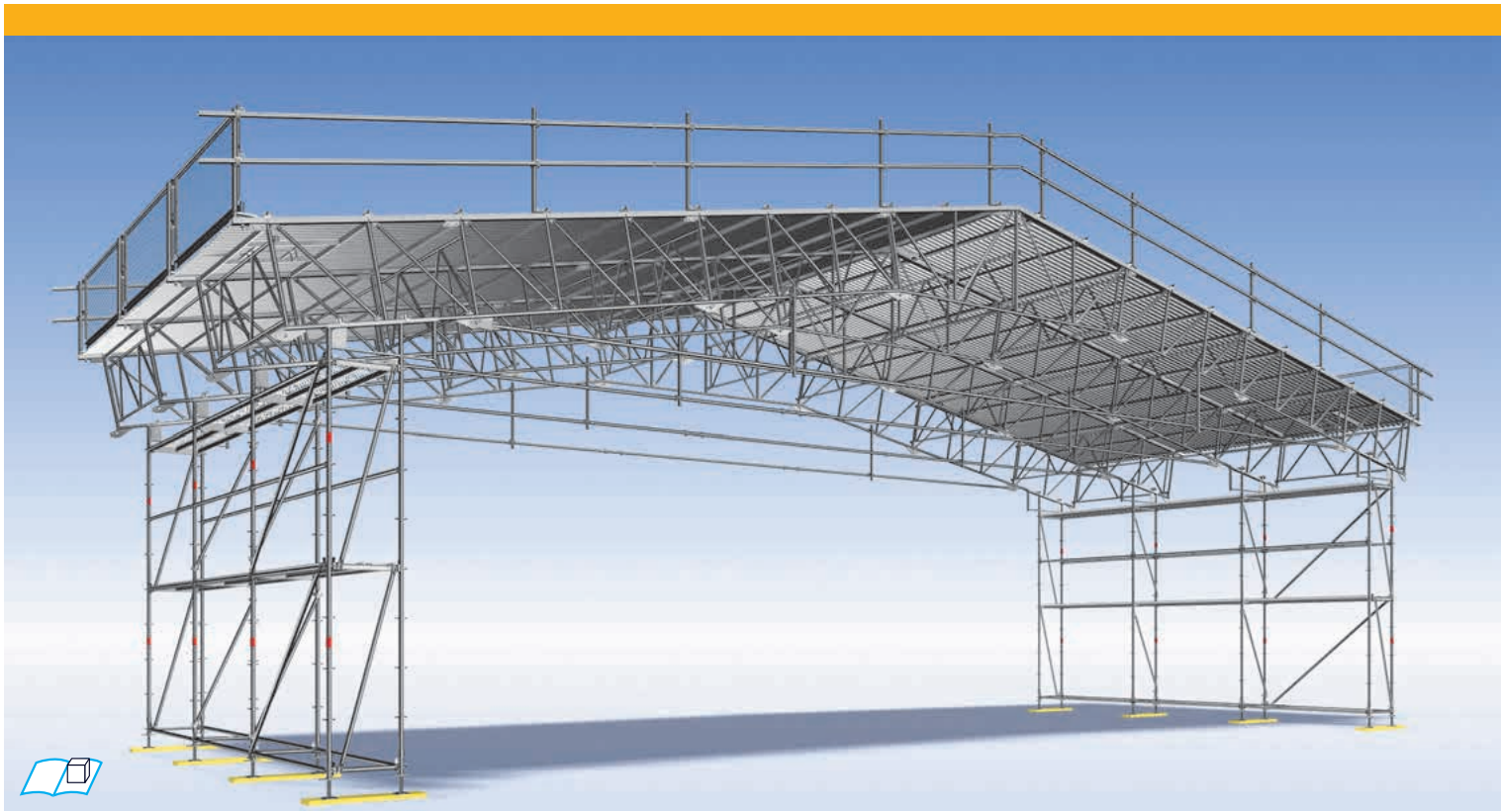


Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref.-No.
1	**FW System chord**	1.57	10.5	20	**2646.157**
		2.07	13.9	20	**2646.207**
2	**FW System post**	2.00	16.2	28	**2646.200**
3	**FW System end fitting with turnbuckle,** WS 30 and WS 36		3.8	100	**2646.202**
4	**FW System end fitting,** WS 30		1.0	100	**2646.203**
5	**FW System diagonal rod**				
	for 2.07 x 2.00 m bay	1.96	2.8	20	**2646.211**
	for 1.57 x 2.00 m bay	1.63	2.4	20	**2646.214**
6	**Bolt**				
	for Ref. No. 2646.224, 2646.275 and 2664.226	20 x 113 mm	3.0	10	**2646.280**
	for Ref. No. 2646.265	30 x 130 mm	6.3	10	**2646.283**
	for all other connections	20 x 66 mm	1.6	10	**2646.220**
7	**Safety clip D = 4 mm**		1.5	50	**5905.001**
8	**Allround FW System lock nut,** WS 30		1.5	10	**2646.230**
9	**FW System ridge post**	2.25	17.5	28	**2646.223**
10	**FW System ridge diagonal brace**	2.53	15.1	50	**2646.224**
11	**FW System ridge ledger with rosettes**	1.09	5.0		**2664.109**
		1.57	6.5		**2664.157**
		2.07	8.0	28	**2664.207**
		2.57	9.5	28	**2664.257**
12	**FW System support adapter**		4.4	45	**2646.265**
13	**FW System keder rail holder**		1.3	250	**2646.275**
14	**FW System support beam**	1.57	35.2	10	**2655.157**
15	**FW System chord support**	1.57	27.0	10	**2652.157**
16	**FW System tie connector**		2.8	100	**2664.226**
17	**Tie thread rod**	2.00	2.9	100	**5976.200**
		3.00	4.4	100	**5976.300**
		4.00	5.8	100	**5976.400**
		5.00	7.3	100	**5976.500**
18	**FW System trolley**	1.57	30.0	50	**2646.228**
19	**Aluminium keder rail 3000**	2.00	6.1	20	**5574.200**
		3.00	9.2	20	**5574.300**
		4.00	12.2	20	**5574.400**
		5.00	15.3	20	**5574.500**
		6.00	18.3	50	**5574.600**
20	**Groove bolt for keder rail M12 x 40,** with nut		5.0	50	**4206.001**
21	**Joint plate for keder rail,** 2 groove bolts are needed	0.17	0.5		**4208.000**
22	**Keder roof tarpaulin** see page 32 / 33				
23	**Hinged attachment**		3.4	100	**5573.001**

WS = wrench size **PU** = packaging unit = available ex works = delivery time on request = only available in this packaging unit

LAYHER CASSETTE ROOF

FOR WEATHERPROOFING AND TEMPORARY HALLS – LOW-COST, LABOUR-SAVING ROOFING



Notice: Potentially neccessary stabilizing measurement are not illustrated.

Layher cassette roofs have established themselves as a firm favourite at construction sites for conversion, renovation and restoration. The structure itself and all the equipment is protected during the conversion or roof repair and normal business operations can continue under a secure roof.

If weatherproofing is the aim then there are many reasons to choose the Layher cassette roof system.

- **Economical thanks to top-class technology**
  A sophisticated, proven construction consisting of high-quality components, specially equipped for recurrent, changing assembly and dismantling operations.

- **Long, useful service life**
  The Layher cassette roof is almost indestructible. Its practical design coupled with the chosen materials are key reasons making it an investment that will retain its value over many years. The use of cassette roof girders ensures rapid assembly. The roof trusses are assembled astonishingly quickly at ground level, then mounted on the supporting structure using a crane. The roof cassettes for the intermediate bays are inserted into the channel section and locked in place with clamping plates and wedges. That's all there is to it! No tensioning or tying is required.
  The cassettes act as bracing elements. Only every second bay is assembled as a so-called truss bay, and there are no doubled roof trusses. This represents an additional saving of material and, consequently, also of money and assembly time.

- **Economical modular system**
  Variable roof areas are possible thanks to the well-conceived section lengths of the roof trusses and the U-shaped top chord.

- **Vast spans**
  Depending on the static system and the load, it is possible to create roof structures with spans of more than 30 m.

- **Easy to open for material supply**
  To permit material supply to the site, the Layher cassette roof can be opened at any location by simply removing one or more roof cassettes. No crane is needed.




- **System-independent**

  The Layher cassette roof does not require any specific substructure. This means that no unwanted additional investments are required. The Layher cassette roof can be mounted easily on almost any scaffolding or other suitable substructure.

- **Total weatherproofing**

  Rainwater is excluded correctly thanks to the over-lapping, shaped roof surface elements. This is a basic requirement for any weatherproofing roof.

- **Notes on construction and use**

  When assembling and using the roof, it is essential to observe the applicable regulations and the manufacturer's assembly instructions. Personal safety apparatus (PSA) for protection against falls must be used. All data is calculated to the best of Layher's knowledge and based on relevant technical regulations or is adopted from other regulations. It is necessary to check the stability of the supporting structure (e.g. scaffolding) and the roof structure. The Layher cassette roof is made for high snow loads (up to about 0.75 kN / m^2) with medium spans.

This cassette roof is a non-insulated, rainproof covering under which condensation may form and drip depending on the outside weather. The connections between the cassettes are not sealed and rainwater may penetrate due to unfavourable wind conditions. We cannot therefore accept any liability for damage to the covered structure. However, additional sealing options exist.

YOUR BENEFITS AT A GLANCE

- Economical thanks to well-thought-out and durable components and time-saving assembly.
- Investment protection thanks to long, useful service life and high-quality components, specially equipped for recurrent, changing assembly and dismantling operations.
- Application as temporary storehouse, the repair of timber roofs and coverings, refurbishment work on motorways or over bridges and applications for events.
- No interruption of working due to weather influence.
- Fully combinable to Layher Allround Scaffolding and Layher SpeedyScaf.

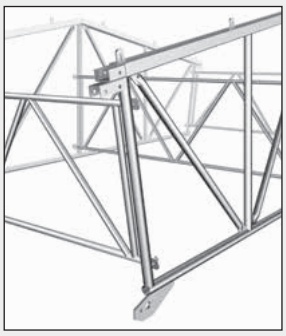
The system for large spans and rapid assembly for everyday use

Truss elements
These one metre high **roof beams** 1 are the elements that support the cassette roof (U-shaped top chord for the insertion of the roof cassettes, tubular bottom chord and posts of diameter 48.3 mm). The **ridge support** 2 is intended for the construction of double-pitch roofs with a roof angle of approximately 11°.

The **roof beams** 1 or **ridge supports** 2 are connected to one another at the bottom chord with **30 x 50 mm bolts** 3 and **4 mm safety clips** 4**.** At the top chord, it is possible to use either two **M14 x 80 bolts** 6 with nuts or **14 x 77 mm bolts** 4a **with 2.8 mm safety clips** 4b**.**

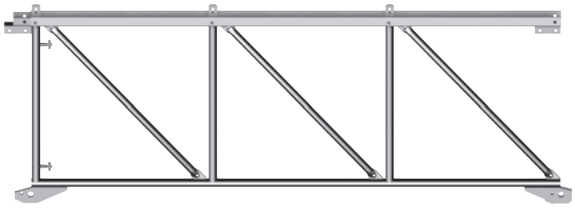
Depending on the structural documentation some construction variants may require the use of a third **14 x 107 mm bolt** 5a and **2.8 mm safety clip** 5b at the top chord.

A truss bay consisting of a pair of roof trusses connected to **beam stiffeners** 7 is pre-assembled at ground level and the roof cassettes are mounted on it and wedged in place.

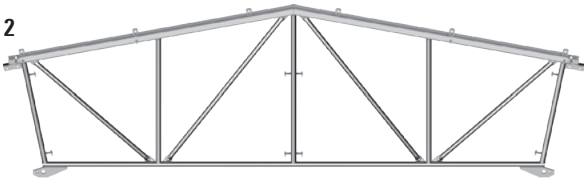


A crane is used to place the pre-mounted truss bays on the scaffolding at intervals of 2.57 m, while the unoccupied intermediate bays are reinforced with **tubular stiffeners** 9 and then closed using roof cassettes.

1

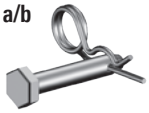


2



3 a/b

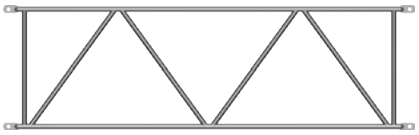
4 a/b



5 a/b

6

7



8

9

Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref.-No.
1	**Roof beam**				
	2.00 m	2.00 x 1.00	48.2	16	**5902.200**
	3.00 m	3.00 x 1.00	64.5	16	**5902.300**
2	**Ridge support**	4.30 x 1.00 / 1.50	106.0	10	**5901.000**
3a	**Bolt,** 30 x 50 mm for connecting the roof beams and ridge supports	0.05	3.0	10	**5903.001**
3b	**Safety clip,** 4 mm for 30 x 50 mm bolts and roof support wedges	0.08	1.5	50	**5905.001**
4a	**Bolt.** 14 x 77 mm and	0.08	2.2	20	**5906.078**
4b	**Safety clip.** 2.8 mm		0.5	50	**4905.001**
5a	**Bolt,** 14 x 107 mm and	0.11	3.0	20	**5906.108**
5b	**Safety clip,** 2.8 mm		0.5	50	**4905.001**
6	**Bolt,** M14 x 80 with washer and nut		2.8	20	**5906.081**
7	**Beam stiffener**	2.57	15.2	35	**5907.000**
8	**End post for mono-pitch roofs**		6.0		**5901.100**
9	**Tubular stiffener**	2.57	5.1	150	**2504.257**

WS = wrench size **PU** = packaging unit = available ex works = delivery time on request = only available in this packaging unit

Cassette Roof tie

Tie elements
In the case of high levels of snow and / or large spans, it is necessary to install a **tie 2.** The **end pieces of the ties** 1 are connected to the last bottom chord joint using **30 x 64 mm bolts** 3 and extended by one or more tie spacers.
The tie elements are joined to one another using **lattice beam connectors** 4 and are suspended using scaffolding tubes and couplers.
When mounting ties, it is necessary to install a 2.00 m long roof girder as the external roof girder.

Lattice beam connectors 4 are used to connect the tie end pieces or spacers. Each of these requires either two **M14 x 65 bolts** 5 with nuts or four **14 x 77 mm bolts** 6a **with 2.8 mm safety clips** 6b**.**

Tie connection

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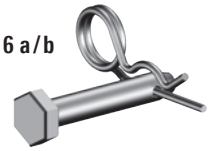
2

3 a/b

4

5

6 a / b

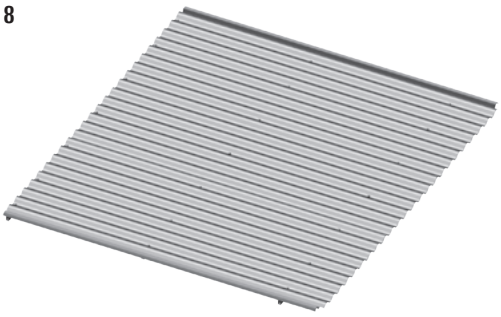


Roof cassettes

Roof cassettes with corrugated sheet
The **roof cassettes** 8 consist of a robust, hot-dip galvanized steel frame with shaped steel sheets and form the rainproof, walk-on roof covering of the cassette roof. The cassettes improve the horizontal rigidity of the roof. They can be supplied in lengths of 1.00 m and 2.00 m. The roof cassettes are inserted in the channel section of the top chord and are secured positively and non-positively using wedges and clamping plates. In this case, the clamping plate acts as a force-distributing base while the specially shaped wedge prevents slippage.

The 2.00 m-long cassette is also available with an **access hatch** 9 to provide you with a safe, easy way onto the roof.

8



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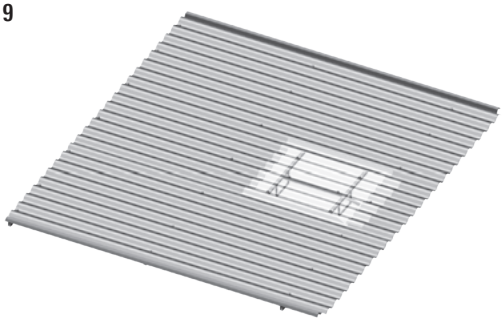

Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Tie** end piece, for roof girder	6.00	29.5	50	**5917.000**
2	**Tie**	2.00	7.1	50	**5918.200**
		4.00	17.0	50	**5918.400**
		6.00	25.5	50	**5918.600**
3a	**Bolt,** 30 x 64 mm for assembly of the tie end pieces	0.06	4.0	10	**5904.001**
3b	**Safety clip,** 4 mm for securing the 30 x 64 mm bolts	0.08	1.5	50	**5905.001**
4	**Lattice beam connector,** round steel for joining the tie elements Ref. Nos. 5917 and 5918	0.44	3.4	20	**4916.000**
5	**Bolt,** M14 x 65 with nut	0.07	6.5	50	**4908.066**
6a	**Bolt,** 14 x 77 mm and	0.08	2.2	20	**5906.078**
6b	**Safety clip,** 2.8 mm		0.5	50	**4905.001**

Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
8	**Roof cassette,** 1.00 m, corrugated sheet	1.00 x 2.57	35.2	20	**5909.100**
	Roof cassette, 2.00 m, corrugated sheet	2.00 x 2.57	66.0	20	**5909.200**
9	**Roof cassette with access hatch,** 2.00 m, corrugated sheet	2.00 x 2.57	75.7		**5910.200**

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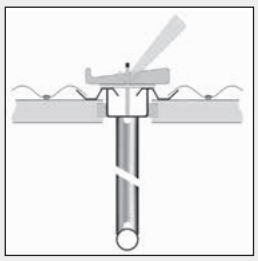
Cassette roof support

Ridge cassettes 1 for use with roof trusses consisting of roof girders and ridge supports.

Support scaffolding for cassette roofs is usually clad with translucent scaffolding tarpaulins. If additional light is required, **light cassettes** 2 can also be installed.
The light cassettes are fitted with transparent corrugated plastic panels together with a grid at the bottom to prevent people falling through. There is therefore no need for safety guards around the light cassette.



Cassette fixing

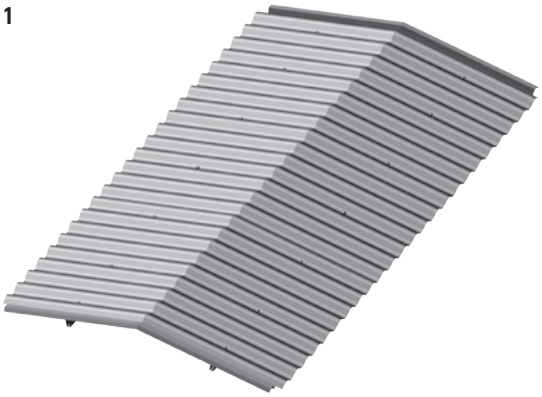
Wedges and clamping plates 3 / 4 for securing the roof cassettes both on the roof trusses and in the intermediate bay.

The **carrying handles** 5 are inserted in the edge section of the roof cassettes and simplify the insertion and removal of individual roof cassettes without there being any need to bend or go too close to the opening.

Roof supports as connecting elements for the supporting structure
For the cassette roof, 2 types of roof supports are available. The **swivelling roof support** 6 has a movable seesaw, which also can be used for mono-pitch roofs. The rigid **roof support** 7 fits for support scaffolding with widths of 0.73 m and 1.09 m. The premounted truss bays are inserted in the roof support and secured using 2 **wedges** 8 with **safety clips** 9 to ensure that they cannot lift out of position. And if the roof has to be mounted on another structure: Our engineers have even found solutions for this requirement. Please consult us.

Detail for roof support

1



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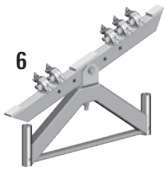

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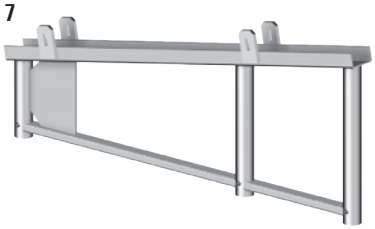
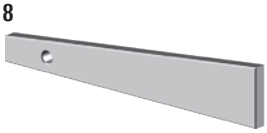


Top scaffolding guardrail, secure assembly thanks to lower bracket levels

8



9

Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Ridge cassette,** with corrugated sheet	1.40 x 2.57	44.4	10	**5911.000**
2	**Light cassette,** 2.00 m. with corrugated plastic panels, installation only in intermediate bays in alternation with roof cassettes	2.00 x 2.57	46.0	10	**5930.200**
3	**Wedge, for fixing cassette**	0.18	7.5	25	**5913.002**
4	**Clamping plate,** for fixing cassette	0.12 x 0.08	15.0	25	**5914.001**
5	**Carrying handle,** for roof cassette. steel	0.75	1.2		**5931.100**
6	**Swivelling roof support**				
	0.73 m	0.73	19.1	20	**5975.073**
	1.09 m	1.09	22.4	20	**5975.109**
7	**Roof support,** rigid 0,73 / 1,09 m 2 wedges Ref. No. 5913.003 and 2 safety clips Ref. No. 5905.001 are required for each roof support	1.14 x 0.47	15.3	20	**5915.000**
8	**Wedge for roof support**	0.18	7.5	25	**5913.003**
9	**Safety clip,** 4 mm for bolts and roof support wedges	0.08	1.5	50	**5905.001**

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Cassette roof logistics

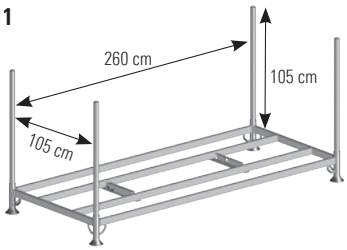
Tubular pallet 1 for the transport and storage of 13 ridge cassettes or 20 roof cassettes, also suitable for brick guards.
Design: **hot-dip galvanized**

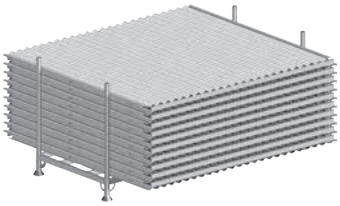
The **modular skeleton box** 2 in standardized European dimensions has a **carrying capacity of 2 t** and is stackable with Euro pallets. The upper part has crane eyelets.

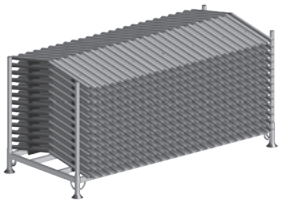
A side opening makes it possible to remove the stacked items even if several pallets are positioned on top of one another.
Design: **hot-dip galvanized**

More pallets you'll find in the catalogue System-free Accessories.

1







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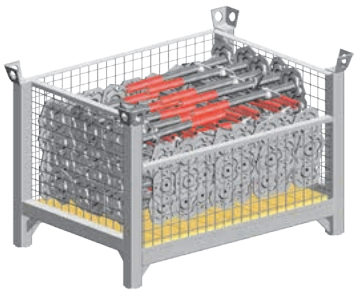


Cassette roof fall protection

Safety when walking on the roof
Safety when walking on the roof and the fall protection of anyone who slips on the roof is provided by **roof guards** 7 in the eaves area of the side protection.

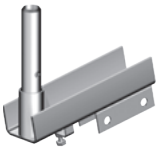
To this end, the **connecting piece** 3 accommodates the **guardrail support** 6 and, if necessary, commercially available semicircular gutter supports can be installed on the structure for the controlled removal of water from the roof.

A **standard connection** 5 is provided for the construction of the side protection in the gable area or at the barge board and for the Allround scaffolding of openings on the roof surface.

This is installed instead of the clamping plate. The standard connector accommodates a steel scaffolding tube as a guardrail post. Max. distance between posts: 3.00 m.

The **base support for walkway** 4 can be used alternatively to the **connecting piece** 3 at the eaves area for fixation of the fall protection. It can additionally bear scaffolding decks for a horizontal walkway. It's mounted to the top chord of the lattice beam with 2 wedges.

3



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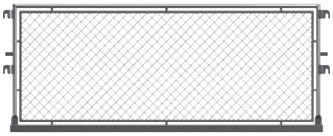
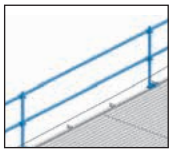
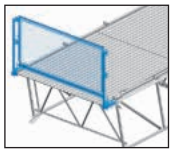




Side protection, gable



Side protection, eaves

Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Tubular pallet 265** steel, hot-dip galvanized, length of pallet posts 1.20 m, load 1,300 kg	2.77 x 1.22	50.6	10	**5113.265**
2	**Modular skeleton box with timber base plate** steel, hot-dip galvanized Internal dimensions 1.08 x 0.68 x 0.61 m load 2,000 kg, perm. onload 6,000 kg stackable with Euro pallets	1.20 x 0.80	85.8		**5113.002**

Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
3	**Connecting piece for cassette supports** 1 spigot	0.30	4.1		**5932.000**
4	**Base support for walkway,** steel for assembly of a walkway at the eaves area	0.73	8.7		**5916.073**
5	**Standard connection**	0.22	3.2		**5934.000**
6	**Guardrail support** single with guardrail wedge housings, steel	1.00	5.5	100	**1716.000**
7	**Roof guard**	1.00 x 2.57	21.1	30	**1749.257**

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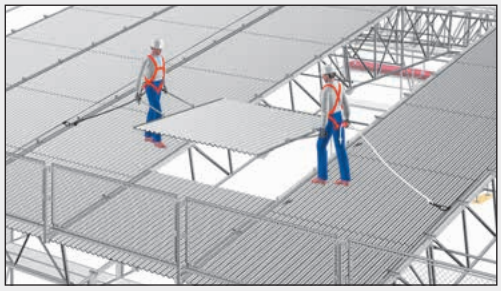
End fastener 1 for suspending
fall arrester / pre-tensioner.
Fastened in each case with wedge.

Intermediate fastener 2 for assembly
of an intermediate element, max. distance 15 m.
Each fastening with wedge.

Ridge fastener 4 for fitting of an
intermediate element in the ridge area.
Fastened in each case with wedge.

Intermediate element 3 as rope guide on
intermediate and ridge fastener.



Gripper 5 for the use on slinging ropes with snap-on hooks for securing the gripper and for connecting the safety rope.

End fastener with rope 6 – slinging rope with fastening mechanism. On the oppostite side the **fall arrester** 8 will be bolted.

Pretensioner 7 for holding the safety rope with parallel-adjustable clamping jaws, for suspension from the end fastener. The tips of the pressure pads must be checked for flattening before every installation. The pressure pads must be replaced at the latest after they have been used 25 times.

Fall arrester 8 is fitted between end fastener and end tensioner, element for once-only release!

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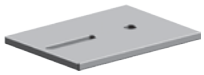

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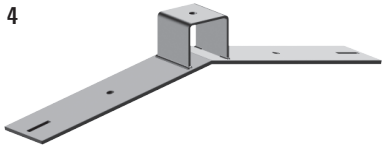

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Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**End fastener,** steel, hot-dip galvanized	0.23 x 0.12	3.1		**5969.010**
2	**Intermediate fastener,** steel, hot-dip galvanized	0.23 x 0.12	2.2		**5969.020**
3	**Intermediate element,** stainless steel, breaking load > 12 kN, incl. M12 x 40 hexagon bolt and lock nut	0.12	0.5		**5969.080**
4	**Ridge fastener,** steel, hot-dip galvanized	0.87 x 0.12	9.7		**5969.030**
5	**Gripper,** stainless steel, snap hook, steel, breaking load > 12 kN	0.09	0.4		**5969.040**
6	**End fastener with rope,** stainless steel	25.00	7.0		**5969.025**
		35.00	9.4		**5969.035**
7	**Rope pre-tensioner,** steel, galvanized, rope dia. 5 – 10 mm	0.30	1.0		**5969.060**
8	**Fall arrester,** stainless steel, shrink-on hose, synthetic rubber, max. stroke 70 mm, release threshold 2.4 kN	0.25	1.1		**5969.070**

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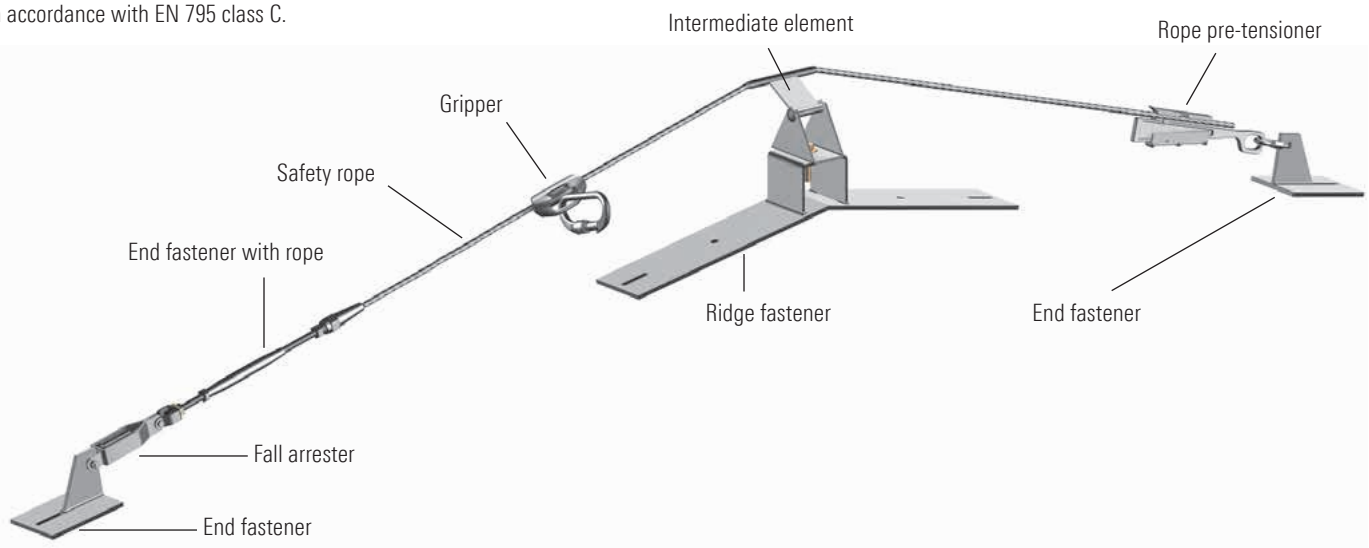
ATTACHMENT DEVICE
with horizontally movable guide
in accordance with EN 795 class C.



The **PSA safety harness AX 60 C** 1 has impressive features:

- Comfortable, padded and ergonomic back support
- Convenient tool holders and click-locks for easy fastening
- High operational dependability and absolute freedom from maintenance, plus very simple fastening
- Operating errors are not possible, as the equipment operates in any position
- Excellent running even under gruelling working conditions
- Enormous distribution of forces in the event of a fall.

Before use, visual checks must be performed regularly to ensure correct working order. In accordance with German BGR 198 regulations, all personal safety equipment must be inspected at least once a year by an expert. The maximum permissible period of use for the equipment must not be exceeded.

Travelling arrester system ASK 1 2
Travelling rope shortener made of stainless steel, firmly sewn belt fall arrester (conforms to EN 355) with snap hook, rope length 5.00 m, conforms to EN 353-2.

PSA connecting line Y-version 3
Belt fall arrester with two coated-core ropes, dia. 12 mm. Aluminium one-hand snap hook and two tube hooks FS 90 (conforming to EN 354 / EN 355).

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Up to 25 m span. Consisting of:	Quantity	PU [pcs.]	Ref. No.
Ridge fastener	1	80	**5969.030**
End fastener	2	200	**5969.010**
Gripper	1	100	**5969.040**
End fastener with rope	1	30	**5969.025**
Rope pre-tensioner	1	100	**5969.060**
Fall arrester	1	100	**5969.070**
Intermediate element		100	**5969.080**

Pos.	Description	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**PSA safety harness AX 60 C** with extension 0.50 m conforming to EN 361	1.8	5	**5969.160**
2	**Travelling arrester system ASK 1** Polyamide, dia.12 mm	2.7	5	**5969.200**
3	**PSA connecting line Y-version** with snap hook FS 90 (conforming to EN 354 / EN 355)	1.6	5	**5969.600**

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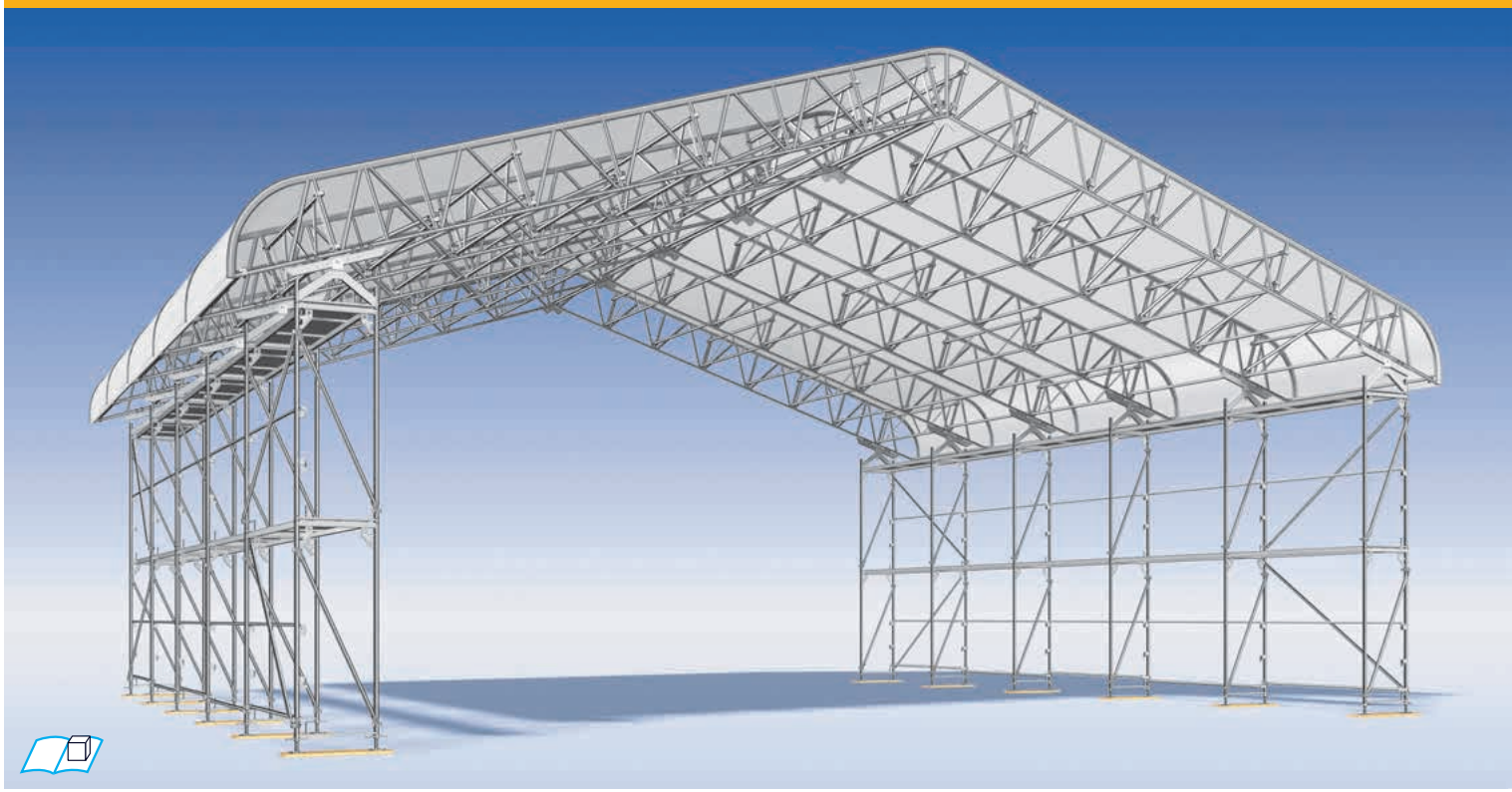
LAYHER KEDER ROOF XL



Notice: Potentially neccessary stabilizing measurement are not illustrated.

The Layher Keder Roof XL is a lightweight, proven weather protection roof. According to local weather conditions, **spans of up to 30 m** are possible. Used in conjunction with Keder rails for wall cladding, it means that the entire construction can be designed to form a lightweight hall.

The Layher Keder Roof XL is based on Aluminium Lattice Beams 750 with integrated Keder section in the top chord.

The Layher Keder Roof has many areas of application, ranging from the **roofing during the addition of storeys** and the **repair of timber roofs and coverings, weather protection** for new structures, **refurbishment work on motorways** and over bridges, and numerous applications for **events and normal work.**

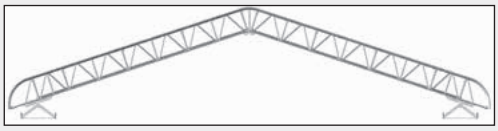
It is a non-insulated, rainproof covering under which condensation may form and drip uncontrolled, depending on the weather.

YOUR BENEFITS AT A GLANCE

- Roof widths up to 30 m and inclinations of 18° are possible.
- High snow loads (up to 1.0 kN / m²) on intermediate spans.
- Adaptation to all conditions thanks to roof widths and different designs as double-pitch, mono-pitch and polygonal barrel roof.
- Economical use thanks to flexible, well-thought-out and durable components, lightweight aluminium components and time-saving assembly (e.g. faster and easier fitting of Keder tarpaulins).
- Material and load bearing-capactity tables are available to ease the planning.
- Many areas of application, ranging from the roofing during the addition of storeys and the repair of timber roofs and coverings, weather protection for new structures, refurbishment work on motorways or over bridges and numerous applications for events.
- No interruption of working due to weather influence.
- Fully combinable to Layher Allround Scaffolding and Layher SpeedyScaf.

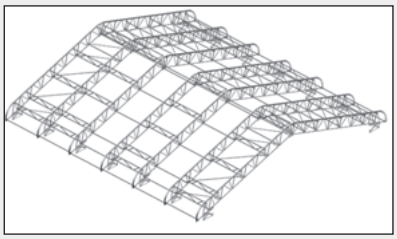
The Keder Roof XL is a lightweight, but very sturdy weather protection roof for great spans up to 30 m.

It has a standard roof angle of 18°.

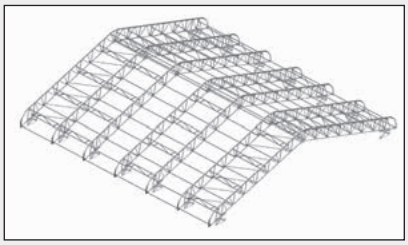


Stiffening variants
The Keder Roof XL permits, thanks to differing configurations of the stiffening components, three different stiffening variants for use depending on the span, snow load or wind load requirements.

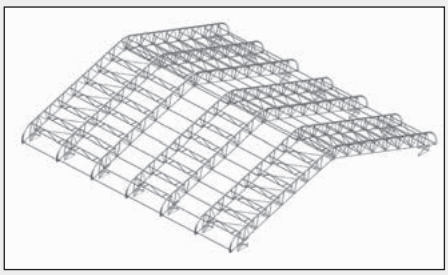
The Keder Roof XL can be planned by using LayPLAN software. Material lists and load bearing capacity lists are available. That saves you real money when planning temporary weather protection roofs.



Type "Light"
Vertical stiffener: 2.00 m
Bottom chord stiffener: 2.00 m



Type "Standard"
Vertical stiffener: 2.00 m
Bottom chord stiffener: 1.00 m



Type "Heavy"
Vertical stiffener: 1.00 m
Bottom chord stiffener: 1.00 m

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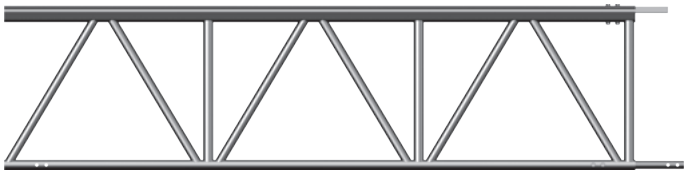

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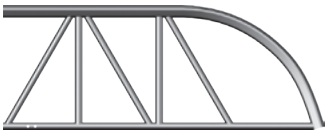

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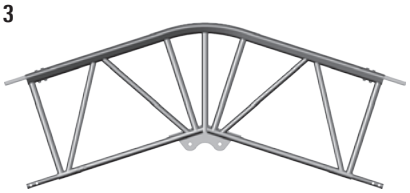

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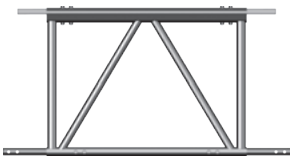

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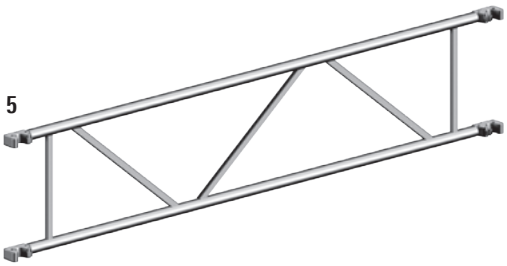

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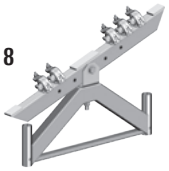

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10 a / b

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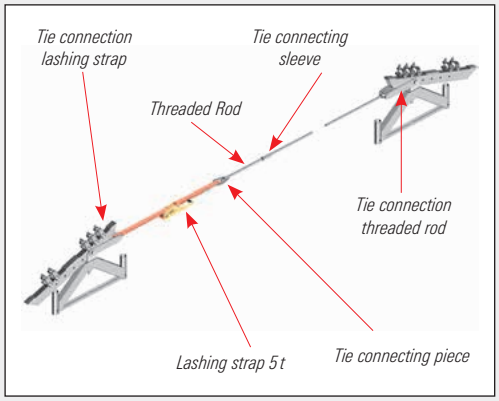
12

Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Keder Roof XL lattice beam** Aluminium	2.00 x 0.78	17.3	25	**5975.200**
		3.00 x 0.78	24.4	25	**5975.300**
2	**Keder Roof XL eaves section**	2.00 x 0.78	14.3	25	**5975.100**
3	**Keder Roof XL ridge section**	2.10 x 0.78			
	18°-Version		24.5	20	**5975.110**
	20°-Version		24.5	20	**5975.120**
4	**Keder Roof XL mono-pitch lattice beam**	1.06 x 0.78	14.5	25	**5975.106**
5	**Keder Roof XL stiffener**	2.57 x 0.55	10.0	50	**5940.257**
6	**Keder Roof XL ledger**	2.57	4.2	50	**5972.257**
7	**Keder Roof XL horizontal diagonal brace**	2.57 x 1.00	4.2	50	**5939.100**
		2.57 x 2.00	5.0	50	**5939.200**
8	**Keder Roof XL support**	0.73	19.1	20	**5975.073**
		1.09	22.4	20	**5975.109**
9	**Keder rail seal**		0.5	50 ▦	**5971.003**
10 a	**Bolt,** 12 x 95 mm and		2.5	25 ▦	**5976.091**
10b	**Safety clip,** 2.8 mm		0.5	50 ▦	**4905.001**
11	**Hinged pin,** Ø 12 mm, with pan head		2.0	20 ▦	**4905.667**
12	**Special bolt,** M12 x 60 with nut		4.0	50 ▦	**4905.061**
	alternative for Pos. 10 **Special bolt,** M12 x 90 with nut alternative for Pos. 10		2.8	25 ▦	**5975.091**

WS = wrench size **PU** = packaging unit = available ex works = delivery time on request ▦ = only available in this packaging unit

Tie fastening to roof support*:



* statically recommended

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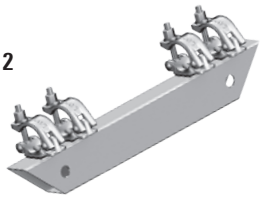

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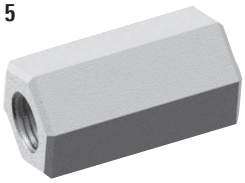

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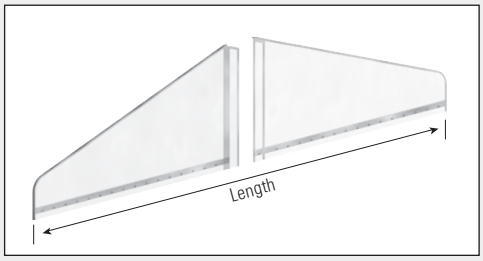
Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Keder Roof XL threaded tie**	2.00	2.9		**5976.200**
		3.00	4.4		**5976.300**
		4.00	5.8		**5976.400**
		5.00	7.3		**5976.500**
2	**Keder Roof XL tie attachment**		6.1		**5975.000**
3	**Keder Roof XL tie connection threaded rod**		2.2		**5975.020**
4	**Keder Roof XL tie connecting piece**		0.8		**5975.030**
5	**Keder Roof XL tie connecting sleeve WS 30 x 90**		0.4		**5976.000**
6	**Keder Roof XL tie connection lashing strap**		2.0		**5975.010**
7	**Keder Roof XL lashing strap 5 t,** 5.00 m with ratchet and ABS function for stepwise release	5.00	2.8		**5976.600**
8	**Keder Roof XL polyester lashing strap,** 6.00 m with clamp lock for setting the tie	6.00	0.2		**5976.610**
9	**Set for tarpaulin pulling** consisting of 2 castors, 1 aluminium tube 3.00 m and 4 securing pins	3.00	5.8		**5971.400**
	Castor for tarpaulin pulling, for 48.3 mm tube		0.4		**5971.401**

WS = wrench size **PU** = packaging unit = available ex works = delivery time on request = only available in this packaging unit

Tarpaulins
Flammability acc. to ISO 3795
< 100 mm / min
Cream-coloured PVC tarpaulins with a weight of 630 g / m².

Material:
PVC-coated polyester fabric,
heat and UV-resistant.

Tarpaulins
Flammability acc. to DIN 4102 B1, low-inflammability
PVC tarpaulins with a weight of 650 g / m². In the case of public events, the building inspection authorities usually demand low-inflammability tarpaulins.



Other tarpaulins on request

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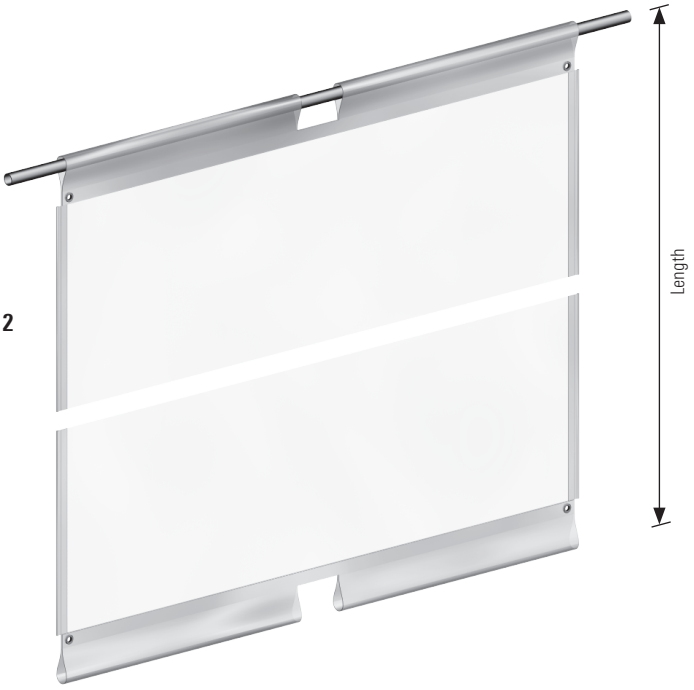

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Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Keder Roof XL gable tarpaulin,** flame-retarding	9.60	13.8	2	**5972.381**
	Flammability acc. to ISO 3795	11.50	17.9	2	**5972.382**
	< 100 mm / min	13.40	22.1	2	**5972.383**
	2-piece	15.30	27.4	2	**5972.384**
		17.20	33.1	2	**5972.385**
		19.10	39.4	2	**5972.386**
		21.00	44.7	1	**5972.387**
		22.90	51.7	2	**5972.388**
		24.80	59.5	5	**5972.389**
		26.80	68.2	2	**5972.390**
	4-piece	28.70	76.7	2	**5972.391**
		30.60	85.8	5	**5972.392**
		32.50	95.5	5	**5972.393**
	Keder Roof XL gable tarpaulin, low-inflammability	9.60	13.8	2	**5973.381**
	Flammability acc. to DIN 4102 B1,	11.50	17.9	5	**5973.382**
	2-piece	13.40	22.1	2	**5973.383**
		15.30	27.4	2	**5973.384**
		17.20	33.1	2	**5973.385**
		19.10	39.4	2	**5973.386**
		21.00	44.7	2	**5973.387**
		22.90	51.7	2	**5973.388**
		24.80	59.5	2	**5973.389**
		26.80	68.2	2	**5973.390**
	4-piece	28.70	76.7	6	**5973.391**
		30.60	85.7	2	**5973.392**
		32.50	95.5	2	**5973.393**
2	**Keder Roof, roof tarpaulin,** flame-retarding	11.00 x 2.57	23.5	5	**5972.306**
	Flammability acc. to ISO 3795 < 100 mm / min	14.00 x 2.57	28.2	4	**5972.307**
	Design width 2.57 m	17.00 x 2.57	35.5	5	**5972.308**
		20.00 x 2.57	40.7	5	**5972.309**
		22.50 x 2.57	46.3	5	**5972.370**
		24.50 x 2.57	50.4	5	**5972.371**
		26.50 x 2.57	54.5	16	**5972.372**
		28.50 x 2.57	58.5	5	**5972.373**
		30.50 x 2.57	62.7	16	**5972.374**
		32.50 x 2.57	66.8	16	**5972.375**
		34.50 x 2.57	70.9	5	**5972.376**
		36.50 x 2.57	75.0	5	**5972.377**
		38.50 x 2.57	79.2	5	**5972.378**
	Design width 2.07 m	11.00 x 2.07	18.4	4	**5972.360**
		14.00 x 2.07	23.5	4	**5972.361**
		17.00 x 2.07	28.5	5	**5972.362**
		20.00 x 2.07	33.5	4	**5972.363**
	Keder Roof, roof tarpaulin, low-inflammability	11.00 x 2.57	24.0	2	**5973.306**
	Flammability acc. to DIN 4102 B1,	14.00 x 2.57	28.8	1	**5973.307**
	Design width 2.57 m	17.00 x 2.57	36.3	5	**5973.308**
		20.00 x 2.57	41.6	2	**5973.309**
		22.50 x 2.57	46.8	5	**5973.370**
		24.50 x 2.57	51.0	16	**5973.371**
		26.50 x 2.57	55.2	16	**5973.372**
		28.50 x 2.57	59.3	16	**5973.373**
		30.50 x 2.57	63.5	16	**5973.374**
		32.50 x 2.57	67.7	16	**5973.375**
		34.50 x 2.57	73.9	16	**5973.376**
		36.50 x 2.57	76.0	16	**5973.377**
		38.50 x 2.57	80.1	16	**5973.378**
	Design width 2.07 m	11.00 x 2.07	18.8	2	**5973.360**
		14.00 x 2.07	24.0	5	**5973.361**
		17.00 x 2.07	29.2	1	**5973.362**
		20.00 x 2.07	34.4	5	**5973.363**
3	**Tarpaulin clip**		2.0	50	**5971.141**

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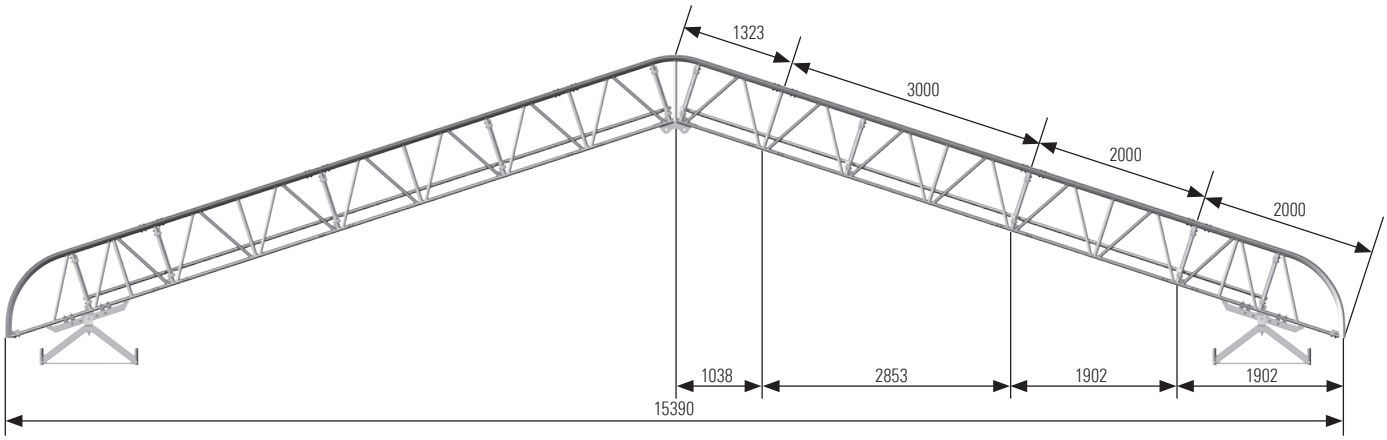
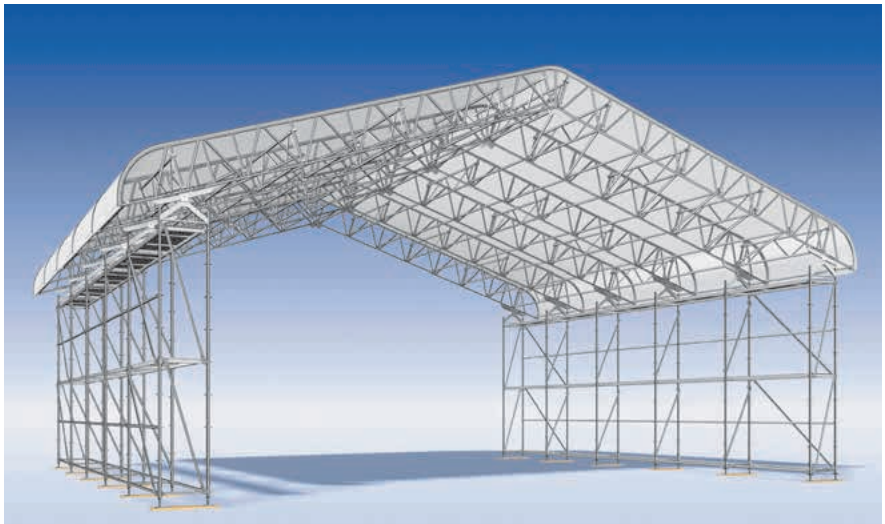


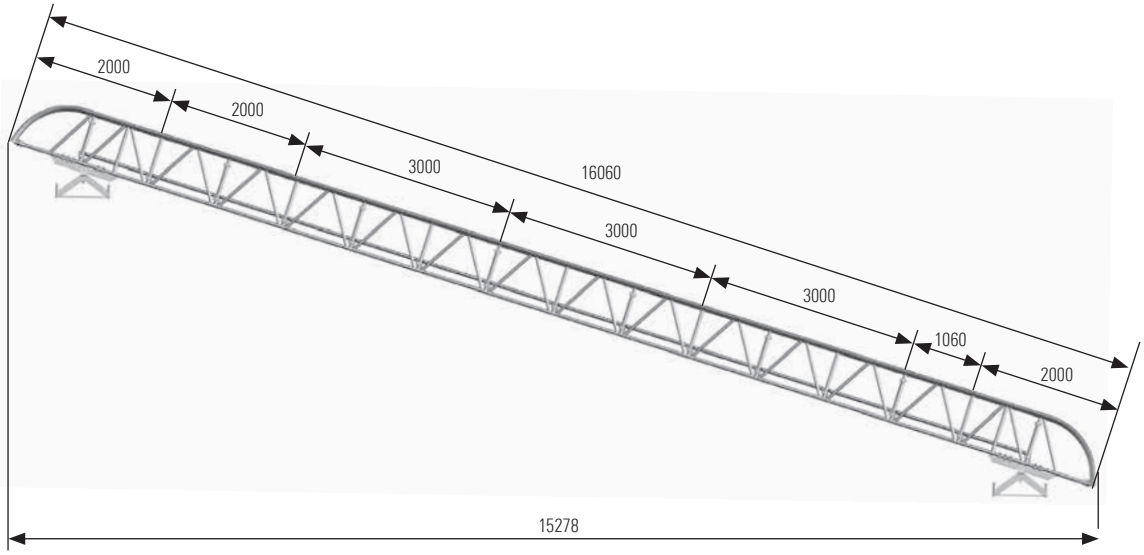
Material example

ROOFED BASE AREA: 15.40 m x 12.86 m (5 bays each 2.57 m), without support scaffolding, weight: 1,942.3 kg (9.87 kg / m²)

Following material is needed	Quantity	PU [pcs.]	Ref. No.
Safety clips 2.8 mm (72 pcs. needed)	2	50	**4905.001**
GI Securing pins (72 pcs. needed)	4	20	**4905.667**
Horizontal diagonal brace 1.00 m x 2.,57 m	28		**5939.100**
Stiffener 2.57 m	30		**5940.257**
Keder rail seal (36 pcs. needed)	1	50	**5971.003**
Tarpaulin clips (100 pcs. needed)	2	50	**5971.141**
Ledger 2.57 m	60		**5972.257**
Tarpaulin 2.57 x 20.00 m	5		**5972.309**
Support 0.73 m	12		**5975.073**
Eaves section	12		**5975.100**
Ridge section	6		**5975.110**
Lattice beam 2.00 m	12		**5975.200**
Lattice beam 3.00 m	12		**5975.300**
Bolt dia. 12 x 95 mm (72 pcs. needed)	3	25	**5976.091**

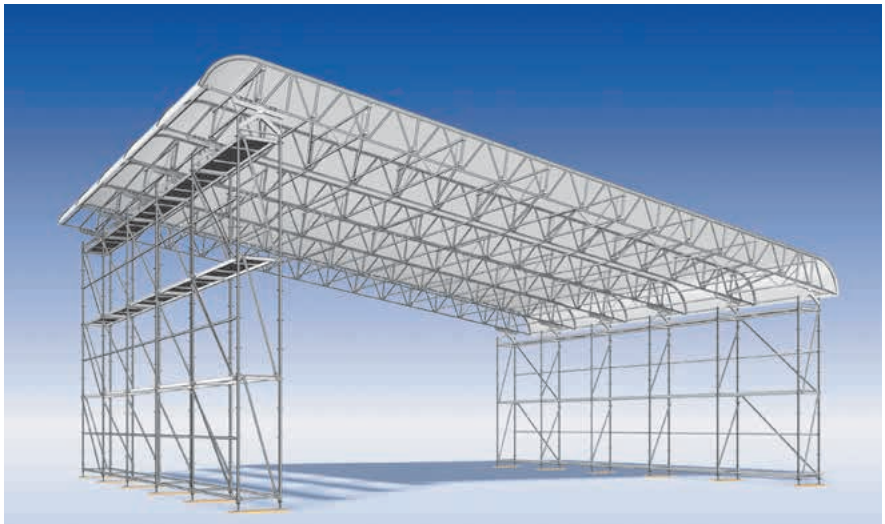


Notice: Potentially neccessary stabilizing measurement are not illustrated.



ROOFED BASE AREA: 15.30 m x 12.86 m (5 bays each 2.57 m with a roof angle of 18°), without support scaffolding, weight: 1,869.1 kg (9.50 kg / m²)

Following material is needed	Quantity	PU [pcs.]	Ref. No.
Safety clips 2.8 mm (72 pcs. needed)	2	50 ▦	**4905.001**
GI Securing pins (72 pcs. needed)	4	20 ▦	**4905.667**
Horizontal diagonal brace 1.00 m x 2.57 m	28		**5939.100**
Stiffener 2.57 m	30		**5940.257**
Keder rail seal (36 pcs. needed)	1	50 ▦	**5971.003**
Tarpaulin clips (100 pcs. needed)	2	50 ▦	**5971.141**
Ledger 2.57 m	61		**5972.257**
Tarpaulin 2.57 x 20.00 m	5		**5972.309**
Support 0.73 m	12		**5975.073**
Eaves section	12		**5975.100**
Ridge section	6		**5975.106**
Lattice beam 2.00 m	6		**5975.200**
Lattice beam 3.00 m	18		**5975.300**
Bolt dia. 12 x 95 mm (72 pcs. needed)	3	25 ▦	**5976.091**



Notice: Potentially neccessary stabilizing measurement are not illustrated.

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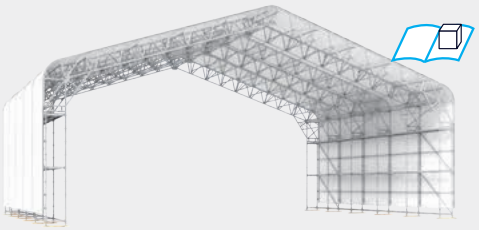
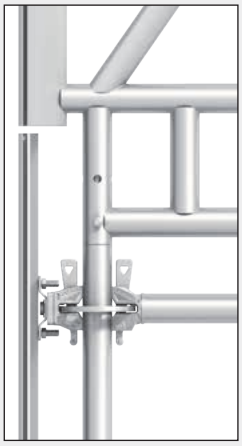
Keder halls

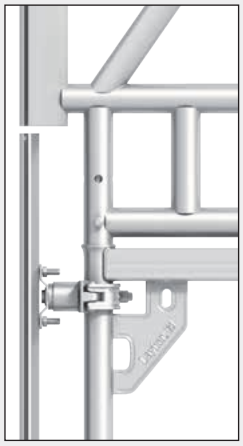
The Bending-Resistant Corner is available as a special roof support, to create visually attractive and closed halls with wide spans using the Keder Roof XL. It can be mounted both on support scaffolding made from Allround parts and on SpeedyScaf.



The Bending-Resistant Corner can be connected quickly and easily by setting it down onto the spigots. The roof tarpaulins are joined to the wall covering using rotatable keder rail holders and keder rails 2000 from the Layher accessories range.



Transition from Keder Roof XL to Allround support scaffolding



Transition from Keder Roof XL to SpeedyScaf support scaffolding

The support scaffolding can also be used as fully fledged work scaffolding, and the attachment of brackets or inward-facing projections presents no problem when parts from the Layher construction kit are used.

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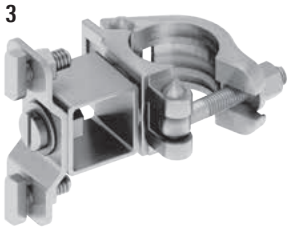


4

Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Bending-resistant corner XL**		34.7	10	**5975.160**
2	**Keder rail holder,** rotable, with wedge head, incl. 2 groove bolts, for Allround Scaffolding		0.9		**5573.000**
3	**Keder rail holder,** rotable, with half-coupler, incl. 2 groove bolts, for Speedyscaf System		1.0		**5573.006**
4	**Aluminium keder rail 2000**	1.30	2.0		**4201.130**
		2.00	3.0		**4201.200**
		2.25	3.3		**4201.220**
		2.50	3.8		**4201.250**
		3.00	4.5		**4201.300**
		4.00	6.0		**4201.400**

WS = wrench size **PU** = packaging unit = available ex works = delivery time on request = only available in this packaging unit

MOBILE ROOFS

THE ECONOMICAL EXPANSION OF LAYHER ROOF SYSTEMS

Whether on a rapidly advancing construction site or under cramped conditions, you can get Layher's protective roofs rolling to where the action is with only a few extra components.

Flexibility and economy to the highest degree with mobile roofs from Layher.

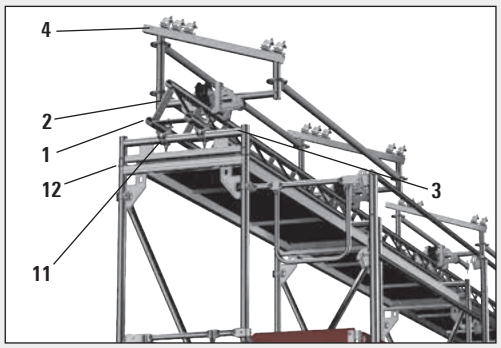
YOUR BENEFITS AT A GLANCE

- Economic extension for the Layher weather roofs.
- Flexibility is guaranteed thanks to possible openings to slide the roof apart. Also overlapping roofs are possible.
- Flexible and economic solution by moving the roof. The complete site is not needed to be covered.
- Slight variations in the alignment of the rails can be compensated with a transverse adjustment on the trolley.
- Fully combinable with Layher SpeedyScaf and Layher Allround Scaffolding.
- Flexible bay length – independent from the substructure.

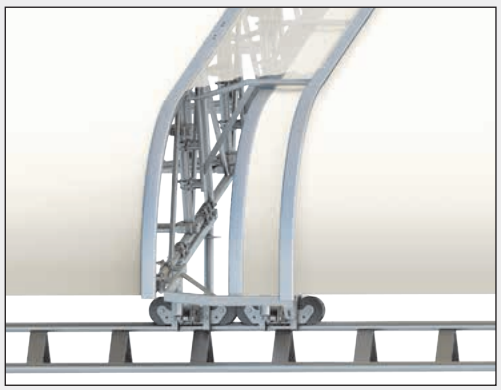
Mobile Roofs
Keder roof or Keder roof XL can easily be made mobile with a few additional parts.

This can then be moved section by section to keep pace with construction progress, so it's no longer essential to provide a roof over the entire surface, or alternatively to dismantle and rebuild a roof for each stage of building work. The mobile roofs fit onto all scaffolding systems and are also flexible and economical to use. The **rails** 1 don't need to be laid exactly parallel, since the **trolley** 2 permits equalization in the transverse direction.

The support scaffolding bay widths are completely independent of the mobile roof, allowing the scaffolding to be built with wider bays. Besides faster assembly, the supporting structure also permits material savings. The assembly of the roofs themselves is also simple and quick: the roof bays can for example be assembled at a readily accessible point at the gable end of the building, from an auxiliary scaffolding or using a crane.
One bay at a time is assembled, then moved, and has the next bay attached to it.



The **overlap bracket T18** 5 can be used, when de roof binders are mobile. If separate segments of the roof must be put togehter, there will be a gap in the roof. By using the **overlap bracket T18** 5 combined with **Aluminium keder rails 2000** 12 and **roof tarpaulins 0.46 m wide** 11**,** these gaps can be closed.
For the eaves, the **overlap eaves bracket T18** 6 and the **overlap keder bow 2000** 7 is used.



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3a


3b


4a


4b


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10a


10b


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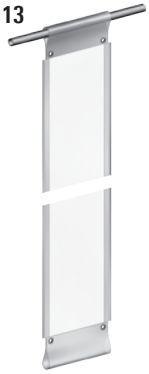

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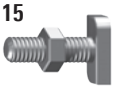
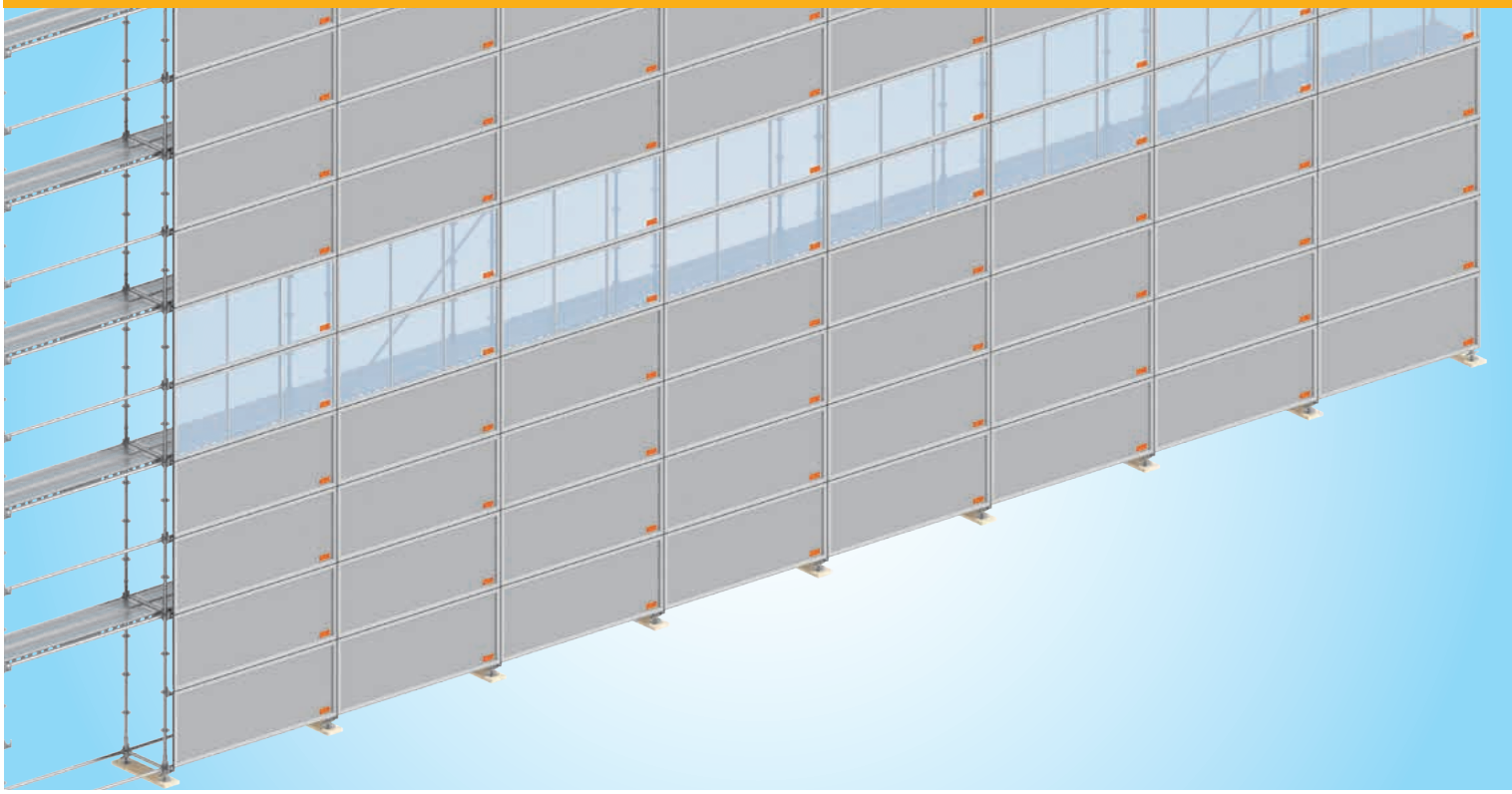


Pos.	Description		Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Rail,** 3.00 m		3,00 x 0,30	53,4	21	**5941.300**
2	**Trolley T17** Castors of Polyamide, permanent Lift-off preventer		0,40 x 0,45	16,2	50	**5938.040**
3a	**Adapter for rail T12 0.73 m**		0,73 x 0,17	5,5		**5938.027**
3b	**Adapter for rail T12 1.09 m**		1,09 x 0,17	11,5		**5938.028**
4a	**Roof support,** 20° rigid, 0.73 m (for Keder roof)		0,51 x 0,80	12,4	20	**5938.022**
4b	**Roof support,** 18° rigid, 0.73 m (for Keder roof XL) with Allround rosettes		0,51 x 0,80	15,5	20	**5938.073**
5	**Overlap bracket T18**			5,5	10	**5938.044**
6	**Overlap bracket eaves T18**			5,4	10	**5938.043**
7	**Overlap keder bow 2000**			2,3	50	**5938.042**
8	**Lattice beam connector T16,** dia. 38 mm		0,44	2,4		**4925.000**
9	**Connector for trolley** for Roof support 5938.022		2,63 x 0,13	11,1	50	**5938.019**
10a	**Bolt,** dia. 12 x 65 mm and			3,5	50	**4905.066**
	Safety clip, 2.8 mm			0,5	50	**4905.001**
10b	**Hinged pin** 8a or 8b for connecting the rails 5941.300 with lattice beam spigots 4922.000 and for securing of 5938.019			2,0	20	**4905.667**
11	**Double coupler with coarse thread** Class BB, EN 74-1 RA BB C3 M, quality-monitored, for use in the classes B and BB on steel and aluminium tube acc. to approval Z-8.331-947	SW 19		1,3	25	**4777.019**
		SW 22		1,3	25	**4777.022**
12	**Locking pin,** red, dia. 11 mm for securing of 5938.027, 8638.028			0,2	100	**4000.001**
13	**Keder roof tarpaulin,** 0.67 m wide					**on request**
14	**Aluminium keder rail 2000**		1,30	2,0		**4201.130**
			2,00	3,0		**4201.200**
			2,25	3,3		**4201.220**
			2,50	3,8		**4201.250**
			3,00	4,5		**4201.300**
			4,00	6,0		**4201.400**
15	**Captive bolt for keder rail** M12 x 40, with nut			5,0	50	**4206.001**

WS = wrench size **PU** = packaging unit = available ex works = delivery time on request = only available in this packaging unit

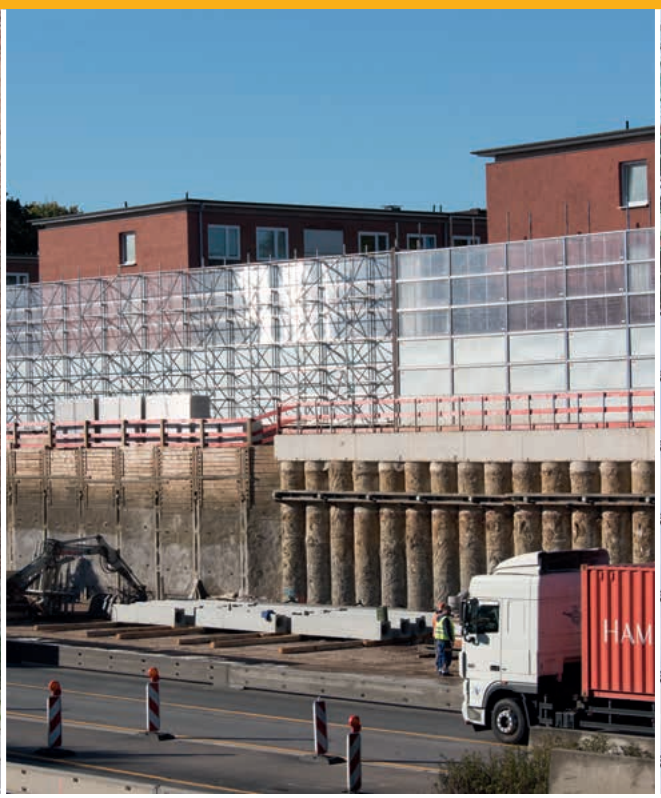
LAYHER PROTECT SYSTEM

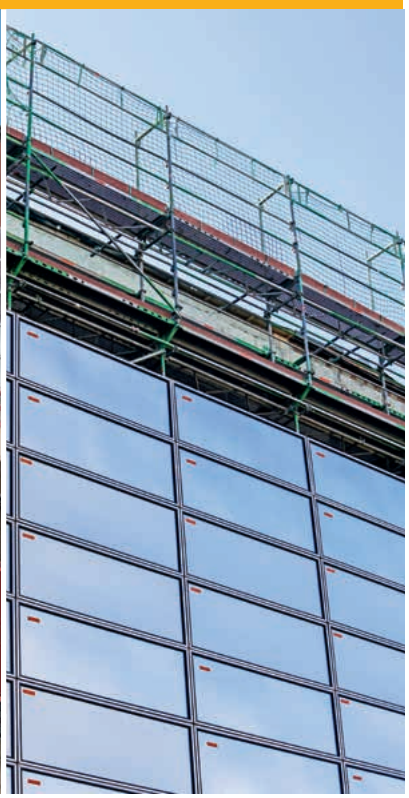
THE LOW-COST, LABOUR-SAVING ENCLOSURE FOR ENVIRONMENT, NOISE AND WEATHER PROTECTION



With the **Protect System,** Layher can supply a cassette enclosure system which is compatible with the Layher Allround scaffolding and SpeedyScaf systems and which meets requirements concerning environmental protection and insulation from noise and weather. **It is an exceptionally economical solution which boasts Layher's renowned quality:**

- **Only a small number of individual parts, designed for frequent, changing applications.**
- **Rapid, easy assembly in a simple, logical sequence.**
- The cassettes are designed for Layher axis dimensions (max. width: 3.07 m) and, with a height of 1.00 m, are very simple to assemble and move into the scaffolding.
- The surrounding rubber seal makes the cassette elements almost dustproof **(facade coating),** vacuum-compatible **(removal of asbestos),** waterproof **(sandblasting work).**
- Electrostatically inert and therefore easy to clean.
- The wall cassettes can be used with a dimension of **airborne sound insulation** of Rw'=26 dB.
- **Light cassettes** permit work in daylight conditions within the enclosure.
- Cassette elements exist for **external and internal corners.**
- A specially developed **connection rail** is used to establish a connection with the existing building or the ground.
- Practical solutions for horizontal and vertical dimension compensation are available.
- The anchoring layout corresponds to that of scaffolding which is clad with tarpaulins.
- **Access elements** compatible with system and individual requirements are available.





Layher Protect System:
A system which meets all environmental and safety requirements and prevents all risks. The individual components of the Protect System can only be supplied ex works from Eibensbach.
Metric bay lengths can be ordered subject to delivery times.

YOUR BENEFITS AT A GLANCE

- Requirements of environmental, sound and weather protection are fulfilled.
- Rapid, easy assembly in a simple, logical sequence.
- The all-round rubber seal makes the cassette elements almost dustproof (facade coating), vacuum-compatible (removal of asbestos), waterproof (sandblasting work).
- Only few, optical attractive components, designed for frequently changing applications.
- Fully combinable to Layher Allround Scaffolding and Layher SpeedyScaf.

Cassette elements
Frames made from aluminium sections with galvanized sheet steel inserts. A surrounding rubber seal provides a clean, precise connection to neighbouring elements.

The **wall cassettes** 1 can be used with a dimension of airborne sound insulation of Rw'=26 dB.

On request, it is also possible to supply special wall cassette variants with enhanced sound isolation properties in accordance with the "Supplementary Technical Requirements and Guidelines for Highway Noise Insulation Walls" ZTV-Lsw 88:1988 and the evaluation in accordance with DB guideline 800.2001, section 2.

A test report concerning the airborne sound insulation of scaffolding coverings issued by the Fraunhofer Institute for Building Mechanics in accordance with ZTV-Lsw 88:1988 or DB guideline 800.2001 is available.

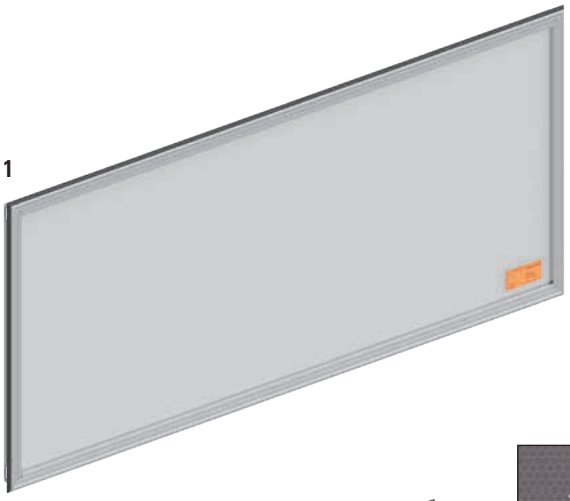
Thanks to the use of **light cassettes** 2, it is possible to work in daylight conditions behind the enclosure. In this case, a translucent plastic web plate replaces the steel plate in the aluminium section frame.

Connection rails 3 close the enclosure at the ground or building. These are clamped to the cassettes and make it possible to pull a Keder tarpaulin into the built-in Keder groove. Alternatively, a sheet or board can be adapted for use with the wooden strip intended for this purpose. Connection rails also permit the clean, close-fitting connection of fitted bays.

Internal and external corners are formed using **corner cassettes** 4, while the corresponding **connection rails** 3, which are inserted in the holder, permit a close-fitting connection to the neighbouring cassettes and close the system both visually and in functional terms.

Corner elements with other angles upon request.

1



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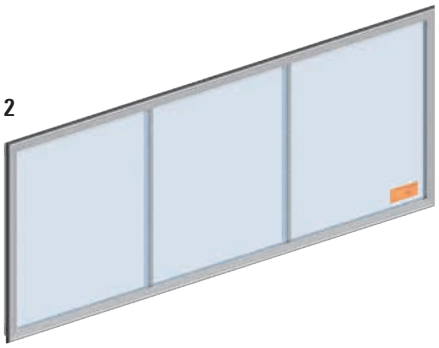
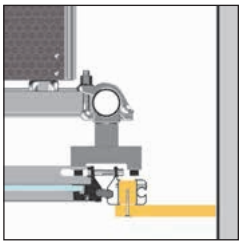
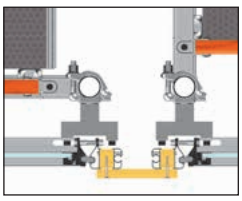




Wall connection



Equalizing bay connection

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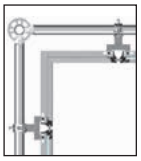

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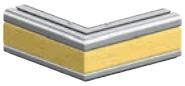


Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**Wall cassette**				
	0.73 m long	0.73 x 1.00	7.7	15	**5980.073**
	1.09 m long	1.09 x 1.00	10.5	15	**5980.109**
	1.57 m long	1.57 x 1.00	14.3	15	**5980.157**
	2.07 m long	2.07 x 1.00	18.2	15	**5980.207**
	2.57 m long	2.57 x 1.00	22.2	15	**5980.257**
	3.07 m long	3.07 x 1.00	27.2	15	**5980.308**
	Wall cassette, metric				
	0.50 m long	0.50 x 1.00	6.0	15	**5980.050**
	1.00 m long	1.00 x 1.00	10.0	15	**5980.100**
	1.50 m long	1.50 x 1.00	14.0	15	**5980.150**
	2.00 m long	2.00 x 1.00	18.0	15	**5980.200**
	2.50 m long	2.50 x 1.00	22.0	15	**5980.250**
	3.00 m long	3.00 x 1.00	27.0	15	**5980.301**
2	**Light cassette**				
	0.73 m long	0.73 x 1.00	5.2	15	**5981.073**
	1.09 m long	1.09 x 1.00	7.1	15	**5981.109**
	1.57 m long	1.57 x 1.00	9.5	15	**5984.157**
	2.07 m long	2.07 x 1.00	11.5	15	**5984.207**
	2.57 m long	2.57 x 1.00	14.2	15	**5984.257**
	3.07 m long	3.07 x 1.00	16.2	15	**5984.307**
	Light cassette, metric				
	0.50 m long	0.50 x 1.00	4.0	15	**5981.050**
	1.00 m long	1.00 x 1.00	6.0	15	**5981.100**
	1.50 m long	1.50 x 1.00	8.6	15	**5984.150**
	2.00 m long	2.00 x 1.00	10.6	15	**5984.200**
	2.50 m long	2.50 x 1.00	13.0	15	**5984.250**
	3.00 m long	3.00 x 1.00	15.5	15	**5984.300**
3	**Connection rail**				
	0.73 m long	0.73	1.7	20	**5983.073**
	1.09 m long	1.09	1.9	30	**5983.109**
	1.57 m long	1.57	2.9	30	**5983.157**
	2.07 m long	2.07	3.7	30	**5983.207**
	2.57 m long	2.57	4.6	30	**5983.257**
	3.07 m long	3.07	5.5	30	**5983.307**
	Connection rail, metric				
	0.50 m long	0.50	1.2	30	**5983.050**
	1.00 m long	1.00	1.9	30	**5983.100**
	1.50 m long	1.50	2.6	30	**5983.150**
	2.00 m long	2.00	3.6	30	**5983.200**
	2.50 m long	2.50	4.5	50	**5983.250**
	3.00 m long	3.00	5.4	30	**5983.300**
4	**Corner cassette 90°**	0.16 x 1.00	6.2	50	**5985.010**
5	**Allround inner corner cassette 90°,** 1.00 m	0.39 x 1.00	10.2	20	**5985.040**
6	**Connection rail 90°**	0.17 x 0.17	0.6	20	**5985.011**
	Connection rail 90°, internal	0.39 x 0.39	1.8	40	**5985.041**

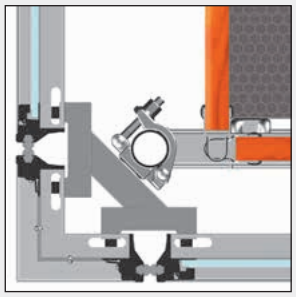
WS = wrench size **PU** = packaging unit = available ex works = delivery time on request = only available in this packaging unit

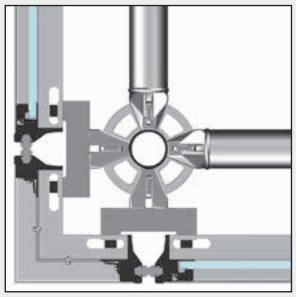
Protect System elements

The cassettes are secured to the scaffolding using special **holders** 1-4**;** which are installed at a standard height of 1.00 m. Once the lower row of cassettes has been installed and aligned, all the other cassettes are mounted and secured simply using holders. The subsequent removal and installation of individual cassettes for material covering or other purposes is possible.

For access to the cladded scaffolding, the **light door elements** 5 and 6 are available. Both doors are for axis dimensions 1.57 m and thanks to the gap ledger 7 they are free of tripping hazards.

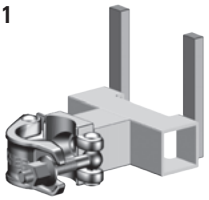
If required, the **light cassettes** can be equipped with single-glazed safety glass (particularly resistant to mechanical loads).





The components of the Protect system are only available ex works. Metric bay lengths are possible with delivery time upon request.

1



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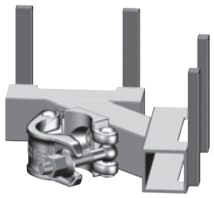

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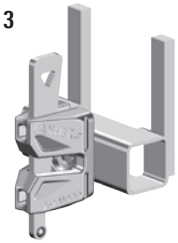

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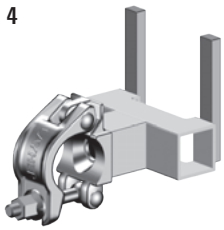

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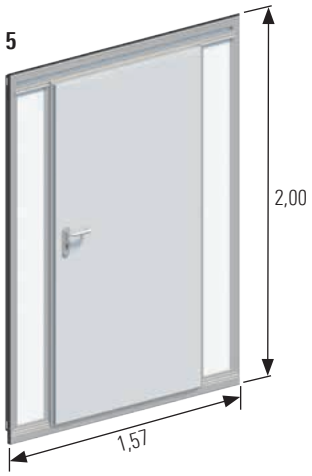
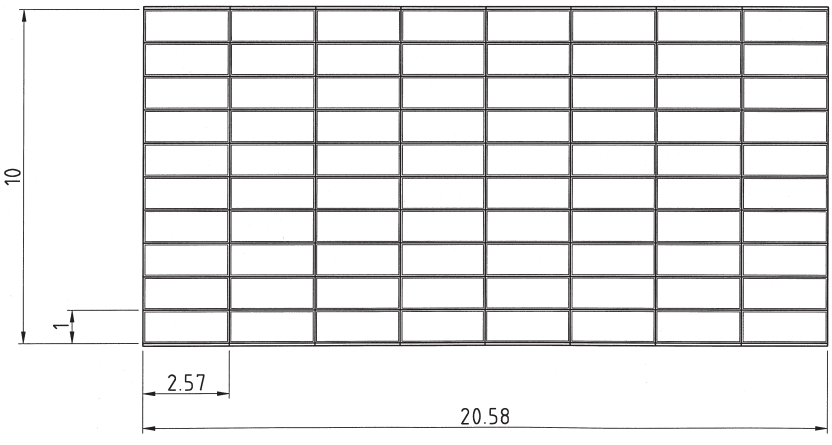


6

7

Material example

This material example is based on a facade scaffolding of Allround Scaffolding:
Width 8 x 2.57 m = 20.56 m, height 10.00 m,
result a face of **205.60 m²;**
at the lower edge of the cassettes, connection rails were fitted.



Pos.	Description		Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	**SpeedyScaf holder for wall cassette T9**	WS 19		1.6	250	**5986.011**
2	**SpeedyScaf corner holder for wall cassette T9**	WS 19		2.4	500	**5986.021**
3	**Allround holder for wall cassette T9**			1.2	250	**5986.031**
4	**Ledger holder for half-coupling T9**	WS 19		1.6	300	**5986.041**
5	**Light door element for site access** Hinged DIN right height clearance 0.94 m width clearance 1.84 m		1.57 x 2.00	45.5		**5985.156**
6	**Light door element for escape ways** Hinged DIN right with anti-panic handle height clearance 1.19 m width clearance 2.09 m		1.57 x 3.00	68.6		**5985.157**
7	**Gap ledger** for Protect light door element		1.57	12.7	50	**5985.158**
8	**Real glass cassettes** ESG safety glass – without illustration		0.73 – 3.07 x 1.00			**on request**
9	**Wall cassettes with enhanced sound insulation** in accordance with ZTV-Lsw 88:1988 or DB guidelines 800.2001 (section 2) – without illustration		0.73 – 3.07 x 1.00			**on request**

Following material is needed	Quantity	Ref. No.
Wall cassette 2.57 x 1.00 m	80	**5980.257**
Allround holder	99	**5986.031**
Connection rail 2.57 m	8	**5983.257**

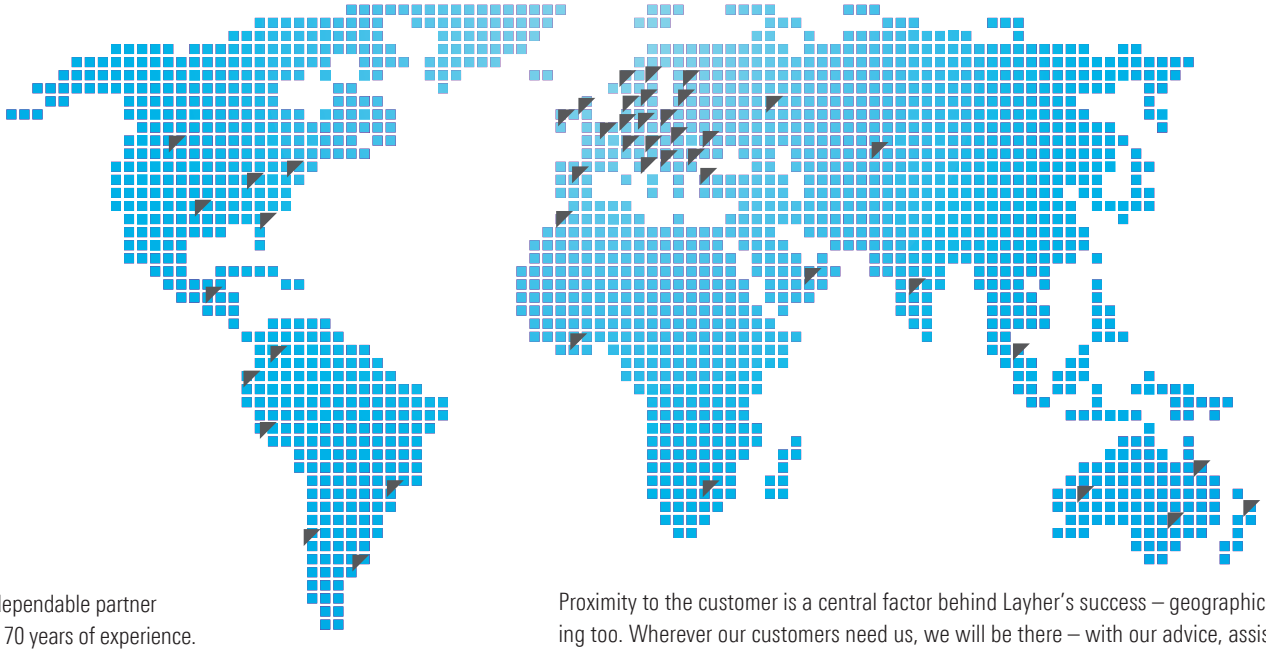
WS = wrench size **PU** = packaging unit = available ex works = delivery time on request = only available in this packaging unit

R

S

T

W



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Proximity to the customer is a central factor behind Layher's success – geographically speaking too. Wherever our customers need us, we will be there – with our advice, assistance and solutions.

- **SpeedyScaf**
- **Allround Scaffolding**
- **System-free Accessories**
- **Protective Systems**
- **Shoring**
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- **Ladders**

Headquarters in Eibensbach

Plant 2 in Gueglingen

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More Possibilities. The Scaffolding System.

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Scaffolding Grandstands Ladders

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