PERI UP
Public Stairs

Instructions for Assembly and Use – Standard configuration – Version 1.2



PERI Ltd

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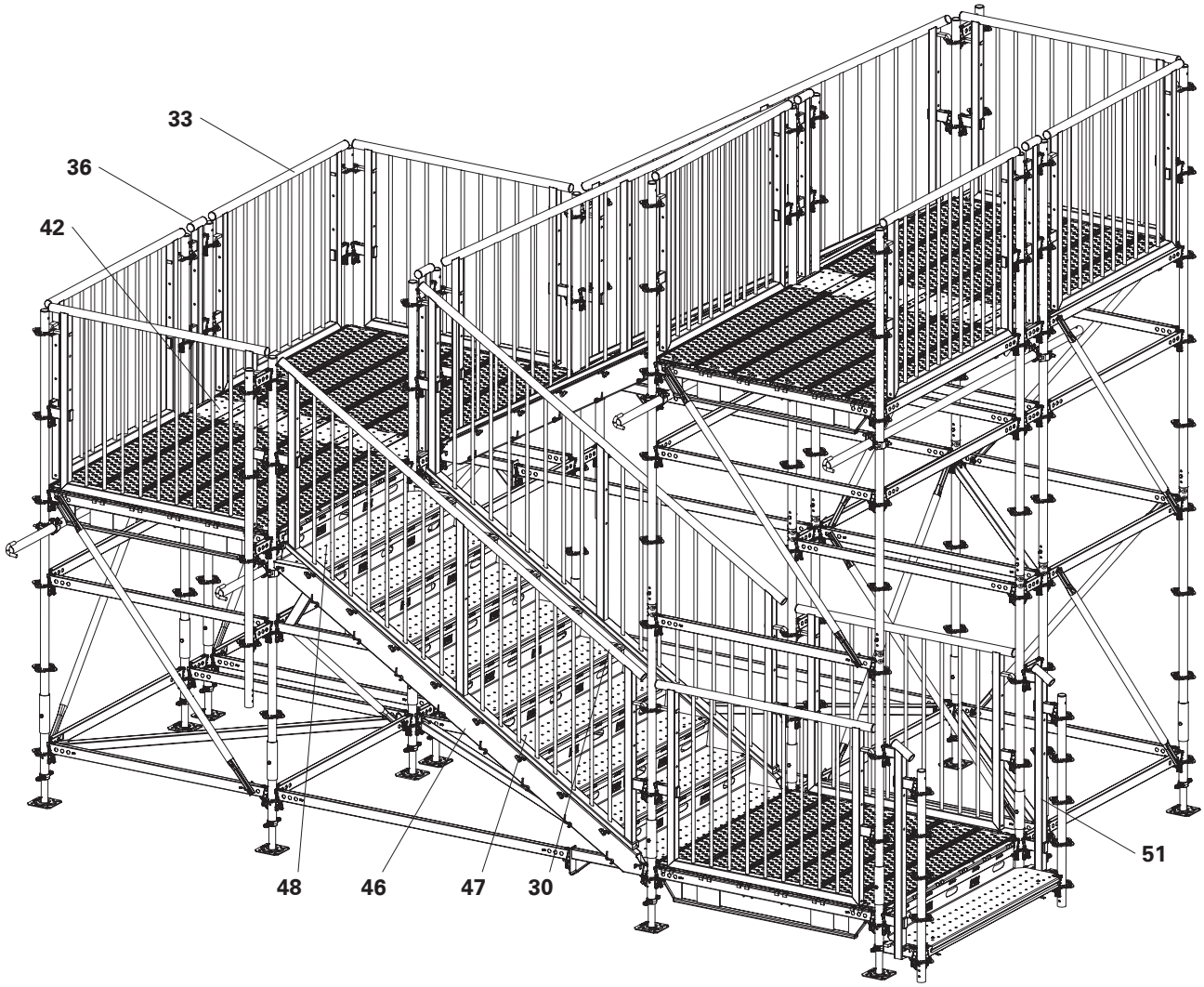
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Product Catalogue

Overview

Main components



No.	Component designation	Article no.
30	Guardrail PPG 250/150	138351
33	Guardrail PPG 150	138357
36	Guardrail PPG 25	138363
42	Gap Cover PDC 150	138447
46	Stair Stringer PAS 250/150	138592
47	Stair Tread PATS 150	138976
48	Stair Tread PATT 150, top	138978
51	Height Adjustment PAH 1	138400
53	Platform Beam PDB 150 (not shown)	138376

Overview

Key

Pictogram | Definition


Danger/Warning/Caution


Note


To be complied with


Load-bearing point


Visual inspection


Tip


Incorrect use


Safety helmet


Safety shoes


Safety gloves


Safety goggles


Personal protective equipment to prevent falling from a height (PPE)


Observe additional documentation

Arrows

Arrow representing an action

Arrow representing a reaction of an action*

Arrow representing forces

* If not identical to the action arrow.

Safety instruction categories
The safety instructions alert site personnel to the risks involved and provide information on how to avoid these risks. Safety instructions can be found at the beginning of the section or before instructions for action and are highlighted as follows:

Danger
This sign indicates an extremely hazardous situation that could result in death or serious, irreversible injury if the safety instructions are not followed.

Warning
This sign indicates a hazardous situation that could result in death or serious irreversible injury if the safety instructions are not followed.

Caution
This sign indicates a hazardous situation that could result in minor or moderate injury if the safety instructions are not followed.

Note
This sign indicates situations in which failure to observe the information can result in material damage.

Format of the safety instructions

Signal word
Type and source of hazard!
Consequences of non-compliance.
⇒ Preventative measures.

Dimensions
Dimensions are usually given in cm. Other measurement units, e.g. m, are shown in the illustrations.

Conventions
- Instructions are numbered with: 1. ....., 2. ....., 3. .....
- The result of an instruction is shown by: →
- Position numbers are clearly provided for the individual components and are given in the drawing, e.g. **1**, in the text in brackets, for example (**1**).
- Multiple position numbers, i.e. alternative components, are represented with a slash: e.g. **1/2**.

Notes on illustrations
The illustration on the front cover of these instructions is understood to be a system representation only. The assembly steps presented in these Instructions for Assembly and Use are shown in the form of examples with only one component size. They are valid for all component sizes contained in the standard configuration.

To facilitate understanding, illustrations are sometimes incomplete. The safety equipment that is not shown in these detailed descriptions must nevertheless be available.

Terminology
Components are not always named in full so that they are easier to read. All components deemed valid according to the program overview may be used.
Exceptions are specified.

Example:
– Horizontal ledger
corresponds to:
– Horizontal Ledger UH Plus
– Horizontal Ledger UH–2.

Target groups

Contractors
These Instructions for Assembly and Use are designed for contractors who either
- assemble, modify and dismantle PERI systems, or
- use them, e.g. for concreting, or
- allow them to be used for other operations, e.g. carpentry or electrical work.

The contractor's procedures for the control of temporary works must ensure that suitably competent persons are appointed to manage the planning and use of PERI formwork systems. The appointed person(s):
- must identify potential hazards during the planning phase,
- determines measures that provide protection against risks,
- creates a safety and health protection plan,
- coordinates the protective measures for the contractor and site personnel so that they do not endanger each other,
- monitors compliance with the protective measures.
- must be on site for all system operations,
- prepares and updates the plan for assembly, modification and dismantling,
- prepares and updates the plan for use of the system by the user,
- supervises the assembly, modification and dismantling work (supervisor).

Competent persons qualified to carry out inspections
Due to the specialist knowledge gained from professional training, professional experience and recent professional activity, the competent person qualified to carry out inspections has a reliable understanding of safety-related issues and can carry out inspections correctly. Depending on the complexity of the inspection to be undertaken, e.g. scope of testing, type of testing or the use of certain measuring devices, a range of specialist knowledge is necessary.

Qualified personnel
PERI systems may only be assembled, modified or dismantled by personnel who are suitably qualified to do so. Qualified personnel must have completed a course of training* in the work to be performed, covering the following points at least:
- Explanation of the plan for the assembly, modification or dismantling of the system in an understandable form and language.
- Description of the measures for safely assembling, modifying or dismantling the system.
- Naming of the preventive measures to be taken to avoid the risk of persons and objects falling.
- Designation of the safety precautions in the event of changing weather conditions that could adversely affect the safety of the system, as well as the personnel concerned.
- Details regarding permissible loads.
- Description of all other risks and dangers associated with assembly, modification or dismantling operations.

- **These Instructions for Assembly and Use must be available at the system's place of use.**
- **In other countries, ensure that the relevant national guidelines and regulations in the respective current version are complied with!**

* Instructions are given by the contractor themselves or a competent person selected by them.

Product description

Regular assembly
These Instructions for Assembly and Use describe the standard assembly and the intended use of PERI UP Public Stairs.

The proven standard construction includes the tower construction in
- stair widths of 1.5 and 2.0 m
- With a surface load of 5 kN/m² and a
  – stair width of 1.5 m, the maximum permissible assembly height is: 15 m

Structural arrangements:
All structural arrangements are geometrically possible, but must be verified individually.
- Single-run flights of stairs in widths of 1.0 to 2.5 m.
- Multi-run flight of stairs in any combination of the above element widths.
- Stair towers 1.0 to 2.5 m wide.
- Angled stairs 1.0 to 2.5 m wide.
- Height compensations cantilevered upwards and downwards
  – 3-tier (with facing formwork)
  – 1-tier, max. 2 x in a row.

Technical data
System width / stair widths in
100 cm, 150 cm, 200 cm and 250 cm
Pitch of the steps: s = 16.7 cm
Floor height per flight of stairs 150 cm

Environmental conditions
- Use under normal, typical construction site environmental conditions (e.g. plaster, concrete, cleaning agents, paints & varnishes, etc.)
- Operating temperature
  -20 °C to + 60 °C,
- The service life will be reduced if the system is used near the sea, in salt water, in the desert or within or near chemical plants.
- The use of road salt or grit in conjunction with aluminium / steel / leads to a significant reduction in service life.

Wind loads according to EN 1991-1-4
Simplified wind speed pressures according to Table NA.B.3 for wind zone 2, coast and islands of the Baltic Sea were taken into account in the structural design of the standard configurations.

For service lives of up to 2 years, the wind load may be reduced by a service life factor of 0.7. This results in the following height-dependent wind speed pressures:
Up to 9 m q_p = 0.85*0.7 = 0.60 kN/m²
Up to 12 m q_p = 0.89*0.7 = 0.62 kN/m²
Up to 15 m q_p = 0.94*0.7 = 0.66 kN/m²

Wind acting on increased surface area due to icing or increased dead loads due to snow and ice are not considered.

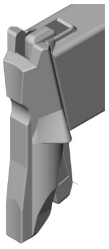
Dynamic loads
When carrying out the structural design of the individual components, a horizontal equivalent load of 10% of the vertical live loads was taken into account. These must be taken into account in the system calculation if there is no wind load.

Intended use
Stairs for public areas, for example as:
- Escape stairs,
- Additional escape route
- Temporary entry/exit
- Construction site access

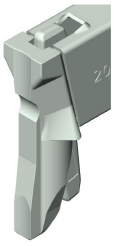
PERI products are intended exclusively for commercial assembly by professionally qualified users.

Foreseeable misuse
- Uses that exceed the specifications at point "Intended Use" are deemed to be inappropriate.
- Exceeding the permissible load-bearing capacity & load limits
- Deviating from the assembly sequence set out in these Instructions for Assembly and Use
- Using the components for something other than the PERI UP FLEX system

Component Variants
- The standard configurations are not valid for the use of Horizontal Ledgers UH. They require a seperate static analysis.



Ledger UH



Ledger UH-2
Ledger UH Plus

- Ledger UH Plus may be used in substitution for Ledger UH-2.
- Standards UVR may be used in substitution for UVR-2.

Standards and regulations

Germany
- DIN 18065 – Building stairs – Terms, measurement rules, main dimensions
- DIN 18040-1 – Barrier-free construction – Planning principles – Part 1: Publicly accessible buildings
- German Model Ordinance Governing Places of Assembly (MVStättVO)
- Model Building Code – (MBO)
- Technical regulations for workplaces
- ASR A1.8 – Traffic routes
- ASR A2.1 – Protection against falling and falling objects, entering danger zones
- ASR A2.3 – Escape and rescue routes, escape and rescue plan
- Relevant DGUV rules and regulations
- RIL 813.0202 – Platform access – Load assumptions

Europe
- DIN EN 12810-1 – Facade scaffold made of prefabricated components – Product specifications
- DIN EN 12811-1 – Temporary structures for buildings – Working scaffolds
- DIN EN 16165 – Determining the slip resistance of floors – Determination method
- DIN EN 13200-1, -3, -6, -7 – Spectator facilities
- Guide to Safety at Sports Grounds
- Basis for UEFA, FIFA, IOC…
- DIN EN 1991-1-1 – Eurocode 1: Effects on supporting structures – Part 1-1: General effects on structures – Weights, dead loads and live loads
- DIN EN 1991-1-4 – Eurocode 1: Effects on supporting structures – Part 1-4: General effects – Wind loads
- DIN EN 13782 – Temporary structures – Tents – Safety
- DIN EN 13814-1 – Safety of amusement rides and amusement facilities – Part 1: Design, structural design and manufacture
- DIN EN 17210 – Accessibility and usability of the built environment
- BS 5395-1 – Stairs, ladders and walkways
- BS 5973 – Access and working scaffolds and special scaffold structures in steel (withdrawn)
- NF P 93 522 – Construction site facilities – Construction site stairs for access and evacuation of personnel – Design loads
- SIA 358 – Guardrails and parapets
- SIA 500 – Obstacle-free buildings (under review)

International
- International Building Code (IBC)
- SANS 1169 – Temporary Stands

Instructions for Use

Use in a way not intended, deviating from the standard configuration or the intended use according to the Instructions for Assembly and Use, represents an application with a potential safety risk, e.g. risk of falling.

Deviations from the standard configuration must be verified for the application by means of separate strength and stability calculations and explicitly reflected in the assembly instructions.

All components listed in the program overview may be used for assembly. Other components are not permitted. Exceptions are named or must be planned and verified on a project-specific basis.

The use of other products and spare parts is not allowed.

Changes to PERI components are not permitted.

The system described in these Instructions for Assembly and Use may contain patent-protected components.

Cleaning and maintenance instructions

Cleaning



The contractor must ensure that the personal protective equipment required for cleaning, maintenance and repair work such as
- Safety helmet,
- Safety shoes,
- Safety gloves,
- Safety goggles,

is available and used as intended.

Cleaning tools must be adapted to the respective surfaces of the components so that they are not damaged.

Keep work platforms and thoroughfares free of oil and grease.
Slip hazard.

Never clean powder-coated components, e.g. elements and accessories, with a steel brush or hard metal scraper; this ensures that the powder coating remains intact.

Mechanical components or gear mechanisms, must be cleaned of dirt before and after use, and then greased with a suitable lubricant.
Do not grease the spindles.

Provide suitable support for the components during cleaning so that no unintentional change in their position is possible.

Do not clean components suspended on crane lifting gear.

Maintenance
Inspect all components regularly. (Inspection, maintenance, repair, removal from service)
In the event of damage, deformation or corrosion that reduces the load-bearing capacity, replace the components and remove them from service.

Before the components are used again, they should be checked to ensure they are in good condition (rental storage criteria)
Regular inspection by a certified expert will ensure operational readiness.

Additional technical documentation

- Assembly Instructions
  - PERI UP Scaffolding Kit components
- Approval
  - Approval Z-8.22-863 PERI UP Flex Module System

Cross-system



Safety instructions apply to all service life phases of the system.

General information
The contractor must ensure that the Instructions for Assembly and Use supplied by PERI are available at all times and understood by the site personnel.

These Instructions for Assembly and Use can be used as a basis for the site based Risk Assessment and Method Statement (RAMS) compiled by the contractor. They are not to be considered as a substitute for the RAMS.

Observe and comply with the safety instructions and permissible loads.

For the application and inspection of PERI products, observe the current laws and regulations in force in the respective countries.

Materials and working areas are to be inspected before each use and assembly for:
- damage,
- corrosion,
- stability,
- functional integrity.

Damaged components must be exchanged immediately on site and no longer used.

Safety components are to be removed only when they are no longer required.

Components provided by the contractor must comply with the characteristics stipulated in these Instructions for Assembly and Use and all applicable laws and standards. Unless otherwise indicated, the following applies in particular:
- Timber components:
  Strength class C24 for solid wood according to EN 338.
- Scaffolding tubes:
  Galvanised steel tubes with minimum dimensions Ø 48.3 x 3.2 mm in accordance with EN 12811-1:2003 4.2.1.2.
- Scaffolding tube couplings:
  according to EN 74-1 and EN 74-2.

Deviations from the standard configuration are only permitted after a further risk assessment has been carried out by the contractor.

Appropriate measures for working and operational safety, as well as stability, are defined on the basis of this risk assessment.

Corresponding proof of stability can be provided by PERI on request if the risk assessment and resulting measures to be implemented are made available.

Nails and wood screws must not protrude. Only allow other connecting components to protrude to the extent that is necessary.
If necessary, mark protruding components or fit them with protective material.
Secure all pins with cotter pins and all bolts with nuts

Before and after extraordinary events that may have damaging effects on the safety of the system, the contractor must immediately
- produce another risk assessment, the results of which must be used to implement suitable measures to ensure the stability of the system,
- arrange for an extraordinary inspection to be carried out by a competent person qualified to do so. The aim of this inspection is to detect and repair damage in good time in order to ensure safe use of the system.

Exceptional events could be:
- accidents, fire, explosions, collisions,
- long periods of non-use,
- natural events, e.g. heavy rainfall, heavy snowfall, significant icing, storms or earthquakes.

Suitable measures could be:
- removing nets/tarpaulin,
- clearing snow and ice,
- reducing live loads,
- securing loose materials.

Safety instructions

Assembly, modification and dismantling work
PERI systems may only be assembled, modified or dismantled under the supervision of a person qualified to do so and by suitably qualified employees. The qualified personnel must have received appropriate training for the work to be carried out with regard to specific risks and dangers.

On the basis of the risk assessment and the Instructions for Assembly and Use, the contractor must create assembly instructions to guarantee safe assembly, modification and dismantling.

If the system is used in public areas, as a rule it must be checked and approved by an authority or other designated organisation before it is used for the first time.
In non-public areas, the system must be checked by a person authorised to test it to ensure that it functions safely. The results of the inspection must be documented in an inspection log.
The contractor must arrange for the necessary inspection.



The contractor must ensure that the personal protective equipment required for the assembly, modification or dismantling of the system, e.g.
- Safety helmet,
- Safety shoes,
- Safety gloves,
- Safety goggles,

is available and used as intended.

For work at a higher level, use an approved ladder or platform system, or an assembly scaffold.



If personal protective equipment against falling from a height (PPE) is required or specified in local regulations, the contractor must determine appropriate attachment points on the basis of the risk assessment.
The PPE to be used to prevent falling is determined by the contractor.

The contractor must provide safe working areas for site personnel which are to be reached via safe access routes.

The contractor must ensure that the following points are observed:
- If necessary, secure single components and assemblies to prevent them from falling, e.g. using ropes.
- Cordon off and signpost danger zones.
- Ensure stability during all construction stages.
- Ensure and demonstrate that all loads that occur are safely transferred.

Use
Every contractor who uses or allows the PERI systems to be used, is responsible for ensuring that the equipment is in good condition.

If the system is used successively or at the same time by several contractors, the health and safety coordinator must point out any possible mutual hazards and all work must then be coordinated.

If systems are used in publicly accessible areas, measures must be taken to prevent injuries caused by bumping into protruding components, e.g. installation of protective components.

All components must be secured against unauthorised modification or disassembly

Storage or parking of objects (even for short periods) is not permitted.

Always keep the contact surfaces of the system free of dirt, objects, snow and ice.
Close off the system in extreme weather conditions.

System-specific

The load-distributing support used, such as planking, must match the respective substrate. If multiple layers are required, planks are to be arranged crosswise.
It must be ensured that the scaffold cannot shift in a horizontal direction, irrespective of what substrate is being used.

Couplings with bolt fixings must be tightened with 50 Nm. This corresponds to a force of 20 kg using a lever arm length of 25 cm.

Hammer the wedges with a 500 g hammer with a jarring blow.



Observe the maximum loads (permissible surface and point loads) for each stair width and structural arrangement (flight of stairs, stair tower, etc.)!
This is necessary to fulfill the requirements in accordance with
DIN EN 1991-1-1/NA category T2 or T3. (refer to page 27).

Anchoring

Refer to the Section "Static design" for the anchoring forces and the anchoring positions.

Enclosing the scaffold, or mounting additional surfaces that are exposed to the influences of the wind, changes the stability. As a result, the stability must be re-assessed.
If necessary, additional measures must be implemented.

Anchoring must be installed progressively with the erection of the scaffold assembly.

The anchoring forces must be transferred into sufficiently load-bearing anchorage via wall ties and fixing materials e.g. the building.

Inspecting the anchoring

The anchoring and its components must be inspected by a qualified person nominated by the scaffolding contractor.

Load tests must be carried out at the place of use.



Ensure that the relevant national guidelines and regulations are complied with!

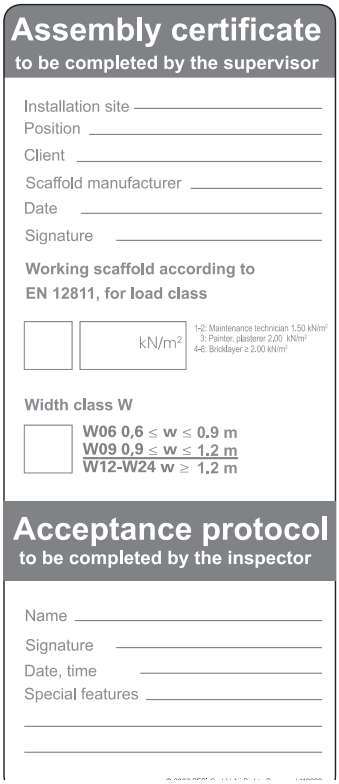
Identification marking

When carrying out the work the following identification markings must be observed:
If certain parts of the scaffold are not ready for use – especially during assembly, modification and dismantling – a "No Entry" warning sign restricting access must be clearly displayed (see Sign 1).
In addition, the area must be adequately closed off in order to prevent access.

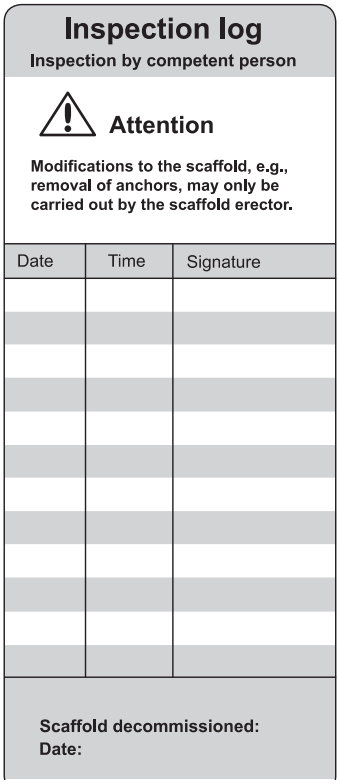
After assembly has been completed, all scaffold entry points must clearly display the designated sign. (Sign 2)
The identification marking does not replace the inspection log! (Sign 2, rear side)



Sign 1



Sign 2



Sign 2, rear side

Laws and regulations

When assembling, modifying, dismantling and using the scaffolding in Germany, accident prevention regulations and guidelines of the employer's liability insurance associations, as well as national health and safety regulations, must be followed, especially:

- German Product Safety Act (ProdSG)
- Directive 2009/104/EC
- Occupational Health and Safety Act (ArbSchG)
- Operating Safety Regulation (BetrSichV)
- Statutory Accident Insurance (DGUV) Information 201-011
- BGV A1 (Trade Association Regulations)
- TRBS 2121 (Technical Regulations for Operational Safety)
- TRBS 1203 (Technical Regulations for Operational Safety)
- Regulations for Occupational Health and Safety on Construction Sites 30 (RAB 30)

The latest version in each case is applicable.

Ensure that the relevant national guidelines and regulations for public access points in their current version are observed!

Inspection, handover and use

The erected scaffold must be inspected by the scaffolding contractor in order to determine that assembly has been carried out correctly. If the contractor is convinced that the scaffold has been correctly erected, it can then be handed over to the user.
It is advisable to carry out the handover with the user and, for example, to document this in a written report.

During the handover, the scaffolding contractor must advise the client of any possible risks involved with non-intended use and their obligation to provide adequate prevention against risk and danger!
- Put up safety and warning signs at the scaffold access point.
- Handover of a usage plan.

The scaffold client must ensure that the scaffolds are in good condition and not arbitrarily altered in any way. In this respect, the qualified specialists must be instructed that if changes have obviously been made during use, these must be reported to the respective qualified and competent person.

Inspection based on

the applicable country-specific laws and regulations for public access
the risk assessment
the Instructions for Assembly and Use
the plan for assembly, modification and dismantling

Components used	Stability	Working and operational safety
Condition, e.g. obviously undamaged	Load-bearing capacity of the substrate and attachment points	Identification marking of widths and load classes
Identification markings, e.g. tubes, scaffold couplers, system components	Anchoring, inspection, dimensions	Lateral protection
Dimensions, e.g. planking, tube wall thickness	Supporting system	Stairs
	Spacing of standards, suspensions, console brackets, kicker braces	Corner execution
	Anchoring pattern, bracing and reinforcement	Completeness and support of the decks
	Eccentricities, spindle lengths, inclinations, tolerances	Spacing between the building and edge of decking
		Decking configuration depending on the fall height
		Protection panel in roof edge protection scaffold
		Distance to overhead lines/lightning protection

Source: based on TRBS 2121 Part 1

Use in public areas

The client is responsible for the safe operation of the stairs in public areas.

Warning

For technical reasons, there is a residual risk of slipping and jamming on steps and landing platforms.
This can lead to minor or serious injuries.

⇒ The intended number of Platform Beams PDB must be installed in the correct positions.
⇒ Inform users, for example by means of signs, that
  – footwear must be worn on public stairs,
  – the continuous handrail must be used.
⇒ If necessary, the landing platform can be covered with a suitable carpet
⇒ In some countries or for certain applications, it is necessary to add markings to all step edges.
  This can be achieved by taking the following measures
  – Applying a special adhesive tape to the front edge of the tread, as well as the
  – Upper edge of the riser
  – Applying luminous paint in the required area (varnish, spray, etc.)
  – Coating the steps with powder or sand paint.

Warning

- The upper tube of the guardrails has system-related gaps. This can result in fingers or hands being trapped. This can lead to minor or serious injuries.
  ⇒ Therefore, fit the continuous handrail as well.
  ⇒ Depending on the installation location, fit additional child handrails as specified in the system.
  ⇒ The handrail end cap including tube bend must be fitted to prevent threading into the handrail tube at the bottom / top of the stairs.

- The handrail may fail if used incorrectly. This can lead to minor or serious injuries.
  ⇒ The handrail must not be used as a climbing aid or slide. Likewise, the handrail arch must not be used as a seat or suchlike.
  If necessary, inform users by means of signs, for example, that the handrail must not be used in the manner described above.
  ⇒ The handrail must be supported by a handrail bracket at least every 1.5 m. A long unsupported section can lead to overloading and possibly even breakage.

Warning

Risk of serious or fatal injuries from falling sideways.

⇒ If the stairs are to be used by children < 3 years of age, the guardrails must also be fitted with a net.
⇒ Gaps must be limited to a maximum of 8.9 cm.

Warning

- There is a risk of collision with protruding scaffolding components. This can lead to minor or serious injuries.
  ⇒ Fit poly cover protective components. See assembly instructions for scaffolding kit components.

Storage and transportation

General information

- Store and transport components in such a way that no unintentional change in their position is possible. Detach load-lifting accessories and lifting gear from the lowered components only if they are in a stable position and no unintentional change is possible.
- Do not drop the components.
- Only ever use approved and inspected means of transportation from PERI including lashing, lifting gear and slings.
- Only attach the means of transport to the intended attachment points using suitable lifting gear and slings.

Storage

- Store components in such a way that no water can penetrate and remain inside the components. This could lead to destruction caused by freezing water.
  Drainage openings in components must remain unobstructed.
- Components with wooden parts are to be stored in well-ventilated and dry conditions.

Repositioning

- Ensure that components are picked up and set down in such a way that unintentional falling over, falling apart, sliding, falling down or rolling is avoided.
- Always use ropes to guide components or assemblies that are susceptible to wind when moving them with a crane.
- Do not move components over people.
- Access areas on the construction site must be free of obstacles and tripping hazards, and must also be slip-resistant.
- The substrate must have a sufficient load-bearing capacity for transport.
- If possible, use original PERI storage and transport systems for moving, such as crate pallets, pallets or stacking devices.

A1 Safety during assembly

Warning

During assembly and dismantling, situations may arise where there is a risk of falling. A fall can result in serious injury or even death.

⇒ Select a work area and set it up in such a way that there is no risk of falling, e.g. use a cherry picker or crane basket to carry out work where there is a risk of falling.

⇒ Use PPE and comply with the prescribed attachment points.

Verified attachment points

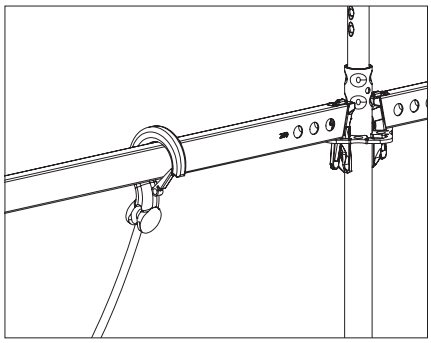


Fig. A1.01

Horizontal ledger

Attachment point:
Each Horizontal Ledger UH Plus or UH-2

- which is freely accessible for the lifting gear
- and is installed at a maximum height of 1.0 m above the deck level.
- and which is wedged on two rosettes of 2 standards.
  The standards must be butt-jointed at least 0.5 m below the deck level.

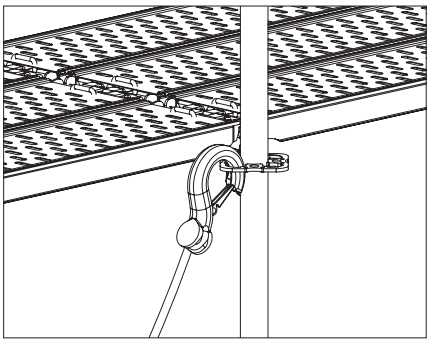


Fig. A1.02

Rosette

Attachment point:
Each rosette that is integrated in the base scaffold. See rules and regulations on the right.

Attachment points in the system

Each specified attachment point is intended for securing only one person!

General information

- The use of personal protective equipment to prevent falling from a height is regulated in the project-related risk assessment that has been prepared by the contractor (user).
- When using personal protective equipment to prevent falling from a height, all valid standards and safety regulations are to be taken into consideration by the contractor.
- Each scaffold assembly is to be secured against tipping by the user.
- The application concerns assembly, reconstruction and dismantling.

Requirements

- The scaffold assembly underneath the final assembly level is complete. This means, all ledgers and diagonal bracing have been installed and the decking is in place as the topmost assembly level.
- The joints of the topmost standards must lie underneath the last assembly level.

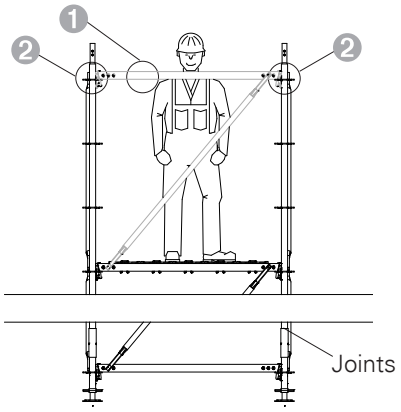


Fig. A1.03

Attachment points
Standard ends approx. 2.0 m below the assembly level:
each horizontal ledger in the assembly level 1,
each rosette in the assembly level 2.

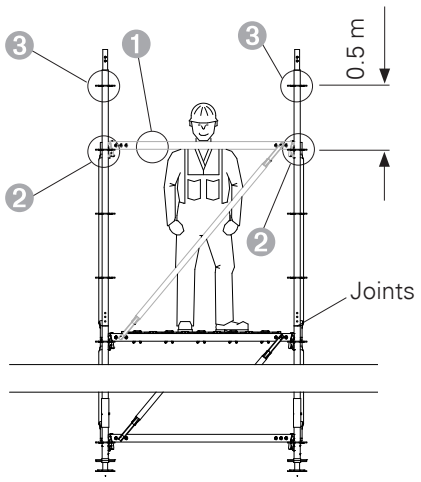


Fig. A1.04

Attachment points
Standard ends approx. 1.5 m below the assembly level:
each horizontal ledger in the assembly level 1,
each rosette up to max. 0.5 m above the last assembly level 2, 3.

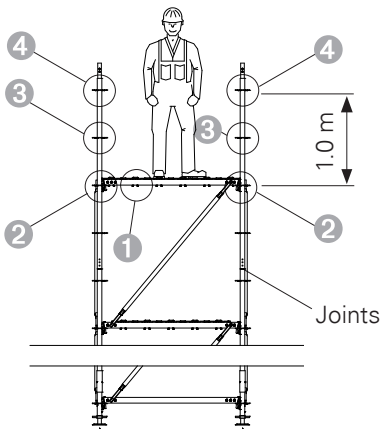


Fig. A1.05

Attachment points
Standard ends approx. 1.0 m below the assembly level:
each horizontal ledger in the assembly level 1,
each rosette up to max. 1.0 m above the last assembly level 2 3 4.

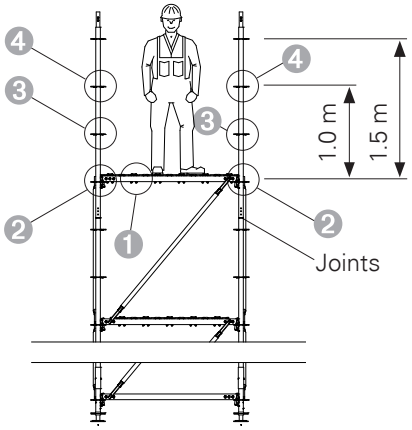


Fig. A1.06

Attachment points
Standard ends approx. 0.5 m below the assembly level:
each horizontal ledger in the assembly level 1,
each rosette up to max. 1.0 m above the last assembly level 2 3 4.

A2 Component overview

Pos. no.	Component name	Article no.
1	Adj. Base Plate UJB Ø38mm 50/30	100411
2	Base Standard UVB 25	133499
3	Horizontal Ledger UH-2 150	132010
4	Horizontal Ledger UH-2 200	132016
5	Horizontal Ledger UH-2 250	132025
6	Horizontal Ledger UH-2 25	131995
7	Horizontal Ledger UHV-2 150	137020
8	Horizontal Ledger UHV-2 200	137025
10	H-Brace UBH Flex 150/150	114912
11	H-Brace UBH Flex 250/150	124101
12	H-Brace UBH Flex 200/200	114916
13	H-Brace UBH Flex 250/200	114920
14	Standard UVR-2 100	132224
15	Standard UVR-2 150	132229
16	Standard UVR-2 200	132234
17	Standard UVR-2 300	132239
18	Top Standard UVH-2 100	132194
19	Top Standard UVH-2 125	132196
20	Top Standard UVH-2 200	132200
21	Top Standard UVH-2 250	132202
22	Plastic Cap Ø48.3mm grey	138327
24	Steel Deck UDG-2 25x25	138607
25	Steel Deck UDG-2 25x150	132505
26	Steel Deck UDG-2 25x200	132508
27	Steel Deck UDG-2 25x250	132511
30	Guardrail PPG 250/150	138351
31	Guardrail PPG 250	138353
32	Guardrail PPG 200	138355
33	Guardrail PPG 150	138357
34	Guardrail PPG 100	138359
35	Guardrail PPG 50	138361
36	Guardrail PPG 25	138363
37	Guardrail UPGA 150	141931
38	Guardrail UPGA 200	141927
39	Guardrail UPGA 250	141923
40	Gap Cover PDC 250	138443
41	Gap Cover PDC 200	138445
42	Gap Cover PDC 150	138447
43	Gap Cover PDC 100	138449
44	Lifting Protection PEL	138404
46	Stair Stringer PAS 250/150	138592
47	Stair Tread PATS 150	138976
48	Stair Tread PATT 150 top	138978

Pos. no.	Component name	Article no.
49	Stair Tread PATS 200	138980
50	Stair Tread PATT 200 top	138982
51	Height Adjustment PAH 1	138400
52	Height Adjustment PAH 3	138970
53	Platform Beam PDB 150	138376
54	Platform Beam PDB 75	138381
56	Safety Washer UBL PEW	138402
58	Ledger Brace UBL-2 150/100	132781
59	Ledger Brace UBL-2 200/100	132791
60	Ledger Brace UBL-2 150/150	132783
61	Ledger Brace UBL-2 200/150	132793
62	Ledger Brace UBL-2 250/150	132814
63	Ledger Brace UBL-2 250/100	132812
65	Shoring Brace UBS 150/150	107810
68	Node Brace UBK-2 250/150	133451
69	Bolt ISO 4014-M10x070-8.8-ga-N	100719
70	Bolt ISO 4014-M10x075-8.8-ga	136577
71	Bolt ISO 4014-M10x055-8.8-ga	720631
72	Bolt ISO 4017-M10x025-8.8-ga	057264
73	Bolt ISO 7380-2-M08x025-10.9-ga	139158
74	Hex-Nut ISO 4032-M10-8	710234
75	Bolt ISO 4014-M10x065-8.8-ga	106305
76	Cap Nut-DIN 1587-M10-6	140031
80	Handrail Support Start PESS	138367
81	Handrail Tube Start PEHS	138371
82	Handrail Bracket sym PEBS	138385
83	Handrail Bracket Corner PEBC	138389
84	Handrail Support Guard PESG	138393
85	Handrail Support Coupler PESC	138411
86	Handrail Tube Staireye PEHE	138408
87	Handrail Joint PEHJ	138025
88	Handrail Tube PEHT 6m	138419
89	Riv. ISO 15979-6.0x10-ST/ST	722318
90	Riv. ISO 15979-6.0x16-ST/ST	114537
91	Protect. Tube Clip 13-42.4mm	118387
92	Console Bracket UCB 25	134005
93	Clamping Rosette UEV 180°	116306
96	Wall Tie UWT 270	102957
97	Standard Coupl. RA Ø48/48mm ga	017020

Pos. no.	Module designation	Article no.
101	**Handrail start**	
	Handrail Support Start PESS (**80**)	138367
	Handrail Tube Start PEHS (**81**)	138371

A3 Tool list

Tool name	Article no.
Carpenter's Hammer with Magnet, 500 g	727193
Scaffold Ratchet AF 19/22	796061
Scaffold Ratchet AF 17/19	138994
Powerbird Pro blind rivet tool	728736
Metal drill 6.2 mm	
Allen key / bit	
Round slings	
4-sling lifting gear	

Tightening torques

Unless otherwise indicated, PERI recommends the following guide values for bolt connections as "hand-tightened" tightening torques $M_{A,hand\text{-}tightened}$.
These guide values are based on EN 15048 with minimum Safety Factor 3 against breakage.

Quality class	Quality 4.6		Quality 8.8 and 10.9
Lubrication	**Lightly oiled**	**MoS2**	**Undefined**
Bolt M8	8 Nm	6.6 Nm	8 Nm
Bolt M10	16 Nm	13.0 Nm	16 Nm
Bolt M12	30 Nm	23.0 Nm	30 Nm
Bolt M16	65 Nm	54.0 Nm	65 Nm
Bolt M20	100 Nm		100 Nm
Bolt M24	150 Nm		150 Nm
Bolt M30	260 Nm		260 Nm
Bolt M36	350 Nm		350 Nm

Tightening torques have been determined for the following components:

Scaffolding tube coupling	50 Nm

Staircase

Components

4 Horizontal Ledger UH-2 200
46 Stair Stringer PAS 250/150
47 Stair Tread PATS 150
48 Stair Tread PATT 150 top

Stair stringers

The stair stringers are assembled from Stair Stringer PAS 250/150 (**46**) and Horizontal Ledger UH-2 200 (**4**).
The horizontal ledger is installed after the Stair Stringer PAS has been fitted to the stair tower.
(Fig. A4.01 - Fig. A4.01b)

! Attention!

The Horizontal Ledger UH-2 (**3**) guarantees the exact required distance between the stair stringers and prevents the stair stringers from tilting outwards. Otherwise stair treads could fall down.

⇒ Always fit the horizontal ledgers before installing the stair treads.
⇒ When dismantling, first remove all stair treads, then remove the horizontal ledger (**3**).

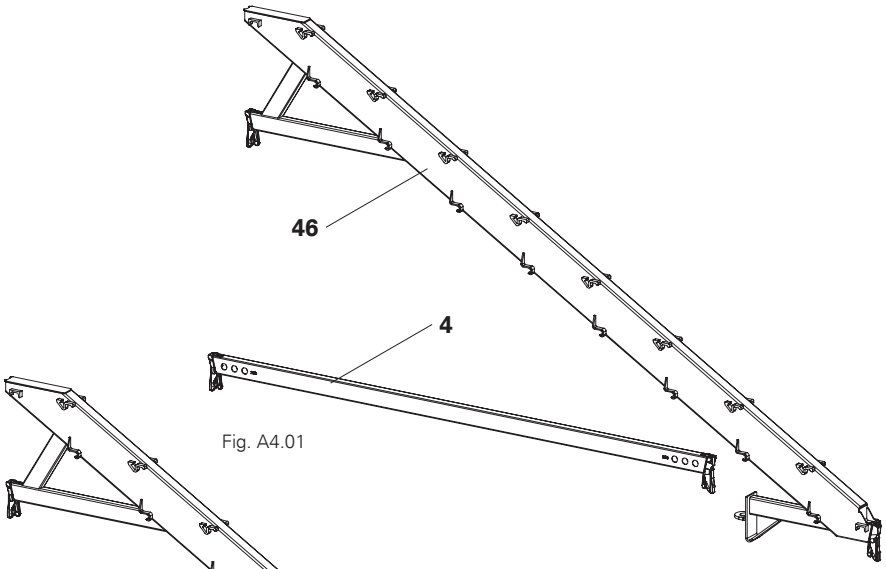


Fig. A4.01

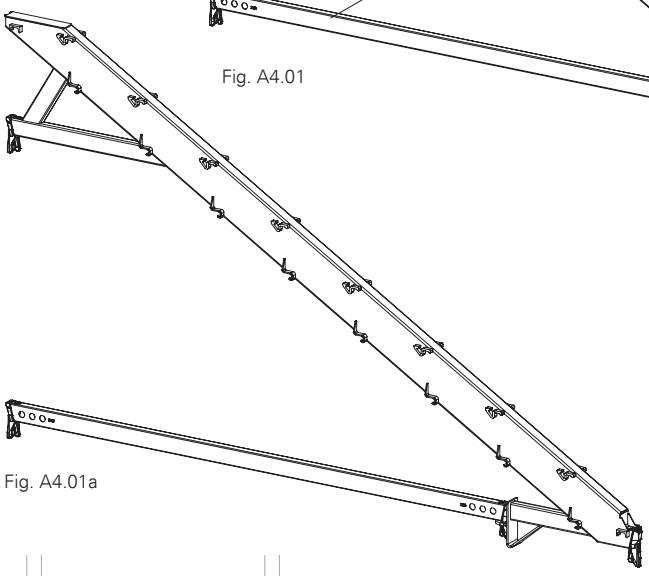


Fig. A4.01a

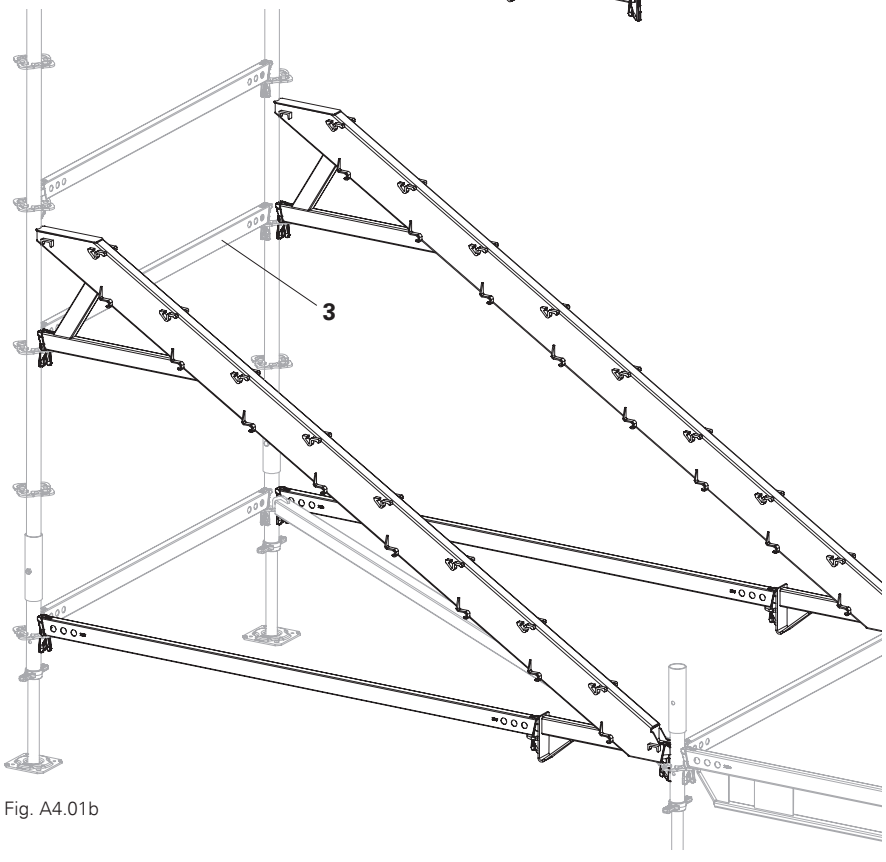


Fig. A4.01b

Stair steps

The flight of stairs is made from Stair Tread PATS 150 (**47**) and Stair Tread PATT 150 top as the uppermost step.

Assembly

Start the assembly process at the lowest step.

1. Pick up the step with the back of your hand facing upwards at the grip holes and press down vertically with the heel of your hand or thumb. (Fig. A4.02)
2. Lift the step between the stair stringers and place it on the lugs of the previous step. (Fig. A4.02a)
3. Align the installation position using the arrow markings. (Fig. A4.03 + Fig. A4.03a)
4. Move the step forwards and place it in the stair stringer supports. (Fig. A4.04 + Fig. A4.04a)

Is the step correctly engaged in the stair support?

When removing the uppermost Stair Tread PATT, first release the Horizontal Ledger UH-2 directly below it.

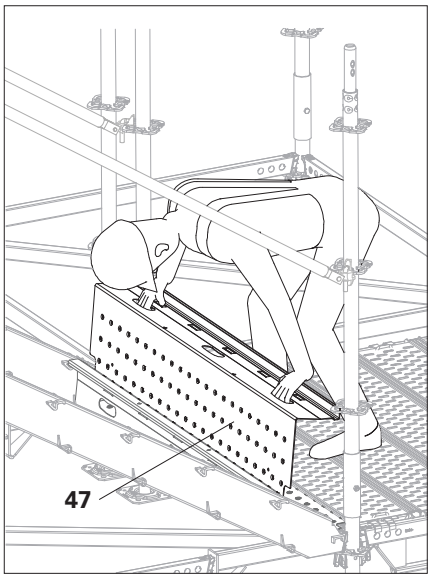


Fig. A4.02

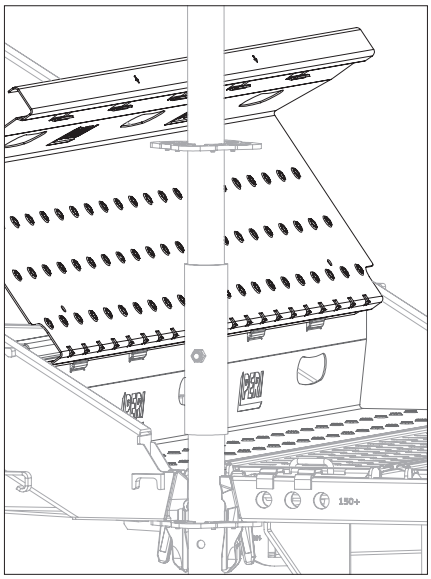
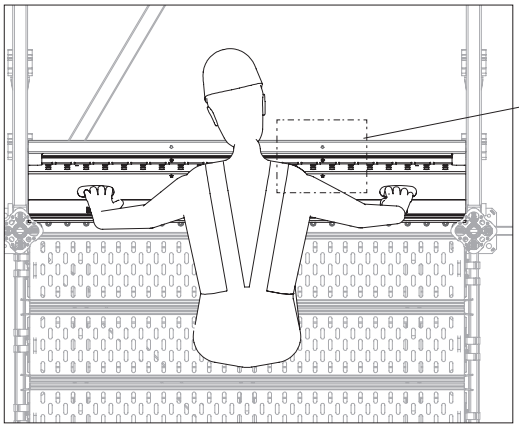


Fig. A4.02a



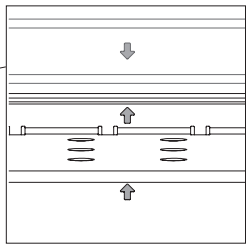


Fig. A4.03a

Fig. A4.03

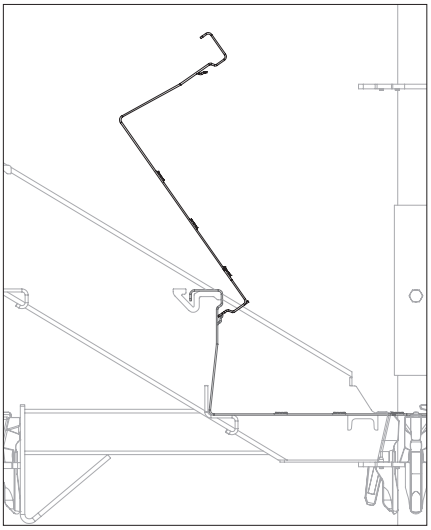


Fig. A4.04

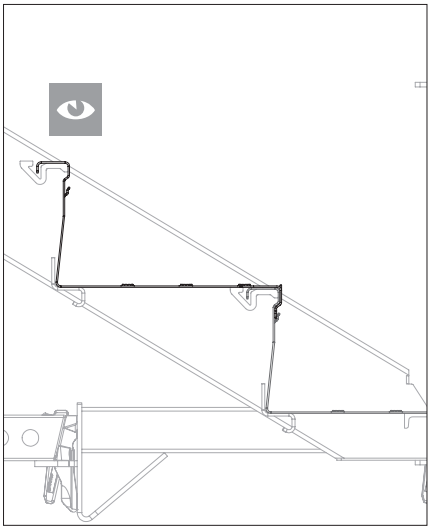


Fig. A4.04a

Safety Washer UBL PEW

Warning
Fit and remove the Safety Washer UBL PEW with caution.
Spring Tension in the item may cause it to spring away without warning during the assembly and removal processes.
⇒ Wear safety goggles!

Components

56 Safety Washer UBL PEW
60 Ledger Brace UBL-2 150/150

All ledger braces must be secured with the Safety Washer UBL PEW (**56**) to prevent unauthorised removal.

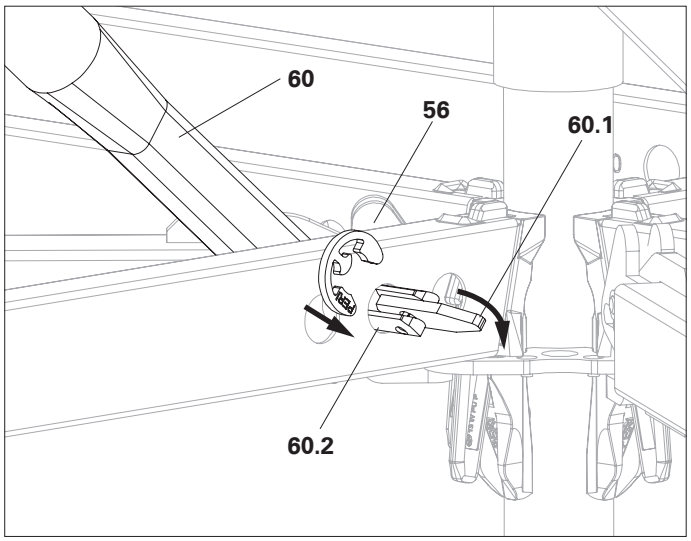


Fig. A4.05

Assembly
1. Fit the ledger brace (**60**) in accordance with the assembly instructions for the PERI UP Scaffolding Kit components.
2. Fit the Safety Washer UBL PEW in the direction of the tilt finger (**60.1**) over the tilt finger pin (**60.2**). Use a hammer, if necessary. (Fig. A4.05)

Dismantling
1. Use a hammer to remove the safety washer (**56**) from the tilt finger pin (**60.2**) in the opposite direction of the tilt finger (**60.1**).
2. Remove the ledger brace. (Fig. A4.06)

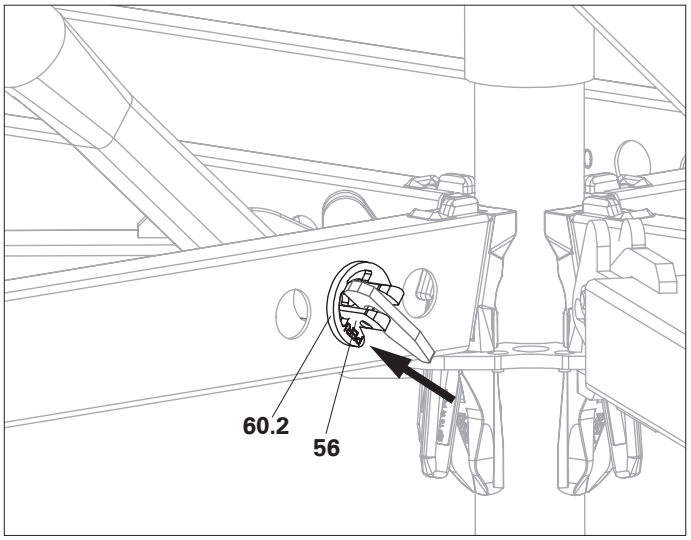


Fig. A4.06

Handrail supports

Handrail components

71 Bolt ISO 4014-M10x055-8.8-ga
76 Cap Nut-DIN 1587-M10-6-ga
80 Handrail Support Start PESS
81 Handrail Tube Start PEHS
82 Handrail Bracket sym PEBS
83 Handrail Bracket Corner PEBC
84 Handrail Support Guard PESG
85 Handrail Support Coupler PESC
86 Handrail Tube Staireye PEHE
87 Handrail Joint PEHJ
88 Handrail Tube PEHT 6m
89 Riv. ISO 15979-6.0x10-ST/ST
90 Riv. ISO 15979-6.0x16-ST/ST
101 Handrail start (module)

Handrail start assembly

1. Assemble Handrail Support Start PESS (**80**) with one or two Handrail Tube Start PEHS (**81**), as well as 2x or 4x Bolts M10x55 (**71**) and Cap Nuts M10 (**76**) to form a single or double-run handrail start (**101**).

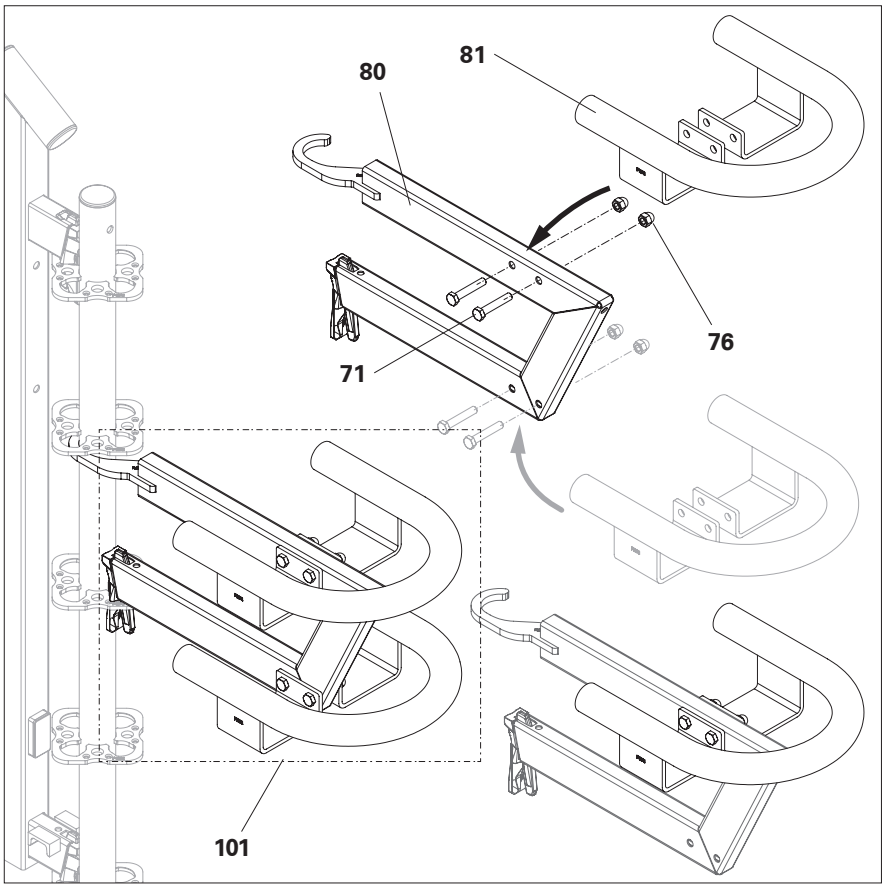


Fig. A4.07

Handrail bracket assembly

1. Attach Handrail Bracket sym PEBS (**82**) or Handrail Bracket Corner PEBC (**83**) to Handrail Support Guard PESG (**84**) or Handrail Support Coupling PESC (**85**) and screw together tightly with Cap Nut M10 (**76**).
2. Rivet the handrail tube
   – to Handrail Bracket sym PEBS (82) with 1x rivet 6x10 (89),
   – to Handrail Bracket Corner PEBC (83) with 2 x rivet 6x16 (90)

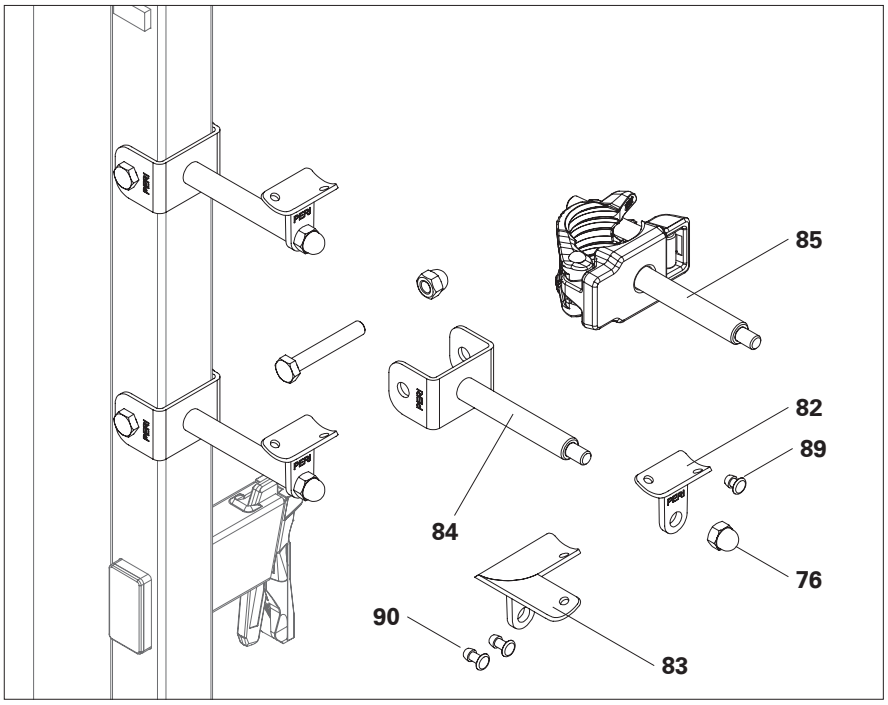


Fig. A4.08

Handrail tubes

Handrail Tube Staireye PEHE
The Handrail Tube Staireye PEHE (**86**) connects the inner handrail to the landing platform in conjunction with 2 x Handrail Joints PEHJ (**87**).

Handrail Tube PEHT 6m
The Handrail Tubes PEHT (**88**) are supplied in stock lengths of 6 m each. Cutting must be carried out by the installer.

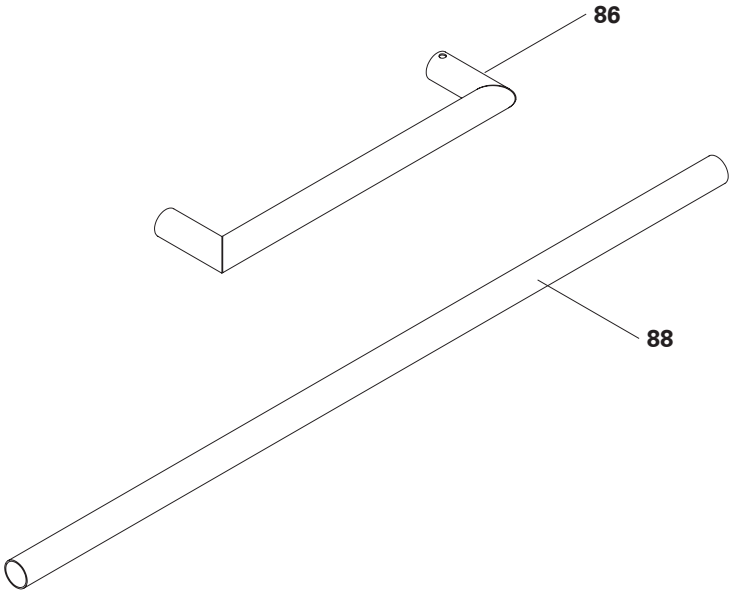


Fig. A4.09

Handrail Joint PEHJ

Handrail Joints PEHJ (**87**) connect the Handrail Tubes PEHT (**88**) at changes of direction or joints, e.g. on pedestrian bridges.
The connection angle can be continuously adjusted between 180° and 90° by turning the half-joints.

Dimensions of the Handrail Joint PEHJ [mm]		
Length of extended joint	**J1**	130
Length of half joint	**J2**	65
Tube insert in joint	**J3**	35
Handrail extension (length per half-joint that can be fitted to the handrail)	**J4**	30

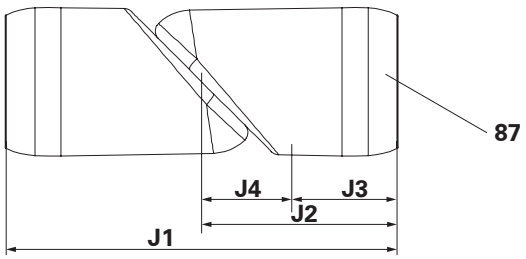


Fig. A4.11

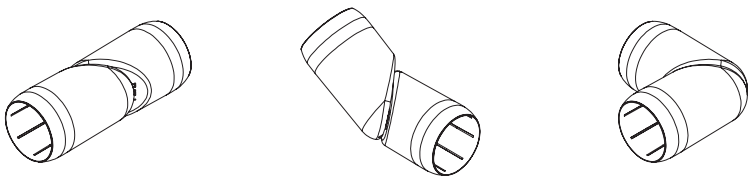


Fig. A4.10

Platform Beam PDB

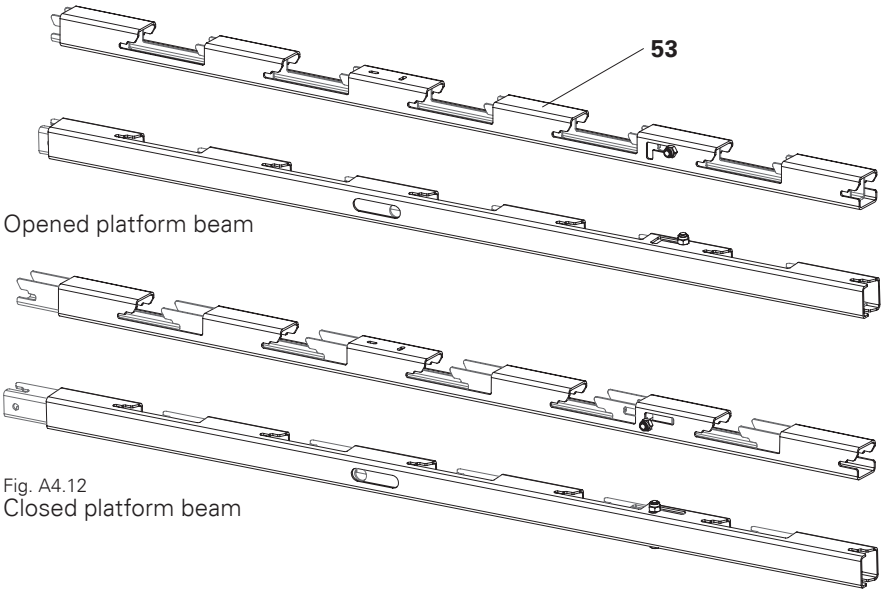
Required for bracing landing platforms

Components

53 Platform Beam PDB 150
54 Platform Beam PDB 75

Landing platforms must be braced with Platform Beams PDB to reinforce the deck. (Fig. A4.13)

This is necessary to fulfill the requirements in accordance with DIN EN 1991-1-1/NA category T2 or T3.



Opened platform beam

Fig. A4.12
Closed platform beam

Verified loads

- Utilisation category T2
- Vertical loads
  - Surface load q_k [kN/m²] 5.00
  - Individual load Q_k [kN / 50x50 mm] 2.00
- Guardrail loads q_k [kN/m]
  - Landing platform area 1.00
  - Staircase area 0.50

- Utilisation category T3
- Vertical loads
  - Surface load q_k [kN/m²] 7.50
  - Individual load Q_k [kN / 50x50 mm] 3.00
- Guardrail loads q_k [kN/m]
  - Landing platform area 2.00
  - Staircase area 1.00

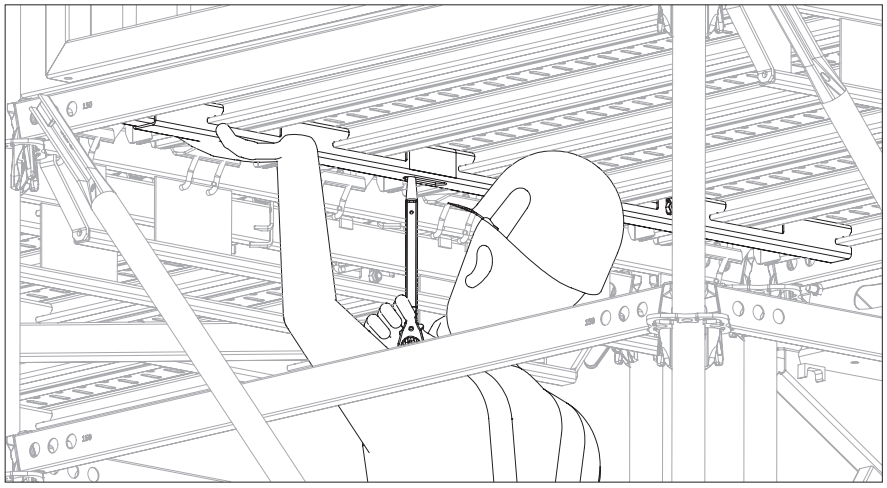


Fig. A4.13

- EN 1991-1-1 German National Annex

Table 6.1DE Vertical live loads for ceilings, stairs and balconies:
T1 - Stairs and stair landings in residential buildings, office buildings and doctor's offices without heavy equipment
T2 - All stairs and stair landings that cannot be classified as T1 or T3
T3 - Entrances and stairs to stands without fixed seats that serve as escape routes

Caution

- There is a risk of crushing your fingers and hands when installing and removing the Platform Beam PDB. This can result in minor or even serious injuries.
  ⇒ Wear protective gloves.
  ⇒ Keep fingers and hands away from pinch points.
- Dirt falling through the decks may end up in the installer's eyes.
  ⇒ Wear safety goggles.

Do not walk on the landing platform when installing and removing the platform beam so that the decks remain movable.

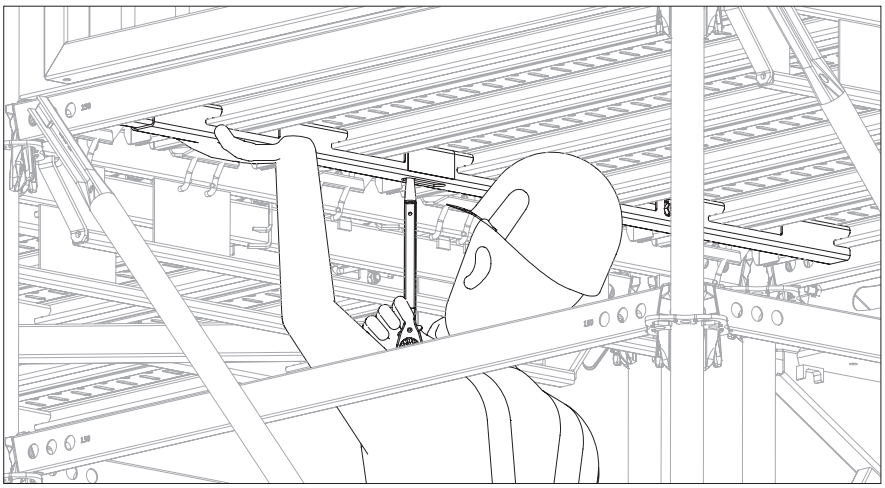


Fig. A4.14

Assembly

1. Open the Platform Beam PDB all the way and insert it into the deck bars from below. Get a good initial fixing by shifting the platform beam.

→ Hold the platform beam with one hand.

Closing the platform beam

The Platform Beam PDB is closed in two stages.

1. Insert the scaffold ratchet through the hole on the underside into the slot on the top.
2. Swivel the scaffold ratchet to the left up to an angle of approx. 45°.
3. Remove the scaffold ratchet. (Fig. A4.15a)
4. Insert the scaffold ratchet at an angle of approx. 45° into the second upper slot.
5. Swivel the scaffold ratchet to the left as far as it will go until the locking bolt drops down into the groove.
6. Remove the scaffold ratchet. (Fig. A4.15b)
7. Tighten the nut on the locking bolt to prevent unauthorised disassembly. (Fig. A4.16)

Closing

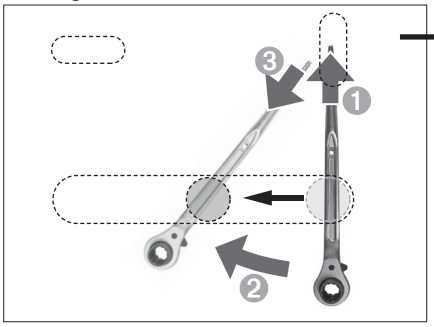


Fig. A4.15a

Changing slots

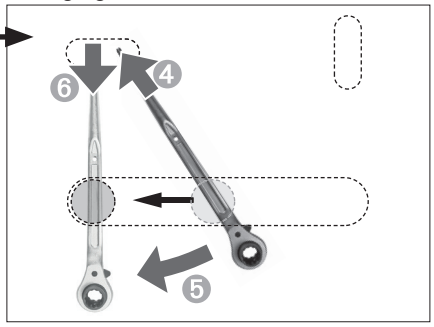


Fig. A4.15b

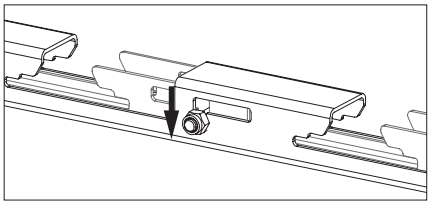


Fig. A4.16

Dismantling
1. Loosen the nut on the locking bolt.
2. Lift the locking bolt.
→ Hold the platform beam with one hand.(Fig. A4.17)

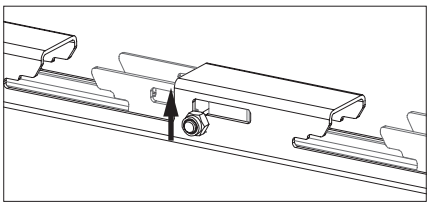


Fig. A4.17

Opening the platform beam
The Platform Beam PDB is opened in two stages.

1. Insert the scaffold ratchet through the hole on the underside into the slot on the top.
2. Swivel the scaffold ratchet to the right up to an angle of approx. 45°.
3. Remove the scaffold ratchet. (Fig. A4.18a)
4. Insert the scaffold ratchet at an angle of approx. 45° into the second upper slot.
5. Swivel the scaffold ratchet to the right as far as it will go.
6. Remove the scaffold ratchet. (Fig. A4.18b)
7. Pull the platform beam down off the deck bar.

Opening

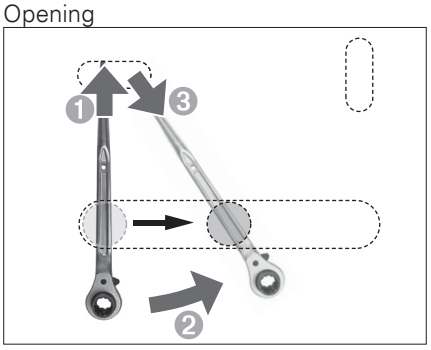


Fig. A4.18a

Changing slots

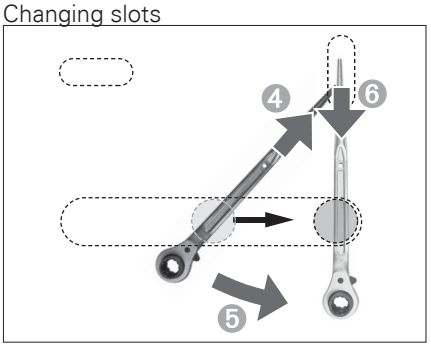


Fig. A4.18b

Horizontal Brace UBH Flex

Horizontal Braces UBH Flex (**10**) ensure the exact perpendicularity of a scaffold. They absorb forces acting diagonally.

For assembly, see the assembly instructions "PERI UP Scaffolding Kit components".
Additionally:
Tighten nut 10.1 on the safety bolt to prevent unauthorised disassembly.

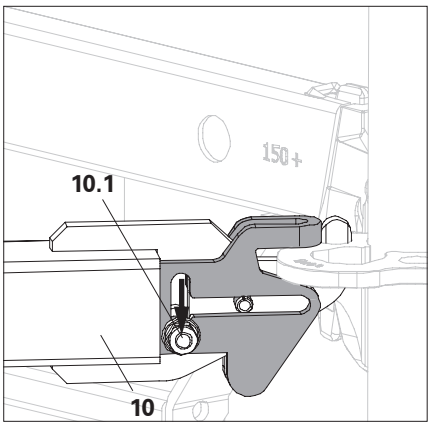


Fig. A4.19

Utilisation categories

The permissible vertical loads for PERI UP Public Stairs pursuant to DIN EN 1991-1-1 (12.2010) and DIN EN 1991-1-1/NA (12.2010) are verified for T2 and T3. (Tab. A4.01)

Utilisation category	Surface load q_k [kN/m²)	Guardrail load q_k [kN/m]	
		Landing platform area	Staircase area
T2	5.00	1.00	0.50
T3	7.50	2.00	1.00

Tab. A4.01

Required bracing

The number and positioning of the Platform Beams PDB for bracing the landing platforms depends on the steel decks used and the required utilisation category. See illustrations.

- Fit Platform Beam PDB in pairs directly next to each other.

Decks UDG-2, utilisation category T2

Landing platform 100x100 cm

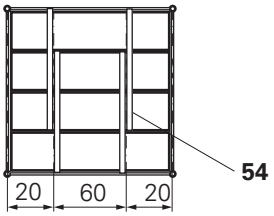


Fig. A4.20

Landing platform 150x150 cm

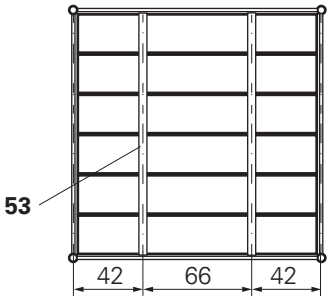


Fig. A4.20a

Landing platform 200x200 cm

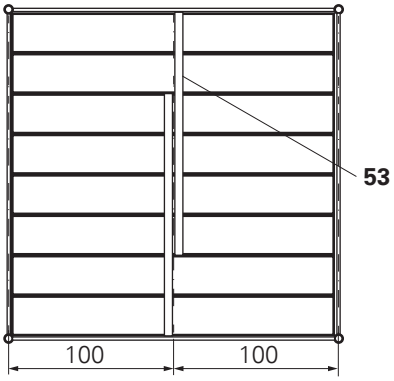


Fig. A4.20b

Landing platform 250x250 cm

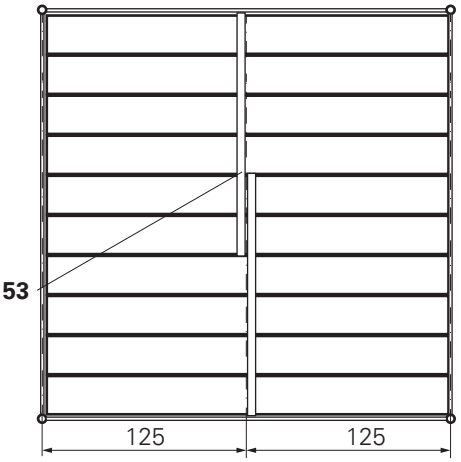


Fig. A4.20c

Decks UDG-2, utilisation category T3

Landing platform 100x100 cm

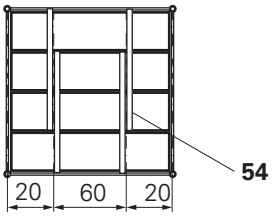


Fig. A4.21

Landing platform 150x150 cm

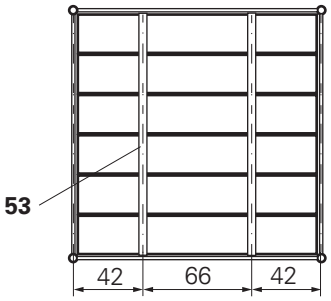


Fig. A4.21a

Landing platform 200x200 cm

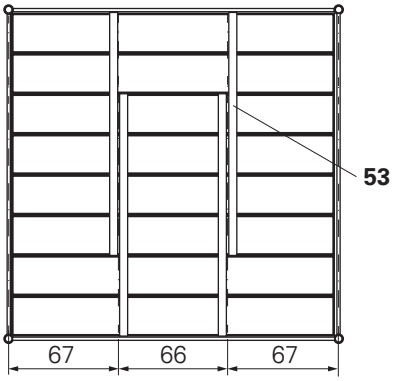


Fig. A4.21b

Landing platform 250x250 cm

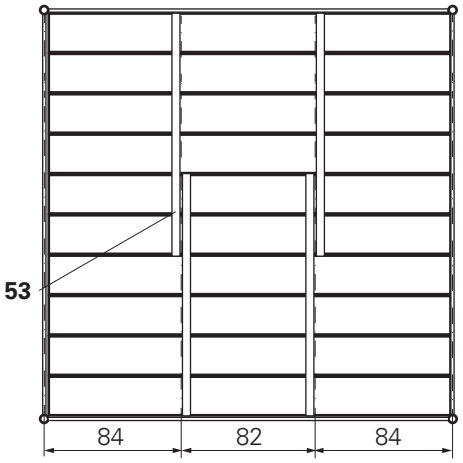


Fig. A4.21c

Decks UDG,
utilisation category T2 and T3

Landing platform 100x100 cm

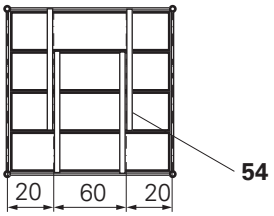


Fig. A4.22

Landing platform 150x150 cm

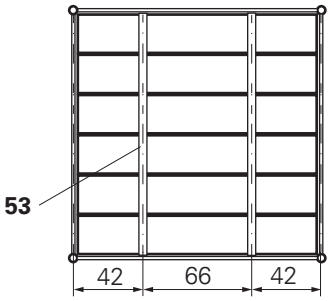


Fig. A4.22a

Landing platform 200x200 cm

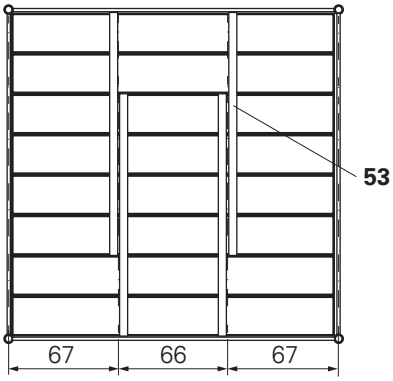


Fig. A4.22b

Landing platform 250x250 cm

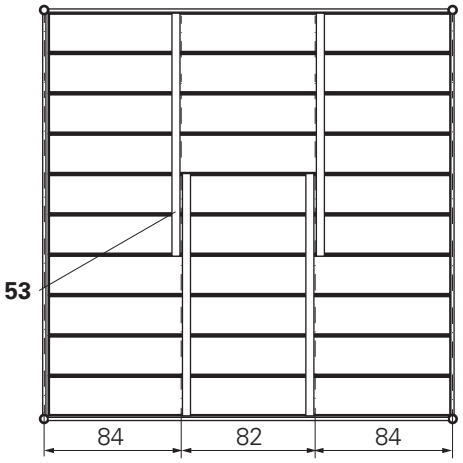


Fig. A4.22c

Gap Cover PDC

For closing gaps in decks, e.g. in the staireye.
Gap fillers must be secured to prevent them from lifting.

Assembly

1. Fit Lifting Protection PEL (**44**) to Gap Cover PDC (**42**) beforehand with a filister head bolt (**73**). The lift lock must continue to be rotatable.
2. Place the Gap Cover PDC (**42**) on the deck gap, but do not bolt it down tightly yet.
   See the table and figure for the number and position of lift locks.

PERI recommends using a cordless screwdriver. (AF 5 hexagon socket)

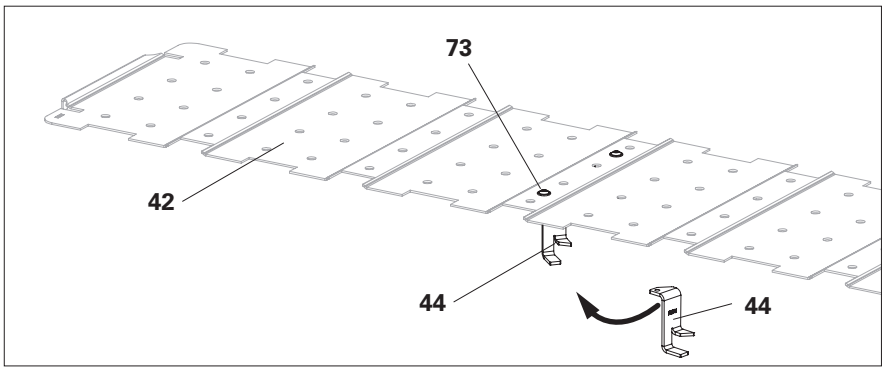


Fig. A4.23

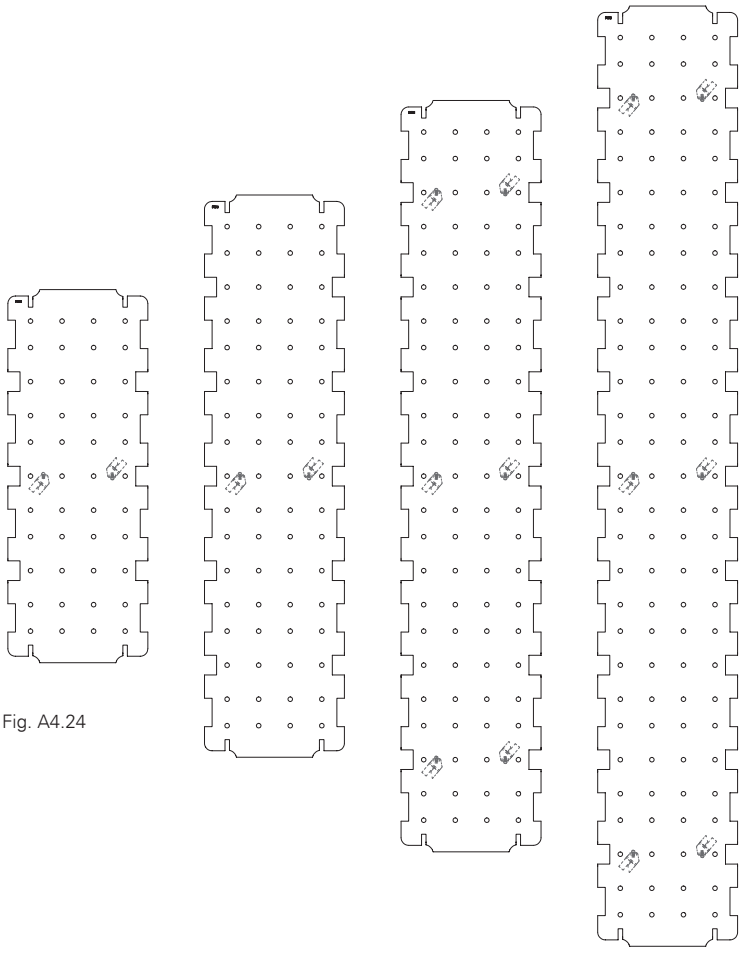


Fig. A4.24

Required number of lift locks	
Gap cover	Lifting Protection PEL (**44**)
PDC 100	2
PDC 150	2
PDC 200	6
PDC 250	6

Tab. A4.02

B Alternating staircase units - Standard configuration

General information

Stair width
These Instructions for Assembly and Use describe the assembly of a tower configuration with a stair width of 150 cm.



For the assembly of the individual components, see the previous section "System components" or the assembly instructions "PERI UP Scaffolding Kit components".

B1 Access landing platform

Base frame

Components

1	Adj. Base Plate UJB Ø38mm 50/30	6x
2	Base Standard UVB 25	6x
3	Horizontal Ledger UH-2 150	3x
7	Horizontal Ledger UHV-2 150	2x
11	H-Brace UBH Flex 250/150	1x

Assembly aid

5	Horizontal Ledger UH-2 250	1x

The substrate must be sufficiently level and have a sufficient load-bearing capacity.

- Plan and create project-specific height compensation in front of the first stair tread.
- Ensure that the base standards are uniformly aligned so that they can be pinned later.
- Extend the adj. base plates as far as possible to provide an adequate working area for installing the Beam Waler PDB below the landing platform.

Assembly

1. Set up the adj. base plates (**1**) and base standards (**2**) as shown in the illustration.
2. Connect the base standards with Horizontal Ledgers UH-2 (**3**) and UHV-2 (**7**).
3. Fit Horizontal Ledgers UH-2 250 (**5**) on one side to prevent them from falling over.
4. Fit the H-Brace UBH Flex (**11**). Fit the side with hooks (**11.1**) on the side of the access landing platform.

(Fig. B1.01)

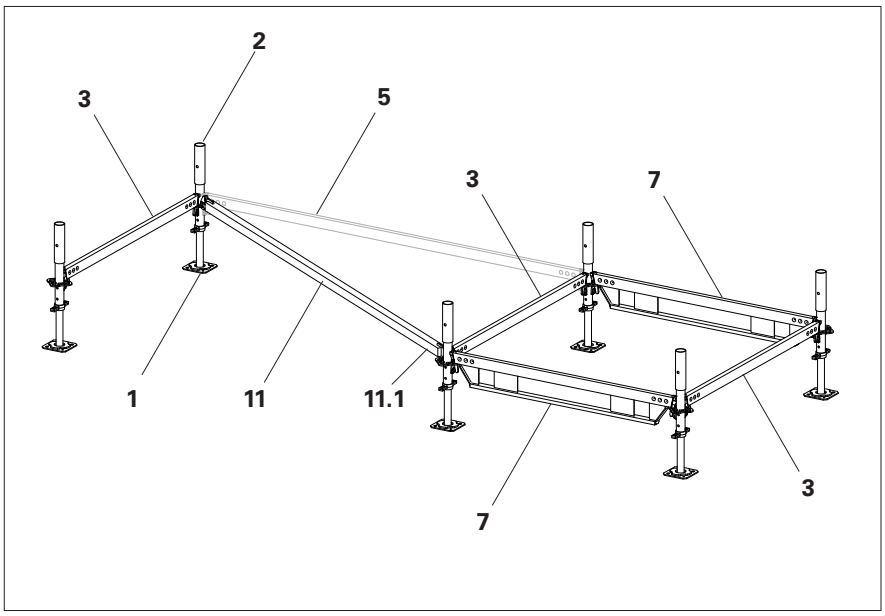


Fig. B1.01

Standards and stair stringers

The riser height of the PERI UP Public Stairs is 16.6 cm. The Height Compensation PAH1 can be used to level the approach to the first landing platform. Depending on the slope of the terrain or the recessed area, it may be necessary to build one or a maximum of two cantilevered height access steps in front of the landing platform. Alternatively, a ramp can be used as height compensation.

Components

3	Horizontal Ledger UH-2 150	2x
4	Horizontal Ledger UH-2 200	2x
15	Standard UVR-2 150	2x
46	Stair Stringer PAS 250/150	2x

Assembly

1. Insert the Standards UVR-2 150 (**15**) into the base standards.
2. Connect standards at a height of 1 m and 1.5 m with Horizontal Ledgers UH-2 150 (**3**).
3. Fit 1 x Stair Stringer PAS (**46**) together with a second person.
4. Fit Horizontal Ledger UH-2 200 (**4**).
5. Remove the Horizontal Ledger UH-2 250 (**5**) used as an assembly aid. (Fig. B1.02)
6. Fit the second Stair Stringer PAS (**46a**) together with a second person.
7. Fit the Horizontal Ledger UH-2 200 (**4a**). (Fig. B1.03)

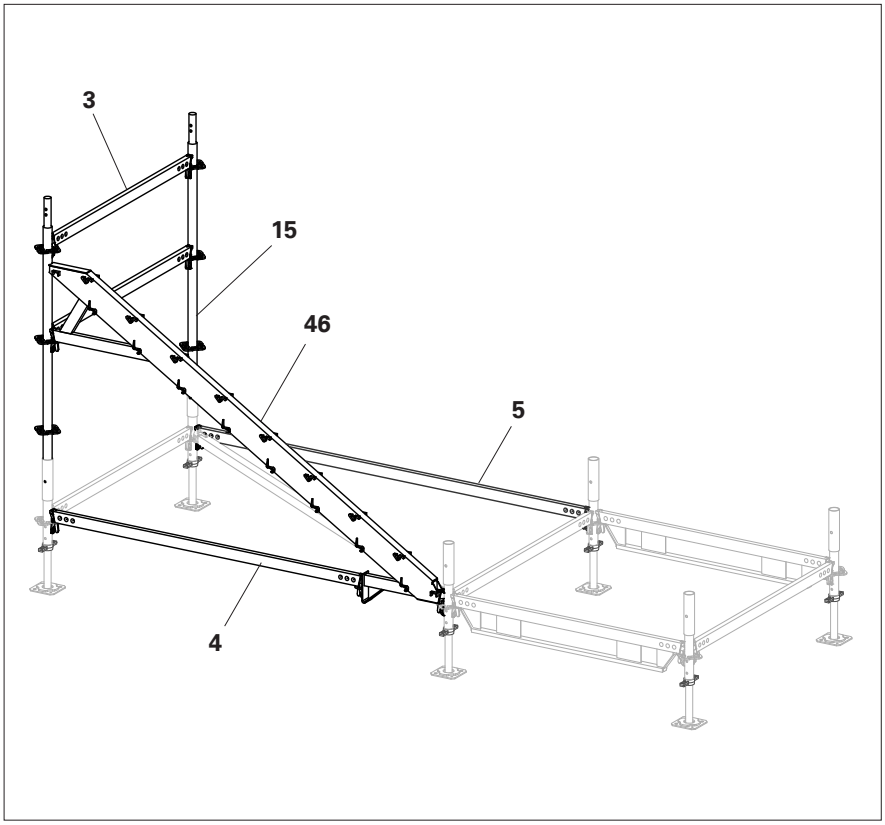


Fig. B1.02

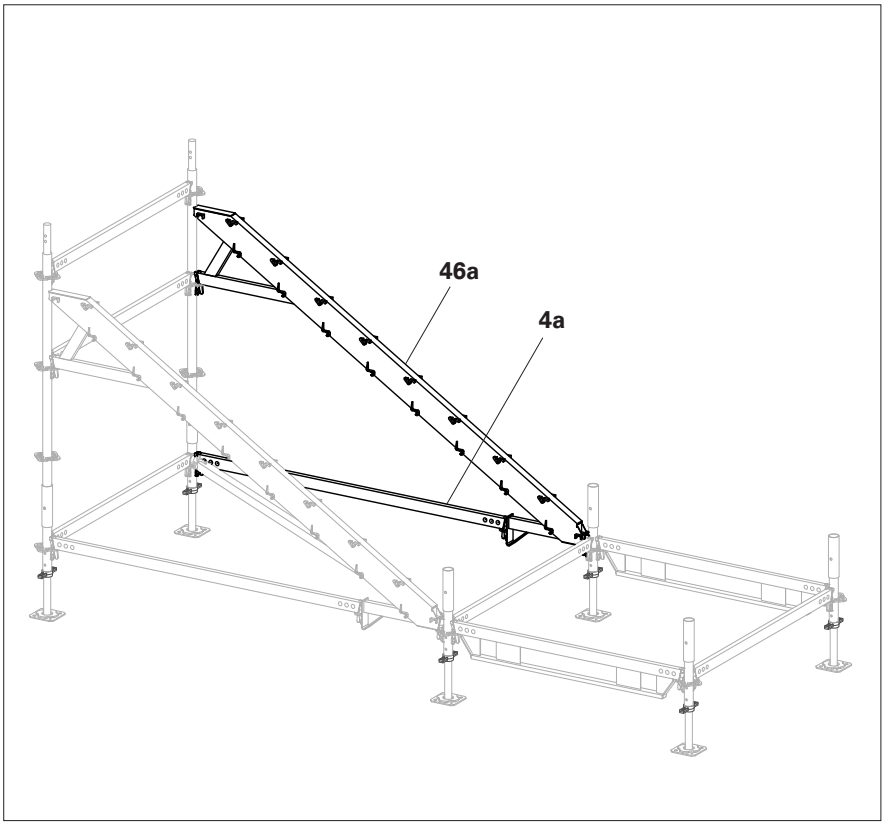


Fig. B1.03

Height compensation

The riser height of the PERI UP Public Stairs is 16.6 cm.
The Height Compensation PAH1 can be used to level the approach to the first landing platform. Depending on the slope of the terrain or the spindles, it may be necessary to build one or several height access steps in front of the landing platform.
Alternatively, place a ramp on the terrain.

Components

3	Horizontal Ledger UH-2 150	1x
16	Standard UVR-2 200	2x
19	Top Standard UVH-2 125	2x
22	Plastic Cap Ø48.3mm grey	2x
44	Lifting Protection PEL	2x
48	Stair Tread PATT 150 top	1x
51	Height Adjustment PAH 1	2x
72	Bolt ISO 4017-M10x025-8.8-ga	2x
73	Bolt ISO 7380-2-M08x025-10.9-ga	2x
74	Hex-Nut ISO 4032-M10-8-ga	2x

Caution

The anti-slip surface of the steps has a sharp edge.
This may cause minor cuts and abrasions during handling.
⇒ Wear protective gloves.
⇒ Do not throw or catch components.

Assembly

1. Attach the Standards UVR-2 200 to the start of the landing platform. (Fig. B1.04)
2. Attach the plastic cap (**22**) to the Top Standard UVH-2 125 (**19**).
3. Fit Height Adjustment PAH 1 (**51**) to Top Standard UVH-2 125 (**19**).
4. Fit the assembly to the base and vertical standard.
5. Fit Horizontal Ledger UH-2 150 (**3**) as a step support. (Fig. B1.05)

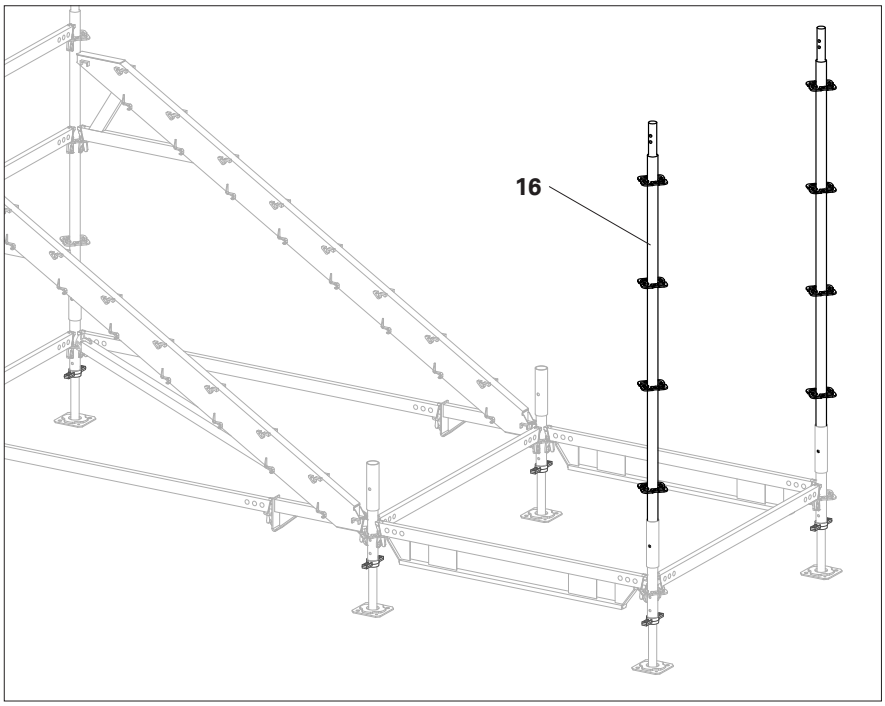


Fig. B1.04

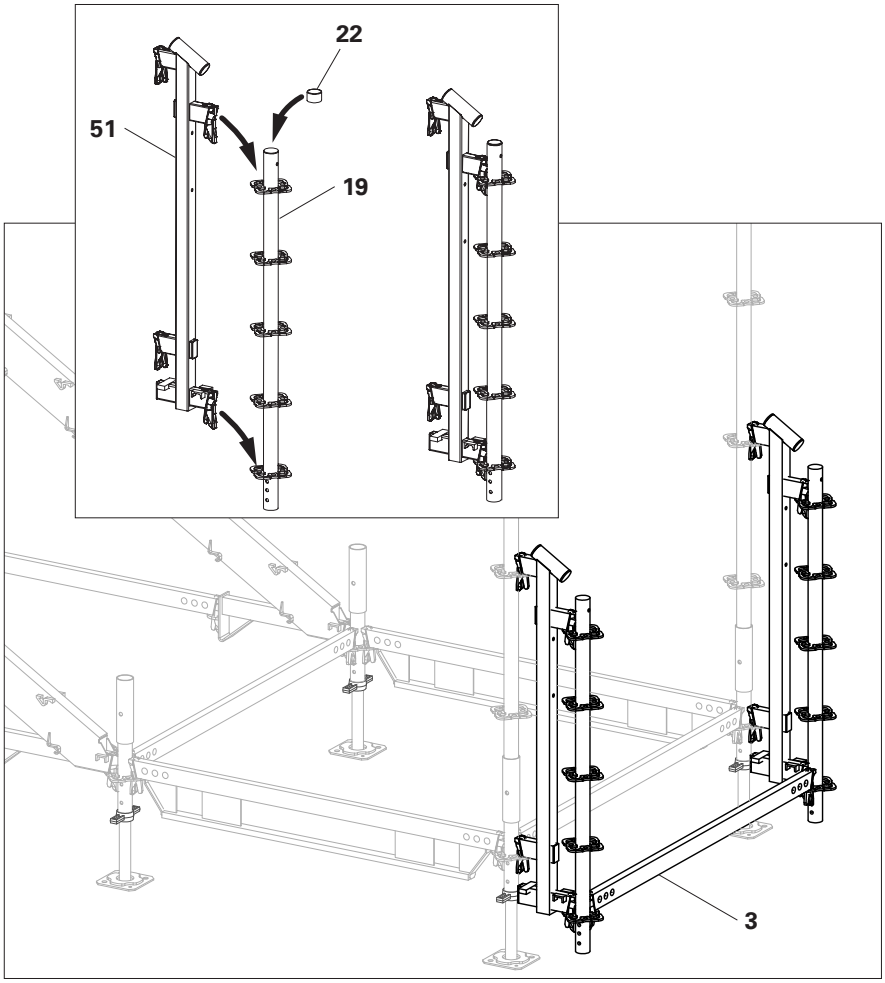


Fig. B1.05

6. Fit 2 x Lifting Protection PEL (**44**) to the step in advance with Bolt M8x25 (**73**).
7. Fit Step PATT 150 top (**48**).
8. Tighten the bolt. The lift lock rotates until it rests against the horizontal ledger. Continue turning until the bolt is tightened.
9. After installation, secure the step on the riser with a bolt (**72**) and nut (**74**) to prevent unauthorised removal. (Fig. B1.06 + Fig. B1.06a)

PERI recommends using a cordless screwdriver. (AF 5 hexagon socket)

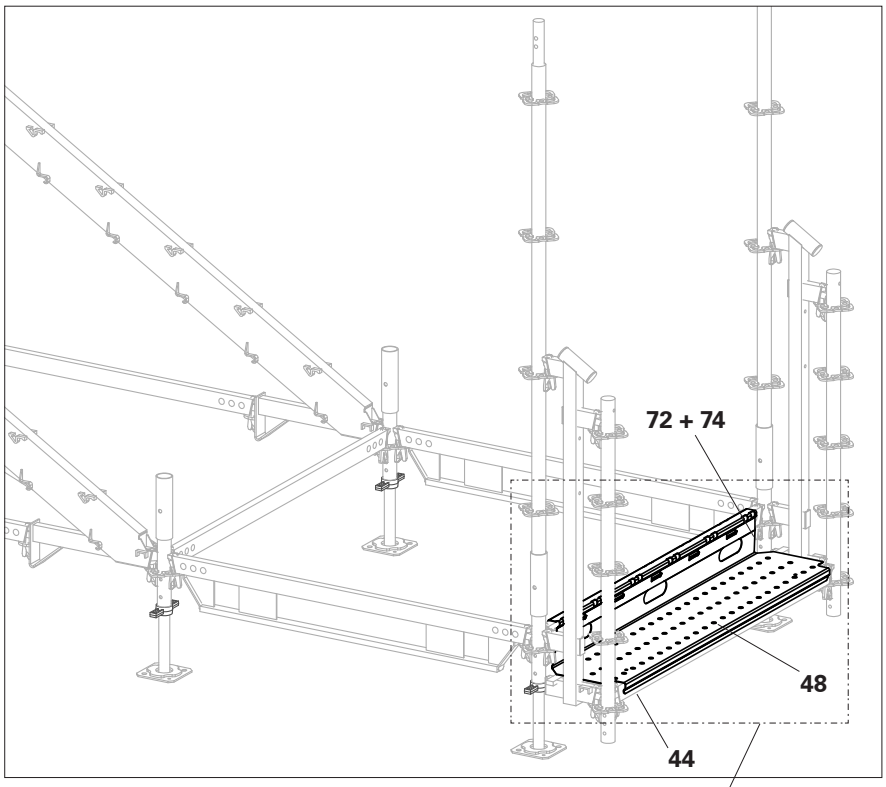


Fig. B1.06

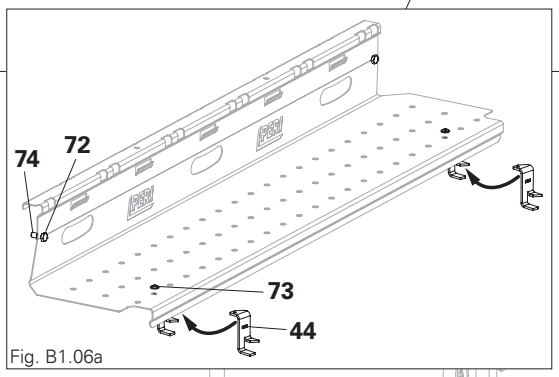


Fig. B1.06a

First step

Components

47 Stair Tread PATS 150	1x

Caution

The anti-slip surface of the steps has a sharp edge.
This may cause minor cuts and abrasions during handling.
⇒ Wear protective gloves.
⇒ Do not throw or catch components.

Assembly

1. Fit the lowest Stair Treads PATS 150 (**47**). (Fig. B1.07)
   For installation, see the section System components, Section "Stair steps" on page 22.

Fig. B1.07

Landing platform decks

Components

25	Steel Deck UDG-2 25x150	6x
53	Platform Beam PDB 150	2x

Caution

There is a risk of crushing your fingers and hands when installing the Platform Beam PDB. This can result in minor or even serious injuries.

⇒ Wear protective gloves.

⇒ Keep fingers and hands away from pinch points.

Assembly

1. Fit the Decks UDG-2 (**25**) in the access bay. (Fig. B1.08)
2. Brace the decks with Platform Beam PDB 150 (**53**). (Fig. B1.09)
   For details on installation and positions, see the section System components, Section "Platform Beam PDB" on page 26

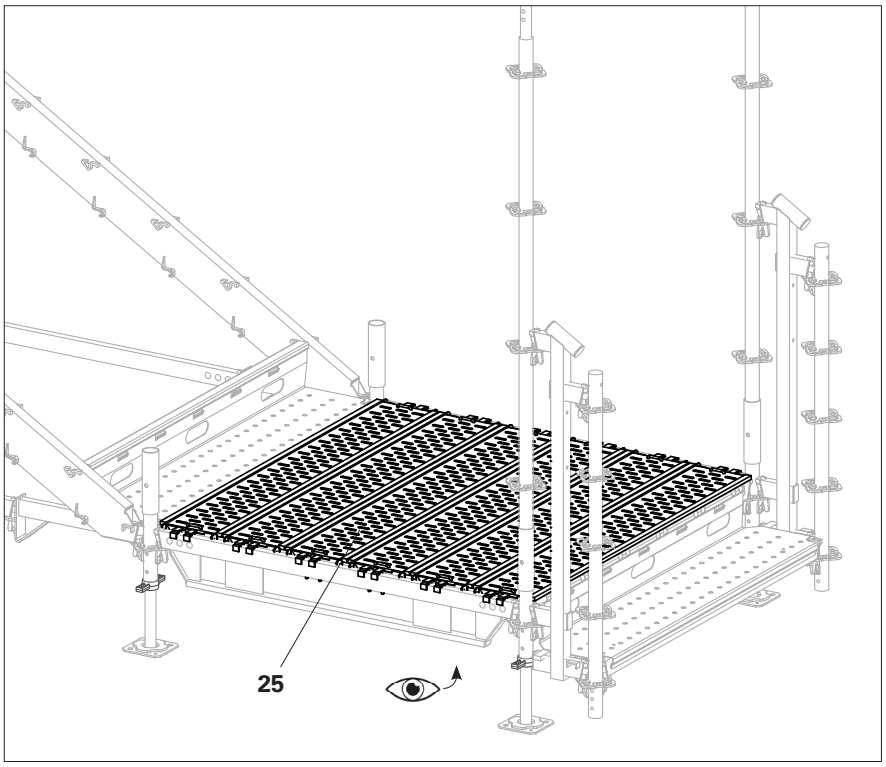


Fig. B1.08

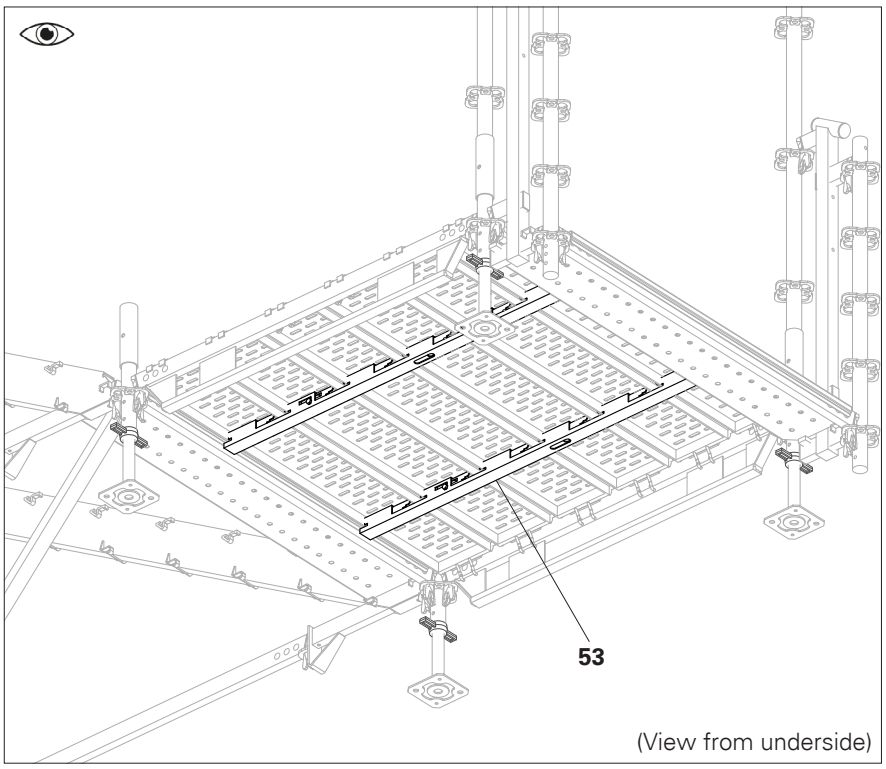


Fig. B1.09

3. To optimise the incline of the access step, extend the adj. base plates to the required height.
   In conjunction with a Height Adjustment PAH1, set them to 30 cm from the upper edge of the rosette to the contact area.
   This corresponds to a spindle extension of 13.5 cm to the underside of the collar. (Fig. B1.10)

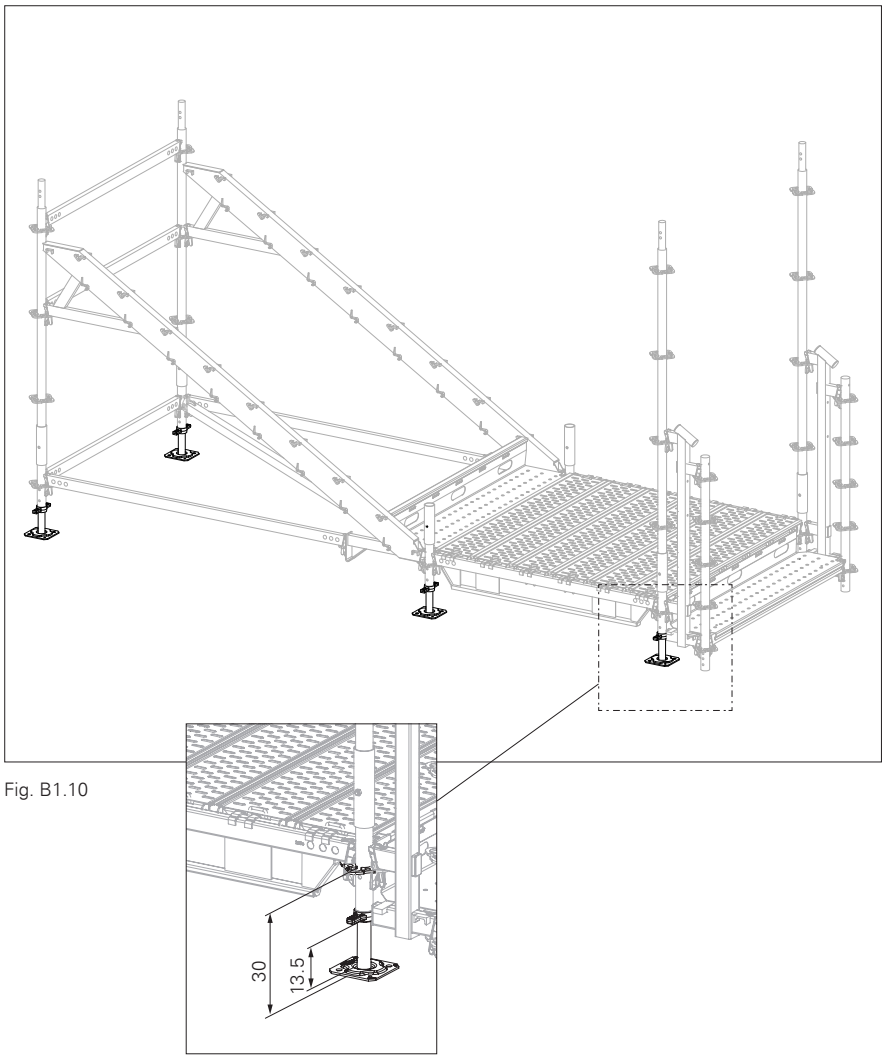


Fig. B1.10

Base level

Components

1	Adj. Base Plate UJB Ø38mm **50/30**	10x
2	Base Standard UVB 25	10x
3	Horizontal Ledger UH-2 150	11x
5	Horizontal Ledger UH-2 250	2x
6	Horizontal Ledger UH-2 25	4x
10	H-Brace UBH Flex 150/150	3x
11	H-Brace UBH Flex 250/150	1x

Assembly

1. Set up additional adj. base plates (**1**) with base standards (**2**) and connect with horizontal ledgers (**3 / 5 / 6**).
2. Fit additional H-braces (**10 / 11**). (Fig. B2.01 + Fig. B2.01a)
3. Align the base level horizontally, starting at the stair tread.
4. Hammer all of the horizontal ledger wedges into place.

For assembly details, see the assembly instructions PERI UP Scaffolding Kit components.

- When aligning, be mindful of the height of the access step.
- Extension ≤ 30 cm.

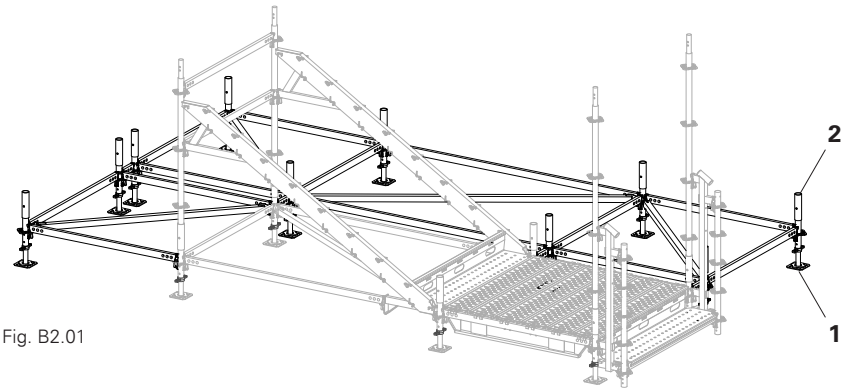


Fig. B2.01

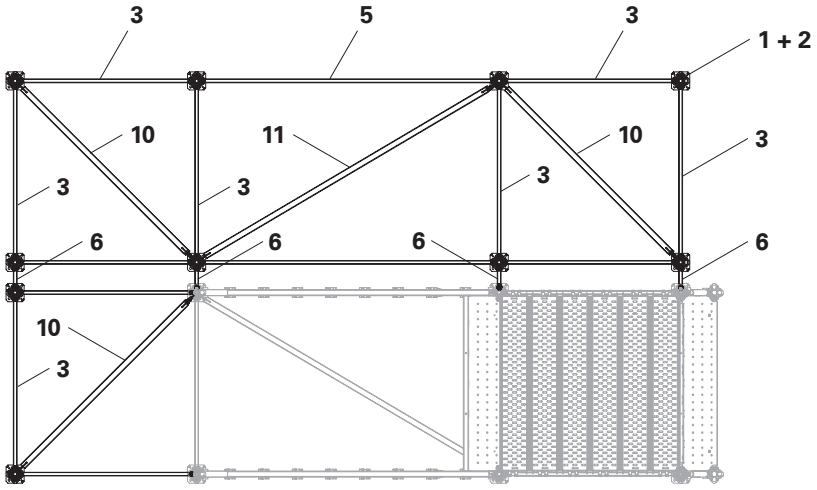


Fig. B2.01a

B2 First staircase

Components

3	Horizontal Ledger UH-2 150	7x
6	Horizontal Ledger UH-2 25	2x
15	Standard UVR-2 150	6x

Standards

The length chosen for the standards must guarantee that the standard joint is always positioned exactly between the respective landing platform levels. For this reason, different leg lengths are fitted to the base level.

Assembly

1. Insert Standard UVR-2 150 (**15**) into base standards
3. Install 7 x Horizontal Ledgers UH-2 150 (**3**) one metre above the base level.
4. Connect the centre standards with Horizontal Ledgers UH-2 25 (**6**). (Fig. B2.02)

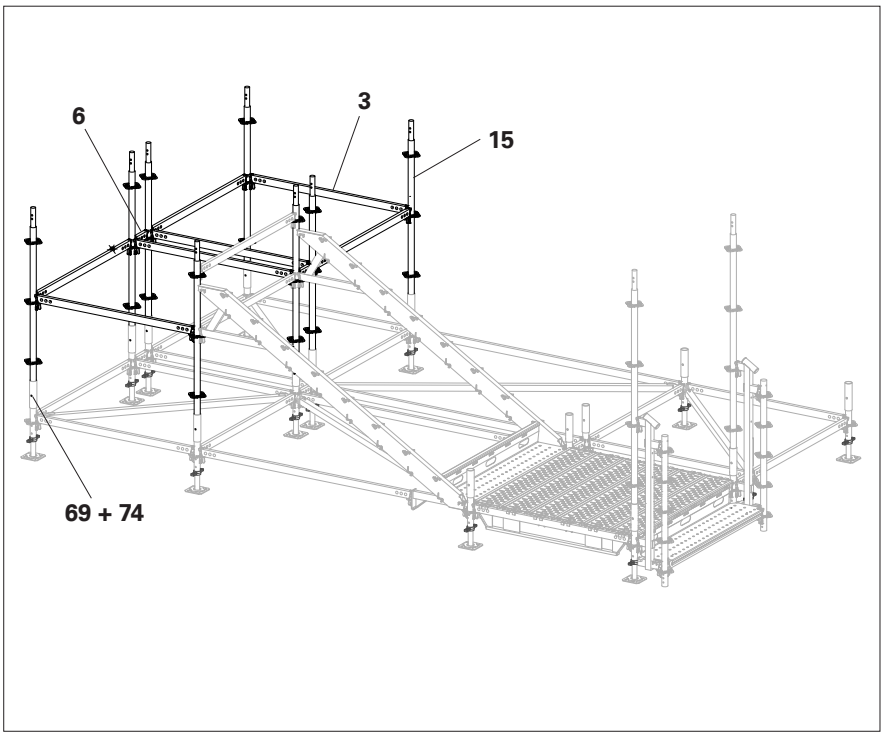


Fig. B2.02

B2 First staircase

Components

16 Standard UVR-2 200	10x
37 Guardrail UPGA 150	6x

Standards
The length chosen for the standards must guarantee that the standard joint is always positioned exactly between the respective landing platform levels. For this reason, different leg lengths are fitted to the base level.

Assembly
1. Attach the Guardrail UPGA's (**37**) to their respective standards at 2.5m high, then insert Standard UVR-2 200 (**16a**) into lower standards.
2. Insert Standard UVR-2 200 (**16b**) into base standards.
3. Fit the Node Brace UBK-2 at 1m high to the newly introduced standards (**16b**).

Assembly with Advanced Guard Rail (AGR) system. From a safe position / platform, a guardrail can be fitted 1m above the next platform level. Starting from an assembled Standard, the Guardrail UPGA is 'hooked' into a small hole in the Rosette. The 'Pin' connection of the Guardrail UPGA is then connected to the next Standard to be assembled. The Standard is then lifted into place. Repeat in an anti-clockwise direction to position Guardrails on the outside of the Standards.

- For assembly and dismantling, first insert or detach one side, then the other side.

Caution
- Stability compromised!
  – Do not attach any loads (e.g. materials) to the guardrails nor place any loads on the guardrail posts!

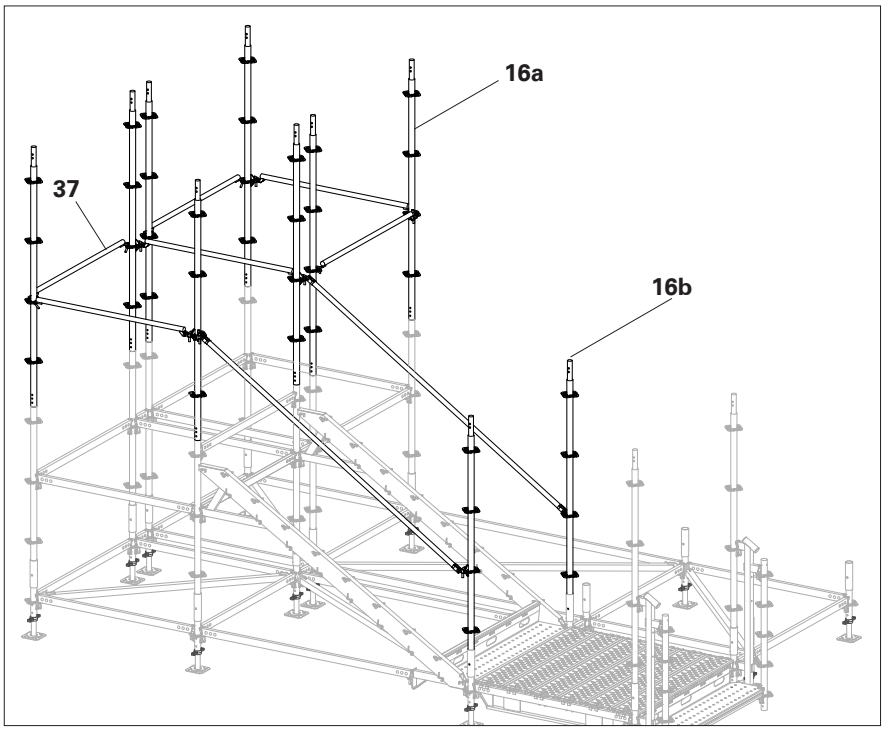
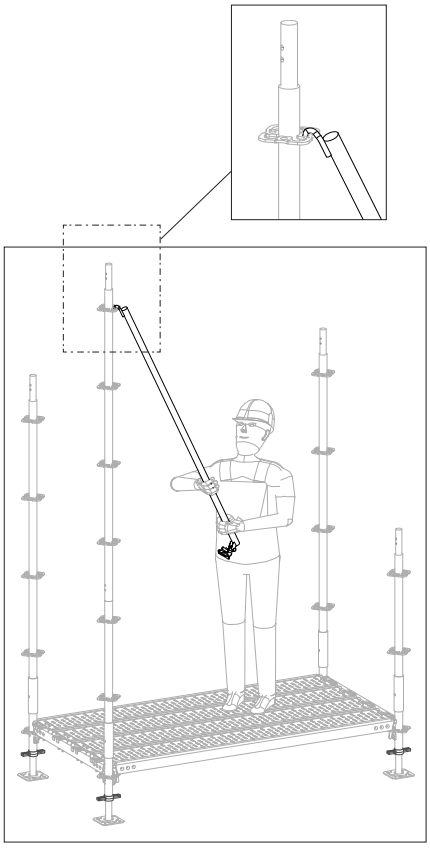
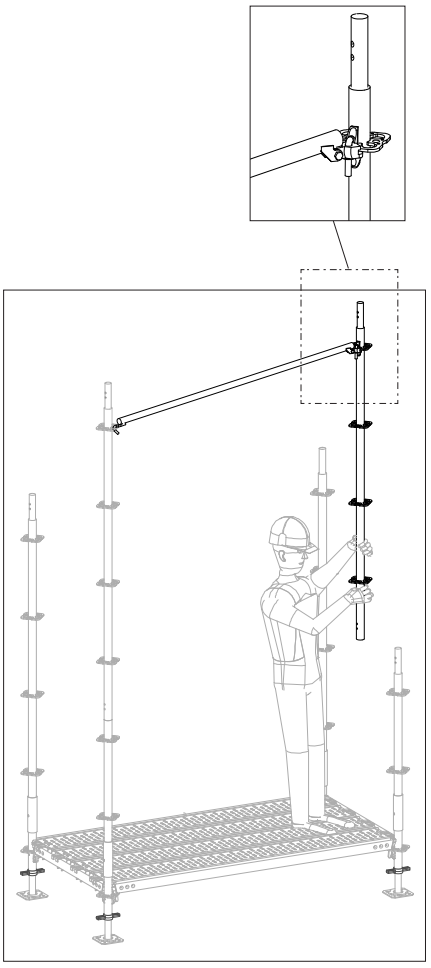


Fig. B2.03


Fig. B2.03a


Fig. B2.03b

Braces

Stair tower

Components

3	Horizontal Ledger UH-2 150	3x
6	Horizontal Ledger UH-2 25	2x
7	Horizontal Ledger UHV-2 150	4x
56	Safety Washer UBL PEW	6x
58	Ledger Brace UBL-2 150/100	2x
60	Ledger Brace UBL-2 150/150	4x
65	Shoring Brace UBS 150/150	4x

Horizontal ledger assembly

1. Install 3 x Horizontal Ledgers UH-2 150 (**3**) at a height of 1.5 m above the base level.
2. Install 4 x Horizontal Ledgers UHV-2 150 (**7**) as platform beams.
3. Connect the centre standards with Horizontal Ledgers UH-2 25 (**6**).

Bracing assembly

Brace each landing platform tower with 1 Ledger Brace UBL-2 150/100 (**58**) and 2 Ledger Braces UBL-2 150/150 (**60**) on all 4 sides in a spiral pattern.

1. Hook the mounting finger into the upper horizontal ledger.
2. Hook the tilt finger into the lower horizontal ledger.
3. Position the tilt finger on the inside of the horizontal ledger.
4. Secure all Ledger Braces UBL-2 with Safety Washers UBL PEW (**56**) to prevent unauthorised removal. See the section System components, Section "Safety Washer UBL PEW" on page 23. (Fig B2.04 + B2.04a)

Assembly

Additionally in the lowest position:
Fit *4 x Shoring Braces UBS (**65**) to the internal frame columns.
If necessary, fit the H-brace (**10**) rotated through 90°.
(Fig. B2.04a)

For assembly details, see the assembly instructions PERI UP Scaffolding Kit components.

*Only required for Stair Towers 15m

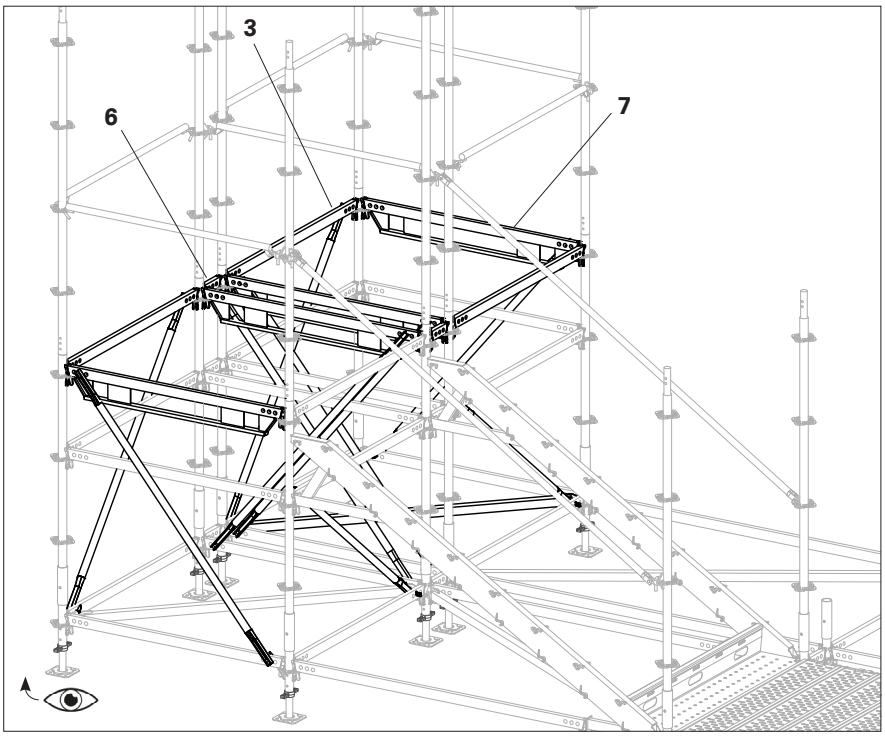


Fig. B2.04

- All tilt fingers in the assembly must be transverse after installation of the Ledger Braces UBL and be resting on both sides of the hole.
- Each ledger brace must be secured on the tilt finger with a Safety Washer PEW to prevent unauthorised removal.

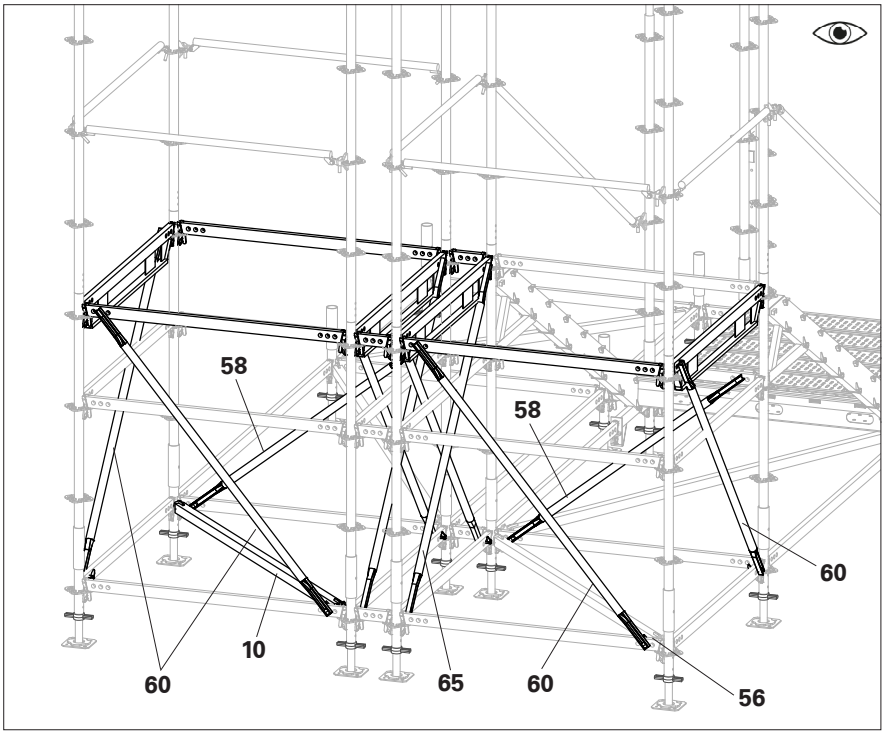


Fig. B2.04a

Landing platform

Components

25	Steel Deck UDG-2 25x150	12x

Fitting landing platform decks

1. Fit Decks UDG-2 (**25**) in the landing platform bays.

(Fig. B2.05)

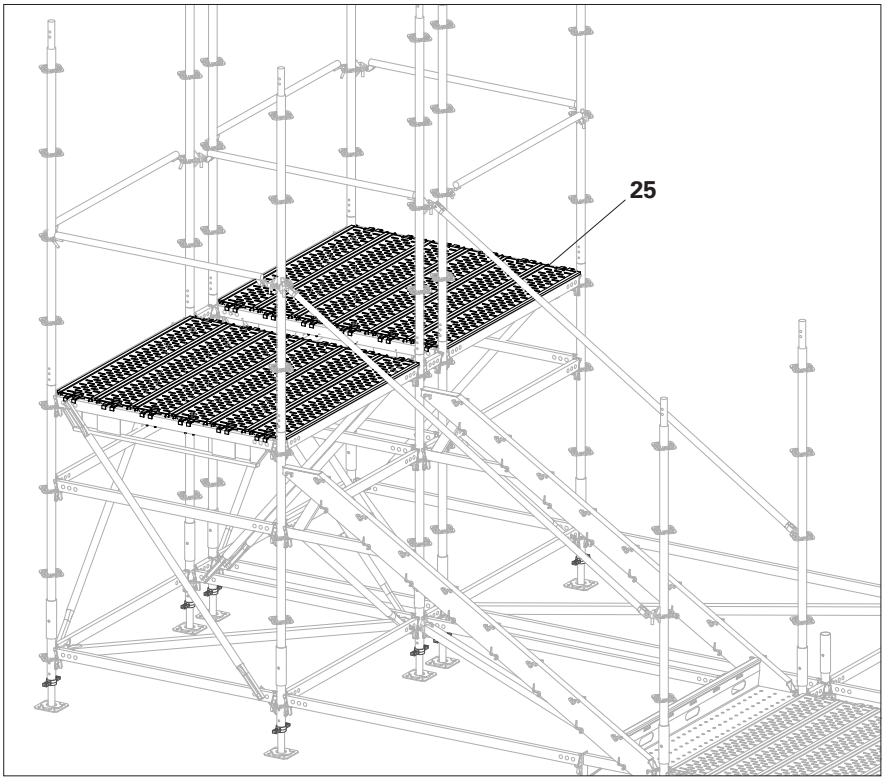


Fig. B2.05

Stairs

For installing the steps, see Section "Stair steps" on page 22.

Components

42	Gap Cover PDC 150	1x
44	Lifting Protection PEL	2x
47	Stair Tread PATS 150	7x
48	Stair Tread PATT 150 top	1x
72	Bolt ISO 4017-M10x025-8.8-ga	2x
73	Bolt ISO 7380-2-M08x025-10.9-ga	2x
74	Hex-Nut ISO 4032-M10-8-ga	2x

Caution

The anti-slip surface of the steps has a sharp edge.
This may cause minor cuts and abrasions during handling.
⇒ Wear protective gloves.
⇒ Do not throw or catch components.

Assembly

1. Fit additional Stair Treads PATS 150 (**47**) from bottom to top.
2. Fit the uppermost Stair Tread PATT 150 top (**48**).
   For installation, see Section "Stair steps" on page 22
3. Secure the uppermost stair tread with a bolt (**72**) and nut (**74**) to prevent unauthorised removal.
   (Fig. B2.06 + Fig. B2.06a)

Gap Cover PDC

Close the remaining gap in the deck of both landing platform towers.

Assembly

1. Fit Lifting Protection PEL (**44**) to Gap Cover PDC (**42**) beforehand with a filister head bolt (**73**). The lift lock must continue to be rotatable.
2. Place the Gap Cover PDC (**42**) on the deck gap, but do not bolt it down tightly yet. (Fig. B2.06 + Fig. B2.06b)
   For the number and position of the lift locks, see Section "Gap Cover PDC" on page 32

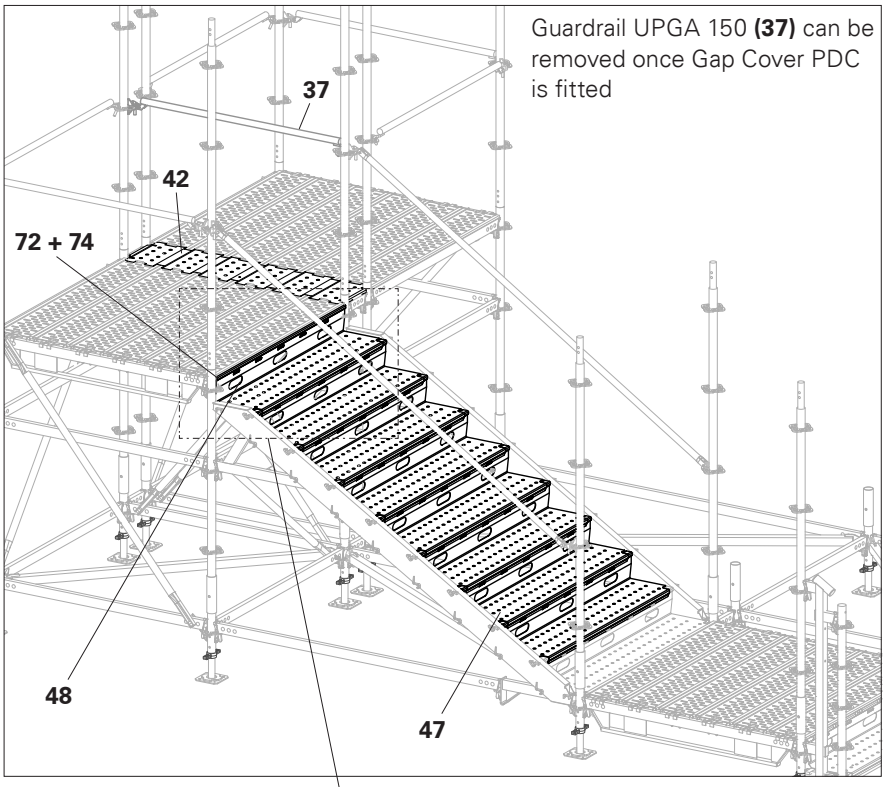


Fig. B2.06

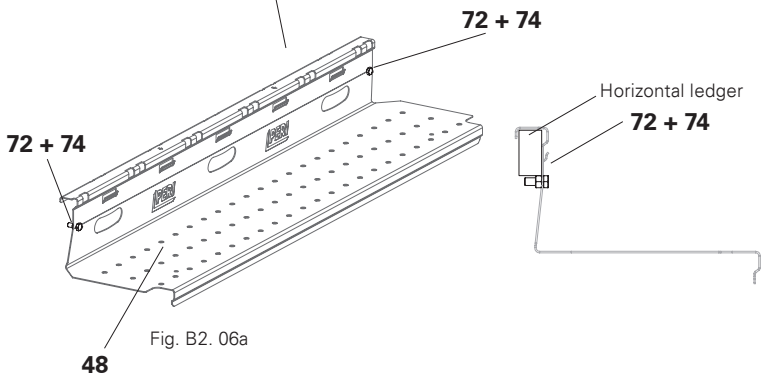


Fig. B2. 06a

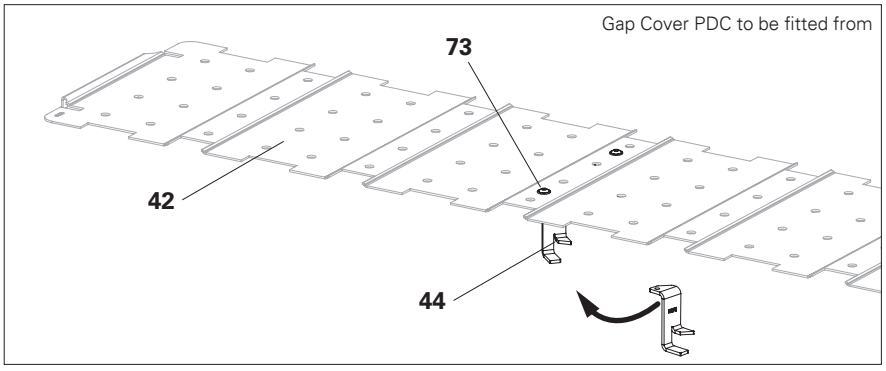


Fig. B2.06b.

PERI recommends using a cordless screwdriver. (AF 5 hexagon socket)

Landing platform tower start

Components

3	Horizontal Ledger UH-2 150	4x
16	Standard UVR-2 200	4x
25	Steel Deck UDG-2 25x150	5x
27	Steel Deck UDG-2 25x250	6x
37	Guardrail UPGA 150	3x
39	Guardrail UPGA 250	2x

Assembly

1. Attach the Guardrail UPGAs (**37 / 39**) to their respective standards at 2m high, then insert standards (**16**) into base standards. (Fig. B2.07)

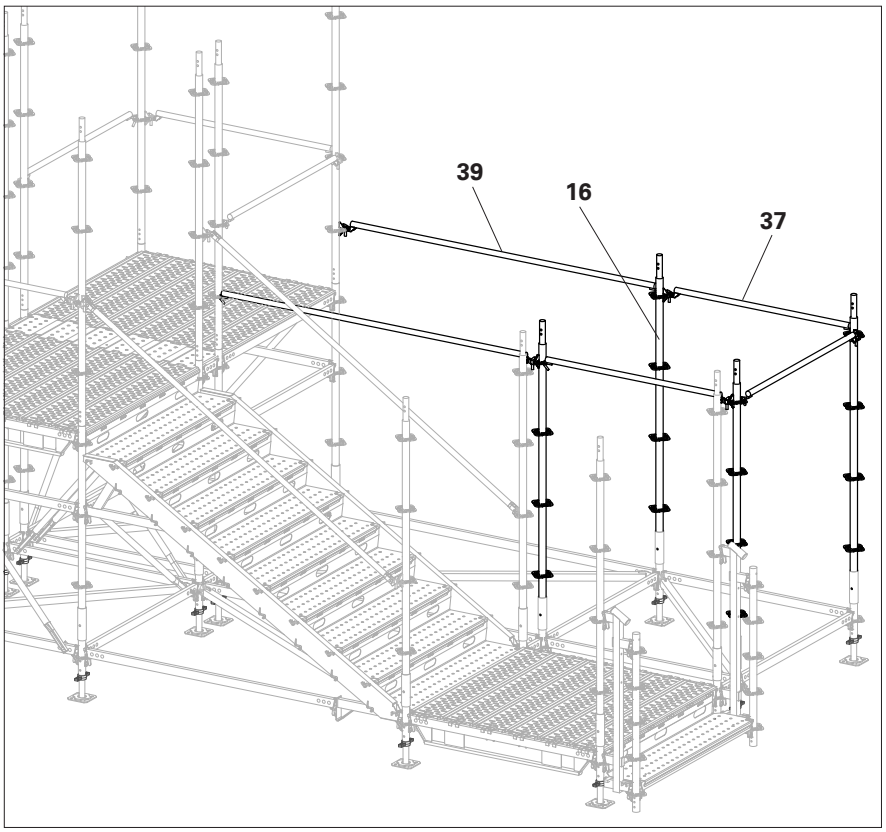


Fig. B2.07

2. Connect the standards with Horizontal Ledgers UH-2 150 (**3**) either end of deck locations.
3. Install 6 x Steel Deck UDG-2 25x250 (**27**) one metre above the base level.
4. Install 5 x Steel Deck UDG-2 25x150 (**25**) one metre above the base level. (Fig. B2.07a)

Temporary Decks may be accessed from the tower platforms.

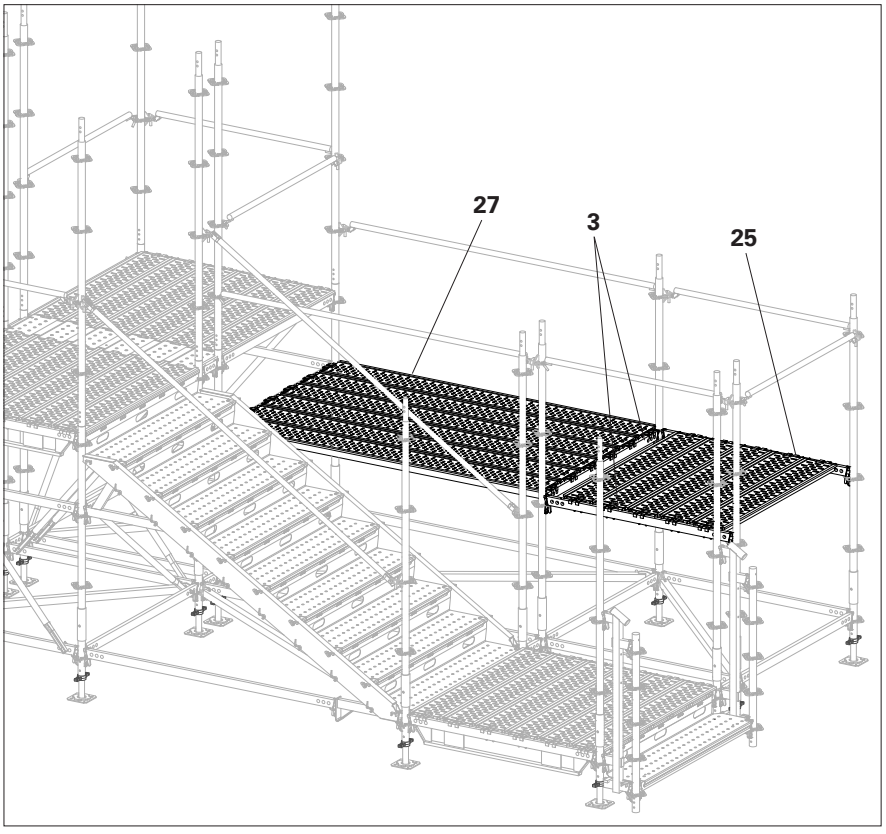


Fig. B2.07a

Guardrail

Components

3	Horizontal Ledger UH-2 150	6x
30	Guardrail PPG 250/150	2x
33	Guardrail PPG 150	6x
36	Guardrail PPG 25	2x

Assembly

1. Fit 2 x Guardrails PPG 150 (**33**) in the area of the access landing platform. Ensure that both wedges (**33.1**) and both hooks (**33.2**) engage in the rosettes.
2. Hammer all wedges into place.
3. Fit 2 x Guardrails PPG 250/150 (**30**) to the flight of stairs. First hook them into the upper side, then the lower side.
4. Fit 4 x Guardrails PPG 150 (**33**) to the landing platform.
5. Fit 2 x Guardrails PPG 25 (**36**) between the landing platform towers.
6. Fit two Horizontal Ledgers UH–2 (**3a**) to the access landing platform.
7. Fit four Horizontal Ledgers UH-2 (**3b**) to the upper landing platform. (Fig. B2.08 + Fig. B2.08a)

Guardrail PPG Units are safely fitted from behind the temporary Guardrails UPGA / Node Braces UBK-2 which may be subsequently removed for re-use.

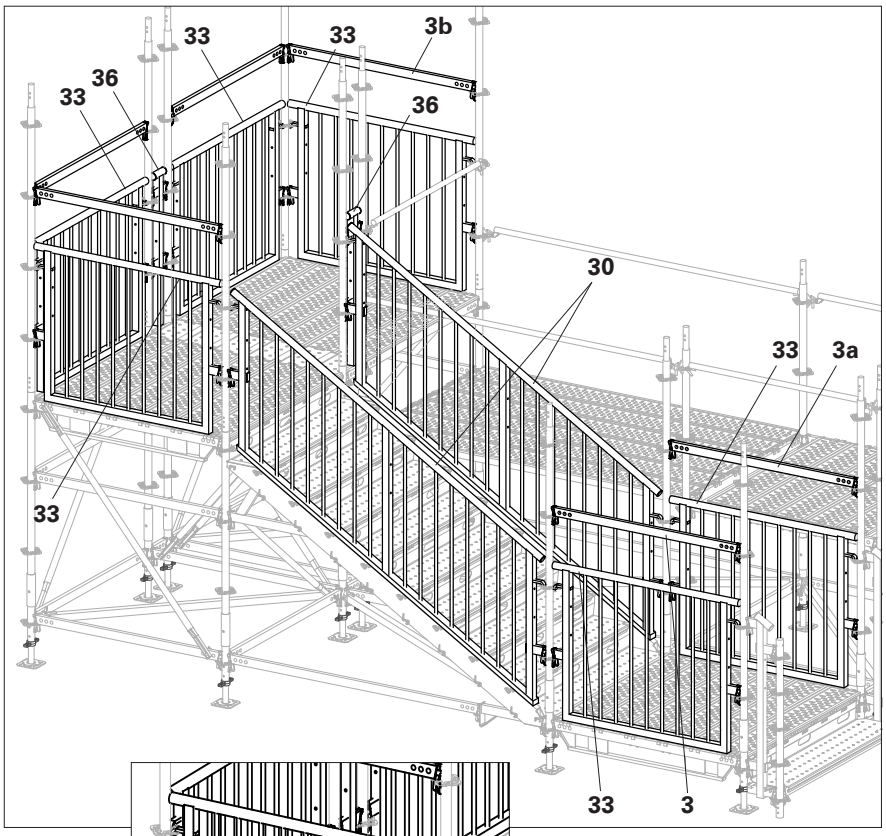


Fig. B2.08

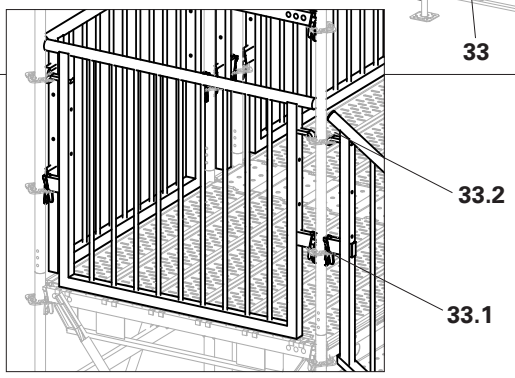


Fig. B2.08a

Landing platform tower cont.

Components

17	Standard UVR-2 300	4x
37	Guardrail UPGA 150	4x
68	Node Brace UBK-2 250/150	2x

Assembly

1. From the temporary landing platform, attach 1 x Node Brace UBK-2 (**68**) to the Standard at 1m above the platform level on the previous tower, then connect the other end to 1 x Standard UVH-2 300 (**17**) at 2m high and insert the Standard at point (**A**) (Fig. B3.01a).
2. Following an anti-clockwise plan direction, attach the Guardrail UPGA 150 (**37**) to the next Standard at 2m high, then insert the Standard at Point (**B**) (Fig B3.01b).
3. Continue with the next Standard, attaching the next Guardrail UPGA 150 (**37**) to the next Standard at 2m high, then insert the Standard at Point (**C**) (Fig B3.01c)
4. On the final Standard, also attach one end of the remaining Node Brace UBK-2 (**68**) before inserting into position at Point (**D**). Connect the other end of the Node Brace UBK-2 to the Standard at 1m above the platform level on the previous tower (Fig. B3.01d).

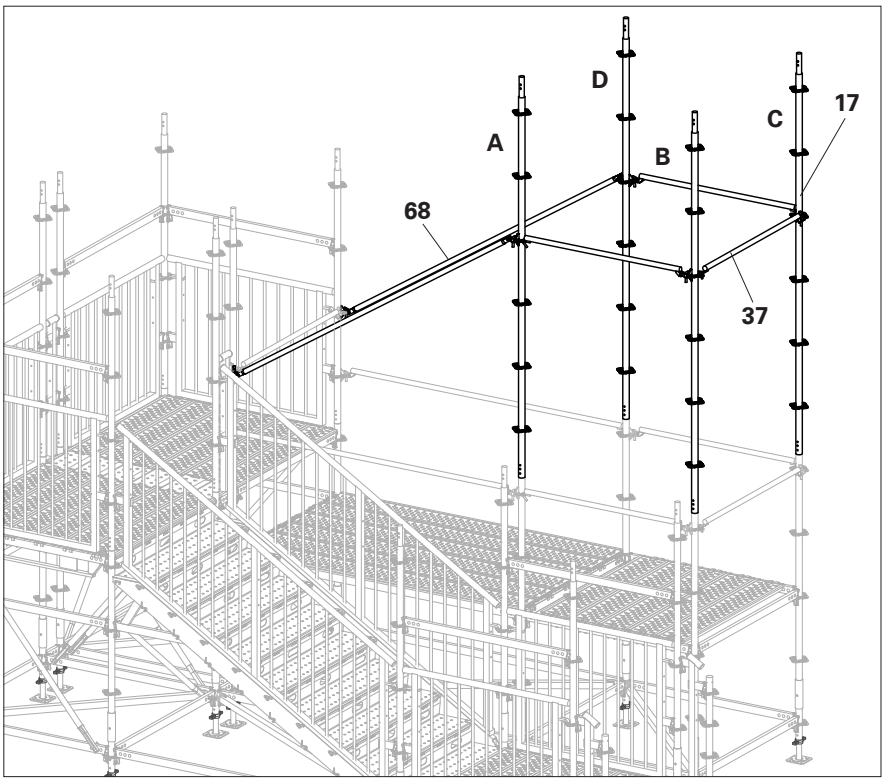


Fig. B3.01

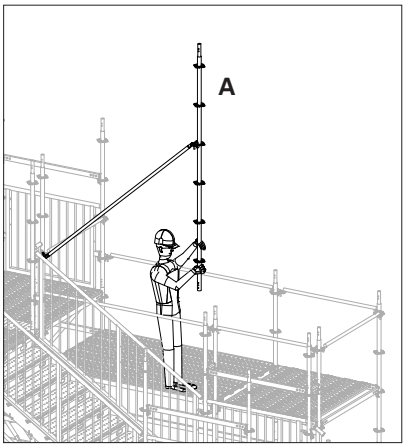


Fig. B3.01a

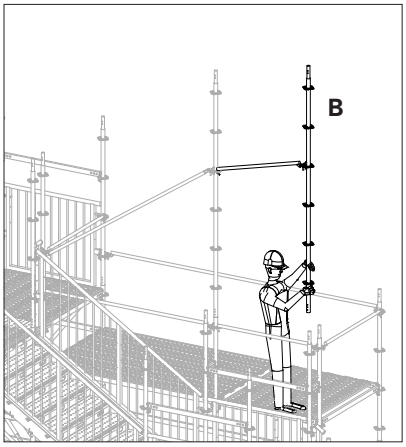


Fig. B3.01b

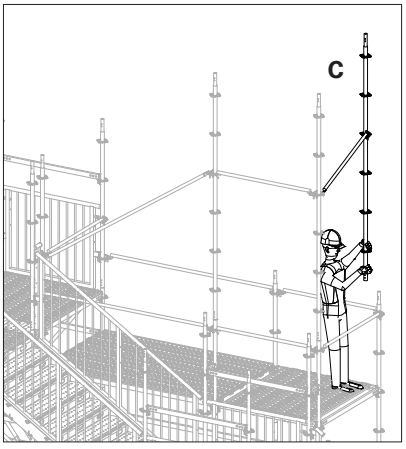


Fig. B3.01c

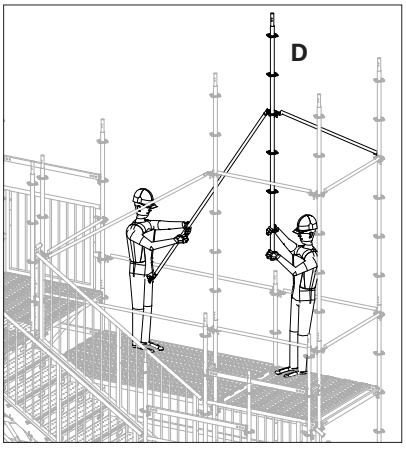


Fig. B3.01d

Landing platform tower cont.

Components

3	Horizontal Ledger UH-2 150	10x
6	Horizontal Ledger UH-2 25	2x
7	Horizontal Ledger UHV-2 150	2x
10	H-Brace UBH FLEX 150/150	1x
56	Safety Washer UBL PEW	7x
58	Ledger Brace UBL-2 150/100	1x
60	Ledger Brace UBL-2 150/150	6x

Assembly

1. Fit 4 x Horizontal Ledgers UH-2 150 (**3**). Fit 2 x Horizontal Ledgers UH-2 25 (**6**).
2. Fit 4 x Ledger Braces UBL-2 150/150 (**60**) in a spiral pattern on all 4 sides.
3. Secure all Ledger Braces UBL-2 with Safety Washers UBL PEW (**56**) to prevent unauthorised removal. See the section System components, Section "Safety Washer UBL PEW" on page 23.
4. Fit 1 x H-Brace UBH Flex (**10**). (Fig. B3.02)

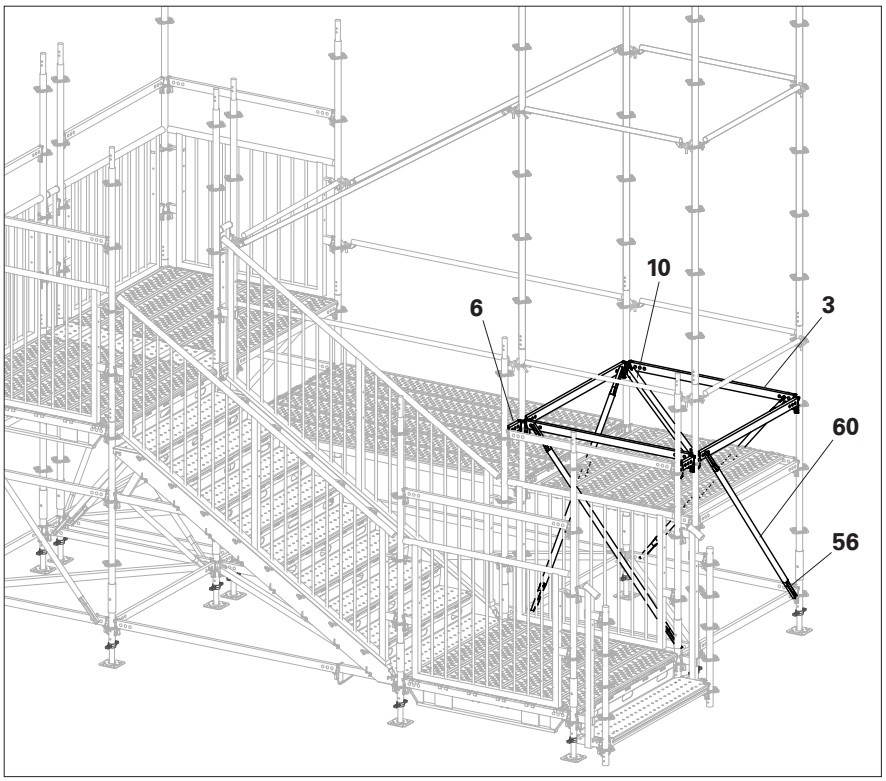


Fig. B3.02

5. Fit 6 x Horizontal Ledgers UH-2 150 (**3**) and 2 x Horizontal Ledgers UHV-2 150 (**7**).
6. Fit 2 x ledger braces (**60**), fit 1 x ledger brace (**58**).
7. Secure all Ledger Braces UBL-2 with Safety Washers UBL PEW (**56**) to prevent unauthorised removal. See the section System components, Section "Safety Washer UBL PEW" on page 23. (Fig. B3.03)

For the uppermost level:
Fit Top Standards UVH 200 otherwise Standards UVR-2 300

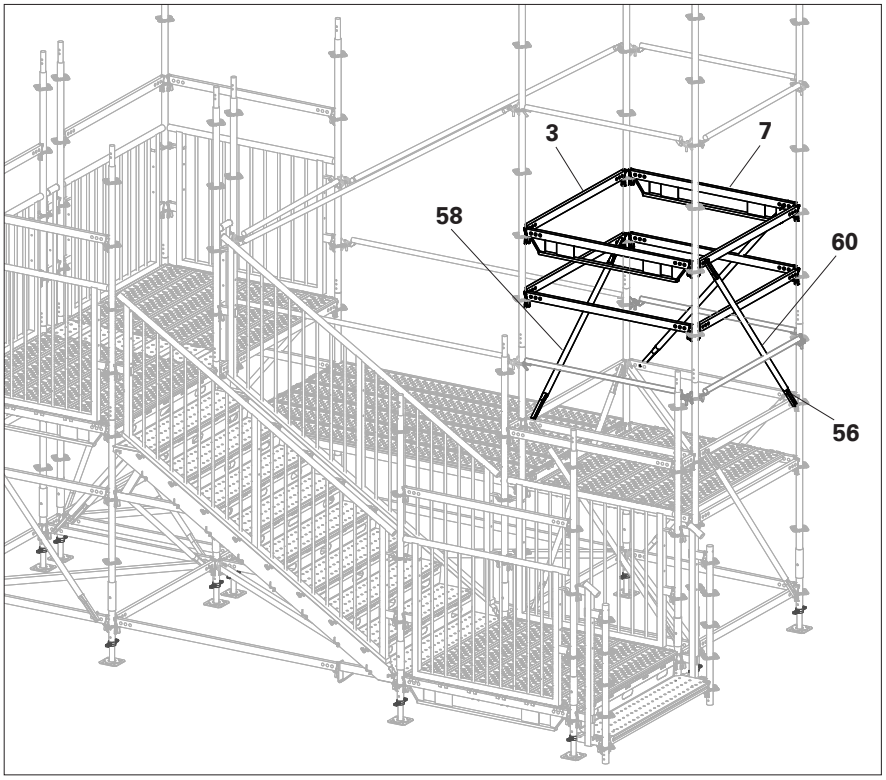


Fig. B3.03

B3 Second staircase

Stair stringers & Landing platform

Components

4	Horizontal Ledger UH-2 200	2x
25	Steel Deck UDG-2 25x150	6x
46	Stair Stringer PAS 250/150	2x

Assembly

From the temporary landing platform:

1. Fit the Steel Deck UDG-2's (**25**).
2. Fit 2x Stair Stringer PAS (**46**) together with a second person.
3. Fit Horizontal Ledger UH-2 200 (**4**). (Fig. B3.04)

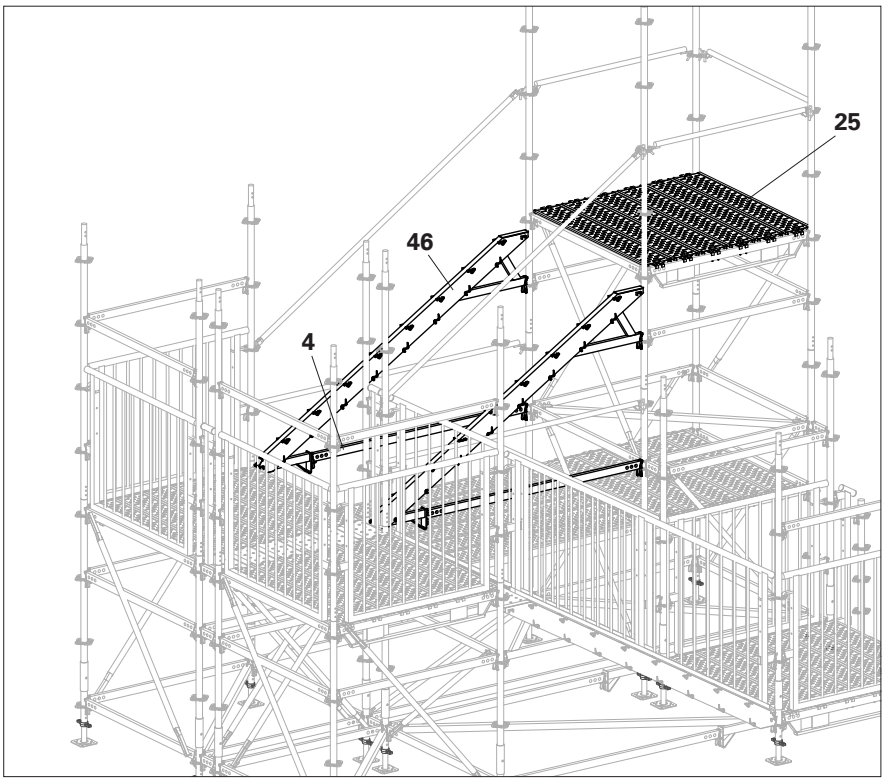


Fig. B3.04

Flight of stairs

Components

30	Guardrail PPG 250/150	2x
44	Lifting Protection PEL	2x
47	Stair Tread PATS 150	8x
48	Stair Tread PATT 150 top	1x
72	Bolt ISO 4017-M10x025-8.8-ga	2x
73	Bolt ISO 4017-M08x025-10.9-ga	2x
74	Hex-Nut ISO 4032-M10-8-ga	2x

Assembly

1. Fit the Stair Treads PATS 150 (**47**).
2. Fit the uppermost Stair Tread PATT 150 top (**48**). For installation, see the section System components.
3. Secure the uppermost stair tread with 2 x Bolts M10 x 25 (**72**) and nuts (**74**) to prevent unauthorised removal.
4. Fit 2 x Guardrails PPG 250/150 (**30**).
5. Depending on requirements, the bottom step can be clamped with 2 Lift Locks PEL and Bolts (**73**). (Fig. B3.05)

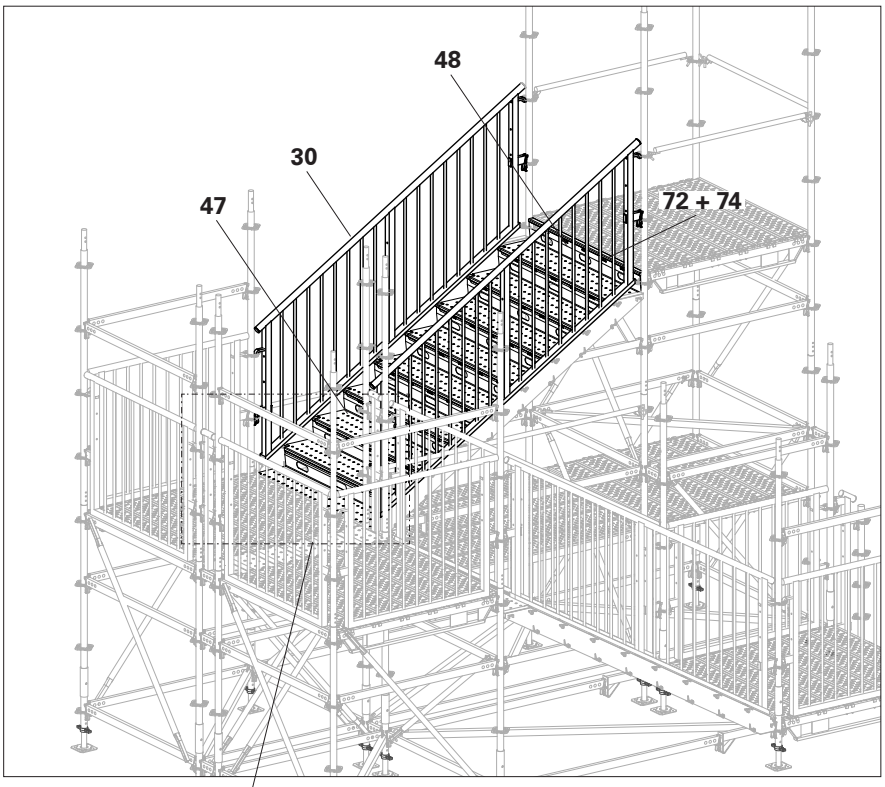
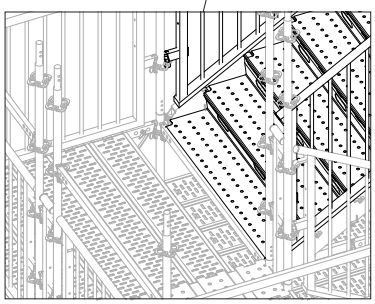


Fig. B3.05



- Temporary removal of the UDG Deck is required to fit the bottom Stair Tread

The landing brace with Platform Beam PDB (**53**) and H-Brace UBH (**10**) can only be installed if:

- the first step of the next flight of stairs and
- the missing steel deck is installed in the landing platform.

The assembly process for the final landing platform (final staircase landing) takes place in this work step. (Fig. B3.05a)

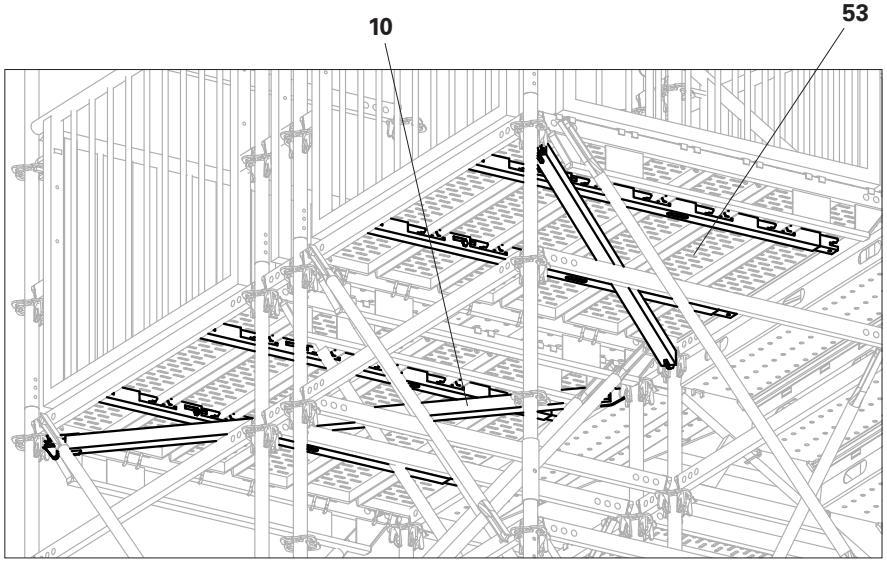


Fig. B3.05a (View from underside)

B3 Second staircase

Landing platform tower

Components

3	Horizontal Ledger UH-2 150	6x
25	Steel Deck UDG-2 25x150	5x

Assembly

1. Fit 4 x Horizontal Ledgers UH-2 150 (**3**).
2. Fit 2 x temporary Horizontal Ledgers UH-2 150 (**3a**). (Fig. B3.05)
3. Fit five temporary Steel Decks UDG-2 25x150 (**25**) approximately in the centre. (Fig. B3.06)

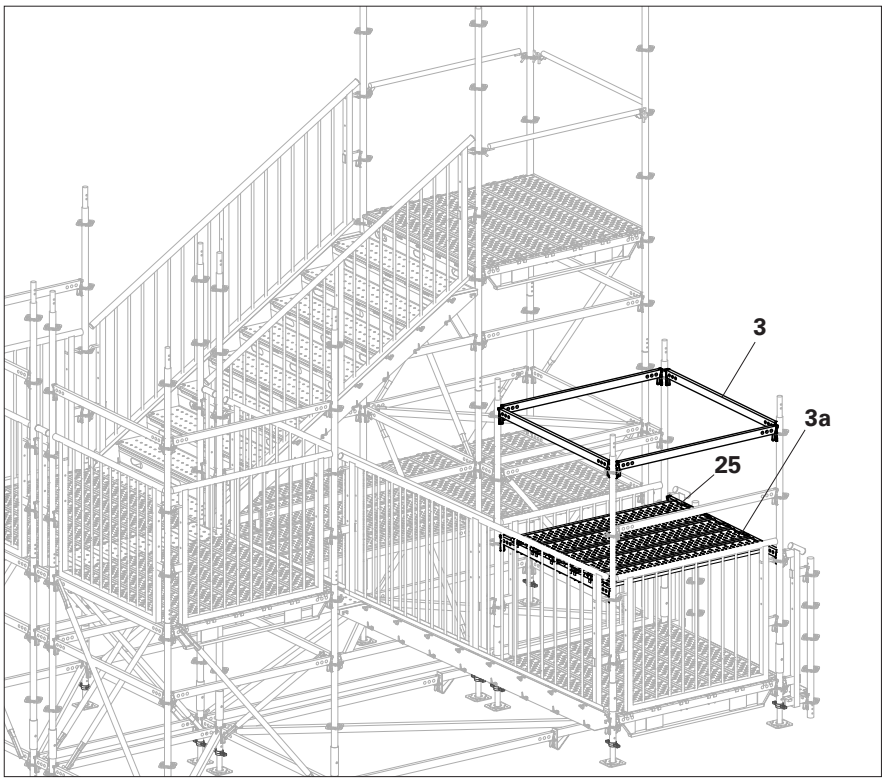


Fig. B3.06

Landing platform tower

Components

3	Horizontal Ledger UH-2 150	6x
6	Horizontal Ledger UH-2 25	4x
7	Horizontal Ledger UHV-2 150	2x
17	Standard UVR-2 300	4x
37	Guardrail UPGA 150	3x
60	Ledger Brace UBL-2 150/150	1x
69	Bolt ISO 4014-M10X070-8.8	4x
74	Hex-Nut ISO 4032-M10-8-ga	4x

Assembly

1. Connect Guardrail UPGA's (**37**) to their respective standards at 2m high, then insert standards (**17**) into lower standards.
2. Connect standards with bolt (**69**) and nut (**74**) so that they are tension-proof. (Fig. B3.07)

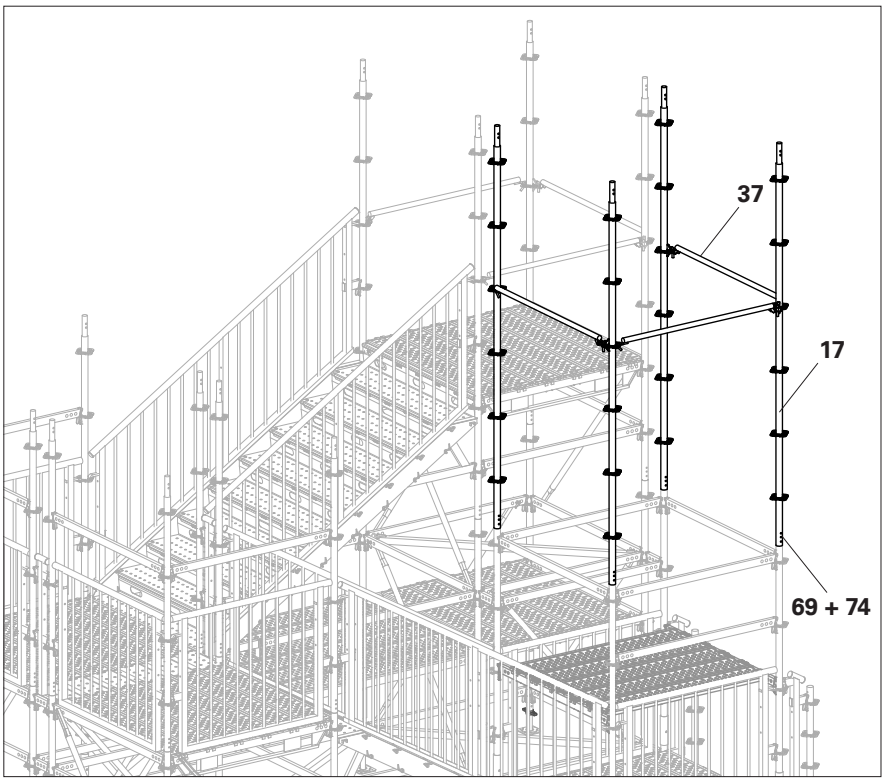


Fig. B3.07

3. Fit 6 x Horizontal Ledgers UH-2 150 (**3**), 2 x Horizontal Ledgers UHV-2 150 (**7**) and 4 x Horizontal Ledgers UH-2 25 (**6**).
4. Fit 1 x Ledger Brace UBL-2 150/150 (**60**). (Fig. B3.08)

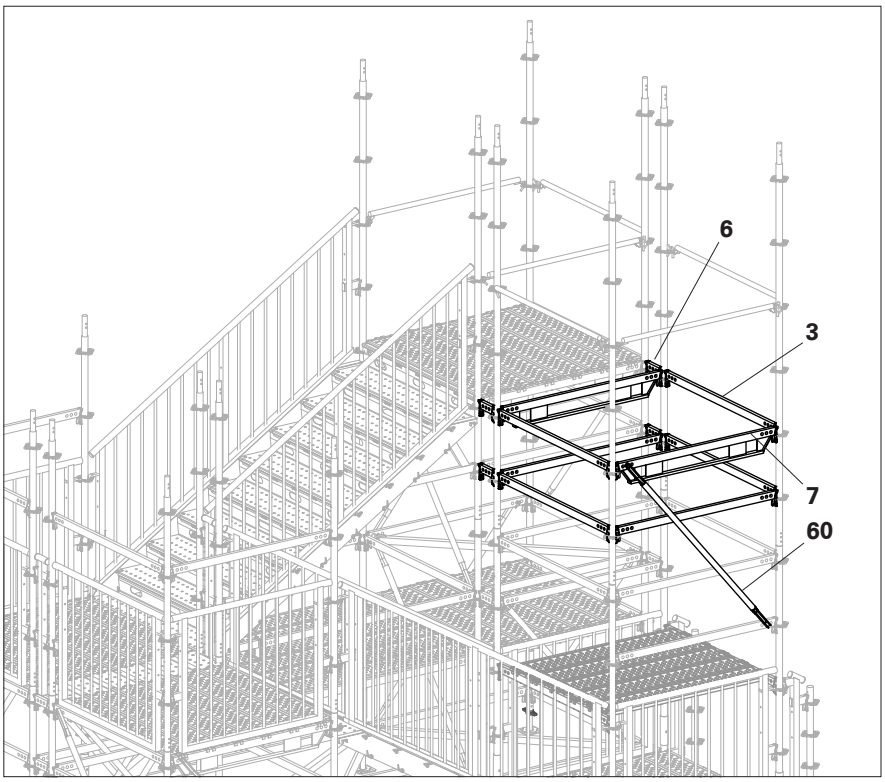


Fig. B3.08

Landing platform

Components

3	Horizontal Ledger UH-2 150	4x
25	Steel Deck UDG-2 25x150	6x
33	Guardrail PPG 150	4x
36	Guardrail PPG 25	2x
42	Gap Cover PDC 150	1x
44	Lifting Protection PEL	2x
73	Bolt ISO 7380-2-M08x025-10.9-ga	2x

Fitting landing platform decks

1. Fit Decks UDG-2 (**25**) in the landing platform bays.

Fitting the Gap Cover PDC

2. Place the Gap Cover PDC (**42**) with pre-assembled lift lock (**44**) on the deck gap. Do not bolt it down tightly yet, see Section "Landing platform" on page 46.
3. From the temporary platform, fit the landing brace with Platform Beam PDB (**53**) and H- Braces UBH (**10**).

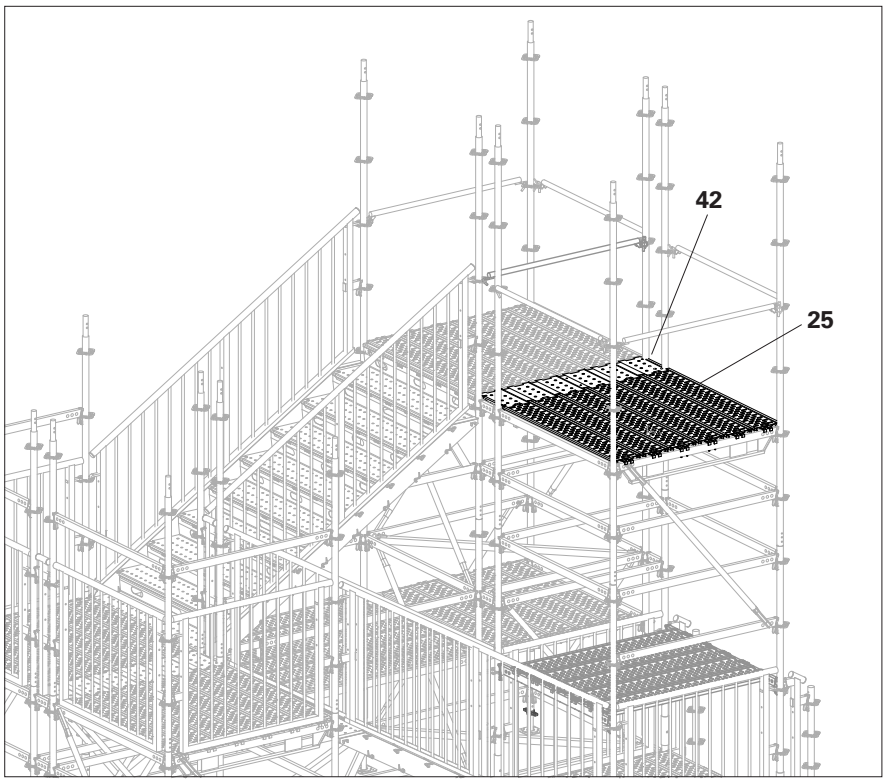


Fig. B3.09

Guardrail assembly

4. Fit 4 x Guardrails PPG 150 (**33**) to the landing platform.
5. Fit 2 x Guardrails PPG 25 (**36**) between the landing platform towers.
6. Fit 4 x Horizontal Ledgers UH-2 150 (**3**).

Temporary lower Decks and Ledgers can be removed once Decks, Gap Cover PDC, Platform Beam PDB & H-Brace UBH is fitted.

Repeat the work steps in section B3 for each additional staircase level.

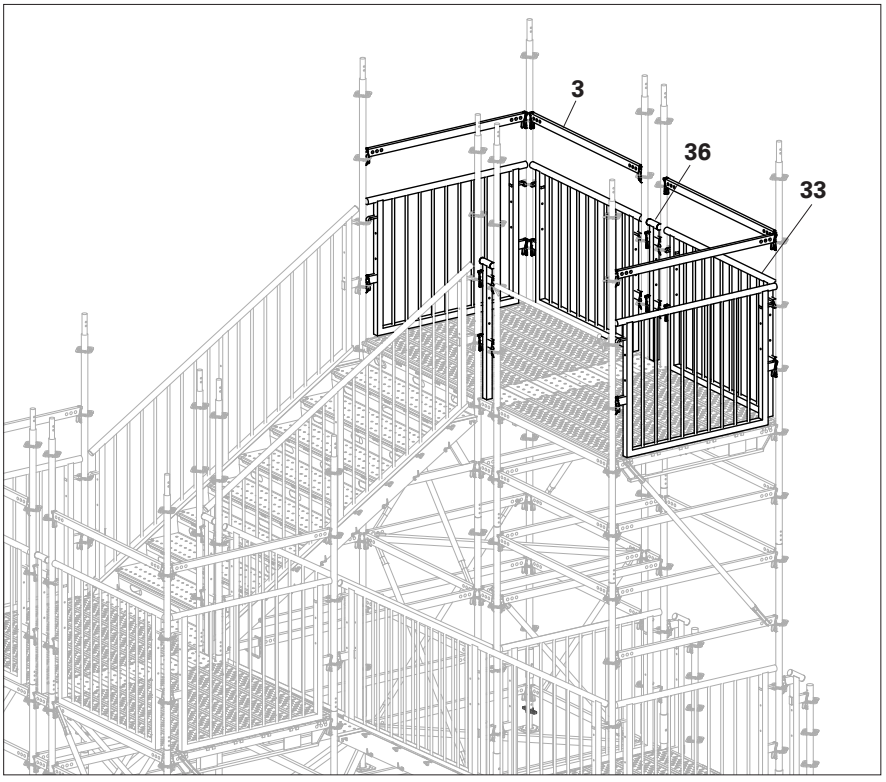


Fig. B3.10

Uppermost level

When the final landing platform is reached:

- Build up the uppermost level with Top Standards UVH-2 200 (21),
- Fit the plastic cap (22) onto the top standards.
- Fit the final steel deck (25),
- Brace the landing platforms with Platform Beam PDF and H-braces,
- Screw the gap cover into place,
- Complete the lateral protection with Guardrail PPG 150 (33) depending on the circumstances. (Fig. B4.01)

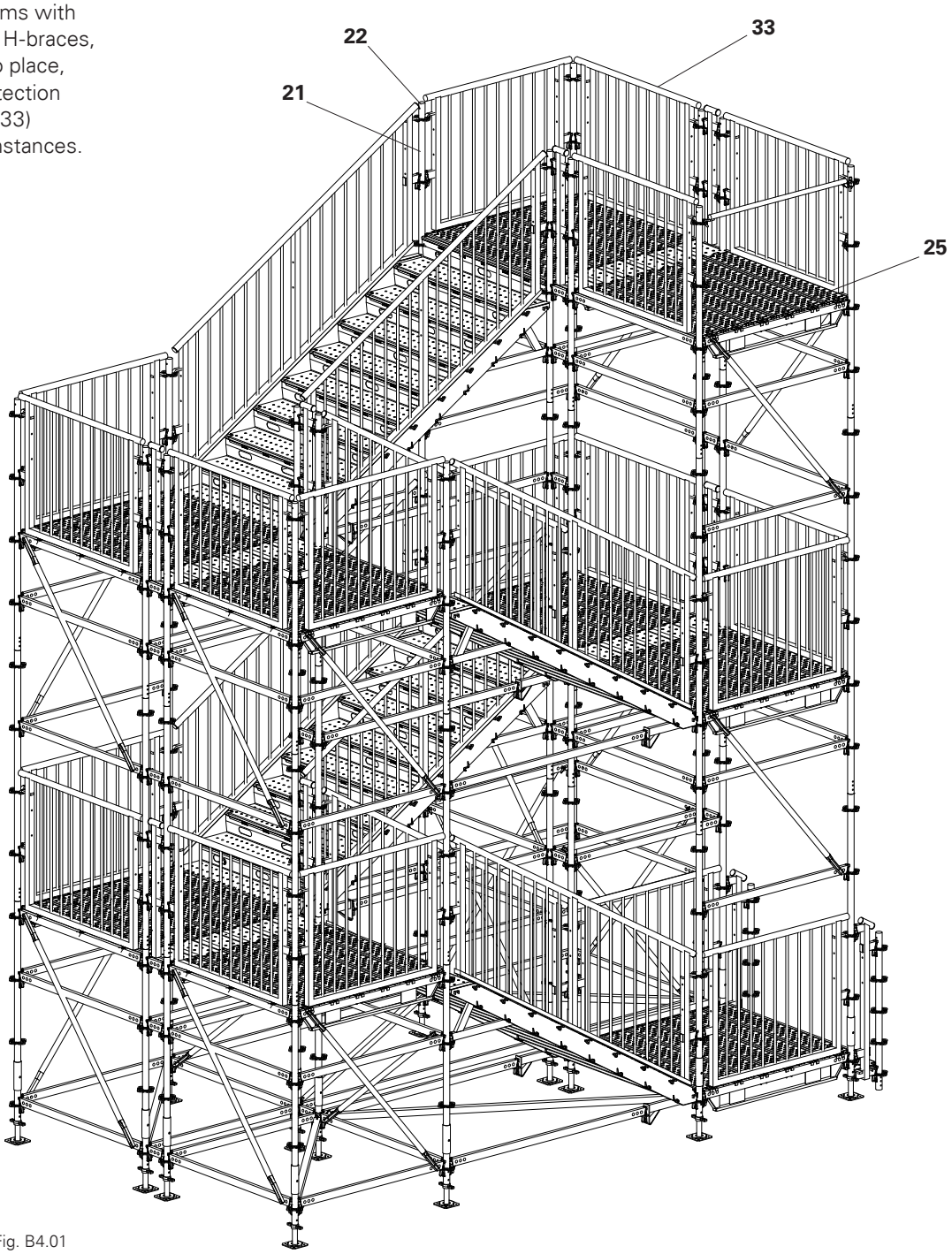


Fig. B4.01

Warning

- The structural stability of the staircase construction is reduced if load-bearing anchoring is missing or insufficient.
- Ties do not transfer vertical loads.

This could result in the scaffold collapsing.

⇒ Adhere to the number and position of the ties in Section "E2 Tie loads" on page 97.

Install ties only in the levels that have been braced with horizontal braces.

Ties must always be attached to the inner and outer standards by means of standard couplers in order to accommodate the loads parallel to the building.

Proof of the load-bearing capacity of the fixing material between the wall ties and the anchoring base for the anchor loads in Section "E2 Tie loads" on page 97 is required.

Distance to the building: ≤ 30 cm

Fit anchoring below the landing platform in sequence with the scaffolding assembly process.
The first tie position should be at a height of approx. 1.65 m or 3.15 m. Fit additional anchoring at intervals of approx. 3 m.

Deviating anchoring positions should always be individually verified and geometrically reviewed.

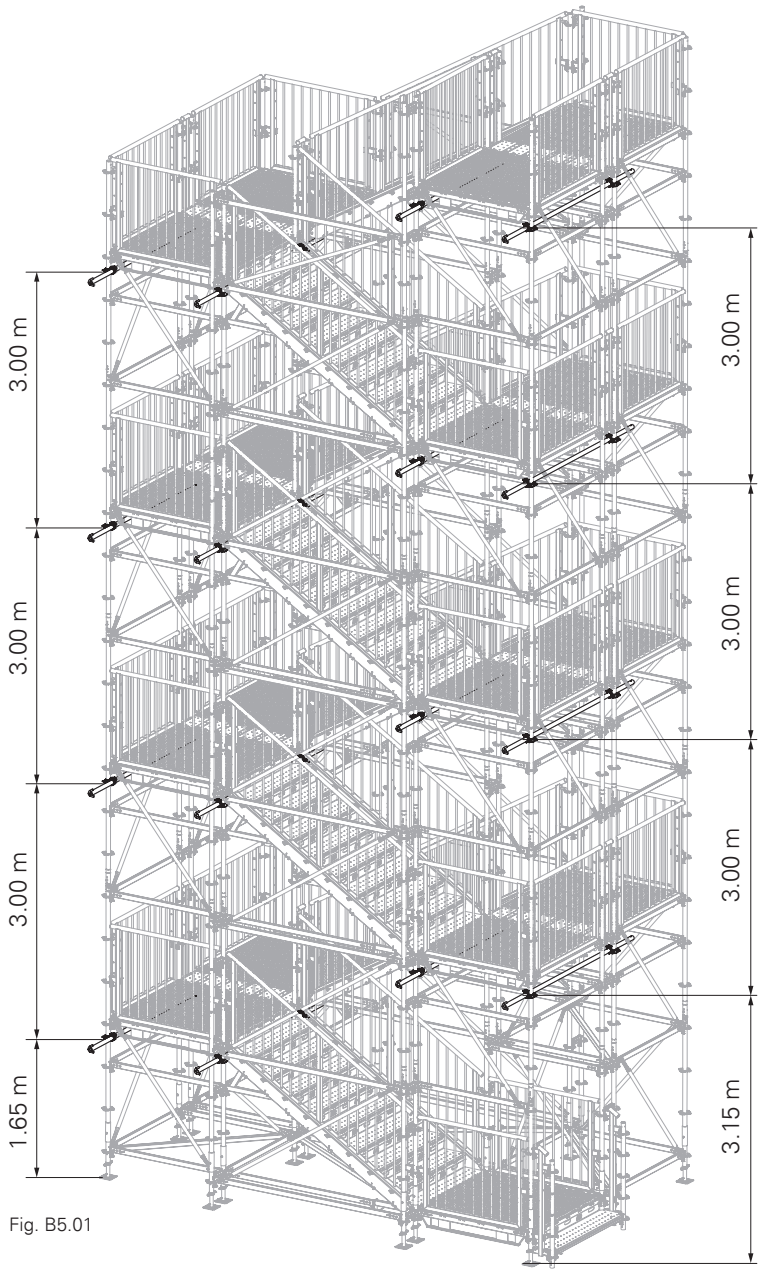


Fig. B5.01

Fit the wall ties to the 1st and 3rd standards. (Fig. B5.02).

Components

96 Wall Tie UWT 270
97 Standard Coupl. RA Ø48/48mm ga

Assembly

1. Fit the wall ties, e.g. UWT 270 (**96**), to the standards using standard couplers (**97**). (Fig. B5.02)
2. Fit Wall Tie UWT to the wall, e.g. with eyebolts M12 and dowels or equivalent connection. (Fig. B5.03)

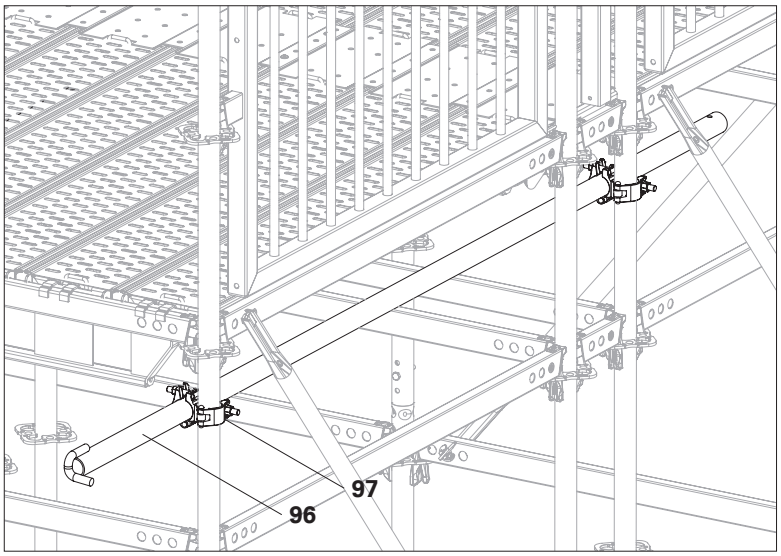


Fig. B5.02

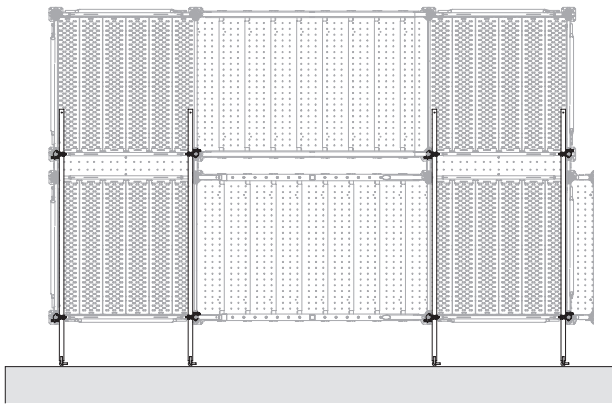


Fig. B5.03

B6 Guardrail reinforcement at top level

- For stair towers of any height.
- For use of additional standards based on load requirements, see Tab. B6.01
- A parallel inner standard (**21**) replaces the additional standard, for example when a landing platform is connected at right angles. The inner standard (**21**) is already part of the basic structure.
- A project-specific verification is required in the case of deviating guardrail loads.

Components

6 Horizontal Ledger UH-2 25
20 Top Standard UVH-2 200
22 Plastic Cap Ø48.3mm grey

Assembly

1. Fit Horizontal Ledger UH-2 25 (**6**) to Top Standard UVH-2 200 (**20**) at the positions shown. Secure the wedges.
2. Fit the pre-assembled assembly to the four labelled standards. Secure the wedges.
3. Fit the plastic cap (**22**) onto the top standard. (Fig. B6.01)

Stair tower, width 1.5 m		
Guardrail loads	Standards 20	Standards 20a
Guardrail load 1 kN/m ⊥, 0.5 kN/m ∥*	●	–
Guardrail load 1 kN/m ⊥, 1 kN/m ∥*	●	–

Stair tower, width 2.0 m		
Guardrail loads	Standards 20	Standards 20a
Guardrail load 1 kN/m ⊥, 0.5 kN/m ∥*	●	●
Guardrail load 1 kN/m ⊥, 1 kN/m ∥*	●	●

Tab. B6.01

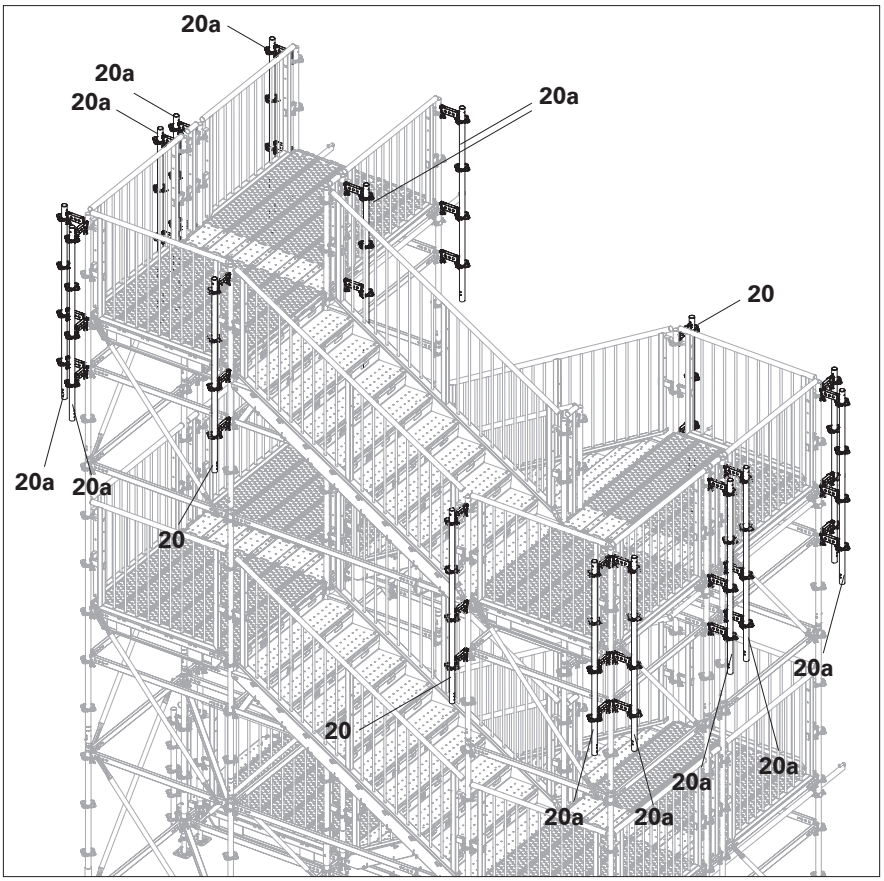


Fig. B6.01

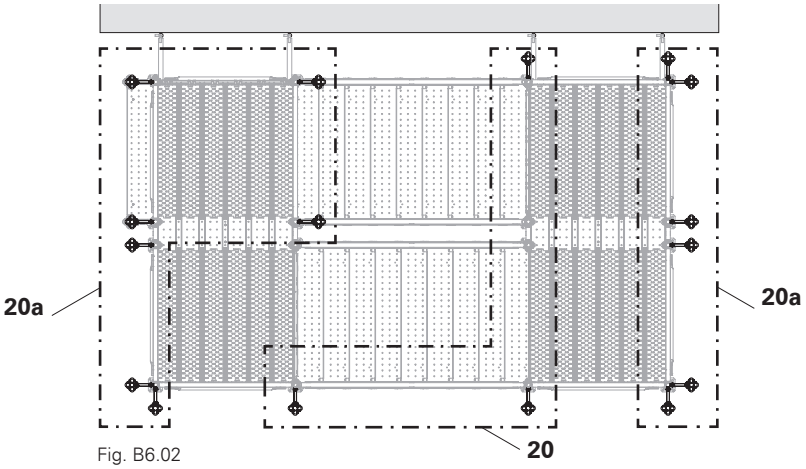


Fig. B6.02

* Perpendicular ⊥ and parallel ∥ refer to the direction of the visitor flow in relation to the guardrail component.

● required
– not required

B7 Additional frame

- Only required for stair towers that are 9.0 m or higher.
- The PERI UP Public Stairs can be built as a stair tower with additional standards up to a height of 15 m.
- The additional standards are only required on the standards that connect directly to the outside of the flight of stairs.

Components

1	Adj. Base Plate UJB Ø38mm 50/30	4x
2	Base Standard UVB 25	4x
5	Horizontal Ledger UH-2 250	
6	Horizontal Ledger UH-2 25	
15	Standard UVR-2 150	
17	Standard UVR-2 300	
21	Top Standard UVH-2 250	
22	Plastic Cap Ø48.3mm grey	4x
56	Safety Washer UBL PEW	
62	Ledger Brace UBL-2 250/150	
63	Ledger Brace UBL-2 250/100	2x

Assembly

1. Set up the adj. base plates (**1**) and base standards (**2**).
2. Connect Standard UVR-2 150 (**15**) or UVR-2 300 (**17**) at the positions shown.
   The height of the front standard must always match the height of the respective standard in the stair tower.
3. Connect standards to the stair tower with Horizontal Ledger UH-2 25 (**6**) at the positions shown. Secure the wedges.
4. Fit the ledger braces incl. Safety Washer PEW.
5. Connect the additional standards with Horizontal Ledger UH-2 250 (**5**) at the positions shown. Secure the wedges.
6. In the uppermost position:
   – Fit top standards as is done in the stair tower.
   – Fit the Ledger Brace UBL-2 250/100 (63).
   – Fit the plastic cap (22) onto the top standard. (Fig. B7.01)

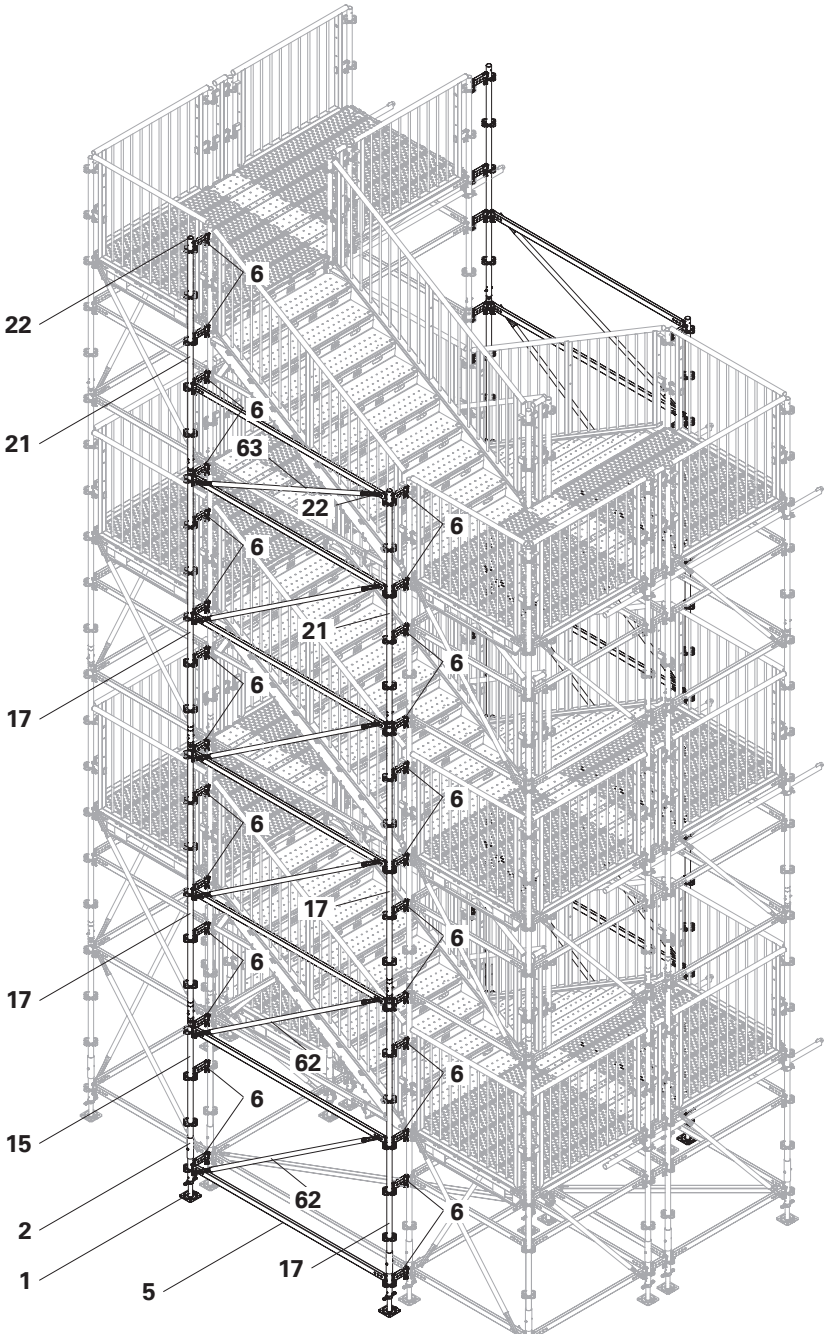


Fig. B7.01

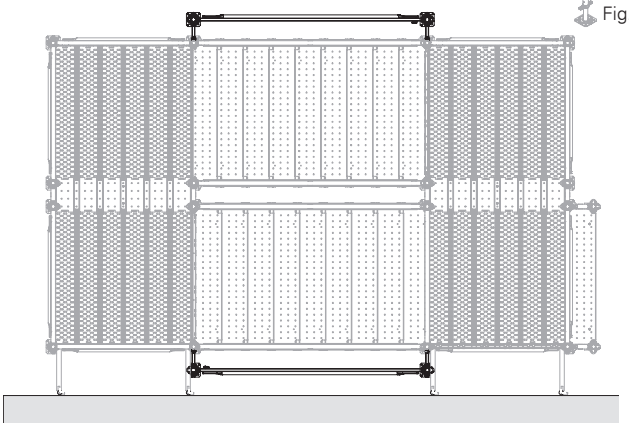


Fig. B7.02

B8 Dismantling

Sequence

- Dismantle from top to bottom, i.e. in the reverse order as shown in the assembly procedure.
- Install temporary decks and guardrails in the opposite order to the one described in the assembly process. Dismantle stair parts and remove temporary decks and guardrails.
- Remove the anchoring progressively from top to bottom as the staircase is dismantled.
- In the event of work being interrupted, the uppermost level should not extend more than 3.0 m beyond the uppermost tie position.

The scaffolding contractor can also undertake other measures on the basis of their own risk assessment.

Attention!

The Horizontal Ledger UH-2 between the stair stringers guarantees the exact required distance between the stair stringers and prevents the stair stringers from tilting outwards. Otherwise stair treads could fall down.

⇒ See Section "Stair stringers" on page 21.

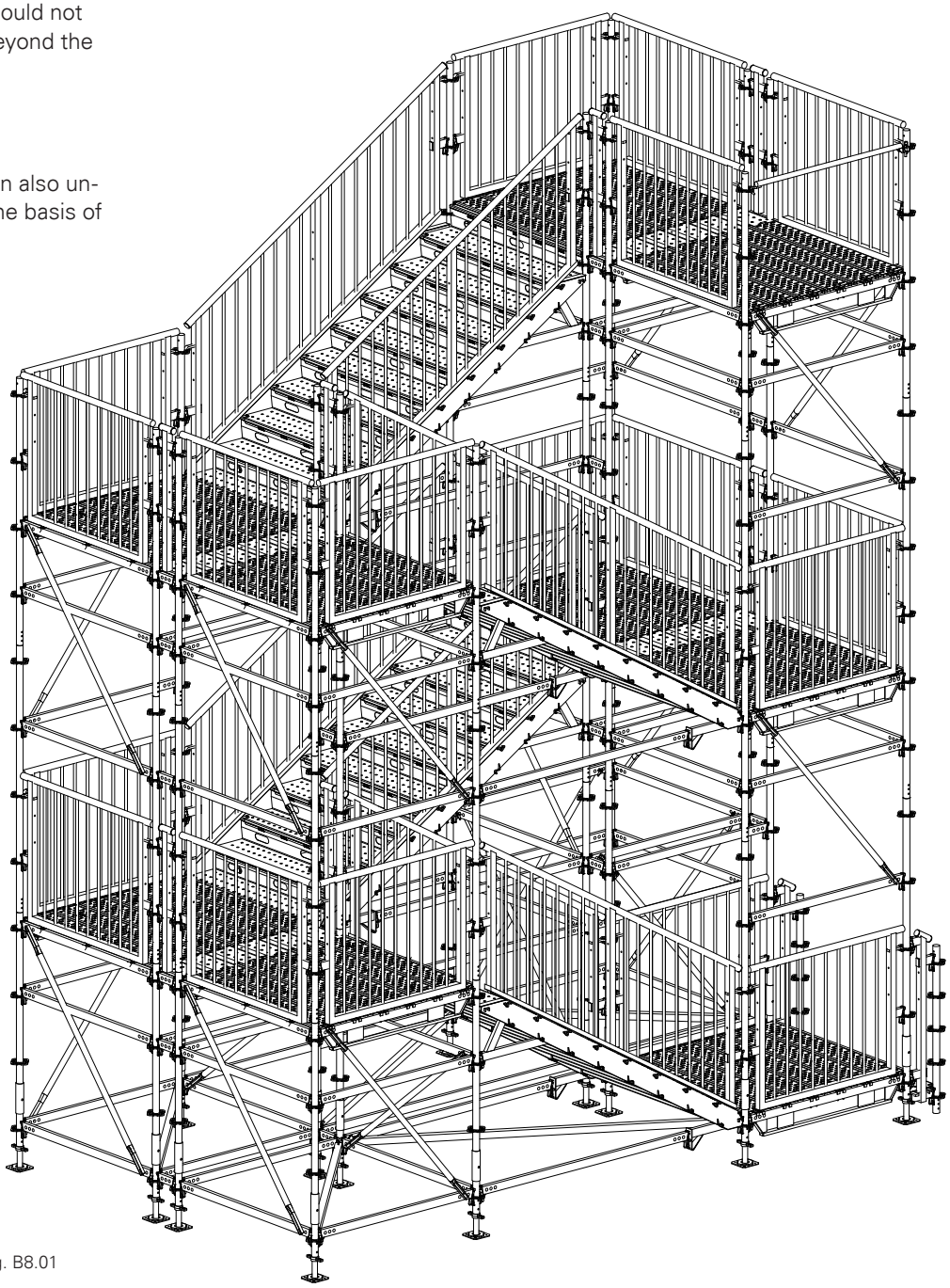


Fig. B8.01

General information

The height and length of straight staircases is practically unlimited. Theoretical limits only arise due to the increase in the dead weight of the substructure with increasing height.

Install a landing platform after a maximum of 12 steps.

Anchoring
Ballast straight staircases in line with static requirements, for example due to wind loads, and / or anchor them to the building.

Permissible live load
– up to 2.0 m width: 7.5 kN/m²
– 2.5 m width: 5 kN/m²

Substructure
The static design of the substructure is not part of these Instructions for Assembly and Use due to the large number of application and design variants.

The substructure shown in each case is merely an example. Provide proof of load-bearing capacity based on project-specific planning.

Guardrail loads
The transfer of guardrail loads must be verified on a case by case basis.

Preparing the intermediate landing platform

Components

1	Adj. Base Plate UJB Ø38mm 50/30	8x
2	Base Standard UVB 25	8x
4	Horizontal Ledger UH-2 200	18x
5	Horizontal Ledger UH-2 250	2x
8	Horizontal Ledger UHV-2 200	2x
12	H-Brace UBH Flex 200/200	2x
13	H-Brace UBH Flex 250/200	1x
15	Standard UVR-2 150	4x
21	Top Standard UVH-2 250	4x
26	Steel Deck UDG-2 25x200	8x
38	Guardrail UPGA 200	3x
39	Guardrail UPGA 250	2x
53	Platform Beam PDB 150	4x
59	Ledger Brace UBL-2 200/100	4x
61	Ledger Brace UBL-2 200/150	4x
68	Node Brace UBK-2 250/150	2x

The substrate must be sufficiently level and have a sufficient load-bearing capacity.
- Plan and create project-specific height compensation in front of the first stair tread.
- Ensure that the base standards are uniformly aligned so that they can be pinned later.
- Extend the adj. base plates as far as possible to provide an adequate working area for installing the Beam Waler PDB below the landing platform.

Assembly
1. Set up the adj. base plates (**1**) and base standards (**2**) as shown in the illustration.
2. Connect the base standards with Horizontal Ledgers UH-2 (**4 / 5**).
3. Fit the H-Brace UBH Flex (**12 / 13**). (Fig. C1.01)

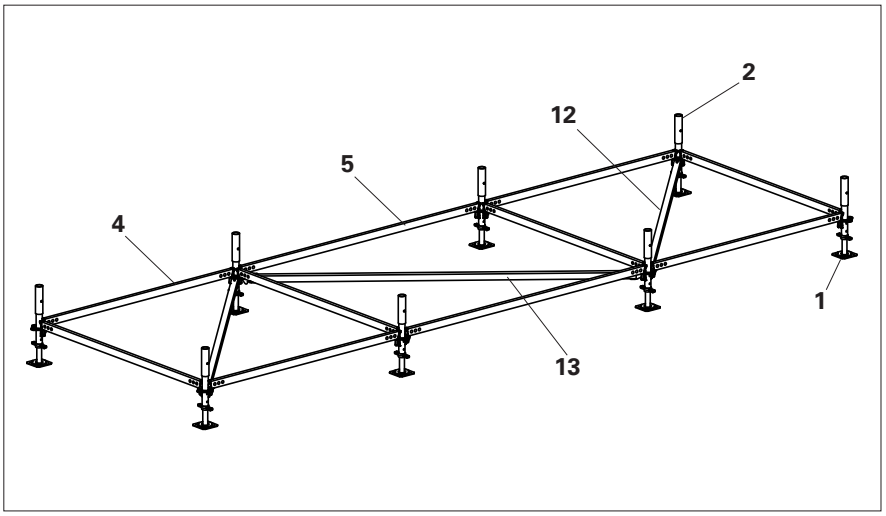


Fig. C1.01

4. Insert 2 x Standard UVR-2 150 (**15a**) into base standards, then connect 2 x Guardrail UPGA 250 (**39**) at 1.5m on 2 x Standard UVR-2 150 (**15b**) then insert those into the base standards.
5. Connect 3 x Guardrail UPGA 200 (**38**) to their respective top standards at 2.5m high, then insert 2 x Top Standard UVH-2 250 (**21a**) into base standards.
6. Connect 2 x Node Brace UBK-2 250/150 (**68**) to their respective standards at 2.5m high, then insert 2x Top Standard UVH-2 250 (**21b**) into base standards. (Fig. C1.02)

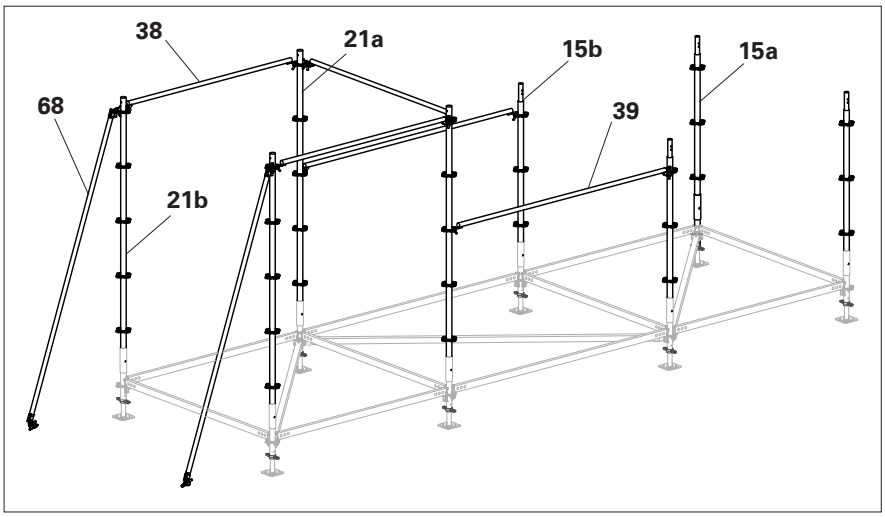


Fig. C1.02

7. Fit 10 x Horizontal Ledger UH-2 200 (**4**). (Fig. C1.03)

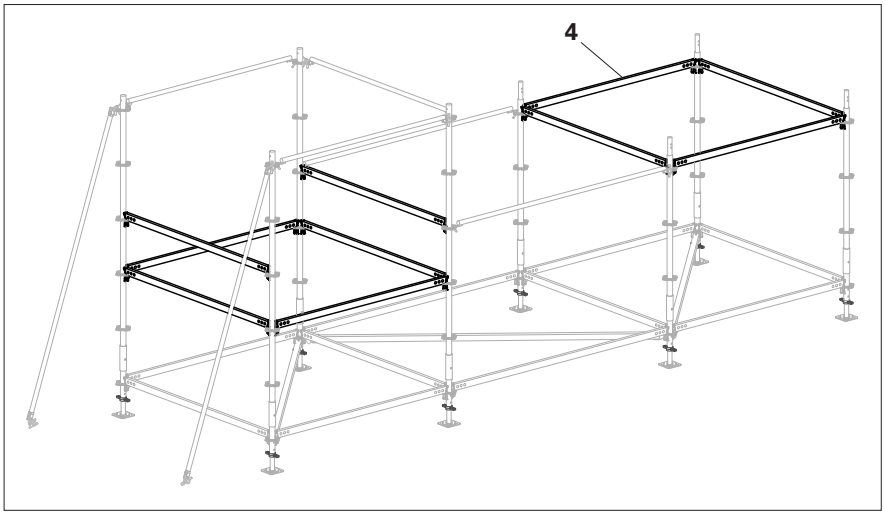


Fig. C1.03

8. Fit 2x Horizontal Ledger UHV-2 200 (**8**).
9. Brace the landing platform tower with 4x Ledger Brace UBL-2 200/100 (**59**), then brace the other tower with 4x Ledger Brace UBL-2 200/150 (**61**). (Fig. C1.04)

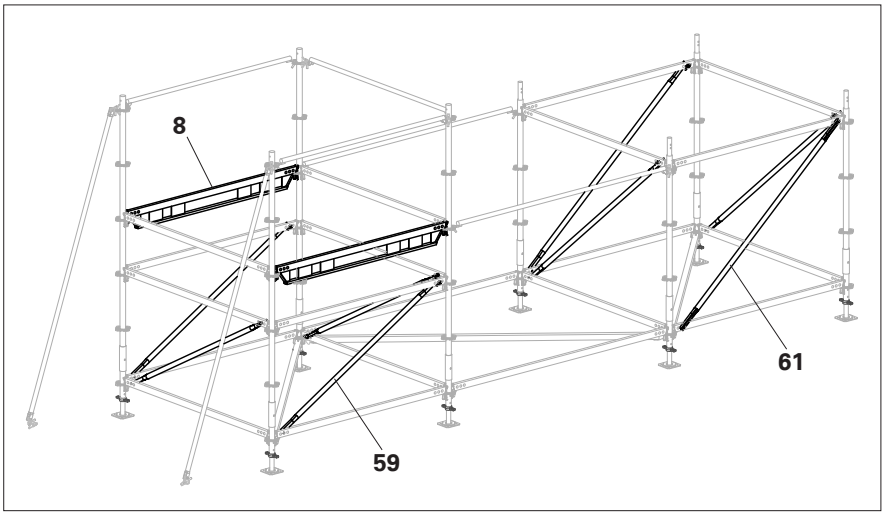


Fig. C1.04

10. Fit 8 x Steel Deck UDG-2 25x200 (**26**). (Fig. C1.05)
11. Fit the Platform Beam PDB 150 (**53**). For the required number and position, see Section "Platform Beam PDB" on page 26.
12. Fit the H-Brace UBH Flex 200/200 (**12**). (Fig. C1.05a)

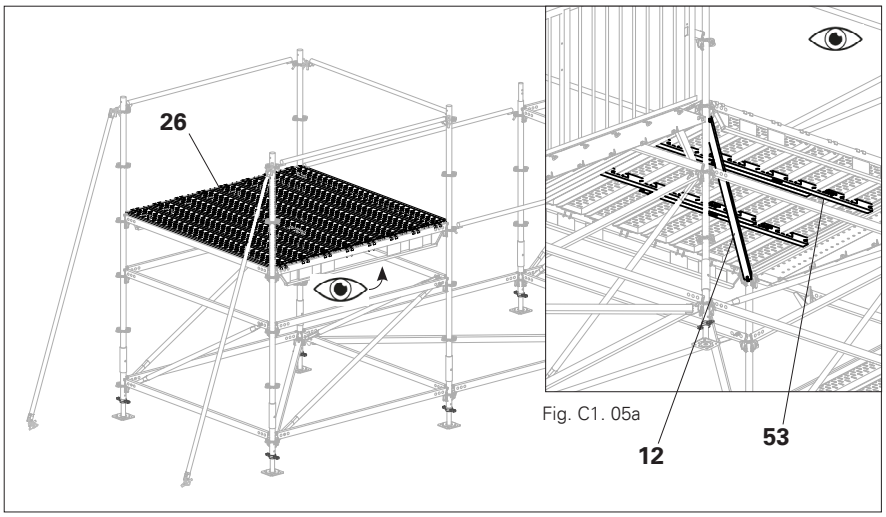


Fig. C1.05

First flight of stairs

Components

1	Adj. Base Plate UJB Ø38mm **50/30**	2x
2	Base Standard UVB 25	2x
4	Horizontal Ledger UH-2 200	4x
13	H-Brace UBH Flex 250/200	1x
18	Top Standard UVH-2 100	2x
19	Top Standard UVH-2 125	2x
22	Plastic Cap Ø48.3mm grey	6x
30	Guardrail PPG 250/150	2x
44	Lifting Protection PEL	2x
46	Stair Stringer PAS 250/150	2x
49	Stair Tread PATS 200	8x
50	Stair Tread PATT 200 top	2x
51	Height Adjustment PAH 1	2x
72	Bolt ISO 4017-M10x025-8.8-ga	2x
73	Bolt ISO 7380-2-M08x025-10.9-ga	2x

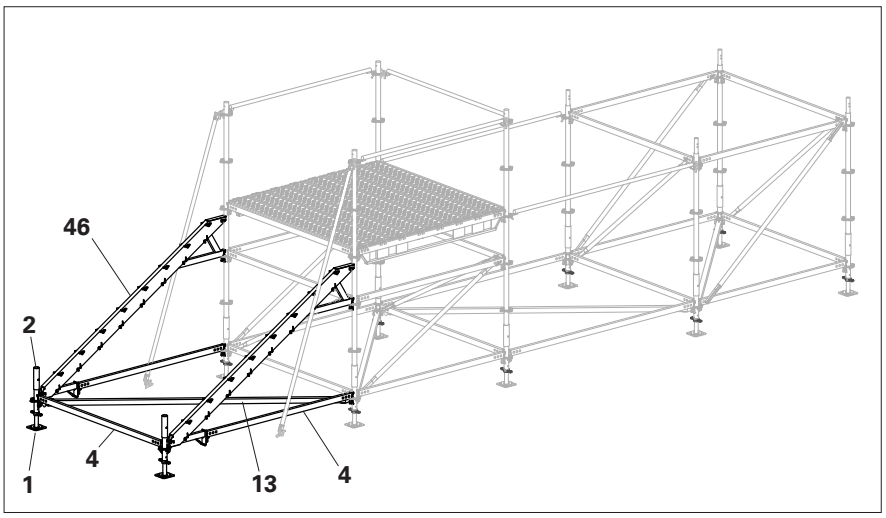


Fig. C1.06

Assembly

1. Fit 2 x Adj. Base Plate UJB Ø38mm 50/30 (**1**) with 2 x Base Standard UVB 25 (**2**) and Horizontal Ledger UH-2 200 (**4**) as front support for the stair stringers.
2. Fit 2 x Stair Stringer PAS 250/150 (**46**) with Horizontal Ledger UH-2 200 (**4**).
3. Fit the H-Brace UBH Flex 250/200 (**13**). (Fig. C1.06)

4. Insert 2 x Top Standard UVH-2 100 (**18**) into the base standards.
5. Attach the Top Standard UVH-2 125 (**19**) to Height Adjustment PAH 1 (**51**). Fit the assembly (**19 + 51**) to the top standard (**18**).
6. Brace Top Standards UVH-2 125 (**19**) with Horizontal Ledger UH-2 200 (**4**). (Fig. C1.07)

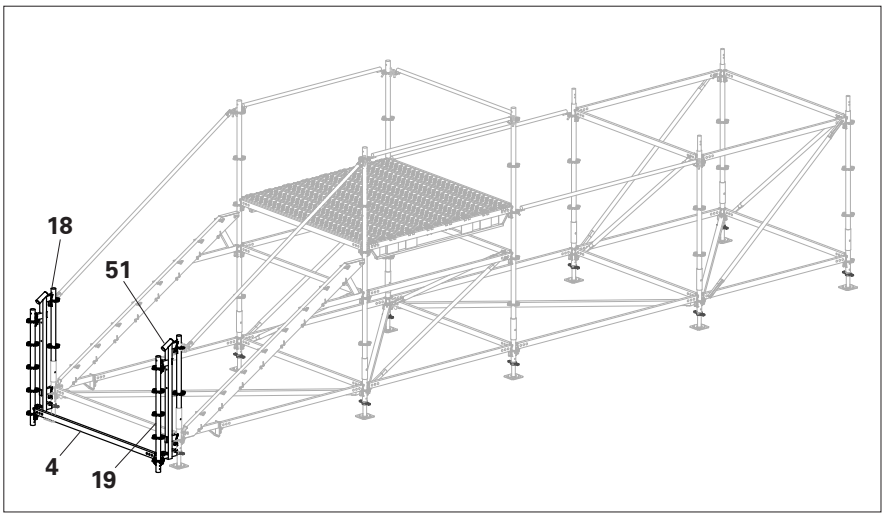


Fig. C1.07

7. Fit Stair Tread PATT 200 top (**50**) with pre-assembled Lifting Protection PEL (**44 + 73**). (Fig. C1.08)

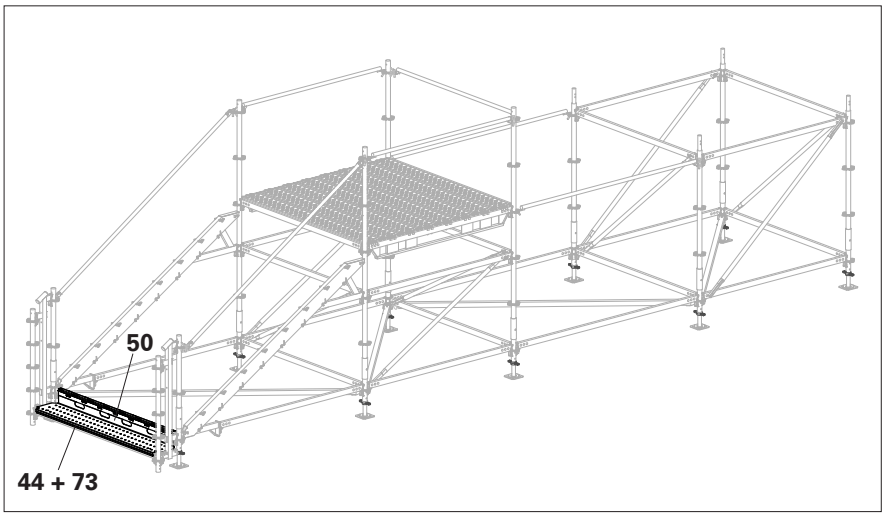


Fig. C1.08

8. Fit 8 x Stair Tread PATS 200 (**49**).
9. Fit 1 x Stair Tread PATT 200 top (**50**). Bolt in 2 x Bolt ISO 4017-M10x025-8.8-ga (**72**) as a lift lock.
10. Fit 2 x Guardrails PPG 250/150 (**30**).
11. Fit Plastic Caps Ø48.3mm grey (**22**) onto the top standards. (Fig. C1.09)

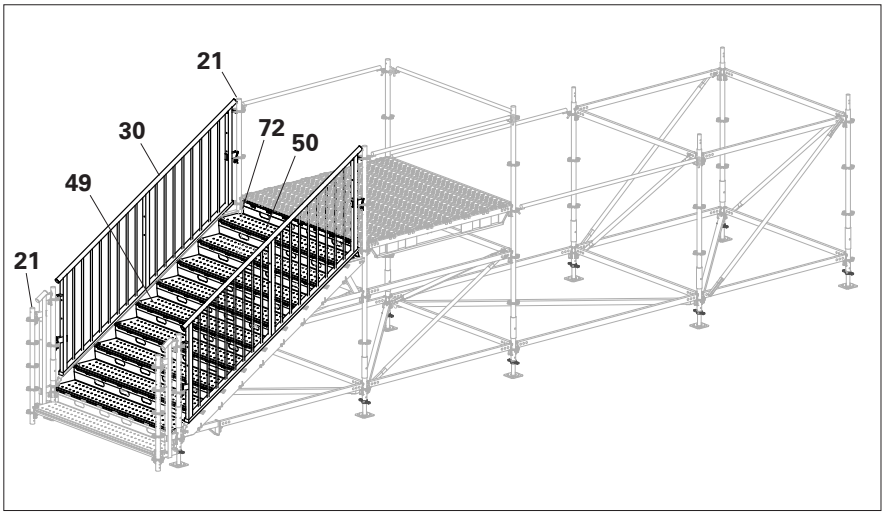


Fig. C1.09

Preparing the second tower

Install temporary decks in the substructure according to project-specific requirements. (Example illustration)

Components

4	Horizontal Ledger UH-2 200	2x
5	Horizontal Ledger UH-2 250	2x
21	Top Standard UVH-2 250	4x
26	Steel Deck UDG-2 25x200	16x
38	Guardrail UPGA 200	4x
68	Node Brace UBK-2 250/150	2x

Assembly

1. Fit 2 x Horizontal Ledger UH-2 200 (**4**) & 2 x Horizontal Ledger UH-2 250 (**5**).
2. Fit 16 x Steel Deck UDG-2 25x200 (**26**). (Fig. C1.10)

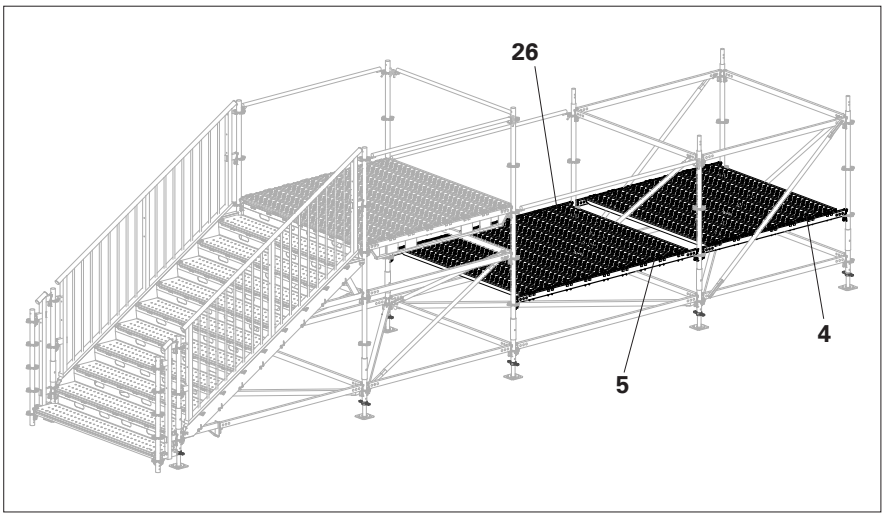


Fig. C1.10

3. Connect 3 x Guardrail UPGA 200 (**38**) to 2 x Top Standard UVH-2 250 (**21a**) at 2.5m high then insert into base standards.
4. Proceed to attach the other end of the two of the Guardrail UPGA 200 to 2 x Top Standard UVH-2 250 (**21b**) at 2.5m high while also attaching a further 1 x Guardrail UPGA 200 between the two Top Standards.
5. Connect 2 x Node Brace UBK-2 250/150 (**68**) to their respective standards at 2.5m high, then insert the two Top Standard UVH-2 250 (**21b**) into base standards. (Fig. C1.11)

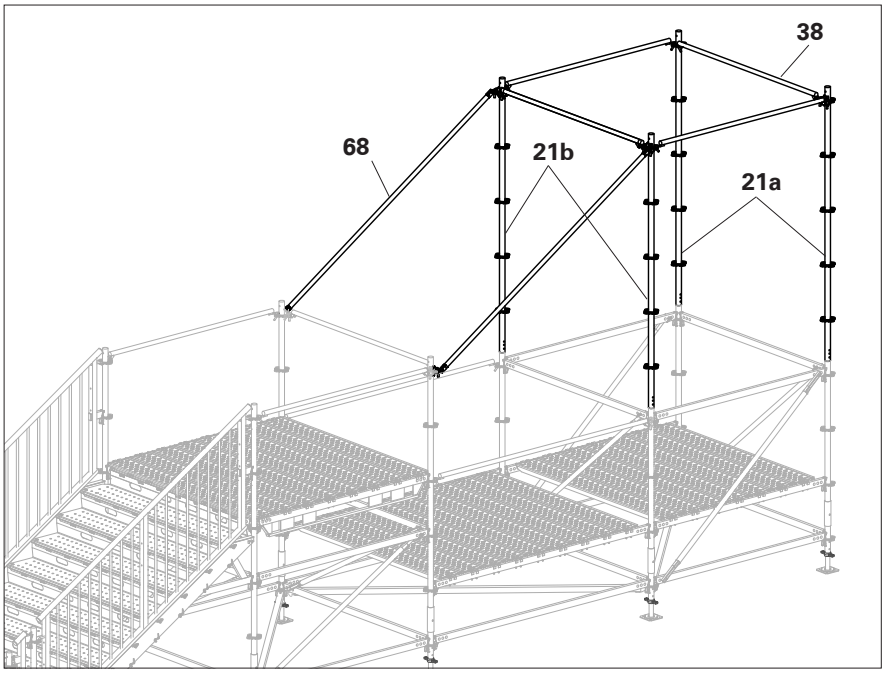


Fig. C1.11

Preparing the second flight of stairs

Components

4	Horizontal Ledger UH-2 200	8x
8	Horizontal Ledger UHV-2 200	2x
26	Steel Deck UDG-2 25x200	7x
46	Stair Stringer PAS 250/150	2x
49	Stair Tread PATS 200	1x
59	Ledger Brace UBL-2 200/100	4x
62	Ledger Brace UBL-2 250/150	2x

Assembly

1. Connect the top standards with 4 x Horizontal Ledger UH-2 200 (**4a**).
2. Fit 4 x Ledger Brace UBL-2 200/100 (**59**).
3. Fit 2 x Stair Stringer PAS 250/150 (**46**) with Horizontal Ledger UH-2 200 (**4b**).
4. Fit 2 x Ledger Brace UBL-2 250/150 (**62**).
5. Fit the first Stair Tread PATS 200 (**49**). (Fig. C1.12)

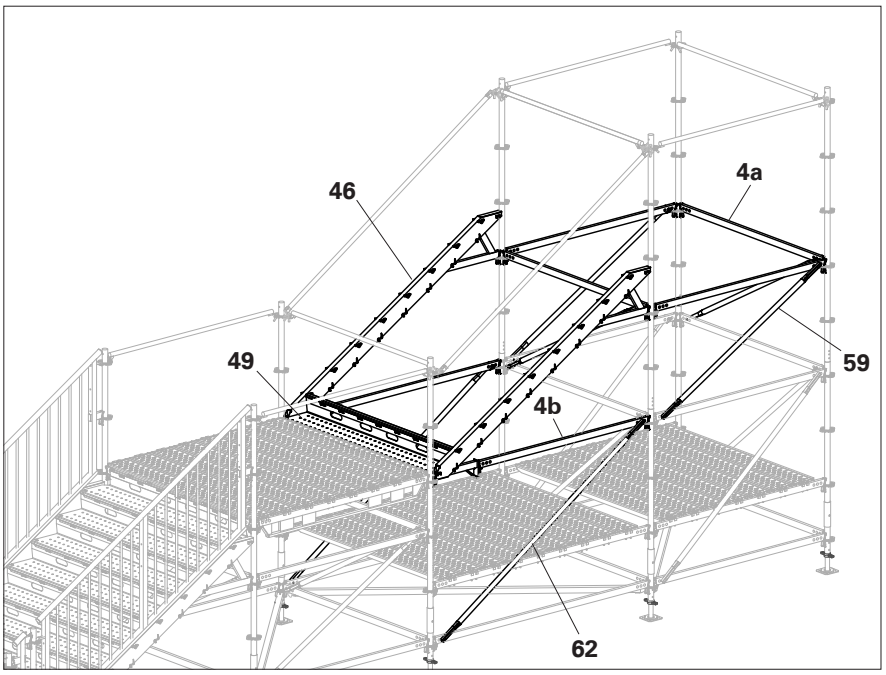


Fig. C1.12

6. Fit temporary 7 x Steel Deck UDG-2 25x200 (**26**).
7. Fit 2 x Horizontal Ledger UH-2 200 (**4**) & 2 x Horizontal Ledger UHV-2 200 (**8**). (Fig. C1.13)

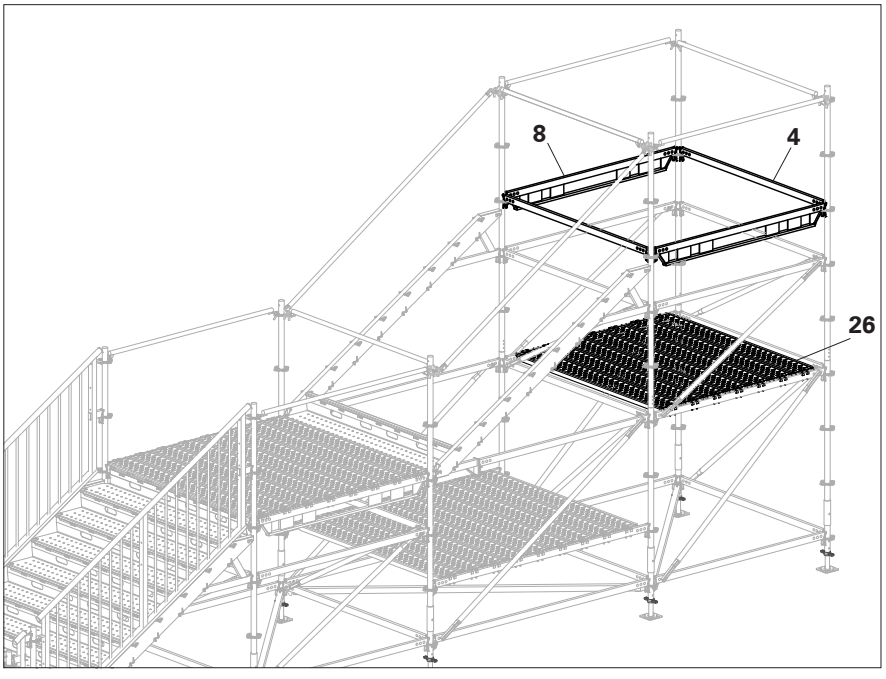


Fig. C1.13

Continuing the second tower

Components

26	Steel Deck UDG-2 25x200	7x
12	H-Brace UBH FLEX 200/200	1x
53	Platform Beam PDB 150	

Assembly

1. Fit 7 x Steel Deck UDG-2 25x200 (**26**). (Fig. C1.14)
2. Fit H-Brace UBH FLEX 200/200 & Platform Beam PDB 150. For the required number and position, see Section "Platform Beam PDB" on page 26.

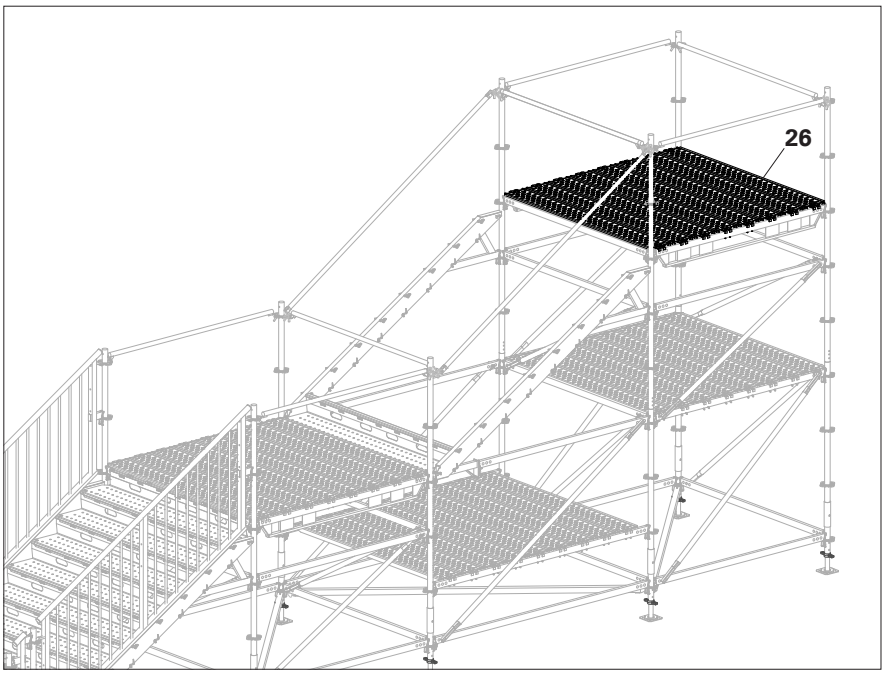


Fig. C1.14

Completing the landing platform & second flight of stairs

Remove the temporary decks once the decks in C1.14 are installed.

Components

22	Plastic Cap Ø48.3mm grey	8x
30	Guardrail PPG 250/150	2x
32	Guardrail PPG 200	2x
49	Stair Tread PATS 200	7x
50	Stair Tread PATT 200 top	1x

Assembly

1. Fit 7 x Stair Tread PATS 200 (**49**).
2. Fit 1 x Stair Tread PATT 200 (**50**).
3. Fit 2 x Guardrails PPG 200 (**32**) & 2 x Guardrails PPG 250/150 (**30**).
4. Fit Plastic Caps Ø48.3mm grey (**22**) to the tube ends. (Fig. C1.15)

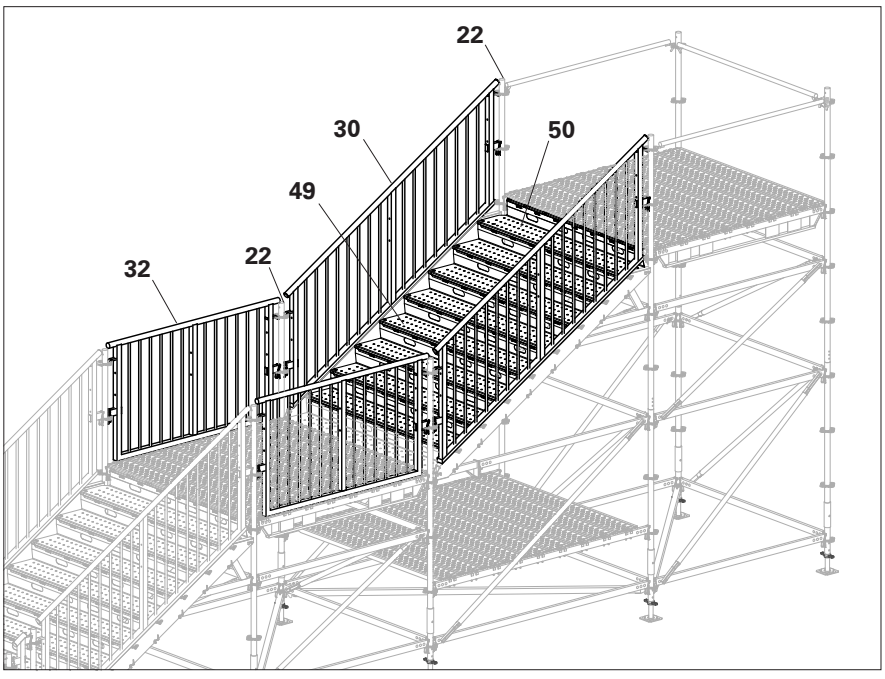


Fig. C1.15

Preparing the third tower

Components

4	Horizontal Ledger UH-2 200	2x
5	Horizontal Ledger UH-2 250	6x
13	H-Brace UBH Flex 250/200	1x
17	Standard UVR-2 300	2x
38	Guardrail UPGA 200	1x
39	Guardrail UPGA 250	2x
61	Ledger Brace UBL-2 200/150	1x
62	Ledger Brace UBL-2 250/150	2x

Assembly

1. Connect the base standards with Horizontal Ledgers UH-2 (**4 / 5**).
2. Fit the H-Brace UBH Flex (**13**).
3. Connect 2 x Guardrail UPGA 250 (**39**) to previous top standards 1.5m high then connect to 2 x Standard UVR-2 300 (**17**) at 3m high.
4. Connect 1 x Guardrail UPGA 200 (**38**) between the standards, then insert the two standards into base standards. (Fig. C1.16)

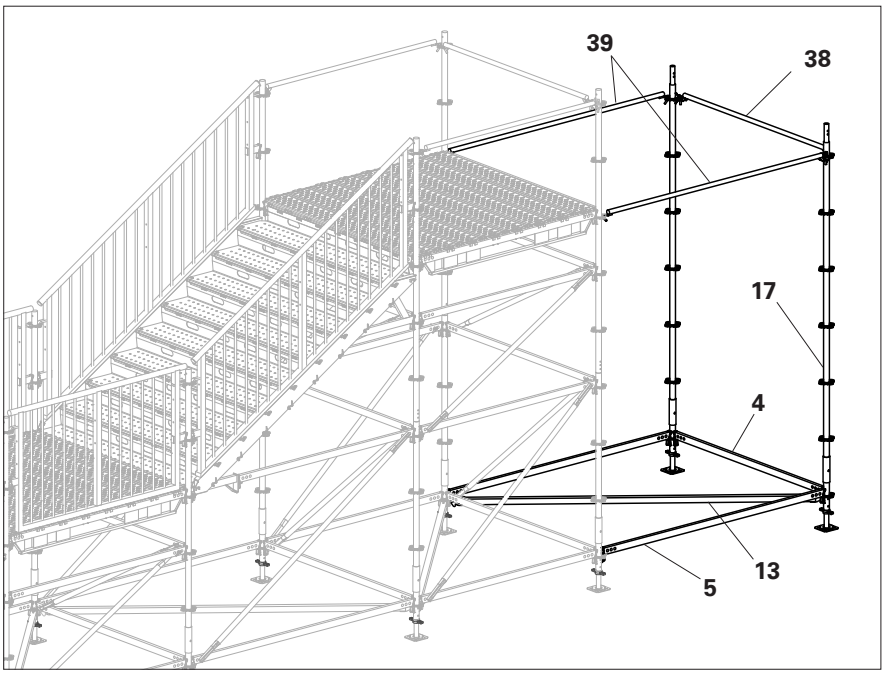


Fig. C1.16

5. Fit 1 x Ledger Brace UBL-2 200/150 (**61**) & 2 x Ledger Brace UBL-2 250/150 (**62**).
6. Fit 4 x Horizontal Ledger UH-2 250 (**5**) & 1 x Horizontal Ledger UH-2 200 (**4**). (Fig. C1.17)

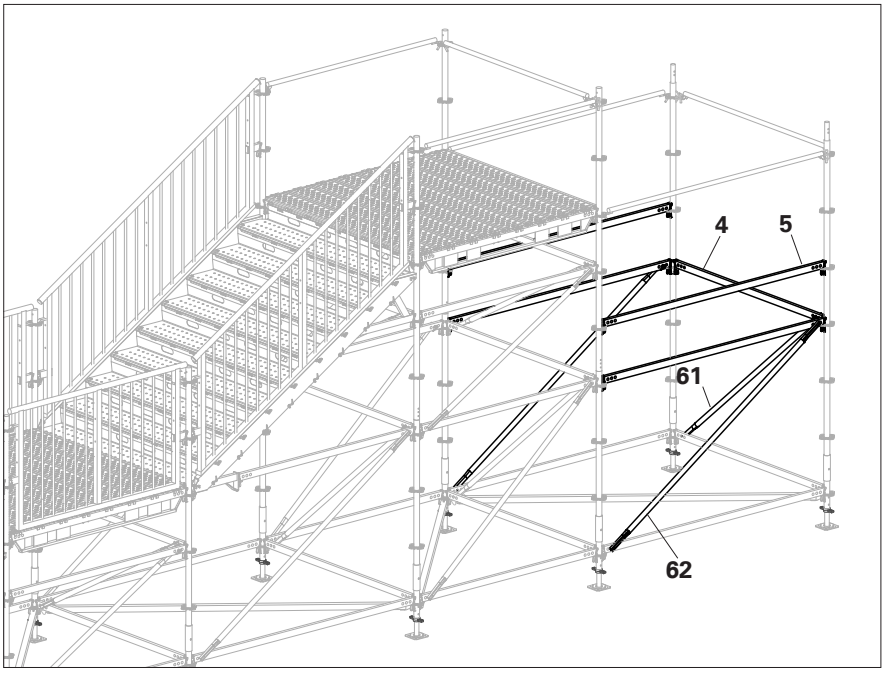


Fig. C1.17

Continuing the third tower

Components

21	Top Standard UVH-2 250	2x
26	Steel Deck UDG-2 25x200	9x
38	Guardrail UPGA 200	1x
39	Guardrail UPGA 250	2x
68	Node Brace UBK-2 250/150	2x

Assembly

1. Fit 9 x Steel Deck UDG-2 25x200 (**26**). (Fig. C1.18)

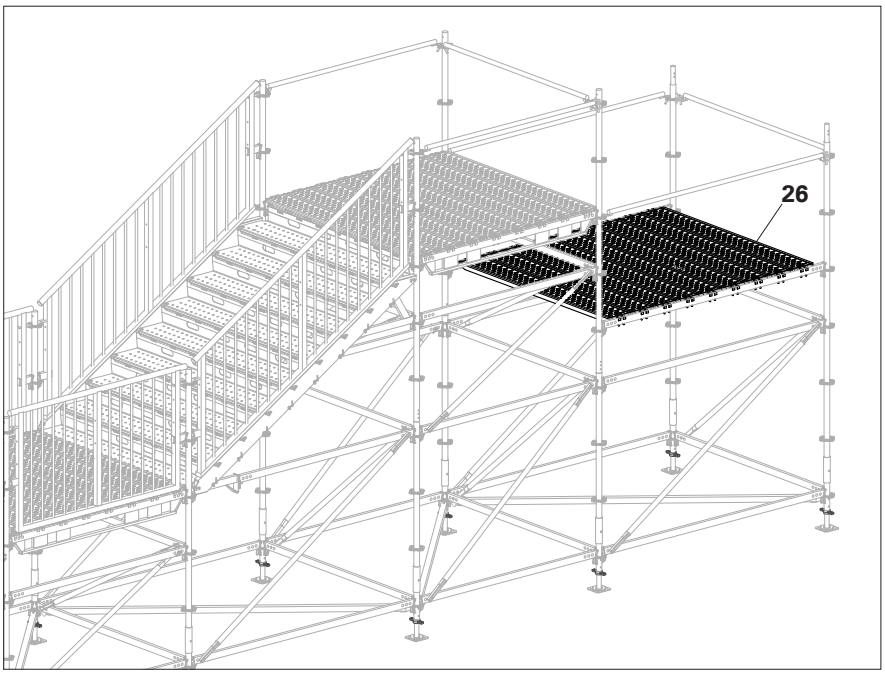


Fig. C1.18

2. Connect 1 x Guardrail UPGA 200 (**38**) to 2 x Top Standard UVH-2 250 (**21**) at 2.5m then connect 2 x Guardrail UPGA 250 (**39**) to the same top standards at 1m high.
3. Connect 2 x Node Brace UBK-2 250/150 (**68**) to their respective standards at 2.5m high, then insert the two Top Standard UVH-2 250 (**21**) into lower standards and connect the ends of the Guardrail UPGA's and Node Braces to existing Top Standards. (Fig. C1.19)

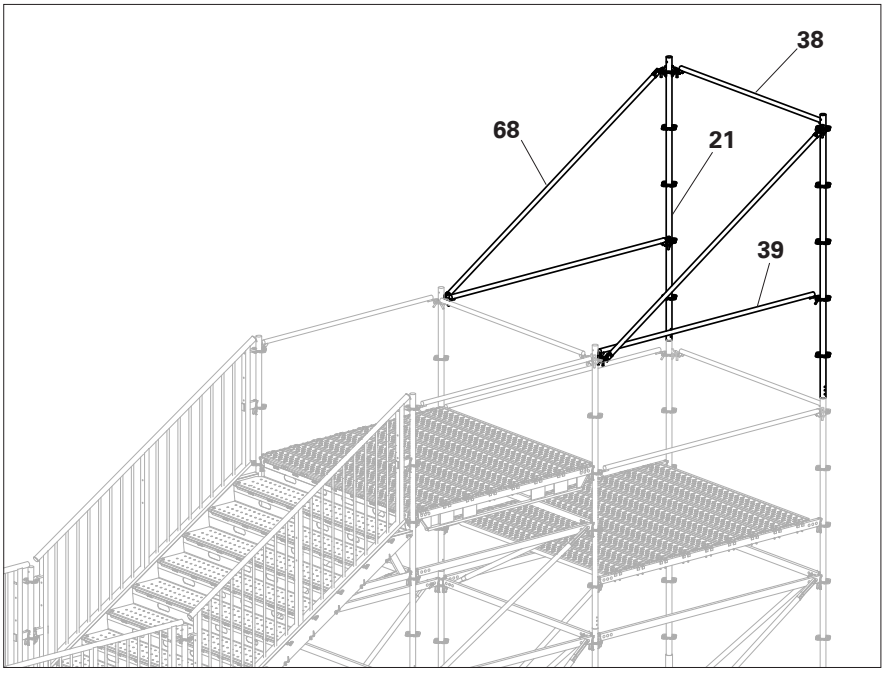


Fig. C1.19

Continuing the third tower

Components

4	Horizontal Ledger UH-2 200	4x
5	Horizontal Ledger UH-2 250	2x
26	Steel Deck UDG-2 25x200	3x
59	Ledger Brace UBL-2 200/100	1x
61	Ledger Brace UBL-2 200/150	1x
62	Ledger Brace UBL-2 250/150	2x

Assembly

1. Fit 2 x Horizontal Ledger UH-2 250 (**5**) & 2 x Horizontal Ledger UH-2 200 (**4**).
2. Fit 1 x Ledger Brace UBL-2 200/150 (**61**), 2 x Ledger Brace UBL-2 250/150 (**62**) & 1 x Ledger Brace UBL-2 200/100 (**59**). (Fig. C1.20)

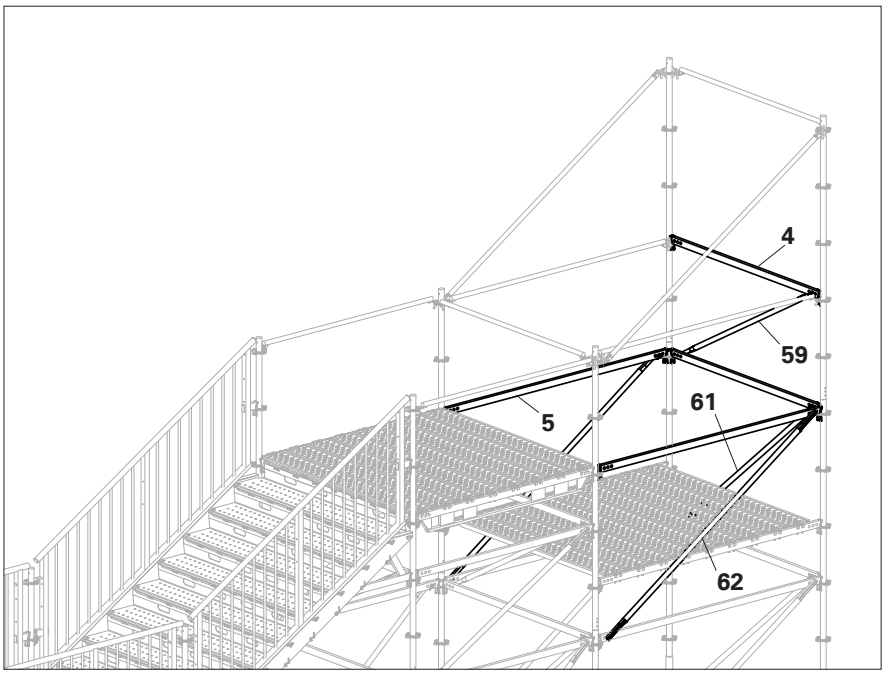


Fig. C1.20

3. Fit 2 x Horizontal Ledger UH-2 200 (**4**).
4. Fit 3 x Steel Deck UDG-2 25x200 (**26**). (Fig. C1.21)

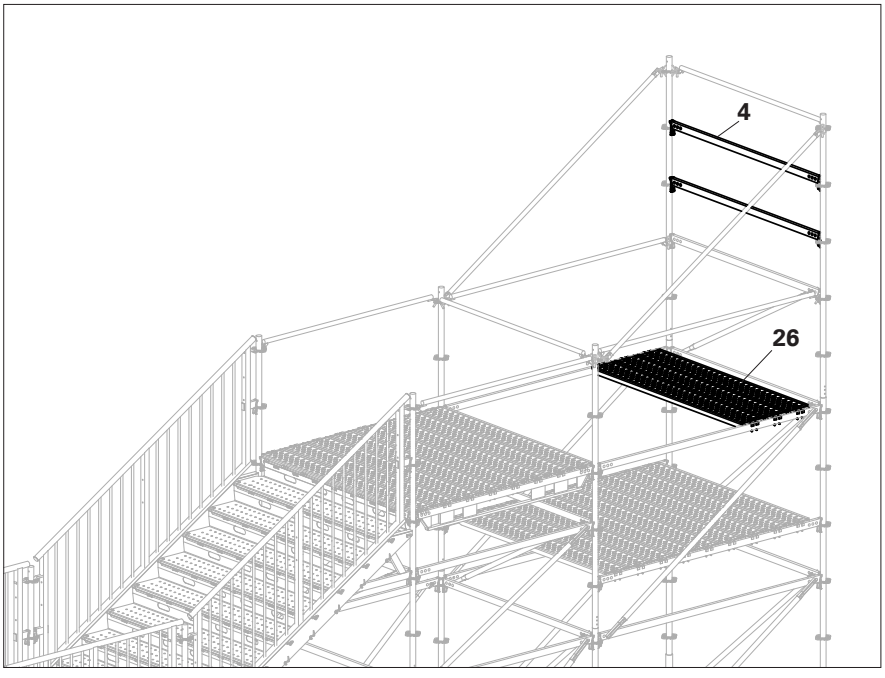


Fig. C1.21

Completing the third flight of stairs

Components

4	Horizontal Ledger UH-2 200	2x
22	Plastic Cap Ø48.3mm grey	2x
30	Guardrail PPG 250/150	2x
32	Guardrail PPG 200	2x
46	Stair Stringer PAS 250/150	2x
49	Stair Tread PATS 200	8x
50	Stair Tread PATT 200 top	1x
72	Bolt ISO 4017-M10x025-8.8-ga	2x

Assembly

1. Fit 2 x Stair Stringer PAS 250/150 (**46**) with Horizontal Ledger UH-2 200 (**4**).
2. Fit 1 x Stair Tread PATS 200 (**49**). (Fig. C1.22)

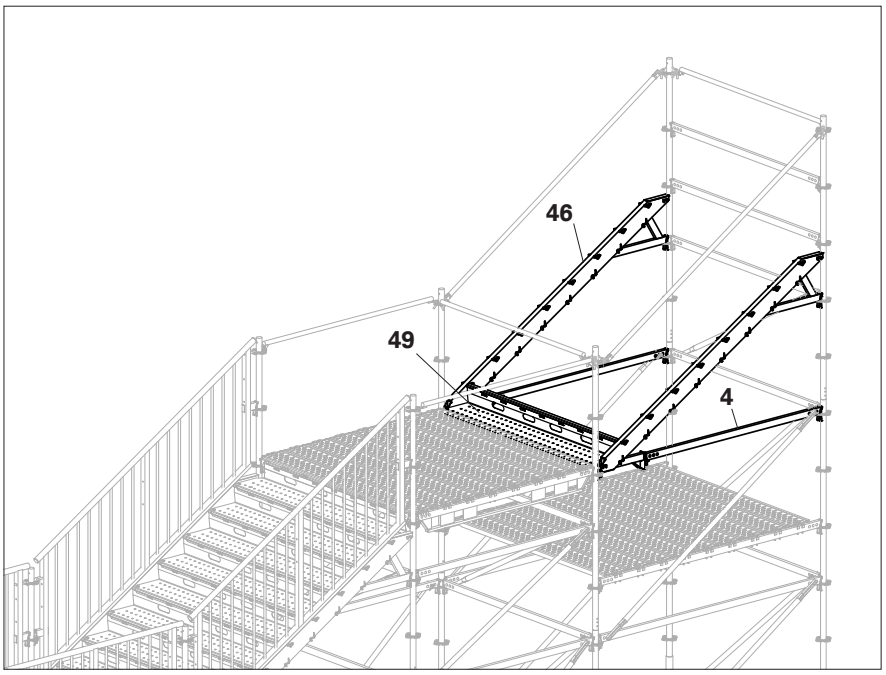


Fig. C1.22

5. Fit 7 x Stair Tread PATS 200 (**49**).
6. Fit 1 x Stair Tread PATT 200 top (**50**). Bolt in 2 x Bolt ISO 4017-M10x025-8.8-ga (**72**) as a lift lock.
7. Fit 2 x Guardrails PPG 200 (**32**) & 2 x Guardrails PPG 250/150 (**30**).
8. Fit Plastic Caps Ø48.3mm grey (**22**) to the tube ends. (Fig. C1.23)

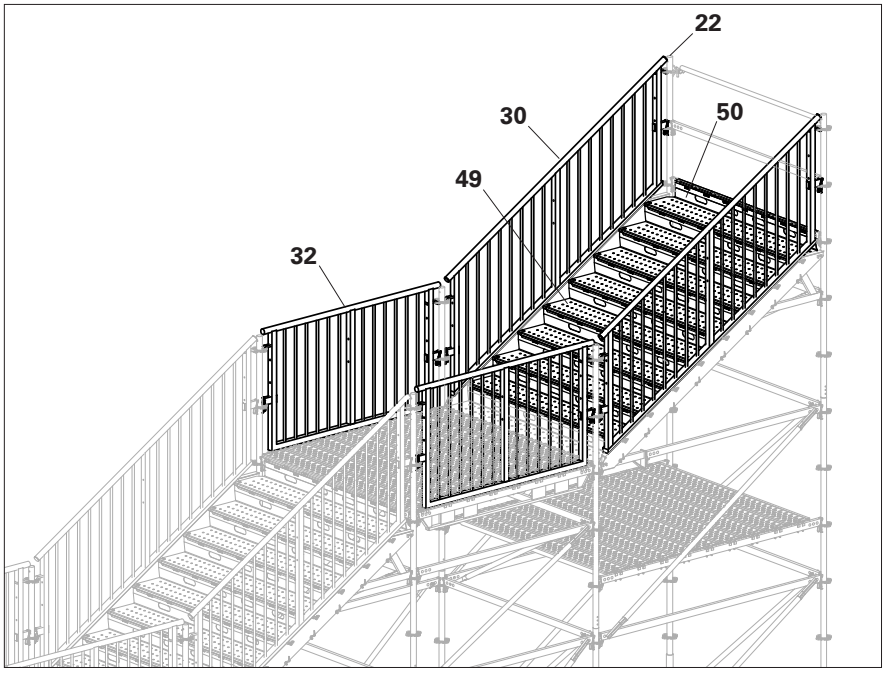


Fig. C1.23

Remove the temporary decks once the stairs are installed in C1.23.

Stair exit

The stair exit shown is merely an example. Carry out planning and proof of load-bearing capacity on a project-specific basis. (Fig. C1.24)

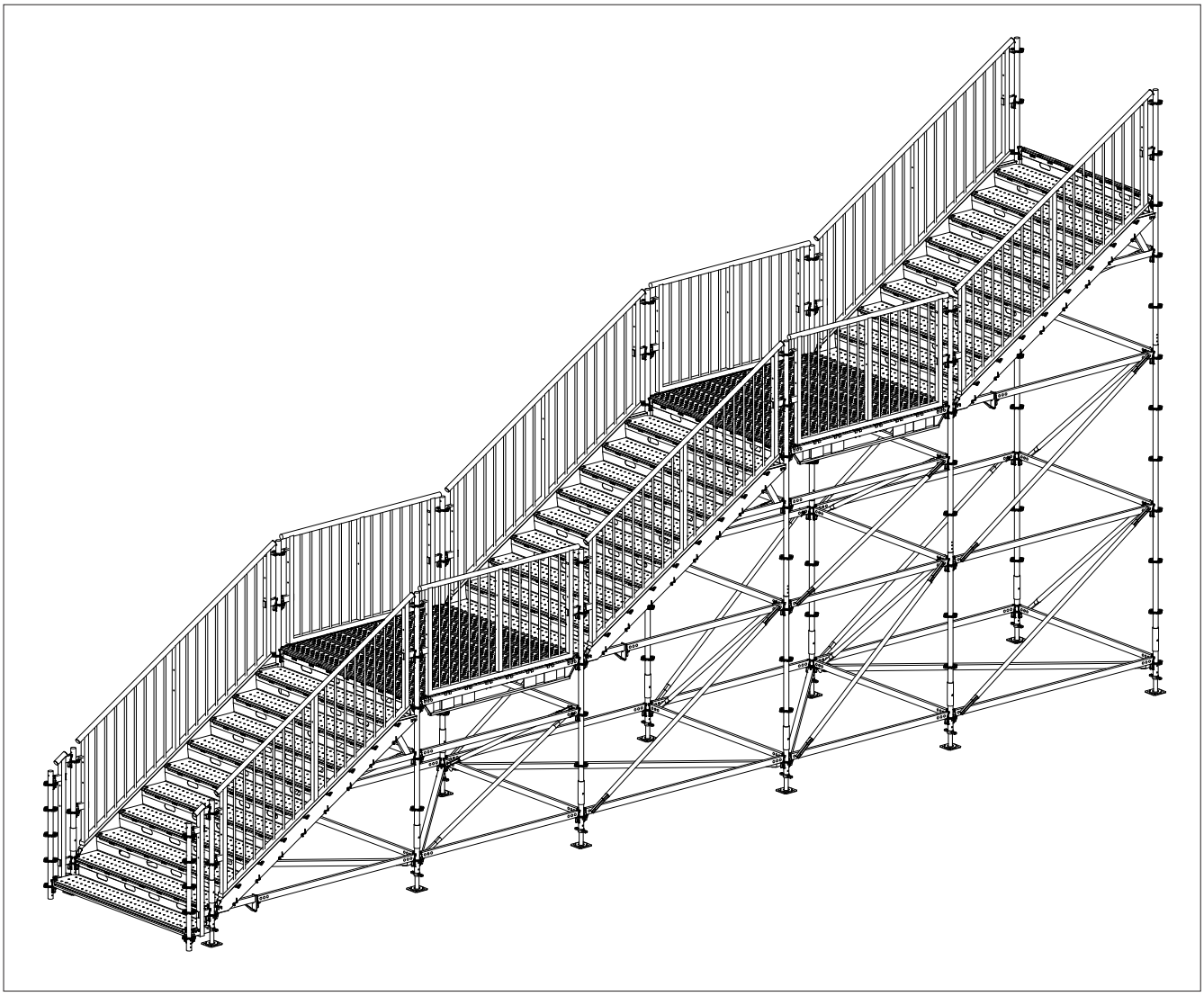


Fig. C1.24

C2 Multi-run staircase

Construct multi-run staircases in parallel.
The guardrails, which function as lift locks, prevent the installation of steps and decks if they are already fitted to the adjacent flight of stairs.

- Assembly is carried out in the same way as for single-run staircases.
- Proof of load-bearing capacity must be prepared on a project-specific basis.
- The handrail is installed in the same way, however:
  – Fit the handrail brackets for the right and left handrail in a single work step.
  (Fig. C2.01a + Fig. C2.01b)

Permissible live load
– 1.0 and 1.5 m width: 7.5 kN/m²
– 2.0 and 2.5 m width: 5 kN/m²

Anchoring
Ballast straight staircases in line with static requirements, for example due to wind loads, or anchor them to the building.

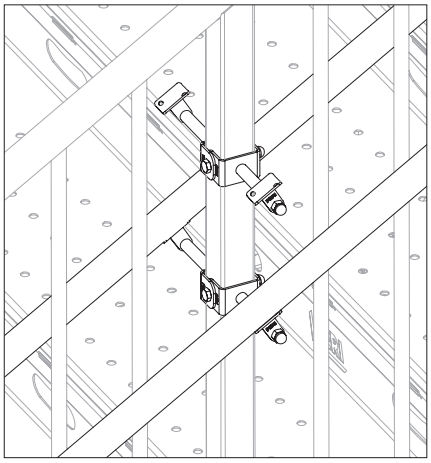


Fig. C2.01a

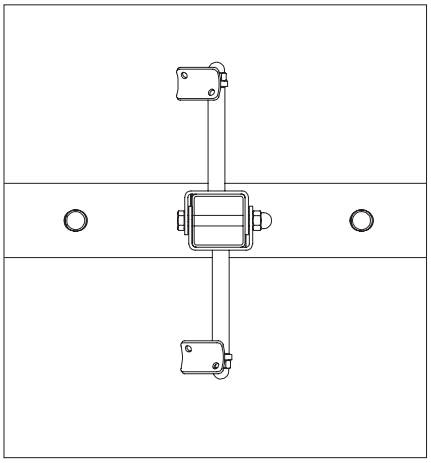


Fig. C2.01b

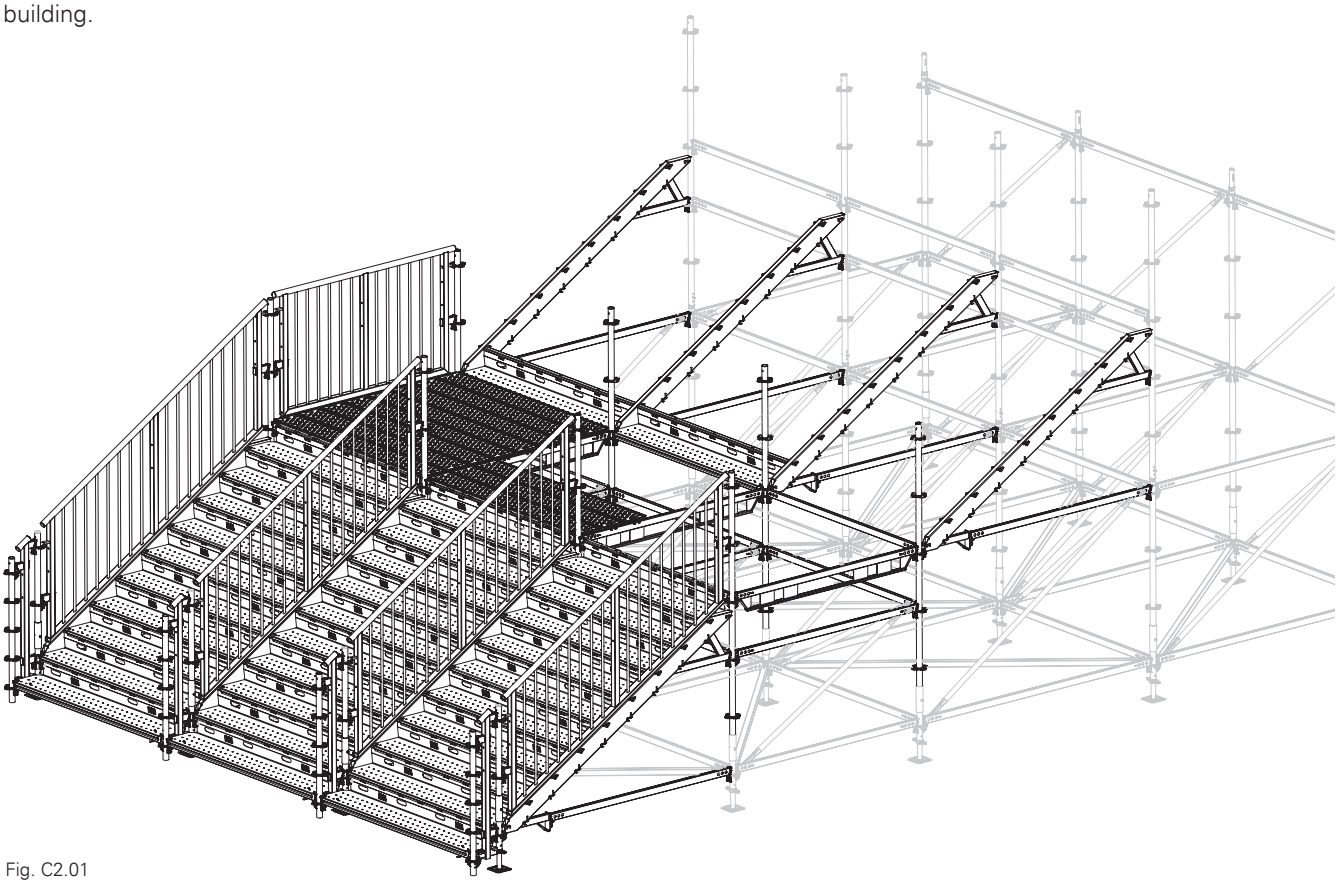


Fig. C2.01

C3 Customised staircases

Plan and statically verify customised staircases on a project-by-project basis.

In addition to angled staircases, it is also possible to construct long counter-running stair ramps or bridging in conjunction with the PERI Engineering Construction Kit.

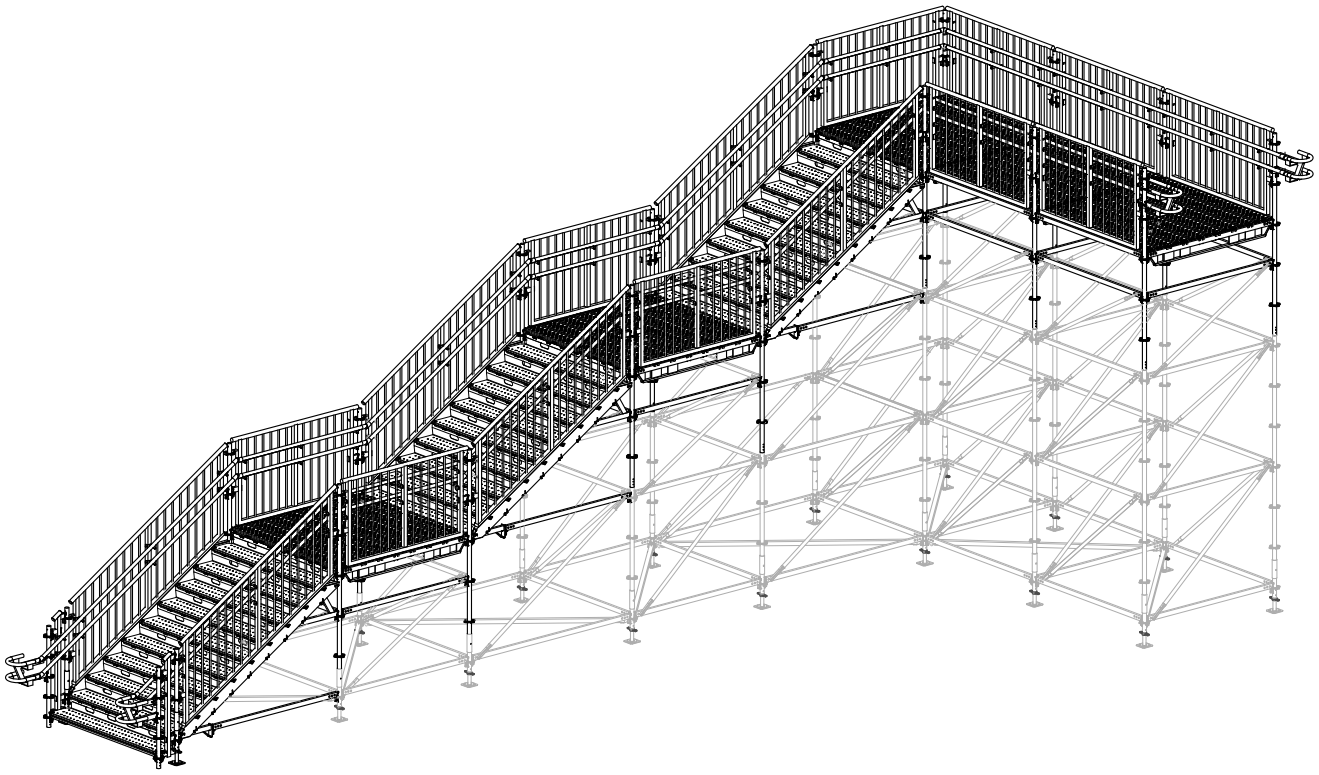


Fig. C3.01

D1 Handrail components

General information
Depending on the country-specific regulations and type of use, it may be necessary or advisable to install a handrail.

Handrail components

70 Bolt ISO 4014-M10X075-8.8
71 Bolt ISO 4014-M10x055-8.8-ga
76 Cap Nut-DIN 1587-M10-6-ga
80 Handrail Support Start PESS
81 Handrail Tube Start PEHS
82 Handrail Bracket sym PEBS
83 Handrail Bracket Corner PEBC
84 Handrail Support Guard PESG
85 Handrail Support Coupler PESC
86 Handrail Tube Staireye PEHE
87 Handrail Joint PEHJ
88 Handrail Tube PEHT 6m
89 Riv. ISO 15979-6.0x10-ST/ST
90 Riv. ISO 15979-6.0x16-ST/ST
101 Handrail start (module)

Handrail start assembly
1. Assemble Handrail Support Start PESS (**80**) with one or two Handrail Tube Start PEHS (**81**), as well as 2x or 4x Bolts M10x55 (**71**) and Cap Nuts M10 (**76**) to form a single or double-run handrail start (**101**). (Fig. D1.01)

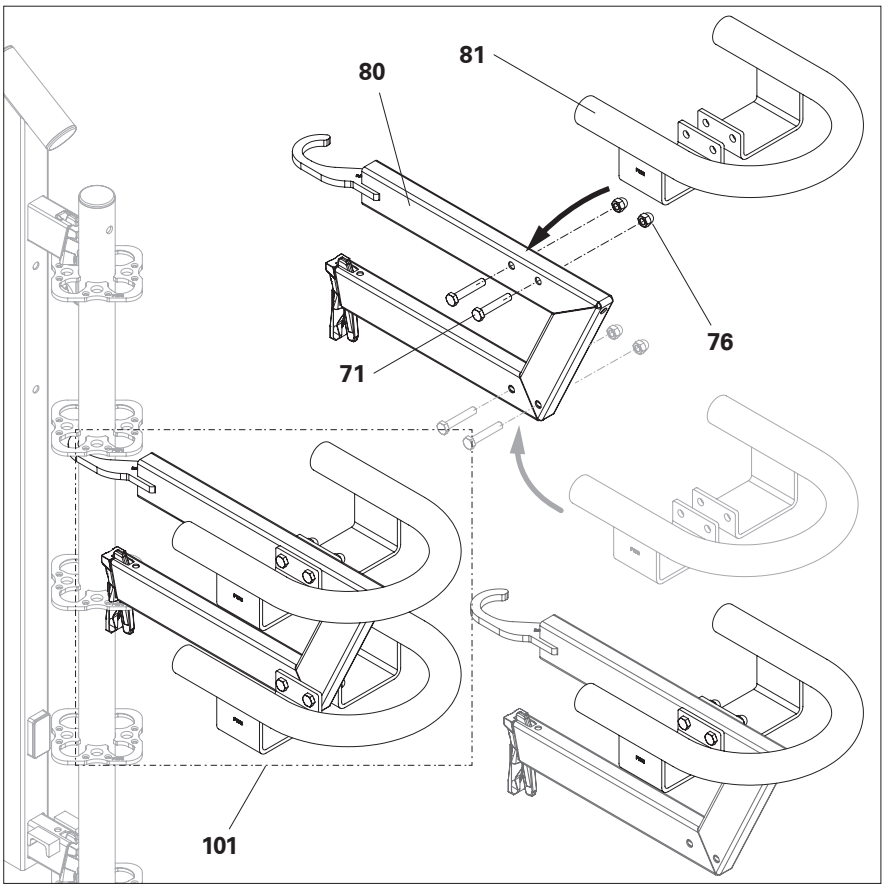


Fig. D1.01

Handrail bracket assembly
1. Attach Handrail Bracket sym PEBS (**82**) or Handrail Bracket Corner PEBC (**83**) to Handrail Support Guard PESG (**84**) or Handrail Support Coupling PESC (**85**) and screw on hand-tight with Cap Nut M10 (**76**).
2. Bolt the handrail bracket to the frame tube of the Guardrail PPG (**30 / 36**) using the M10x75 Bolt (**70**) and cap nut (**76**). (Fig. D1.02)

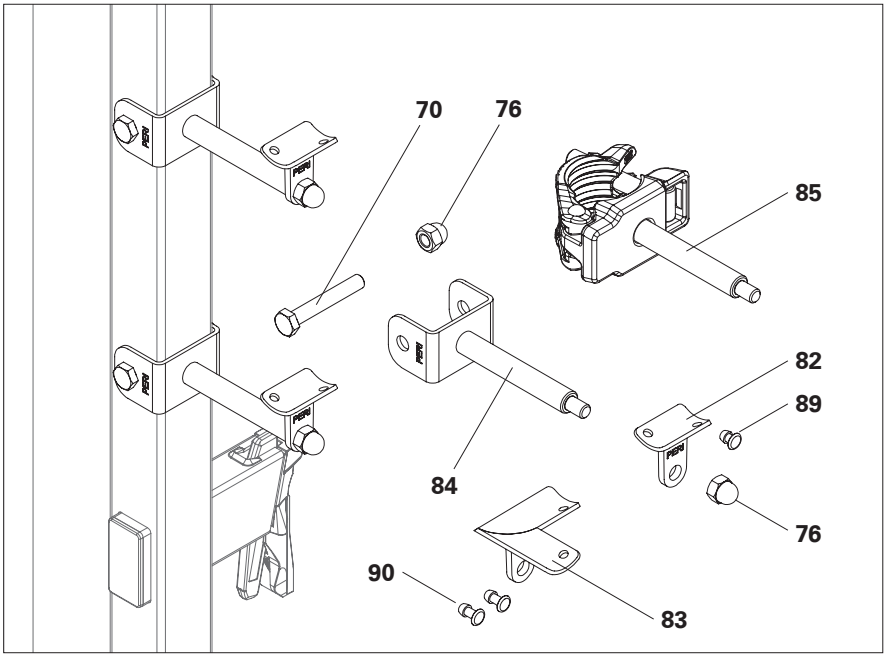


Fig. D1.02

Handrail tubes

Handrail Tube Staireye PEHE
The Handrail Tube Staireye PEHE (**86**) connects the inner handrail to the landing platform in conjunction with 2 x Handrail Joints PEHJ (**87**).

Handrail Tube PEHT 6m
The Handrail Tubes PEHT (**88**) are supplied in stock lengths of 6 m each. Cutting must be carried out by the installer. (Fig. D1.03)

Assembly
The handrail tubes (**88**) are riveted to the handrail brackets (**82**).
- On Handrail Bracket sym PEBS (**82**):
  – Drill the handrail tube through the handrail support with a 6.2 mm drill bit and rivet to Handrail Bracket sym PEBS (82) with 1x rivet 6x10 (89).
- On Handrail Bracket Corner PEBC (**83**):
  – Drill the handrail tube through the handrail support and Handrail Joint PEHJ with a 6.2 mm drill bit and rivet to Handrail Bracket Corner PEBC (83) with 2 x rivet 6x16 (90).

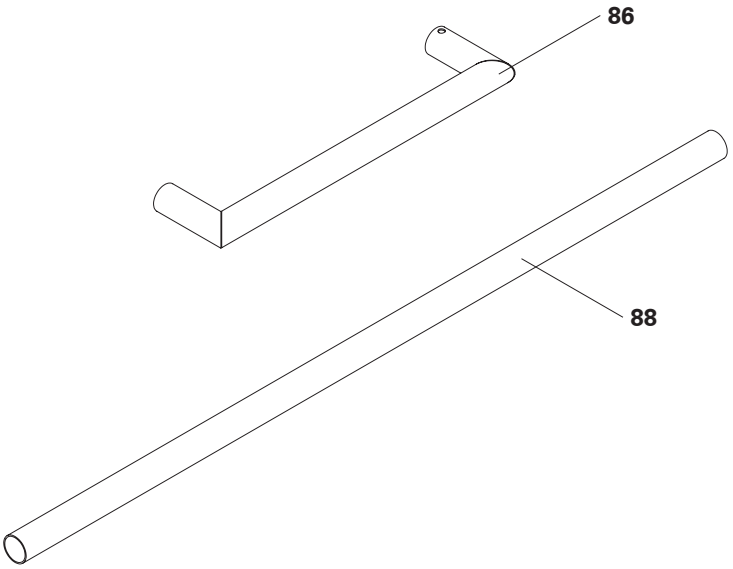


Fig. D1.03

Handrail Joint PEHJ
Handrail Joints PEHJ (**87**) connect the Handrail Tubes PEHT (**88**) at changes of direction.
The connection angle can be continuously adjusted between 180° and 90° by turning the half-joints.
(Fig. D1.04 + Fig. D1.05)

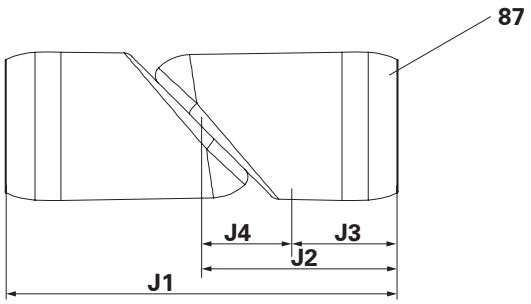
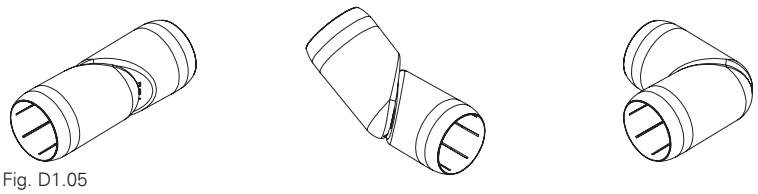


Fig. D1.04


Fig. D1.05

Dimensions of the Handrail Joint PEHJ [mm]		
Length of extended joint	**J1**	130
Length of half joint	**J2**	65
Tube insert in joint	**J3**	35
Handrail extension (length per half-joint that can be fitted to the handrail)	**J4**	30

Tab. D1.01

D2 Handrail on alternating staircase

Handrail tube lengths
The table Tab. D2.01 shows the respective cut-to-size lengths of Handrail Tube PEHT (**88**) including the tube insert in the Handrail Joint PEHJ (**87**).

The respective installation position is represented in the illustration using the capital letters **A** to **I**. Figures in brackets are not shown.

All specified dimensions may vary slightly due to the different fitting arrangements for the handrail brackets. With the specified tube lengths, it should always be ensured that the tube can be fitted and inserted sufficiently deep (**35 mm**) into the Handrail Joint PEHJ.

Tube lengths (cut-to-size dimension) for alternating staircase [mm]					
		System width			
Construction phase		100	150	200	250
Handrail start with 1 x Height Adjustment PAH 1 at the access landing platform	**A**	559			
Handrail start with 2 x Height Adjustment PAH 1	**(A)**	883			
Handrail start with 1 x Height Adjustment PAH 3	**(A)**	1207			
Access landing platform	**B**	940	1440	1940	2440
Staircase, single	**C**	2852			
Landing platform outside, lateral	**D**	810	1310	1810	2310
Landing platform outside, front side	**E**	1930	2930	3930	4930
Handrail Tube Staireye PEHE on inside of landing platform	**F**	508 (component length)			
Handrail joint on the inside	**G**	75			
Landing platform outside, front side, open on one side, up to centre of standard	**H**	2090	3090	4090	5090
Landing platform outside, front side, with 25 cm transition and handrail start	**(H)**	2570	3570	4570	5570
Landing platform inside at staireye, open on one side, up to centre of standard	**I**	1350	1850	2350	2850
Landing platform inside at staireye, with 25 cm transition and handrail start	**(I)**	1830	2330	2830	3330

Tab. D2.01

D2 Handrail on alternating staircase

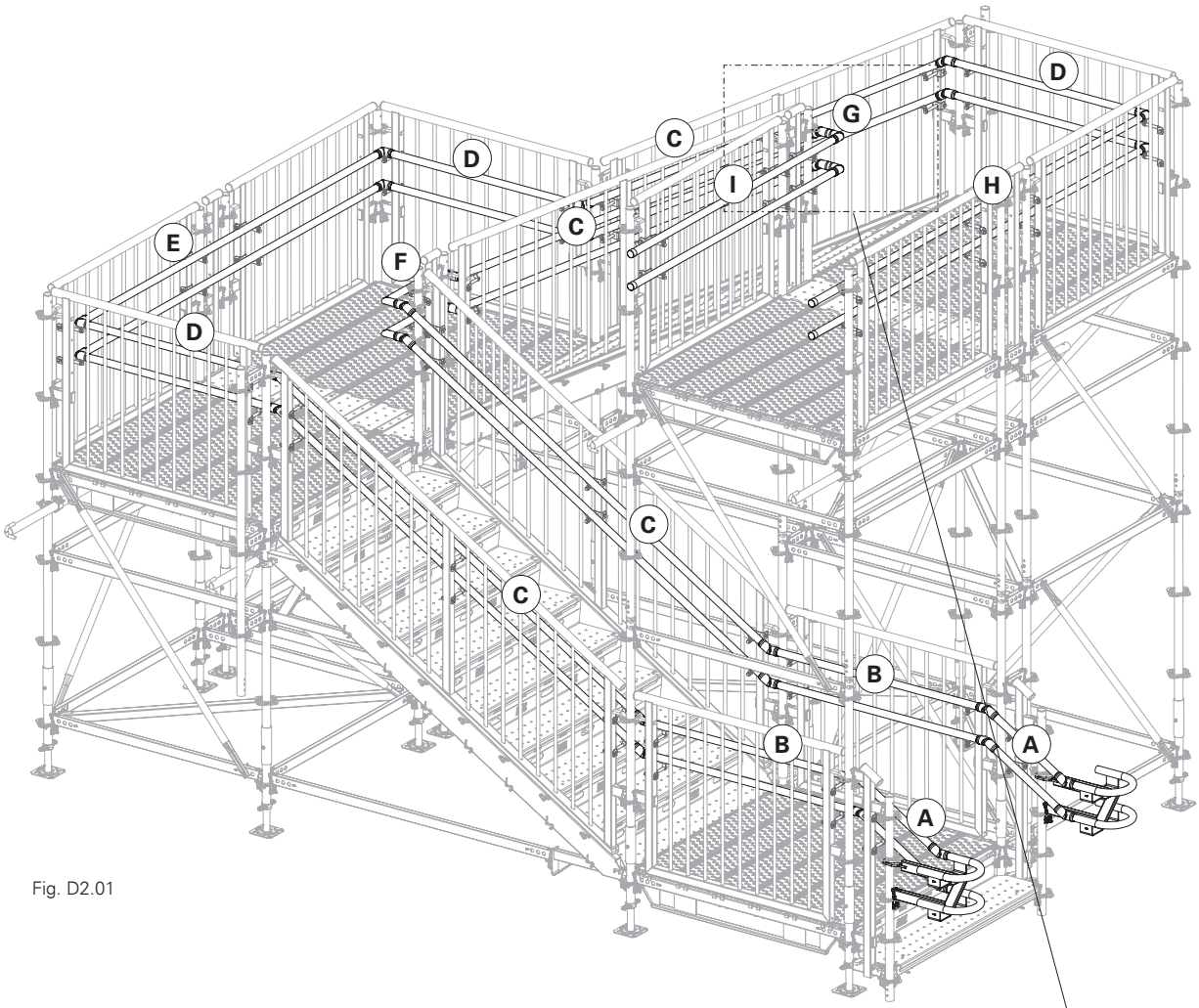


Fig. D2.01

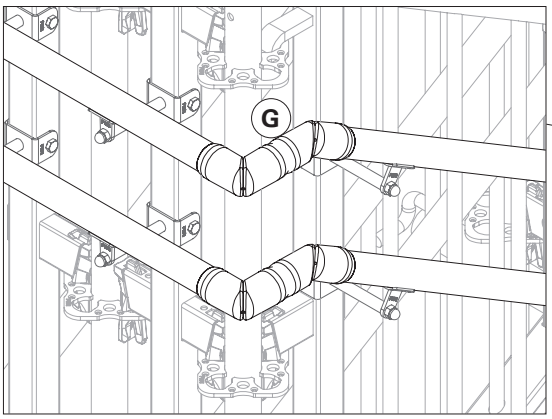


Fig. D2.01b

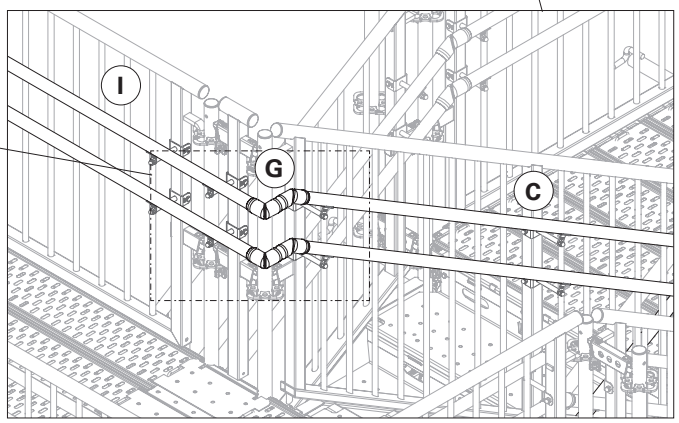


Fig. D2.01a

D2 Handrail on alternating staircase

- Fit the handrail from bottom to top.
- For double handrails, start with the top one. Shown in a different way for reasons of clarity.
- Observe the maximum permissible distance of 1.50 m between the handrail supports (**82**).
- The installation procedure described may vary depending on the staircase design.

Components

70 Bolt ISO 4014-M10X075-8.8
76 Cap Nut-DIN 1587-M10-6-ga
82 Handrail Bracket sym PEBS
83 Handrail Bracket Corner PEBC
84 Handrail Support Guard PESG
85 Handrail Support Coupler PESC
86 Handrail Tube Staireye PEHE
87 Handrail Joint PEHJ
88 Handrail Tube PEHT 6m
89 Riv. ISO 15979-6.0x10-ST/ST
91 Protect. Tube Clip 13-42.4mm 118387
101 Handrail start (module)

Fitting the lower handrail start

1. Tap the handrail start (module) (**101**) into the rosettes on the Top Standard UVH-2 100 (**18**).
2. Bolt the Handrail Support Guard PESG (**84**) to the Height Adjustment PAH 1 (**51**) using Bolt M10x75 (**70**) and cap nut (**76**).
3. Screw Handrail Bracket sym PEBS (**82**) onto each handrail support hand-tight with the cap nut (**76**).
4. Attach the cut-to-size Handrail Tube PEHT (**88**) with Handrail Joint PEHJ (**87**) to the handrail start (**101**), align and place on the handrail bracket.
5. Rivet the handrail tube (**88**) to the handrail bracket (**82**) using a 6.0x10 steel rivet (**89**).
6. Screw the nut (**76**) tightly onto the handrail support (Fig. D2.02)

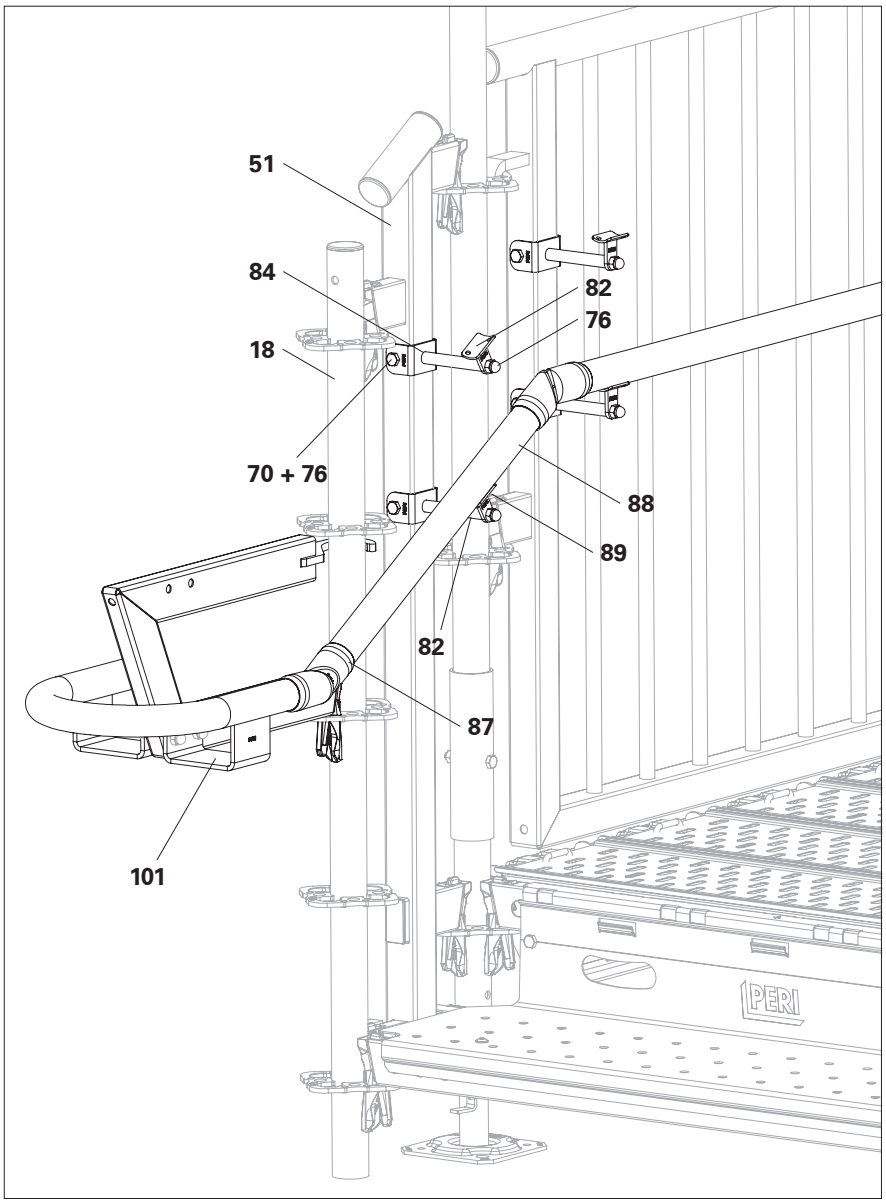


Fig. D2.02

D2 Handrail on alternating staircase

Fitting additional handrail tubes

1. Screw additional Handrail Supports PESG (**84**) with Handrail Bracket sym PEBS (**82**) to the frame of Guardrail PPG (**30 / 32**).
2. Attach the cut-to-size Handrail Tube PEHT (**88**) with Handrail Joint PEHJ (**87**) to the previous handrail tube, align and place on the handrail bracket.
3. Rivet the handrail tube (**88**) to the handrail bracket (**82**) using a 6.0x10 steel rivet (**89**).
4. Screw the nut (**74**) tightly onto the handrail support.
5. Repeat steps 1-4 until the upper handrail start is reached. (Fig. D2.03)

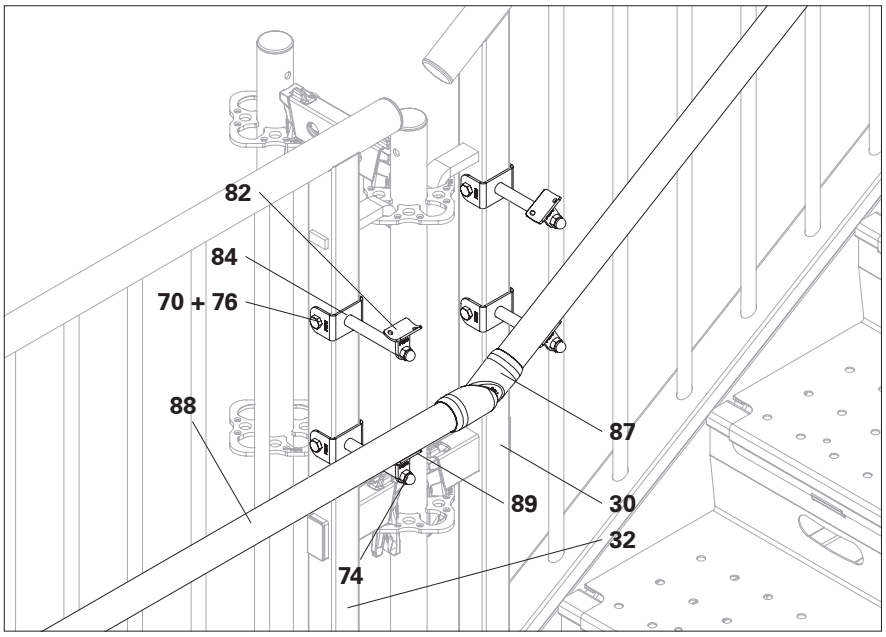


Fig. D2.03

Fitting a Handrail Tube Staireye PEHE

1. Fit Handrail Support PESG (**84**) with Handrail Bracket sym PEBS (**82**) to the frame of Guardrail PPG 25 (**36**).
2. Attach the Handrail Tube Staireye PEHE (**86**) with Handrail Joint PEHJ (**87**) to the previous handrail tube, align and place on the handrail bracket.
3. Rivet the Handrail Tube Staireye PEHE (**86**) to the handrail bracket (**82**) using a 6.0x10 steel rivet (**89**).
4. Screw the nut (**74**) tightly onto the handrail support. (Fig. D2.04)

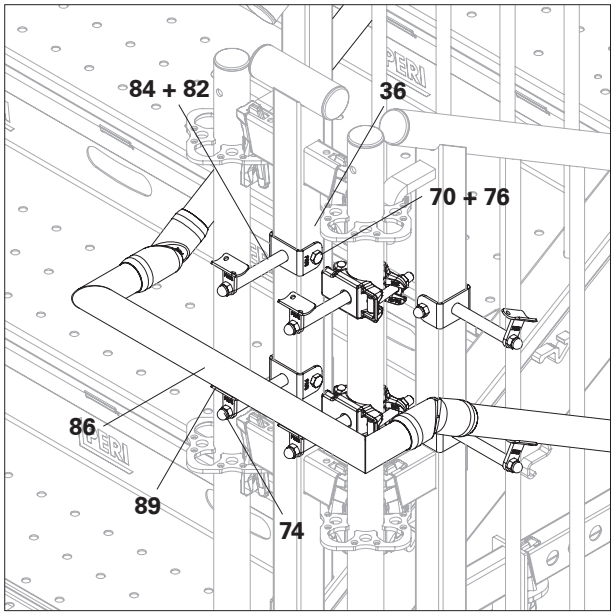


Fig. D2.04

D2 Handrail on alternating staircase

Fitting to the outside of the landing platform

The Handrail Bracket Corner PEBC should always be fitted to the right-hand guardrail.

1. Fit 4 x Handrail Support PESG (**84**) with 2 x Handrail Bracket Corner PEBC (**83**) and 2 x Handrail Bracket sym PEBS (**82**) to the frame of Guardrail PPG 150 (**33**). (Fig. D2.05 - Fig. D2.07)
2. Attach the cut-to-size Handrail Tube PEHT (**88**) with Handrail Joint PEHJ (**87**) to the previous handrail tube, align and place on the handrail bracket.
3. Rivet the handrail tube (**88**) incl. Handrail Joint (**87**) to the handrail bracket (**83**) using a 6.0x16 steel rivet (**90**).
4. Screw the nut (**74**) tightly onto the handrail support.

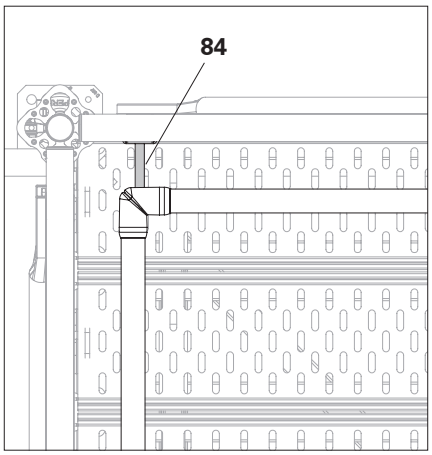


Fig. D2.05

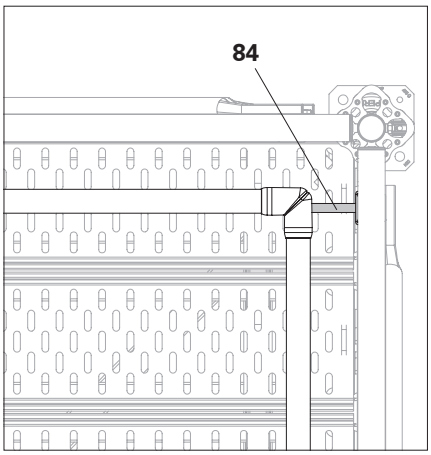


Fig. D2.05a

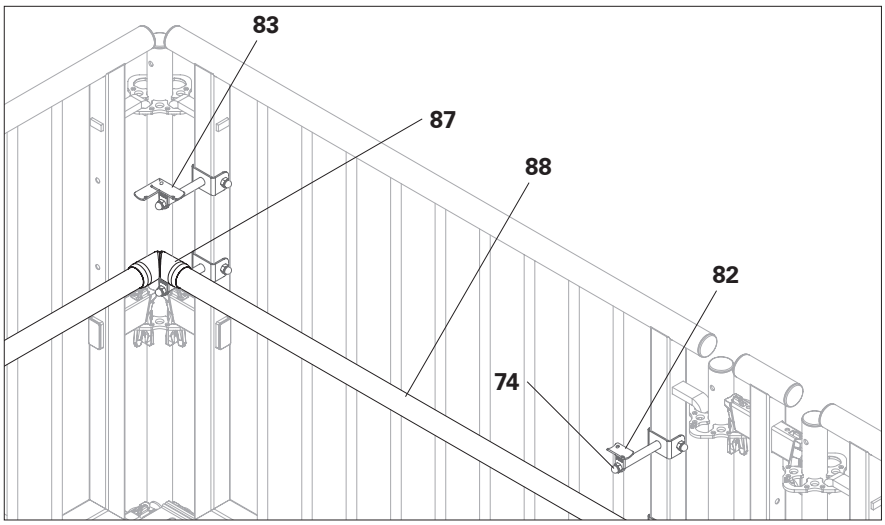


Fig. D2.06

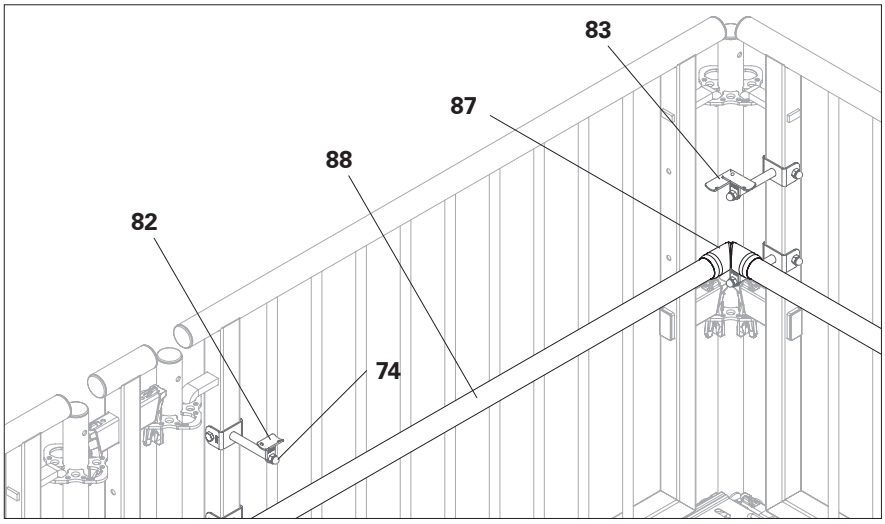


Fig. D2.07

D2 Handrail on alternating staircase

Fitting the upper finish
Plan the upper finish based on the project-specific conditions.
1. Close the ends of the handrail tubes with Protect. Tube Clip 13-42.4mm (**91**). (Fig. D2.08)

Alternatively:
Fit the handrail start, see customised handrail.

Dismantling
Do not loosen the riveted connection. Instead, separate the handrail bracket and handrail support.

Clearly mark the position of the handrail tubes for further use, e.g. with capital letters as shown in this document.

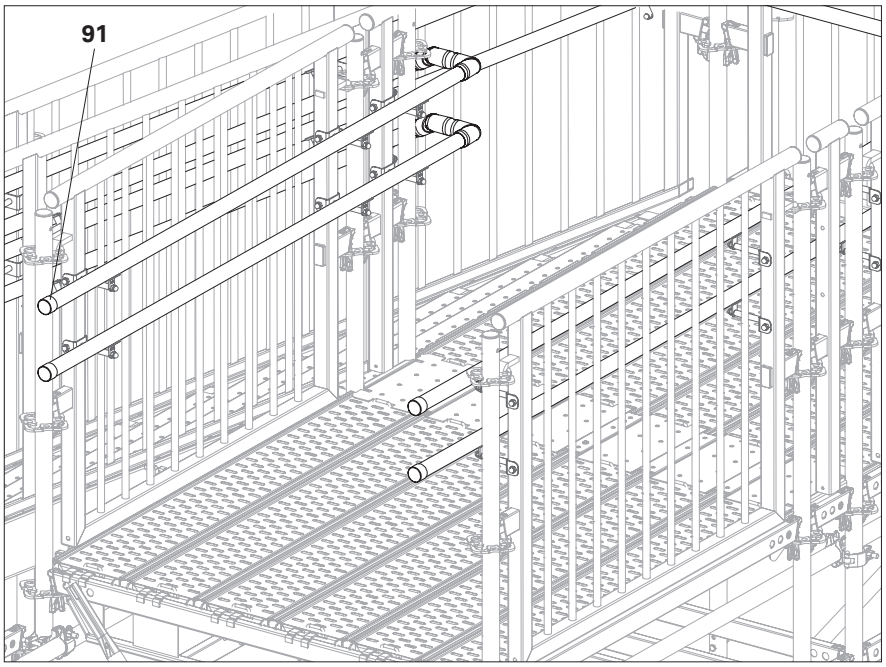


Fig. D2.08

D3 Handrail on straight staircase

Handrail tube lengths
Table 2 shows the respective cut-to-size lengths of Handrail Tube PEHT (**88**) including the tube insert in the Handrail Joint PEHJ (**87**).

The respective installation position is represented in the illustration using the capital letters **K** to **N**. Figures in brackets are not shown.

All specified dimensions may vary slightly due to the different fitting arrangements for the handrail brackets.

With the specified tube lengths, it should always be ensured that the tube can be fitted and inserted sufficiently deep (**35 mm**) into the Handrail Joint PEHJ.

Tube lengths (cut-to-size dimension) for straight staircase Staircase [mm]					
		System width			
System component		100	150	200	250
Handrail start with 1 x Height Adjustment PAH 1 and first flight of stairs	**K**	3472			
Handrail start with 2 x Height Adjustment PAH 1 and first flight of stairs	**(K)**	3796			
Handrail start with 1 x Height Adjustment PAH 3 and first flight of stairs	**(K)**	4120			
Intermediate landing platform	**L**	940	1440	1940	2440
Single flight of stairs	**(M)**	2852			
Handrail start at top with 1 x Guardrail PPG 25	**N**	450			
Handrail start at top with 1 x Guardrail PPG 50	**(N)**	700			

Tab. D3.01

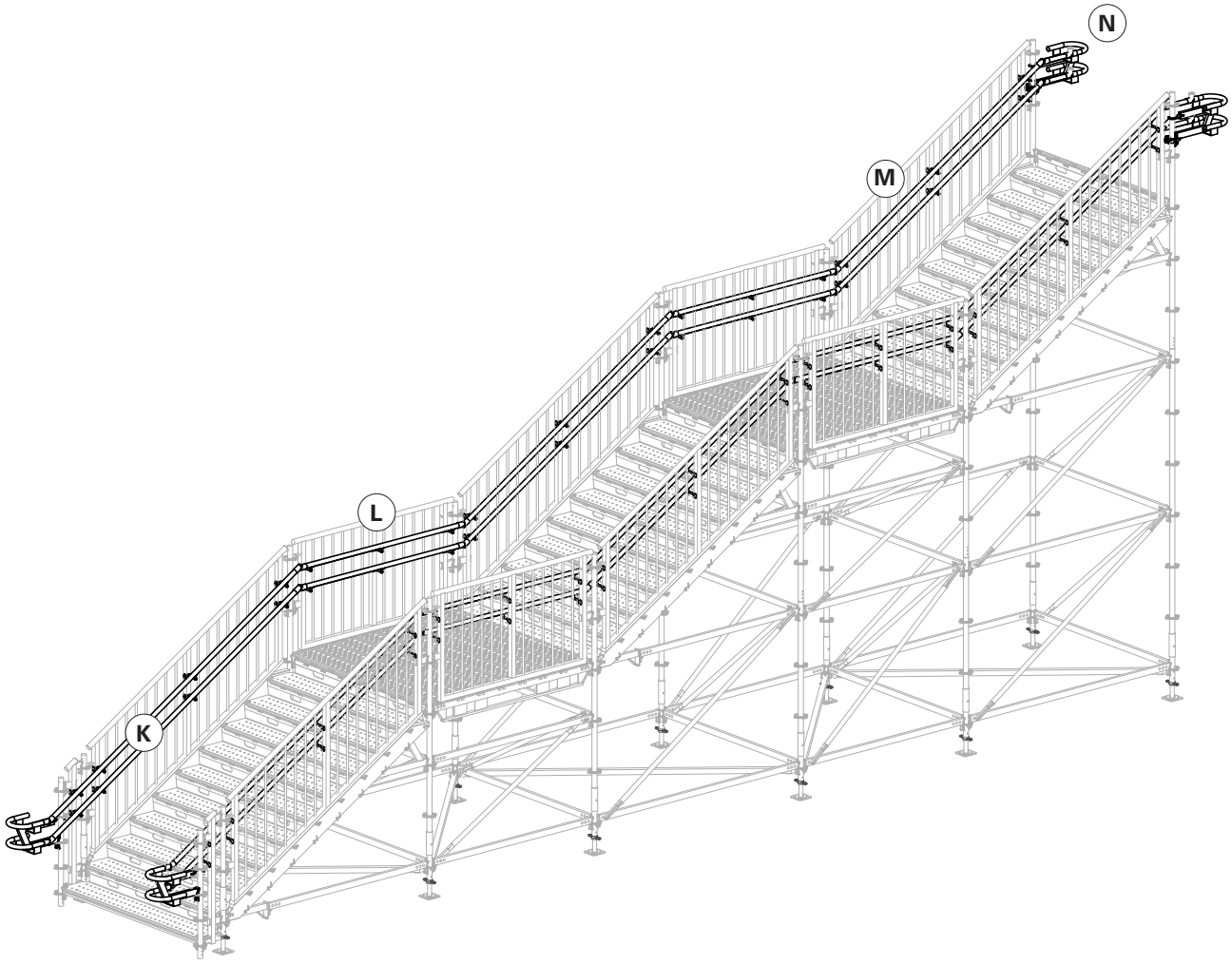


Fig. D3.01

D3 Handrail on straight staircase

Option to add more steps

Components

70 Bolt ISO 4014-M10X075-8.8
76 Cap Nut-DIN 1587-M10-6-ga
82 Handrail Bracket sym PEBS
83 Handrail Bracket Corner PEBC
84 Handrail Support Guard PESG
85 Handrail Support Coupler PESC
86 Handrail Tube Staireye PEHE
87 Handrail Joint PEHJ
88 Handrail Tube PEHT 6m
89 Riv. ISO 15979-6.0x10-ST/ST
91 Protect. Tube Clip 13-42.4mm 118387
101 Handrail start (module)

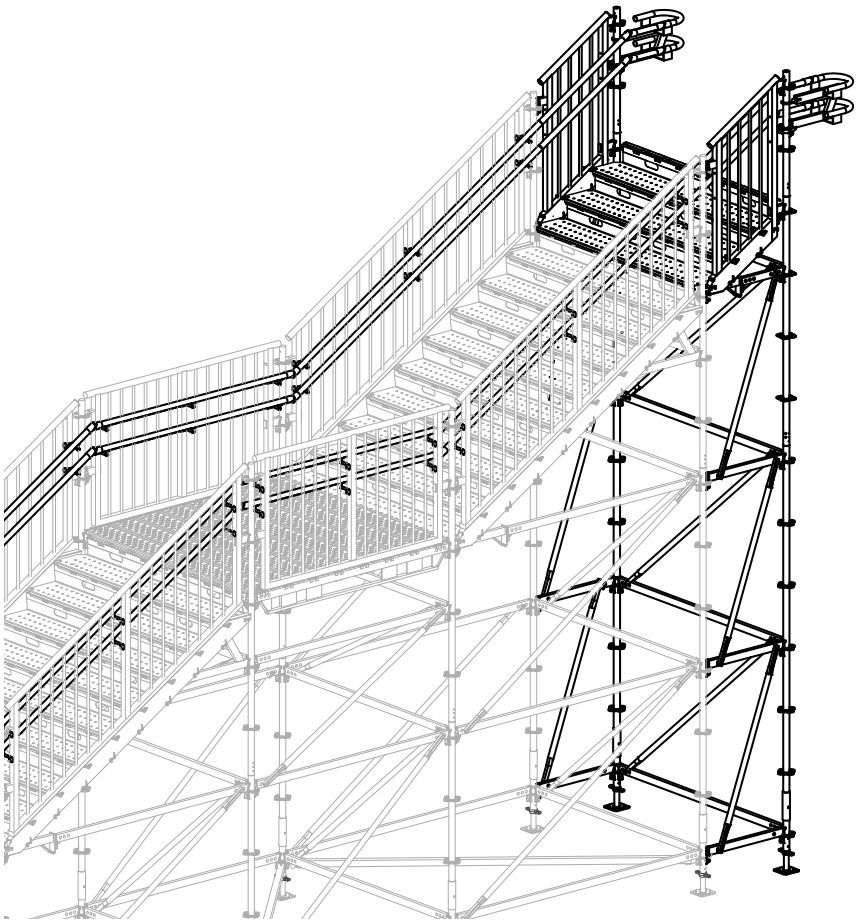


Fig. D3.01b

D3 Handrail on straight staircase

- Fit the handrail from bottom to top.
- For double handrails, start with the top one. Shown in a different way for reasons of clarity.
- Observe the maximum permissible distance of 1.50 m between the handrail supports (**82**).
- The installation procedure described may vary depending on the staircase design.

Components

70	Bolt ISO 4014-M10X075-8.8
76	Cap Nut-DIN 1587-M10-6-ga
82	Handrail Bracket sym PEBS
84	Handrail Support Guard PESG
87	Handrail Joint PEHJ
88	Handrail Tube PEHT 6m
89	Riv. ISO 15979-6.0x10-ST/ST
91	Protect. Tube Clip 13-42.4mm
93	Clamping Rosette UEV 180°
101	Handrail start (module)

Fitting the lower handrail start

1. Tap the handrail start (module) (**101**) into the rosettes on the Top Standard UVH-2 125 (**19**).
2. Bolt 2 x Handrail Support Guard PESG (**84**) with Handrail Bracket sym PEBS (**82**) onto Height Adjustment PAH 1 (**51**) and 2 x 3 onto Guardrail PPG (**30**).
3. Attach the cut-to-size Handrail Tube PEHT (**88**) with Handrail Joint PEHJ (**87**) to the handrail start (**101**), align and place on the handrail bracket.
4. Rivet the handrail tube (**88**) to the handrail bracket (**82**) using a 6.0x10 steel rivet (**89**).
5. Screw the cap nut (**76**) tightly onto the handrail support. (Fig. D3.02)

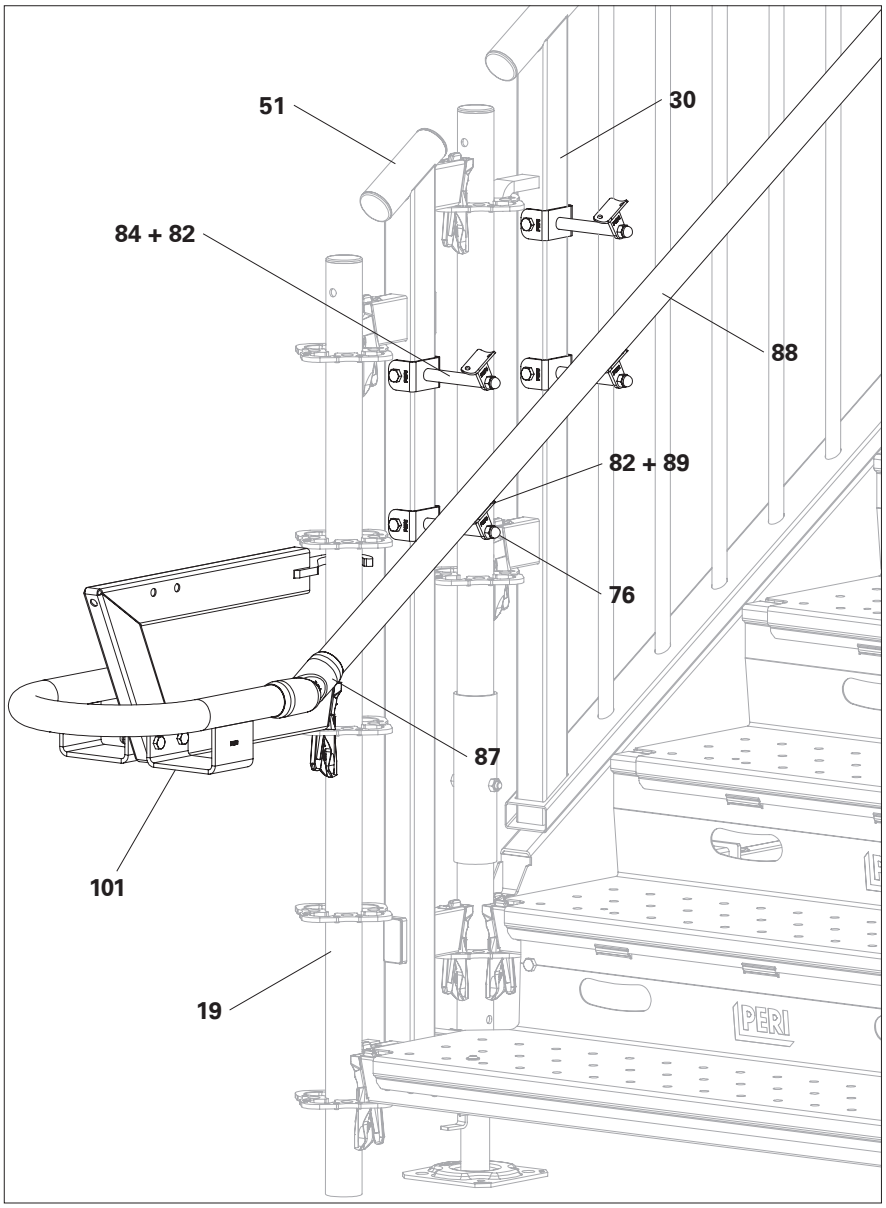


Fig. D3.02

D3 Handrail on straight staircase

Fitting additional handrail tubes

1. Screw additional Handrail Supports PESG (**84**) with Handrail Bracket sym PEBS (**82**) to the frame of Guardrail PPG (**30 / 32**).
2. Attach the cut-to-size Handrail Tube PEHT (**88**) with Handrail Joint PEHJ (**87**) to the previous handrail tube, align and place on the handrail bracket.
3. Rivet the handrail tube (**88**) to the handrail bracket (**82**) using a 6.0x10 steel rivet (**89**).
4. Screw the cap nut (**76**) tightly onto the handrail support. (Fig. D3.03)
5. Repeat steps 1-4 until the upper handrail start is reached.

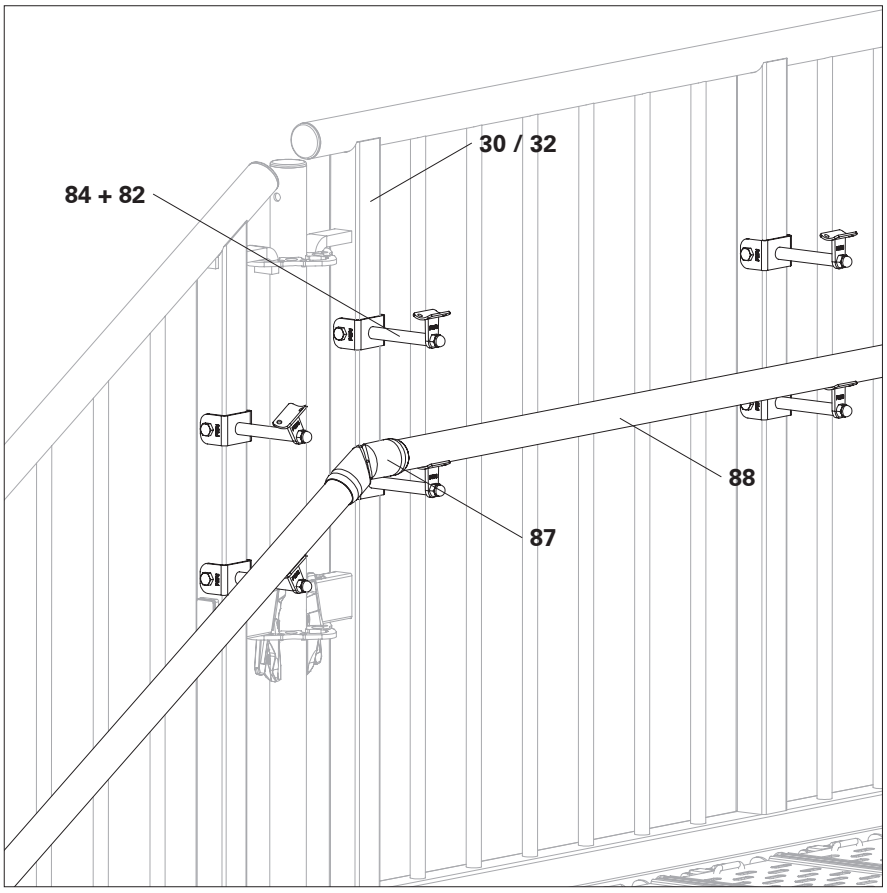


Fig. D3.03

D3 Handrail on straight staircase

Fitting the upper handrail start

1. Fit Handrail Start PESS (**80**) with Clamping Rosette UEV 180°(**93**) to Top Standard UVH-2 100 (**18**).
2. Align the uppermost Handrail Tube PEHT (**88**) with Handrail Joint PEHJ (**87**) and attach to Handrail Tube Start PEHS (**81**).
3. Bolt the Handrail Tube Start PEHS (**81**) tightly to the Handrail Support Start PESS (**80**) using 2 x M10X55-8.8 Bolts (**71**) and nuts (**74**).
   (Fig. D3.04 + Fig. D3.04a)

Dismantling

Do not loosen the riveted connection. Instead, separate the handrail bracket and handrail support.

Clearly mark the position of the handrail tubes for further use, e.g. with capital letters as shown in this document.

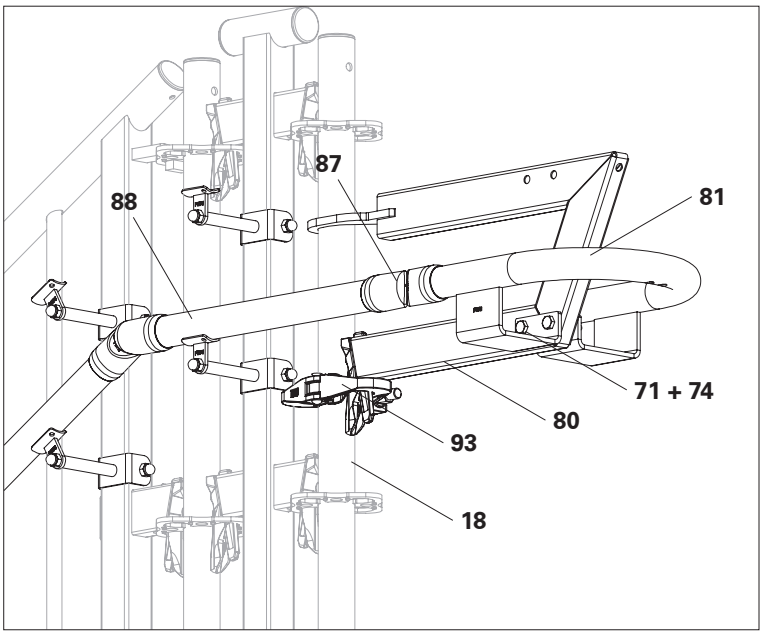


Fig. D3.04

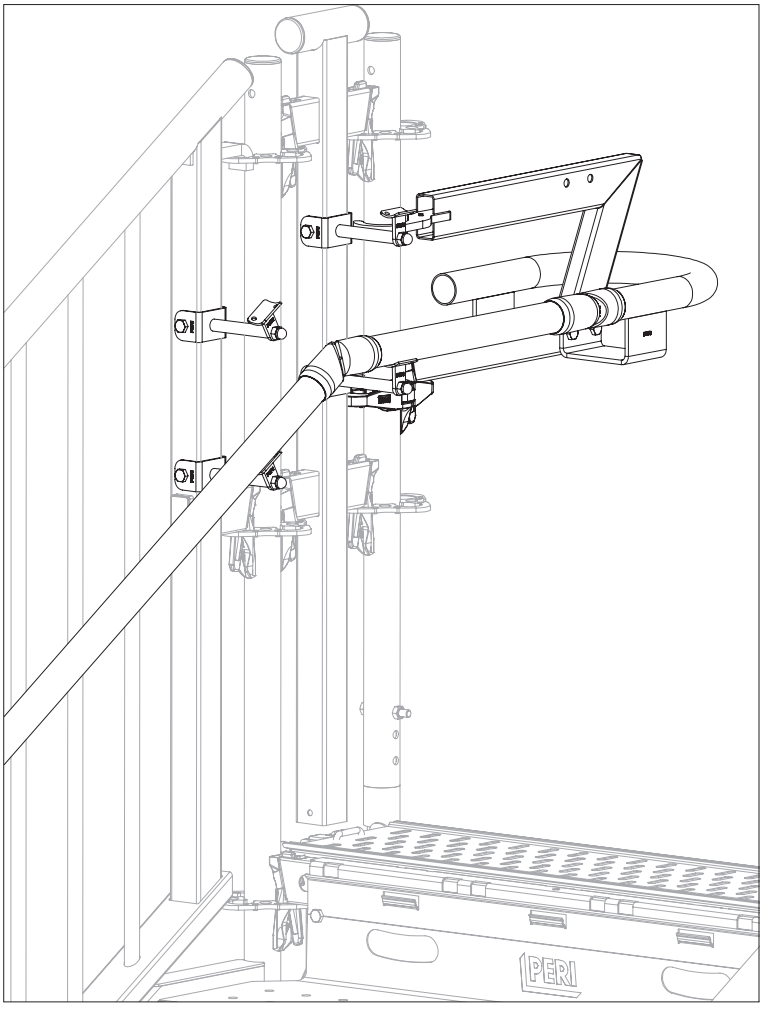


Fig. D3.04a

D4 Customised handrails

Tube lengths for customised system combinations.
In customised system combinations, various staircase sections are combined in different ways. The resulting tube lengths (sectional dimensions) required for the handrail can be determined using the information in the adjacent tables.

Dismantling
Do not loosen the riveted connection. Instead, separate the handrail bracket and handrail support.



Clearly mark the position of the handrail tubes for further use, e.g. with capital letters as shown in this document.

System lengths in relation to staircase sections	[mm]
Single-run flight of stairs (from centre of standard to centre of standard)	2913
Double-run flight of stairs (from centre of standard to centre of standard)	5826
Guardrail PPG 25 (from centre of standard to centre of standard)	250
Guardrail PPG 50 (from centre of standard to centre of standard)	500
Guardrail PPG 100 (from centre of standard to centre of standard)	1000
Guardrail PPG 150 (from centre of standard to centre of standard)	1500
Guardrail PPG 200 (from centre of standard to centre of standard)	2000
Guardrail PPG 250 (from centre of standard to centre of standard)	2500
Height Adjustment PAH1 (from centre of standard to centre of standard)	324
Height Adjustment PAH3 (from centre of standard to centre of standard)	972
Straight handrail start, up to centre of first standard	260
Handrail start diagonally downwards, to centre of first standard	295
Handrail extension, 1 x half joint	-30
Handrail extension, 2 x half joint	-60
Handrail projection at outside corner (from centre of standard to end of tube)	100
Handrail recess at inside corner (from centre of standard to end of tube)	-160

Tab. D4.01

Calculation examples for tube lengths	[mm]
Single-run flight of stairs with Height Adjustment PAH1 and handrail start (**K**)	
Handrail start diagonally downwards, to centre of first standard (**K1**)	295
Height Adjustment PAH1 (from centre of standard to centre of standard) (**K2**)	324
Single-run flight of stairs (from centre of standard to centre of standard) (**K3**)	2913
Handrail extension 2x half joint	-60
Cut-to-size dimension	3472
Intermediate landing platform 150 (**L**)	
Guardrail PPG 150 (from centre of standard to centre of standard) (**L1**)	1500
Handrail extension 2x half joint	-60
Cut-to-size dimension	1440

Tab. D4.02

D4 Customised handrails

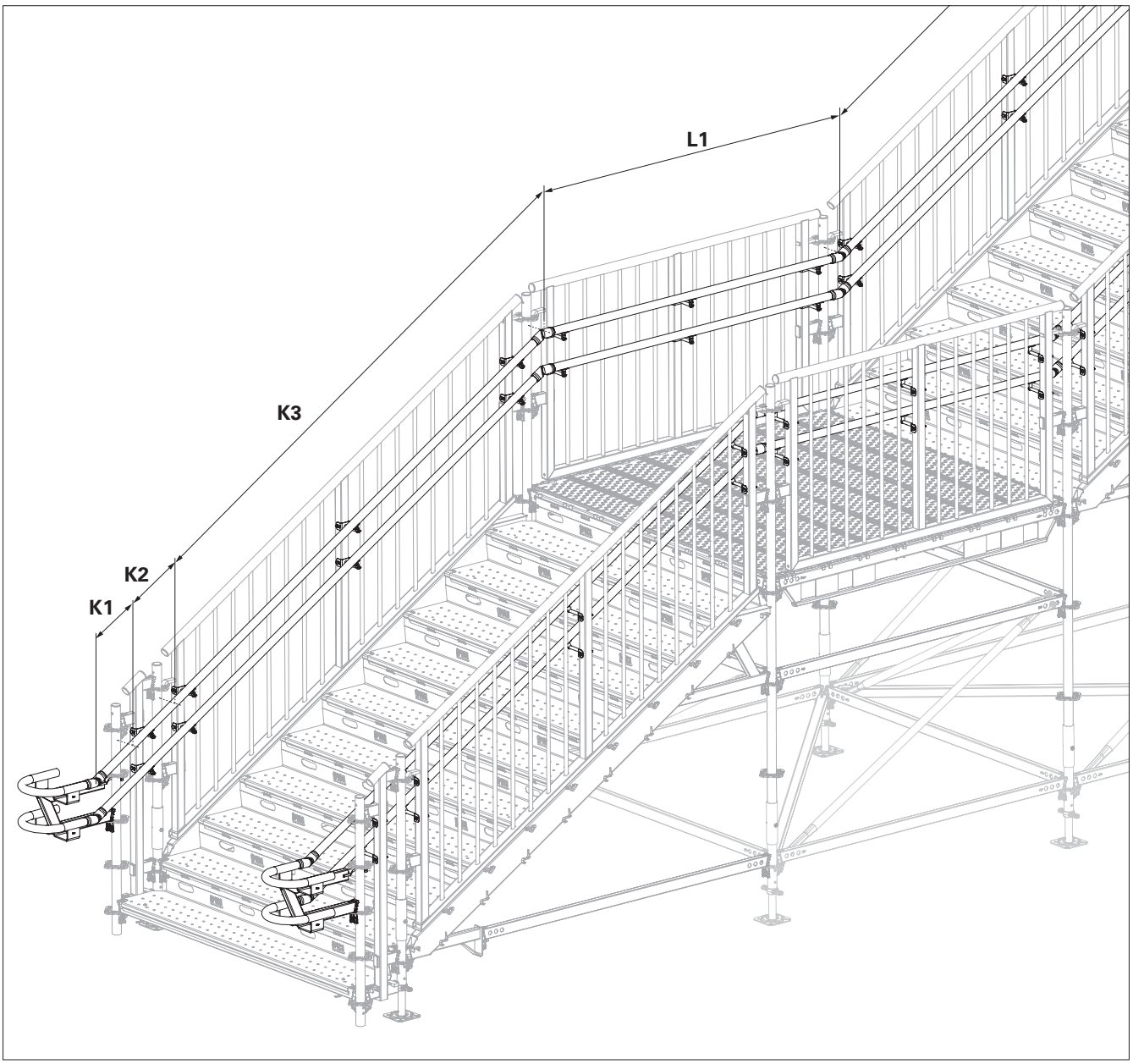


Fig. D4.01

Single flight of stairs (**M**)	[mm]
Single-run flight of stairs (from centre of standard to centre of standard) (**M1**)	2913
Handrail extension 2x half joint	-60
Cut-to-size dimension	2853
Single-run flight of stairs (from centre of standard to centre of standard) (**M2**)	3884
Handrail extension 2x half joint	-60
Cut-to-size dimension	3824
Handrail start at top with a Guardrail PPG 25 (**N**)	[mm]
Straight handrail start, up to centre of first standard (**N**)	260
Handrail extension 2x half joint	-60
Cut-to-size dimension	200

Fig. D4.02

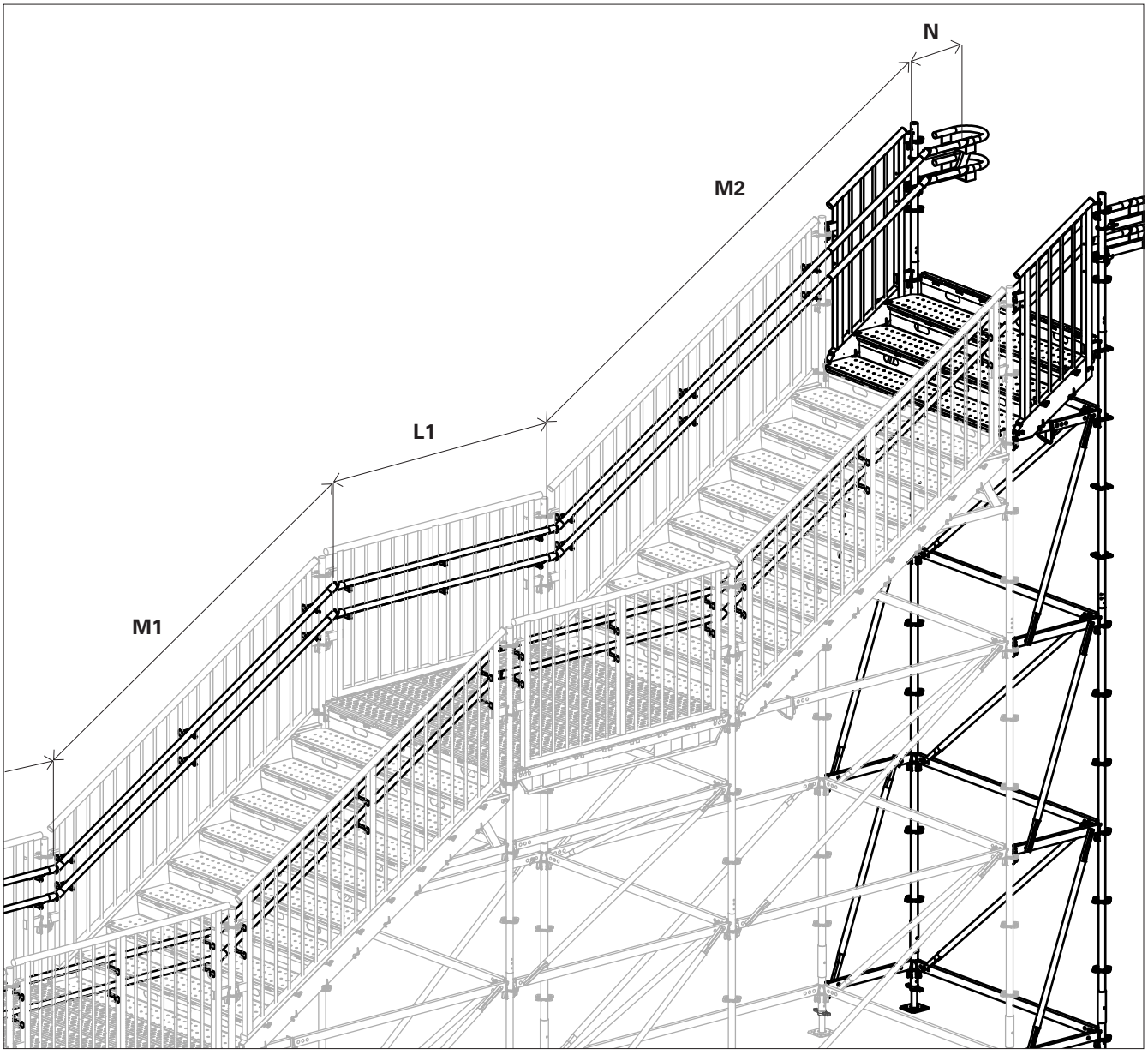


Fig. D4.02

Handrails arranged at right angles
For guardrails arranged at right angles, the tube projection or recess must be taken into account.

The system dimension (**X**) must be calculated based on the project-specific conditions.
e.g. 1500 + 250 + 1500 mm

Handrail on inside corner
Length of handrail tube = system dimension- 160 mm.
(Fig. D4.03)

Handrail on outside corner
Length of handrail tube = system dimension +100 mm.
(Fig. D4.04)

Landing platform with 2 x inside corner (**P**)	[mm]
System dimension e.g. 1500 + 250 + 1500 (**X**)	3250
Handrail recess at inside corner (centre of standard to end of tube left)	-160
Handrail recess at inside corner (centre of standard to end of tube right)	-160
Cut-to-size dimension	2930

Tab. D4.03

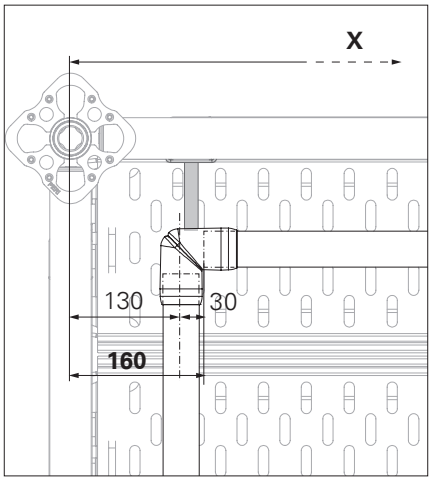


Fig. D4.03

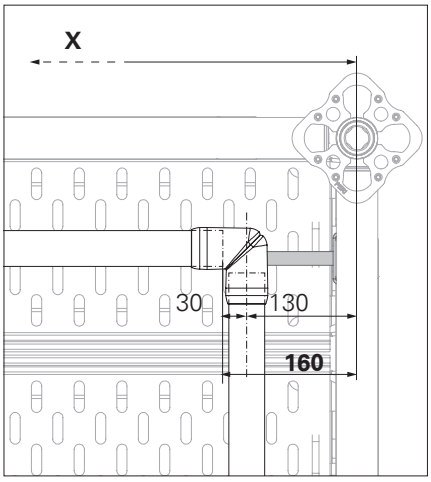


Fig. D4.03a

Landing platform with outside corner and inside corner (**Q**)	[mm]
System dimension e.g. 1500 + 250 + 1500 (**X**)	3250
Handrail projection at outside corner (centre of standard to end of tube left)	100
Handrail recess at inside corner (centre of standard to end of tube right)	-160
Cut-to-size dimension	3190

Tab. D4.04

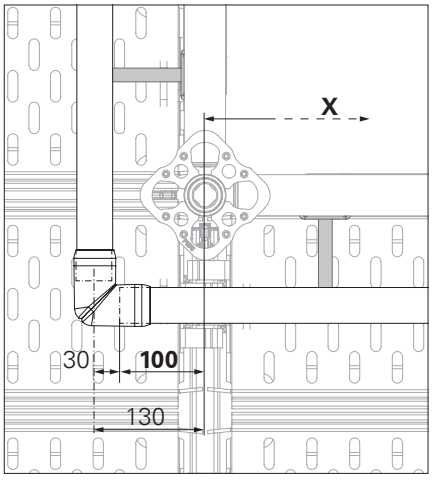


Fig. D4.04

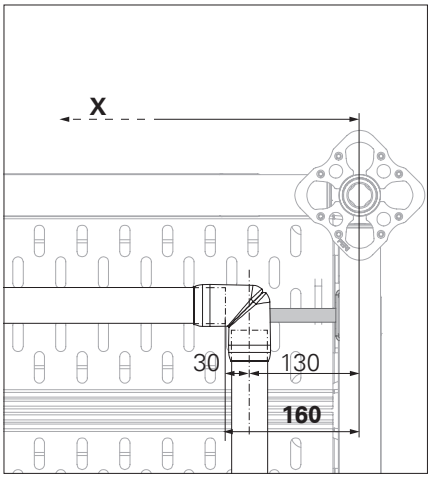


Fig. D4.04a

Handrails arranged at right angles with straight joints

The system dimension (**X**) must be calculated based on the project-specific conditions.
e.g. 1500 + 250 + 1500 mm

Always fit straight joints of handrails, whether the stairs go up or down, in the area of a standard between two Handrail Support Guards PESG (**84**).

Handrail on inside corner
Length of handrail tube = system dimension - 160 mm.
(Fig. D4.05)

Handrail on outside corner
Length of handrail tube = system dimension +100 mm.
(Fig. D4.06)

Straight joint on Handrail Joint PEHJ
Length of handrail tube = system dimension -30 mm.
(Fig. D4.05a + Fig. D4.06a)

Landing platform with 1 x inside corner and straight joint (**R**)	[mm]
System dimension e.g. 1500 + 250 + 1500 (**X**)	3250
Handrail recess at inside corner (centre of standard to end of tube left)	-160
Handrail extension, 1 x half joint (on straight joint) right	-30
Cut-to-size dimension	3060

Tab. D4.05

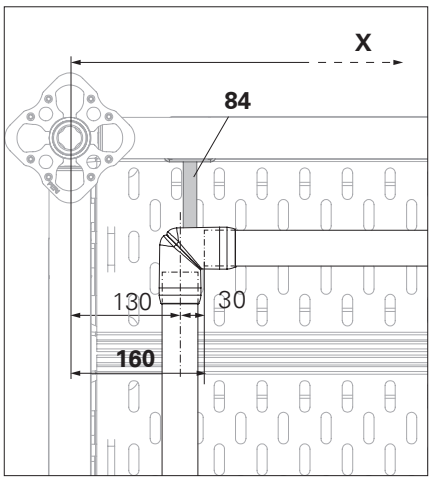


Fig. D4.05

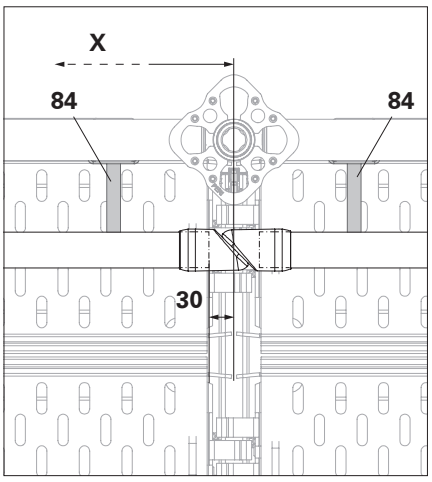


Fig. D4.05a

Landing platform with 1 x outside corner and straight joint (**S**)	[mm]
System dimension e.g. 1500 + 250 + 1500 (**X**)	3250
Handrail projection at outside corner (centre of standard to end of tube left)	100
Handrail extension, 1 x half joint (on straight joint) right	-30
Cut-to-size dimension	3320

Tab. D4.06

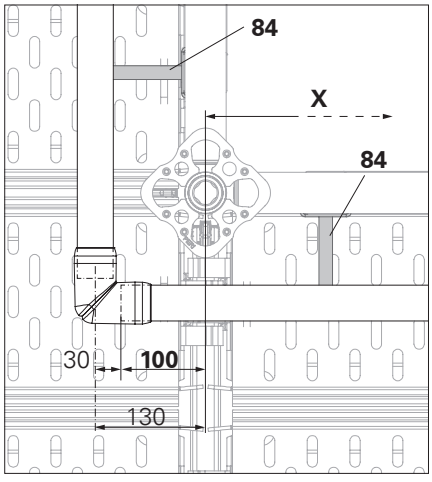


Fig. D4.06

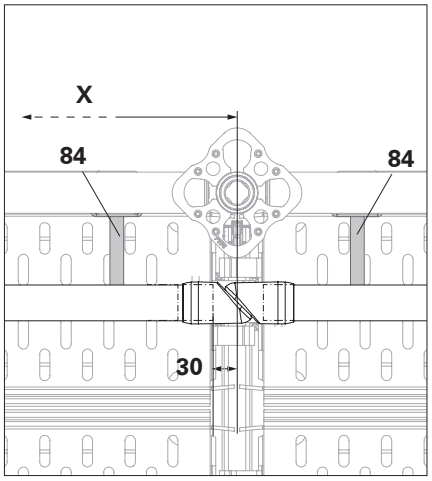


Fig. D4.06a

Straight joint on Handrail Joint PEHJ

The system dimension (**X**) must be calculated based on the project-specific conditions.
e.g. 1500 + 250 + 1500 mm

Always fit straight joints of handrails, whether the stairs go up or down, in the area of a standard between two Handrail Support Guards PESG (**84**).

Straight joint on Handrail Joint PEHJ
Length of handrail tube = system dimension -30 mm.
(Fig. D4.07 + Fig. D4.07a)

Handrail with straight joint (**T**)	[mm]
System dimension e.g. 1500 + 250 + 1500 (**X**)	3250
Handrail extension, 1 x half joint (on straight joint) left	-30
Handrail extension, 1 x half joint (on straight joint) right	-30
Cut-to-size dimension	3190

Tab. D4.07

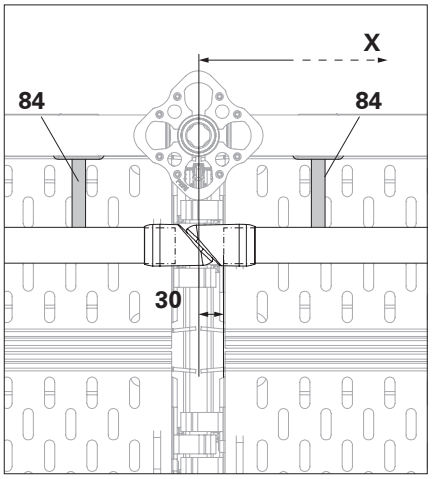


Fig. D4.07

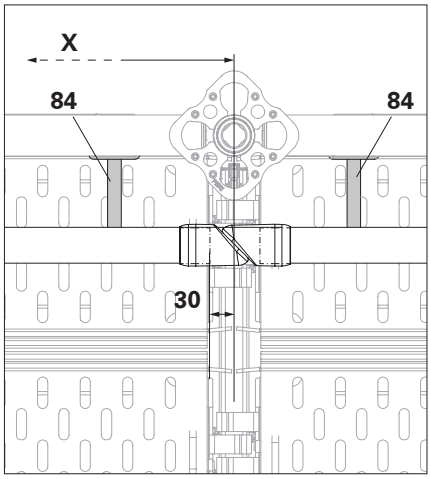


Fig. D4.07a

E1 Support forces

Support forces of the standards

The support forces for the stair tower standards are given in the table and depend on the respective overall height.

Live load 5.0 kN/m²
Staircase width 1.50 m

PERI UP Public Stairs			
	max. support force in point		
	A	B	C
Tower height [m]	[kN]	[kN]	[kN]
6	10.0	22.8	
9	15.3	34.5	11.2
12	19.6	43.8	16.0
15	22.6	50.7	20.8

Tab. E1.01

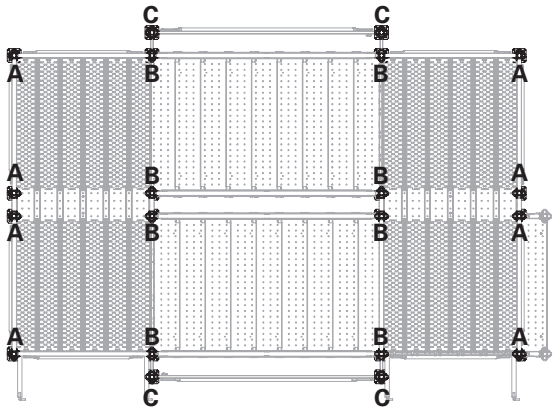


Fig. E1.01

E2 Tie loads

Anchoring with wall ties

Anchor stair towers to the first and third standards from the anchoring point in every second level (offset 3 m in the tie pattern).
Anchor each tower frame.

PERI UP Public Stairs Standard configuration 1.50 m wide, 15 m high				
Tower height [m]	**Tie forces (+ = tension force / – = compressive force)**			
	⌖ $A_{\perp}$ [kN]	⌖ $A_{\parallel}$ [kN]	⌖ $B_{\perp}$ [kN]	⌖ $B_{\parallel}$ [kN]
6.0	+/- 4.3	2.0	+/- 4.5	1.7
9.0	+/- 4.6	2.0	+/- 4.8	1.8
12.0	+/- 5.7	2.5	+/- 5.8	2.0
15.0	+/- 5.8	2.5	+/- 5.9	2.1

Tab. E2.01

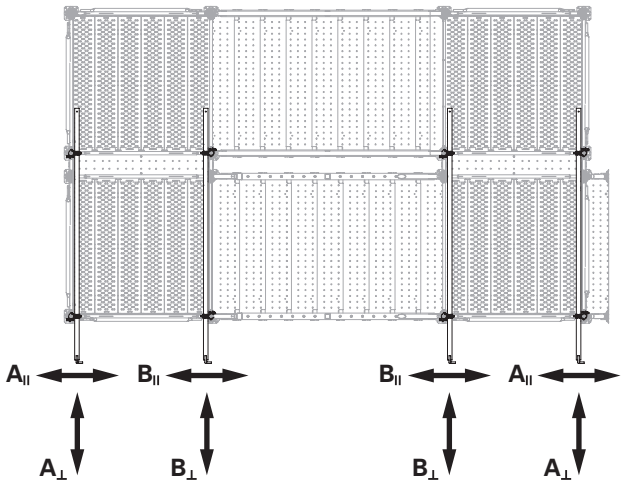
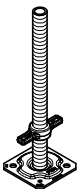


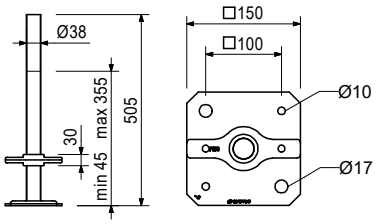
Fig. E2.01

Art no.	Weight [kg]	
100411	3.390	**Adj.Base Plate UJB Ø38mm 50/30**

Notes

With captive red quick jack nut.



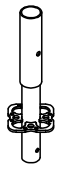


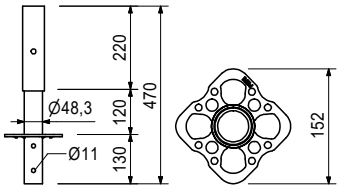
Accessory (not included)

100863 Handle Locking UJS

Art no.	Weight [kg]	
133499	2.260	**Base Standard UVB 25**

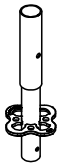
For fitting onto the base spindles directly. Can also be used as 25 cm standard.

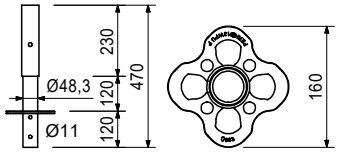




Art no.	Weight [kg]	
400014	2.470	**Base Standard UVB 24**

For fitting onto the base spindles directly.

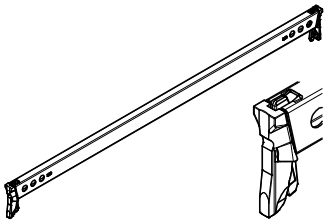


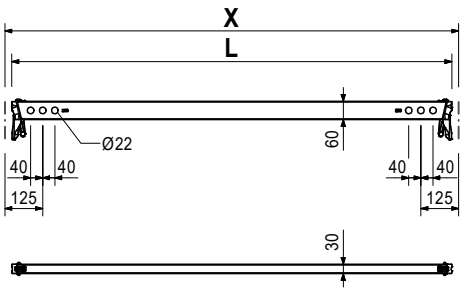


Art no.	Weight [kg]		L [mm]	X [mm]
		Horizontal Ledgers UH-2		
131995	1.400	**Horizontal Ledger UH-2 25**	204	250
133900	1.590	**Horizontal Ledger UH-2 33**	284	330
131998	2.030	**Horizontal Ledger UH-2 50**	454	500
133903	2.470	**Horizontal Ledger UH-2 67**	624	670
132213	2.680	**Horizontal Ledger UH-2 75**	704	750
137911	3.750	**Horizontal Ledger UH-2 100E**	954	1000
432004	3.740	**Horizontal Ledger UH-2 100**	954	1000
132007	4.500	**Horizontal Ledger UH-2 125**	1204	1250
132010	4.670	**Horizontal Ledger UH-2 150**	1454	1500
132013	5.330	**Horizontal Ledger UH-2 175**	1704	1750
132016	5.990	**Horizontal Ledger UH-2 200**	1954	2000
132019	6.650	**Horizontal Ledger UH-2 225**	2204	2250
132025	7.310	**Horizontal Ledger UH-2 250**	2454	2500
132022	8.640	**Horizontal Ledger UH-2 300**	2954	3000

Notes

With color coding for length identification.

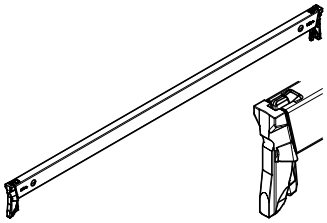


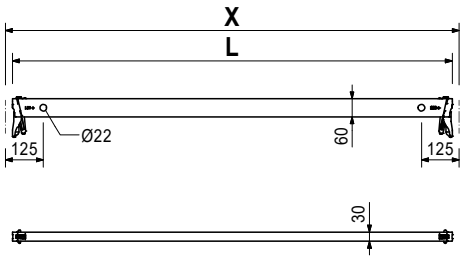


Art no.	Weight [kg]		L [mm]	X [mm]
		Horizontal Ledgers UH Plus		
414613	1.430	**Horizontal Ledger UH 25 Plus**	204	250
414595	2.080	**Horizontal Ledger UH 50 Plus**	454	500
429982	2.520	**Horizontal Ledger UH 67 Plus**	624	670
414629	2.740	**Horizontal Ledger UH 75 Plus**	704	750
414632	4.470	**Horizontal Ledger UH 100 Plus**	954	1000
414638	5.440	**Horizontal Ledger UH 125 Plus**	1204	1250
414641	4.720	**Horizontal Ledger UH 150 Plus**	1454	1500
417032	5.390	**Horizontal Ledger UH 175 Plus**	1704	1750
414645	6.050	**Horizontal Ledger UH 200 Plus**	1954	2000
416356	6.710	**Horizontal Ledger UH 225 Plus**	2204	2250
414648	7.370	**Horizontal Ledger UH 250 Plus**	2454	2500
414651	8.690	**Horizontal Ledger UH 300 Plus**	2954	3000

Notes

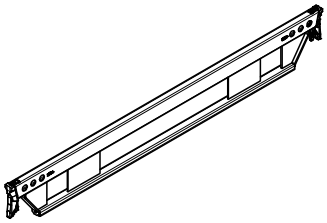
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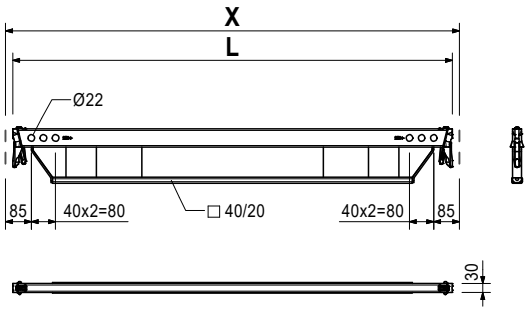




Art no.	Weight [kg]		L [mm]	X [mm]
		Horizontal Ledgers UHV-2		
137020	8.720	**Horizontal Ledger UHV-2 150**	1454	1500
137025	11.700	**Horizontal Ledger UHV-2 200**	1954	2000
137030	14.000	**Horizontal Ledger UHV-2 250**	2454	2500
137035	17.000	**Horizontal Ledger UHV-2 300**	2954	3000

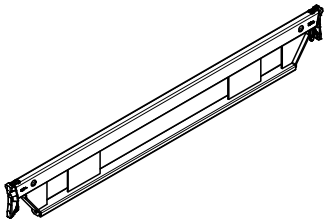
For high loads, e.g. in the case of material storage.

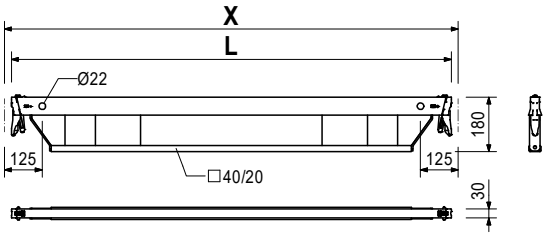




Art no.	Weight [kg]		L [mm]	X [mm]
		Horizontal Ledger UHV Plus		
414681	11.000	**Horizontal Ledger UHV 150 Plus**	1454	1500
414687	14.900	**Horizontal Ledger UHV 200 Plus**	1954	2000
414691	18.100	**Horizontal Ledger UHV 250 Plus**	2454	2500
414695	21.800	**Horizontal Ledger UHV 300 Plus**	2954	3000

For high loads, e.g. in the case of material storage.



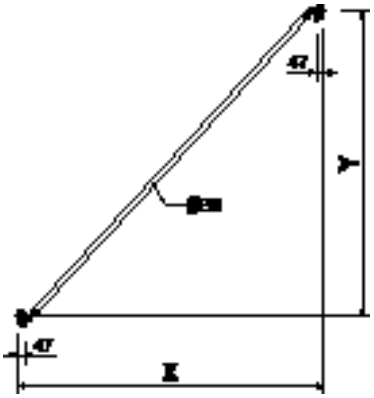


Art no.	Weight [kg]		L [mm]	X [mm]	Y [mm]
		Node Braces UBK-2			
133451	6.210	**Node Brace UBK-2 250/150**	2930	2500	1500

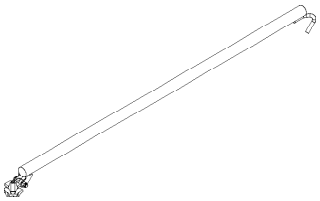
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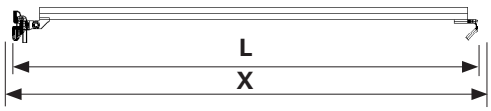
With color coding for length identification.





Art no.	Weight [kg]		L [mm]	X [mm]
		Guardrail UPGA		
141931	2.98	**Guardrail UPGA 150**	1470	1500
141927	3.78	**Guardrail UPGA 200**	1970	2000
141923	4.59	**Guardrail UPGA 250**	2470	2500
141919	5.39	**Guardrail UPGA 300**	2970	3000



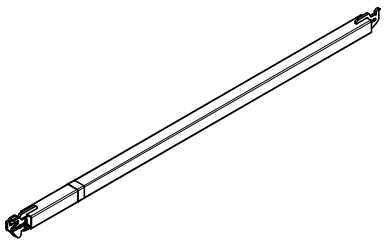


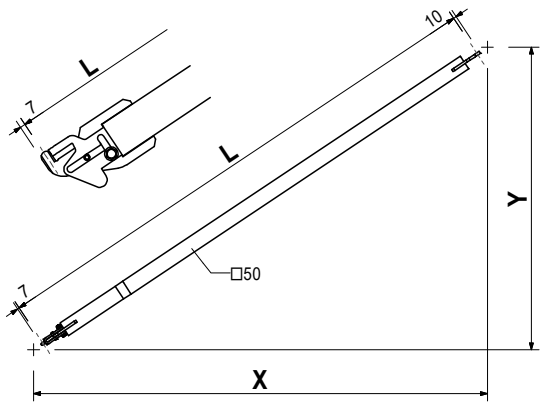
Art no.	Weight [kg]		L [mm]	X [mm]	Y [mm]
		H-Braces UBH Flex			
114818	4.590	**H-Brace UBH Flex 100/100**	1335	1000	1000
114904	5.630	**H-Brace UBH Flex 125/125**	1689	1250	1250
114821	5.730	**H-Brace UBH Flex 150/100**	1725	1500	1000
114908	6.170	**H-Brace UBH Flex 150/125**	1874	1500	1250
114912	6.660	**H-Brace UBH Flex 150/150**	2042	1500	1500
114820	7.010	**H-Brace UBH Flex 200/100**	2161	2000	1000
124097	7.780	**H-Brace UBH Flex 200/150**	2422	2000	1500
114916	8.740	**H-Brace UBH Flex 200/200**	2749	2000	2000
114896	8.130	**H-Brace UBH Flex 250/75**	2541	2500	750
114819	8.360	**H-Brace UBH Flex 250/100**	2620	2500	1000
114996	8.650	**H-Brace UBH Flex 250/125**	2720	2500	1250
124101	9.000	**H-Brace UBH Flex 250/150**	2838	2500	1500
114920	9.840	**H-Brace UBH Flex 250/200**	3123	2500	2000
114928	10.800	**H-Brace UBH Flex 250/250**	3456	2500	2500
114900	9.550	**H-Brace UBH Flex 300/75**	3025	3000	750
114892	9.740	**H-Brace UBH Flex 300/100**	3092	3000	1000
124105	10.300	**H-Brace UBH Flex 300/150**	3279	3000	1500
114924	11.000	**H-Brace UBH Flex 300/200**	3528	3000	2000
114932	11.900	**H-Brace UBH Flex 300/250**	3826	3000	2500
114936	12.900	**H-Brace UBH Flex 300/300**	4163	3000	3000

For horizontal bracing of towers.
Also for use beneath Decks UDG.

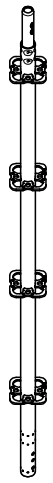
Notes

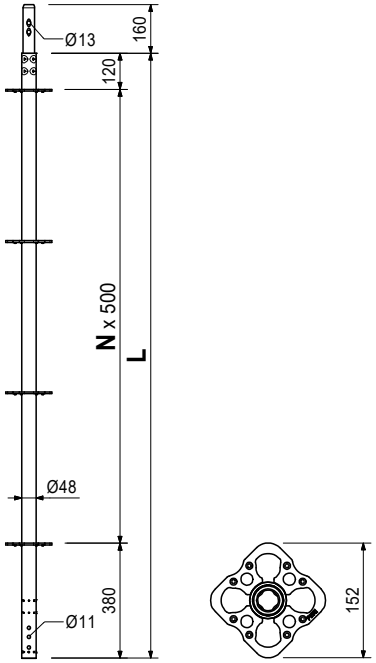
With color coding for length identification.



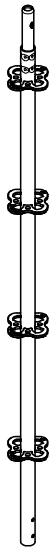


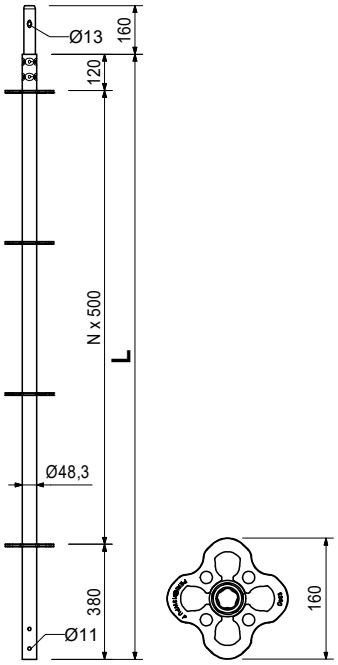
Art no.	Weight [kg]		L [mm]
		Standards UVR-2	
132219	2.490	**Standard UVR-2 50**	500
132224	4.340	**Standard UVR-2 100**	1000
132229	6.190	**Standard UVR-2 150**	1500
132234	8.030	**Standard UVR-2 200**	2000
132239	11.700	**Standard UVR-2 300**	3000





Art no.	Weight [kg]		L [mm]
		Standard UVR	
402859	3.080	**Standard UVR 50**	500
401306	5.380	**Standard UVR 100**	1000
402860	7.690	**Standard UVR 150**	1500
400009	9.990	**Standard UVR 200**	2000
400012	14.700	**Standard UVR 300**	3000

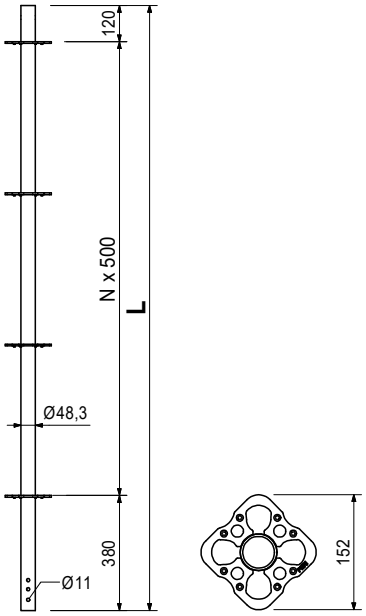




Art no.	Weight [kg]		L [mm]
		Top Standards UVH-2	
132123	2.100	**Top Standard UVH-2 50**	500
132194	4.210	**Top Standard UVH-2 100**	1000
132198	6.320	**Top Standard UVH-2 150**	1500
132200	8.420	**Top Standard UVH-2 200**	2000
132202	10.500	**Top Standard UVH-2 250**	2500

Without spigot for supporting head spindles.

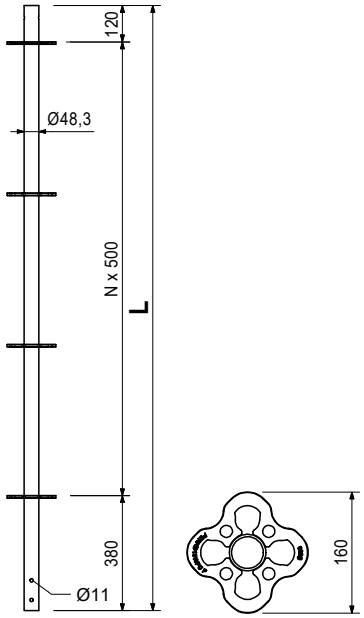




Art no.	Weight [kg]		L [mm]
		Top Standards UVH	
401309	2.510	**Top Standard UVH 50**	500
400000	4.610	**Top Standard UVH 100**	1000
400003	6.920	**Top Standard UVH 150**	1500
400005	9.230	**Top Standard UVH 200**	2000
400007	11.500	**Top Standard UVH 250**	2500

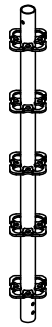
Without spigot for supporting head spindles.

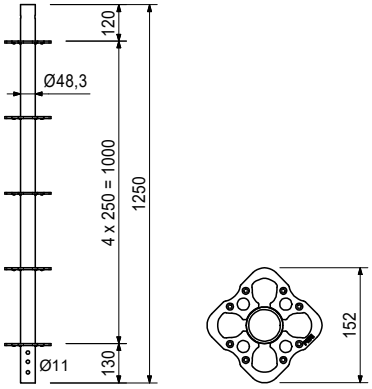




Art no.	Weight [kg]		L [mm]
132196	6.060	**Top Standard UVH-2 125**	1250

Without spigot for supporting head spindles.

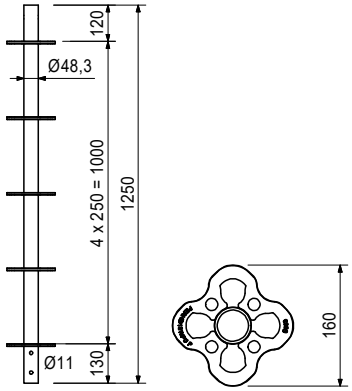




Art no.	Weight [kg]		L [mm]
417195	7.590	**Top Standard UVH 125**	1250

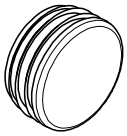
Without spigot for supporting head spindles.

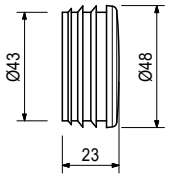




Art no.	Weight [kg]	
138327	0.100	**Plastic Cap Ø48.3mm grey**

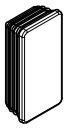
Termination on UVH-2 Ledgers.

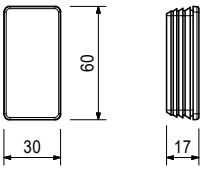




Art no.	Weight [kg]	
138682	0.010	**Plastic Cap 30x60mm grey**

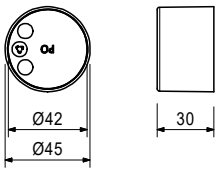
End for Railing PPG 250/150, lower Diagonal Tube.





Art no.	Weight [kg]		
118387	0.006	**Protect. Tube Clip 13-42.4mm**	



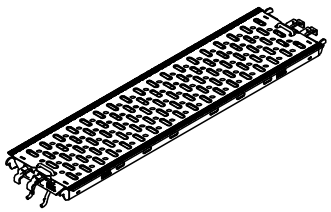


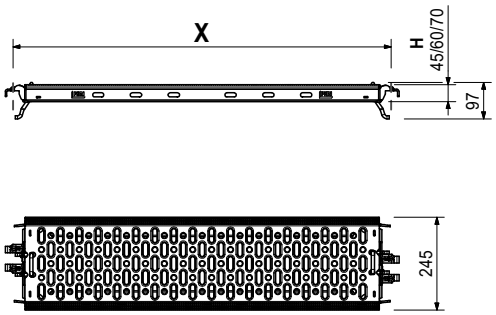
Art no.	Weight [kg]		X [mm]	zul. p [kN/m²]
		Steel Decks UDG-2 25		
138607	2.200	**Steel Deck UDG-2 25x25**	250	6
132479	3.190	**Steel Deck UDG-2 25x50**	500	6
132483	3.960	**Steel Deck UDG-2 25x67**	670	6
132488	4.320	**Steel Deck UDG-2 25x75**	750	6
132492	5.450	**Steel Deck UDG-2 25x100**	1000	6
132502	6.590	**Steel Deck UDG-2 25x125**	1250	6
132505	7.730	**Steel Deck UDG-2 25x150**	1500	6
132508	10.500	**Steel Deck UDG-2 25x200**	2000	6
132511	12.900	**Steel Deck UDG-2 25x250**	2500	4.5
132515	15.800	**Steel Deck UDG-2 25x300**	3000	3

Length X: 50 - 150 with H of 45 mm.
Length X: 200 - 250 with H of 60 mm.
Length X: 300 with H of 70 mm.

Notes

Values correspond to EN 12811-1.
With color plugs for length identification.



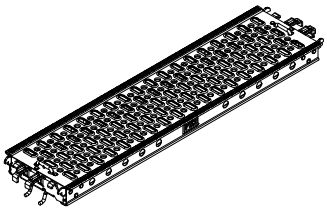


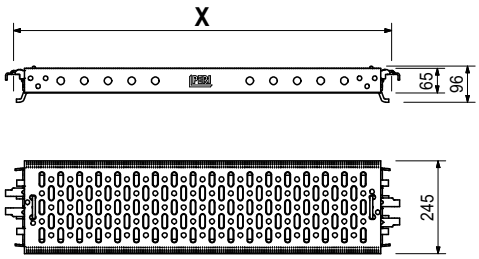
Art no.	Weight [kg]		X [mm]	zul. p [kN/m²]
		Steel Decks UDG 25		
424124	3.810	**Steel Deck UDG 25x 50**	500	6
432858	4.810	**Steel Deck UDG 25x 67**	670	6
424121	5.180	**Steel Deck UDG 25x 75**	750	6
424118	6.550	**Steel Deck UDG 25x100**	1000	6
424115	7.940	**Steel Deck UDG 25x125**	1250	6
424112	9.330	**Steel Deck UDG 25x150**	1500	6
424109	12.200	**Steel Deck UDG 25x200**	2000	6
423771	14.900	**Steel Deck UDG 25x250**	2500	4.5
424915	17.700	**Steel Deck UDG 25x300**	3000	3

Assembly onto Horizontal Ledgers UH.

Notes

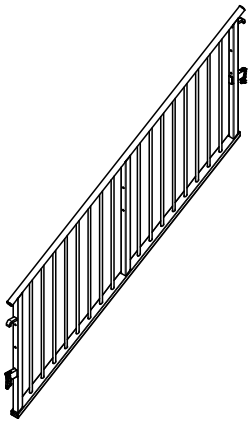
Values correspond to EN 12811-1.

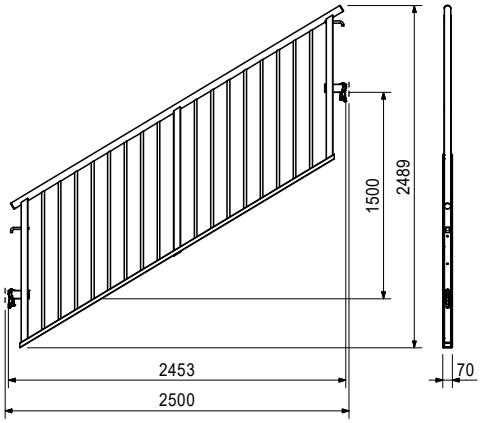




Art no.	Weight [kg]		B [mm]	L [mm]	X [mm]	Y [mm]
138351	39.400	**Guardrail PPG 250/150**	70	2453	2500	1500

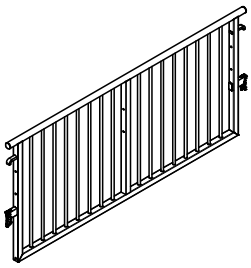
Guardrail for a flight of stairs.

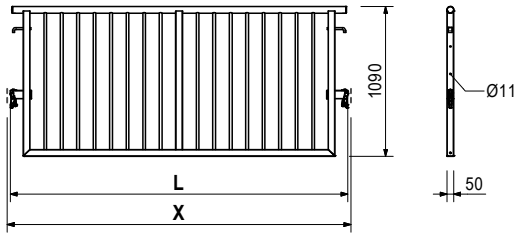




Art no.	Weight [kg]		L [mm]	X [mm]	zul. p [kN/m]
		Guardrails PPG			
138363	6.540	**Guardrail PPG 25**	204	250	3
138361	11.500	**Guardrail PPG 50**	454	500	3
138359	17.300	**Guardrail PPG 100**	954	1000	3
138357	23.100	**Guardrail PPG 150**	1454	1500	3
138355	31.000	**Guardrail PPG 200**	1954	2000	3
138353	36.900	**Guardrail PPG 250**	2454	2500	2

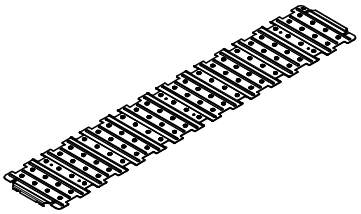
Horizontal guardrails for public areas.

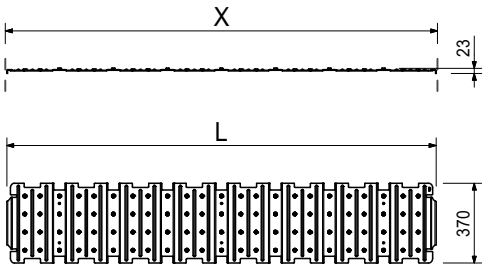




Art no.	Weight [kg]		B [mm]	L [mm]	X [mm]
		Gap Covers PDC			
138449	7.120	**Gap Cover PDC 100**	370	987	1000
138447	10.700	**Gap Cover PDC 150**	370	1487	1500
138445	14.300	**Gap Cover PDC 200**	370	1987	2000
138443	17.900	**Gap Cover PDC 250**	370	2487	2500

Covers the gap in Landing Platform.





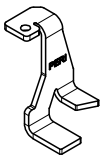
Accessory (not included)

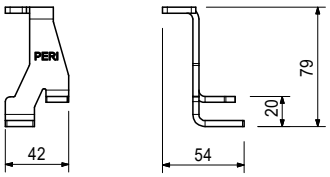
138404 Lifting Protection PEL

139158 Bolt ISO7380-2-M08x025-10.9ga

Art no.	Weight [kg]		B [mm]	L [mm]
138404	0.099	**Lifting Protection PEL**	32	80

Assembly with Gap Cover PDC and the Stair Tread PATT Top as a starter tread.





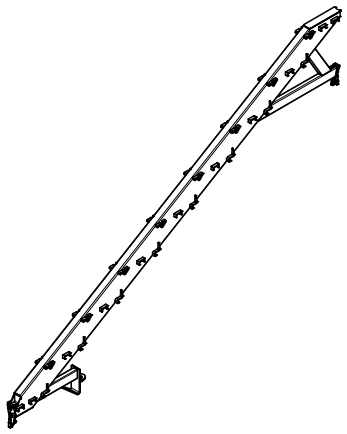
Accessory (not included)

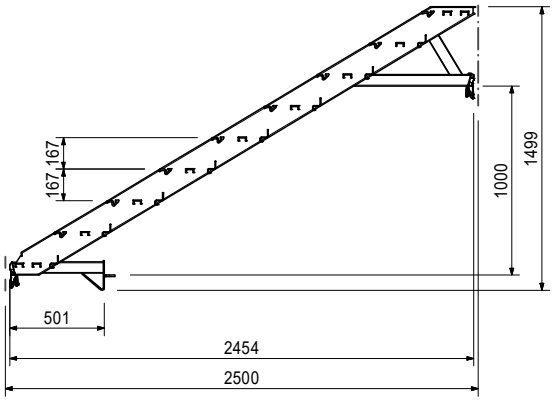
139158 Bolt ISO7380-2-M08x025-10.9ga

Art no.	Weight [kg]		B [mm]	L [mm]	X [mm]
138592	31.800	**Stair Stringer PAS 250/150**	1499	2454	2500

Notes

For multi-flight staircases is only one stair stringer required.

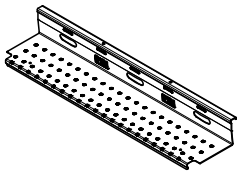


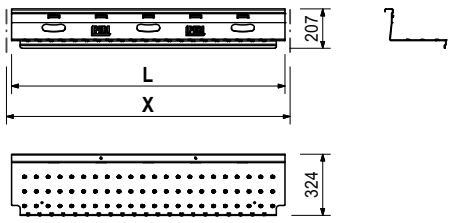


Accessory (not included)

132016 Horizontal Ledger UH-2 200

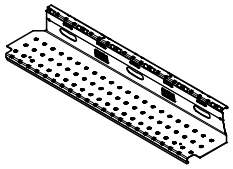
Art no.	Weight [kg]		B [mm]	L [mm]	X [mm]
		Stair Treads PATS			
138972	7.910	**Stair Tread PATS 100**	324	946	1000
138976	12.200	**Stair Tread PATS 150**	324	1446	1500
138980	16.400	**Stair Tread PATS 200**	324	1946	2000
138984	20.700	**Stair Tread PATS 250**	324	2446	2500

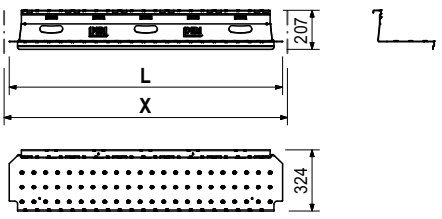




Art no.	Weight [kg]		B [mm]	L [mm]	X [mm]
		Stair Treads PATT top			
138974	7.330	**Stair Tread PATT 100 top**	324	946	1000
138978	11.500	**Stair Tread PATT 150 top**	324	1446	1500
138982	15.700	**Stair Tread PATT 200 top**	324	1946	2000
138986	19.900	**Stair Tread PATT 250 top**	324	2446	2500

The top tread of a flight of Stairs.





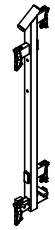
Accessory (not included)

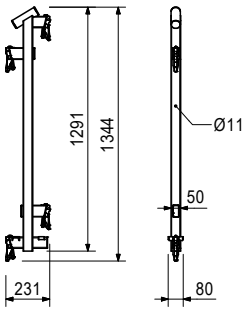
057264 Bolt ISO4017-M10x025-8.8-ga

710234 Hex-Nut ISO4032-M10-8-ga

Art no.	Weight [kg]		B [mm]	L [mm]
138400	8.020	**Height Adjustment PAH 1**	80	231

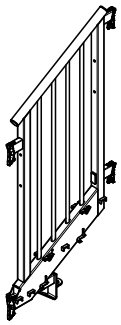
Height adjustment for 1 step up and down.

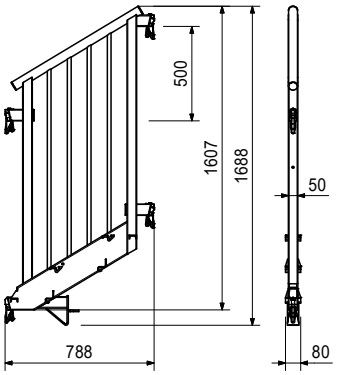




Art no.	Weight [kg]		B [mm]	L [mm]
138970	23.500	**Height Adjustment PAH 3**	80	788

Height adjustment for 3 steps up and down.





Accessory (not included)

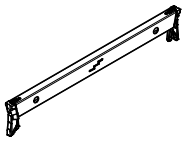
131998 Horizontal Ledger UH-2 50

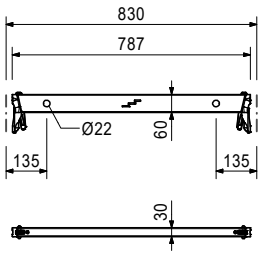
Art no.	Weight [kg]		B [mm]	L [mm]	X [mm]
139088	2.950	**Ledger Public PHH 83**	30	787	830

Horizontal ledger for the system PERI Public in use with the Height Adjustment PAH3

Notes

For a vertical ledger distance of 1,50 m the diagonals UBL 150/100 art.-no. 100055 and UBL-2 150/100 art.-no. 132781 can be used.



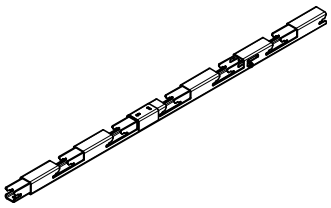


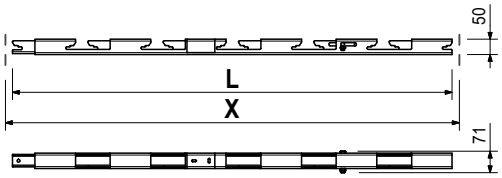
Accessory (not included)

132781 Ledger Brace UBL-2 150/100

Art no.	Weight [kg]		B [mm]	L [mm]	X [mm]
		Platform Beams PDB			
138381	3.350	**Platform Beam PDB 75**	71	706	750
138376	7.110	**Platform Beam PDB 150**	71	1453	1500

Platform Beam for coupling of UDG and UDG-2 Decks.

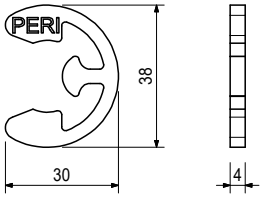




Art no.	Weight [kg]		B [mm]	L [mm]
138402	0.015	**Safety Washer UBL PEW**	4	38

Protection against dismantling for Ledger Brace UBL / UBL-2.



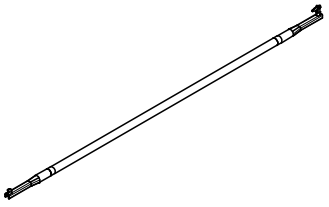


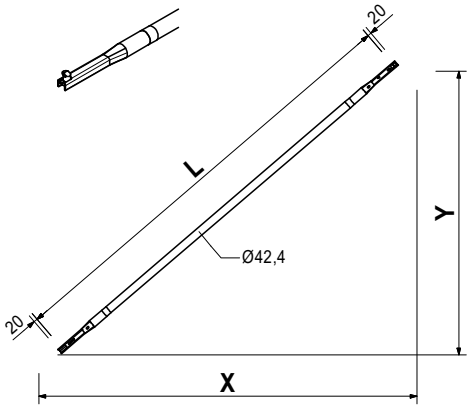
Art no.	Weight [kg]		L [mm]	X [mm]	Y [mm]
		Ledger Braces UBL-2			
132771	2.130	**Ledger Brace UBL-2 100/50**	901	1000	500
132773	2.830	**Ledger Brace UBL-2 100/100**	1250	1000	1000
132775	3.680	**Ledger Brace UBL-2 100/150**	1677	1000	1500
132777	4.600	**Ledger Brace UBL-2 100/200**	2136	1000	2000
132779	3.020	**Ledger Brace UBL-2 150/50**	1347	1500	500
132781	3.530	**Ledger Brace UBL-2 150/100**	1601	1500	1000
132783	4.230	**Ledger Brace UBL-2 150/150**	1953	1500	1500
132785	5.040	**Ledger Brace UBL-2 150/200**	2358	1500	2000
132787	5.320	**Ledger Brace UBL-2 175/200**	2500	1750	2000
132789	3.970	**Ledger Brace UBL-2 200/50**	1820	2000	500
132791	4.360	**Ledger Brace UBL-2 200/100**	2016	2000	1000
132793	4.940	**Ledger Brace UBL-2 200/150**	2305	2000	1500
132795	5.640	**Ledger Brace UBL-2 200/200**	2658	2000	2000
132797	4.450	**Ledger Brace UBL-2 225/50**	2062	2250	500
132808	4.800	**Ledger Brace UBL-2 225/100**	2236	2250	1000
132810	5.980	**Ledger Brace UBL-2 225/200**	2829	2250	2000
132812	5.250	**Ledger Brace UBL-2 250/100**	2462	2500	1000
132814	5.730	**Ledger Brace UBL-2 250/150**	2705	2500	1500
132816	6.340	**Ledger Brace UBL-2 250/200**	3010	2500	2000
132827	5.910	**Ledger Brace UBL-2 300/50**	2795	3000	500
132829	6.170	**Ledger Brace UBL-2 300/100**	2926	3000	1000
132831	6.590	**Ledger Brace UBL-2 300/150**	3133	3000	1500
132833	7.120	**Ledger Brace UBL-2 300/200**	3400	3000	2000

Suspension in holes of the Horizontal Ledgers.

Notes

With length embossing and coloured sticker for easy identification.
UBL-2 150/250 is identical with UBL-2 300/50.
UBL-2 225/150 is identical with UBL-2 175/200.
UBL-2 250/50 is identical with UBL-2 200/150.
UBL-2 75/200 is identical with UBL-2 225/50.



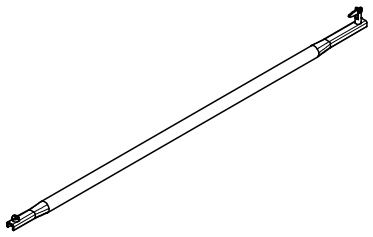


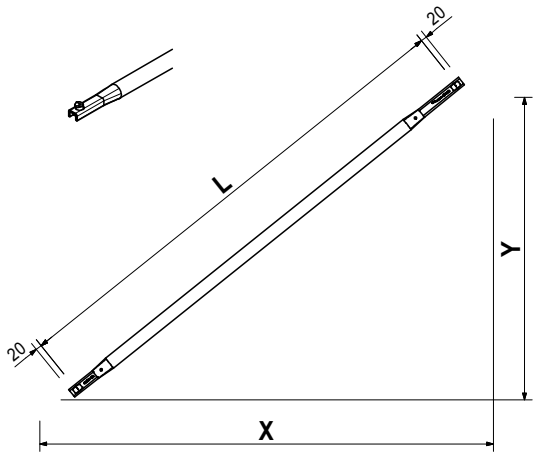
Art no.	Weight [kg]		L [mm]	X [mm]	Y [mm]
		Ledger Braces UBL			
415156	2.660	**Ledger Brace UBL 100/50**	901	1000	500
415513	4.640	**Ledger Brace UBL 100/150**	1677	1000	1500
415157	5.810	**Ledger Brace UBL 100/200**	2136	1000	2000
407867	3.790	**Ledger Brace UBL 150/50**	1347	1500	500
400055	4.440	**Ledger Brace UBL 150/100**	1601	1500	1000
402846	5.340	**Ledger Brace UBL 150/150**	1953	1500	1500
400057	6.380	**Ledger Brace UBL 150/200**	2358	1500	2000
409034	6.740	**Ledger Brace UBL 175/200**	2500	1750	2000
404391	5.000	**Ledger Brace UBL 200/50**	1820	2000	500
400059	5.500	**Ledger Brace UBL 200/100**	2016	2000	1000
402862	6.240	**Ledger Brace UBL 200/150**	2305	2000	1500
400061	7.160	**Ledger Brace UBL 200/200**	2658	2000	2000
430282	4.450	**Ledger Brace UBL 225/50**	2062	2250	500
430283	4.800	**Ledger Brace UBL 225/100**	2236	2250	1000
417689	7.580	**Ledger Brace UBL 225/200**	2829	2250	2000
400063	6.640	**Ledger Brace UBL 250/100**	2462	2500	1000
402861	7.260	**Ledger Brace UBL 250/150**	2705	2500	1500
400065	8.050	**Ledger Brace UBL 250/200**	3010	2500	2000
404762	7.490	**Ledger Brace UBL 300/50**	2795	3000	500
400067	7.830	**Ledger Brace UBL 300/100**	2926	3000	1000
404766	8.360	**Ledger Brace UBL 300/150**	3133	3000	1500
400069	9.050	**Ledger Brace UBL 300/200**	3400	3000	2000

Suspension in holes of the Horizontal Ledgers.

Notes

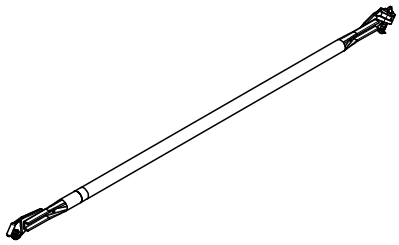
With length embossing and coloured sticker for easy identification.
UBL 150/250 is identical with UBL 300/50.
UBL 225/150 is identical with UBL 175/200.
UBL 250/50 is identical with UBL 200/150.
UBL 75/200 is identical with UBL 225/50.

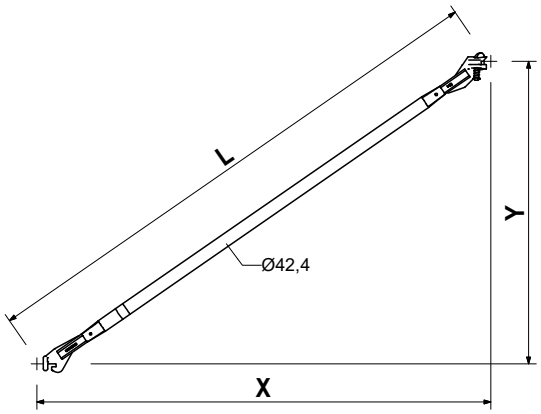




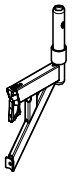
Art no.	Weight [kg]		L [mm]	X [mm]	Y [mm]
		Shoring Braces UBS			
128936	4.250	**Shoring Brace UBS 100/100**	1413	1000	1000
129354	5.300	**Shoring Brace UBS 100/150**	1771	1000	1500
107801	5.260	**Shoring Brace UBS 150/100**	1792	1500	1000
107810	6.050	**Shoring Brace UBS 150/150**	2122	1500	1500
115504	6.360	**Shoring Brace UBS 200/100**	2219	2000	1000
115291	7.050	**Shoring Brace UBS 200/150**	2492	2000	1500
123592	7.630	**Shoring Brace UBS 250/100**	2672	2500	1000
123588	8.090	**Shoring Brace UBS 250/150**	2902	2500	1500
123584	8.820	**Shoring Brace UBS 300/100**	3139	3000	1000
123580	9.360	**Shoring Brace UBS 300/150**	3337	3000	1500

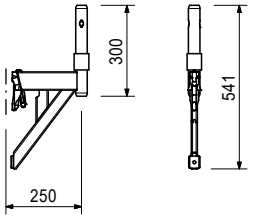
Standard brace for yoke discs.



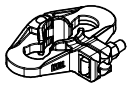


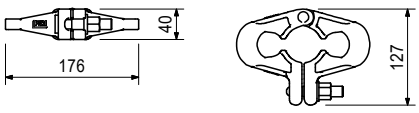
Art no.	Weight [kg]	
134005	2.710	**Console Bracket UCB 25**





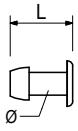
Art no.	Weight [kg]	
116306	1.700	**Rosett Coupler UEV 180°**



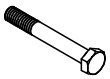


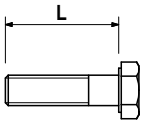
Art no.	Weight [kg]	
		Riv.ISO15979-ST/ST
722318	0.003	**Riv.ISO15979-6.0x10-ST/ST**
114537	0.003	**Riv.ISO15979-6.0x16-ST/ST**





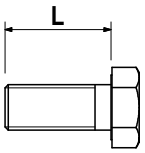
Art no.	Weight [kg]	
		Bolts ISO4014-M10-8.8-ga
720631	0.040	**Bolt ISO4014-M10x055-8.8-ga**
106305	0.050	**Bolt ISO4014-M10x65-8.8-ga**
100719	0.060	**Bolt ISO4014-M10x070-8.8-ga-N**
136577	0.053	**Bolt ISO4014-M10x075-8.8-ga**





Art no.	Weight [kg]	
057264	0.026	**Bolt ISO4017-M10x025-8.8-ga**

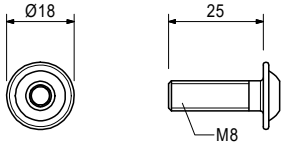




Art no.	Weight [kg]		B [mm]	L [mm]
139158	0.010	**Bolt ISO7380-2-M08x025-10.9-ga**	18	29

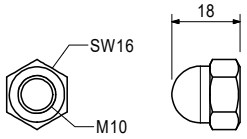
Bolt for Lifting Protection PEL.





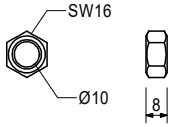
Art no.	Weight [kg]		B [mm]	L [mm]
140031	0.010	**Cap Nut-DIN1587-M10-6-ga**	16	18





Art no.	Weight [kg]	
710234	0.010	**Hex-Nut ISO4032-M10-8-ga**



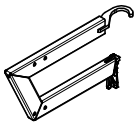


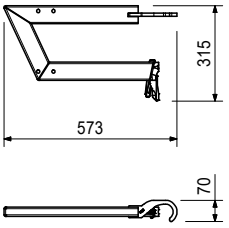
Art no.	Weight [kg]		B [mm]	L [mm]
138367	3.360	**Handrail Support Start PESS**	76	573

Mounting for Handrail Tube Start PEHS.

Notes

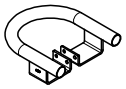
Can accommodate Handrail Tube Start PEHS in two different heights.

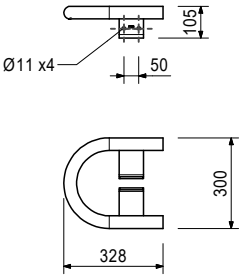




Art no.	Weight [kg]		B [mm]	L [mm]
138371	3.020	**Handrail Tube Start PEHS**	300	328

Can only be used together with the Handrail Support Start PESS.





Accessory (not included)

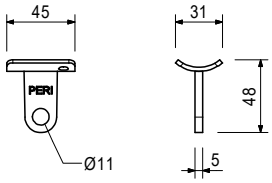
720631 Bolt ISO4014-M10x055-8.8-ga

140031 Cap Nut-DIN1587-M10-6-ga

Art no.	Weight [kg]		B [mm]	L [mm]
138385	0.057	**Handrail Bracket sym PEBS**	45	48

For attachment of the Handrail Tube PEHT at the Handrail Support PESG or PESC.



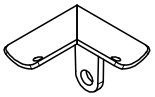


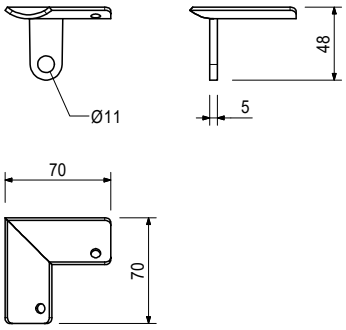
Accessory (not included)

722318 Riv.ISO15979-6.0x10-ST/ST

Art no.	Weight [kg]		B [mm]	L [mm]
138389	0.100	**Handrail Bracket Corner PEBC**	70	48

For attachment of the Handrail Tube PEHT at the Handrail Support PESG.



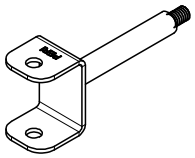


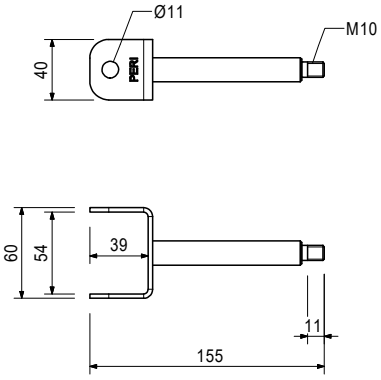
Accessory (not included)

114537 Riv.ISO15979-6.0x16-ST/ST

Art no.	Weight [kg]		B [mm]	L [mm]
138393	0.282	**Handrail Support Guard PESG**	60	159

As a holder for Handrail Bracket PEBS or Edge PEBC.





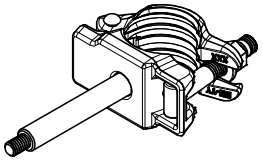
Accessory (not included)

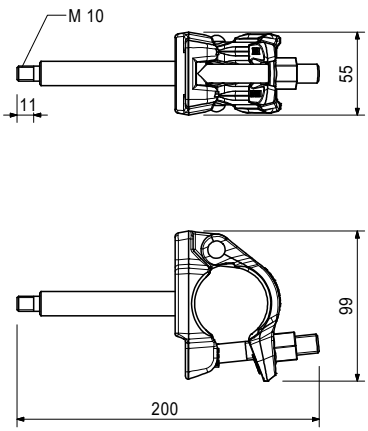
106305 Bolt ISO4014-M10x65-8.8-ga

140031 Cap Nut-DIN1587-M10-6-ga

Art no.	Weight [kg]		B [mm]	L [mm]
138411	1.050	**Handrail Support Coupler PESC**	99	204

For attaching of Handrail Brackets PEBS or PEBC to scaffold tubes.



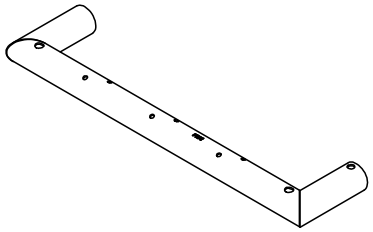


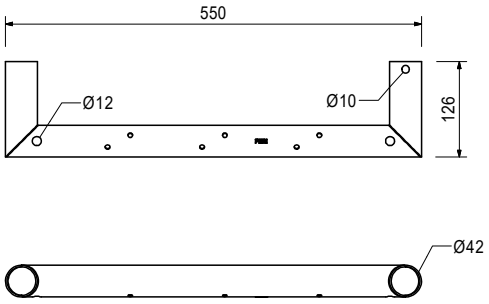
Accessory (not included)

140031 Cap Nut-DIN1587-M10-6-ga

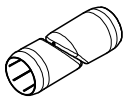
Art no.	Weight [kg]		B [mm]	L [mm]
138408	1.400	**Handrail Tube Staireye PEHE**	126	550

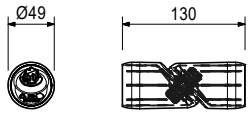
For a staireye in the standard configuration 250 mm.





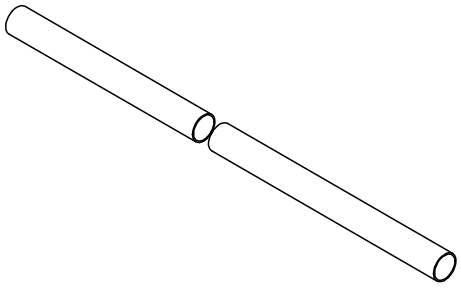
Art no.	Weight [kg]		B [mm]	L [mm]
138025	0.077	**Handrail Joint PEHJ**	49	130

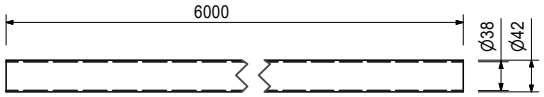




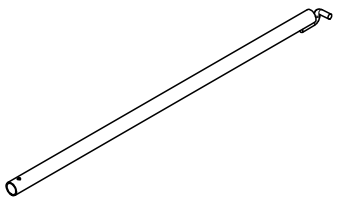
Art no.	Weight [kg]		B [mm]	L [mm]
138419	4.090	**Handrail Tube PEHT 6m**	42	6000

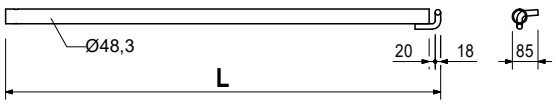
Tailored to specific projects by the customer.





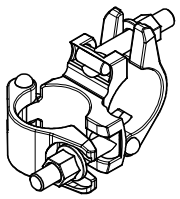
Art no.	Weight [kg]		L [mm]
		Wall Ties UWT	
100088	1.920	**Wall Tie UWT 45**	488
138285	2.810	**Wall Tie UWT 70**	738
100091	4.680	**Wall Tie UWT 110**	1138
100093	5.870	**Wall Tie UWT 140**	1438
102951	7.060	**Wall Tie UWT 170**	1738
102954	9.050	**Wall Tie UWT 220**	2238
102957	11.000	**Wall Tie UWT 270**	2738

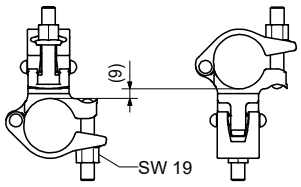




Art no.	Weight [kg]	
017020	1.120	**Standard Coupl. RA Ø48/48mm ga**

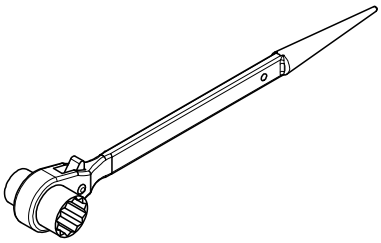
For Scaffold Tubes Ø 48 mm.

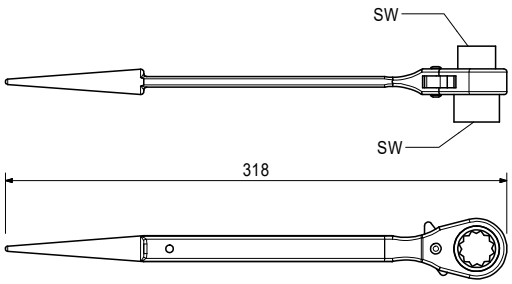




Art no.	Weight [kg]	
727193	0.790	**Carpenters Hammer w. Magnet**

Art no.	Weight [kg]	
		Scaff. Build. Ratchets
138994	0.450	**Scaff. Build. Ratchet SW 17/19**
796061	0.450	**Scaff. Build. Ratchet SW19/22**



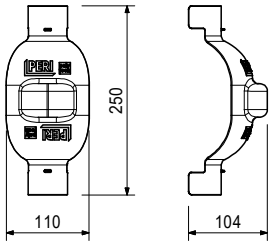


Art no.	Weight [kg]	
728736	1.800	**Rivet Gun Powerbird Pro**

Art no.	Weight [kg]	
134175	0.065	**Poly Cover Coupling UPC-C**

Surface: Yellow fluorescent (RAL 1026).

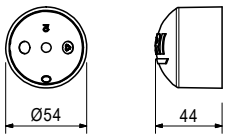




Art no.	Weight [kg]	
133907	0.015	**Poly Cover Tube UPC-T**

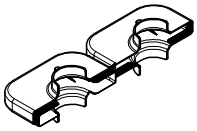
Surface: Yellow fluorescent (RAL 1026).

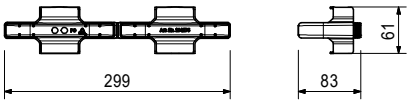




Art no.	Weight [kg]	
134176	0.098	**Poly Cover Rosette UPC-R**

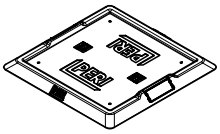
Surface: Yellow fluorescent (RAL 1026).

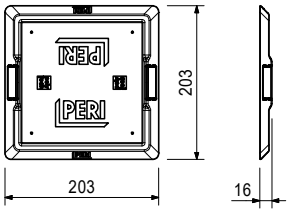




Art no.	Weight [kg]	
134177	0.186	**Spindle Lining UES**

The protective underlay for base spindles protects sensitive base decks from damage by the base spindle plate. Surface: Yellow fluorescent (RAL 1026).





The optimal system for every project and any requirement



Wall formwork



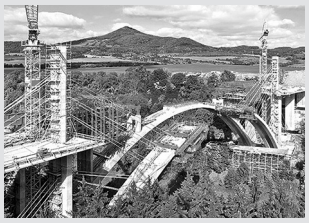
Column formwork



Slab formwork



Climbing systems



Bridge formwork



Tunnel formwork



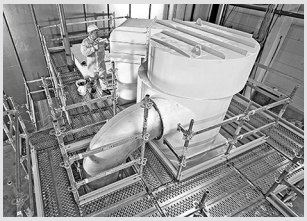
Shoring



Working scaffolds for construction



Working scaffolds for facades



Working scaffolds for industry



Access



Safety scaffolds



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