

LAYHER PROTECTIVE SYSTEMS CATALOGUE



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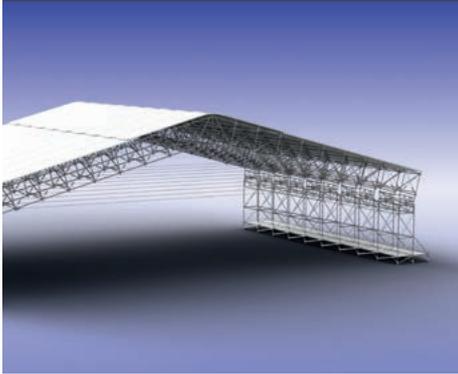
Quality management
certified according
to ISO 9001:2008





ALLROUND FW SYSTEM ROOF

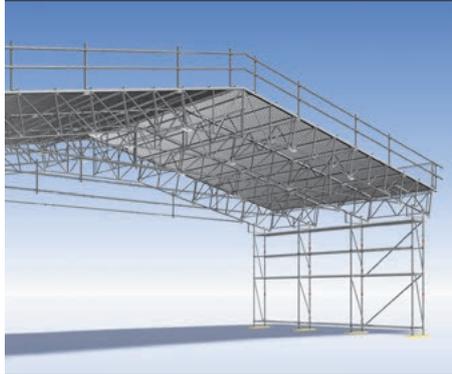
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CASSETTE ROOF

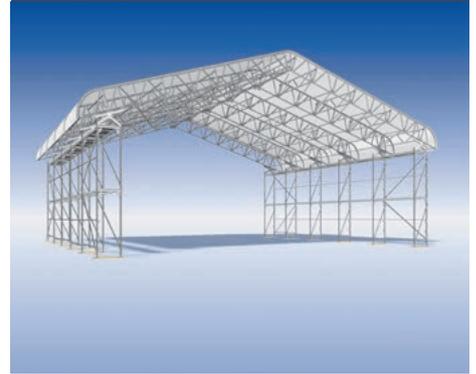
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PRODUCT PORTFOLIO



The Layher product range – all catalogues at a glance

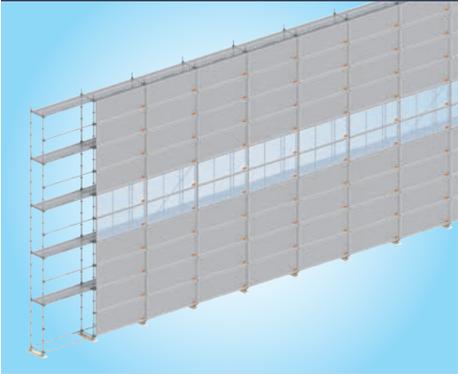
Speedyscaf System	Ref. No. 8102.259
Allround Scaffolding	Ref. No. 8116.255
System-free Accessories	Ref. No. 8103.257
Protective Systems	Ref. No. 8121.257
Event Systems	Ref. No. 8111.230
Access Technology	Ref. No. 8118.229

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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 1,700 dedicated Layher employees are creating more possibilities for our customers every single day. In more than 40 countries all over the world.



MORE INFORMATION

Discover the world of Layher in its company film at:

yt-image-en.layher.com



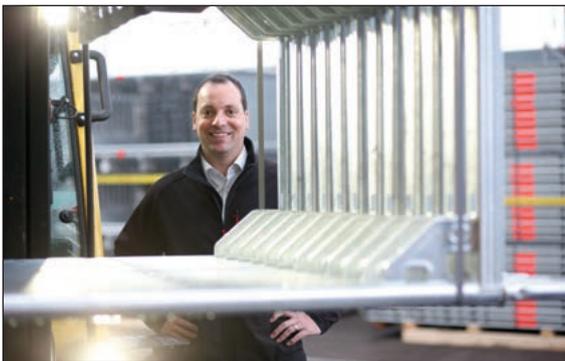
MORE SPEED

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 several 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

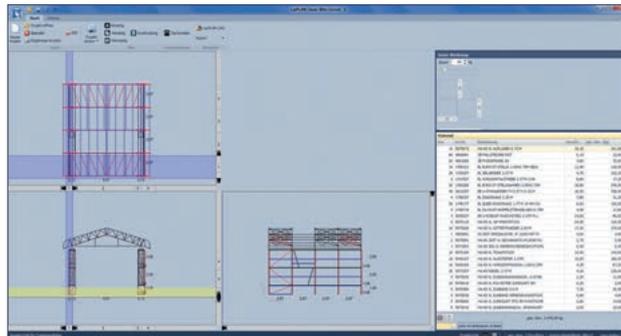
With the LayPLAN CLASSIC modules for Allround Scaffolding and SpeedyScaf, individualised scaffolding solutions can be configured quickly and easily: whether they're for circular or facade scaffolding made from SpeedyScaf, for birdcage scaffolding and free-standing towers made from Allround Scaffolding, 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.

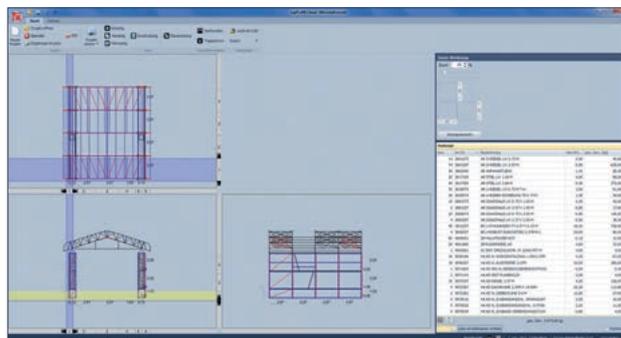
LayPLAN CAD

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.

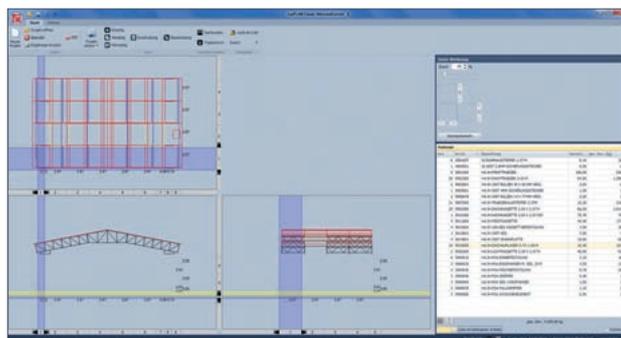
Thanks to integration into the LayPLAN system, the basic planning can be handled in automated form using the proven LayPLAN CLASSIC. Project data can be quickly recorded using input masks, ensuring a time saving for every order. The data are then simply exported into the AutoCAD program, which offers 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. It is possible to export them as 3D PDFs too (3D PDF exporter only included with LayPLAN CAD OEM version), which brings benefits in the tender phase and also facilitates later assembly. 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.



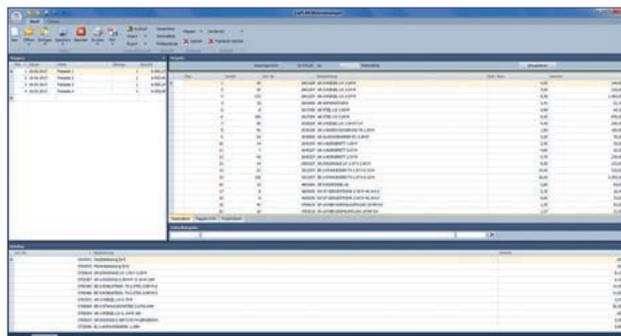
Keder Roof XL with SpeedyScaf as substructure



Keder Roof XL with Allround Scaffolding as substructure

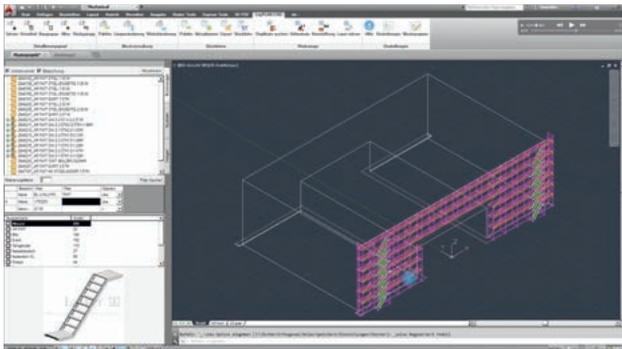


Cassette Roof

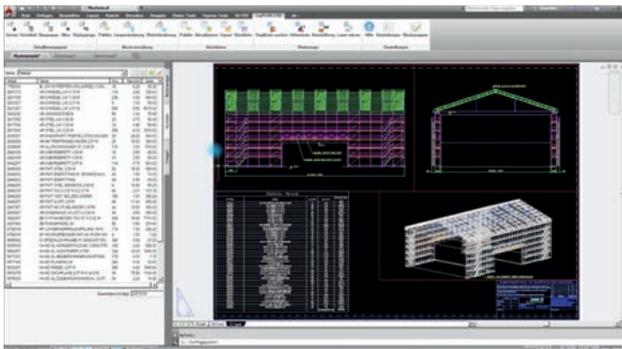


LayPLAN Material Manager

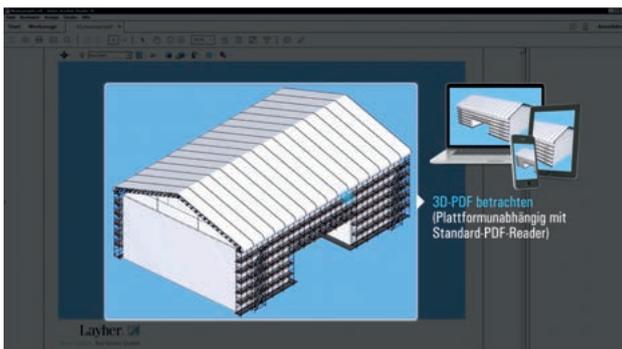
Part of LayPLAN CLASSIC and LayPLAN CAD



Planning of individualised scaffolding structures in LayPLAN CAD



Creation of planning documents with integral material lists in LayPLAN CAD



Generation of 3D PDFs with the aid of 3D PDF exporters

How can I acquire LayPLAN?

Registration and all the ordering processes can be conveniently accessed at the Layher website: <http://software.layher.com>

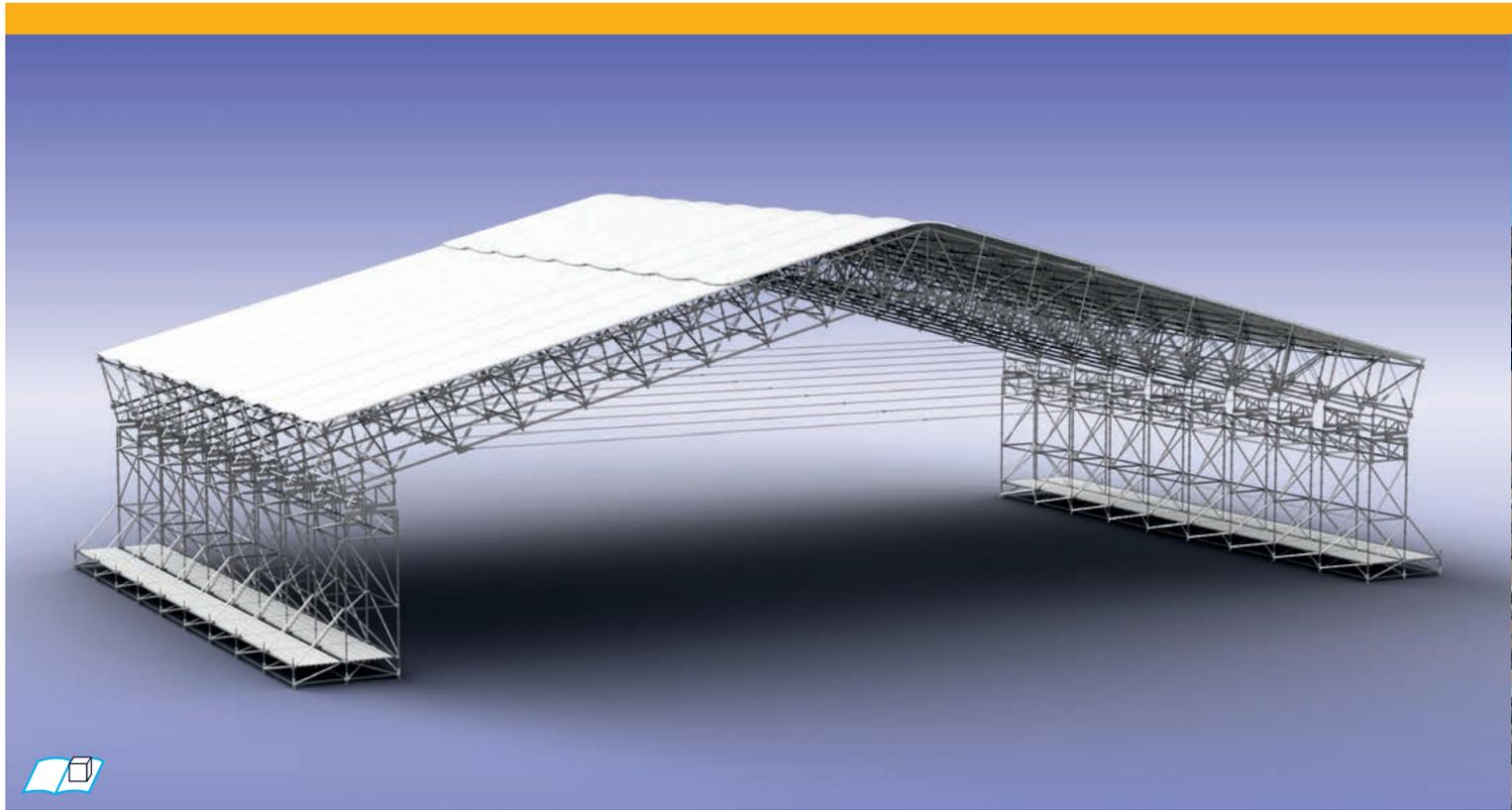
A contact form gives you the data to access our software portal, where you can download a 30-day test version and also find the order form for the full version.

The individual software packages can be licensed for a validity of 1 year from our sales partner Mensch und Maschine Deutschland GmbH, which also handles the entire sales process and provides continuous hotline support for these packages. The license is extended by a further year if a subscription model is selected, unless it is terminated with two months notice to the end of the contractual year.

Pos.	Description
1	LayPLAN CLASSIC scaffolding configurator for SpeedyScaf, Allround Scaffolding, weather protection roofs and rolling towers
2	LayPLAN CAD plug-in for AutoCAD, for designing complex scaffolding in 3D and for developing scaffolding proposals from LayPLAN CLASSIC
3	LayPLAN CAD OEM AutoCAD 2017 OEM with LayPLAN CAD plug-in for designing complex scaffolding in 3D, incl. 3D PDF exporter, and for developing scaffolding proposals from LayPLAN CLASSIC

ALLROUND FW SYSTEM ROOF

FOR SPANS OF OVER 45 METRES.



Notice: Potentially necessary 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

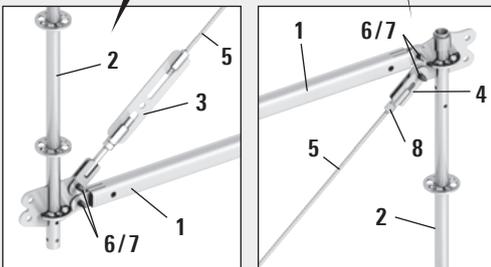
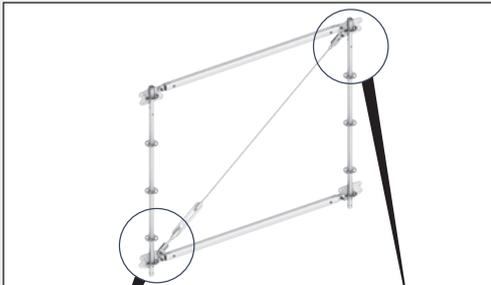
- ▶ Lattice system with great structural height permits high roof widths of more than 45 m, depending on local wind and snow load conditions.
- ▶ Thank to the many flexible applications of the Allround FW System for weather protection roofs, bridging and bracing for work scaffolding, it is now being 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.



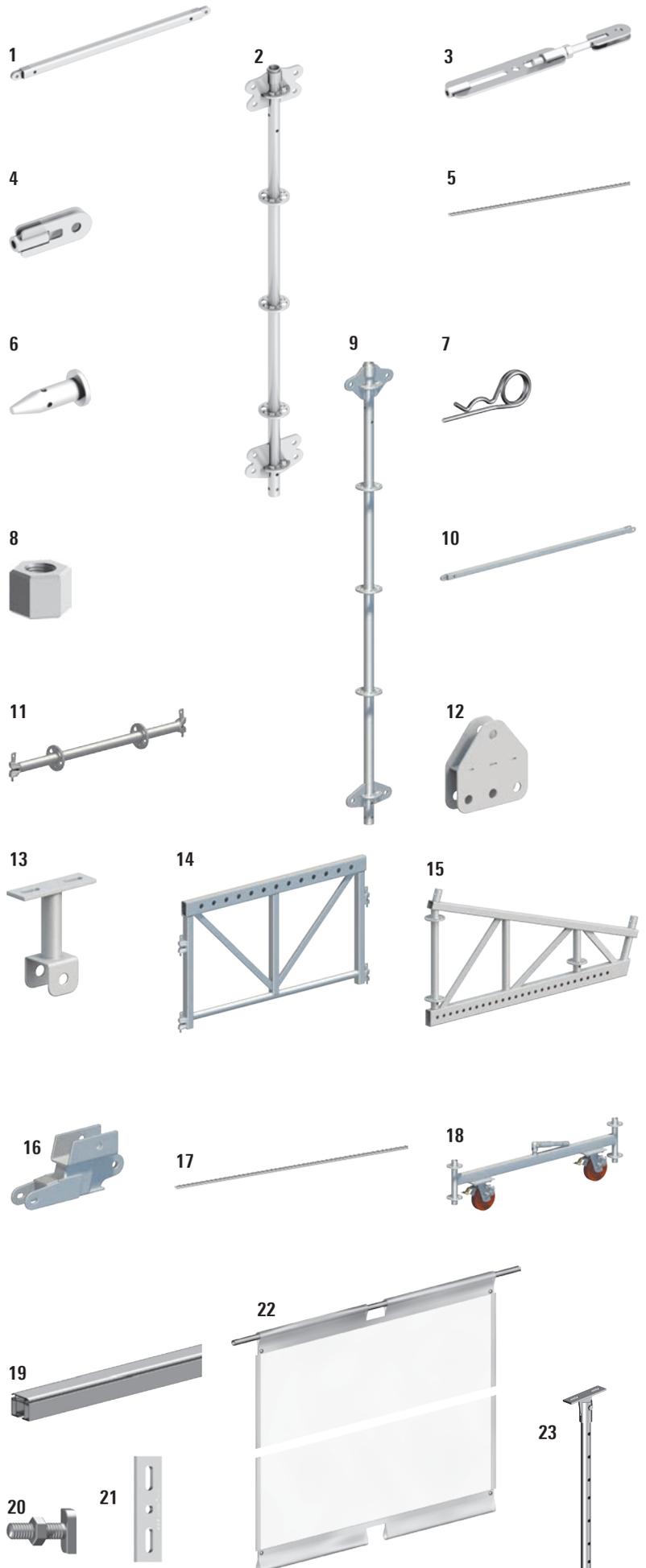
Allround FW System Roof elements

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 possibilities, 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]	Dimensions L/H x W [m]	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		3.8	250	2646.202 
4	FW System end fitting		1.0	500	2646.203 
5	FW System diagonal rod for 2.07 x 2.00 m bay for 1.57 x 2.00 m bay	1.96	2.8	100	2646.211 
		1.63	2.4	100	2646.214 
6	Bolt	20 x 66 mm	1.6	10 	2646.220 
		30 x 113 mm	3.0	10 	2646.280 
		30 x 130 mm	6.3	10 	2646.283 
7	Safety clip D=4 mm		1.5	50 	5905.001 
8	Allround FW System lock nut		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	3000	4208.000 
22	Keder roof tarpaulin see page 34				
23	Hinged attachment		3.4	100	5573.001

LAYHER CASSETTE ROOF

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



Notice: Potentially necessary 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 / m²) 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.

Cassette Roof elements

The system for large spans and rapid assembly for everyday use

Truss elements

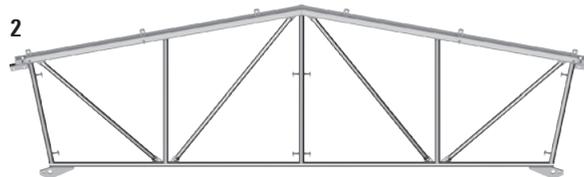
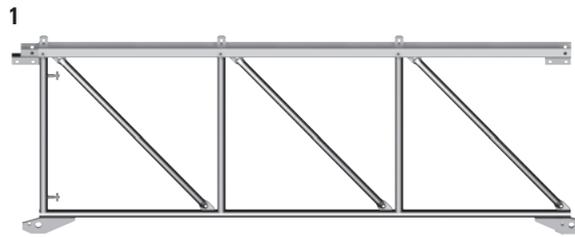
These one metre high **roof beams 1** are the elements that support the cassette roof (U-shaped top chord for the insertion of the roof cassettes, tubular bottom chord and posts of diameter 48.3 mm). The **ridge support 2** is intended for the construction of double-pitch roofs with a roof angle of approximately 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 8** and then closed using roof cassettes.



3 a/b



4 a/b



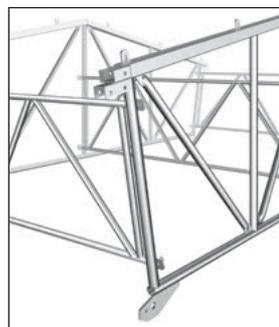
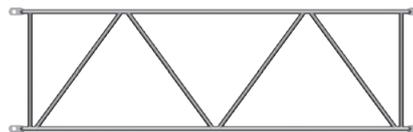
5 a/b



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 3.00 m	2.00 x 1.00	48.2	16	5902.200 🏠
		3.00 x 1.00	64.5	16	5902.300 🏠
2	Ridge support	4.30x1.00/1.50	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	Tubular stiffener	2.57	5.1	150	2504.257 🏠
9	End post for mono-pitch roofs		1.20		5901.100 🕒

Cassette Roof elements

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.

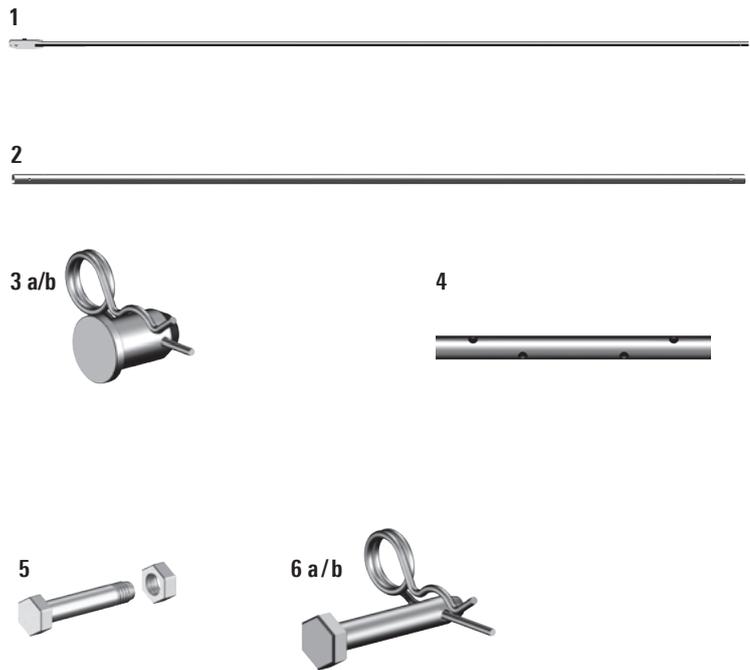
The tie elements are joined to one another using **lattice beam connectors 4** and are suspended using scaffolding tubes and couplers.

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

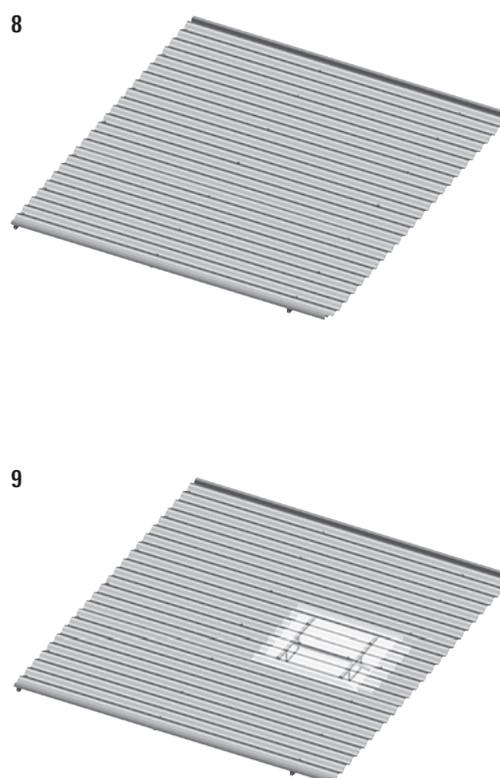


Roof Cassette elements

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.



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	500	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				

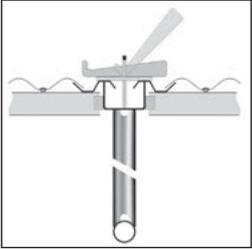
Pos.	Description	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
8	Roof cassette, 1.00 m, corrugated sheet	1.00 x 2.57	35.2	20	5909.100 🏠
	Roof cassette, 2.00 m, corrugated sheet	2.00 x 2.57	66.0	20	5909.200 🏠
9	Roof cassette with access hatch, 2.00 m, corrugated sheet	2.00 x 2.57	75.7	10	5910.200 🏠

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

Roof Cassette elements

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.

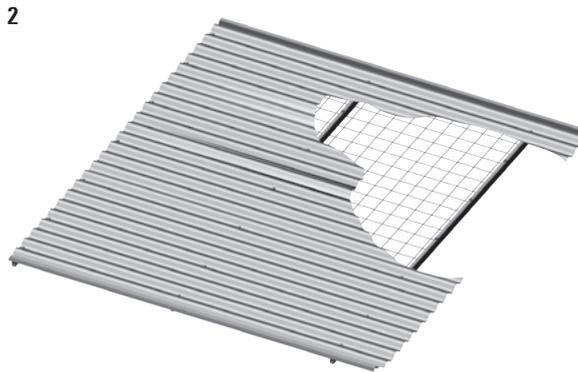
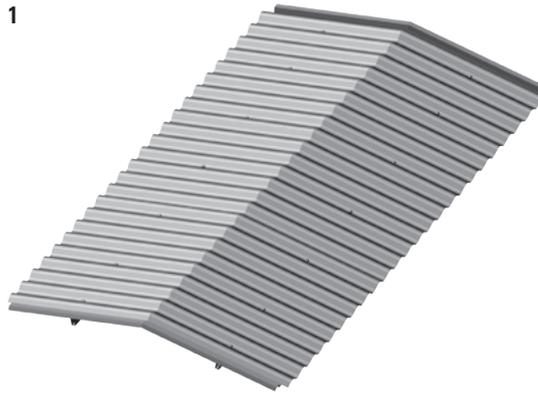
Roof supports as connecting elements for the supporting structure

The **roof support 6** is mounted on the appropriate support scaffolding. It can be used for SpeedyScaf and Allround scaffolding of width 0.73 m or 1.09 m. The pre-mounted truss bays are inserted in the roof support and secured using 2 **wedges 7** with **safety clips 8** to ensure that they cannot lift out of position. And if the roof has to be mounted on another structure?

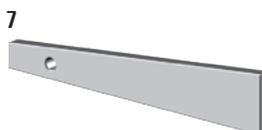
Our engineers have even found solutions for this requirement. Please consult us.



Detail for roof support



Top scaffolding guardrail, secure assembly thanks to lower bracket levels



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	Roof support , 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 
7	Wedge for roof support	0.18	7.5	25 	5913.003 
8	Safety clip , 4 mm for bolts and roof support wedges	0.08	1.5	50 	5905.001 

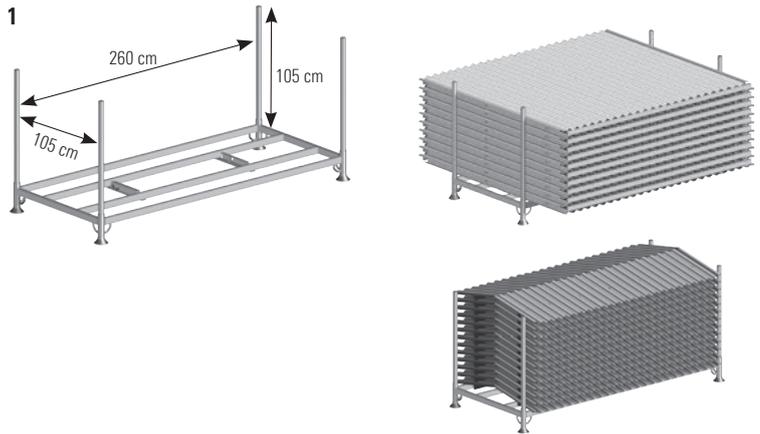
Tubular pallet 1 for the transport and storage of 13 ridge cassettes or 20 roof cassettes, also suitable for brick guards.

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.



Fall protection

Safety when walking on the roof

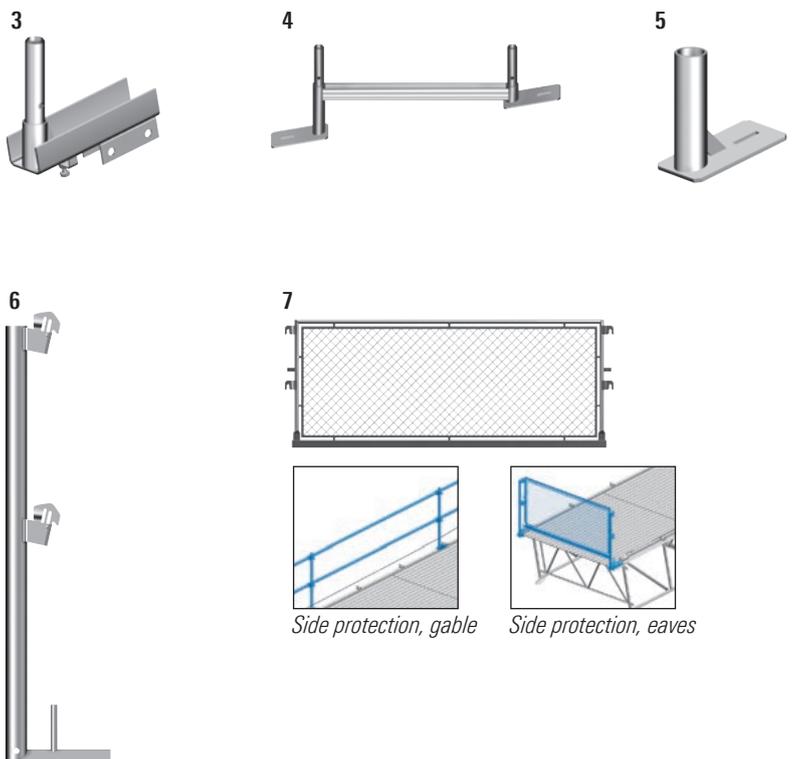
Safety when walking on the roof and the fall protection of anyone who slips on the roof is provided by **roof guards 7** in the eaves area of the side protection.

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.



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	100	5932.000 
4	Base support for walkway, steel for assembly of a walkway at the eaves area	0.73	8.7	60	5916.073 
5	Standard connection	0.22	3.2	500	5934.000 
6	Euro guardrail post 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 

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

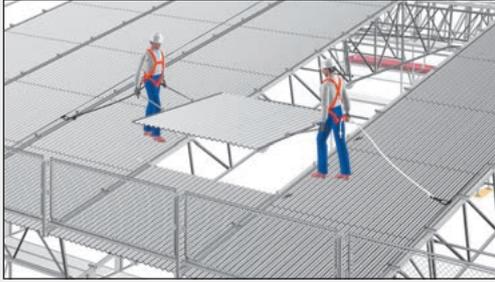
Safety gear

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.

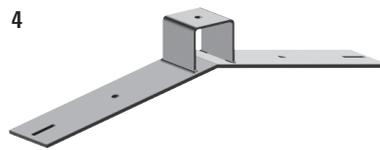
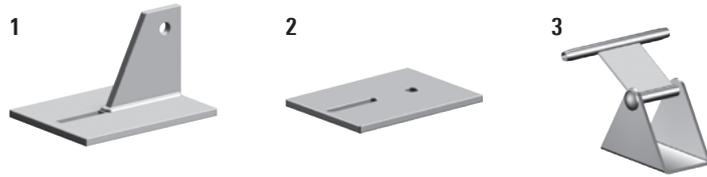


Gripper 5 for the use on slinging ropes with snap-on hooks for securing the gripper and for connecting the safety rope.

End fastener with rope 6 – slinging rope with fastening mechanism. On the opposite 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.

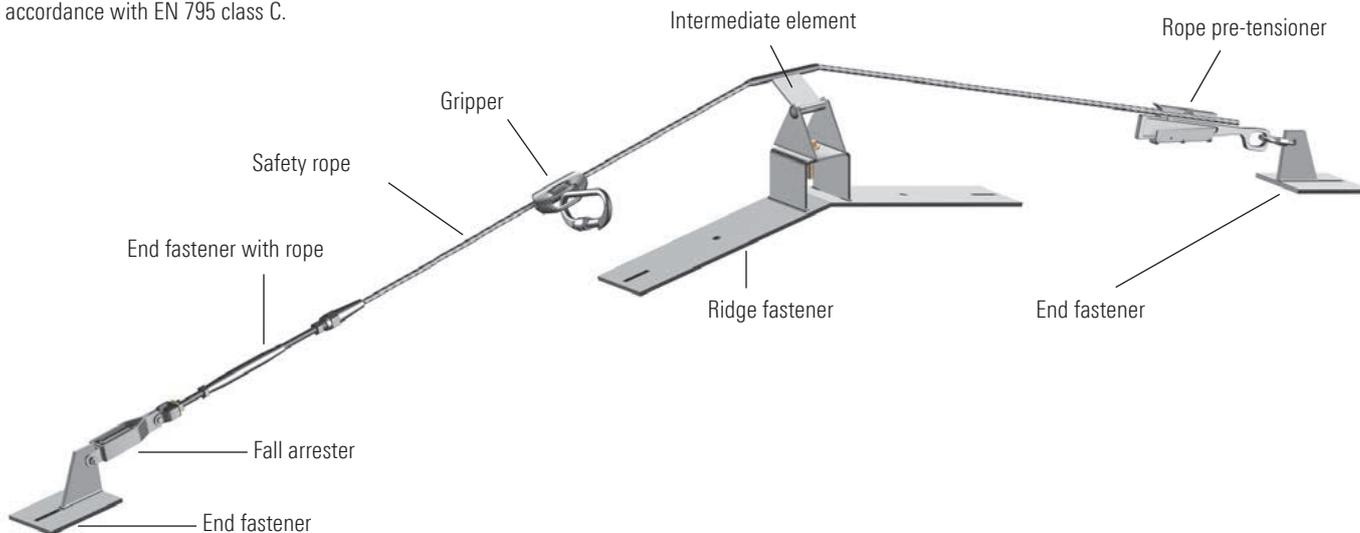
Fall arrester 8 is fitted between end fastener and end tensioner, element for once-only release!



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	200	5969.010 
2	Intermediate fastener , steel, hot-dip galvanized	0.23 x 0.12	2.2	100	5969.020 
3	Intermediate element , stainless steel, breaking load > 12 kN, incl. M12 x 40 hexagon bolt and lock nut	0.12	0.5	100	5969.080 
4	Ridge fastener , steel, hot-dip galvanized	0.87 x 0.12	9.7	80	5969.030 
5	Gripper , stainless steel, snap hook, steel, breaking load > 12 kN	0.09	0.4	100	5969.040 
6	End fastener with rope , stainless steel	25.00	7.0	30	5969.025 
		35.00	9.4	20	5969.035 
7	Rope pre-tensioner , steel, galvanized, rope dia. 5 – 10 mm	0.30	1.0	100	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	100	5969.070 

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

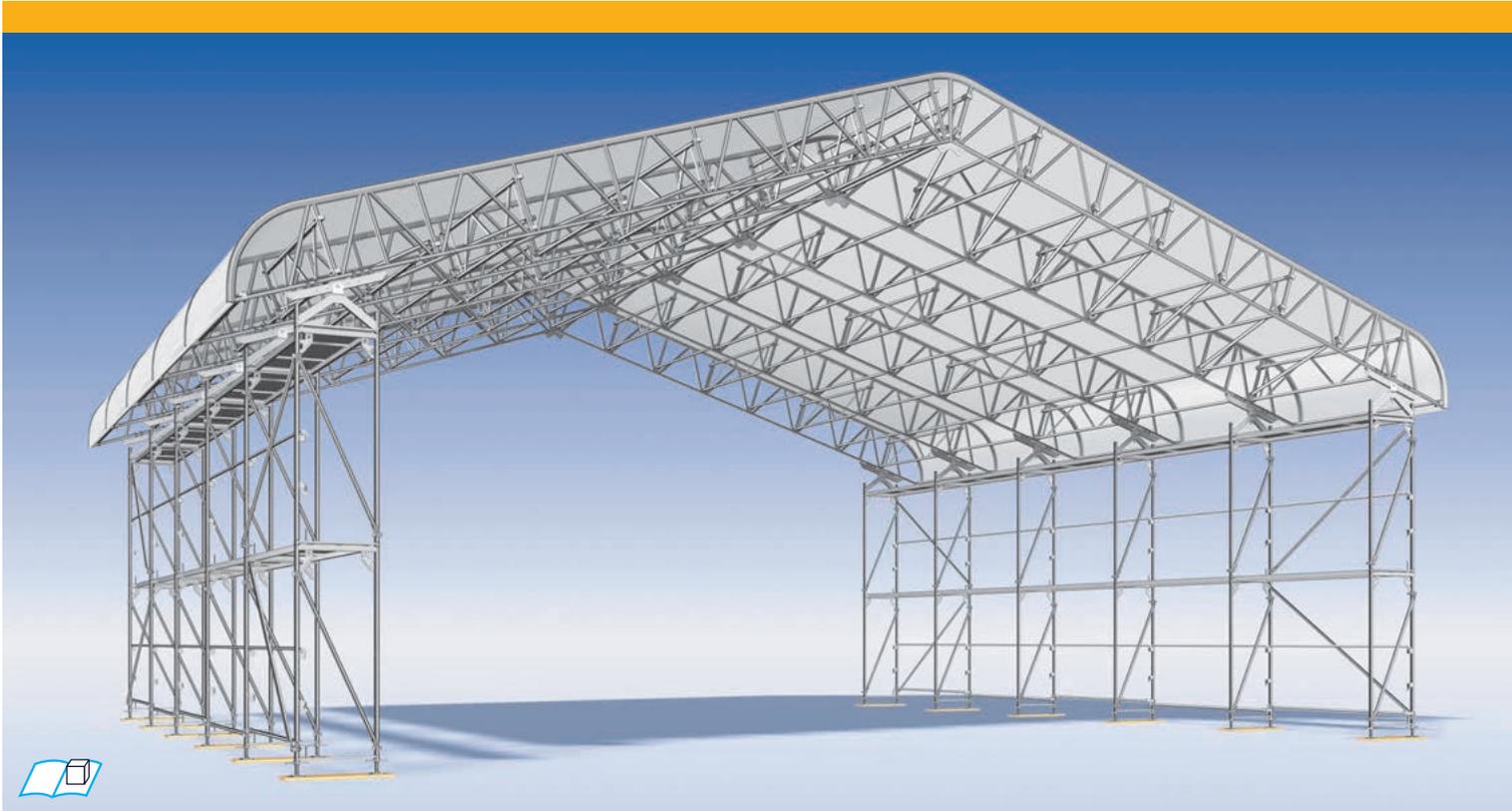
Belt fall arrester with two coated-core ropes, dia. 12 mm. Aluminium one-hand snap hook and two tube hooks FS 90 (conforming to EN 354 / EN 355).



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	1	100	5969.080

Pos.	Description	Dimensions L/H x W [m]	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 🕒

LAYHER KEDER ROOF XL



Notice: Potentially necessary 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

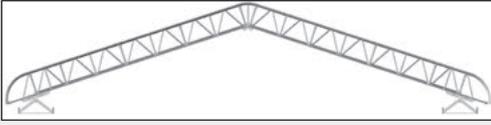
- ▶ Roof widths up to 30 m and inclinations of 18° are possible.
- ▶ High snow loads (up to 1.0 kN/m²) on intermediate spans.
- ▶ Adaptation to all conditions thanks to roof widths and different designs as double-pitch, mono-pitch and polygonal barrel roof.
- ▶ Economical use thanks to flexible, well-thought-out and durable components, lightweight aluminium components and time-saving assembly (e.g. faster and easier fitting of Keder tarpaulins).
- ▶ Material and load bearing-capacity 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.



Keder Roof XL elements

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

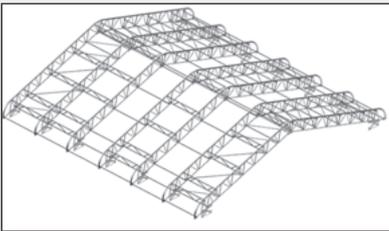
It has a standard roof angle of 18°.



Stiffening variants

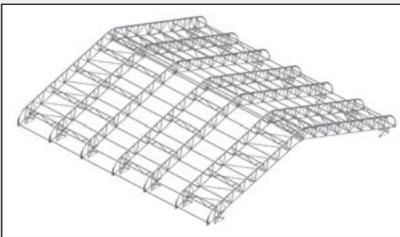
The Keder Roof XL permits, thanks to differing configurations of the stiffening components, three different stiffening variants for use depending on the span, snow load or wind load requirements.

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.



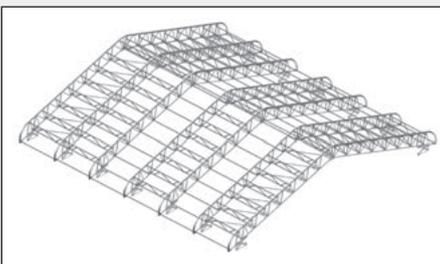
Type "Light"

Vertical stiffener: 2.00 m
Bottom chord stiffener: 2.00 m



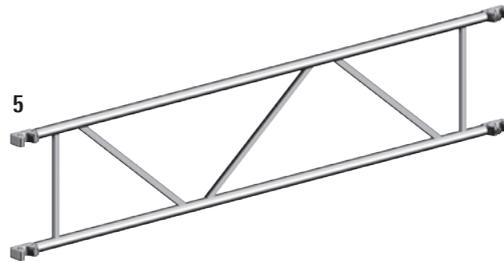
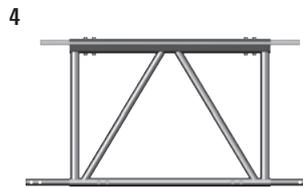
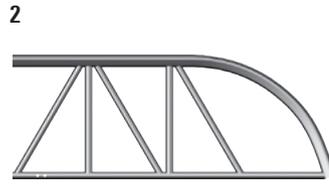
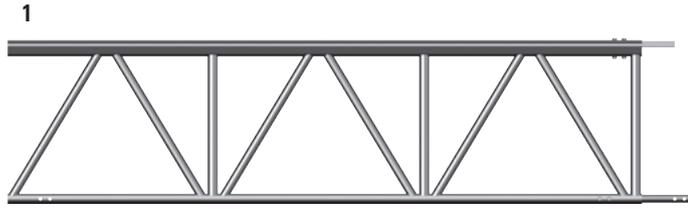
Type "Standard"

Vertical stiffener: 2.00 m
Bottom chord stiffener: 1.00 m



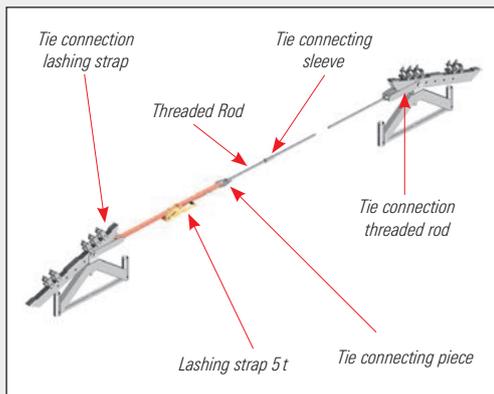
Type "Heavy"

Vertical stiffener: 1.00 m
Bottom chord stiffener: 1.00 m

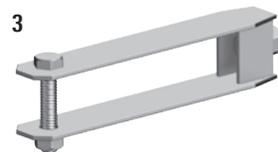
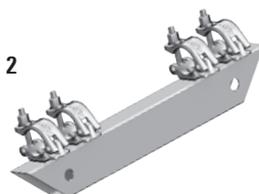


Pos.	Description	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	Keder Roof XL lattice beam Aluminium	2.00 x 0.78	17.3	25	5975.200 🏠
		3.00 x 0.78	24.4	25	5975.300 🏠
2	Keder Roof XL eaves section	2.00 x 0.78	14.3	25	5975.100 🏠
3	Keder Roof XL ridge section 18°-Version 20°-Version	2.10 x 0.78			
			24.5	20	5975.110 🏠
			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 🏠
10a	Bolt, 12 x 95 mm and		2.5	25 🏠	5976.091 🏠
10b	Safety clip, 2.8 mm		0.5	50 🏠	4905.001
11	Special bolt, M12 x 60 with nut alternative for Pos. 10 Special bolt, M12 x 90 with nut alternative for Pos. 10		4.0	50 🏠	4905.061
			2.8	25 🏠	5975.091 🏠

Tie fastening to roof support*:



* statically recommended



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	100	5976.200 🏠
		3.00	4.4	100	5976.300 🏠
		4.00	5.8	100	5976.400 🏠
		5.00	7.3	100	5976.500 🏠
2	Keder Roof XL tie attachment		6.1	50	5975.000 🏠
3	Keder Roof XL tie connection threaded rod		2.2	100	5975.020 🏠
4	Keder Roof XL tie connecting piece		0.8	250	5975.030 🏠
5	Keder Roof XL tie connecting sleeve WS 30 x 90		0.4	1000	5976.000 🏠
6	Keder Roof XL tie connection lashing strap		2.0	100	5975.010 🏠
7	Keder Roof XL lashing strap 5 t, 5.00 m with ratchet	5.00	2.8	100	5976.600 🏠
8	Keder Roof XL polyester lashing strap, 6.00 m with clamp lock for setting the tie	6.00	0.2	800	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	54	5971.400 🏠
	Castor for tarpaulin pulling, for 48.3 mm tube		0.4	2	5971.401 🕒

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

Keder Roof, Roof Tarpaulins

Tarpaulins

Flammability acc. to ISO 3795

< 100 mm/min

Cream-coloured PVC tarpaulins with a weight of 630 g/m².

Material:

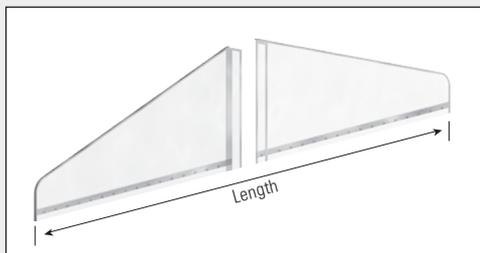
PVC-coated polyester fabric,
heat and UV-resistant.

Tarpaulins

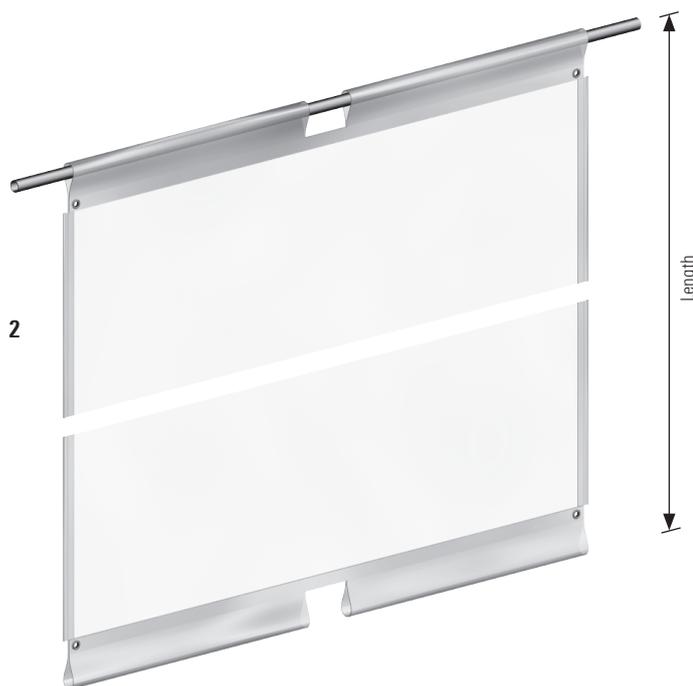
Flammability acc. to DIN 4102 B1,

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.



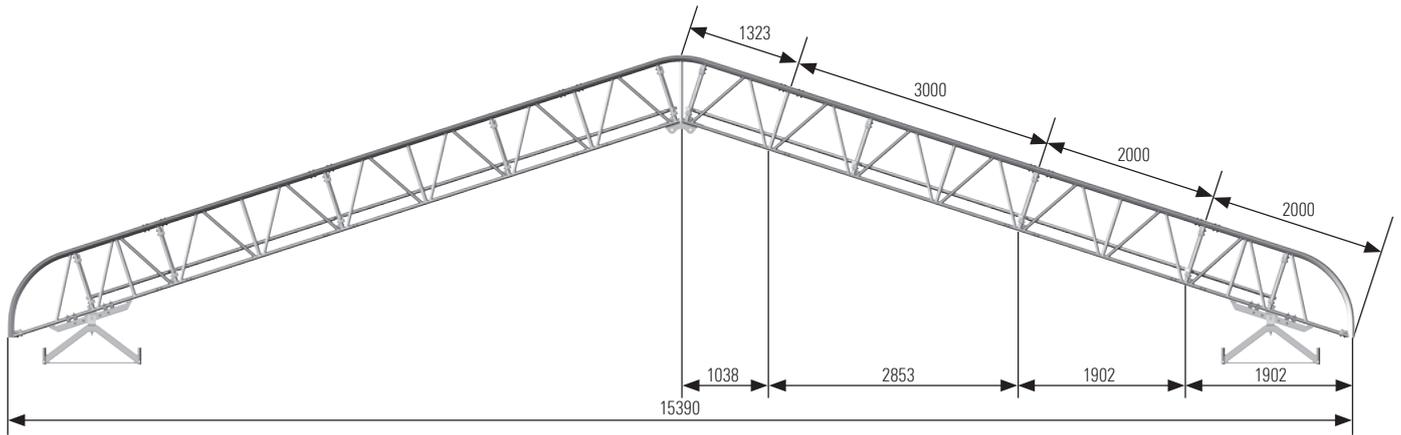
Other tarpaulins on request.



Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.	
1	Keder Roof XL gable tarpaulin , flame-retarding Flammability acc. to ISO 3795 < 100 mm / min 2-piece	9.60	13.8	2	5972.381 🕒	
		11.50	17.9	2	5972.382 🕒	
		13.40	22.1	2	5972.383 🕒	
		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 Flammability acc. to DIN 4102 B1, 2-piece	9.60	13.8	2	5973.381 🕒
	11.50		17.9	5	5973.382 🕒	
	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 Flammability acc. to ISO 3795 < 100 mm / min Design width 2.57 m	11.00 x 2.57	23.5	5
		14.00 x 2.57		28.2	4	5972.307 🕒
		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 Flammability acc. to DIN 4102 B1, Design width 2.57 m		11.00 x 2.57	24.0	2	5973.306 🕒	
		14.00 x 2.57	28.8	1	5973.307 🕒	
		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	16	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 🏠	

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

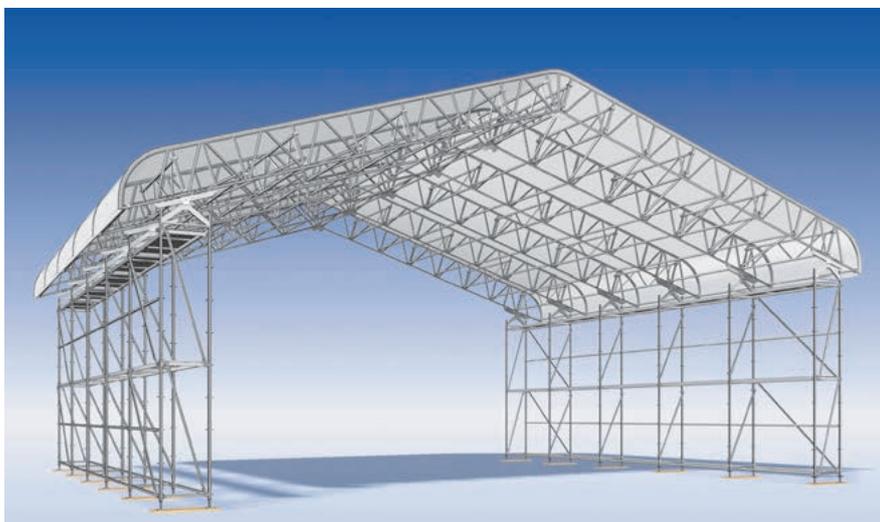
Keder Roof XL as double-pitch roof – Type Standard



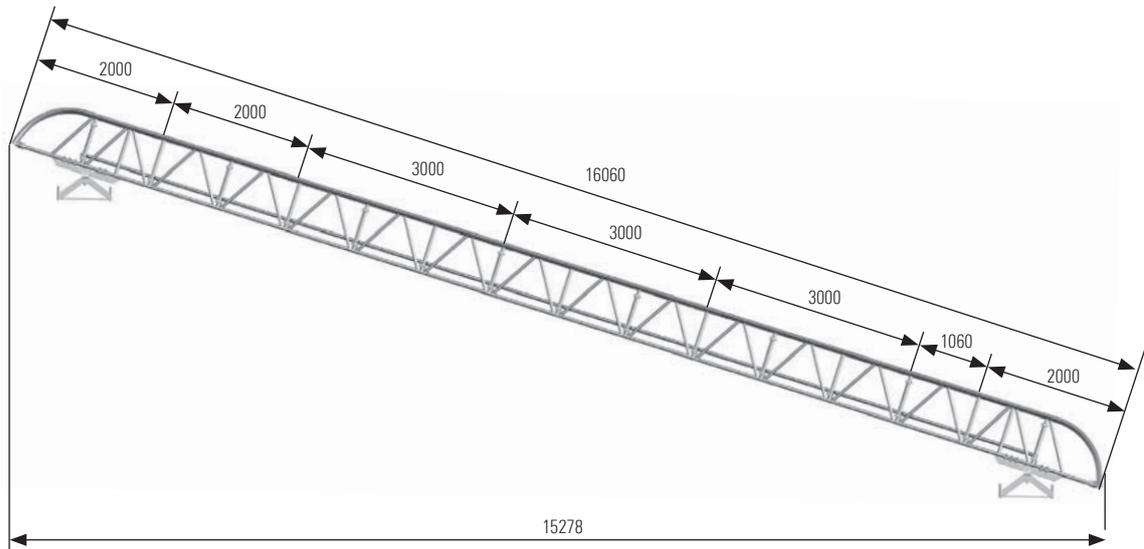
Material example

ROOFED BASE AREA: 15.40 x 12.86 m (5 bays each 2.57 m) without support scaffolding, Weight: 1.654 kg (8.35 kg / m²)

Following material is needed	Quantity	PU [pcs.]	Ref. No.
Locking pin, red	24	100	4000.001
Special bolt M12 x 60 with nut (72 pcs. needed)	2	50	4905.061
Horizontal diagonal brace 1.00 x 2.57 m	14	50	5939.100
Stiffener 2.57 m	30	50	5940.257
Keder rail seal (36 pcs. needed)	1	50	5971.003
Tarpaulin clip (100 pcs. needed)	2	50	5971.141
Ledger 2.57 m	60	50	5972.257
Roof tarpaulin 2.57 x 20.00 m	5	5	5972.309
Support 0.73 m	12	20	5975.073
Hexagonal screw M12 x 90 with nut (72 pcs. needed)	3	25	5975.091
Eaves section	12	25	5975.100
Ridge section 18°	6	20	5975.110
Lattice beam 2.00 m	12	25	5975.200
Lattice beam 3.00 m	12	25	5975.300

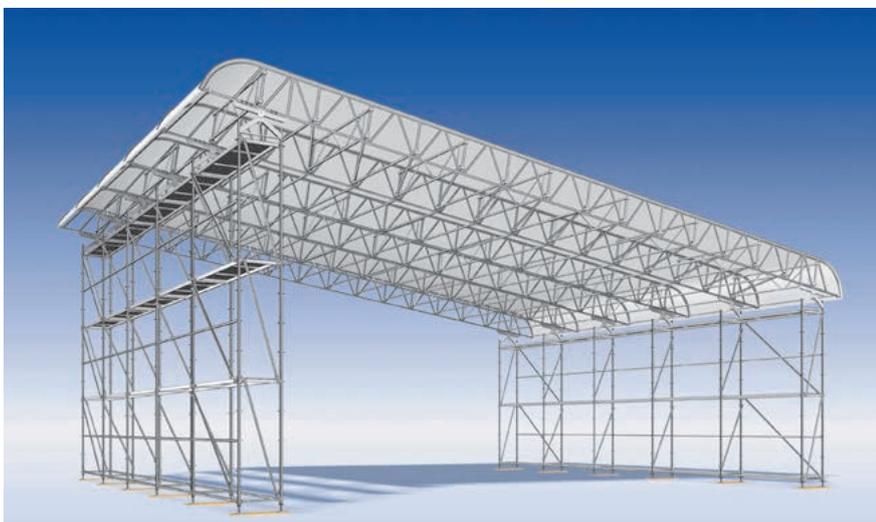


Notice: Potentially necessary stabilizing measurement are not illustrated.



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: 1.581 kg (7.66 kg / m²)

Following material is needed	Quantity	PU [pcs.]	Ref. No.
Locking pin, red	24	100	4000.001
Special bolt M12 x 60 with nut (72 pcs. needed)	2	50	4905.061
Horizontal diagonal brace 1.00 x 2.57 m	14	50	5939.100
Stiffener 2.57 m	24	50	5940.257
Keder rail seal (36 pcs. needed)	1	50	5971.003
Tarpaulin clip (100 pcs. needed)	2	50	5971.141
Ledger 2.57 m	61	50	5972.257
Roof tarpaulin 2.57 x 20.00 m	5	5	5972.309
Support 0.73 m	12	20	5975.073
Hexagonal screw M12 x 90 with nut (72 pcs. needed)	3	25	5975.091
Eaves section	12	25	5975.100
Mono-pitch lattice beam 1.06 m	6	25	5975.106
Lattice beam 2.00 m	6	25	5975.200
Lattice beam 3.00 m	18	25	5975.300



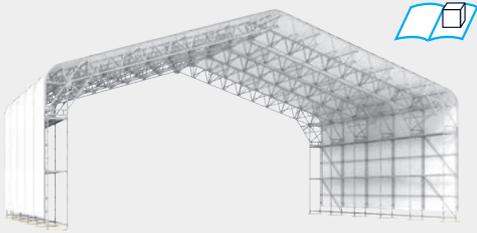
Notice: Potentially necessary stabilizing measurement are not illustrated.

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

Keder Roof XL – Keder halls

Keder halls

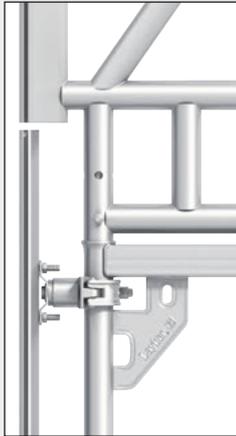
The Bending-Resistant Corner is available as a special roof support, to create visually attractive and closed halls with wide spans using the Keder Roof XL. It can be mounted both on support scaffolding made from Allround parts and on SpeedyScaf.



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.

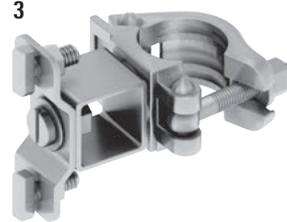
1



2



3



4



Pos.	Description	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	Bending-resistand corner		34.7	10	5975.160 🕒
2	Keder rail holder, rotatable, with wedge head, incl. 2 groove bolts, for Allround Scaffolding		0.9	500	5573.000 🏠
3	Keder rail holder, rotatable, with half-coupler, incl. 2 groove bolts for Speedyscaf System		1.0	500	5573.006 🏠
4	Aluminium keder rail 2000	1.30	2.0	50	4201.130 🏠
		2.00	3.0	100	4201.200 🏠
		2.25	3.3	100	4201.220 🏠
		2.50	3.8	100	4201.250 🏠
		3.00	4.5	100	4201.300 🏠
		4.00	6.0	100	4201.400 🏠

MOBILE ROOFS

THE ECONOMICAL EXPANSION OF LAYHER ROOF SYSTEMS

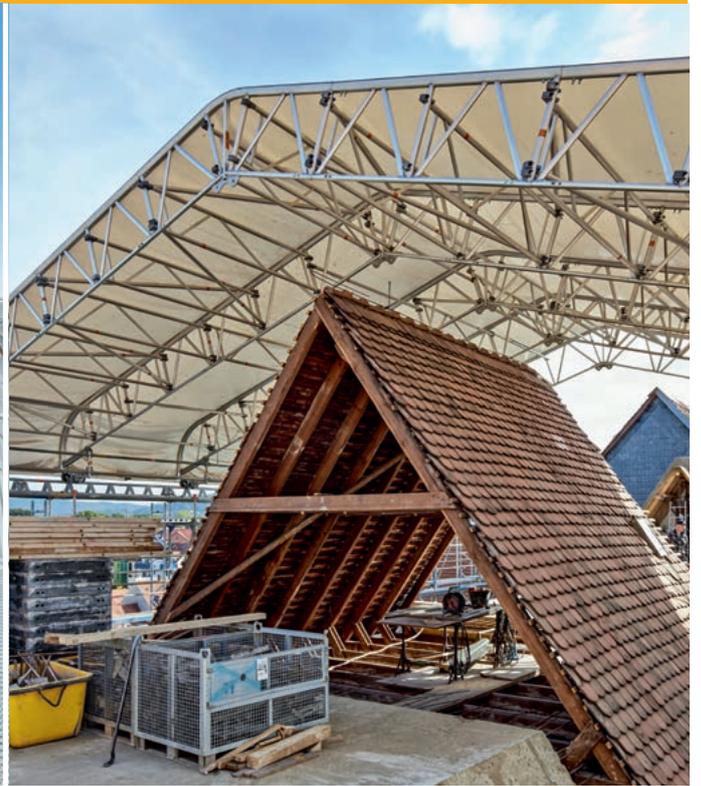


Whether on a rapidly advancing construction site or under cramped conditions, you can get Layher's protective roofs rolling to where the action is with only a few extra components.

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 elements

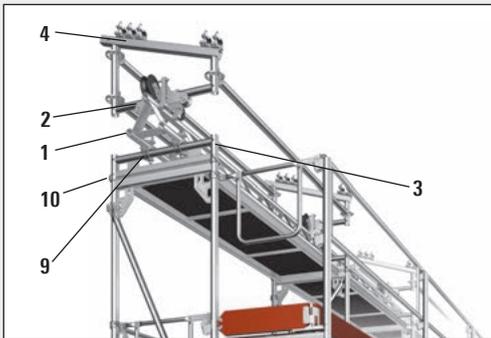
Mobile Roofs

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

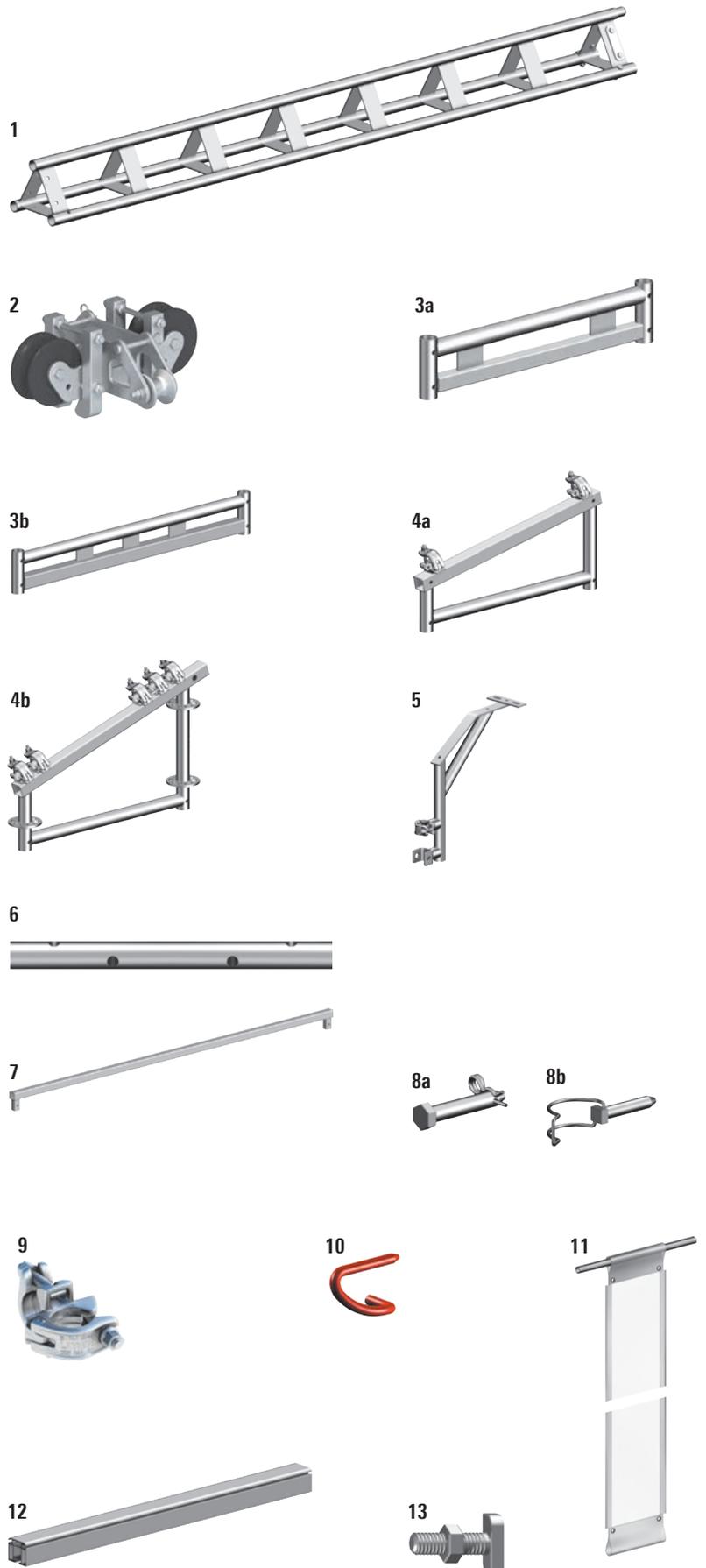
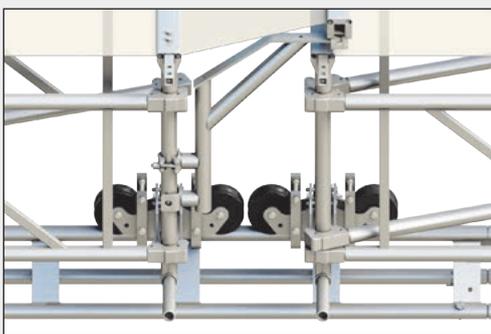
This can then be moved section by section to keep pace with construction progress, so it's no longer essential to provide a roof over the entire surface, or alternatively to dismantle and rebuild a roof for each stage of building work. The mobile roofs fit onto all scaffolding systems and are also flexible 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 5** can be used, when de roof binders are mobile. If separate segments of the roof must be put together, there will be a gap in the roof. By using the overlap bracket combined with **Aluminium keder rails 3000 12** and **roof tarpaulins 0.46 m wide 11**, these gaps can be closed.

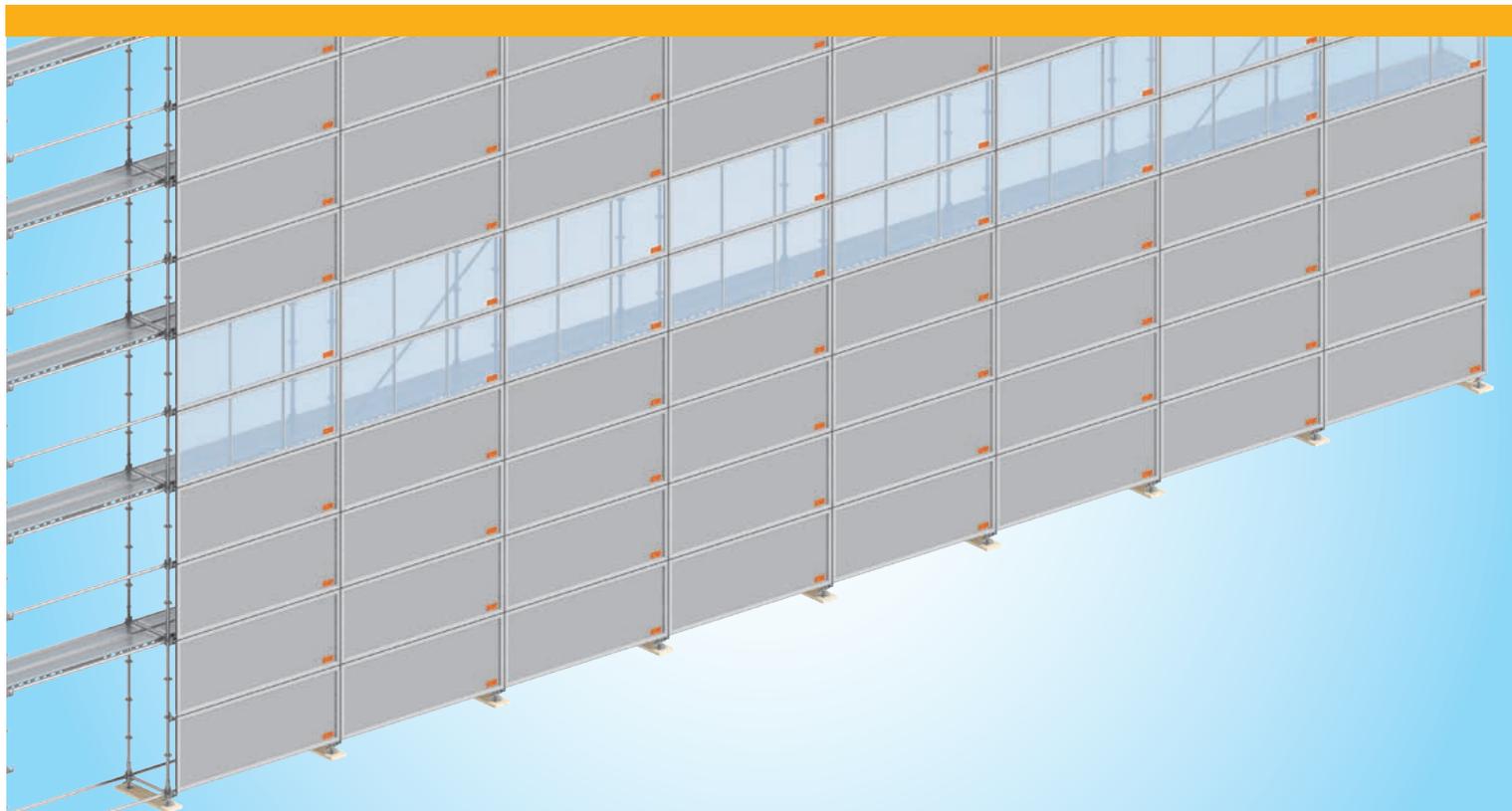


Pos.	Description	Dimensions L / H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.
1	Rail, 3.00 m	3.00 x 0.30	53.4	21	5941.300 🏠
2	Trolley T17 Castors of Polyamide, permanent Lift-off preventer	0.40 x 0.45	16.2	50	5938.040 🏠
3a	Adapter for rail T12 0.73 m	0.73 x 0.17	5.5	100	5938.027 🏠
3b	Adapter for rail T12 1.09 m	1.09 x 0.17	11.5	100	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	14.0	20	5938.073 🏠
5	Overlap bracket For closing the gap between two separate mobile roof binders	0.45	7.2	30	5938.032 🏠
6	Lattice beam connector T16, dia. 38 mm	0.44	2.4	350	4925.000
7	Connector for trolley for Roof support 5938.022	2.63 x 0.13	11.1	50	5938.019 🏠
8a	Bolt, dia. 12 x 65 mm and Safety clip, 2.8 mm		3.5	50 🏠	4905.066
			0.5	50 🏠	4905.001
8b	Hinged pin 8a or 8b for connecting the rails 5941.300 with lattice beam spigots 4922.000 and for securing of 5938.019			20 🏠	4905.667
9	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	19 WS	1.3	25	4777.019
		22 WS	1.3	25	4777.022
10	Locking pin, red, dia. 11 mm for securing of 5938.027, 8638.028		0.2	100	4000.001
11	Keder roof tarpaulin, 0.46 m wide				on request
12	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 🏠
13	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 $R_w' = 26$ 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.

Protect System elements

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 $R_w'=26$ 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.

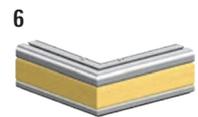
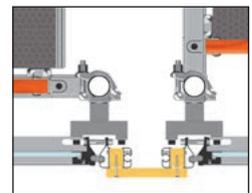
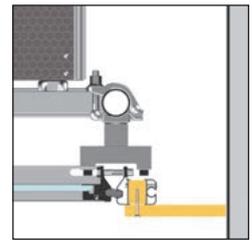
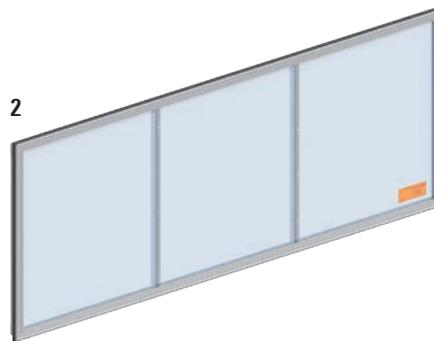
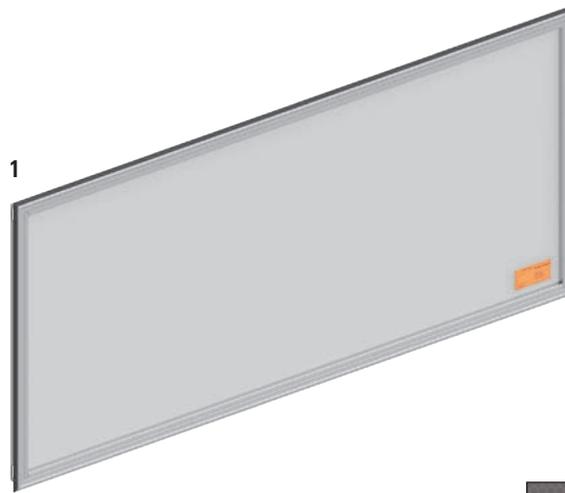
A test report concerning the airborne sound insulation of scaffolding coverings issued by the Fraunhofer Institute for Building Mechanics in accordance with ZTV-Lsw 88:1988 or DB guideline 800.2001 is available.

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.



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	1	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 🕒

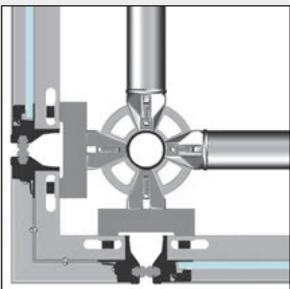
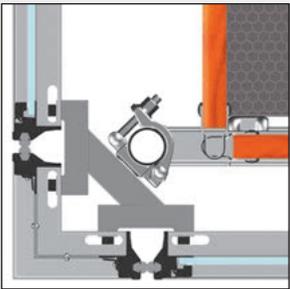
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Protect System elements

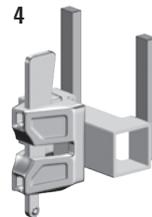
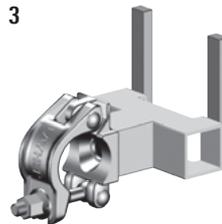
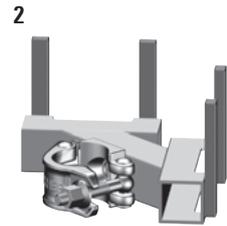
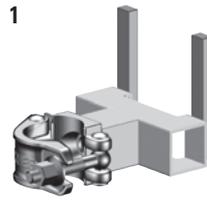
The cassettes are secured to the scaffolding using special **holders 1-4**; which are installed at a standard height of 1.00 m. Once the lower row of cassettes has been installed and aligned, all the other cassettes are mounted and secured simply using holders. The subsequent removal and installation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

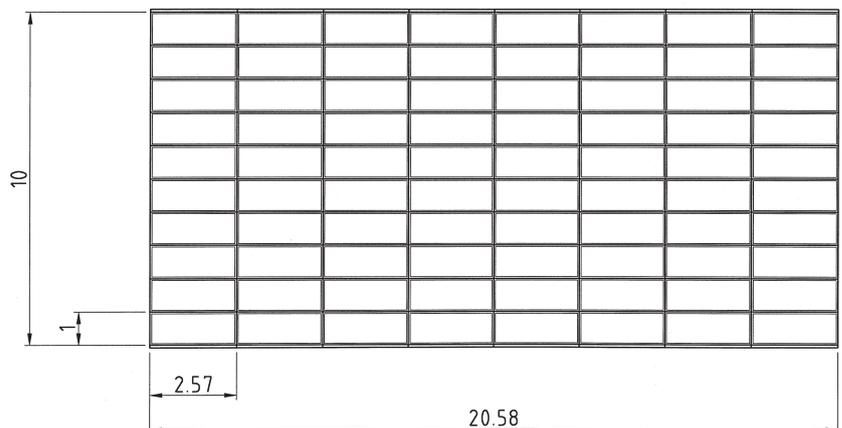


The components of the Protect system are only available ex works. Metric bay lengths are possible with delivery time upon request.



Material example

This material example is based on a façade scaffolding of Allround Scaffolding: Width $8 \times 2.57 \text{ m} = 25.58 \text{ m}$, Height 10.00 m, result a face of **205.80 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	19 WS	1.6	250	5986.011 
2	SpeedyScaf corner holder for wall cassette T9	19 WS	2.4	500	5986.021 
3	Allround holder for wall cassette T9		1.7	250	5986.031
4	Ledger holder for half-coupling T9	19 WS	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	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	70.5	5	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

A

Access hatch	16
Adaptor for rail T12	
0.73 m	41
1.09 m	41
Allround FW chord	10
Allround FW diagonal rod	10
Allround FW post	10
Allround FW System	10
Allround FW System lock nut	11
Allround FW System Roof	8
Allround FW System Roof elements	10
Allround holder for wall cassette T9	47
Allround inner corner cassette 90°	45
Aluminium keder rail 3000	11, 40, 41
Attachment device	24

B

Base support for walkway	20, 21
Beam stiffener	14, 15
Bolt	11
12 x 65 mm	41
12 x 95 mm	29
14 x 77 mm	14, 15, 16, 17
14 x 107 mm	14, 15
30 x 50 mm	14, 15
30 x 64 mm	16, 17
M14 x 65	16, 17
M14 x 80	14, 15

C

Captive bolt for keder rail	41
Carrying capacity of 2 t	20
Carrying handle	18, 19
Cassette element	44
Cassette roof	12
Castor for tarpaulin pulling	31
Clamping plate	18, 19
Connecting piece	20
Connecting piece for cassette supports	21
Connection rail	44, 45
metric	45
Connection rail 90°	45
internal	45
Connector for trolley	41
Corner cassette	44
Corner cassette 90°	45

D

Double coupler with coarse thread	41
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E

End fastener	22, 23
End fastener with rope	22, 23
End pieces of the ties	16
Euro guardrail post	21

F

Fall arrester	22, 23
Fall protection	20
FW System chord	11
FW System chord support	11
FW System diagonal rod	11
FW System end fitting with turnbuckle	11
FW System keder rail holder	11
FW System post	11
FW System ridge diagonal brace	11
FW System ridge ledger with rosettes	11
FW System ridge post	11
FW System support adapter	11
FW System support beam	11
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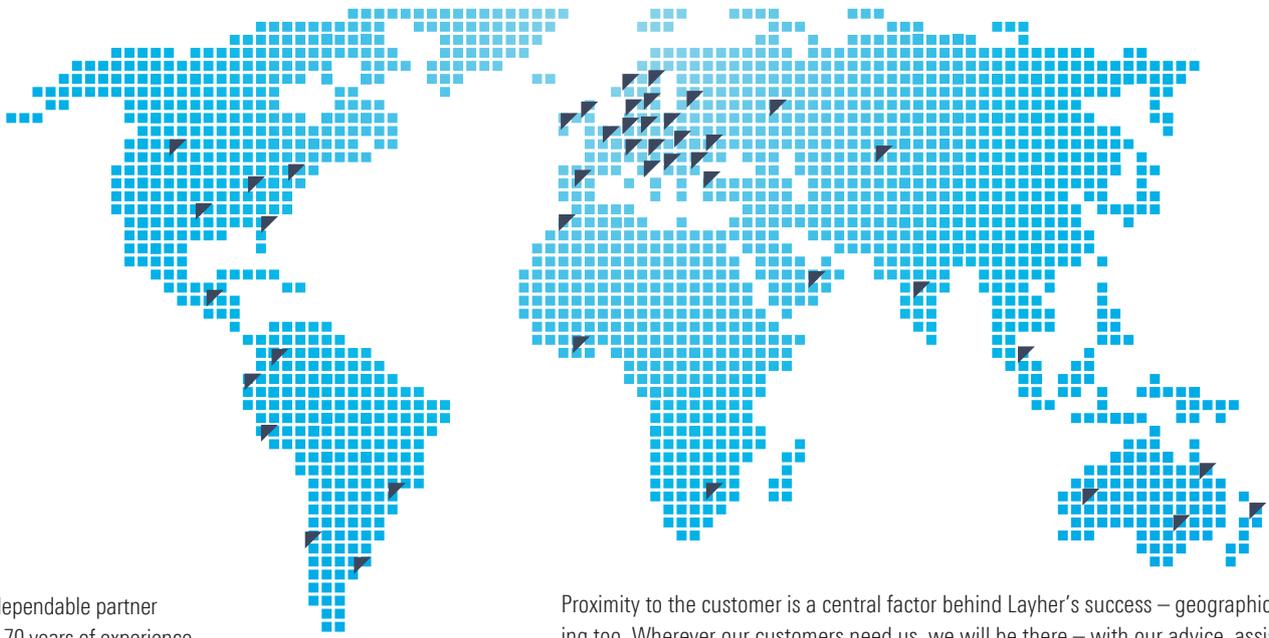
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