Layher®

More Possibilities. The Scaffolding System.

LAYHER EVENT-SYSTEMS

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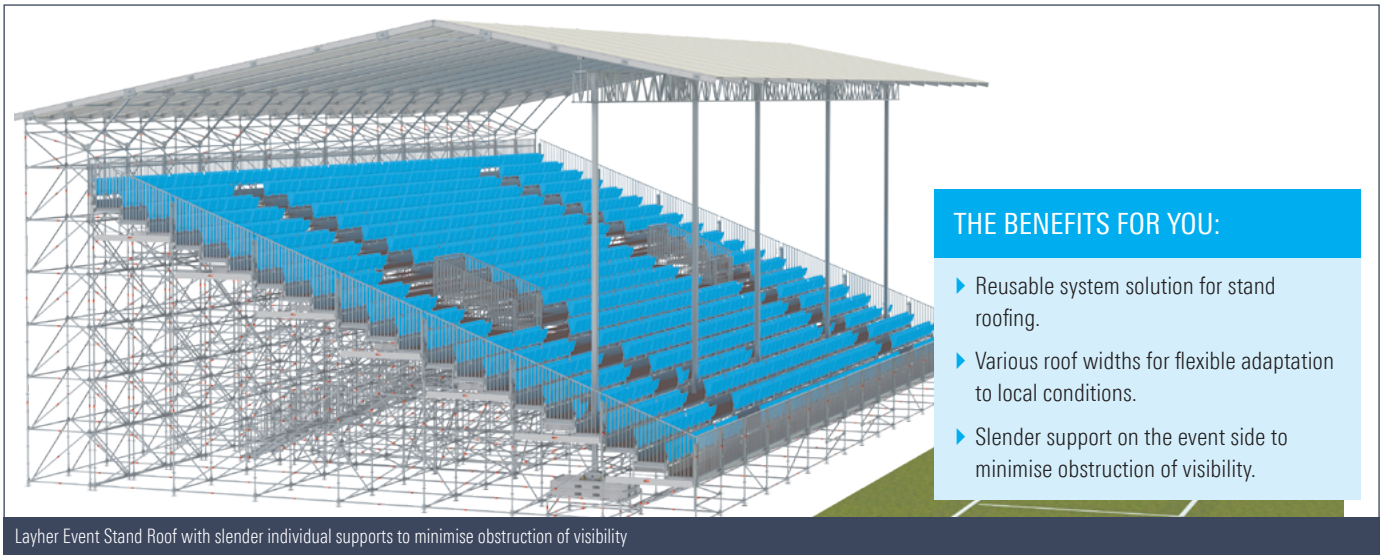
Quality management certified according to DIN EN ISO 9001

THE EVENT STAND ROOF



Layher Event Stand Roof with slender individual supports to minimise obstruction of visibility

THE BENEFITS FOR YOU:

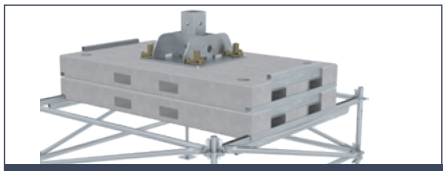
- Reusable system solution for stand roofing.
- Various roof widths for flexible adaptation to local conditions.
- Slender support on the event side to minimise obstruction of visibility.

Previously, temporary stands have required complex and expensive one-off structures for their roofs. To meet the requirements for sun and rain protection provided by Layher Event stands while minimising obstruction of visibility caused by supports within the system, Layher has designed the Event Stand Roof.

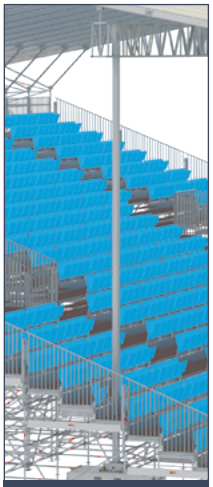
The basis for the roof trusses is the proven Keder Rail 9000, with additional holes. Not only that, various connectors are available for forming the roof ridge or extending the keder rail. Together with the mounting and bracing elements, the stand roof can be placed onto a preassembled rear wall of the stand in a bending-resistant arrangement. The Keder Rails 9000 are braced against one another using suitable Allround O-ledgers and horizontal diagonal braces.

On the side facing the event area, the roof is supported by steel truss beams on slender supports. These supports rest on a scaffolding bay with special concrete ballast blocks. These system ballast blocks can be placed directly onto an Allround Scaffolding bay. The ballast block can be moved either by a fork-lift truck or by crane with connectable crane eyelets.

Ridge design

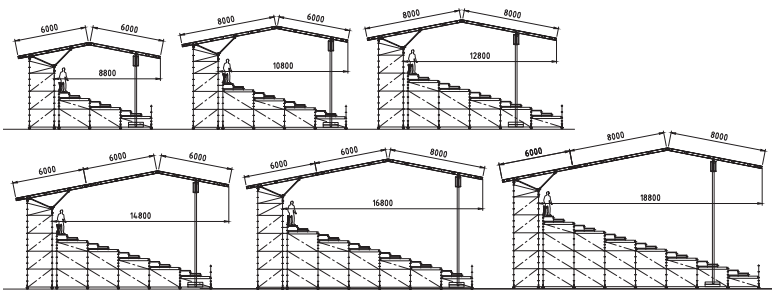


System ballast element (see page 18)



Roof support

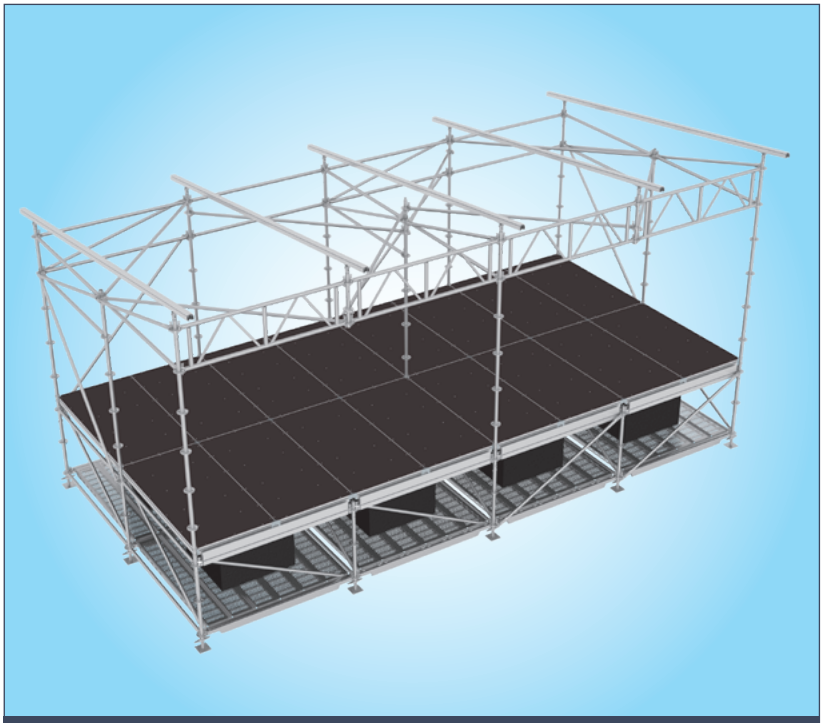
EXAMPLES FOR VARIOUS ROOF CONFIGURATIONS



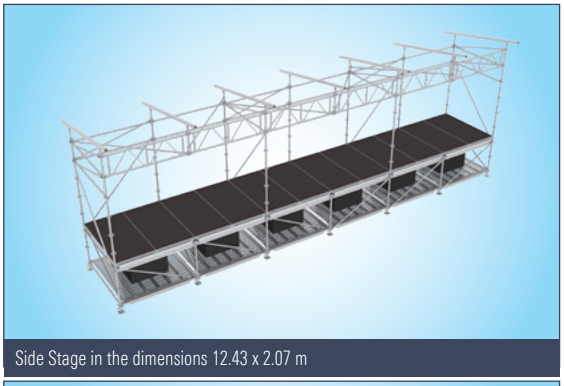
The maximum extent of the roof over the stand is approx. 18.8 metres, with a snow load of 25 kg/m², in wind zone 2 and for a maximum service life of two years. It can be used with all Layher Event System lengths (EV 86, EV 100 and EV 104). The length of the roof sections can besteadily extended in standard 2 metre steps from 8.8 m to max. 18.8 m with one row of supports. Using a further row of supports allows the extent of the roof to be increased accordingly.

Learn more in our catalogue on page 26.

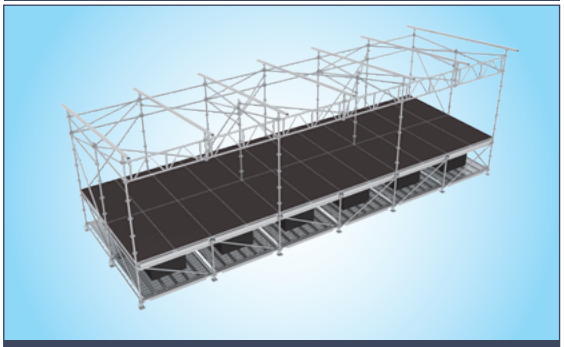
SIDE STAGES TO OPEN-AIR STAGES



Side Stage in the dimensions 8.23 x 4.14 m



Side Stage in the dimensions 12.43 x 2.07 m



Side Stage in the dimensions 12.43 x 4.14 m

Structural strength calculations and inspection books for smaller open-air stages and mobile stages usually ignore a technical area positioned at the side or behind the stage floor. This technical area is needed for preparing and storing technical equipment and instruments. Unlike expensive one-off solutions, side attachments for stages using Allround Scaffolding are considerably faster to build, making them more economical too.

To assist its clients even during the planning phase, Layher has verified the stability for a range of different configurations. The verification stability now available combines the building depths of 2.07 m and 4.14 m with three standard lengths (0.50 m, 1.00 m and 1.50 m) and the resultant stage heights (0.85 m, 1.35 m and 1.85 m). Building widths from 4.14 m to 20.72 m are provided in 2.07 m steps. The metric variants are of course also covered. Any stair accesses needed can be positioned variably.

None of the possible variants is subject to the criteria of the model approval requirement – meaning that an inspection book is not needed.
The verification of stability is available by Layher customer log-in at login.layher.com as a free download.

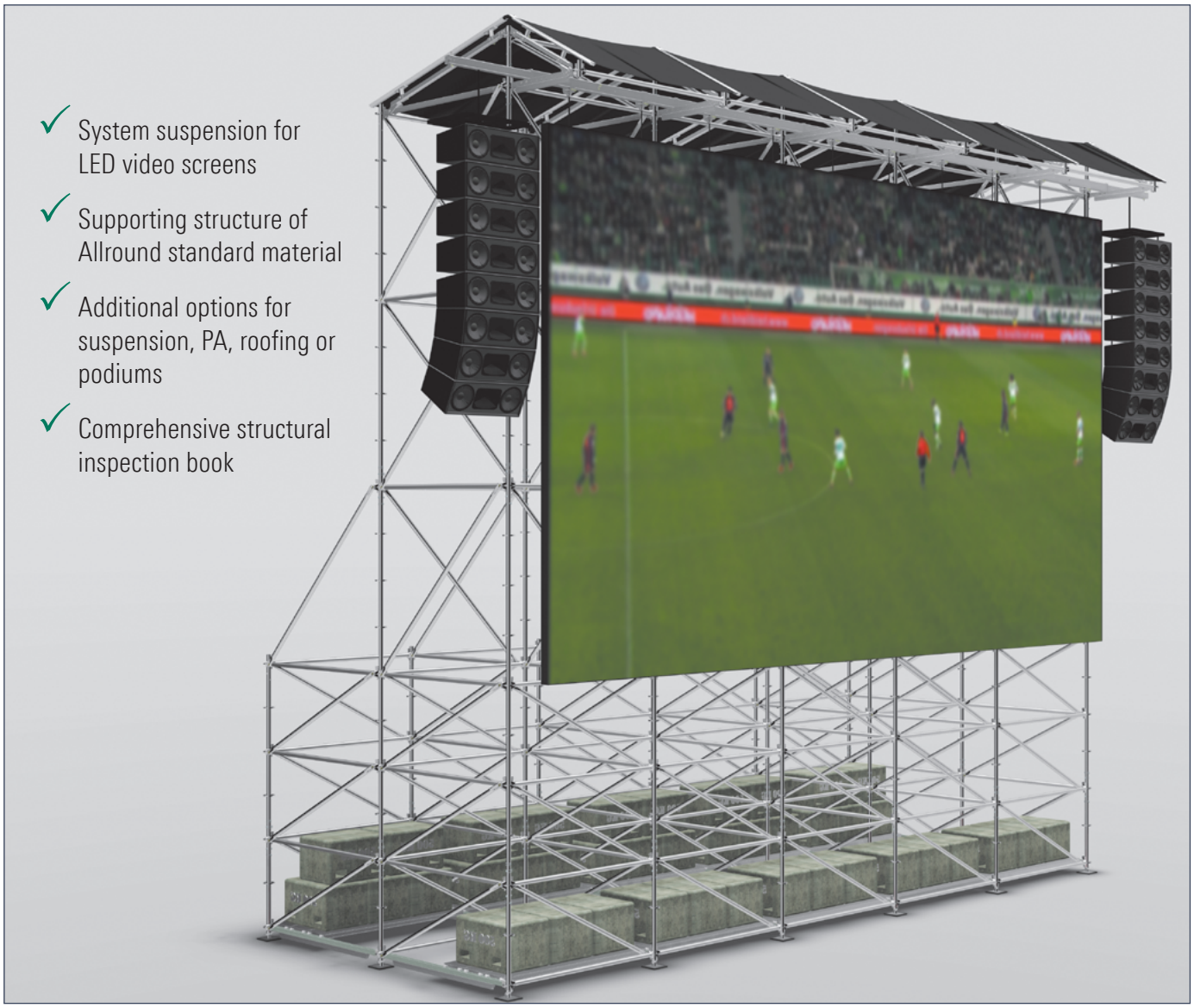
In addition to the range of assembly variants the page for the structural strength verification distinguishes between:

- Wind zone 1 + 2 Inland
- Wind zone 3 + 4 Inland
- Wind zone 3 + 4 Coast and Baltic Sea islands
- Up to gale force 8 Bft, the structure can be provided with tarpaulins by others

THE BENEFITS FOR YOU:

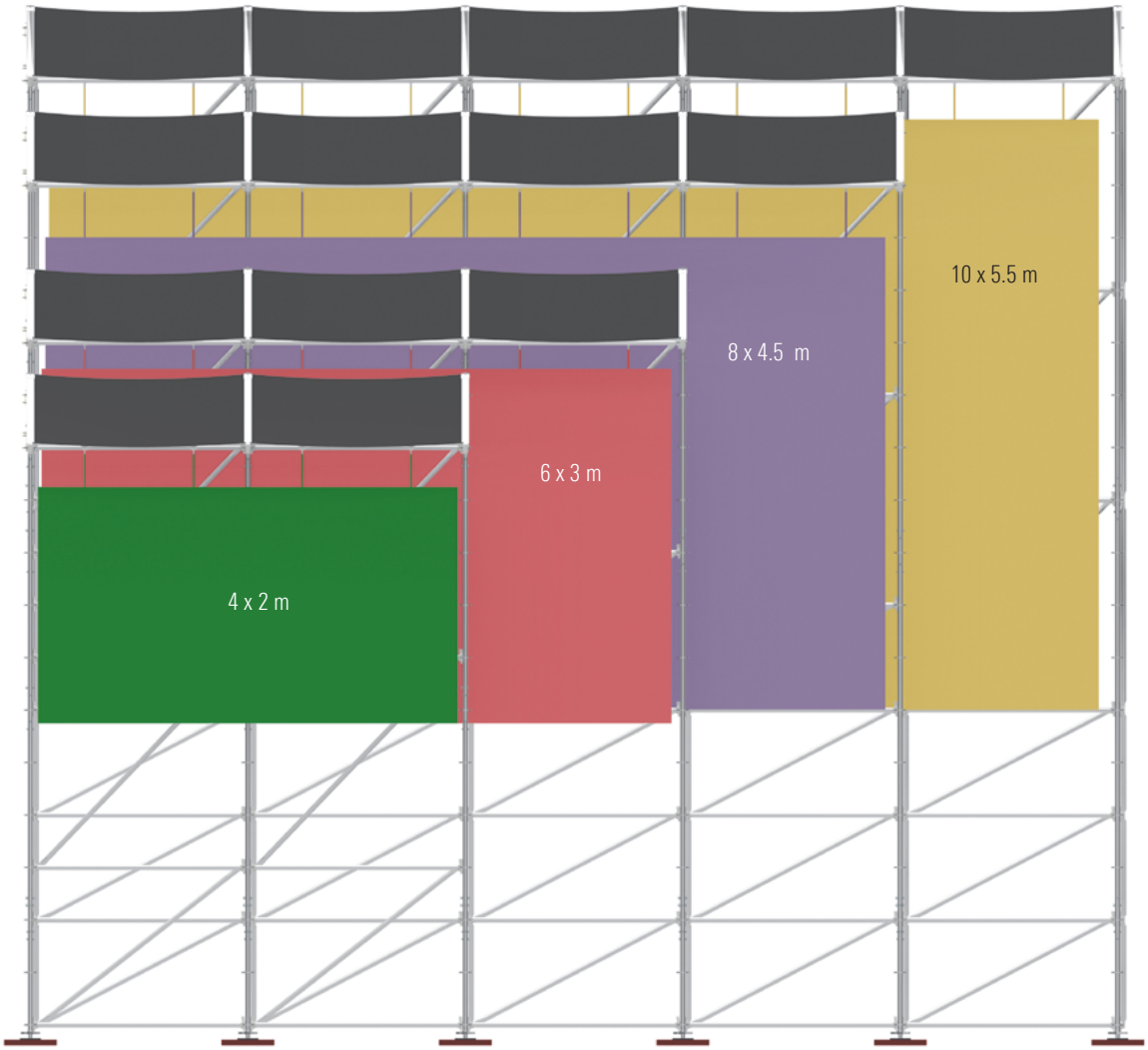
- No need to invest in individual structural analyses for Side Stages.
- Safety under the law from available verification of stability.
- Added value of existing material – new application options without additional investment.
- Well thought-out system solution using rapidly available standard Allround Scaffolding parts.
- Quick and easy building manually. No crane is needed.

THE LAYHER VIDEO WALL SYSTEM



To give all of the audience a closer look at the performers at major open-air concerts, and also because the broadcasting of major sporting events like the FIFA World Cup is increasingly evolving into a spectacle for the entire public, LED video screens have now become essential. But since not every concert and not every fan community makes the same demands of a video screen, and the LED displays made up of several panels can be flexibly adjusted in size to suit actual needs, Layher has designed its Video Wall System for easy adaptation to requirements on the spot.

Based on proven Allround Scaffolding from Layher, it can be adapted in modular form to the most commonly used video screen sizes. Complete kits are therefore available, offering you not only certainty in your material planning thanks to an already available inspection book for all variants in accordance with DIN EN 13814, but also a high degree of legal security and simplicity, since no further structural strength calculations are needed.



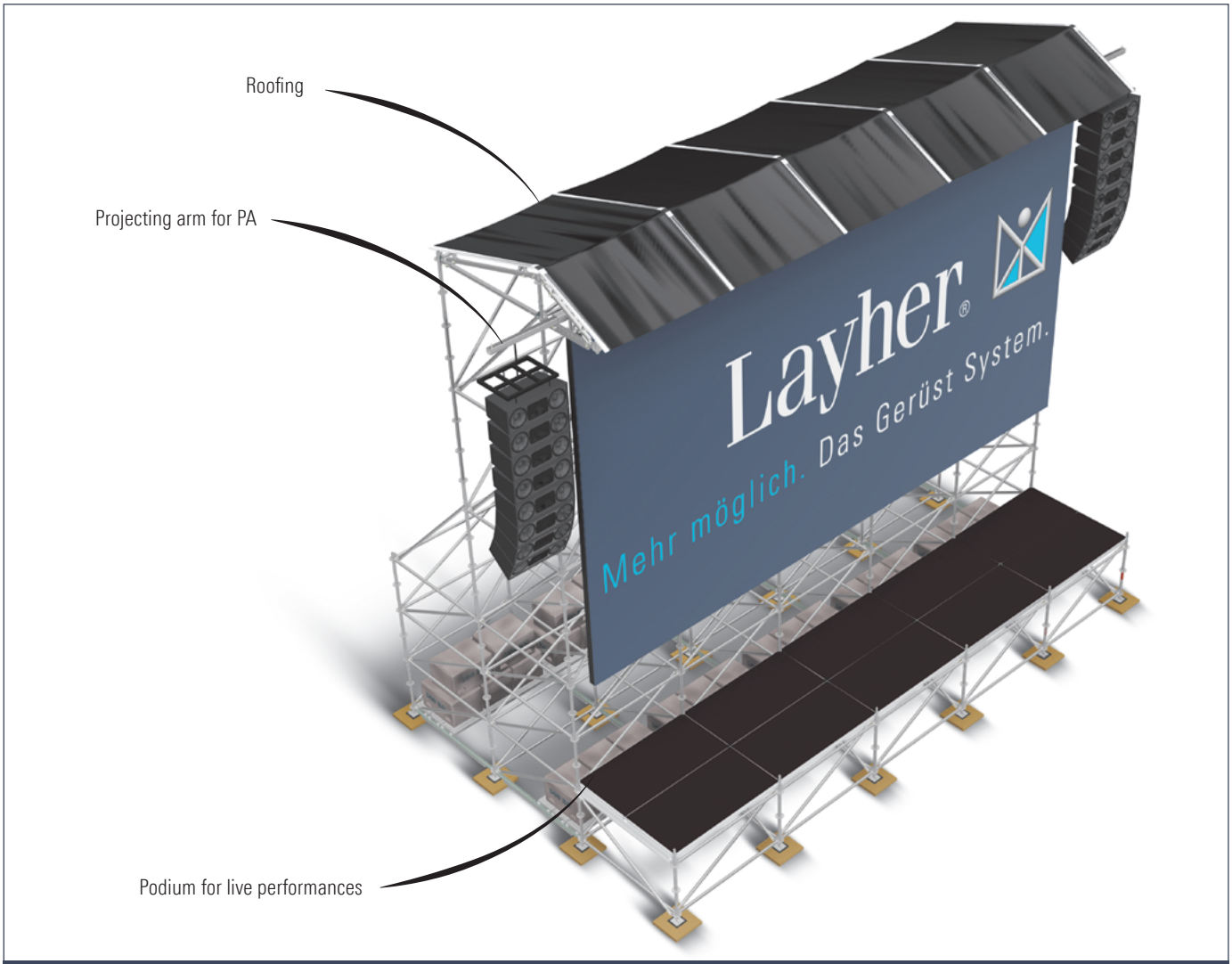
Four possible heights to match the most frequently used video screen sizes

Based on Allround Scaffolding, suitable supporting structures can be built using supplementary parts adapted specifically to the requirements of video screen systems. The projecting arm designed specially for this purpose, the associated load beam and the available suspension points can be used to sustain loads of up to 5 kN per meter. Even older, usually heavier LED screens can be held without problems.

An optional projecting arm inserted laterally into the load beam is strong enough to support 5 kN on each side. For smaller PA systems, such as those needed for voice amplification or for reproducing audio signals during sport transmissions, this is quite sufficient. If bigger PA systems are needed, the Video Wall System can be simply widened by one bay each on the left and right of the screen. In the middle there is 10 kN available for the speaker systems.

To protect the motorised chain hoists often used, a roof solution using keder tarpaulins is available. Even a complete enclosure of the structure, using tarpaulins or the Layher Protect System, is covered by the inspection book. This also opens the way for its use as an access barrier or for the customer to fit sound insulation components.

If the video screen is to rest on a surface, instead of being suspended from motorised chain hoists, that too is no problem: with the Layher Event decks, a platform can be created that not only supports the video screen, but can also be expanded into a space for putting on live performances.

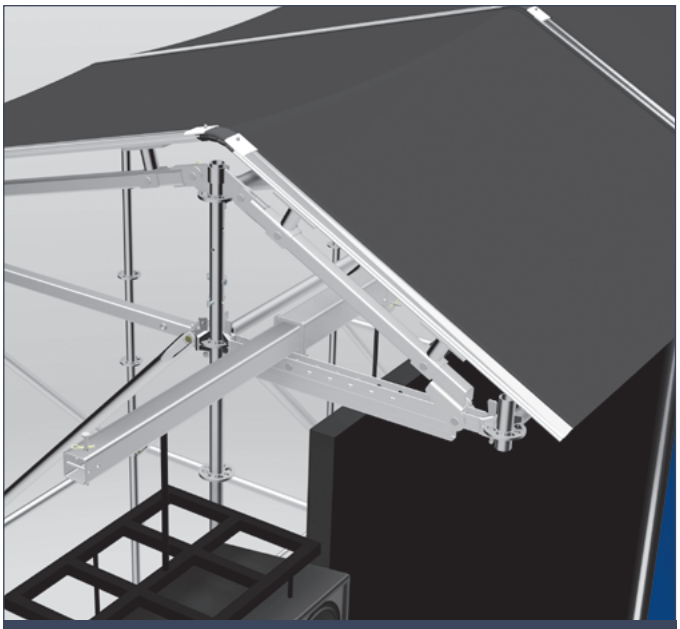


Additional options covered in the inspection book

Apart from standard Allround material, only a few additional components are needed. The roof, beam and projecting arm structures are assembled bolt-free using pins. The remaining assembly work for the Video Wall System is completed quickly and easily thanks to the proven Allround wedge connection technology.

THE BENEFITS FOR YOU:

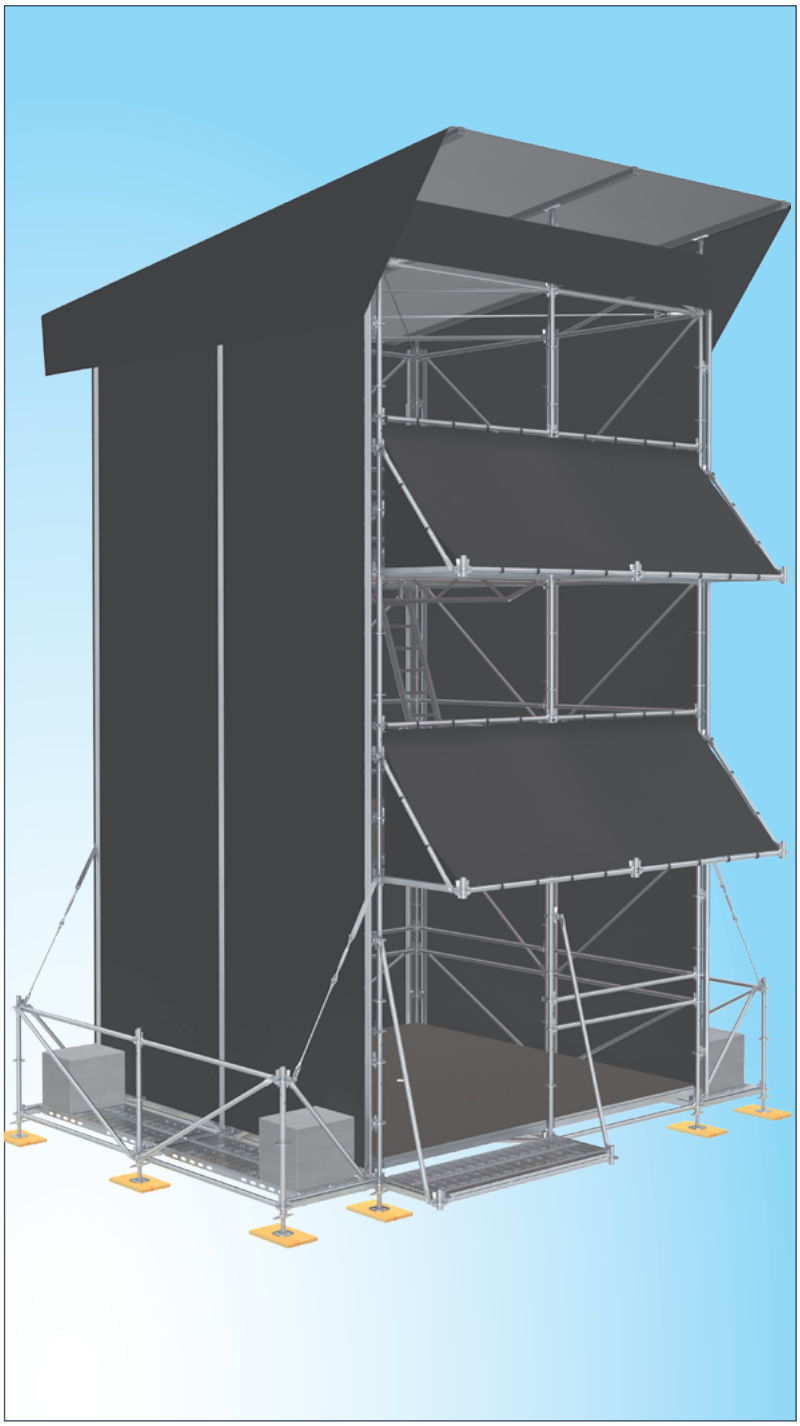
- High degree of planning certainty and simplicity, by covering many application scenarios with one system and by rapid material availability.
- High degree of legal security, thanks to the inspection book provided in accordance with DIN EN 13814 and covering all system variants. Stability is verified for up to wind zone 4. The video screen does not have to be removed in strong winds (display panel manufacturer's specifications must be complied with).
- Quick and easy assembly without a crane, thanks to bolt-free pin and wedge connection technology.



Video screen projecting arm and PA projecting arm

Learn more in our catalogue on page 36.

FOH TOWER KIT SYSTEM

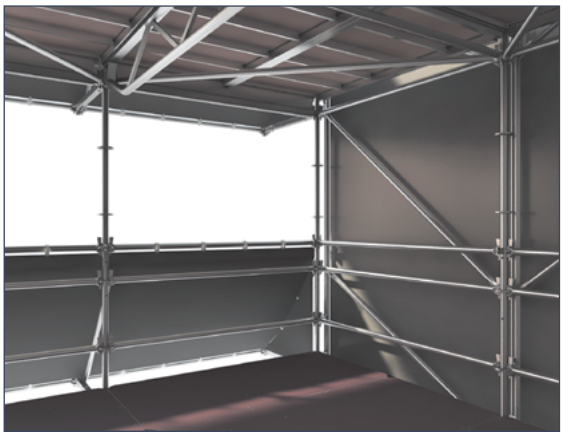


The Layher FOH Tower kit system provides you with the right solution for your Front-Of-House applications. To meet the most frequently encountered requirements, a total of 12 FOH Tower complete KITs are available.

ONE SYSTEM – MANY VARIANTS

The kit system and Layher's flexible Allround equipment offers an impressive variability.

Whether it's a 2 or 3 bay width, with or without a projecting roof and entrance, with 1, 2 or 3 storeys. The Layher FOH Tower kit System means more possibilities. Typical for Layher!

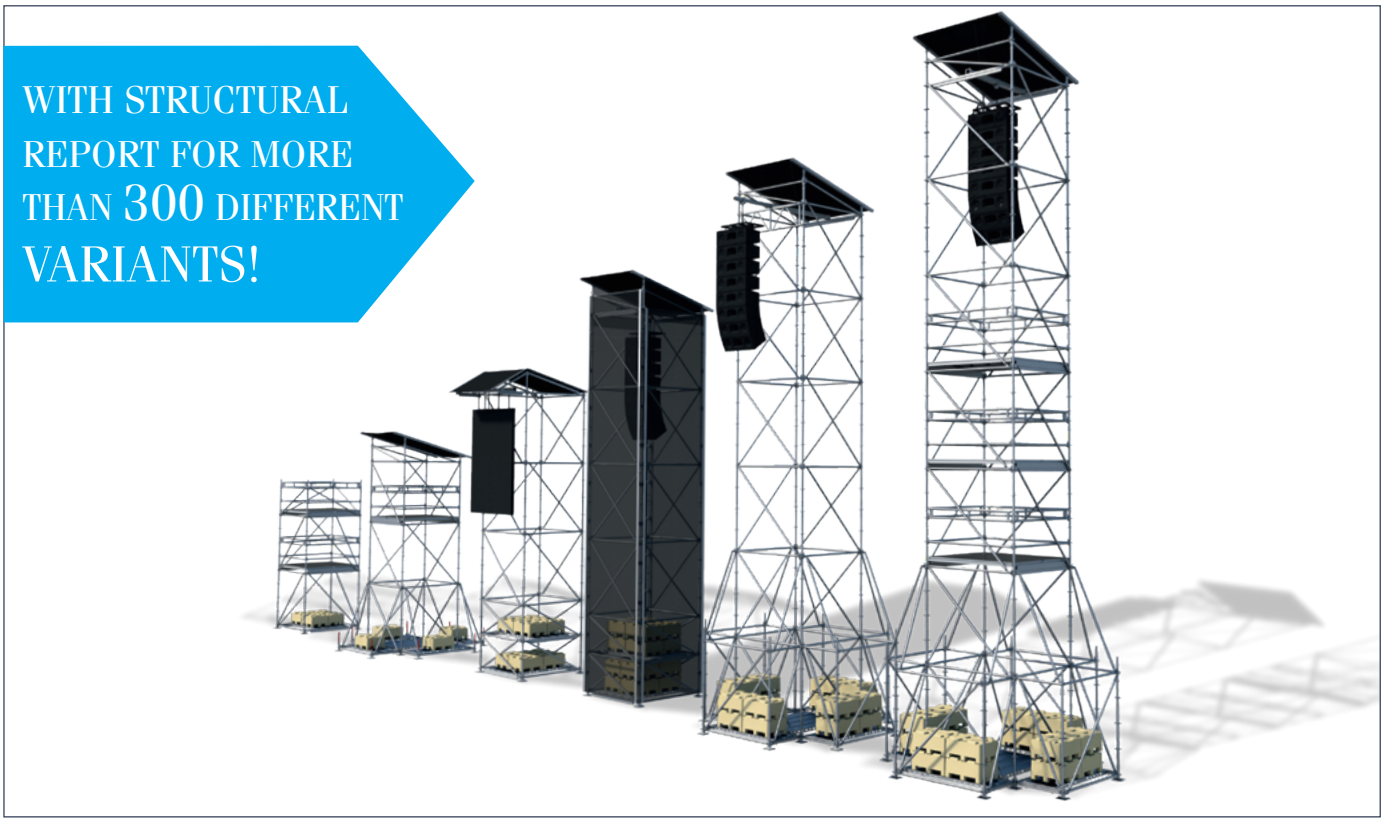


THE BENEFITS FOR YOU:

- Quick and easy assembly thanks to optimum use of material.
- Neat and practically-minded design down to the last detail.
- Each of the maximum of three levels is without a hindering central support.
- Complete enclosure using keder tarpaulins.
- Very few special parts.
- Two inspection books available: 4.14 m x 4.14 m (4 x 4) and 6.21 m x 4.14 m (6 x 4).

Learn more in our catalogue on page 32.

THE PA-TOWER PLUS FROM LAYHER



Towers for loudspeakers, camera equipment or lighting are essential at every sporting and cultural event. To cater for that, the solution needs to be uncomplicated. The new PA-Tower PLUS from Layher typifies its practically minded and economical system solutions.

Compared with one-off solutions devised for specific projects, the PA-Tower PLUS is not only quick to deliver due to the use of Allround standard components, and efficient to assemble thanks to the self-locking wedge head connection, but also ensures with its varying standard lengths and matching supplementary components a high degree of flexibility in use.

In addition to economical and flexible assembly and dismantling, the lightweight and handy Allround components also ensure compact packing dimensions during storage and transport – for more efficient logistics.

Depending on requirements, more than 300 pre-configured variants in various heights and widths are possible with the Allround construction kit. An extensive structural report is available for all these variants.

Two surface areas are available – 2.07 x 2.07 m and 4.14 x 4.14 m or 2.00 x 2.00 m and 4.00 x 4.00 m – plus heights from 4.7 to 14.7 metres. The applications range from classic loudspeaker towers and camera / directing towers to towers for lighting or advertising – roofs and enclosures using tarpaulins or the Protect System that quickly fits onto Allround Scaffolding cater to every requirement.

To ensure sufficient space is left free, resulting in minimum requirements for the surface area needed, the new Layher Event towers focus on the smallest possible surface area and the greatest possible height.

The stability of the PA-Tower PLUS was structurally verified in accordance with the current standard DIN EN 13814: with and without a wind strength limit up to Wind Zone (WZ) 4 – both with and without covering. This means that time-consuming and cost-intensive structural analyses for individual towers are no longer needed, considerably reducing the project handling workload.

Ballasting [kg] for the possible height, without wind strength limit (tower permanently covered, PA inside the tower)

Variant 1: 2.07 x 2.07 m und 2.00 x 2.00 m

Height	4.70 m	6.70 m	8.70 m	10.70 m	12.70 m	14.70 m
WZ 1+2 inland	1,200	2,600	4,800	8,000	x	x
WZ 3+4 coast	2,400	x	x	x	x	x

Variant 2: 4.14 x 4.14 m und 4.00 x 4.00 m

Height	4.70 m	6.70 m	8.70 m	10.70 m	12.70 m	14.70 m
WZ 1+2 inland	4 x 300	4 x 350	4 x 600	4 x 950	x	x
WZ 3+4 coast	4 x 550	4 x 800	4 x 1,250	x	x	x

Variant 3: 4.14 x 4.14 m und 4.00 x 4.00 m

Height	4.70 m	6.70 m	8.70 m	10.70 m	12.70 m	14.70 m
WZ 1+2 inland	4 x 400	4 x 450	4 x 650	4 x 1,050	4 x 1,550	4 x 2,150
WZ 3+4 coast	4 x 750	4 x 1,000	4 x 2,250	x	x	x

Ballasting [kg] for the possible height, without wind strength limit (PA inside the tower, covering and PA are removed at wind strengths of 8 and above)

Variant 1: 2.07 x 2.07 m und 2.00 x 2.00 m

Height	4.70 m	6.70 m	8.70 m	10.70 m	12.70 m	14.70 m
WZ 1+2 inland	400	1,000	2,100	3,800	5,800	8,200
WZ 3+4 coast	900	1,900	3,200	4,900	6,900	9,500

Variant 2: 4.14 x 4.14 m und 4.00 x 4.00 m

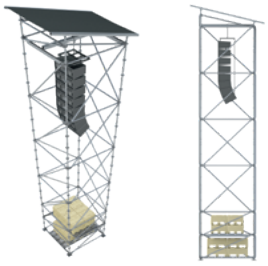
Height	4.70 m	6.70 m	8.70 m	10.70 m	12.70 m	14.70 m
WZ 1+2 inland	4 x 100	4 x 150	4 x 200	4 x 400	4 x 650	4 x 1,000
WZ 3+4 coast	4 x 150	4 x 250	4 x 400	4 x 600	4 x 850	4 x 1,200

THE BENEFITS FOR YOU:

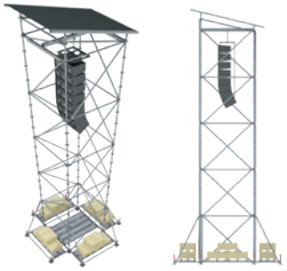
- Modular design, based on the Allround construction kit.
- Economical to assemble thanks to bolt-free wedge and pin connections.
- Minor logistic effort thanks to small packing dimensions.
- Planning and scheduling certainty thanks to availability of a structural report with more than 300 different variants.
- Investments are protected by new application possibilities for existing material without major additional investments.

Variants of differing surface area

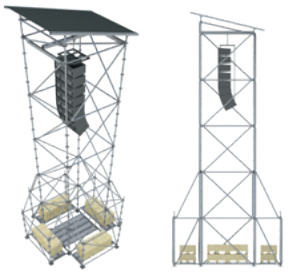
Variant 1: Small surface area.



Variant 2: Large surface area; reinforcement of the bottom 2 metres.



Variant 3: Large surface area; reinforcement of the bottom 4 metres.



Impressive variety of uses

All the variants covered are based on Layher Allround Scaffolding.

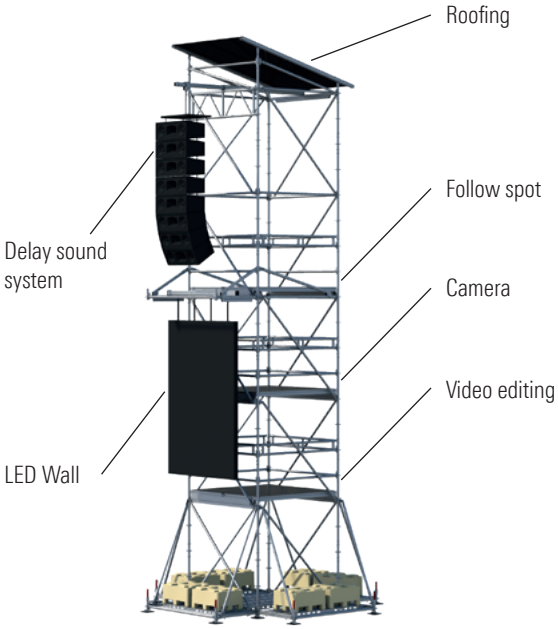
Depending on the application scenario, standard Event components can be combined with one another without any problem.

Additional options

Use of Event decks:

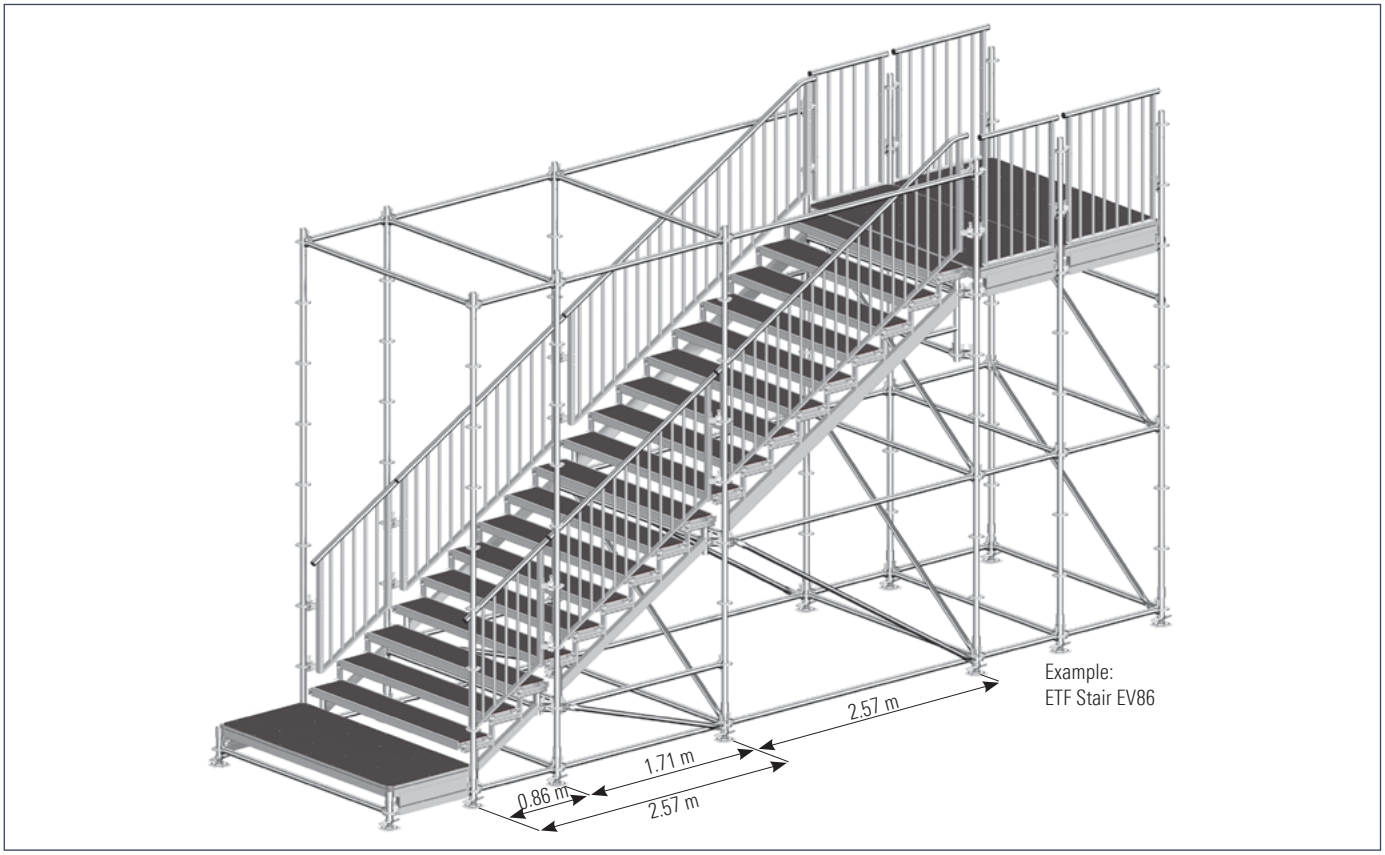
- Camera tower
- Tower for follow spot
- Directing tower
- Tower for video productions

Example for use:
Combination of various options.



Learn more in our catalogue on page 38.

THE STAIRWAY STRINGER SERIES ETF



An ideal addition for the Layher Event System is the stairway stringer series ETF: matching the standard system dimensions, these stairway stringers can be fitted quickly and efficiently at the corners of stages for artists and stage access, and also used for upward access to stand equipment – even in the so-called "vomitories". Stairways and escapes as per DIN 18065 for public areas are also possible without any problem depending on the design. The stairway stringers are designed so that continuous stairway systems with up to 18 steps and / or with an access height of three metres can be assembled, in conformity with the rules, without intermediate landings. A solution as economical as it is safe.

THE BENEFITS FOR YOU:

- Up to 18 steps continuously without intermediate platform.
- Conformal constructions according to DIN 18065.
- Predestinated for use in internal accesses and intermediate platforms.
- Possibility for integration in podia corners.

TECHNICAL DATA

	DIN 18065*	EV 86			EV 104		EV 100	
Stringer length [mm]		857	1,714	2,572	1,036	2,072	1,000	2,000
Stringer height [mm]		500	1,000	1,500	750	1,500	750	1,500
Number of stairs		3	6	9	4	8	4	8
Inclination s [mm]	140 to 190	167	167	167	188	188	188	188
Surface a [mm]	260 to 370	286	286	286	260	260	250 **	250 **
Step width b [mm]		320	320	320	320	320	320	320
Difference u [mm]	min. 30	34	34	34	60	60	70	70
Stride dimension 2s+a [mm]	590 to 650	619	619	619	635	635	625	625

* Provided values for stairways necessary under building law ** For stairways not neccessary under building law: surface a [mm] 210 to 370 mm

Learn more in our catalogue on page 16.

THE ANTI-SLIP RUBBER PAD

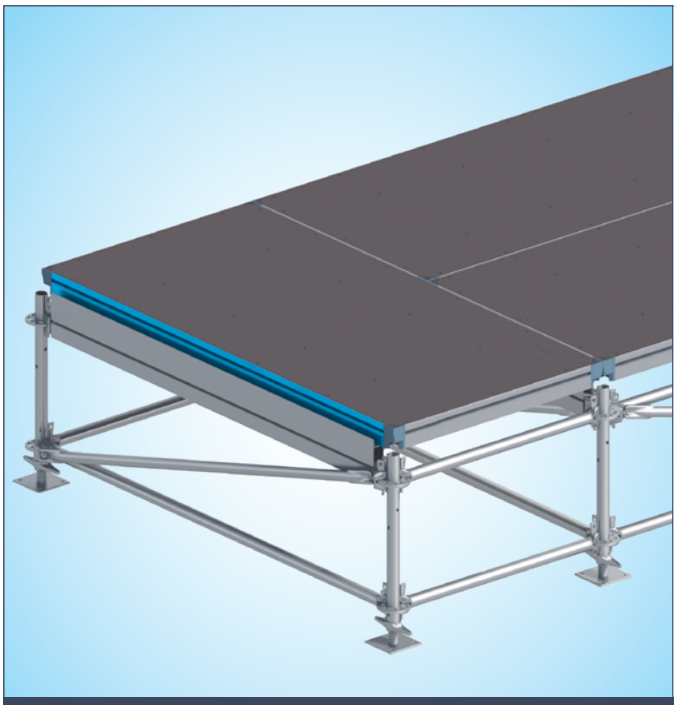
To come up to the high requirements of wind and other horizontal loads, Layher developed a special slip-proof rubber pad. Thanks to the rubber pad, ballasting which could be necessary at by-case basis decisions, can maybe be minimized. The rubber pad is designed for outdoor use on bearing ground, where no load distributing underlay is necessary or in combination with load distributing timber planks. The attractive and inconspiciuous rubber pad also protects sensitive floors e.g. in gyms from surface damages.

THE BENEFITS FOR YOU:

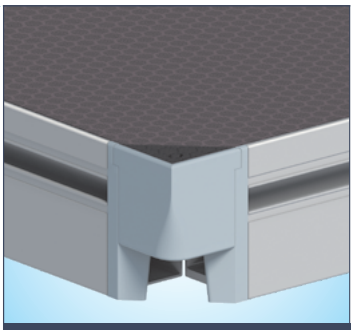
- Maxiumum friction between scaffolding structure and solid grounds like concrete, asphalt or wood.
- Protects sensitive floorings like plastic or wood.
- Attractive and inconspicious.

Learn more in our catalogue on page 12.

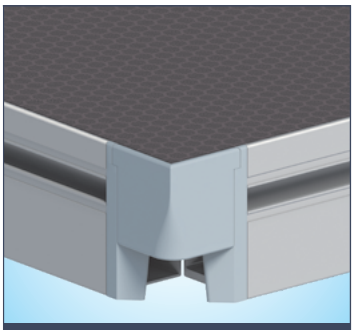
LAYHER EVENT DECK T16



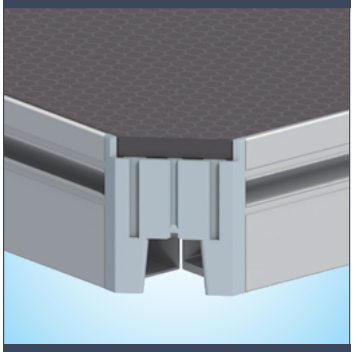
The new Layher Event Deck T16 can now also be suspended on its longitudinal side.



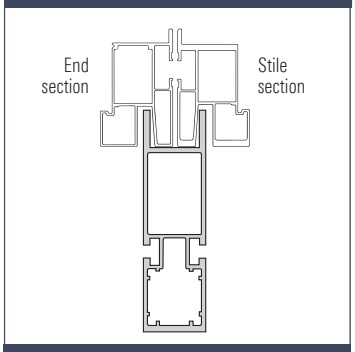
Removable plastic corner



X-Event Deck without removable plastic corner



Plastic corner removed to allow a standard to be passed through



10% thicker stile section with same contour as end section – flat underneath for easy stacking

Previous Event decks could only be suspended in the crosspiece at their ends. For some stage surface shapes this involved a more complex substructure, costing valuable time and materials.

With the new Event Deck T16, many geometric shapes can be built without extra effort. With the new aluminium stile section, suspension is now possible in both the longitudinal and transverse directions.

Other advantages: the new stile section and the reinforced cross rungs ensure an improvement in stiffness. Thanks to the height reduction by 8 mm, one deck more can be accommodated in the same stack height. The removable two-colour plastic corners ensure a better appearance, and on top they match and continue the anti-slip texture of the plywood board.

To obtain surfaces with a continuous surface structure, the Event Deck T16 is also available in an X-Event Deck version. In this version, the plastic corners are not removable and the plywood deck surface extends into the corner. Typically for Layher, the Event Deck T16 also offers maximum investment protection, since the suspension height is identical to that in all previous Event decks, ensuring problem-free combinability.

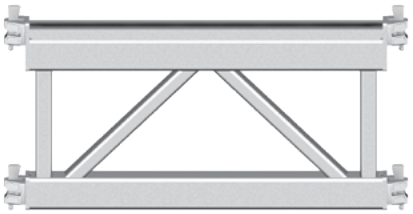
The permissible working load of 7.5 kN/m² (L≤2.07 m) or 5.0 kN/m² (L=2.57 m) permits use in both stages and stands.

THE BENEFITS FOR YOU:

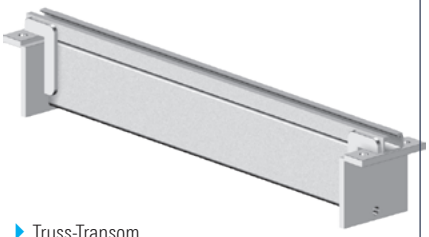
- More flexibility thanks to option of installation in both the longitudinal and transverse directions.
- Reduced sag thanks to reinforced stile and cross-strut section.
- Reduction in the space needed for transport and storage thanks to reduced stack height (92 mm).
- Even better appearance for continuous stage surfaces when the X-Event Deck is used.
- Combinable with Event Decks of previous design thanks to identical suspension height.
- Consistently dark surface, for a homogeneous appearance without any unwelcome light reflections due to black rivets.

Learn more in our catalogue on page 14.

THE UNIVERSAL BASE FOR LAYHER STAGES



Lattice beam
Available for bay length:
0.86 m, 1.00 m, 1.04 m, 2.00 m, 2.07 m



Truss-Transom
Available for bay length:
0.86 m, 1.00 m, 1.04 m, 2.00 m, 2.07 m

Since the release of the new guidelines for temporary structures (EN 13814), the use of stage roofings ist not possible anymore without combining it with a podium of Layher. With the universal base, you can connect roofs efficiently to the Layher podium. The speciality of this solution is, that it is possible to adjust almost every position of the supports contiuously. The here shown system is designed to bear the load of small or intermediate sized stage roofs WITHOUT the here shown additional support below the transom adapter. If the base should be used for larger roofings, depending on the load bearing capacity, an additional support could be necessary.

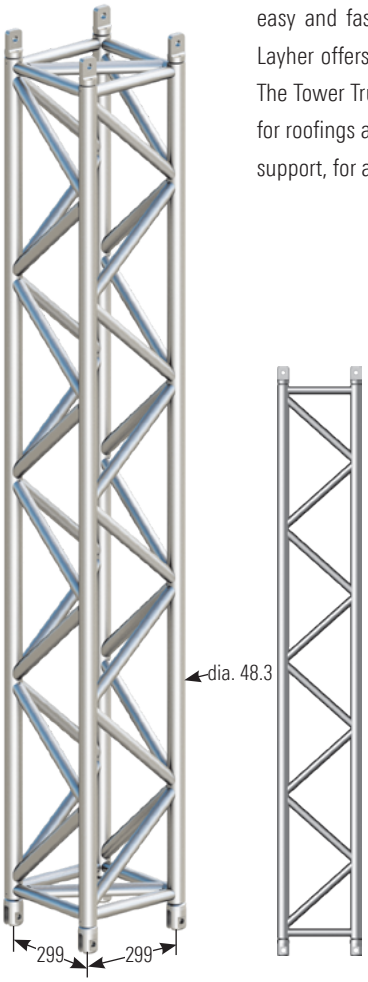
THE BENEFITS FOR YOU:

- Dead weight of the podium, can be charged – thus lower ballasting.
- Forces, emitting by linkage, can be transmitted to the podium – thus lower ballasting.
- Higher headroom, thanks to fixation points on deck level.
- Quick assembly of the podium with the universal base and our well-known Allround Scaffolding.
- Topographic problems at the place of action, can be solved easily.
- Complete system, with stairways, ramps and guardrails available.

Learn more in our catalogue on page 18 .

LAYHER STEEL TRUSS

TOWER TRUSS

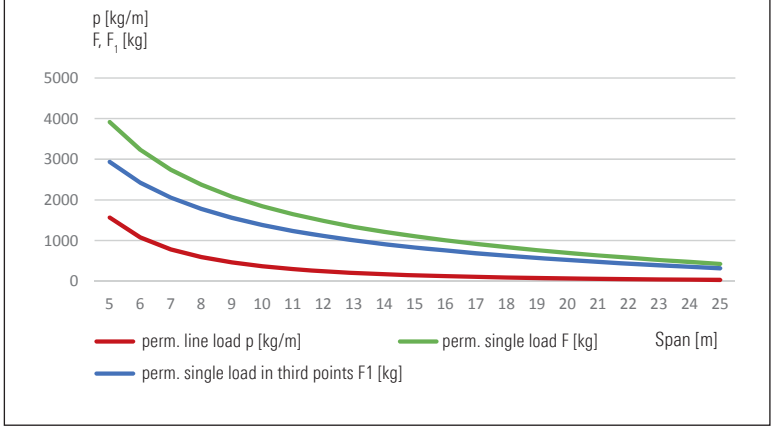


Constructions, which are made to carry high loads and however must be easy and fast to assembly, need wellthought and strong components. Layher offers with the new steel truss the right tools for that challenge. The Tower Truss is a very strong transom type, which is especially usable for roofings as vertical support for constructions of Maxi Truss, as ground support, for advertisment signs or cable bridges.

THE BENEFITS FOR YOU:

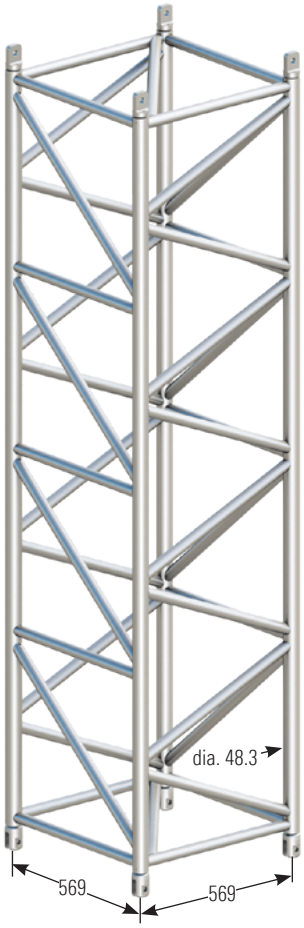
- Attractive outer dimensions.
- High load-bearing capacity.
- Large spans.
- Quick assembly thanks to well-known fork-connectors.

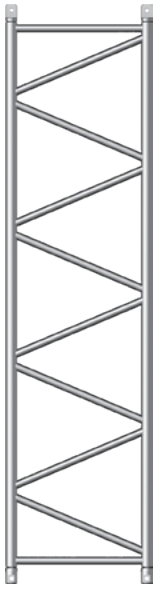
- Special connection bolt of high-tensile steel



Span [m]	perm. line load p [kg/m]	Bending [cm] of perm. p	perm. single load F [kg]	Bending [cm] of perm. F	perm. single load in third points F_1 [kg]	Bending [cm] of perm. F_1
5	1,566	1.2	3,915	1.0	2,936	1.2
6	1,078	1.8	3,235	1.0	2,427	1.7
7	784	2.4	2,746	2.0	2,059	2.3
8	594	3.2	2,375	2.6	1,781	3.1
9	463	4.0	2,083	3.3	1,562	3.9
10	369	5.0	1,846	4.0	1,385	4.8
11	300	6.0	1,650	4.9	1,237	5.8
12	247	7.2	1,484	5.9	1,113	7.0
13	206	8.4	1,341	7.0	1,006	8.2
14	174	9.8	1,217	8.1	913	9.5
15	148	11.3	1,107	9.4	830	11.0
16	126	12.9	1,009	10.8	757	12.5
17	108	14.5	921	12.3	691	14.2
18	93	16.4	841	13.9	631	16.0
19	81	18.3	768	15.7	576	17.9
20	70	20.3	700	17.6	525	19.9
21	61	22.5	638	19.6	478	22.0
22	53	24.7	580	21.7	435	24.3
23	46	27.1	526	24.0	394	26.6
24	40	29.7	475	26.4	356	29.2
25	34	32.3	427	29.0	320	31.8

MAXI TRUSS



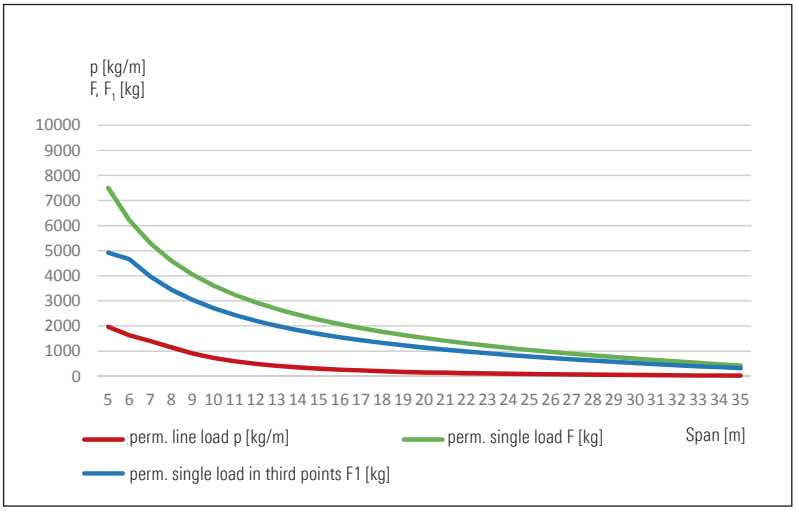


Constructions, which are made to carry high loads and however must be easy and fast to assembly, need well-thought and strong components. Layher offers with the new steel truss the right tools for that challenge. The Maxi-Truss is a very strong transom type, which is especially usable for roofings as main transom, as ground support, for advertisement signs or cable bridges.

THE BENEFITS FOR YOU:

- Reasonable dimensions of 617 x 617 mm.
- High load-bearing capacity.
- Large spans.
- Quick assembly thanks to well-known fork-connectors.

- Special connection bolt of high-tensile steel



Span [m]	perm. line load p [kg/m]	Bending [cm] of perm. p	perm. single load F [kg]	Bending [cm] of perm. F	perm. single load in third points F_1 [kg]	Bending [cm] of perm. F_1
5	1,968	0.4	7,500	0.5	4,919	0.6
6	1,633	0.7	6,215	0.8	4,662	0.9
7	1,395	1.2	5,292	1.0	3,969	1.2
8	1,149	1.7	4,595	1.4	3,447	1.6
9	900	2.1	4,049	1.7	3,037	2.1
10	722	2.6	3,608	2.1	2,706	2.5
11	590	3.2	3,244	2.6	2,433	3.1
12	490	3.8	2,938	3.1	2,203	3.7
13	412	4.4	2,675	3.6	2,006	4.3
14	350	5.2	2,448	4.2	1,836	5.0
15	300	5.9	2,248	4.9	1,686	5.8
16	259	6.8	2,071	5.6	1,553	6.6
17	225	7.6	1,912	6.4	1,434	7.4
18	197	8.6	1,769	7.2	1,327	8.4
19	173	9.6	1,639	8.0	1,230	9.3
20	152	10.6	1,521	9.0	1,141	10.4
21	134	11.8	1,411	10.0	1,059	11.5
22	119	12.9	1,310	11.0	983	12.6
23	106	14.2	1,216	12.2	912	13.9
24	94	15.5	1,129	13.3	846	15.1
25	84	16.8	1,046	14.6	785	16.5
26	75	18.3	969	15.9	727	17.9
27	66	19.8	896	17.3	672	19.4
28	59	21.3	827	18.8	620	20.9
29	53	22.9	761	20.4	571	22.5
30	47	24.6	699	22.0	524	24.2
31	41	26.4	639	23.8	479	25.9
32	36	28.2	582	25.6	436	27.8
33	32	30.1	527	27.5	395	29.7
34	28	32.0	474	29.5	356	31.6
35	24	34.1	423	31.6	318	33.7

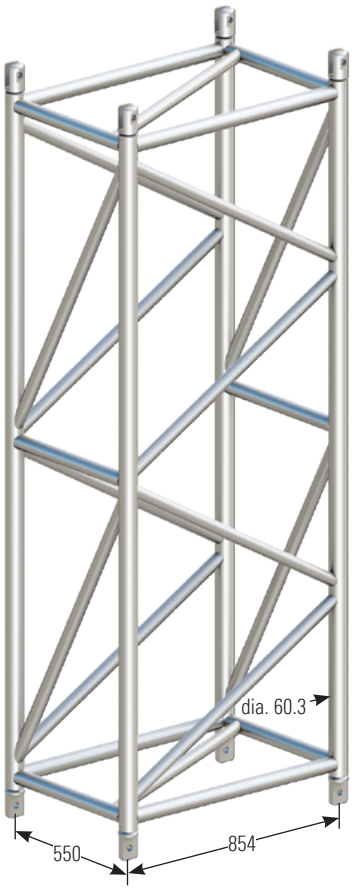
SUPER TRUSS

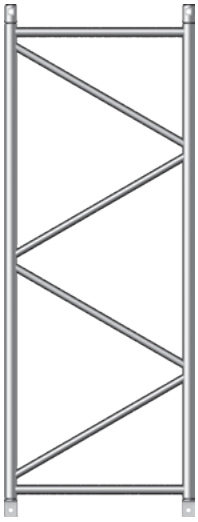
Constructions, which are made to carry high loads and however must be easy and fast to assembly, need well-thought and strong components. Layher offers with the new steel truss the right tools for that challenge. The Super Truss is a very strong transom type, which is especially usable for roofings as main transom, as ground support, for advertisment signs or cable bridges.

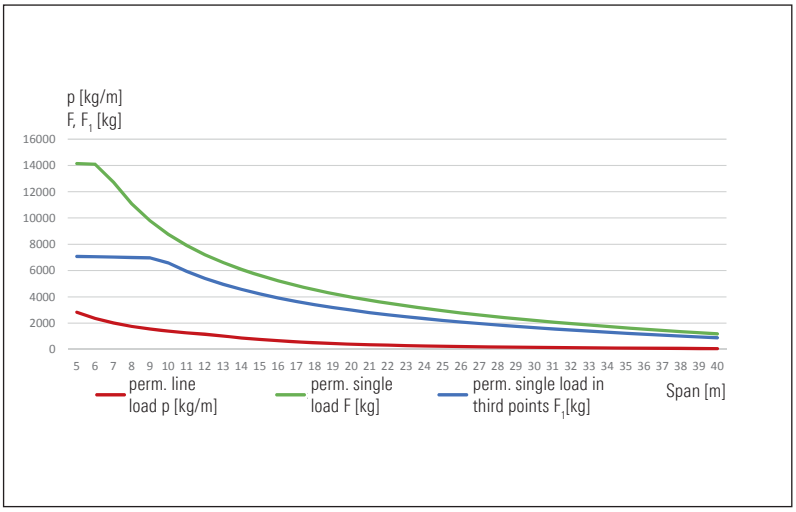
THE BENEFITS FOR YOU:

- Reasonable dimensions of 610 x 914 mm.
- High load-bearing capacity.
- Large spans.
- Quick assembly thanks to well-known fork-connectors.

- Special connection bolt of high-tensile steel

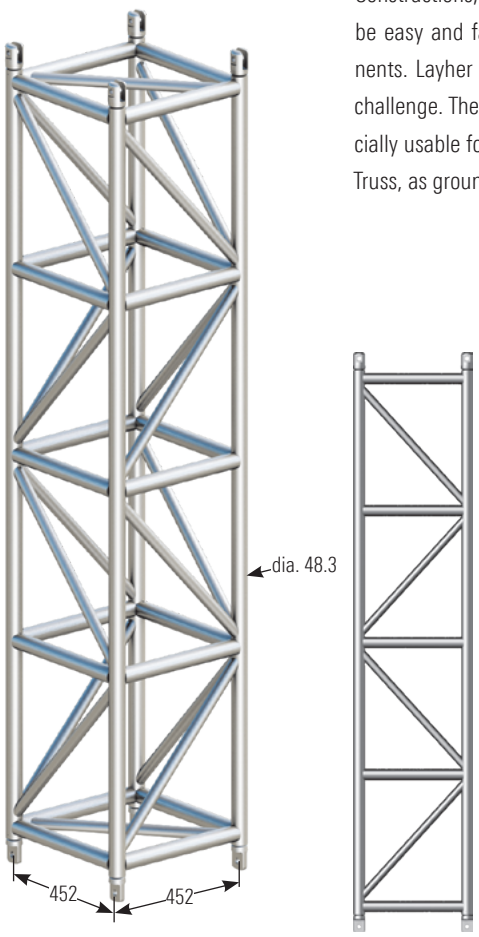






Span [m]	perm. line load p [kg/m]	Bending [cm] of perm. p	perm. single load F [kg]	Bending [cm] of perm. F	perm. single load in third points F_1 [kg]	Bending [cm] of perm. F_1
5	2,829	0.2	14,143	0.3	7,072	0.2
6	2,348	0.3	14,089	0.5	7,045	0.4
7	2,005	0.5	12,721	0.7	7,018	0.6
8	1,748	0.7	11,081	0.9	6,991	0.9
9	1,547	1.0	9,798	1.2	6,964	1.3
10	1,387	1.4	8,767	1.4	6,576	1.7
11	1,256	1.9	7,919	1.7	5,939	2.1
12	1,147	2.4	7,207	2.1	5,405	2.5
13	1,016	3.0	6,601	2.4	4,951	2.9
14	868	3.5	6,077	2.8	4,558	3.4
15	749	4.0	5,620	3.3	4,215	3.9
16	652	4.6	5,216	3.7	3,912	4.4
17	571	5.2	4,857	4.2	3,643	5.0
18	504	5.8	4,535	4.7	3,401	5.6
19	447	6.4	4,243	5.3	3,183	6.3
20	398	7.2	3,979	5.9	2,984	7.0
21	356	7.9	3,736	6.5	2,802	7.7
22	319	8.7	3,514	7.2	2,635	8.5
23	288	9.5	3,308	7.9	2,481	9.3
24	260	10.4	3,118	8.7	2,338	10.1
25	235	11.3	2,940	9.5	2,205	11.0
26	213	12.2	2,774	10.3	2,080	11.9
27	194	13.2	2,618	11.2	1,964	12.9
28	177	14.2	2,472	12.1	1,854	13.9
29	161	15.3	2,333	13.0	1,750	14.9
30	147	16.4	2,202	14.0	1,652	16.0
31	134	17.5	2,078	15.1	1,559	17.1
32	123	18.7	1,960	16.2	1,470	18.3
33	112	19.9	1,848	17.3	1,386	19.5
34	102	21.2	1,740	18.5	1,305	20.8
35	94	22.5	1,637	19.8	1,228	22.1
36	85	23.9	1,538	21.1	1,154	23.4
37	78	25.3	1,444	22.4	1,083	24.8
38	71	26.7	1,352	23.8	1,014	26.3
39	65	28.2	1,264	25.3	948	27.7
40	59	29.7	1,179	26.8	885	29.3

NOVA TRUSS

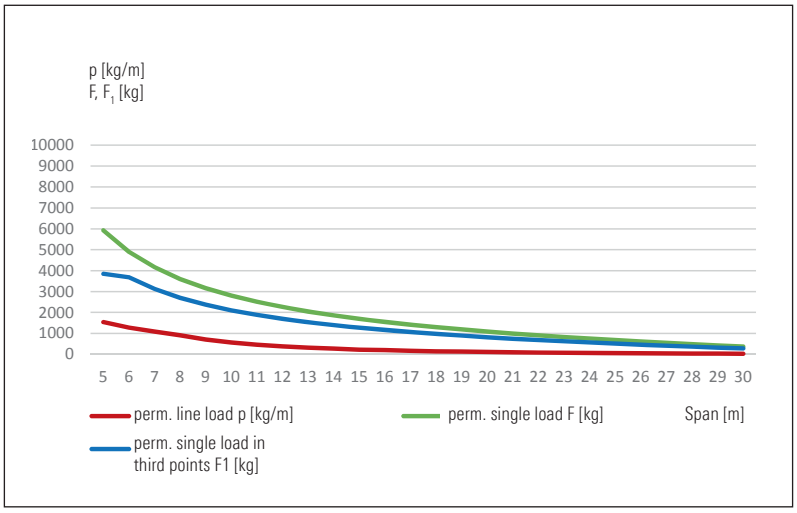


Constructions, which are made to carry high loads and however must be easy and fast to assembly, need well-thought and strong components. Layher offers with the new steel truss the right tools for that challenge. The Nova Truss is a very strong transom type, which is especially usable for roofings as vertical support for constructions of Super Truss, as ground support, for advertisment signs or cable bridges.

THE BENEFITS FOR YOU:

- Reasonable dimensions of 500 x 500 mm.
- High load-bearing capacity.
- Large spans.
- Quick assembly thanks to well-known fork-connectors.

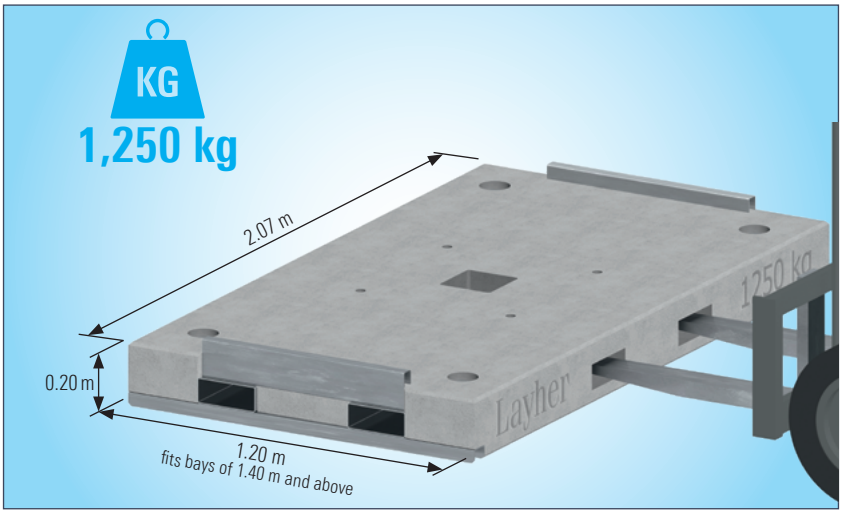
- Special connection bolt of high-tensile steel

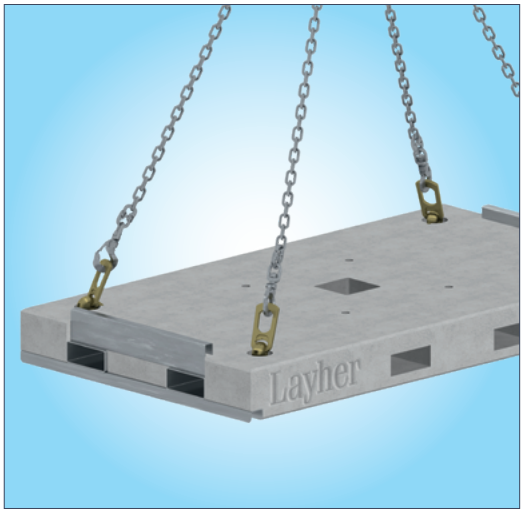


Span [m]	perm. line load p [kg/m]	Bending [cm] of perm. p	perm. single load F [kg]	Bending [cm] of perm. F	perm. single load in third points F_1 [kg]	Bending [cm] of perm. F_1
5	1,539	0.5	5,926	0.7	3,848	0.7
6	1,275	0.9	4,900	1.0	3,675	1.1
7	1,087	1.5	4,161	1.3	3,120	1.6
8	900	2.1	3,601	1.7	2,701	2.0
9	702	2.7	3,161	2.2	2,371	2.6
10	561	3.3	2,805	2.7	2,103	3.2
11	456	4.0	2,509	3.3	1,882	3.9
12	377	4.8	2,260	3.9	1,695	4.6
13	315	5.6	2,045	4.6	1,534	5.4
14	265	6.5	1,858	5.4	1,394	6.3
15	226	7.5	1,693	6.3	1,270	7.3
16	193	8.5	1,547	7.2	1,160	8.3
17	166	9.7	1,415	8.2	1,061	9.4
18	144	10.9	1,295	9.2	971	10.6
19	125	12.1	1,186	10.4	889	11.9
20	109	13.5	1,085	11.6	814	13.2
21	94	14.9	992	12.9	744	14.6
22	82	16.4	906	14.3	679	16.1
23	72	18.0	825	15.8	619	17.7
24	62	19.7	749	17.4	562	19.3
25	54	21.4	678	19.2	508	21.1
26	47	23.3	610	21.0	458	22.9
27	40	25.2	546	22.9	409	24.8
28	35	27.2	485	24.9	364	26.9
29	29	29.3	427	27.1	320	29.0
30	25	31.5	371	29.3	278	31.2

Learn more in our catalogue on page 40.

THE SYSTEM BALLAST ELEMENT





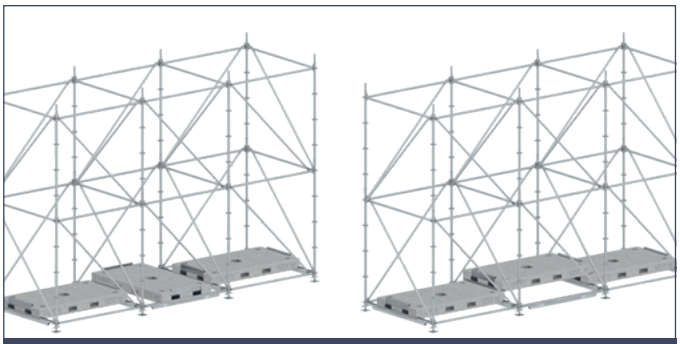
To give free-standing scaffolding structures the required stability, they have to be weighted using ballast elements. A solution within the system, that also does without the often non-permissible water tanks, is provided by the Layher System Ballast Element, made of reinforced concrete and with a weight of 1,250 kilograms.

MOUNTING

This ballast element is mounted using its integrated steel mounting section, which can be laid either in the U-suspension system or directly onto round tubes. The mounting section and the guide rail also prevent slippage of the ballast element during stacking.

Mounting section (dark blue) and guide rail (pale blue) for optimum stacking on U-ledgers or round tubes without slippage

In multi-bay scaffolding structures, the ballast elements can be arranged either alternatingly or unidirectionally. The alternating arrangement considerable reduces the load on the ledgers.



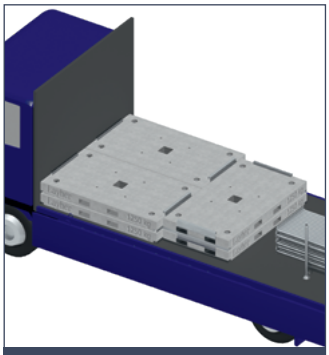
Alternating and unidirectional arrangement of the ballast elements

The shown structure contains Allround initial standards 2.21 m instead of Allround base collars.

DIMENSIONS

The dimensions of the System Ballast Element have been selected to ensure that there are no conflicts with diagonal braces and that two ballast elements fit next to one another in the longitudinal direction on a truck bed.

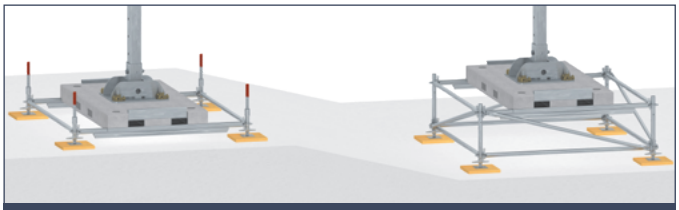
Use of standards with base collars – no conflicts with diagonal braces



Stacking of System Ballast Elements on a truck bed

GROUND IRREGULARITIES

If the ground is uneven, height differences can be compensated for using a height-adjusted Allround scaffolding structure and adjustable base plates. For bigger height differences, braced Allround substructures can also be used. Here too, there are no conflicts with external diagonal braces as a result.



Height difference compensation using braced Allround substructures

CRANE MOVEMENT

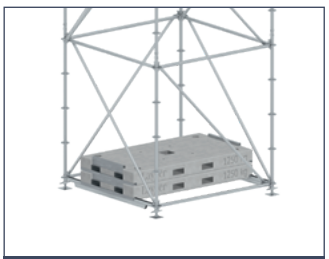
In addition to the classic movement method using a forklift truck, the ballast element can also be positioned using a crane. To do so, spherical head stops (Philipp Spherical Head Transport Anchors 81-013-120) with a permissible load of 13 kN each are integrally cast into the concrete – Spherical Head Lifting Clutch, Philipp KK 1.3, and other required attachment means provided by others.

The bolt-free and positive connection permits faster and safer movement of the System Ballast Element.

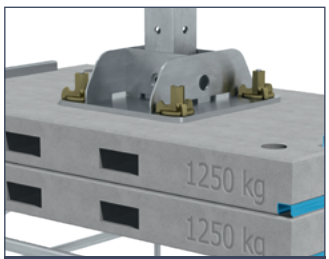
Use of spherical head for crane movement

POSSIBLE USES

The System Ballast Element can be used as a ballast weight for free-standing scaffolding towers or, for example, as a base for a single support of stand roofs. A connection possibility for this option is provided in the middle to receive the stand support. The latter is non-positively secured to the ballast elements using threaded rods and jack nuts.



Use in a free-standing tower structure



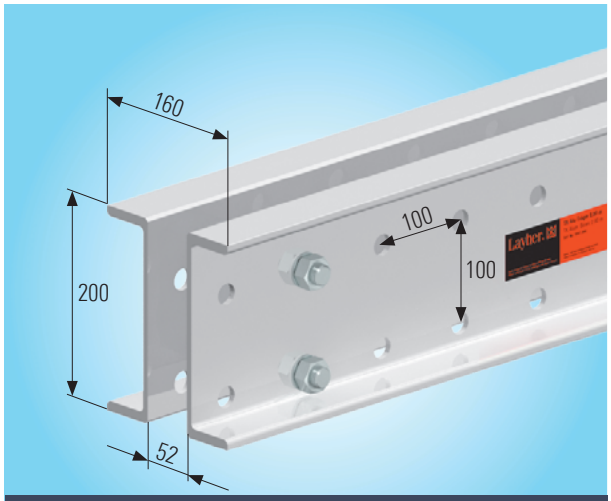
Holding of stand roof support with threaded rod and jack nut

THE BENEFITS FOR YOU:

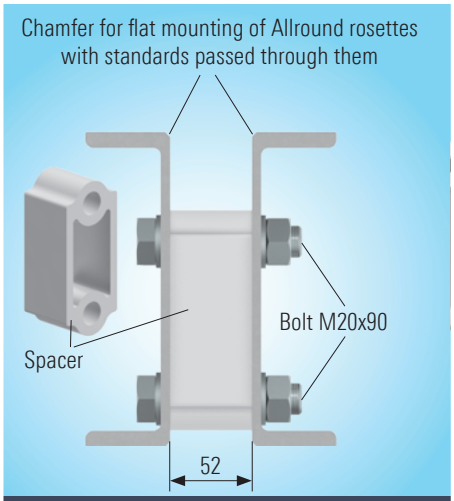
- System Ballast Element in Layher dimension 2.07 m.
- Can be used for U- and O-variants without any conflicts with diagonal braces.
- Fork guides for fork-lift trucks and spherical heads for crane movement ensure quick and easy handling.
- Mounting section and guide rail for optimum stacking without slippage.
- Integrated receptacles for roof supports used in stand roofs.

Learn more in our catalogue on page 28.

TWIXBEAM FOR USE IN EVENT APPLICATION



Dimensions of the aluminium TwixBeam with 0.80 –6.60 m length



Cross-section of the aluminium TwixBeam


Passed-through Allround standard

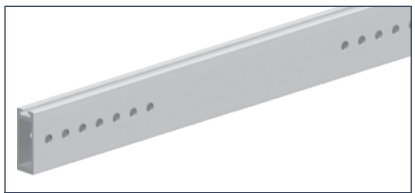
The high-strength, multifunctional aluminium TwixBeam from Layher – consisting of two bolted aluminium U-sections with a height of 200 mm – has a wide range of possible uses, for wide-span work platforms, support beams, suspended scaffolding or projecting structures. The TwixBeam is available in lengths from 0.80 m to 6.60 m. The beam is characterised by high load-bearing capacity yet low weight.

There are many matching expansion parts available for the aluminium TwixBeam: The swivelling spindle is inserted into the 52 mm-wide intermediate area of the beam and pinned in place. It can be used as a head jack or base plate. Standard or suspended structures can be built by passing through an Allround standard or the swivelling spindle. The spindle strut (patent pending) permits stiffening or bracing of various structures – it can transmit tensile and compressive forces. Beam connector and insertion beam complete the system for flexible adaptability to all site conditions and contours.

Aluminium as the material ensures low weight in the beam. The bolted structure permits dismantling of the beam for different applications while ensuring that the material retains its maximum loading capacities and is not weakened by welding.

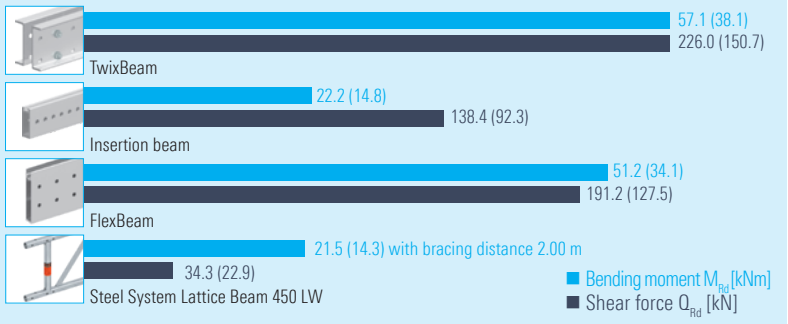

Swivelling spindle


Beam connector


Insert beam with 0.49–2.75 m length


Spindle strut

STRESS CAPACITIES



Note: Values in brackets are working loads (γ_F=1.5) Serviceability and stability must be verified individually.

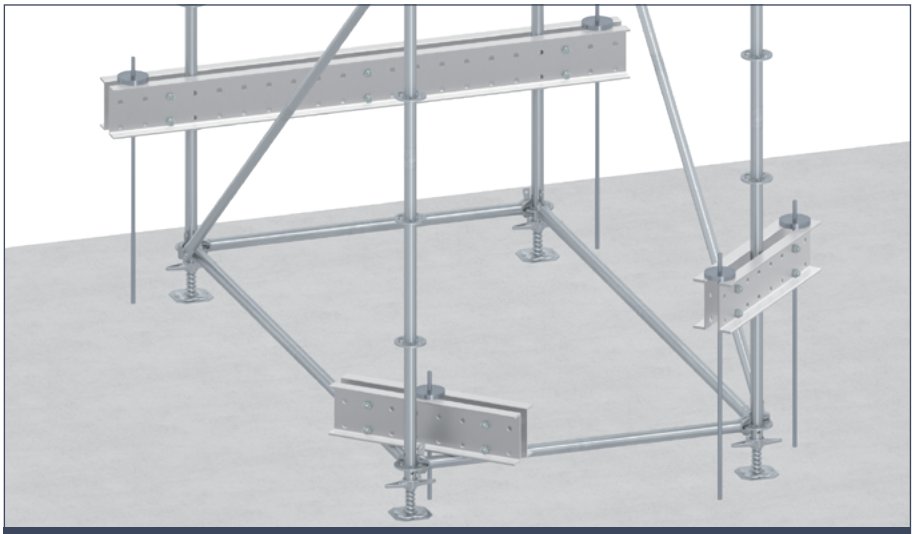
TECHNICAL DATA

	TwixBeam	Insertion beam
Height [mm]	200	140
Width [mm]	160	50
Weight [kg/m] – completely assembled	ca. 13.0	ca. 7.0
Bending stiffness EI [kNm²] – gross	1,760	440

GROUND ANCHORING

Instead of using ballast, scaffolding structures with the TwixBeam can also be anchored in the ground.

- Anchoring in the ground is achieved using threaded rods and matching plate nuts attached by others.
- This leads to enormous logistic benefits, since ballast weights do not have to be transported to the site and moved around there.
- The beam can, thanks to its bolted design, easily be dismantled into its individual parts and then reassembled. This permits subsequent attachment too.

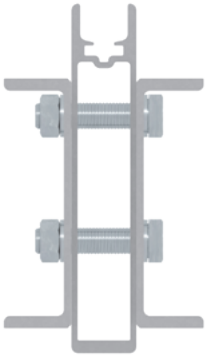


Tower scaffolding anchored in the ground

PLATFORM SOLUTIONS

The TwixBeam can be used to create solutions with projecting platforms or platforms supported on both sides.

- Projecting platforms can either be anchored in the ground or braced against the slab.
- For standard mounting, the swivelling TwixBeam spindle is used for the spindle base.
- Combination with the aluminium FlexBeam permits the building of hybrid platform structures.



Cross section of a hybrid structure of TwixBeam and FlexBeam

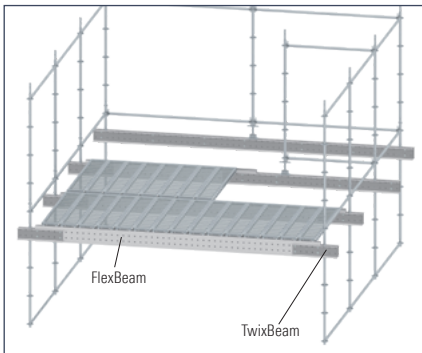


Illustration of the principle

Platform as hybrid structure of TwixBeam and FlexBeam

VARIABLE BEAM STRUCTURES

- The uniform hole configurations in the TwixBeam, the insertion beam and the FlexBeam permit a variety of beam structures.
- The beams can be assembled straight, oblique or at right angles.
- This means flexible adjustments can be made, for example to match funnel-like boiler contours.

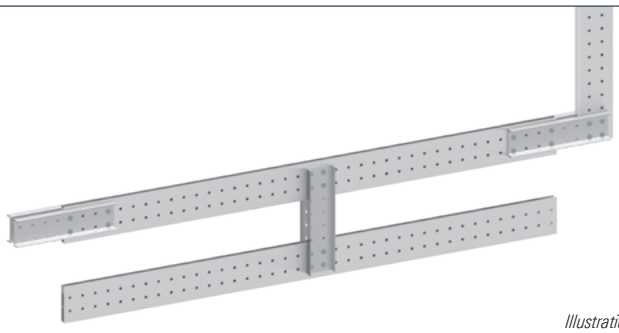


Illustration of the principle

Hybrid beam structure with FlexBeam and TwixBeam

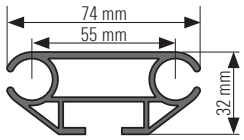
THE BENEFITS FOR YOU:

- Low-weight, easily dismantled and highstrength aluminium beam – particularly useful when passing material through narrow manholes.
- Bracket applications and bracing structures achievable within the system.
- High variability thanks to the insertion beam and combination with the aluminium FlexBeam.
- Investments protected thanks to weather resistance and frequent reusability.
- Easy angle adjustment using swivelling spindle.

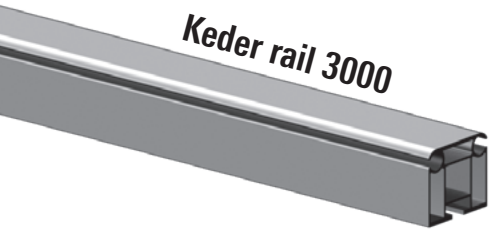
Learn more in our catalogue on page 56.

THE KEDER RAIL RANGE FROM LAYER

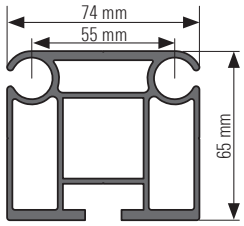
Ref. No. 4201.400
Length 4.0 m; Weight 6.0 kg
Available ex works,
for other lengths see Accessories catalogue



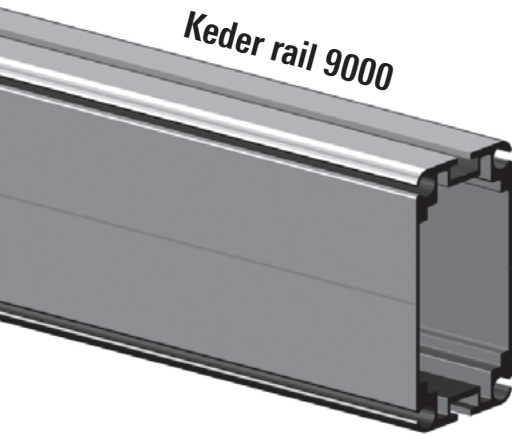
I_y = 6,0 cm^4
$M_{y, pl, R, d}$ = 92.2 kNcm
Weight = 1.50 kg/m



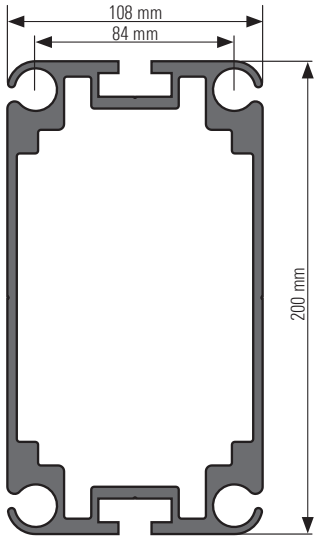
Ref. No. 5574.600
Length 6.0 m; Weight 18.3 kg
Available ex works,
other lengths on request



I_y = 61,4 cm^4
$M_{y, pl, R, d}$ = 543.5 kNcm
Weight = 3.05 kg/m



Ref. No. 5577.600
Length 6.0 m; Weight 65.8 kg
Delivery time and other lengths on request



I_y = 2,272.3 cm^4
$M_{y, pl, R, d}$ = 6,474.4 kNcm
Weight = 10.96 kg/m

Quick and easy tarpaulin roofs and wall coverings are of central importance for Event structures in particular. Layher has expanded its keder rail range by two more effective rail sections.

The proven **keder rail 2000.** Known for its low weight. Ideal for lightweight applications, particularly for wall coverings and scaffolding covers.

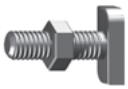
The **keder rail 3000** – very strong yet light. It is perfectly suited for medium spans, as found for example in FOH and directing towers or in technical equipment and storage areas. The keder rail K3000 can also be used as a wall keder rail over large spans.

The **keder rail 9000** is suitable as a heavy-duty marquee section for large and very large spans. Roofs and side coverings for large open-air stages can be constructed with this section, in addition to massive roofs for stands.

The possible maximum spans of the keder sections directly depend on the installation situation and on the location of the overall structure, and must be individually verified by a structural engineer.

The grooves provided in all the keder sections shown for the proven Layher captive bolts (see picture) offer the flexibility necessary to cope with all your design challenges.

Joint strap for aluminium keder rail
Ref. No. 4208.000
2 grooved bolts are required



Captive bolt for keder rail
Ref. No. 4206.000
Packaging unit 50 pcs.

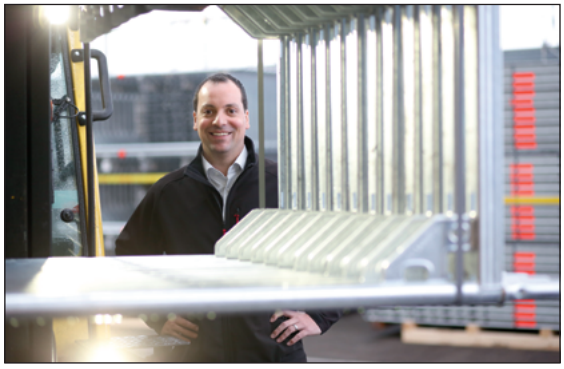
Learn more in our catalogue on page 34.

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.

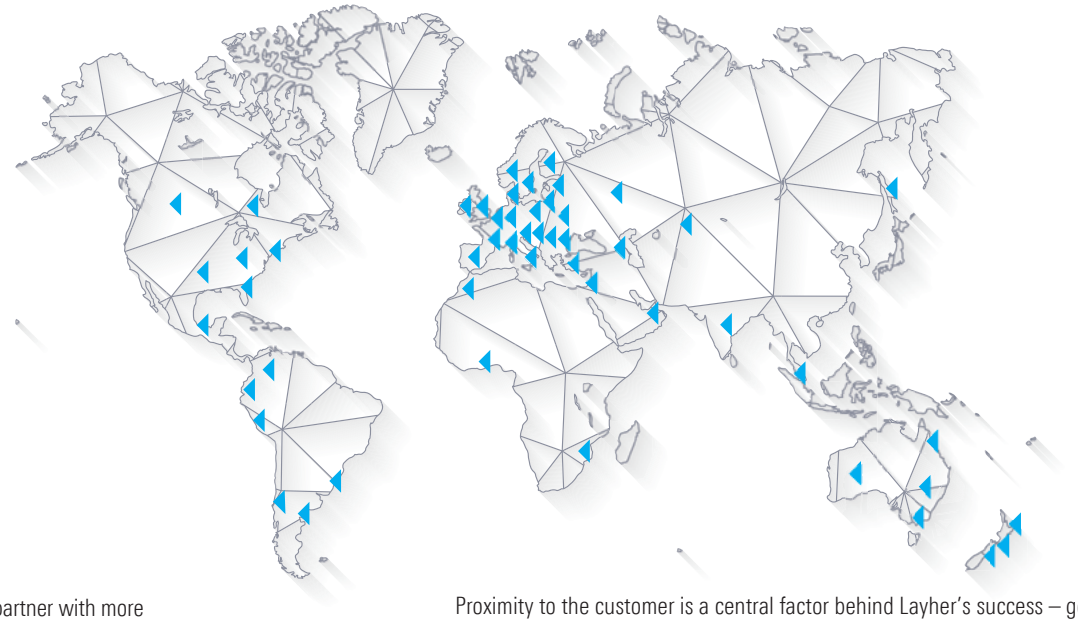
MORE SIMPLICITY

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 is your dependable partner with more than 75 years of experience. "Made by Layher" always means "Made in Germany" too – and that goes for the entire product range. Superb quality – and all from one source.

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

- **SpeedyScaf**
- **Allround Scaffolding**
- **System-free Accessories**
- **Protective Systems**
- **Shoring**
- **Event Systems**
- **Rolling Towers**
- **Ladders**
- **Software**

Headquarters in Eibensbach

Plant 2 in Gueglingen

Layher®

More Possibilities. The Scaffolding System.

Wilhelm Layher GmbH & Co KG
Scaffolding Grandstands Ladders

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