

# LAYHER PROTECTIVE SYSTEMS CATALOGUE 2023/2024





# KEDER ROOF XL

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# 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 Allround Scaffolding System-free Accessories Protective Systems Event Systems Access Technology Ref. No. 8102.264 Ref. No. 8116.260 Ref. No. 8103.281 Ref. No. 8121.262 Ref. No. 8111.235 Ref. No. 8118.235

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# NOTICE

Subject to technical modification. Component weights are subject to fluctuations due to tolerances and may therefore diverge from what is specified.

Steel components are hot-dip galvanized according to EN ISO 1461 and DASt guideline 022. Connection parts or other small pieces can be galvanized according to EN ISO 4042.

Our deliveries shall be made exclusively in accordance with our at the conclusion of contract 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. The fully GTC you can find here: **gtc.layher.com** 

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



#### QUALITY MADE IN GERMANY.

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 and management, sales and export department 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 m<sup>2</sup>. This includes more than 148,000 m<sup>2</sup> of covered production and storage areas.

#### 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 75 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.

#### SUSTAINABILITY AT LAYHER.

We've long been acting with a clear focus, with a view to both economic and ecological sustainability in all our process steps. Social responsibility towards employees, clients and society as a whole are at the very centre of this. We're a dependable employer, active in protecting our resources. The sparing use of work materials as a feature of our sustainable approach is fundamental to how we see ourselves: we already take care to ensure sustainable building methods when planning a new production facility, for example by greening the roofs or using photovoltaic systems. We also value locations that are close by, avoiding unnecessary  $CO_2$  emissions due to long traffic routes. The topic of sustainability is firmly embedded in Layher's organisational structure thanks to its energy management team. Their work has paid off in particular in the form of DIN EN ISO 50001 certification.



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 Lightweight: Through the use of high-tensile steel, a new production process, and an improved design, we have succeeded in minimising the weight of the core components of our systems – while maintaining or raising load-bearing capacity.











#### 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.





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



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.

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LayPLAN CAD

Single licence - plug-in for AutoCAD, for designing complex scaffolding in 3D and for developing scaffolding proposals from LayPLAN CLASSIC



# LAYHER KEDER ROOF XL



Notice: Potentially neccessary stabilizing measurement are not illustrated.

The Layher Keder Roof XL is a lightweight and sustainable weather protection roof. According to the normal climatic 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, the repair of timber roofs and coverings, weather protection for new structures, refurbishment work on motorways and bridges, and numerous applications for events and normal work.

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

#### THE BENEFITS FOR YOU

- > Span up to 30 m and inclinations of 18° are possible.
- High snow loads (up to 1.0 kN/m<sup>2</sup>) 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.
- > No interruption of working due to weather influence.
- Fully combinable to Layher Allround Scaffolding and Layher SpeedyScaf.



### **System Components**

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 mBottom chord stiffener:2.00 m



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



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



Pos.	Description	WS [mm]	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	17.30	25	5975.200	<u></u>
			3.00 x 0.78	24.40	25	5975.300	<b>201</b>
2	Keder Roof XL eaves section Aluminium		2.00 x 0.78	14.30	25	5975.100	<b>—</b>
3	Keder Roof XL ridge section						
	18°-Version		2.54 x 0.78	24.50	20	5975.110	<u> </u>
	20°-Version		2.57 x 0.78	24.50	20	5975.120	<b></b>
4	Keder Roof XL mono-pitch lattice beam Aluminium		1.06 x 0.78	14.50	25	5975.106	<b></b>
5	Keder Roof XL stiffener Aluminium		2.57 x 0.55	10.00	50	5940.257	<u> </u>
6	Keder Roof XL ledger Aluminium		2.57	4.20	50	5972.257	<b></b>
7	Keder Roof XL horizontal diagonal brace Aluminium		2.57 x 1.00	4.20	50	5939.100	<u> </u>
			2.57 x 2.00	5.00	50	5939.200	<u> </u>
8	Swivelling roof support		0.73	19.10	20	5975.073	<b></b>
			1.09	22.40	20	5975.109	<b>—</b>
9	Keder rail seal			0.50	50 🗄	5971.005	<u></u>
10	Bolt 12 x 95	19		2.50	25 🗄	5976.092	<u> </u>
11	Safety clip d=2.8 mm			0.50	50 🗄	4905.002	
12	Hinged pin d=12 mm with pan head			1.60	20	4905.668	
13	Special bolt M14 x 60 with nut	19		4.00	50	4905.062	
14	Special bolt M12 x 90 with nut	19		2.75	25 🗄	5975.092	

WS = wrench size PU = packaging unit ≅ = available ex works ⊕ = delivery time on request ⊞ = only available in this packaging unit ♥ = the approval process is not yet completed IIII = Layher Individual possible ■ = nonly available in this packaging unit ♥ = the approval process is not yet completed IIII = Layher Individual possible

## System Components

#### Tie fastening to roof support\*:



\* statically recommended



Set for tarpaulin pulling 9





Pos.	Description	WS [mm]	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.	
1	Threaded tie		2.00	2.90	100	5976.200	<u></u>
			3.00	4.40	100	5976.300	
			4.00	5.80	100	5976.400	
			5.00	7.30	100	5976.500	
2	Keder Roof XL tie attachment	19		6.10	50	5975.000	
3	Keder Roof XL tie connection threaded rod	30		2.20	100	5975.020	<b></b>
4	Keder Roof XL tie connecting piece	30		0.80	250	5975.030	<b>—</b>
5	Keder Roof XL tie connecting sleeve	30		0.40	1000	5976.000	<u></u>
6	Keder Roof XL tie connection lashing strap	30		2.00	100	5975.010	
7	<b>Keder Roof XL lashing strap 5 t</b> 5.00 m with ratchet and ABS function for stepwise release		5	2.80	100	5976.600	<u> </u>
8	Keder Roof XL polyester lashing strap 6.00 m with clamp lock for setting the tie		6	0.20	800	5976.610	
9	<b>Set for tarpaulin pulling</b> consisting of 2 castors, 1 aluminium tube 3.00 m and 4 securing pins		3	5.80	54	5971.400	<u></u>
10	Castor for tarpaulin pulling for 48.3 mm tube			0.40	250	5971.401	
11	Keder tarpaulin feeder			1.53	200	5971.410	<u> </u>

## **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  $g\,/\,m^2.$  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 smaller 100 mm / min, 2-piece	9.6	13.80	2	5972.381 🕒
		11.5	17.90	2	5972.382 🕒
		13.4	22.10	2	5972.383 🕒
		15.3	27.40	2	5972.384 🕒
		17.2	33.10	2	5972.385 🕒
		19.1	39.40	2	5972.386 🕒
		21.0	44.70	1	5972.387 🕒
		22.9	51.70	2	5972.388 🕒
		24.8	59.50	5	5972.389 🕒
		26.8	68.20	2	5972.390 🕒
		30.6	85.80	1	5972.392 🕒
		32.5	95.50	5	5972.393 🕒
		11.5	17.90	5	5973.382 🕒
		13.4	22.10	5	5973.383 🕒
		15.3	27.40	2	5973.384 🕒
		17.2	33.10	2	5973.385 🕒
		19.1	39.40	2	59/3.386
		21.0	44.70	2	59/3.38/
		22.9	51.70	2	59/3.388
		24.8	59.50	2	5973.389
		26.8	68.20	2	59/3.390
		3U.b	85.70	2	5973.392
	flame retarding Elementality and to ICO 270E employ 100 mm (min A piece	32.5	95.50	2	59/3.393
	hame-retaronny, Frammability acc. to ISO 3735 Smaller 100 mm/ mm, 4-piece	20.7	/0./0	2	5972.391
	Iow-inflammability, Flammability acc. to DIN 4102 B1, 2-piece	9.0 20 7	13.80	L C	5973.381
2	Vodor Poof roof targaulin	20.7	70.70	0	3973.391
2	flame-retarding, Flammability acc. to ISO 3795 smaller 100 mm / min, Design width 2.57 m	11 00 v 2 57	23 50	10	5072 306
		11.00 X 2.37	20.00	10	5072 207 (L)
		14.00 X 2.37	20.20	4	5072 308
		20 00 x 2.57	40.70	10	5972 309
		20.00 x 2.07 22 50 x 2.57	46.30	5	5972.370
		24 50 x 2.57	50.40	5	5972 371
		26.50 x 2.57	54.50	6	5972.372
		28.50 x 2.57	58.50	5	5972.373
		30.50 x 2.57	62.70	5	5972.374 🕒
		32.50 x 2.57	66.80	56	5972.375
		34.50 x 2.57	70.90	5	5972.376 🕒
		36.50 x 2.57	75.00	5	5972.377 🕒
		38.50 x 2.57	79.20	5	5972.378 🕒
	flame-retarding, Flammability acc. to ISO 3795 smaller 100 mm / min, Design width 2.07 m	11.00 x 2.07	18.40	4	5972.360 🕒
		14.00 x 2.07	23.50	4	5972.361 🕒
		17.00 x 2.07	28.50	5	5972.362 🕒
		20.00 x 2.07	33.50	4	5972.363 🕒
	low-inflammability, Flammability acc. to DIN 4102 B1, Design width 2.57 m	11.00 x 2.57	24.00	2	5973.306 🕒
		14.00 x 2.57	28.80	1	5973.307 🕒
		17.00 x 2.57	36.30	5	5973.308 🕒
		20.00 x 2.57	41.60	2	5973.309 🕒
		22.50 x 2.57	46.80	5	5973.370 🕒
		24.50 x 2.57	51.00	16	5973.371 🕒
		26.50 x 2.57	55.20	5	5973.372 🕒
		28.50 x 2.57	59.30	16	59/3.3/3
		30.50 x 2.57	63.50	16	59/3.374
		32.50 x 2.57	b/./U	5	59/3.3/5
		34.50 X 2.57	73.90	5	59/3.3/6
		30.30 X Z.57	/0.00	10 F	53/3.3/7
	low-inflammability Flammability acc. to DIN /102 R1. Design width 2.07 m	30.30 X 2.37	00. IU 10.00	2	5073 260
		1/1 00 x 2.07	2/1.00	5	5973 361
		17.00 x 2.07	24.00	1	5973 362
		20 00 x 2 07	34.40	5	5973 363
3	Tarpaulin clip	20.00 x 2.07	2 00	50 🎟	5971.142

WS = wrench size PU = packaging unit ≡ = available ex works ⊕ = delivery time on request ⊞ = only available in this packaging unit S = the approval process is not yet completed IIII = Layher Individual possible = not in the catalogue



## **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/m<sup>2</sup>)

Following material	Quantity	PU	Ref. No.
is needed		[pcs.]	
Safety clips 2.8 mm (72 pcs. needed)	2	50 🎟	4905.002
GI Securing pins (72 pcs. needed)	4	20 🌐	4905.668
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 🌐	5971.005
Tarpaulin clips (100 pcs. needed)	2	50 🌐	5971.142
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 d=12 x 95 mm (72 pcs. needed)	3	25 🎫	5976.092



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/m<sup>2</sup>)

Following material	Quantity	PU	Ref. No.
is needed		[pcs.]	
Safety clips 2.8 mm (72 pcs. needed)	2	50 🎞	4905.002
GI Securing pins (72 pcs. needed)	4	20 🌐	4905.668
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 🌐	5971.005
Tarpaulin clips (100 pcs. needed)	2	50 🌐	5971.142
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 d=12 x 95 mm (72 pcs. needed)	3	25 🌐	5976.092



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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Pos.	Description	WS [mm]	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.	
1	Bending-resistant corner XL rotable, incl. 2 groove bolts			34.70	10	5975.160	G
2	Keder rail holder with wedge head rotable, incl. 2 groove bolts		0.10	0.88	25	5573.000	<b></b>
3	Keder rail holder with half-coupler rotable, incl. 2 groove bolts	19	0.16	1.00	25	5573.006	
4	Aluminium keder rail 2000		1.30 2.00 2.25 2.50 3.00 4.00	1.95 3.00 3.30 4.50 6.00	50 50 50 50 50 50	4201.130 4201.200 4201.220 4201.250 4201.300 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.

## THE BENEFITS FOR YOU

- > 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 if 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.



### **System Components**

#### **Mobile Roofs**

Layher wheather protection roofs 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 the 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 14 and roof tarpaulins 0.69 m wide, these gaps can be closed. For the eaves, the overlap eaves bracket T18 6 and the overlap keder bow 2000 7 is used.





Pos.	Description	WS [mm]	Dimensions L/H x W [m]	Weight approx. [kg]	PU (pcs.	]	Ref. No.	
1	<b>Rail T19</b> 3.00 m	22	3.00 x 0.30	58.80	21		5938.041	<u> </u>
2	<b>Trolley T17</b> Castors of Polyamide, permanent lift-off preventer	19	0.40 x 0.45	16.20	50		5938.040	<u> </u>
3	Adapter for rail T12		0.73 x 0.17 1.09 x 0.17	5.50 11.50	100 100		5938.027 5938.028	<u> </u>
4	Roof support							
	20° rigid, 0.73 m (for Keder Roof)		0.51 x 0.80	12.40	20		5938.022	<u> </u>
	18° rigid, 0.73 m (for Keder Roof XL) with Allround rosettes		0.51 x 0.80	15.50	20		5938.073	<u> </u>
5	Overlap bracket T18	19		5.46	10		5938.044	<u> </u>
6	Overlap bracket eaves T18	19		5.36	10		5938.043	<u> </u>
7	Overlap Keder bow 2000			2.30	50		5938.042	<u> </u>
8	<b>Unit beam spigot T16</b> d=38 mm, for straight extension of lattice beam Ref. No. 4912, Ref. No. 4922, Ref. No. 4902, Ref. No. 4903, Ref. No. 4904, Ref. No. 4925 with each other		0.54	2.40	350		4925.000	
9	Connector for trolley for roof support 5938.022		2.63 x 0.13	11.10	50		5938.019	<u> </u>
10	Bolt, Safety clip d=12 x 65 mm and 2.8 mm			3.50	50		4905.067	
11	Safety clip d=2.8 mm			0.50	50	▦	4905.002	
12	<b>Hinged pin</b> d=12 mm with pan head			1.60	20		4905.668	
13	Double coupler with coarse thread	19		1.30	25		4777.019	
	Description as 4700.xxx, acc. to approval Z-8.331-947	22		1.30	25		4777.022	
14	<b>Locking pin</b> red, d=11 mm			0.15	100		4000.001	
15	Aluminium keder rail 2000		1.30	1.95	50		4201.130	<u> </u>
			2.00	3.00	50		4201.200	<b>—</b>
			2.25	3.30	50		4201.220	
			2.50	3.80	50		4201.250	
			3.00 4.00	4.50 6.00	50		4201.300	
16	<b>Captive bolt for keder rail</b> M12 x 40, with nut		4.00	4.30	50		4206.004	٩

# LAYHER CASSETTE ROOF

FOR WEATHERPROOFING AND TEMPORARY HALLS - LOW-COST, FLEXIBLE 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 refurbishment and normal business operations can continue under a wheather protection proof roof.

Following points highlight the adventages of the Layher Cassette Roof.

#### 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 chord.

#### Vast spans

Depending on the static system and the climatic conditions, 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 effectively 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 approx. 120 kg/m<sup>2</sup>.

This cassette roof is a non-insulated 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.

### THE BENEFITS FOR YOU

- 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 8** with nuts or **14 x 77 mm bolts 5 with 2.8 mm safety clips 6**.

Depending on the structural documentation some construction variants may require the use of a third 14 x 107 mm bolt 7 and 2.8 mm safety clip 6 at the top chord.

A truss bay consisting of a pair of roof trusses connected to **beam stiffeners 9** 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 11** and then closed using roof cassettes.



Pos.	Description	WS [mm]	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]		Ref. No.	
1	Roof beam							
	2.00 m		2.00 x 1.00	48.20	16		5902.200	<b></b>
	3 00 m		3 00 x 1 00	64 50	16		5902,300	1000
2	Ridge support		4.30 x 1.00 / 1.50	106.00	10		5901.000	<b></b>
3	Bolt 30 x 50		0.05	3.00	10	⊞	5903.002	<b></b>
4	Safety clip d=4 mm			1.50	50		5905.002	<u> </u>
5	Bolt 14 x 77	22		2.20	20	▦	5906.079	<u> </u>
6	Safety clip d=2.8 mm			0.50	50		4905.002	
7	Bolt 14 x 107		0.11	3.00	20		5906.109	<u> </u>
8	Bolt M14 x 80, with washer and nut	22		2.80	20		5906.082	<u> </u>
9	Beam stiffener		2.57	15.20	35		5907.000	
10	End post for mono-pitch roofs			6.60	50		5901.100	
11	Tubular stiffener		2.57	5.10	150		2504.257	<u></u>

### **System Components**

#### 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 5** 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 5 are used to connect the tie end pieces or spacers. Each of these requires either two M14 x 65 bolts 6 with nuts or four 14 x 77 mm bolts 7 with 2.8 mm safety clips 8.





Wedges and clamping plates 9/10 for securing the roof cassettes both on the roof trusses and in the intermediate bay.

The **carrying handles 11** 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 12** has a movable seesaw, which also can be used for mono-pitch roofs. The rigid **roof support 13** 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 14** with **safety clips 4** 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





Pos.	Description	WS [mm]	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs	]	Ref. No.	
1	Tie end piece for roof girder		6	29.50	50		5917.000	
2	Tie		2	7.06	50		5918.200	
			4	17.00	50		5918.400	
			0	23.30	JU		3918.000	
3	Bolt 30 x 64		0.06	4.00	10	▦	5904.002	<u> </u>
4	Safety clip d=4 mm			1.50	50		5905.002	<u> </u>
5	Lattice beam connector, round steel d=36 mm for connection of lattice beam Ref. No. 4906.xxx with each other		0.44	3.35	500		4916.000	
6	Bolt M14 x 65 with nut, property class 8.8	22	Required: 4 pcs.	6.50	50		4908.067	
7	Bolt 14 x 77	22		2.20	20	⊞	5906.079	<u> </u>
8	Safety clip d=2.8 mm			0.50	50		4905.002	
9	Wedge for fixing cassette		0.18	7.50	25	▦	5913.004	<u> </u>
10	Clamping plate for fixing cassette		0.12 x 0.08	15.00	25		5914.002	<u> </u>
11	Carrying handle for roof cassette, steel		0.75	1.20	350		5931.100	
12	Swivelling roof support		0.73	19.10	20		5975.073	<b>—</b>
			1.09	22.40	20		5975.109	
13	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	15.30	20		5915.000	<b>***</b>
14	Wedge for roof support		0.18	7.50	25		5913.005	<u></u>

WS = wrench size PU = packaging unit = available ex works  $\bigcirc$  = delivery time on request = only available in this packaging unit = the approval process is not yet completed = Layher Individual possible = not in the catalogue

### **Roof cassettes**

#### Roof cassettes with corrugated sheet

The **roof cassettes T20 1** consist of a robust, hot-dip galvanized steel frame with shaped steel sheets and have a load capacity of 120 kg/m<sup>2</sup>. 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 T20 2** to provide you with a safe, easy way onto the roof.

**Ridge cassettes T20 3** 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 T20 4** 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.













Pos.	Description	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.	
1	Roof cassette T20 1.00 m, corrugated sheet 2.00 m, corrugated sheet	1.00 x 2.57 2.00 x 2.57	43.57 71.37	20 20	5911.100 5911.200	
2	Roof cassette with access hatch T20 2.00 m, corrugated sheet	2.00 x 2.57	82.72	5	5911.210	
3	Ridge cassette T20 with corrugated sheet	1.40 x 2.57	43.86	10	5911.001	
4	Light cassette T20 2.00 m, with corrugated plastic panels, installation only in intermediate bays and in alternation with roof cassettes	2.00 x 2.57	49.96	10	5911.205	

## 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









### **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.







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, inclusive pallet posts 1.20 m, load 1,300 kg	2.77 x 1.22	50.60	10	5113.265	
2	<b>Modular skeleton box with timber base plate</b> 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	85.80		5113.002	
3	Connecting piece for cassette supports	0.30	4.10	100	5932.000	<u></u>
4	Base support for walkway steel, for assembly of a walkway at the eaves area	0.73	8.70	40	5916.073	
5	Standard connection	0.22	3.20	500	5934.000	<b></b>
6	Guardrail support single, with guardrail wedge housings, steel	1.00	5.50	100	1716.000	
7	Roof guard	1.00 x 2.57	21.10	30	1749.257	<u></u>

## Rope 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 3** for fitting of an intermediate element in the ridge area. Fastened in each case with wedge.



#### Rope safety gear system 20 m / 40 m 1 / 2

#### Oval carabiner:

Connection element between end fastener and fall arrester

Fall arrester:

Reduction of the impact force when falling. Element for one-time operation

- Rope pre-tensioner: Tensioning unit for the safety rope
- Runner: Connection element between PSA-connecting line and roof safety rope
- Fork head: Fixation for the safety rope
- Intermediate element: For installation on ridge fastener and

intermediate fastener





Assembly of intermediate element on ridge fastener



Pos.	Description	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.	
1	Rope safety gear system 20 m KIT 1		10.00	20	5969.120	<u> </u>
2	Rope safety gear system 40 m KIT 2		13.00	20	5969.140	<u> </u>
3	End fastener steel, hot-dip galvanized	0.23 x 0.12	3.10	200	5969.010	<u></u>
4	Intermediate fastener steel, hot-dip galvanized	0.23 x 0.12	1.77	100	5969.020	
5	Ridge fastener steel, hot-dip galvanized	0.87 x 0.12	9.70	80	5969.030	



<b>KIT 1 – Rope safety gear system up to span of 20 m</b> Ref. No. 5969.120	Quantity
Safety rope, Length 20 m	1
Fall arrester	1
Rope pre-tensioner	1
Fork head	1
Runner	1
Oval carabiner	1
Intermediate element	1
Instructions for assembly and use	1
Identification sign	1
Spare part for tensioning element	1

<b>KIT 2 – Rope safety gear system up to span of 40 m</b> Ref. No. 5969.140	Quantity
Safety rope, Length 40 m	1
Fall arrester	1
Rope pre-tensioner	1
Fork head	1
Runner	1
Oval carabiner	1
Intermediate element	3
Instructions for assembly and use	1
Identification sign	1
Spare part for tensioning element	1

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, d=12 mm. Aluminium one-hand snap hook and two tube hooks FS 90 (conforming to EN 354/EN 355).









2



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	1.80	5	5969.160	•
2	Travelling arrester system ASK 1 Polyamide, d=12 mm	2.70	5	5969.200	
3	PSA connecting line Y-version with snap hook FS 90 (conforming to EN 354/EN 355)	1.55	5	5969.600	

# ALLROUND FW SYSTEM ROOF

**REALISABLE SPANS UP TO 45 METERS** 



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. Spans of up to 45 meters can be realized under normal climatic conditions.

Due to the **bolt connection** and the proven **Allround wedge head technique**, the pre-assembly of the roof trusses on the floor is quick and efficient.

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.

### THE BENEFITS FOR YOU

- > Spans of up to 45 m possible under normal climatic conditions.
- Flexible uses, e.g. for weather protection roofs, bridges and supports for scaffolding.
- Extension by only 3 additional expansion parts to the Allround Scaffolding.
- The components are inside the system axes in all 3 directions.



## **System Components**

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**/5. 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 **Aluminium keder** rails **3000** 20 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	WS [mm]	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.	
1	FW System chord		1.57	10.50	20	2646.15	7 🖷
			2.07	13.90	20	2646.20	17 🖴
2	FW System post		2	17.20	28	2646.20	0 🛎
3	FW System end fitting						
	with turnbuckle			3.80	250	2646.20	2 😐
	without turnbuckle			0.95	500	2646.20	13 😐
4	FW System diagonal rod		1.00	2.00	100	2040.21	1 mml
	for 2.07 x 1.50 m bay and for 1.57 x 2.00 m bay		1.50	2.00	100	2646.21	4 🕮
5	Bolt 20 x 113			3.00	10	2646.28	1 🖴
6	Bolt 30 x 130			6.30	10	2646.28	14 😐
7	Bolt 20 x 66			1.61	10	2646.22	.1 🛎
8	Safety clip, d=4 mm			1.50	50	■ 5905.00	12 🛎
9	FW System lock FW nut, 15 x 30	30		1.50	10	2646.23	1 🕮
10	FW System ridge post		2.25	17.47	28	2646.22	3 🕒
11	FW System ridge diagonal brace		2.53	15.05	50	2646.22	.4 🕒
12	FW System ridge ledger with rosettes		1.09	5.00	28	2664.10	<b>19</b> 🕒
			1.57	6.50	28	2664.15	7 🖷
			2.07	8.00	28	2664.20	17 😐
			2.57	9.50	28	2664.25	7 🕒
13	FW System support adapter			4.40	45	2646.26	,5 🕒
14	FW System keder rail holder			1.30	250	2646.27	5 🕒
15	FW System support beam		1.57	35.20	10	2655.15	7 🕒
16	FW System chord support		1.57	27.00	10	2652.15	7 🕒
17	FW System tie connector			2.80	100	2664.22	.6 🕒
18	Tie thread rod		2	2.90	100	5976.20	0 🔛
			3	4.40	100	5976.30	0 😐
			5	7.30	100	5976.40	0 🖴
19	FW System trolley	19	1.57	30.00	50	2646.22	8 🕒
20	Aluminium keder rail 3000		2	6.10	20	5574.20	0 🕒
			3	9.20	20	5574.30	i0 🕒
			4	12.20	50	5574.40	0 🕒
			5	15.30	20	5574.50	0
21	Groove bolt for keder rail		6	18.30	50	5574.60	U 😐
21	M12 x 40, with nut			5.00	50 E	4200.00	J 😐
22	Joint plate for aluminium keder rail 2 groove bolts 4206.003 are needed		0.17	0.50	3000	4208.00	10 🚢
23	Hinged attachment for Event roof		0.7	3.40	100	5573.00	1 🖴

# 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.

## THE BENEFITS FOR YOU

- 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 and optical attractive components, designed for frequently changing applications.
- Fully combinable to Layher Allround Scaffolding and Layher SpeedyScaf.

### System Components

#### **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.

For an increased noise reduction value, different special configurations of Protect cassettes are available.

- Protect wall cassette with increased metal sheet thickness
- Noise reduction mat for Protect cassettes



#### Dismantling of single wall cassettes

44

To remove single wall cassettes, the upper brackets of the wall cassette must be dismantled and the upper wall cassette will be tilted outwards. The wall cassette below can now be be lifted up and removed. The dismantled holders must be bolted in their old positions. While dismantling the cassettes, the handrail of the cassettes must not be removed, unlesse unless the scaffold erector provides further for fall protection.



1

2

3

4



Wall connection

Real glass cassettes with laminated safety glass on request

Wall cassettes with enhanced sound insulation in accordance with ZTV-Lsw 88:1988 or DB guidelines 800.2001 (section 2) on request



5













6



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	7.71	15	5980.073	<u></u>
	1.09 m long	1.09 x 1.00	10.50	15	5980.109	<u> </u>
	1.57 m long	1.57 x 1.00	14.30	15	5980.157	<b>***</b>
	2.07 m long	2.07 x 1.00	18.20	15	5980.207	<b>***</b>
	2.57 m long	2.57 x 1.00	22.20	15	5980.257	<b>***</b>
	3.07 m long	3.07 x 1.00	27.20	15	5980.308	<b>1000</b>
	0.50 m long, metric	0.50 x 1.00	6.00	15	5980.050	
	1.00 m long, metric	1.00 x 1.00	10.00	15	5980.100	
	1.50 m long, metric	1.50 x 1.00	14.00	15	5980.150	
	2.00 m long, metric	2.00 x 1.00	18.00	15	5980.200	
	2.50 m long, metric	2.50 x 1.00	22.00	15	5980.250	
	3.00 m long, metric	3.00 x 1.00	27.00	15	5980.301	
2	Light cassette					
	0 73 m long	0 73 x 1 00	5 20	15	5981.073	
	1 09 m long	1 09 x 1 00	7 10	15	5981,109	
	1.57 m long	1.57 x 1.00	9.48	15	5984,157	
	2.07 m long	2 07 x 1 00	11.48	15	5984 207	<u> </u>
	2.57 m long	2.57 x 1.00	1/1.40	15	5984 257	
	3.07 m long	2.07 x 1.00	16.24	15	5984 307	
	0.50 m long	0.50 × 1.00	10.24	15	5004.007	A
	1.00 m long, metric	1.00 x 1.00	4.00 6.00	15	5001.000	
	1.00 m long, metric	1.00 X 1.00	0.00	10	5901.100	
	2.00 m long, metric	1.30 X 1.00	0.00	10	5504.150	
	2.00 m long, metric	2.00 X 1.00	10.00	10	5964.200	
	2.50 m long, metric	2.50 X 1.00	13.00	10	5984.250	
•		3.00 X 1.00	15.50	15	5984.300	
3	Connection rail	0.70	4.70	00	5000 070	
	U.73 m long	0.73	1.70	20	5983.073	
	1.09 m long	1.09	1.90	30	5983.109	
	1.57 m long	1.5/	2.90	30	5983.157	
	2.07 m long	2.07	3.70	30	5983.207	<u> </u>
	2.57 m long	2.57	4.60	30	5983.257	<u> </u>
	3.07 m long	3.07	5.50	30	5983.307	<u> </u>
	0.50 m long, metric	0.50	1.20	30	5983.050	
	1.00 m long, metric	1.00	1.90	30	5983.100	
	1.50 m long, metric	1.50	2.60	30	5983.150	
	2.00 m long, metric	2.00	3.60	30	5983.200	
	2.50 m long, metric	2.50	4.50	50	5983.250	
	3.00 m long, metric	3.00	5.40	30	5983.300	
4	Corner cassette 90°	0.16 x 1.00	4.20	50	5985.010	<u> </u>
5	Allround inner corner cassette 90° 1.00 m	0.39 x 1.00	10.20	20	5985.040	<b>***</b>
6	Connection rail 90°	0.17 x 0.17	0.58	100	5985.011	<b></b>
		0.39 x 0.39	1.80	40	5985.041	Ċ

## **System Components**

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 **cover 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 facade scaffolding of Allround Scaffolding: Width 8 x 2.57 m = 20.56 m, height 10.00 m, result a face of **205.60 m<sup>2</sup>**; at the lower edge of the cassettes, connection rails were fitted.



Pos.	Description	WS [mm]	Dimensions L/H x W [m]	Weight approx. [kg]	PU [pcs.]	Ref. No.	
1	SpeedyScaf holder for wall cassette T9	19		1.55	250	5986.011	
2	SpeedyScaf corner holder for wall cassette T9	19		2.40	250	5986.021	
3	Allround holder for wall cassette T9			1.20	250	5986.031	
4	Ledger holder for half-coupling T9	19		1.55	300	5986.041	<b>2</b>
5	<b>Light door element for site access</b> Hinged DIN right, height clearance 0.94 m, width clearance 1.84 m		1.57 x 2.00	45.50	1	5985.156	<b>#</b>
6	<b>Light door element for escape ways</b> Hinged DIN right with anti-panic handle, height clearance 1.19 m, width clearance 2.09 m		1.57 x 3.00	68.60	1	5985.157	
7	<b>Cover ledger</b> for Protect light door element			12.70	50	5985.158	

Following material	Quantity	Ref. No.
is needed		
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 = nackaning unit 🛋 = available ex works 🕒 = delivery time on request 🗰 = only available in this nackaning un	t 🕲 = the approval process is n	nt vet completed IND = Lavber Individual possible

## Α

Adapter for rail T12
Allround holder for wall cassette T9
Allround inner corner cassette 90°
Aluminium keder rail 2000 2000 3000

# B

Base support for walkway	33
Beam stiffener	27
Bending-resistant corner XL	19
Bolt	27
12 x 95	11
14 x 107	27
14 x 77	27
14 x 77	29
20 x 113	41
20 x 66	41
30 x 130	41
30 x 50	27
30 x 64	29
M14 x 65	29
Bolt, Safety clip	23

# C

Captive bolt for keder rail	23
Carrying handle	29
Castor for tarpaulin pulling	13
Clamping plate for fixing cassette	29
Connecting piece for cassette supports	33
Connection rail	45
Connection rail 90°	45
Connector for trolley	23
Corner cassette 90°	45
Cover ledger	47

# D

Double coupler with coarse thread
E

End fastener
End post for mono-pitch roofs

## F

23

47

45

19

23 41

FW System	
chord	41
chord support	41
diagonal rod	41
end fitting	41
keder rail holder	41
lock nut, 15 x 30	41
post	41
ridge diagonal brace	41
ridge ledger with rosettes	41
ridge post	41
support adapter	41
support beam	41
tie connector	41
trolley	41

# G

Groove bolt for keder rail	
Guardrail support	

## Η

Hinged attachment for Event roof		41
Hinged pin	11,	23

## I

Intermediate fastener	35

J

Joint plate for a	aluminium	keder i	rail

# Κ

23

35 27

Keder rail holder with half-coupler
Keder rail holder with wedge head
Keder rail seal
Keder Roof XL eaves section gable tarpaulin horizontal diagonal brace lashing strap 5 t lattice beam ledger mono-pitch lattice beam polyester lashing strap ridge section stiffener tie attachment tie connecting piece tie connecting sleeve tie connection lashing strap tie connection threaded rod Keder Roof, roof tarpaulin
Keder tarpaulin feeder

# L

or, round steel	29
	7
	7
coupling T9	47
	45
	31
escape ways	47
site access	47
	23
	or, round steel coupling T9 escape ways site access

# Modular skeleton box with timber base plate 33

41

33

41

19

19

11

11 15

15 13

0	
Overlap bracket eaves T18	23
Overlap bracket T18	23
Overlap Keder bow 2000	23

## Ρ

PSA connecting line Y-version	37
PSA safety harness AX 60 C	37

# R

Rail T19	23
Ridge cassette T20	31
Ridge fastener	35
Ridge support	27
Roof beam	27
Roof cassette T20	31
Roof cassette with access hatch T20	31
Roof guard	33
Roof support	23, 29
Rope safety gear system 20 m	35
Rope safety gear system 40 m	35

# S

Safety clip d=2.8 mm	11, 23, 27, 29
Safety clip d=4 mm	27, 29, 41
Set for tarpaulin pulling	13
Special bolt M12 x 90	11
Special bolt M14 x 60	11
SpeedyScaf corner holder for wa	ll cassette T9
	47
SpeedyScaf holder for wall casse	ette T9 47
Standard connection	33
Swivelling roof support	11, 29

# Т

Tarpaulin clip	15
Threaded tie	13
Tie	29
Tie end piece for roof girder	29
Tie thread rod	41
Travelling arrester system ASK 1	37
Trolley T17	23
Tubular pallet 265	33
Tubular stiffener	27

# U

Unit beam	spigot T16	23

# W

Wall cassette	45
Wedge for fixing cassette	29
Wedge for roof support	29



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