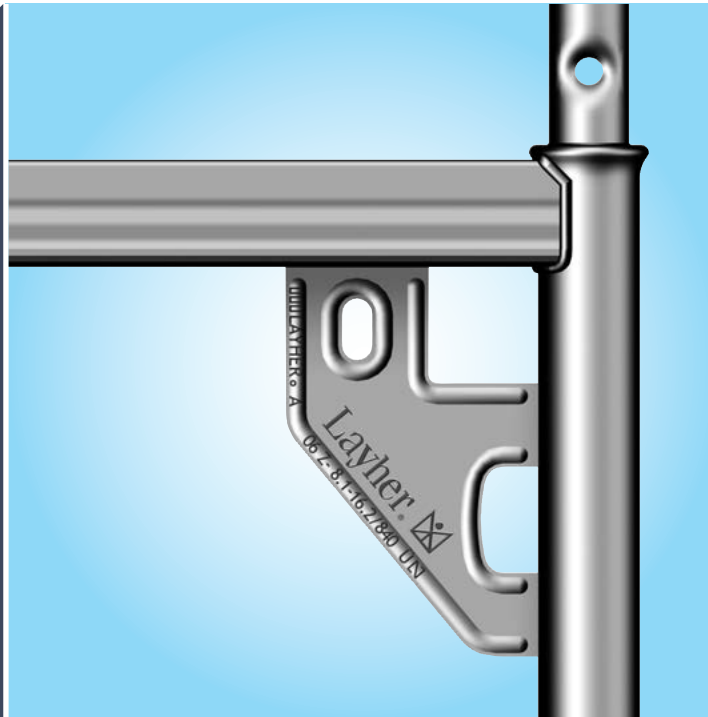


LAYHER SPEEDYSCAF®

INSTRUCTIONS FOR ASSEMBLY AND USE



Edition 11.2013

Ref. No. 8102.230

Quality management
certified according to
DIN EN ISO 9001:2008
by TÜV-CERT



CONTENTS

1.	Introduction	4	18.	Freestanding scaffolding levels	30
2.	Measures to prevent falls	6	19.	Safeguarding against wind forces	30
3.	Supplementing the SpeedyScaf equipment.....	10	20.	Coverings	31
4.	Basic components of Layher SpeedyScaf equipment.....	11	21.	Rolling tower.....	31
5.	Assembly sequence.....	13	22.	Use of the scaffolding	32
6.	Anchoring	16	23.	Dismantling the scaffolding	32
7.	Scaffolding accesses	20	24.	Components of the system	33
8.	Corner solutions.....	21			
9.	Brackets	22			
10.	Aluminium bridging ledgers.....	25			
11.	Bridging.....	25			
12.	Gantry frames	26			
13.	Reducer.....	27			
14.	Frame for balustrade	27			
15.	Protective roofs.....	27			
16.	Weather protection at top level.....	28			
17.	Brick guards.....	29			

NOTE

The products or assembly variants shown in these instructions for assembly and use may be subject to country-specific regulations. The user of the products bears the responsibility for compliance with such regulations. Subject to local regulations, we reserve the right not to supply all products illustrated here.

Your Layher partner on the spot will be happy to provide advice and answers to all questions relating to the approvals for the products, to their use or to specific assembly regulations.

1. INTRODUCTION

General

These instructions for assembly and use relate to assembly, modification and dismantling of the main assembly variants of the SpeedyScaf scaffolding from Wilhelm Layher GmbH & Co. KG, of Gueglingen-Eibensbach, Germany. The instructions cannot cover all the possible applications. If you have any questions about specific applications, please contact your Layher partner.

Caution: The stability of the scaffolding must be verified and assured at all times, including in the assembled state. Layher SpeedyScaf equipment may only be assembled, modified and dismantled under the supervision of a qualified expert and by technically trained employees.

Caution: For assembly, only original Layher scaffolding components identified with the conformity mark <Ü> and the appropriate German approval number (Z-8.1-16.2 for SpeedyScaf 70 steel, Z-8.1-844 for SpeedyScaf 70 aluminium and Z-8.1 840 SpeedyScaf 100 steel) may be used.

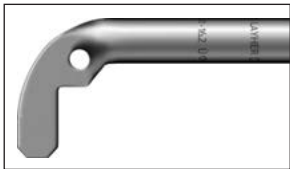
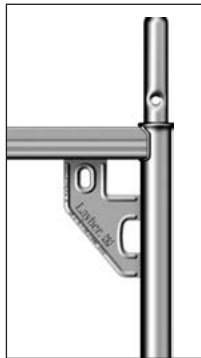
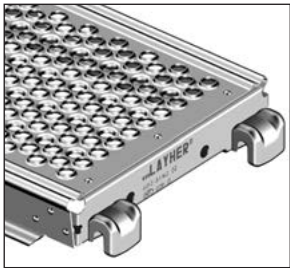


Fig. 1 – 3: Identification of original Layher scaffolding components

Visually check all scaffolding components prior to installation to ensure that they are in flawless condition. Do not use damaged components.

Caution: Assembly, alteration and dismantling of the Layher SpeedyScaf equipment involves risk from falls. Perform the scaffolding construction work in such a way that the risk of falls is ruled out or minimized. Assembly situations where there is a risk of falls are identified in these instructions with the following symbol inside the assembly pictures.



The scaffolding erector must stipulate, on the basis of how he assesses the risk, suitable measures to prevent or minimize risks for the actual case and/or the respective activities involved.

The measures must be selected with due consideration of the actual risk, their usefulness and their practical possibilities, and also depending on

- the qualification of the employees,
- the type and duration of the activity in the high-risk area,
- the possible fall height,
- the state of the surface onto which the employee might fall and
- the state of the workplace and its access.

Technical and personnel-related measures can be applied during assembly, modification and dismantling. Possible measures can include, depending on the assembly situation, the use of qualified personnel specifically informed of the respective risk situation, the use of the advance guardrail, or in specific cases the use of suitable personal safety apparatus. In any event, the assembly sequence must be designed such that side protection is installed at once, so that personnel work predominantly in secured areas.

If the use of personal safety apparatus against falls (PSAaf) or of an advance guardrail is required or is specified by local regulations when Layher SpeedyScaf equipment is assembled, the attachment points shown in section 2 or the advance guardrail as shown must be used. The suitability of PSAaf for preventing falls must be checked. Particular attention must be paid here to the assembly of the second and third scaffolding levels.

Before the start of scaffolding work, the contractor must ascertain whether the planned working area contains equipment that might endanger the employees. Assembly, modification and dismantling may only be performed with appropriate protective equipment. Scaffolding components must not be thrown; instead they must be handed over in such a way that they cannot slip or be dropped.

After completion of the assembly work and before every use of the scaffolding, a check must be conducted to ensure it is in good condition.

With regard to the following instructions for assembly and use of the regular version of the Layher SpeedyScaf scaffolding system, it must be pointed out that as a general principle scaffolding may only be assembled, modified or dismantled under the supervision of a qualified person and by technically trained employees adequately and specifically instructed in this work. To that extent, and with regard to use, we refer to the required conditions set forth in German Ordinance on Industrial Safety and Health (BetrSichV). In the following instructions for assembly and use, we provide the erector and the user, on the basis of our risk analysis, with advice on how to comply with the requirements of the above ordinance in the respective assembly situation.

The technical details set forth in the instructions for assembly and use are intended to help the erector and/or user to comply with the requirements of the ordinance and are not mandatory specifications for them. The erector/user must take the measures needed on the basis of the risk assessment, prepared according to the preconditions of the Ordinance, at his own discretion and exercising all due care and diligence. The specific features of the individual case must be taken into account here.

It is essential that the following instructions for assembly and use are complied with in every case. It is pointed out that all information, particularly that regarding stability in the assembly variants, applies only when original Layher SpeedyScaf components identified with the approval numbers stated on page 4 are used. The installation of non-Layher parts can lead to safety defects and insufficient stability.

The present instructions for assembly and use must be available to the supervisor and to the employees involved.

During assembly, modification and dismantling, as well as during use of the scaffolding, the legal regulations of the German Ordinance on

Industrial Safety and Health (BetrSichV) concerning the erection and use of scaffolding must be complied with.

Scaffolding system

Layher SpeedyScaf is a steel frame scaffolding made of prefabricated components with a system width of 0.73 m and 1.09 m. The bay lengths are 1.57 m, 2.07 m, 2.57 m and 3.07 m. Short lengths of 0.73 m and 1.09 m are also possible. The frames are 2.00 m high and hence determine the distance between the deck levels. They are joined by spigots arranged on the top at the level of the decks. The diagonal braces and rear guardrails are connected via wedge connections to the upright tubes. The deck parts are held horizontally on the support ledgers by claws and in so doing they stiffen the scaffolding both at right angles and parallel to the façade.

The manufacture and identification of components is regulated in the general building authority approvals specified on page 4.

Inspection and documentation

The scaffolding erector must ensure that the scaffolding is checked by the qualified person after completion of the assembly work, i.e. before handover to the scaffolding user. The inspection must be documented. If certain areas of the scaffolding are not ready for use, particularly during assembly, modification and dismantling, they must be identified with a prohibitory sign indicating "no entry". In addition, it must be made clear by barriers that the scaffolding has not been completed and hence must not be entered.

After completion of the scaffolding, it is useful to indicate that inspection has been passed by a clearly discernible identification on the scaffolding itself for the duration of its use. This identification should include the following information:

Example for identification:

- Work scaffolding as per EN 12811-1, protective scaffolding as per DIN 4420-1
- Width class W06 and load class 3
- Evenly distributed load max. 2.00 kN/m²
- Date of inspection
- Name of company
Address of company
Telephone number of company

Kennzeichnung und Freigabe für Gerüste DIN EN 12811/ DIN 4420	
Gerüstersteller:	bedingte Person sein Aufzug:
Ort vor Einsatz:	Aufbauzeitpunkt:
Erstellungsort:	bedingte Person sein Prüfung:
Gerüst-Nr.:	Werkstattnummer:
Gerüstart:	<input type="checkbox"/> Freigehtgerüst nach DIN 12811 <input type="checkbox"/> Freigehtgerüst <input type="checkbox"/> Baumgerüst <input type="checkbox"/> Schussdach <input type="checkbox"/> Schussgerüst nach DIN 4420 <input type="checkbox"/> Freigehtgerüst <input type="checkbox"/> Durchlaufgerüst <input type="checkbox"/> Fahrgestell <input type="checkbox"/> Durchlaufgerüst <input type="checkbox"/> Freigehtgerüst
Belastung:	<input type="checkbox"/> Klein <input type="checkbox"/> Normal <input type="checkbox"/> Groß
Ladestufe:	<input type="checkbox"/> 1700 kg/m ² <input type="checkbox"/> 2000 kg/m ² <input type="checkbox"/> 2500 kg/m ² <input type="checkbox"/> 3000 kg/m ² <small>Die Grenze der Werkstattnummer über überausfordernde Gerüstlasten in einem Gefährdungs- und Risikoprüfungsbereich nicht überschreiten.</small>
Brückenhöhe:	<input type="checkbox"/> 30m <input type="checkbox"/> 30m <input type="checkbox"/> 30m <input type="checkbox"/> 30m
Nutzungsbeschränkungen	<small>(Hinweise für den Nutzer siehe Handbuch)</small>
<p>! Eigentliche Aussagen an Gerüst sind ohne vorherige Rücksprache mit dem Gerüstverantwortlichen. Die Anweisungen der Aufbau- und Verwendungsanleitung sind sorgfältig zu befolgen.</p>	
Geprüft und freigegeben	bedingte Person des Nutzers
bedingte Person des Gerüstbauers:	bedingte Person des Nutzers:
Wählen Layher Speedy & Co. KG Gerüste System Letztens Obersiebenbrunn Straße 35 D-74383 Ditzingen, Eberbach	<p>Mehr möglich. Das Gerüst System.</p> <p>Layher</p>



Figs. 4 and 5: Scaffolding identification signs (German only)

Use

Every employer who requires personnel to use the scaffolding or parts of it must, in the course of the risk analysis in accordance with Section 3 of the German Ordinance on Industrial Safety and Health (BetrSichV), determine whether an inspection prior to use is required. The inspection is intended for confirmation of safe operation depending on the respective use of the scaffolding. After any unusual events that might have damaging effects on the safety of the scaffolding, the employer using it or causing it to be used must immediately ensure that an unscheduled inspection is performed by a qualified person. He must ensure that the scaffolding is checked for obvious defects before use. The employee causing scaffolding to be used is responsible for preserving its operational safety. If defects are found during this check, the scaffolding must not be used in those areas where there are defects until these have been eliminated by the scaffolding erector. Subsequent alterations to the scaffolding are deemed as assembly, modification or dismantling and may only be performed by technically trained employees. If the scaffolding is used by several employers, simultaneously or successively, each employer must ensure that the above inspection is conducted.

The legal regulations of the German Ordinance on Industrial Safety and Health (BetrSichV) must be complied with. Further information on occupational safety can be found in the German publication “BG-Information Handlungsanleitung für den Umgang mit Arbeits- und Schutzgerüsten” governing the handling and use of work and protective scaffolding.

The basis for SpeedyScaf approval in Germany are German and European standards. SpeedyScaf equipment has been approved in many other countries and complies with British Standards.

Caution: Differing and supplementary local regulations are not taken into account in these instructions, but must be complied with.

A detailed list of articles can be found in our catalogue, and information on structural values in our technical documents.

2. MEASURES TO PREVENT FALLS

In line with local regulations or as the result of a risk analysis performed by the scaffolding erector, personal safety apparatus against falls (PSAaf), an advance guardrail or a combination of the two, for example, may be necessary for assembly and dismantling of the scaffolding.

Attachment points for the personal safety apparatus against falls (PSAaf)

If the use of PSAaf is planned for assembly of the SpeedyScaf structure, the attachment points shown in Figs. 6 to 15 must be used. The attachment points shown have been verified by drop tests with original Layher SpeedyScaf scaffolding. If SpeedyScaf scaffolding uses components not identified in accordance with the requirements of the building authority approval Z-8.1-16.2, the suitability of the attachment points for the use of PSAaf must be verified separately by the scaffolding erector/constructor. For attachment to the corner plate (overhead), at least two frames and one guardrail for connecting the frame must be fitted! The wedges of the guardrail fastening must be knocked in firmly, and the half-couplers of the double end guardrail firmly tightened.

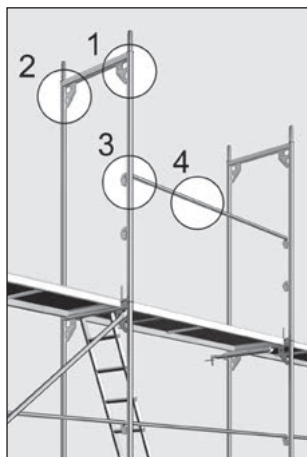


Fig. 6: Overview attachment points

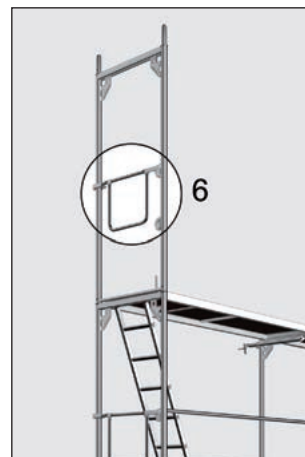


Fig. 12: Attachment point double end guardrail



Fig. 7: Attachment points 1 and 2



Fig. 8: Attachment point 3



Fig. 9: Attachment point 4



Fig. 13: Attachment point 6.1



Fig. 14: Attachment point 6.2



Fig. 15: Attachment point 6.3

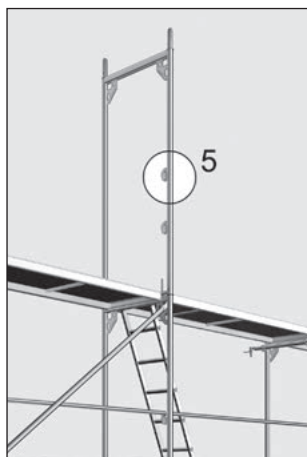


Fig. 10: Attachment point guardrail wedge housing



Fig. 11: Attachment point 5

Description of attachment points:	
1	• Corner plate on outer standard (overhead) – Fig. 7
2	• Corner plate on inner standard (overhead)
3	• Upper guardrail wedge housing – Fig. 8
4	• Upper guardrail – Fig. 9
5	• Upper guardrail wedge housing on free-standing frame – Fig. 11
6	• Double end guardrail – Figs. 13 – 15

When PSAaf systems approved and type-tested specifically for scaffolding construction work are used, with 2.0 m long **PSAaf connecting means and PSAaf belts with webbing extension**, the attachment point must be at least 1.0 m above the standing surface.

If **PSA belts without webbing** extension and 2.0 m long PSAaf connecting means are used, attachment is also possible at the guardrail fixture of the intermediate rail or at the level of the standing surface at the upright tube or at the corner plate of the frame underneath it. Attachment at a lower point is not permissible.

The necessary clearance between the attachment point and the possible impact surface is for

PSAaf systems with webbing extension

- a1) when attached overhead: at least 5.25 m (Fig. 16) and
- a2) when attached at guardrail level: at least 6.75 m (Fig. 17) and for

PSAaf belts without webbing extension

- b1) when attached overhead: at least 4.75 m (Fig. 16)
- b2) when attached at guardrail level: at least 6.25 m (Fig. 17)

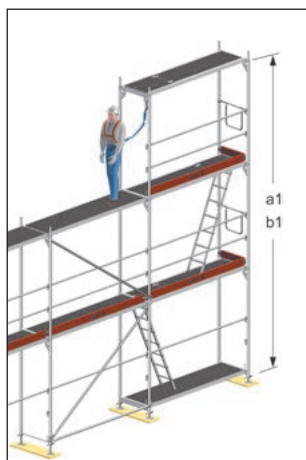


Fig. 16: Attachment overhead

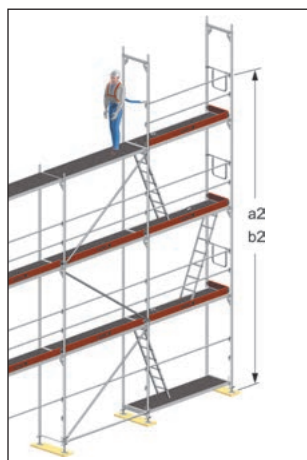


Fig. 17: Attachment at guardrail level

⚠ WARNING

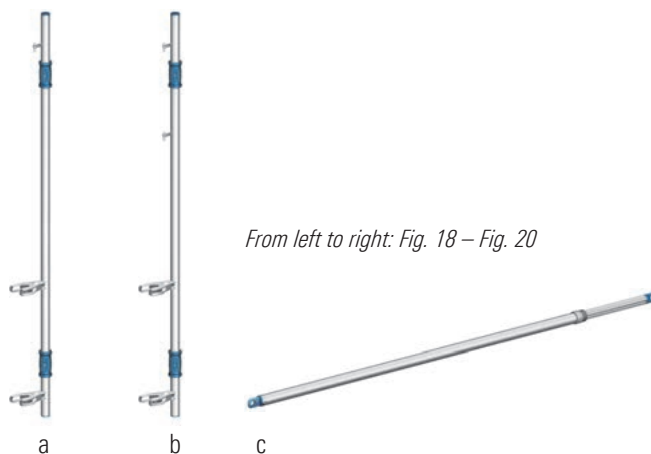
The instructions for use of the PSAaf must be followed. For further directions on using PSAaf see BGI 5101.

If the clearance between the attachment point and the possible impact point is less than that required, there is a risk of injury.

How the Layher advance guardrail system / end guardrail works

The Layher advance guardrail system consists of two basic components – advance guardrail post and assembly guardrail. The assembly post a) or b) must be used depending on local regulations.

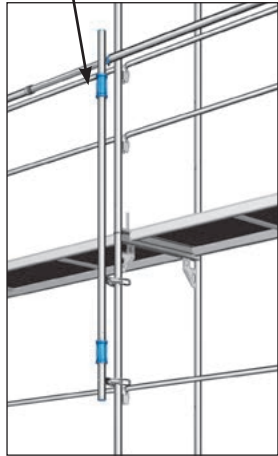
- a. Advance guardrail post with connection for telescoping guardrail at 1 m height
- b. Advance guardrail post with connection for telescoping guardrail at 0.5 m and 1 m heights
- c. Assembly guardrail made of aluminium, for bay widths of 1.57 m to 2.07 m and 2.57 m to 3.07 m and also for combined bay widths (e.g. 1.57 m and 1.09 m) by bridging a standard axis



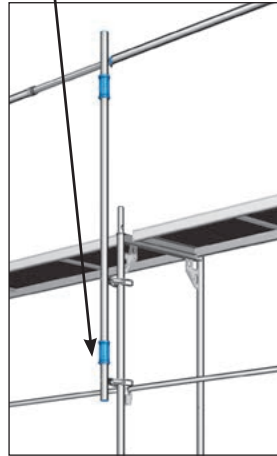
From left to right: Fig. 18 – Fig. 20

The advance guardrail post of the Layher advance guardrail can be fitted and dismantled by an erector from two positions:

1. Assembly/dismantling from above



2. Assembly/dismantling from below



Figs. 21 and 22: Connection of the advance guardrail post to a Speedy Frame

A detailed description of the use, maintenance and care of the Layher advance guardrail system can be found in the appropriate instructions for assembly and use of this system.

The Layher end advance guardrail can be conveniently repositioned from above and below. The erector, standing on a secured level, pulls one of the cross rungs of the end guardrail downwards, or presses it down with his foot, to release the upper U-section. Then the end advance guardrail is swung outwards, moved upwards or downwards, and the lower U-section fitted onto the installed SpeedyScaf end guardrail. Now one of the cross rungs must be pulled downwards or pressed with a foot until the upper U-section can be swung underneath the U-section of the frame. The end advance guardrail is secured by releasing the cross rung. To use the first level, a double end guardrail must be installed on the lower frame.



Fig. 23: Assembly of end advance guardrail

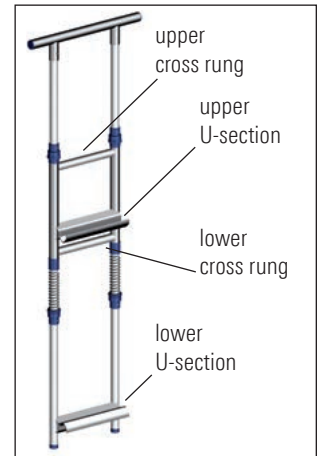


Fig. 24: Details of end advance guardrail



Fig. 25: Assembly of the advance guardrail in the access bay



Fig. 26: Detail showing use of advance guardrail in the scaffolding level

3. SUPPLEMENTING THE SPEEDYSCAF EQUIPMENT

The SpeedyScaf equipment can be supplemented with:

- standardized scaffolding tubes, dia. 48.3 with wall thicknesses:
steel tubes: 3.2 or 4.05 mm
aluminium tubes: 4.0 mm
- couplers as per EN 74-1 or with building authority approval, with 50 Nm tightening torque
- wood or steel planks as per local regulations.

Scaffolding tubes can be connected with the aid of couplers to frames, brackets, lattice beams and other SpeedyScaf components.

Scaffolding tubes connected using couplers can have both a structural function (e.g. as bracket brace, as lattice beam brace, in special anchoring) and be used for subordinate purposes.

When wood and steel planks are used, the permissible plank cross-sections, maximum spans and other criteria for use in accordance with local regulations must be complied with. Wood and steel planks must be secured against inadvertent lifting off and shifting.

The permissible spans for wooden planks according to German standards are given in our technical documents.

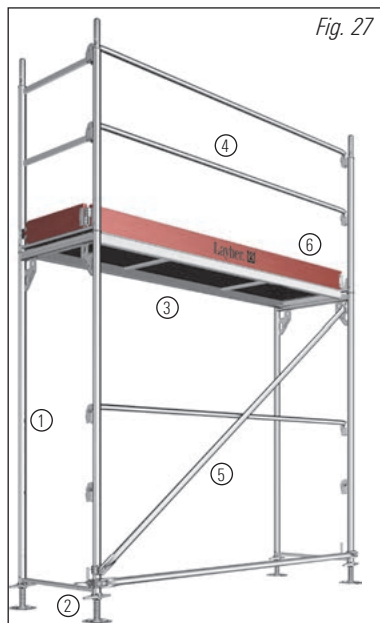
WARNING

Wood planks may only be used as add-on boards and cannot perform any stiffening function. Layher system decks have a stiffening function in SpeedyScaf equipment and cannot be replaced by wooden boards.

4. BASIC ELEMENTS OF LAYHER SPEEDYSCAF EQUIPMENT

Standard assembly is achieved with the following 6 basic elements:

- 1 Frame
- 2 Base plates
- 3 Scaffolding decks
- 4 Guardrails
- 5 Diagonal braces
- 6 Toe boards



Assembly frames

Assembly frames are available in steel (0.36 m, 0.73 m and 1.09 m wide) or in aluminium (0.73 m wide). Equalizing frames are possible in heights of 0.66 m, 1.0 m and 1.5 m.

Base plates

The base plates must be in full surface contact. All base plate types must be secured against slipping and sliding.

Spindle type and spindle extension length			
	Standard base plate 40	Standard base plate 60	Load adjustable base plate 60, swivelling
Max. spindle adjustment	25 cm	41 cm	41 cm

Adjustable base plates with the biggest maximum spindle adjustment may be used provided their load-bearing capacity is verified in each case. If the surface is not level, swivelling base plates or wedge-type inserts must be used and secured against sliding.

WARNING

One-sided positioning of the base plate can cause excessive stresses in its cross-section and collapse of the scaffolding.

Scaffolding decks

In each scaffolding bay of 0.73 m width, either one scaffolding deck of 0.61 m width or two of 0.32 m width must be used. The scaffolding decks must be inserted into the U-sections of the frame. In scaffolding bays of 1.09 m width, three scaffolding decks of 0.32 m width each or one of 0.61 m width plus one of 0.32 m width must be installed.

Scaffolding decks must be secured against inadvertent lifting out by frames of the next scaffolding level or, in the case of the top level, by the guardrail or brick guard supports. If the decks cannot be secured in this way, lift-off preventers must be used. Lift-off preventers and brick guard supports must be secured with locking pins!

WARNING

In roof brick guards and standard brick guards, only decks approved for this application may be used. Older scaffolding decks, such as plywood or solid wood frame boards, aluminium deck boards and combination deck boards must not be used.

Robust decks must be stored such that rotting is not possible, and checked regularly that they are in good condition. Do not use damaged robust decks.

Diagonal braces

Diagonal braces must be installed on the outside of the scaffolding bay in at least every fifth bay for longitudinal strengthening.

The diagonal brace must be inserted into the large hole in the corner plate of the frame (Fig. 28). At the lower end of the opposite frame, the wedge coupler must be connected to the frame tube. Before the coupler is wedged tight, the frames must be vertically aligned by vertical movement of the coupler. With the Euro assembly frame, this is always the case when the wedge coupler is seated precisely underneath the marking hole (Fig. 29).

Important: The wedge coupler must be wedged tight after alignment. A diagonal brace can be assigned to no more than five scaffolding bays.

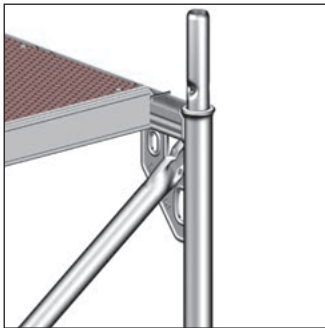


Fig. 28: Diagonal brace at top

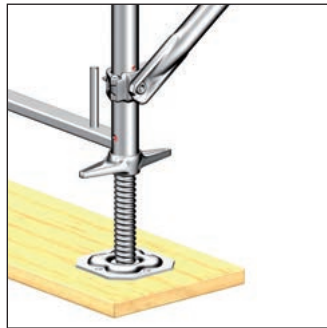


Fig. 29: Diagonal brace at bottom

WARNING

Incorrectly fitted scaffolding couplers reduce the stability of the scaffolding structure and can lead to its collapse.

Wedge couplers must be hammered tight using a 500 g metal hammer until the blow bounces off. Screw couplers must be tightened with a 50 Nm torque.

Three-piece side protection

A three-piece side protection, comprising

- handrail
- intermediate rail
- toe board

must be installed at all scaffolding levels in use on the outside of the scaffolding, unless otherwise specified by local regulations.

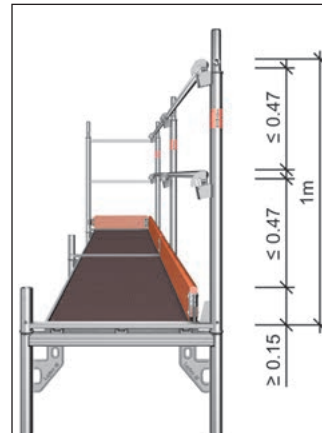


Fig. 30: Three-piece side protection in SpeedyScaf scaffolding

Depending on the clearance of the scaffolding deck from the wall of the building, side protection may also be required on the inside of the scaffolding. Local regulations must be complied with.

Guardrails

The guardrails must be inserted into the wedge housings and secured by hammering the wedge.

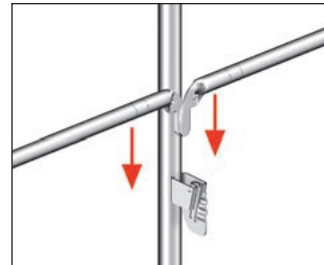


Fig. 31: Insertion at guardrail

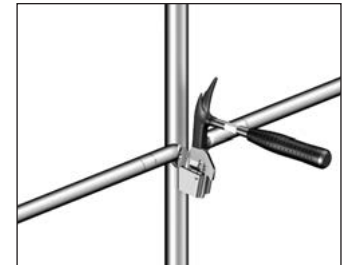


Fig. 32: Knocking in on guardrail

Internal guardrails

If the distance from the wall is greater, internal guardrails are required, which can be quickly attached to the slots in the Euro assembly frames with locking wedge housings (Fig. 33). If older frames are used, guardrail couplers must be used to fasten the internal guardrails (Fig. 34). The correct height dimensions must be assured for guardrail couplers (see Fig. 30).



Fig. 33: Locking wedge housing



Fig. 34: Guardrail coupler

Toe board

The toe board completes the three-piece side protection on the outside of the scaffolding. The toe board can be dispensed with in external access bays.



Fig. 35: Toe board insertion

Toe board insertion in Layher SpeedyScaf

Fit longitudinal toe boards on toe board pins. Fit the end toe boards on toe board pins on one side. The other side of the toe board is fitted to the vertical tube of the frame.

5. ASSEMBLY SEQUENCE

Assembly of the first scaffolding level

1. Start at the highest point. Lay out the guardrails. Place adjustable base plates on the load-distributing bases.

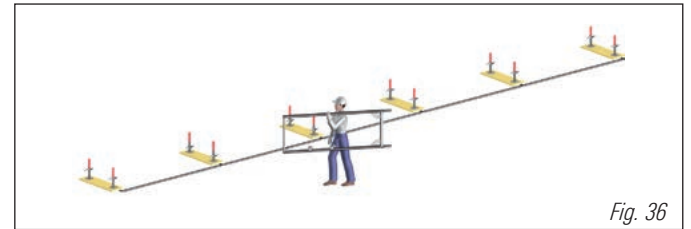


Fig. 36

Important: Check surface for sufficient load-bearing capacity and lay suitable load-distributing bases. Vertically align the first frame.

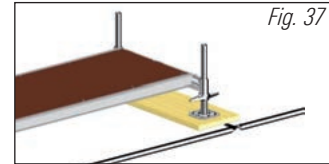


Fig. 37

2. Fit U-start ledger onto the adjustable base plates in the access bay. Insert deck as a ladder support surface.

3. Place the first two assembly frames on the adjustable base plates and connect them with guardrails.
4. Adjust the plates until the guardrail is horizontal. Insert decking.
5. Insert diagonal brace into the hole of the corner plate and tighten the wedge coupler at the lower end of the opposite frame directly underneath the hole marking (see page 12).

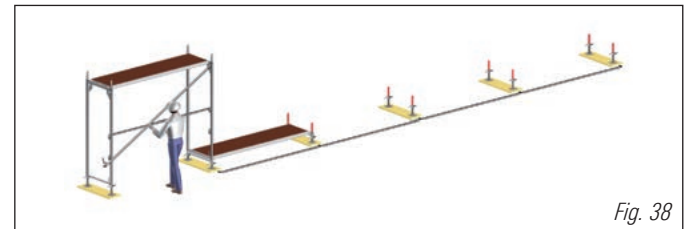


Fig. 38

Caution: Do not exceed the maximum spindle extension length. Ensure the maximum wall clearance of the decks to prevent risk of falls at the upper levels.

6. Adjust the scaffolding to the lay of the ground with intermediate frames (0.66 m, 1.0 m and 1.5 m) if the ground is steeply sloping.
7. To do so, it may be necessary to install U-start ledgers at the top-most point.
8. Swivelling load adjustable bases can be installed on sloping surfaces.
9. The equalizing frames must be vertically braced using tubes and couplers.



Fig. 39

Caution: No more than one equalizing frame may be used per frame level. When equalizing frames are used, the anchoring configuration must be shifted one scaffolding level downwards.

10. Fit a horizontal strut in the diagonal bay above the adjustable base plate.

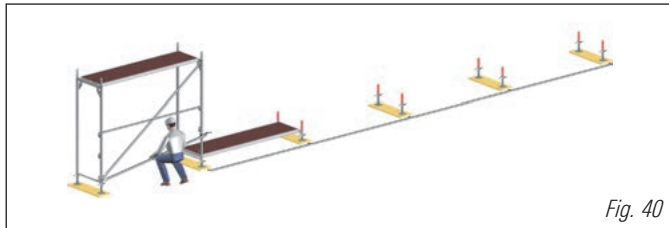


Fig. 40

11. Fit the next frame and connect it using guardrails to the already assembled bay.

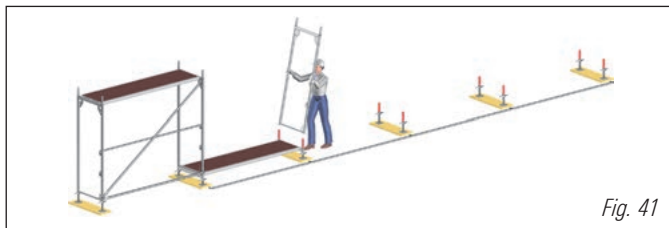


Fig. 41

12. Use a spirit level to check for horizontal positioning, and if necessary make adjustments.

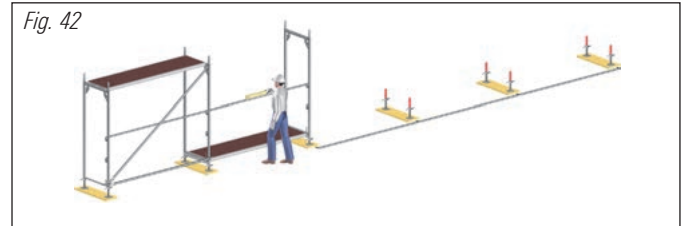


Fig. 42

13. Insert next scaffolding deck/access deck.
14. Complete the scaffolding level. Remove the guardrail in the access bay.



Fig. 43

Caution: Anchoring must be installed continually as scaffolding assembly progresses. See section 6, page 16. With only one scaffolding level, anchor every second frame. With a single-level brick guard, anchor every frame. Provide the anchoring continually.

Assembly of the further scaffolding levels

For scaffolding more than 8 m high (deck height above ground surface), building hoists should be used for assembly, modification and dismantling. As an exception to this, hoists can be dispensed with if the scaffolding height is no more than 14 m and the overall length of the scaffolding is no more than 10 m.

In scaffolding bays where vertical handling is done manually, guardrails and intermediate rails must be present. For this manual handling, at least one person must be present on every scaffolding level.

Caution: There is a risk of falls during assembly of the further scaffolding levels. Measures ascertained in the risk analysis performed by the scaffolding erector must be applied.

Caution: Keep the hatches in access decks closed at all times! Only open them when needed, and close them again immediately afterwards!

Fig. 44



Fig. 45



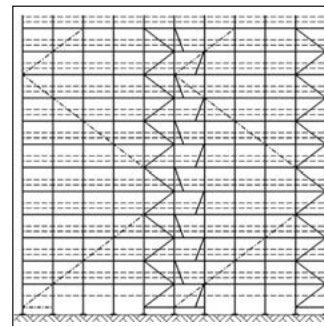
Preventing risk, e.g. by advance guardrail in the access bay.

Fig. 46



Assemble the frame of the top scaffolding level as shown. After frame assembly, insert the guardrail and wedge it tight. Then attach the end guardrail and install the toe boards. Wall ties and vertical braces must be installed continuously as scaffolding assembly progresses.

Diagonal bracing



A diagonal brace can be assigned to no more than five scaffolding bays.

- Tower-type diagonal bracing
- - - Continuous diagonal bracing

Fig. 47: Diagonal bracing

WARNING

Absent diagonal braces and/or horizontal ledgers reduce the stability of the scaffolding structure and can lead to its collapse.

6. ANCHORING

Caution: Anchoring is essential for the stability of the scaffolding and must be continually installed as scaffolding assembly progresses.

Only provide anchoring on sufficiently strong components, if necessary testing the anchoring surface by pull-out tests. A check can be dispensed with if sufficient load-bearing capacity can be assessed on the basis of professional experience and the service value of the anchoring force A_{\perp} does not exceed 1.5 kN or in the case of reinforced concrete according to DIN 1045, 6.0 kN. Provide evidence for the load-bearing capacity of all fastening devices (anchors, ring screws, wall plugs) for the anchoring forces. The eyelets of the eye bolts must be welded and must conform to at least the strength class 4.6.

WARNING

Absent or insufficiently strong anchoring reduces the stability of the scaffolding structure and can lead to its collapse.

The scaffolding can be anchored using the following aids:

- a) Anchoring with wall plug and ring screw in walls
 - SpeedyScaf wall ties
 - Wall tie
 - with 2 double couplers on 2 uprights
 - with 1 standard coupler and 1 wall tie coupler
 - with 2 corner plate couplers (only at top level)
 - V-type anchor with wall ties
- b) Anchoring on support structures using clamping couplers and tube/coupler constructions
 - Anchoring on vertical supports (see page 18)
 - Anchoring on horizontal beams (see page 19)

Caution: The anchorings shown differ in their force absorption and cannot be changed without a renewed inspection!

SpeedyScaf wall ties

1. Connect SpeedyScaf wall ties with standard coupler to inner standard, inserting the wall tie into the ring screw.
2. To do so, the rear end of the SpeedyScaf wall tie must enclose the U-section of the frame.

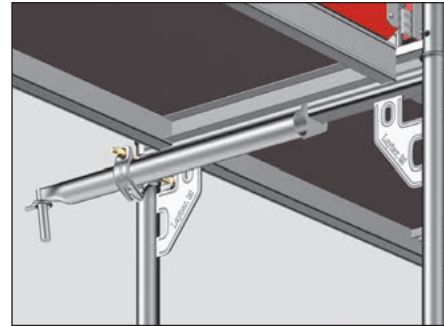
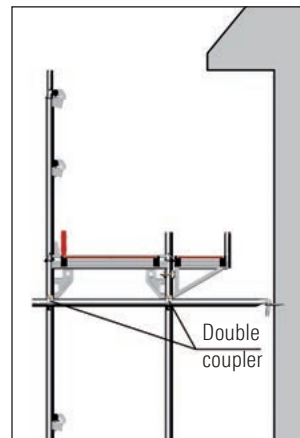


Fig. 48: SpeedyScaf wall tie

Wall ties

Caution: Attach long wall tie (up to 1.45 m) with 2 couplers and other tube and coupler anchorings in the immediate vicinity of the corner plate.



Wall ties are connected with 2 standard couplers to the inner and outer standards, with the wall tie being inserted into the ring screw. If brackets are used, the wall tie must be connected underneath the corner plates. The restricted headroom this causes must be noted.

Fig. 49: Wall ties with standard couplers

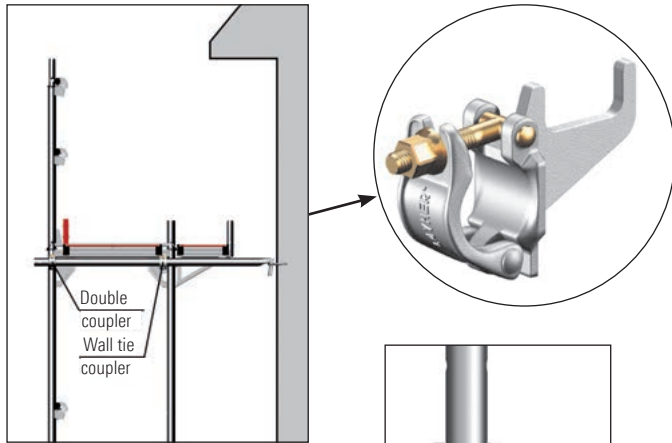
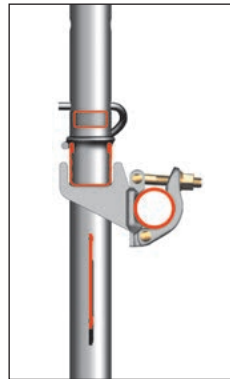


Fig. 50: Wall ties with wall tie coupler

Fig. 51 (right):
Detail of wall tie coupler

Fig. 52:
Section through wall tie coupler



V-shape wall ties

V-shape wall ties are pairs of wall ties arranged in a V-shape and absorbing the forces parallel to the façade.

1. Connect wall tie to upright using standard coupler, inserting the wall tie into the ring screw.
2. Connect second wall tie to first wall tie with standard coupler, inserting the wall tie into the ring screw.
3. Alternatively: connect both wall ties to the upright.

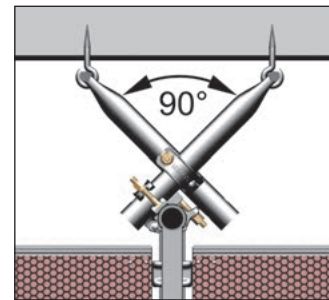


Fig. 55: V-shape wall tie

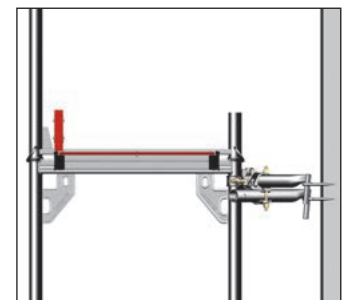


Fig. 56: V-shape wall tie side view

If inside and outside brackets are used, the wall tie can be fastened with 2 corner plate couplers.

Caution: Corner plate couplers may only be used at the top scaffolding level (Fig. 53 and 54).

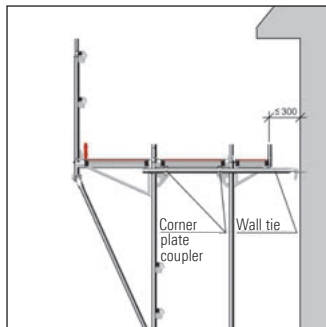


Fig. 53: Wall tie with corner plate coupler

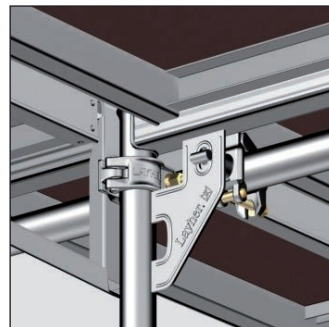


Fig. 54: Detail of corner plate coupler

ETICS-tie

Façades are, in response to more stringent requirements of the energy-saving regulations EnEV 2007, increasingly being lined with thermal insulation compound systems. Scaffolding thus has to be assembled with a greater clearance from the wall. To safeguard it against forces acting parallel to the façade, long ring screws are unsuitable due to their shank length. The Layher ETICS-tie is, in terms of its structural strength, the ideal complement to ties using long ring screws.

The Layher ETICS-tie permits concentrated introduction of high parallel loads. It offers the possibility of connecting a V-shape tie and it can, given a suitable anchoring surface and the maximum wall clearance, absorb a horizontal force of up to 5.0 kN per tie. Matching the regular version, in most cases it is only needed in every 4th to 5th bay. The tension and compression forces of the anchoring points between them are still transferred by long ring screws.

A detailed description can be found in the instructions for assembly and use of the "Layher ETICS-tie".

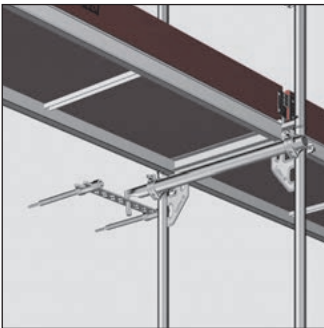


Fig. 57: Anchoring using the ETICS-tie

Anchoring on vertical supports

Anchoring on steel supports is possible using clamping couplers.

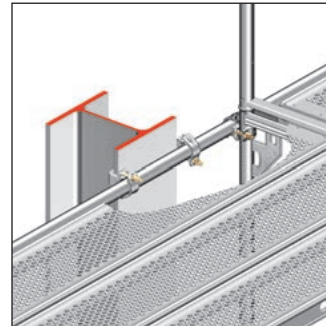
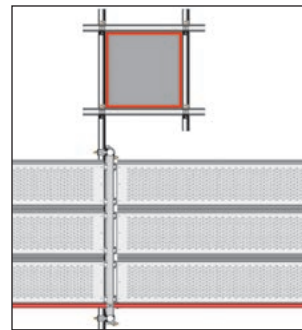


Fig. 58: Anchoring on vertical supports

1. Attach clamping couplers lightly to the scaffolding tube, then slide them up to the flange of the support.
2. Couplers must firmly enclose the flange.
3. Tighten the couplers.



Anchoring on concrete supports or jacketed supports is possible with a tube/coupler construction. Tighten all couplers.

Fig. 59: Anchoring on concrete supports

Anchoring on horizontal beams

Anchoring on horizontal beams is possible with a tube/coupler construction as shown here, and also using clamping couplers in the case of steel beams in particular. The assembly steps match the assembly on supports.

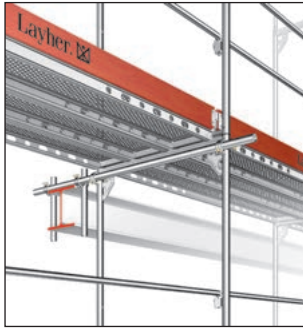


Fig. 60: Anchoring on horizontal beams

1. Attach wall tie tube to the upright tubes using standard couplers.
2. Run the wall tie tube past the beam.
3. Attach vertical tubes to the wall tie tube in front of and behind the beam using standard couplers, and in this way create a connection resistant to tension and compression.

Anchoring configuration

Three typical anchoring configurations are shown here as examples. Selection of the final anchoring configuration also depends on the bay width, the strain on the scaffolding from live loads and wind loads, and on the design height of the scaffolding.

Caution: Anchoring is particularly important if the scaffolding is covered with nets or tarpaulins. Subsequent covering requires additional anchoring.

As the load on the scaffolding increases too, e.g. from brackets, protective roofs or brick guard levels, the anchoring configuration must become denser in order to pass the forces safely into the anchoring surface. The denser the anchoring configuration, the lower the forces on the individual wall ties.

Anchoring configuration, staggered by 8 m

Anchor the assembly frames at the scaffolding end at every 4 m. Anchor inner frames as shown in Fig. 61. Vertical anchor spacing 8 m. In adjacent axes, stagger the configuration by 4 m in the vertical.

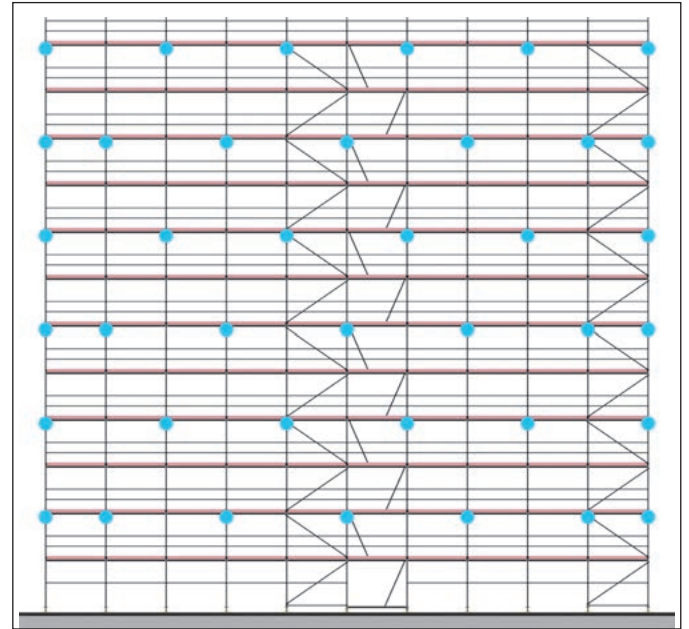


Fig. 61: Anchoring configuration

Anchoring configuration 4 m

Anchor each standard axis every 4 m in the vertical.

Anchoring configuration 2 m

Anchor each standard axis every 2 m in the vertical. Dense anchoring configuration for high wind loads (e.g. tarpaulin covering).

7. SCAFFOLDING ACCESSES

The inside ladder (standard solution) with access decks or the external platform stairway are available as scaffolding accesses.

Scaffolding accesses must be attached/installed continuously as each scaffolding level is built.

Caution: When assembling external access bays, there may be a risk of falls. Perform the scaffolding construction work in such a way that the risk of falls is ruled out or minimized.

Ladder access



Fig. 62: Ladder accesses

Internal:

The access hatches should be arranged offset. The hatches must be kept closed at all times unless actually being used.

The inside ladder access with hatch-type decks is also possible as an external access bay.

Caution: The external access bay must be connected to the main scaffolding every 4 m. Install diagonal brace on the outside of the external access bay.

Install gap covers at the transitional area to the main scaffolding.

Assembly can also be performed similarly to that of an external stairway tower.

Stairway accesses

The stairway access must be positioned in front of the outer scaffolding level. Connect the stairway access to the main scaffolding at least every 4 m and if necessary fit additional SpeedyScaf wall ties or other wall ties. For detailed information on anchoring and bracing of the stairway accesses, please refer to the technical information!

Assembly sequence for the stairway access with U-distance couplers and gap deck, 0.19 m wide



Fig. 63: Platform stairway access



Fig. 64: Insertion of platform stairway

1. Position adjustable base plates with load-distributing bases in the standard configuration.
2. Fit a U-start ledger onto the adjustable base plates on the entry side.
3. Fit a frame onto the adjustable base plates on the exit side and fasten them to the main scaffolding using 2 U-distance couplers.
4. Suspend the first platform stairway in the frame and in the U-start ledger.
5. Fit a second frame onto the U-start ledger and fasten them to the main scaffolding also using 2 U-distance couplers.
6. Suspend a "gap deck" (0.19 m wide deck) into the channel of the U-distance coupler and of the frame of the main scaffolding.
7. Fit a third frame onto the frame of the exit side.
8. Fit the stairway guardrail, continuous stairway guardrail and end guardrail.
9. Connect the stairway access to the main scaffolding with U-distance couplers in the large recesses of the corner plate (every 2 m).
10. Complete the anchoring of the scaffolding.

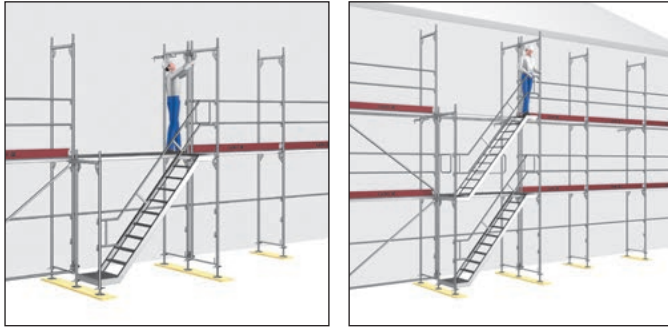


Fig. 65: Connection to main scaffolding Fig. 66: Installation of stairway guardrail

Fastening can also be achieved as shown in Fig. 67 with scaffolding tubes and double couplers. Alternatively, the stairway access can be designed as a stairway tower with platform stairways assembled in opposite directions and with external and internal guardrails.

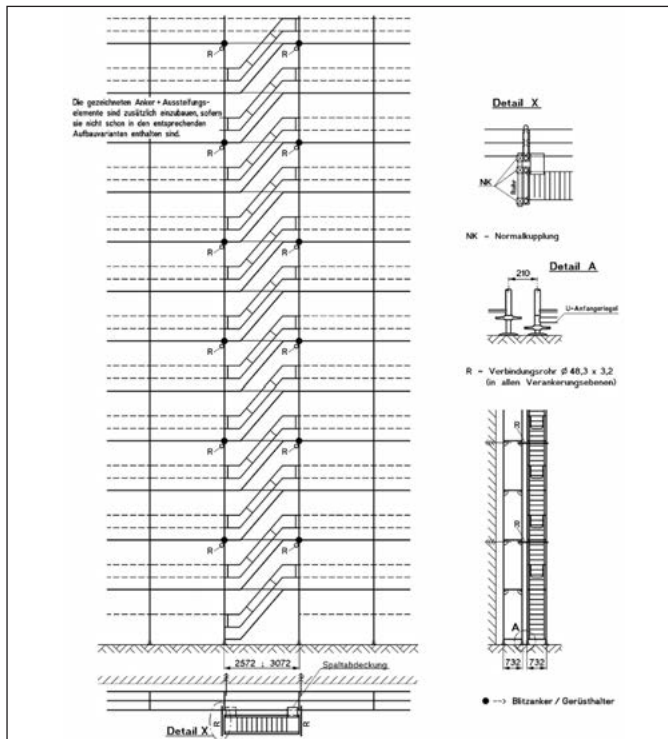


Fig. 67: Anchoring of platform stairway access with scaffolding tubes

8. CORNER SOLUTIONS

Butt-joined scaffolding bays must be connected at corner areas by swivel couplers. These should be connected in the large holes of the corner plates. Fit a further swivel coupler in the base area. Mount connected standards only on one adjustable base plate. Ensure a suitable surface (see section 4 / p. 11). Complete the adjoining bay as described in section 5 / p. 13.

Outer corners

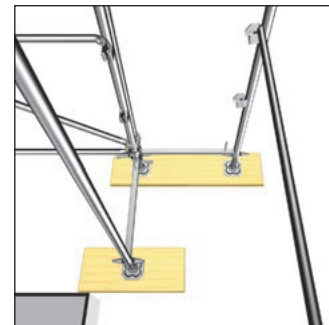


Fig. 68

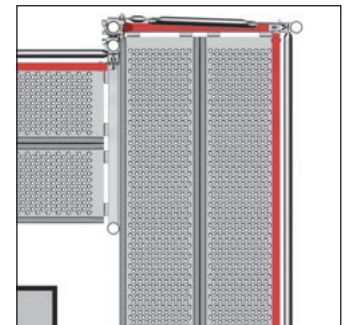


Fig. 69: View from above

Position the frames overlapping in order to obtain a transition as gap-free as possible.



Fig. 70

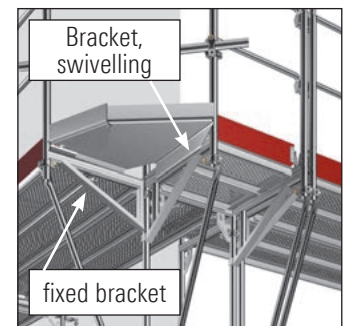


Fig. 71: Detailed view from below

Widening of the top level using swivelling and fixed brackets on an upright tube. No height offset of scaffolding decks.

Inner corners

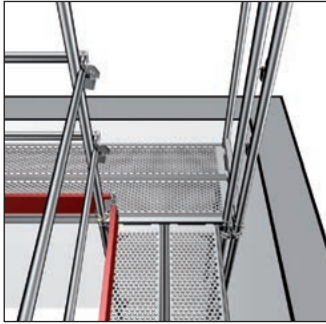


Fig. 72

Position the frames projecting. In the projecting bay, provide side protection using telescoping guardrail and a toe board of appropriate length.

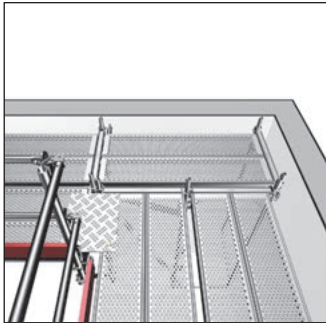


Fig. 73

Version with 0.73 m bracket on the outside. 1.57 m bay erected at the end permits a flat and covered transition. Install gap covers at the transition points!



Fig. 74

Lower view.

9. BRACKETS, 0.36 M AND 0.73 M

Bracket 0.36 m



Fig. 75

The 0.36 m brackets can be used on the inside at all scaffolding levels.

Bracket 0.73 m



Fig. 76

The 0.73 m bracket is used for widening the work area on the outside of the scaffolding at the top scaffolding level.

Caution: It must be supported by a section brace on the scaffolding level underneath it.

Bracket 0.73 m reinforced



Fig. 77

The support can be dispensed with for the 0.73 m reinforced bracket.

Caution: This applies only for the SpeedyScaf System 70 steel, when used up to the max. load class 3 (200 kg/m²).

Fitting the brackets

Brackets 0.73 m



Fig. 78

1. Connect brackets in the corner plate area (Fig. 78).



Fig. 79

2. Swing bracket inwards.
3. Bolt section brace to the bracket (Fig. 79).



Fig. 80

4. Swing the bracket with the section brace outwards.
5. Bolt section brace to the bottom of the frame (Fig. 80).
6. Tighten the coupler.



Fig. 81

The 0.73 m reinforced bracket is fitted to the frame 70 steel without section brace (Figs. 81 and 84).



Fig. 82

Fit the scaffolding decks from the secured level (Fig. 82).

0.36 m brackets

The 0.36 m brackets are fitted in similar fashion from the secured level. It must be ensured here that the decks are laid so that the claw is underneath the lift-off preventer bar.

7. Fit the guardrail supports and the end guardrail supports.
8. Install the three-piece side protection.



Fig. 83



Fig. 84

The scaffolding decks in the main scaffolding must be secured against lift-off. (Fig. 85).

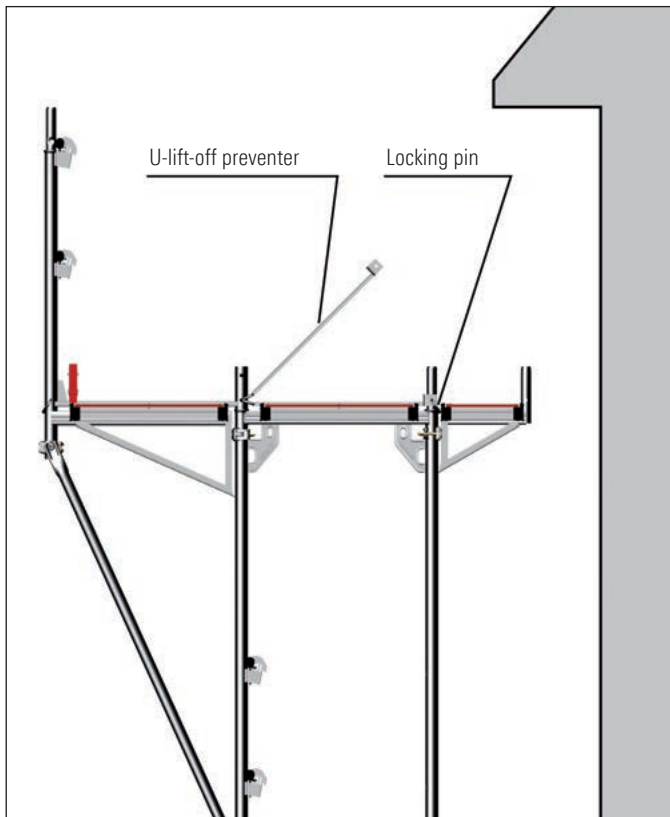


Fig. 85

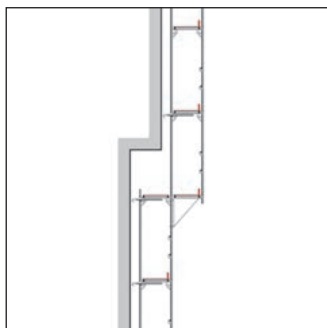


Fig. 86

The maximum assembly heights on brackets (Fig. 86) and the appropriate wall tie forces are given in our technical information.

Caution: The stability must in any event be verified.

Gap-free arrangement of decks

Arrange scaffolding decks as shown in Figs. 87 – 92, otherwise install gap cover between the main deck and bracket deck.

Bracket 0.73 m

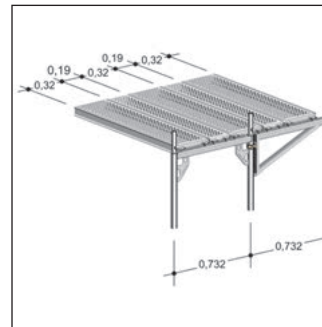


Fig. 87

Bracket 0.36 m

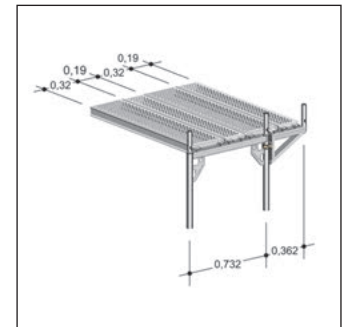


Fig. 88

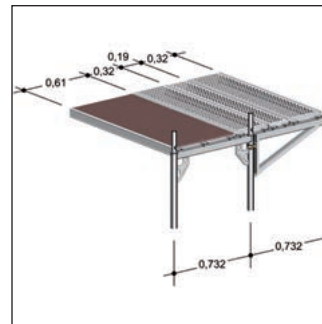


Fig. 89

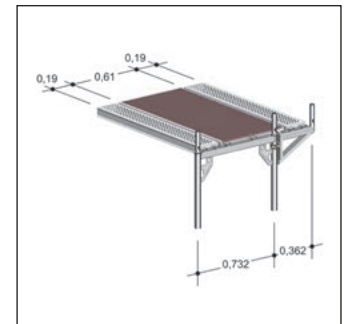


Fig. 90

Bracket 0.73 m

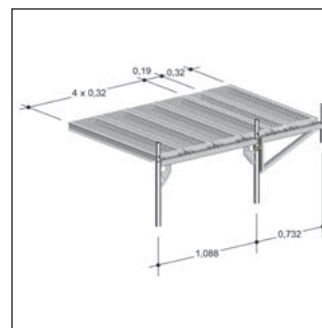


Fig. 91

Bracket 0.36 m

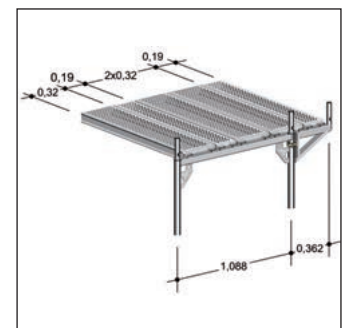


Fig. 92

10. ALUMINIUM BRIDGING LEDGERS WITH SPIGOTS



Fig. 93: U-bridging ledger



Fig. 94: Spigot

Aluminium bridging ledgers permit a reduction in the bay width by 0.5 or 1.0 m. They are fitted longitudinally onto the spigots of the assembly frames. Two loose spigots (1775.000) must be fitted onto the aluminium bridging ledger and secured with the appropriate pins.

Caution: The load-bearing capacity of the aluminium bridging ledger must not be exceeded. The stability must in any event be verified.



Fig. 95: Bay length reduction

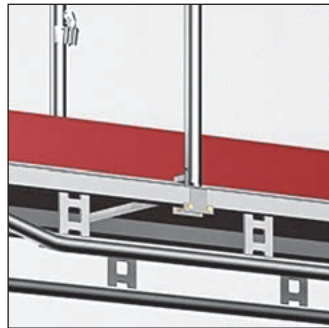


Fig. 96: Detail of U-bridging ledger with spigot

11. BRIDGING

For bridging wide spans, 4.14 m long scaffolding decks or lattice beams can be used. When the 4.14 m stalu deck is used, two connecting clamps must be installed in the middle of the deck.

Lattice beam bridging



Fig. 97: Lattice beam bridging

Caution: Anchoring, strengthening and stabilizing of the lattice beams is described in the appropriate approvals and structural strength verifications.



Fig. 98

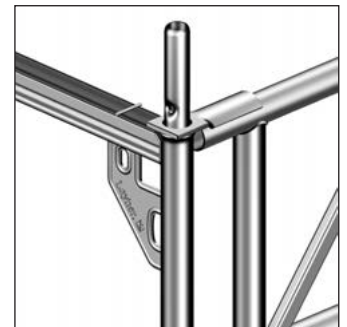


Fig. 99

Installing the lattice beams – mounting the end plates on the spigots of the assembly frames.

Fasten the bottom chord to the frame standard using lattice beam couplers.

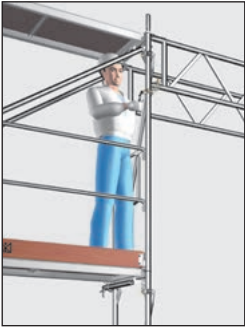


Fig. 100

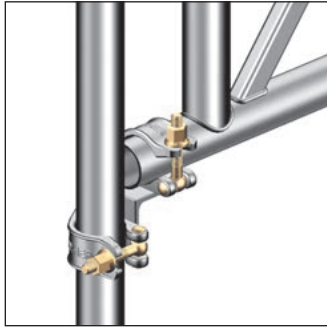


Fig. 101

Fit the U-ledge for lattice beam for receiving the scaffolding decks in the spigots.



Fig. 102

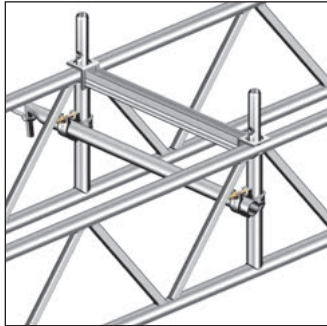


Fig. 103

For safe access, temporary decks must be laid between the lattice beams, e.g. O-steel decks 0.73 m transverse (Fig. 102).



Fig. 104

Install decks, fit assembly frames and then install the side protection.

12. GANTRY FRAMES

The gantry frame is used for constructing pedestrian walkways underneath scaffolding and providing a simple safety system.

The gantry frames must be braced in pairs on the inside and outside using horizontal struts and diagonal braces, and aligned perpendicular. Each frame section must be anchored at 4 m height. Ascent is via access decks plus storey ladders.

Anchoring and bracings must be fitted in accordance with the standard version or with structural strength requirements.



Fig. 105: Installation of gantry frames

13. REDUCER

With the reducer, the scaffolding width can be reduced from 1.09 m to 0.73 m. Place the reducer on the 1.09 m frame, lay decks in the U-section and continue construction with 0.73 m SpeedyScaf equipment.

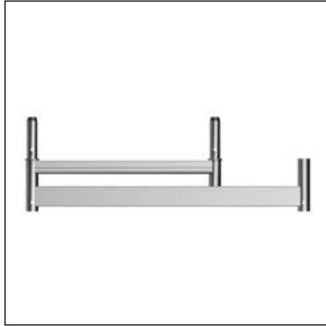


Fig. 106: Reducer



Fig. 107: Use of reducer

14. FRAME FOR BALUSTRADE

The frame for balustrade is used at wall or roof projections. Above it, a maximum of four further levels can be constructed.

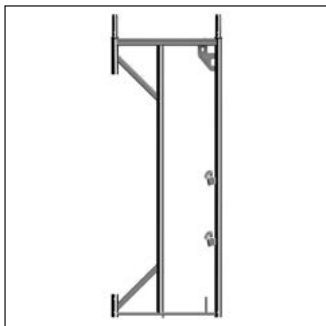


Fig. 108: Frame for balustrade

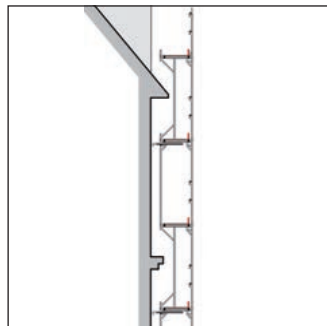


Fig. 109: Use of frame for balustrade

15. PROTECTIVE ROOFS

Protective roofs provide protection from falling objects and may only be used on the outside of a scaffolding at the second scaffolding level (H = 4 m).

Caution: Every connector must be anchored to the façade at the height of the protective roof and at the level directly underneath it.

The protective roof must be separated from the working area of the scaffolding using guardrails after assembly. Lay the scaffolding decks tightly up to the building structure.



Fig. 110

Before fitting a protective roof, the scaffolding must be completed at least up to the second scaffolding level. Two people are needed to fit the protective roof. One stands on the ground, the other on the first scaffolding level.

1. Keep the fan support folded up while connecting the lower half-coupler in the corner plate area of the lower frame.



Fig. 111

2. Swing out the fan support and connect the half-coupler to the corner plate of the upper frame.
3. Build third scaffolding level.



Fig. 112

4. Lay scaffolding decks from the second scaffolding level. Fit the outer scaffolding deck of the horizontal deck surface in the U-section by sliding it out. Lay the inner deck so that the suspension claw is under the lift-off preventer bar.



Fig. 113

5. Fit the scaffolding decks in the inclined section.
6. Walk onto the main scaffolding.
7. Complete the side protection for the scaffolding.

16. WEATHER PROTECTION AT TOP LEVEL

Weather protection at the top scaffolding level is assured by weather protection supports plus the associated tarpaulins. At the top level, all frames to which the weather protection support is attached must be anchored to the building for resistance to tension and compression.

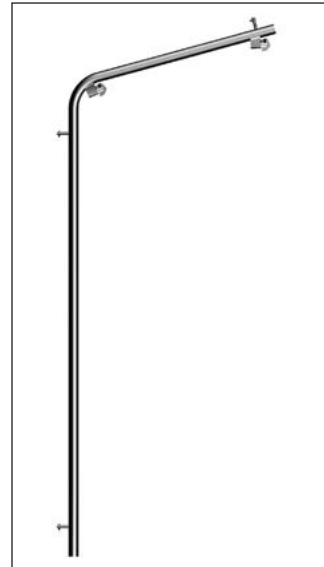


Fig. 114: Weather protection support

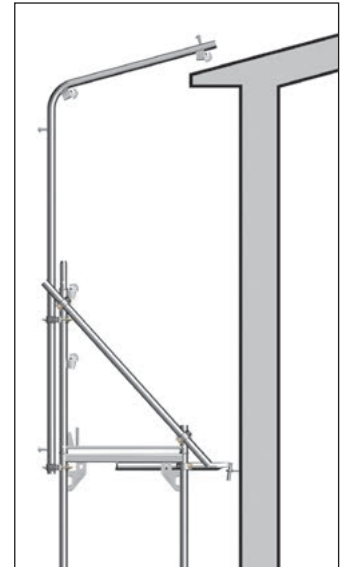


Fig. 115: Installation of weather protection support

The weather protection support must be attached to the guardrail support and to the frame using two swivel couplers, and additionally braced as shown in the sketch using a steel scaffolding tube (length = 1.5 m).

Weather protection tarpaulins are suspended from the tilting pins, and two wedge housings in the roof area are used for bracing by means of guardrails.

17. STANDARD BRICK GUARDS

Standard brick guards safeguard personnel during work on roofs with a slope of more than 20°. Please refer to local regulations for their design (applicable in Germany is DIN 4420-1:2004-03).

Brick guard

1. Fit brick guard supports onto the topmost frames or brackets and secure them with locking pins.
Brick guards produced before June 2012 have to be secured with bolts and safety clips at the wall side.
2. Suspend the brick guard and wedge it in place.
3. Fit the toe board.
4. Close the end side with a frame.



Fig. 116

To do so, fit the brick guard at the top into the U-section of the frame. Fit the guardrail coupler to the frame for fastening the upper brick guard at the bottom.

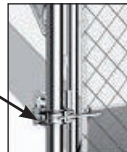


Fig. 117



Fig. 118

Protection nets

1. Fasten protection nets at the scaffolding deck level and 2 m above it to a scaffolding tube or SpeedyScaf guardrail.
2. If SpeedyScaf guardrails are used, first insert them at deck level into the U-sections of the frames, fit and secure the brick guard supports, and then install the handrail and toe boards. The upper SpeedyScaf guardrails are fastened to the wedge housings.
3. Scaffolding tubes must be connected using standard couplers.



Fig. 119

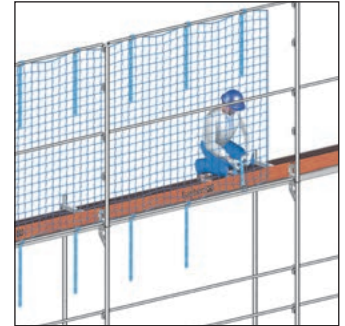


Fig. 120

Fastening the protection nets

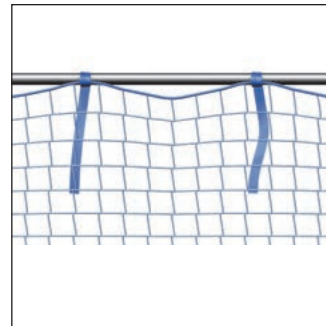


Fig. 121

If SpeedyScaf guardrails are used, protection nets can only be attached with quick strap fasteners!

Attach the protection nets using quick strap fasteners every 750 mm to the guardrails or scaffolding tubes, or

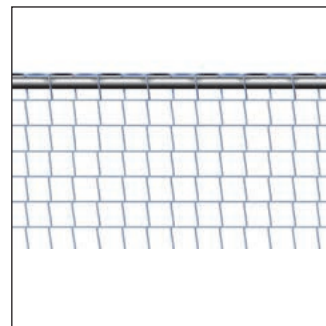
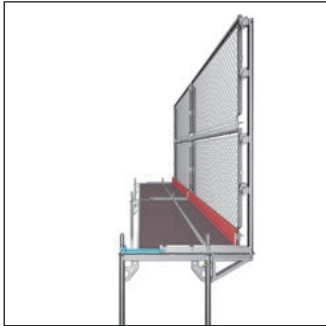


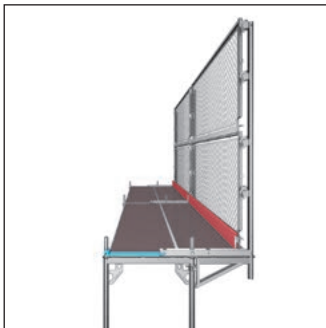
Fig. 122

thread scaffolding tubes through every mesh of the protection net without quick strap fasteners.



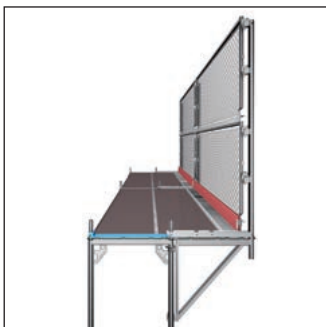
Variant with
bracket 0.36 m

Fig. 123



Variant with
bracket 0.50 m

Fig. 124



Variant with
bracket 0.73 m

Fig. 125

18. FREESTANDING SCAFFOLDING LEVELS

To cater for possible interim states during the construction of buildings, a maximum of 2 scaffolding levels can be assembled without anchoring.

Caution: Standard joints in the last three levels must be secured with locking pins.

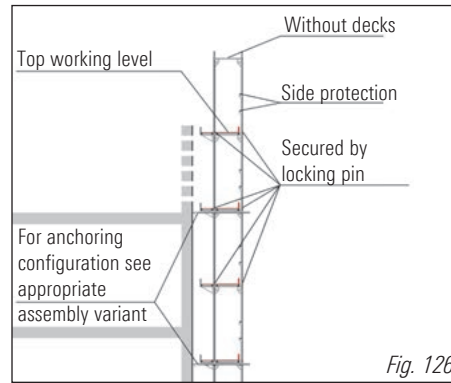


Fig. 126

19. SAFEGUARDING AGAINST WIND FORCES

To safeguard against wind uplift, in buildings with roof slopes of $< 20^\circ$ as in Fig. 127 and in buildings with internal corners as in Fig. 128, the top scaffolding levels as far as the next anchored level and below the top anchored level must be pull-resistant, e.g. secured by locking pins.

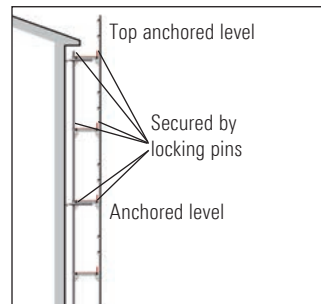


Fig. 127: Building with
gentle roof slope

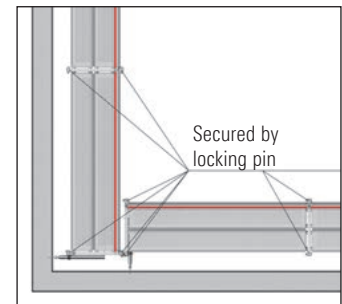


Fig. 128: Inner corners

20. COVERINGS

Caution: Anchoring is particularly important when nets and tarpaulins are used.

Covering with nets

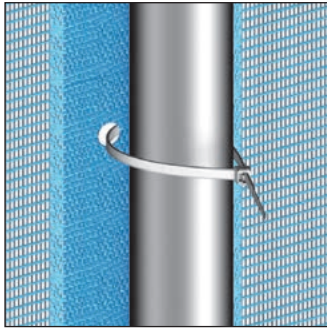


Fig. 129: Fastening with nets

If covering with tarpaulins is intended, Layher Keder tarpaulins must be used. For assembly of the Keder tarpaulins, see the instructions for assembly and use of the Layher Keder tarpaulin system. Alternatively, Layher scaffolding tarpaulins with eyelet bands spaced according to the bay length can be used. Attachment is by Layher T-ties on the outer standard of the frame and spaced no more than 20 cm apart.

Covering with tarpaulins

If covering with nets is intended, Layher scaffolding nets must be used. These have the necessary permeability for air and the right spacing of the eyelet bands. Attachment is by Layher disposable ties on the outer standard of the frame and spaced no more than 20 cm apart.



Fig. 130: Example for assembly of Keder tarpaulin system

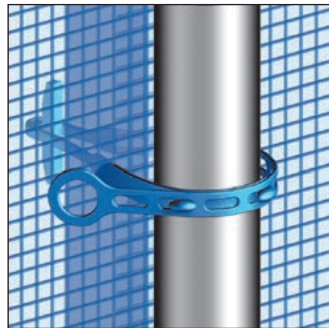


Fig. 131: Fastening of scaffolding tarpaulins

21. ROLLING TOWERS

To ensure rolling towers are safe from tipping over, it may be necessary to widen or ballast them.

Stability must be verified in accordance with DIN 4420 Part 3.

Widening by additional assembly frames

The lower assembly frames are connected with swivel couplers.

Widening by shear-proof connection of two rolling towers

The two sections must be connected by tubes and couplers, lattice beams, or a combination of the two.



Fig. 132: One-sided or two-sided widening with assembly frames and swivel couplers



Fig. 133: Two scaffolding sections connected by lattice beams, tubes and couplers

The following directions must also be heeded for rolling towers:

- Only work on one working level.
- Do not attach lifting gear.
- Only set up and move the tower on horizontal, flat and sufficiently strong ground.
- Move only in the longitudinal direction or diagonally at the corners.
- No personnel or loose objects may be on the tower while it is being moved.
- After movement, lock the wheels by pressing down the brake lever.
- If rolling towers are connected to one another, their structural strength must be verified.
- For larger rolling towers, the wheels must be set in the travel direction to prevent damage to them.

22. USE

- The scaffolding may be used as work scaffolding and protective scaffolding according to the stated scaffolding group.
- The sum of service weights on the individual deck surfaces must not exceed the surface-based service weight of the respective load class (Table 3 EN 12811-1:2003 (D) within one scaffolding bay.

WARNING

Exceeding the permissible service weight can lead to collapse of the scaffolding.

- Every contractor using scaffolding is responsible for assuring that it is used for the authorized purpose and that it is maintained in an operationally safe state.
- Workplaces on scaffolding may only be entered using safe accesses.
- Jumping on scaffolding or throwing objects onto it is not permissible!

- Depositing and storing materials and equipment on scaffolding used as brick guards and protective roofs is not permissible! Material storage can increase the risk to injury to personnel who trip or fall.
- In Germany, the legal regulations set forth in the German Ordinance on Industrial Safety and Health (BetrSichV) dated 27 September 2002 must be complied with when the scaffolding is used.

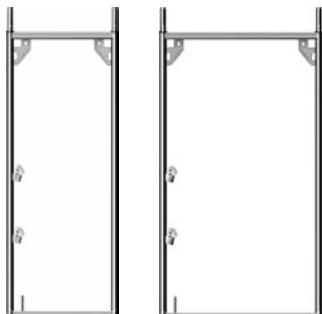
23. DISMANTLING THE SCAFFOLDING

- To dismantle scaffolding, the sequence of working steps described for assembly must be reversed.
- Anchoring must not be dismantled until the scaffolding levels above it have been completely dismantled.
- Components of which the connectors have been released must be removed immediately.
- Do not store scaffolding components on walkways, to prevent risk of tripping. Do not throw removed scaffolding components off the scaffolding. Store scaffolding components correctly.

24. COMPONENTS OF THE SYSTEM

Assembly frames

**Euro assembly frame, steel,
0.73 m,**
Ref. No. 1700.200



**Euro assembly frame, aluminium,
Ref. No. 1714.200**

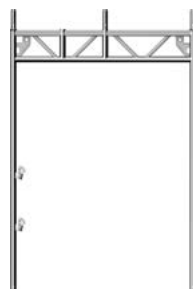
**Euro assembly frame LW, 1.09 m,
Ref. No. 1780.200**

**Euro assembly frame, steel,
1.0 x 0.73 m,
Ref. No. 1700.101**



**Euro assembly frame LW,
1.0 x 1.09 m,
Ref. No. 1780.100**

**Gantry frame LW,
Ref. No. 1779.150**



**Euro assembly frame, 2.0 x 0.36 m,
Ref. No. 1717.200**

**Euro assembly frame, 2.0 m
for balustrade,
Ref. No. 1718.200**



Scaffolding base plates

**Base plate 60,
Ref. No. 4001.060, 0.6 m**

**Base plate 80, reinforced,
Ref. No. 4002.080, 0.8 m**

**Swivelling base plate 60,
reinforced,
Ref. No. 4003.000, 0.6 m**



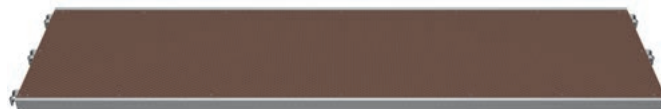
Scaffolding decks



U-steel deck, T4, 0.32 m, Ref. No. 3812.xxx, 0.73 – 4.14 m



U-steel deck, 0.19 m, Ref. No. 3801.xxx, 1.57 – 3.07 m



U-robust deck, 0.61 m, Ref. No. 3835.xxx, 0.73 – 3.07 m



U-robust deck, 0.32 m, Ref. No. 3836.xxx, 1.57 – 3.07 m



U-stalu deck T9, 0.61 m wide, Ref. No. 3867.xxx, 1.57 – 3.07 m



U-stalu deck T9, 0.32 m wide, Ref. No. 3856.xxx, 1.57 – 3.07 m

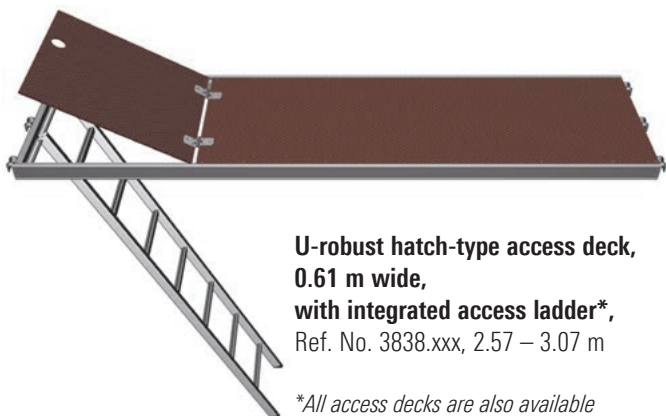
U-stalu deck T9, 0.19 m wide, Ref. No. 3857.xxx, 1.57 – 3.07 m



U-alu deck, 0.32 m wide, Ref. No. 3803.xxx, 1.57 – 3.07 m

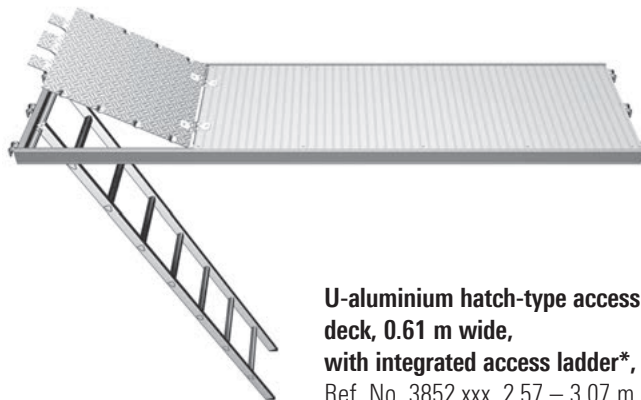


U-solid wood deck, 0.32 m wide, Ref. No. 3818.xxx, 1.57 – 3.07 m



**U-robust hatch-type access deck,
0.61 m wide,
with integrated access ladder*,**
Ref. No. 3838.xxx, 2.57 – 3.07 m

**All access decks are also available
without integrated ladder*



**U-aluminium hatch-type access
deck, 0.61 m wide,
with integrated access ladder*,**
Ref. No. 3852.xxx, 2.57 – 3.07 m

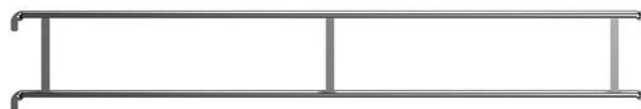
Access ladder, 7-rung,
Ref. No. 4005.007, 2.15 m



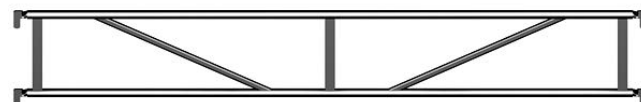
Side protection



Single guardrail, steel, Ref. No. 1724.xxx / 1725.xxx, 0.73 – 3.07 m



Double guardrail, steel, Ref. No. 1728.xxx, 1.57 m – 4.14 m



Double guardrail, aluminium, Ref. No. 1732.xxx, 1.57 m – 3.07 m



Single end guardrail 0.73 m and 1.09 m, Ref. No. 1725.xxx



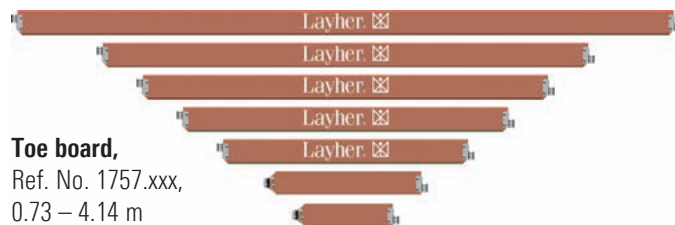
Double end guardrail 0.73 m and 1.09 m, Ref. No. 1728.xxx

Side protection

Euro intermediate frame,
0.73 m and 1.09 m,
in steel and aluminium,
Ref. No. 1719.xxx



Euro top end frame,
0.73 m and 1.09 m,
in steel and aluminium,
Ref. No. 1722.xxx



Toe board,
Ref. No. 1757.xxx,
0.73 – 4.14 m

Diagonal bracing



Diagonal brace with wedge half-coupler,
Ref. No. 1736.xxx, 2.8 – 3.6 m



Diagonal brace with 2 half-couplers,
Ref. No. 1736.157, 2.2 m



Base ledger, Ref. No. 1727.xxx, 2.07 – 3.07 m



Section brace, Ref. No. 1740.xxx and 1741.xxx, 1.8 and 1.9 m

Anchoring



SpeedyScaf wall tie, Ref. No. 1755.069, 0.69 m



Wall tie, Ref. No. 1754.xxx, 0.38 – 1.75 m



ETICS-tie,
Ref. No. 4000.600
and Ref. No. 4000.800

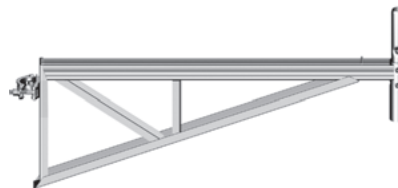
Console brackets



**Plug-in console bracket
0.22 m,**
Ref. No. 1746.022



**Plug-in console bracket
0.36 m,**
Ref. No. 1746.036



**Console bracket
1.09 m,**
Ref. No. 1745.xxx



Console bracket 0.22 m,
Ref. No. 1744.xxx



Console bracket 0.36 m,
Ref. No. 1745.xxx



Console bracket 0.5 m,
Ref. No. 1744.xxx



Console bracket 0.73 m,
Ref. No. 1744.xxx



**Console bracket 0.73 m,
swivelling,** Ref. No. 1744.073

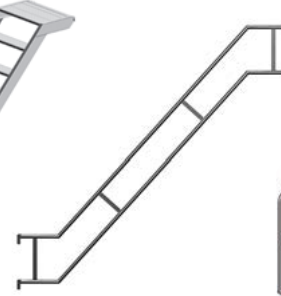


**Console bracket 0.73 m,
reinforced,** Ref. No. 1745.xxx

Stairway access



**Alu platform
stairway,**
Ref. No. 1753.xxx



**Stairway
guardrail,**
Ref. No. 1752.xxx



**Stairway internal
guardrail,**
Ref. No. 1752.007/008/012



U-distance coupler,
Ref. No. 1752.xxx

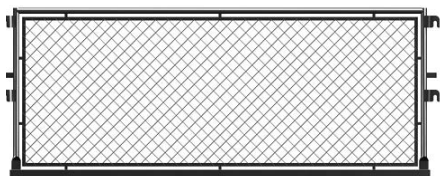


Stairwell guardrail,
Ref. No. 1752.xxx



Stairway guardrail post,
Ref. No. 1752.006

Standard brick guard, pedestrian protection



(above) **SpeedyScaf roof guard**,
Ref. No. 1749.xxx
(left) **SpeedyScaf roof guard support**,
Ref. No. 1748.xxx, 0.36 / 0.50 / 0.73 m
Ref. No. 1778.109, 1.09 m



Fan support,
Ref. No. 1773.019

Weather protection at the top level



Weather protection support,
Ref. No. 1746.000

Lattice beams



SpeedyScaf lattice beam LW, steel, Ref. No. 1781.xxx



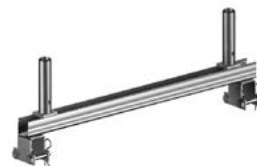
Lattice beam coupler,
Ref. No. 4720.xxx



U-ledger for lattice beam,
Ref. No. 4923.073



U-ledger for lattice beam, reinforced,
Ref. No. 4923.109



Intermediate transom for lattice beam,
Ref. No. 4924.073

Accessories



Intermediate transom, 0.73 m,
Ref. No. 1742.xxx



Intermediate transom, 1.09 m,
Ref. No. 1742.xxx



Aluminium bridging ledger, 2.57 and 3.07 m,
Ref. No. 1775.xxx



(above) **Reducer,** Ref. No. 4027.000

(left) **Spigot,** Ref. No. 1775.000

Advance guardrail system

Advance guardrail post,
Ref. No. 4031.001

Advance guardrail post Export,
Ref. No. 4031.002



Assembly guardrail,

Ref. No. 4031.207, 1.57 – 2.07 m

Ref. No. 4031.307, 2.57 – 3.07 m

End advance guardrail,

Ref. No. 4031.000





Layher® 

More Possibilities. The Scaffolding System.

Wilhelm Layher GmbH & Co. KG
Scaffolding Grandstands Ladders

Ochsenbacher Strasse 56
74363 Gueglingen-Eibensbach
Germany

P.O. Box 40
74361 Gueglingen-Eibensbach
Germany
Telephone +49 (0) 71 35 70-0
Telefax +49 (0) 71 35 70-265
E-Mail info@layher.com
www.layher.com

