

**Cut costs, improve safety,
increase efficiency:
Scaffolding for shipyards and offshore.**



Layher® 

More Possibilities. The Scaffolding System.

Made by Layher.

Supply and service worldwide.

Market leader in Europe.

For more than 60 years now, Layher has been inspiring the scaffolding industry with its innovative ideas.

Layher provides intelligent problem solutions and products, convincing details, and unmatched economic efficiency.

Manufactured in Germany:
We guarantee maximum quality, economic efficiency and service life.

Our scaffolding systems assure the success of our partners and are one of the reasons for the wide acceptance of Layher worldwide.

Aerial view
of our production site
in Germany.

For lasting partnership.

In Layher you have a reliable partner you can count on.

We can help you solve even the most difficult problems with economical solutions – we'd be happy to pass on to you the benefits of our 50 years of worldwide experience.

Your success is our aim.

Your benefit.

DIN EN ISO 9001:2000 quality certification, approvals from building supervisory authorities, plus German TÜV inspections, are the guarantee of safety you can rely on.

Series production with a high degree of automation ensures rapid product availability and sales partners are ready to help and advise all over the world.

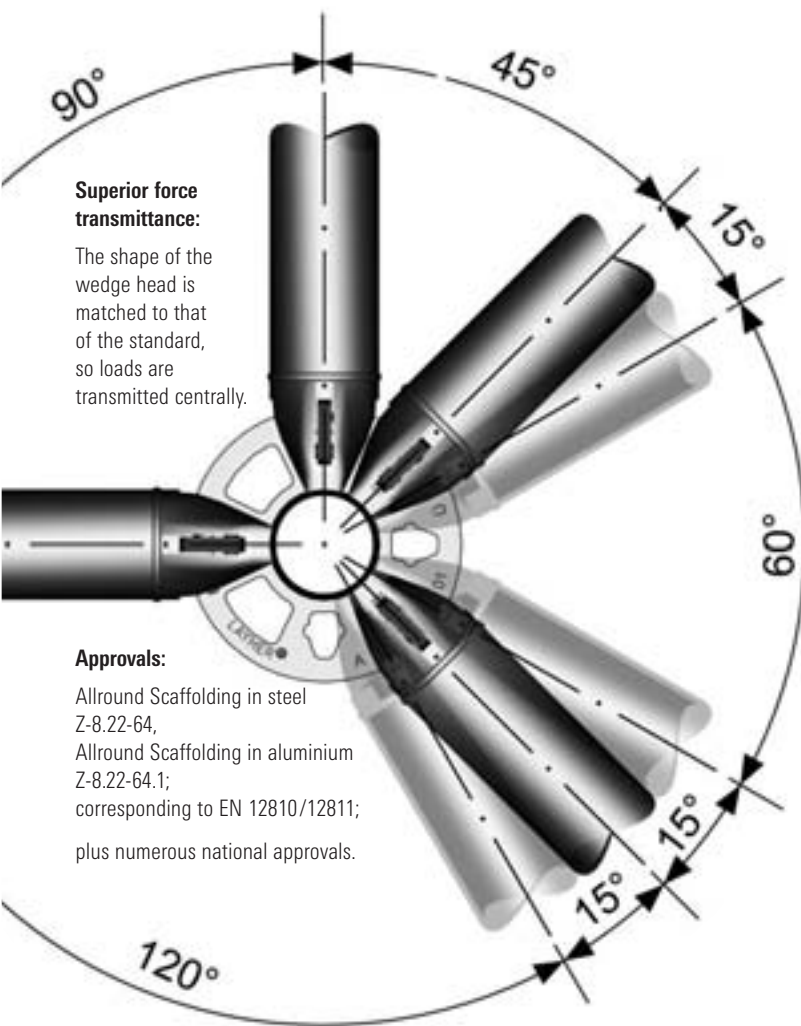
We serve you, wherever you are.



Ingenious. Strong. Limitless.

Layher Allround Scaffolding – the “Original”.

For more than 35 years, Layher Allround Scaffolding has been an investment in an optimised and complete system – in steel or aluminium.



Layher Allround Scaffolding permits optimum adaptation to the respective local problem:

A few basic components – standard, ledger, diagonal brace, deck – form the basis for almost limitless uses, and there are many additional parts for special solutions within the system;

all steel components are hot-dip galvanised, and hence durable and practically maintenance-free;

the use of tubes with a 48.3 mm diameter permits combination and extension using traditional tube and coupler scaffolding at any time.

The function principle of Layher Allround Scaffolding is unique.

Ingenious connection technology:

Safe, 1-man assembly at any height;

sliding the wedge head over the rosette and inserting the wedge into the opening immediately secures the component...

...and a hammer blow on the wedge transforms the connection from structural assembly to high-strength force transmitting rigidity.

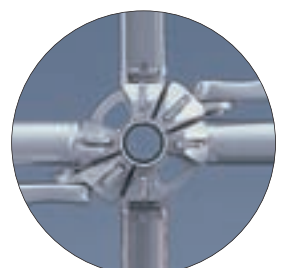
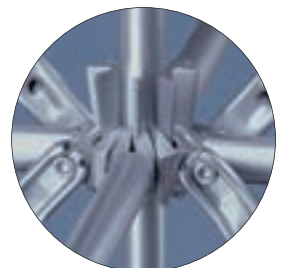
Superior design:

Up to 8 connections can be made on one level – rosettes spaced every 0.5 m – to create the structurally ideal Allround joint.

Built-in assembly speed:

4 narrow openings in the rosette automatically centre the ledgers at right angles –
4 wide openings permit the alignment of ledgers and diagonal braces at the required angles.

Assembly of the system is self-explanatory and is quickly learned.



Layher Allround Scaffolding: Fast. By unique connection technique.

The main use of **Layher Allround Scaffolding in steel** (hot-dip galvanised), is for constructive and ambitious scaffolding – in applications where conventional scaffolding technology cannot be used to the optimum.

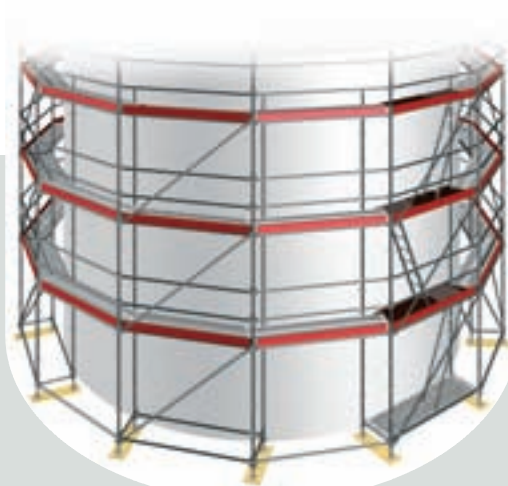
In the shipyard industry, the adaptability of the Allround system is widely appreciated. The Original Layher Allround system allows complete, and fast erection just in time as well as preassembly of scaffolding segments.

For quick, close and safe access for repairs and servicing, whether on the ship's curved hull, on the propeller and rudder, on the superstructure or inside the cargo area.

* A comparison of **scaffolding structures** around an offshore rig leg proves **your advantage**.

Partial offshore rig leg scaffolding:

Diameter: 9,6 m
Height: 7,2 m
Bay length: 2,57 m
Bay height: 2,00 m



Traditional scaffolding



Layher Allround Scaffolding



With Layher Allround Scaffolding, you can work much more profitably:

shorter assembly and dismantling times facilitate frequent use of equipment.

Layher Allround Scaffolding*:

Time: assembly	106 minutes
Time: dismantling	71 minutes
Total:	177 minutes

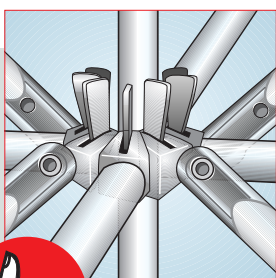
Tube/coupler scaffolding*:

Time: assembly	380 minutes
Time: dismantling	115 minutes
Total:	495 minutes



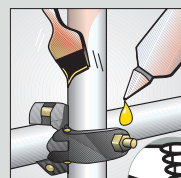
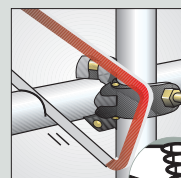
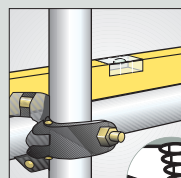
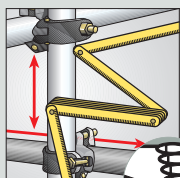
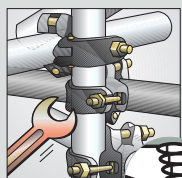
The Layher system's advantages **Your benefit**

- | | |
|--|--|
| Ingenious connection technology | ▶ 8 connections in one plane, automatic rectangularity, flexibility in angle selection, self-locking during assembly, material-saving; no losing parts |
| Comprehensive range of parts | ▶ Limitless uses, unthought-of possibilities, special and one-off solutions; compatible with other Layher systems and products |
| Precision | ▶ Time saving during assembly – safe handling |
| Official approvals | ▶ Approval for steel and aluminium system |



**Layher
Allround Scaffolding:**

Traditional scaffolding:



Layher Allround Scaffolding: Strong. By ultimate bearing capacity.

The Allround Scaffolding system allows individual adaptation to the relevant demands at the time. The practically oriented system with add-on components ensures unsurpassed fast assembly, even with complicated constructions.

Superior system technology: wedge head connection for non-bolted, self-securing assembly; automatic right angles; a few basic components; material-saving logical assembly.

The precision manufacture, the quality of utilized materials and finishing guarantee stability, safety and your scaffolding work performed on high levels.

Layher Allround Scaffolding meets all safety requirements and holds official approvals in Europe and many other countries.

Layher Allround Scaffolding in comparison with **traditional scaffolding** proves the **advantage for you**:

Connection moment:

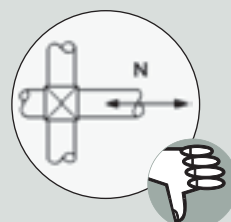
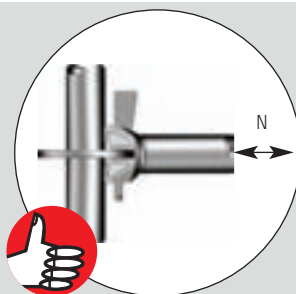
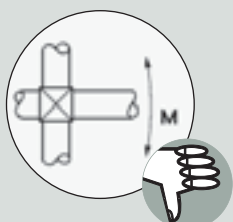
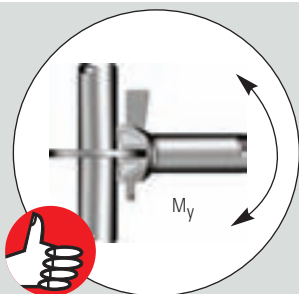
Connection moment
 $M_{y,R,d} = \pm 101.0 \text{ kNcm}$

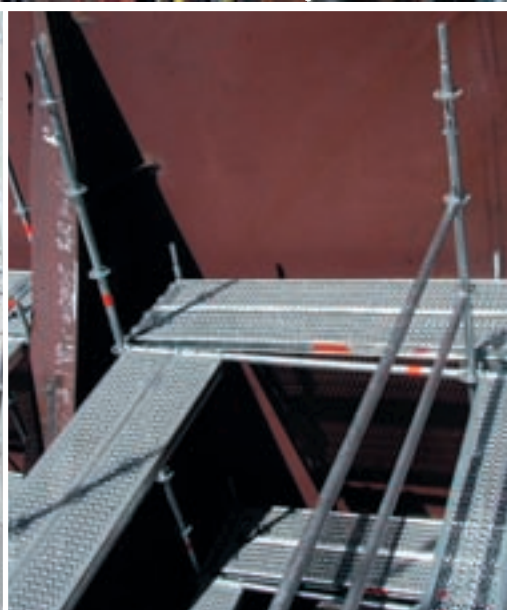
**+39%
stronger***

Normal force:

$N_{R,d} = \pm 31.0 \text{ kN}$

**+127%
stronger***





The Layher system's advantages **Your benefit**

- Wedge lock system** ▶ Loads are derived directly into the standard
- Hot dip galvanization** ▶ Practically maintenance-free
- Quality** ▶ Selected materials and precision manufacture, steady quality controls
- Experience** ▶ The "Original" modular scaffolding system; designed for utmost bearing capacity with least material utilization

Vertical shear force:

Vertical shear force single connection
 $V_{z,R,d} = \pm 26.4 \text{ kN}$

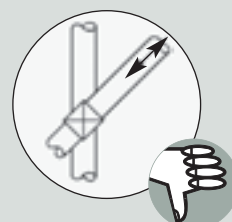
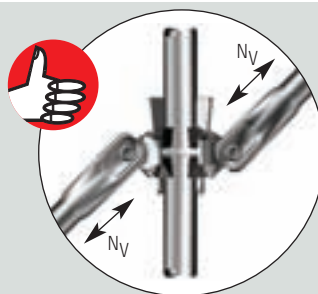
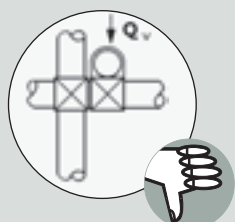
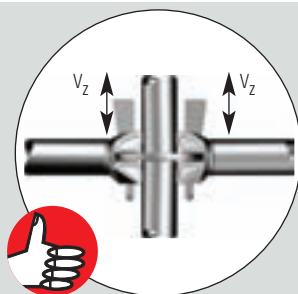
**+93%
stronger***

Axial force, diagonal brace:

Normal force in the vertical diagonal
 brace for a bay height of 2.0 m
 $N_{V,R,d} = + 17.9 \text{ kN } (-5.3 < -16.6)$

**+131%
stronger***

* According to HD 1000



Layher Allround Scaffolding: Flexible. By unparalleled versatility.

With Layher Allround Scaffolding, you are making an investment in a perfected and complete system, hence in rapid, safe, profitable and versatile scaffolding construction; and not least thanks to a comprehensive range of series-produced accessories – this means unrestricted all-round versatility from one set of parts.

Clampable Rosette:

The clampable rosette – connected at any point on the standard – adapts up to 6 ledgers or diagonal braces.



Where work is hindered by passing materials through manholes, by working under high temperatures and in bad light, the easily erected modular Allround Scaffolding system makes life easier.

Manhole Transport:

With tight clearances, e.g. manholes, the Layher Allround Scaffolding can be brought in and assembled favourably.



These benefits are topped by **Allround Scaffolding made from aluminium** due to its low weight.

Lock against Lift-off:

Decks are reliably secured by lock against lift-off integrated in the system.





The Layher system's advantages **Your benefit**

Accurate fitting

- ▶ Time saving during assembly and dismantling – ergonomically comfortable handling

Flexible in use

- ▶ Highly suitable for demanding jobs, usable with other Layher systems and products

Extensive and complete range of parts

- ▶ Structure-based standard lengths, compliance to high loadings

Comprehensive approvals for steel/aluminium

- ▶ Safety in use



Layher Allround Scaffolding: Safe. By thought-out Application Technique.

Working on and with scaffolding is a tough job. The demand for maintenance and construction for offshore and onshore has top priority. The success of your operation depends on people, competent solutions and superior equipment.

Layher Allround Scaffolding always offers the ideal solution. Assemblies may be carried out on the job location or completely fabricated scaffold sections may be craned into position, thanks to the use of bolt-in spigots.

The Layher standardized systems offer you the better alternatives: pre-planned simple and versatile constructions generally dispense with the need for laborious and time consuming traditional scaffolding assembled painstakingly on site.

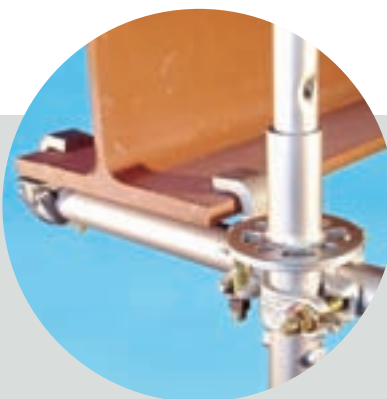
Bolted Spigots:

Suspended scaffold with the use of eyes welded to the platform. The standard with the special spigot is just inserted and secured by turning.



Clamp Couplers:

A clamp formed by two couplers and a tube are fixed to an I-beam to attach the hanging standard.



Triple Couplers Clamp:

For carrying higher load a triple coupler clamp is fixed to an I-beam to attach the hanging standard.





Scissor Clamps and Cradle:

with adjustable suspension height on chain sling allows quick, easy and variable setting of the suspension level.

Cantilever Erection:

Safe support for suspended and projecting scaffolding.

Layher Tensioning Belt:

To erect an Allround scaffold around or to build a catwalk over pipes, the scaffold can be fixed onto the pipe with the Layher tensioning belt.



Weather protection and covering technology: Layher Protective Systems.

The adaptable and modular **Layher Cassette Roof** provides enormously strong interim weather protection – suitable for any scaffolding system – with spans of up to about 39 m and corresponding load-bearing capacities. Only few different system components keep the investment costs within limits.

The Cassette Roof System:

The girders are connected and stiffened on the ground, the roof cassettes placed on them, and the finished unit is lifted by crane onto the substructure.



The Layher Keder Roof and Hall System

is the economical and lightweight way to achieve weather protection, with an attractive appearance and fitted in next to no time without a crane: a persuasively inexpensive complete solution for the roofing of small and medium spans; whether it's for a mono-pitch, double-pitch or asymmetrical roof.

The Keder Tarpaulin:

A technically optimised aluminium keder rail, on ridge, truss, eaves and side, holds the tarpaulin covering, ensures tightness.

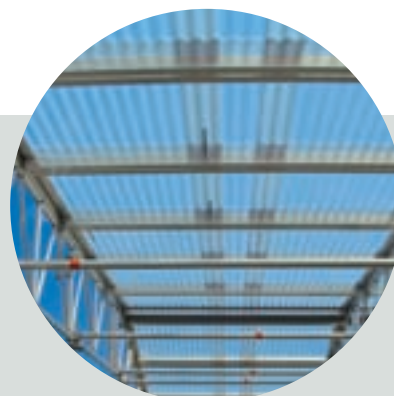


The Layher Lightweight Cassette Roof

(LWCR) is a very light roof with a roof covering of aluminium/PVC roof cassettes that can be erected on non-system lattice girders. With a few extra parts, sturdy yet lightweight roofing can be provided for a wide range of applications. Assembly by crane or by hand is possible.

The Lightweight Cassette Roof:

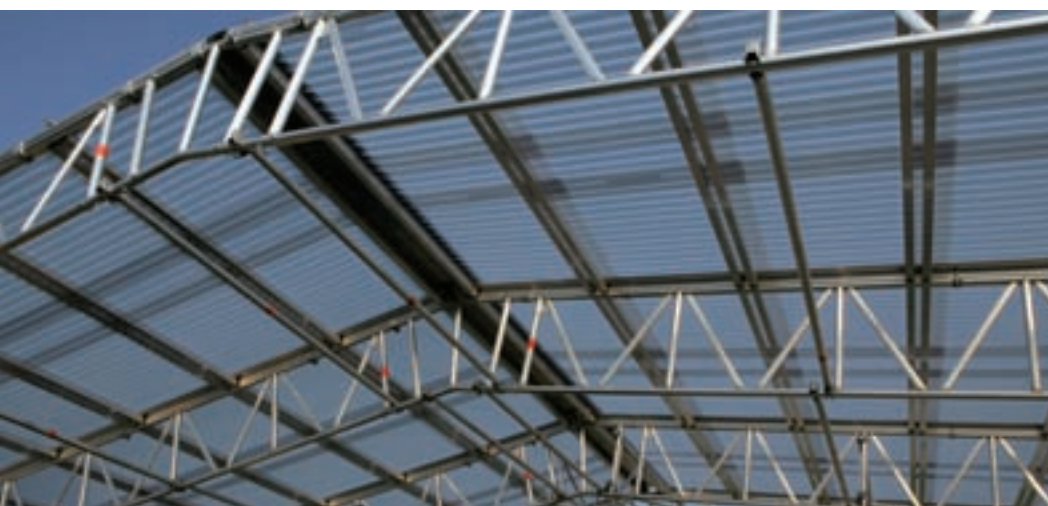
Special U-profiles are attached to the top chord of the lattice beam and are used to receive the roof cassettes.





The Layher system's advantages **Your benefit**

- Minimum of individual parts** ▶ Simple and site-oriented assembly, total structure very weight-saving
- Stability** ▶ Safe thanks to enormous load-bearing capacity, designed for frequent use
- Patented wedge connection** ▶ No time-consuming bolting work, rapid cassette assembly
- Independence** ▶ Can be fitted regardless of system, existing scaffolding can be used as a sub-structure



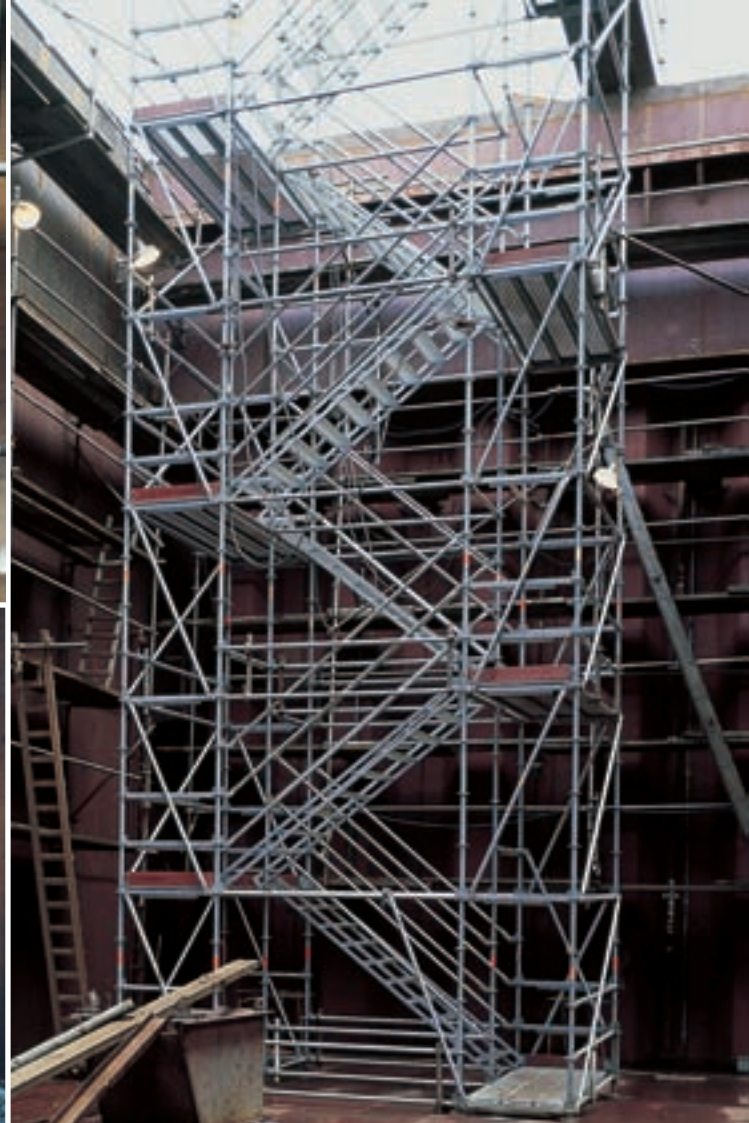
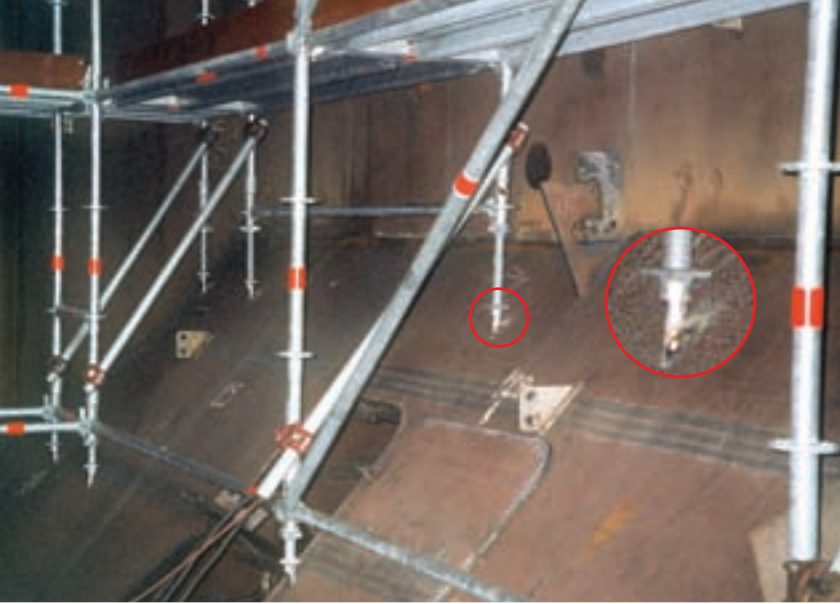
The Layher Protect System

Whenever top protection is required, e.g. asbestos clearance, sandblasting work or weather protection, Layher Protect is the perfect solution. With ingenious detail solutions, and usable with SpeedyScaf and Allround equipment, this unique system offers protection and safety both inside and outside.

The Protect Cassette:

Consist of a lightweight aluminium section frame with fillers made of sheet steel or plastic web plate. All cassette types can be used inside a façade surface.



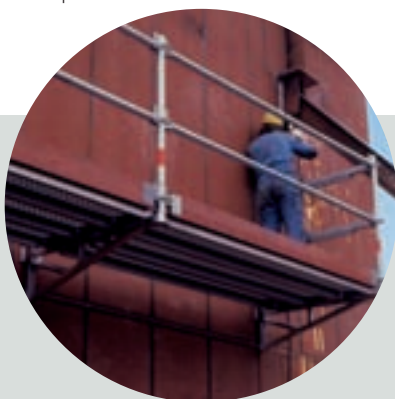


Layher custom-tailored solutions: Individual components in high quality.

As a Layher customer, you can benefit from a comprehensive range of standard solutions with which you can handle every task. For special jobs, you can also rely on an experienced team that will come up with a

Console Brackets:

Quite often the simplest and quickest way to achieve access at set levels both in construction and repair works.



customized solution jointly with you, and design and manufacture special components. High economy and comprehensive safety are the guiding principles.

Safety Gate:

Upon need 1.09 m or 0.73 m wide, with left or right hand attachment, this swivelling guard rail makes for a self closing gate and safe access.



The use of **staircases** provides a safer and more convenient way to access the various levels of scaffolding without interfering with the work area. Standard scaffold equipment is used along with readily available stairs.

Stairway towers are available for permissible loads of up to 7.5 kN/m².



Layher Scaffold Accessories: Solve problems fast and cost-effective.

Layher knows all about the value of accessories and offers a complete and comprehensive range from a single source. Inexpensive, dependable and system-independent.

System-independent construction is considered as well as efficient transport and storage of scaffolding parts.

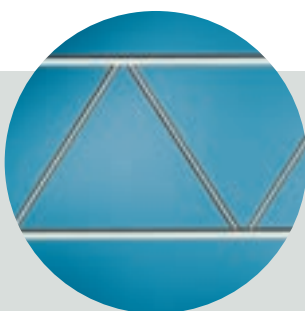
Furthermore Layher offers testing and ranging instruments.

- ▶ Stair Towers
- ▶ Paletts, hoists
- ▶ Sheeting and netting
- ▶ Anchors, hardware

- ▶ Steel and aluminium beams
- ▶ Couplers, scaffold tubes
- ▶ Castors, jacks

e.g. Unit beams:

Made in steel – type-tested – or in aluminium, versatile supporting and bridging element, system-independent.



e.g. Base plates:

Steel, system-independent use in height adjustment of scaffolds; colour and indent marks prevent over-extension.



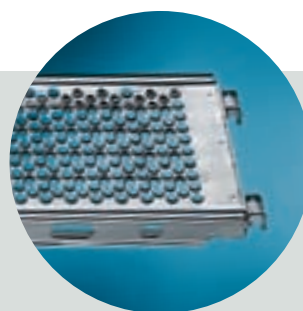
e.g. Couplers:

Steel, drop-forged; varied types for many special uses, fastening by nut or wedge.



e.g. Steel Decks:

nonslip, can be built into the scaffolding at any height – they can take heavy loads and are immune to flying sparks.



Layher Alu Beam 600: Bridges gaps in excess of 9 metres.

Easy to handle and versatile like a board but torsion-resistant with higher load bearing capacity. A working deck that is “simply put in place”.

A quick and handy construction element: lightweight thus stable, as it is made of aluminium and with special profiles.

In accordance with EN 12811, the Layher Alu Bridging Beam 600 with a width of 0.6 m is approved for load class 2 (1.5 kN/m²; lengths up to 10.0 m) in addition to load class 3 (2 kN/m²; lengths up to 7.1 m).

This means it can be used as a deck in working and protective scaffolds, in bird-cage scaffolds, and as a bridging element in façade scaffolds.

Alu Beam 600:

A working deck (in aluminium) up to 10 m long – for use on its own or as a component in scaffold constructions.



The Layher product range at a glance:

▶ Allround Scaffolding

Ingenious modular scaffolding

▶ SpeedyScaf

Unbeatably fast frame scaffolding

▶ Protective Systems

Modular roof and side cladding

▶ Rolling Towers

Variety in height, size and access

▶ Accessories

Highly flexible problem-solvers

▶ Event Systems

Stands and stages, indoor and outdoor

▶ Ladders

Uncompromising quality
in aluminium and wood



8116.205 Edition: 01.12.2009

Wilhelm Layher GmbH & Co. KG

Scaffolding Grandstands Ladders

Post Box 40
74361 Gueglingen-Eibensbach
Germany

Phone +49 71 35 70-0
Fax +49 71 35 70-372
E-mail export@layher.com
www.layher.com