PERI UP

Access technology for construction sites, industry and public areas

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Important information

Without exception, all relevant safety regulations and guidelines must be observed at all times in those countries where our products are used.

The photos shown in this brochure feature construction sites in progress. For this reason, safety and anchor details in particular cannot always be considered as conclusive or final. These are subject to the risk assessment carried out by the contractor.

In addition, computer graphics are used which are to be understood as system representations. For ensuring a better understanding, this and the detailed illustrations shown have been partially reduced to show certain aspects. The safety installations which have possibly not been shown in these detailed descriptions must nevertheless be available.

The systems or items shown might not be available in every country.

Safety instructions and load specifications are to be strictly observed at all times. Separate structural calculations are required for any deviations from the standard design data.

The information contained herein is subject to technical changes in the interests of progress. Errors and typographical mistakes reserved.

Content

Distinguishing features of temporary access

For temporary access of levels with different heights, ladders and stairs are used. The range of applications extends from stairs with only a few steps through to stair towers over 90 m high. Selection takes place according to the intended use and thereby also determines the requirements placed on geometry, load and the actual users.

PERI supports its customers through the development of customized solutions. At the end, the customer receives the officially-approved required plans together with the relevant statical proof which is needed for the acceptance and release of the stairs.

Access means for construction sites and industry

Ladders and stairs are used for accessing higher positioned working areas or entering construction sites as well as industrial facilities. Authorised users are all those involved in the building project, i.e. this means persons in appropriate working clothes with suitable protection equipment.

➡ as of page 6

The most important types

Ladder access
This includes vertical ladders with ladder safety cages as well as access decks or hatches with inclined ladders which are firmly attached. Examples are external ladders for column formwork or ladders in scaffold bays which connect two levels with one another.

Staircases up to 2.0 kN/m²
These are mounted on working scaffolds or erected as separate stair towers. With their typical level height of 2.00 m and landings integrated in the flights of stairs, they are space-saving and inexpensive.

Staircases for 3.0 kN/m²
Featuring stair flights with widths starting from 1.00 m and separate landings, site staircases are ideally suitably for large construction sites as well as rescue operations for injured personnel. They can be erected as stair towers or dog-legged staircases around a stair well.

Access means for public areas

The most important requirements for temporary access in public areas are broad stairs which are easy to negotiate and are suitable for large number of people. Users are all persons who use public areas, from small children through to frail elderly people.

➡ as of page 34

Additional information

- **Escape stairways**
  A set of stairs which serve as an emergency escape route is known as escape stairways.
- **Fire escapes**
  They can be attached to an existing building as a second escape route - the structure may be undergoing modification work at the time. The staircase and landing will only extend one storey height and give access to another level where rescue by ladder or similar is possible.

The most important types

Single or linked continuous staircases
The statutory minimum width of these stairs is 120 cm, extensions must be carried out in 60-cm increments. System scaffold fulfils the guidelines with widths of 150, 200 and 250 cm. A landing is fixed in position at regular intervals on the staircase. Several single continuous staircases next to each other result in a bank of continuous staircases of any width.

Dog-legged staircases
If single continuous staircases are further installed at a 90° angle from the landing, this results in a so-called dog-legged staircase.

Stair towers
Using a special arrangement of dog-legged staircases, this results in a stair tower. This is comprised usually of alternating staircase units and feature landings on the front sides.

Overview of decking systems
UDS System

The UDS Transom Decking System consists of UDS Steel Decks which are mounted on UHD Decking Transoms. It is optimized for use as facade scaffolding

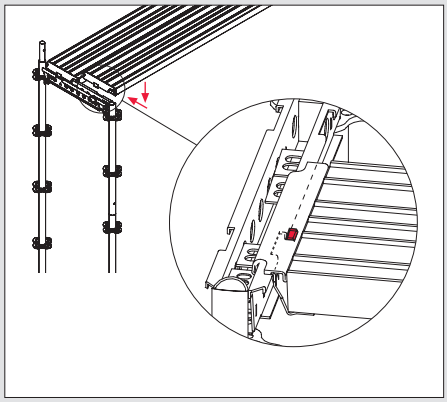
For facade scaffolds, European standards require
- a minimum width of the decking surface for conventional scaffold of 60 or 90 cm as well as
- scaffold levels are completely covered with decking.

UDS Steel Decks therefore have widths of 32 cm. Together with an 8 cm gap for mounting the deck on the brackets, this results in scaffold widths for PERI UP of 72 and 104 cm.

Distinguishing features of the UDS System

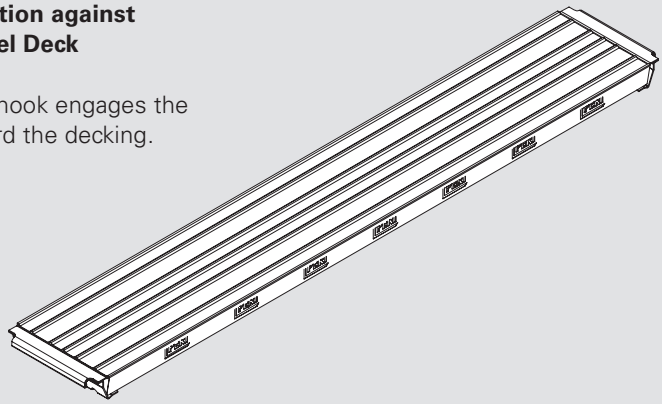
- The decking widths are as follows
  – PERI UP Rosett 72:
    2 x 32 cm + 8 cm = 72 cm
  – PERI UP Rosett 104:
    3 x 32 cm + 8 cm = 104 cm
- The decks are optimized to ensure low weight and high load-bearing capacity. All load classes of facade scaffolding are covered with one type of deck.
- The decks are completely closed and protect workers on all levels against dirt and water from higher levels.

➡ Staircase Alu 64 Page 16
➡ Staircases Public Page 34



The integrated protection against lifting of the UDS Steel Deck

Function: the securing hook engages the ledger by sliding forward the decking.



UDI System

The UDI System consists of UDI or UDG Steel Decks which are mounted on UH Ledgers. It is optimized regarding maximum flexibility in the application.

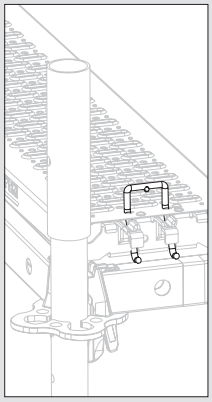
The UDI System fulfils the following requirements
- decking width in modular scaffold grid dimensions of 50 or 25 cm as well as
- no special decking transoms.

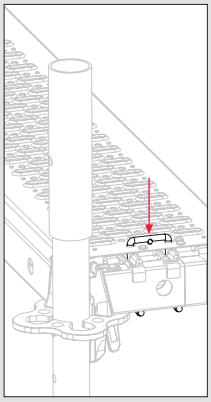
The UDI and UDG Steel Decks have a width of 25 cm and 37.5 cm - suitable for all scaffolding widths provided by the PERI UP Rosett modular scaffolding, e.g. 75 cm, 100 cm, 125 cm, 150 cm and 250 cm.

Distinguishing features of the UDI System

- The dimensions of the decking correspond to the system grid arrangement of the modular scaffold. Decking levels can be completely closed with system components.
- The decks are optimised to ensure low weight and for the use with working platforms which are frequently required in industry.
- The decks are perforated and are particularly suitable for use in those operations where slip resistance has the highest priority.

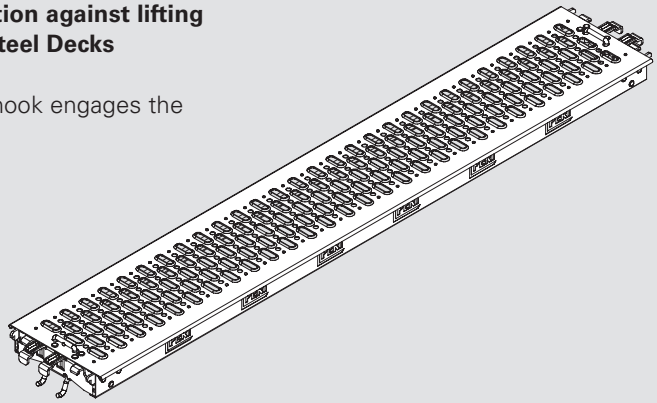
➡ Staircase Alu 75 Page 22
➡ Site and Stairwell Staircases Page 26
➡ Site Staircases Steel 100 Page 28
➡ Site Staircases Steel 125 Page 32





The integrated protection against lifting of the UDI and UDG Steel Decks

Function: the securing hook engages the ledger during assembly.

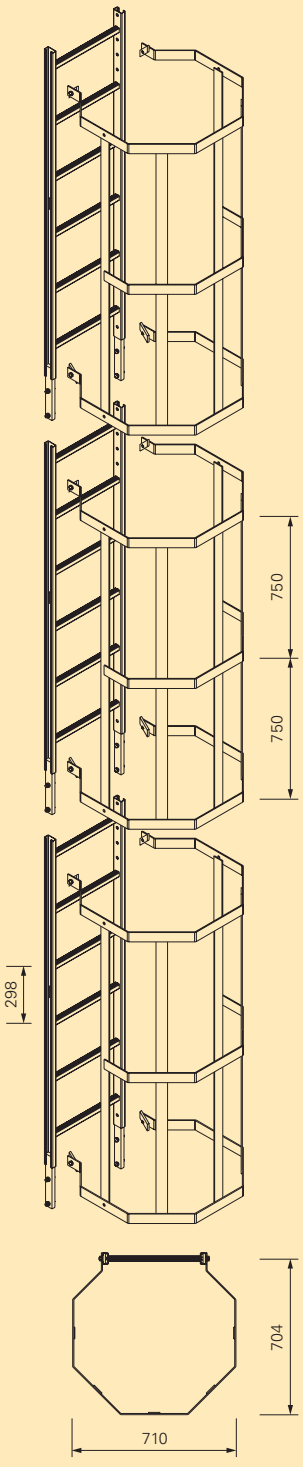


Access means for construction sites and industry – an overview

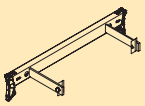
Ladder Access, Hatches and Access Decks with Ladder

Vertical ladder access ➡ Page 10

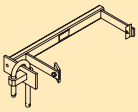
Ladders and safety cages



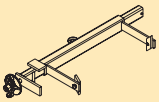
Ladder connectors for



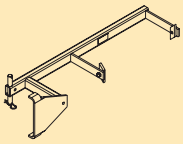
Modular Scaffolding
PERI UP Rosett



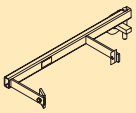
Column Formwork
RAPID



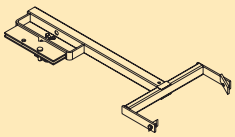
Column Formwork
VARIO



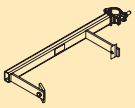
Panel Formwork
TRIO



Column Formwork
QUATTRO



Circular Column Formwork
SRS

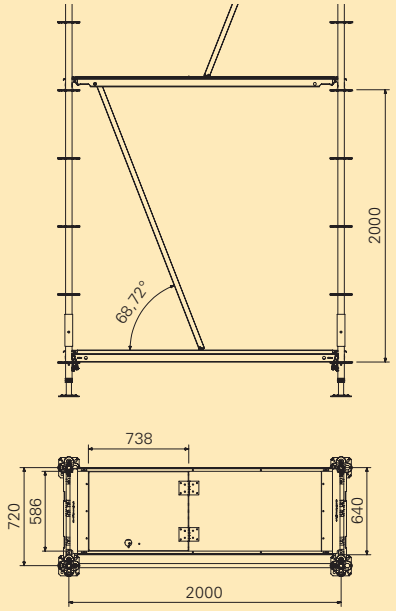


Heavy-Duty Props
HD 200

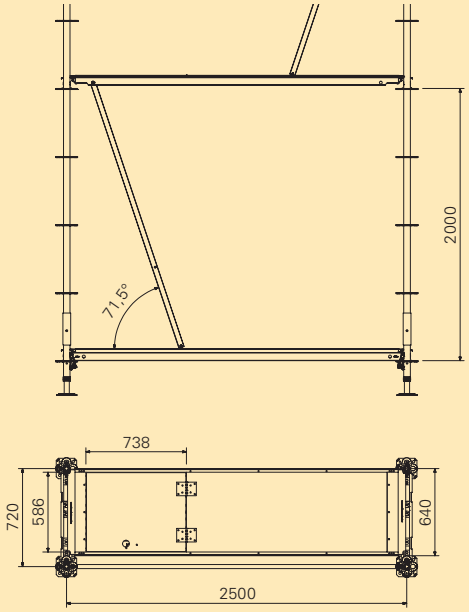
Hatches, Access Decks and Access Decks with Ladder

➡ Page 12

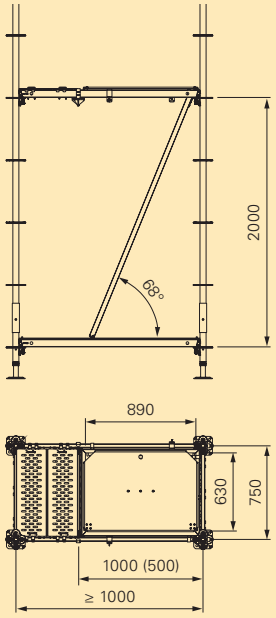
Access Decks with Non-Integrated Ladder (System UDS)



Access Decks with Integrated Ladder (System UDS)



UAL 75 x L

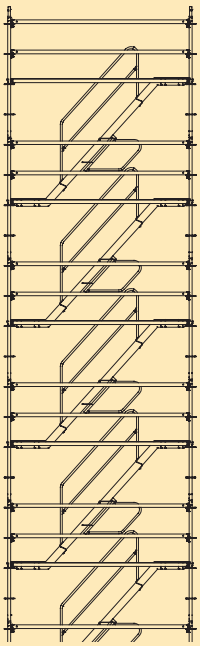


Access means for construction sites and industry – an overview

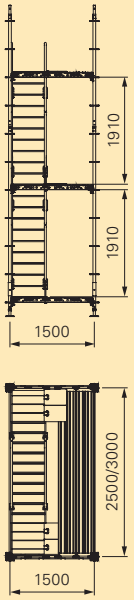
Staircases up to 2.0 kN/m² and for 3.0 kN/m²

Staircases up to 2.0 kN/m² ➡ Page 16

Staircase Alu 64 (System UDS)

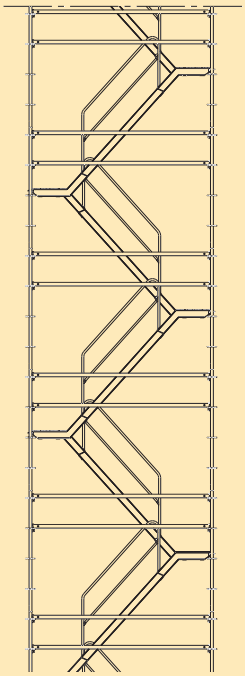


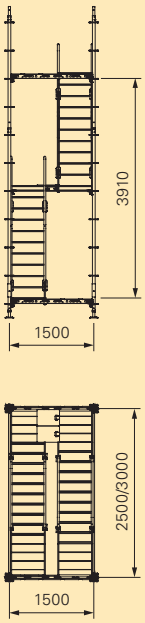
Staircase units in the same direction



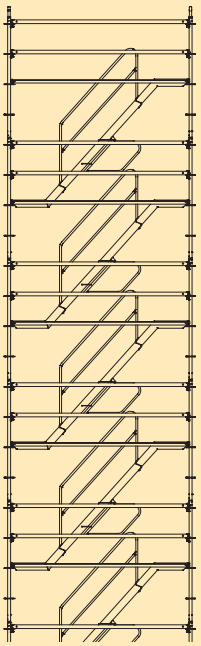
Flight of stairs

Alternating staircase units

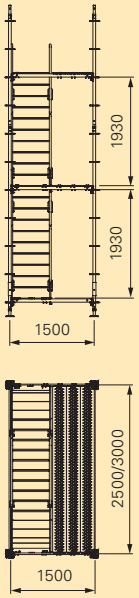




Staircase Alu 75 (System UDI)

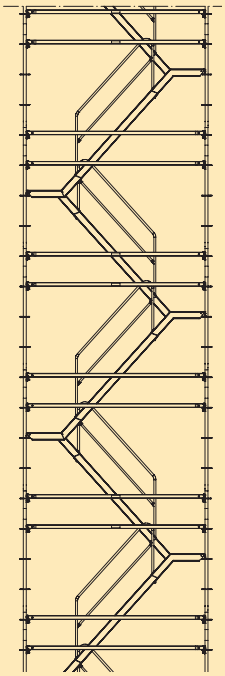


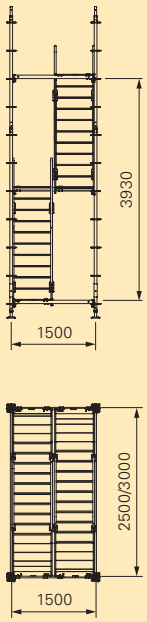
Staircase units in the same direction



Flight of stairs

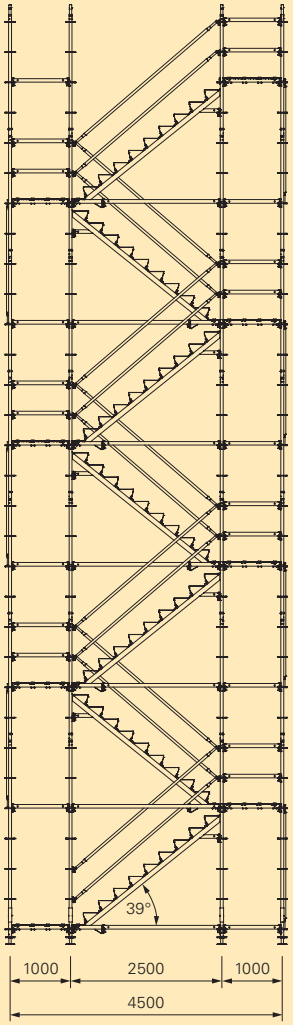
Alternating staircase units



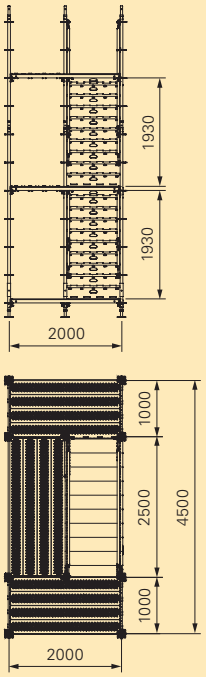


Staircases for 3.0 kN/m² ➡ Page 28

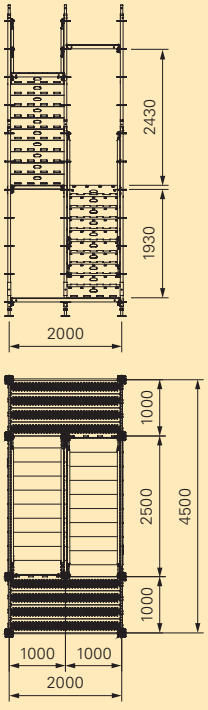
Staircase Steel 100 (System UDI)



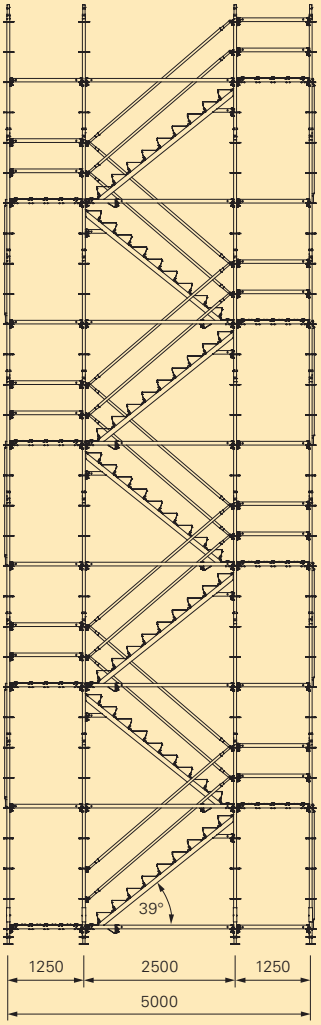
Staircase units in the same direction



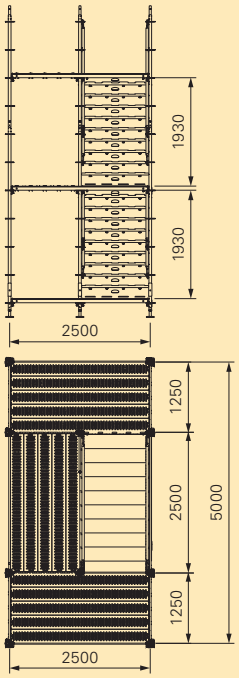
Alternating staircase units



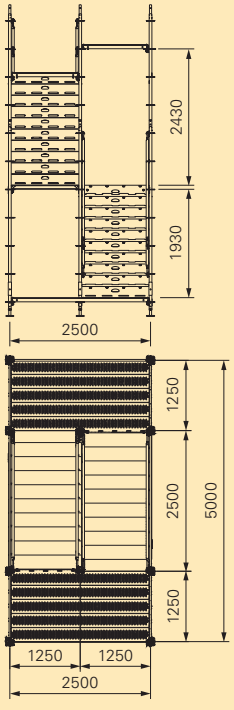
Staircase Steel 125 (System UDI)



Staircase units in the same direction



Alternating staircase units



Vertical ladder access

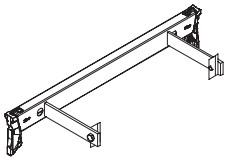
Accessing platforms positioned at great heights

On high and slender elements, such as columns or chimneys, vertical ladder access is the most inexpensive solution.

In sections of around 2.00 m, the ladders are connected to the formwork or scaffolding. The clampable safety cage provides site personnel with very safe conditions for climbing up and down.

With vertical ladder access, large heights can be reached in the shortest way - without the possibility however of transporting materials at the same time.

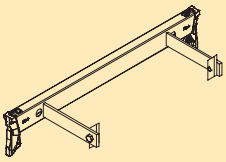
For the various PERI systems, suitable ladder connectors are available. These are used to attach the ladders and safety cages in individual sections.



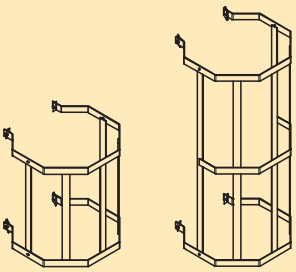
Pre-assembly of the ladder complete with ladder connectors and safety cage takes place on the ground.

Lifted into position by crane, the wedges are then fixed using a hammer.

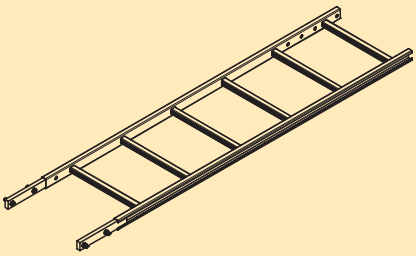
Ladder Connection UAC



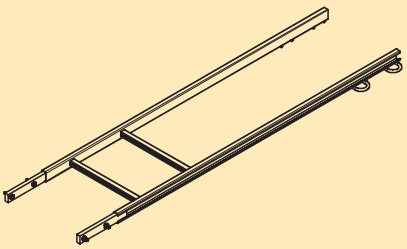
Ladder Safety Cage 75
Ladder Safety Cage 150



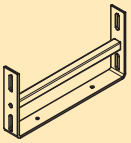
Ladder 180/6



End Ladder 180/2



Ladder Base



Access Deck with Ladder (UDS System)

Decking with integrated ladder for working scaffold

With facade working scaffolds, ladders connect the different levels. Access using access decks with ladders are the easiest and fastest to mount of all possibilities as well as being especially cost-effective.

Access decks with integral ladders are available in lengths of 2.50 and 3.00 m which allows the ladders to be folded up under the deck when not in use. If the facade scaffolding is particularly long, then access decks with ladders can be installed approx. every 20 m in order to reduce walking distances.

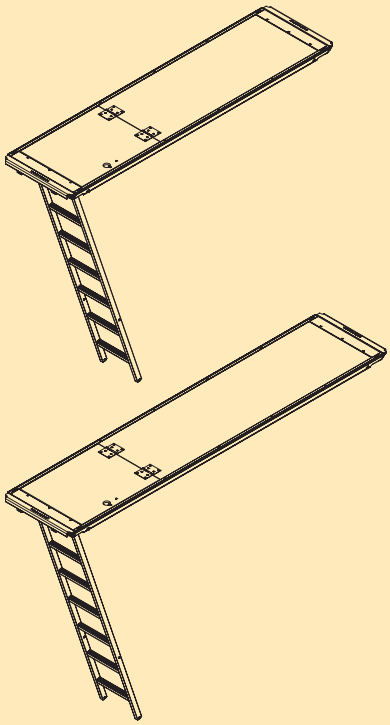
If the integrated ladder is folded upwards and the hatch closed, the complete width of the scaffolding can then be used.

Small facade scaffolding is quickly and safely accessible only after access decks with ladders have been installed.

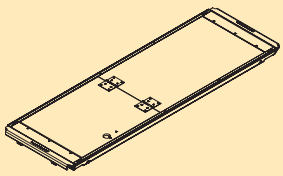
Access decks with ladders can also be integrated in compact working scaffolds as an easy and simple climbing aid.

UDS System

Access Deck UAL-2 with Ladder 64 x 250/3
Access Deck UAL-2 with Ladder 64 x 300/3



Access Deck UAL-2 64 x 200/3



Accessories: Ladder UEL with Hook

Hatches / Access Decks (UDI System)

Solutions with minimal access or small bay lengths

Hatches and access decks consist of a frame with access opening and a short decking piece as well as an attached ladder. They are used where manholes with small diameters lead into the inside of structures. Hatches are a suitable solution also for short bay lengths.

The width of the hatches is based on the following requirements

- a minimum industry manhole diameter (approx. 55 cm or 22 inches) as well as
- the shoulder width of a person. When closed, the hatches can be used as a working area.

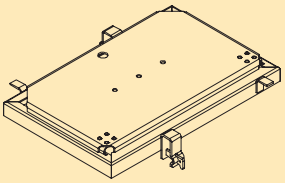
As access to the upper working platforms on shoring towers, hatches with separate ladders can also be used in bays with lengths of only 1.50 m.

Hatches painted in a yellow signal colour are opened in a sideways direction. They close automatically which eliminates a source of danger.

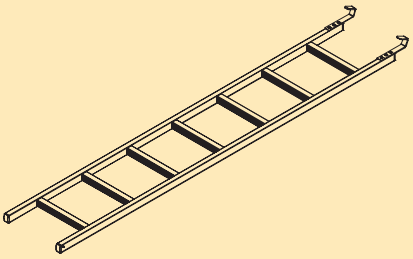
Hatches with widths of 50 and 75 cm can also be installed in bays with small lengths.

UDI System

Hatch UAF 50 x 75
Hatch UAF 75 x 100



Ladder UAF 200

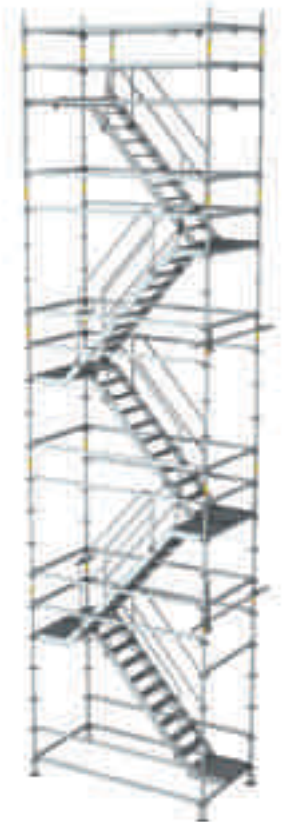


Staircase Alu 64 (UDS System)

Standing scaffold for working areas at higher elevations

The Staircase Alu 64 serves as access to working areas and construction sites – with staircase units in the same direction or alternating staircase units. With height increments of 2.00 m, it is ideally suited as offset access means in front of facade scaffolding, e.g. PERI UP T 72 or T 104.

For this use, the stairs are designed to accommodate a live load of 1.0 kN/m². Each working level can be reached without any height adjustments required. In addition, the stairways together with the PERI UP Rosett modular scaffold can also be used as an independent staircase tower. PERI can show proof of stability for a 20 m run of staircase and landing under a live load of 2.0 kN/m². Ledgers are used as guardrails and brace the tower; diagonals are not required.

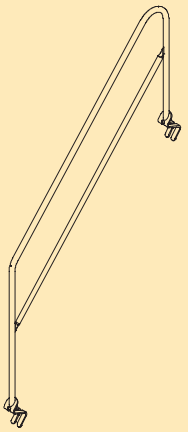


Stair tower with alternating staircase units provide greater head clearance and shorter walking distances for site personnel between levels.

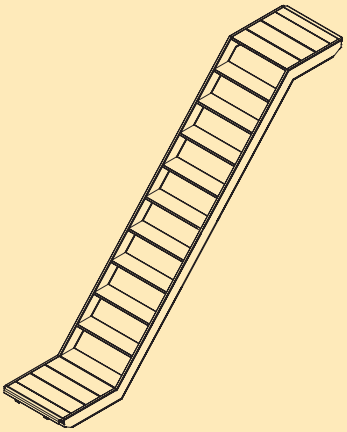
Stair tower with staircase units in the same direction is the preferred type for installation work and, apart from providing access, also offers working platforms.

UDS System

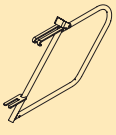
Stair Guardrail UAG



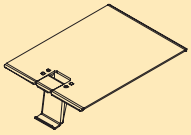
Staircase UAS 64 x 250/200
Staircase UAS 64 x 300/200



Stair Guardrail UAH



Landing Link Panel UAB 30



Staircase Alu 64 (UDS System)
Suspended scaffold for working at a lower level

Connecting details of the scaffold standards to the steel profile of the formwork.

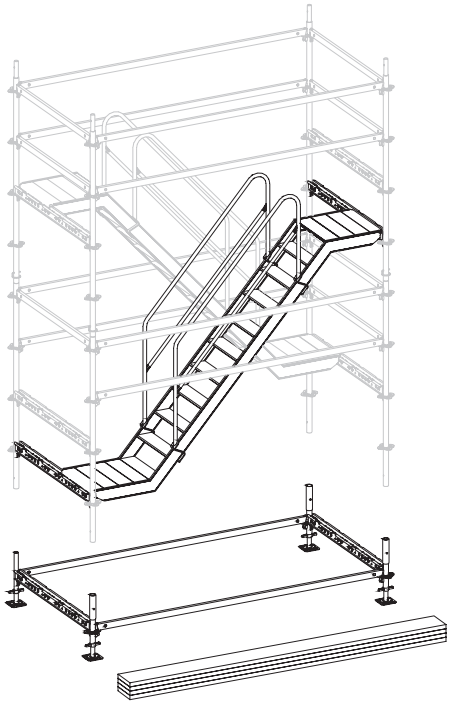
PERI UP site stair towers are particularly fast and cost-effective to install, if the standards are tightly connected to each other and complete stair sections are moved with the crane.

Suspended stairways can also be used for accessing climbing formwork or in shafts, e.g. subway construction. The standards are tightly connected by means of bolts and nuts whereby each connection can transfer up to 19.7 kN permissible tension force. Theoretically, this means up to 40 scaffolding levels can be installed as suspended scaffold.

The staircase is securely bolted to the steel profiles of the climbing formwork. All standards are also tightly connected to each other, ...

... so that the staircase can be passed downwards through the hole in the slab. This provides access to a stair tower from the ground. The formwork thus climbs independently of the stairs while access is always guaranteed.

Accessing the bracket scaffold of a pier head on a incrementally launched bridge construction via a suspended scaffold fixed to rollers.

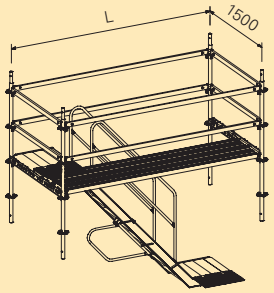


Stair units pre-assembled on the ground can be placed on stair sections already in position with the crane. The units can be positioned on existing stair sections with the crane.

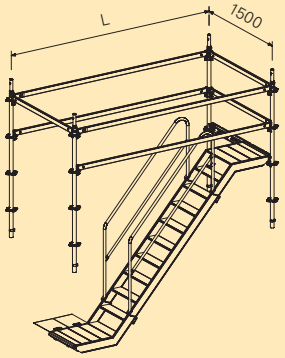
UDS System

Scaffold Units
Due to the modular design principle, quantities of required materials can quickly be determined and easily ordered.

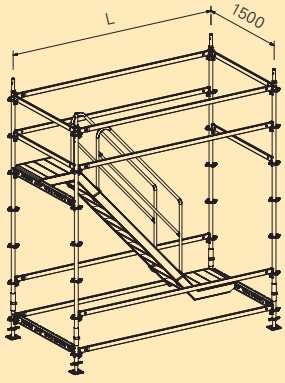
Stair Tower Top



Stair Tower Plus



Stair Tower Basis



Staircase Alu 64 (UDS System)

Access from the building to the climbing formwork

In general, site stair towers are erected in front of or in a building and connect the ground with different levels of the building. The fact that stair towers on the construction site can be used completely differently is shown by the examples on this page.

With climbing formwork, climbing brackets can be used as a base for the stair tower. This means they are not dependent on any foundation measures on the ground and can connect finishing platforms with different floors in the building.

Photo left: stair tower with mounted platforms for accessing the finishing platform on the PERI climbing formwork. Anchoring takes place on the steel profiles of the climbing rails.

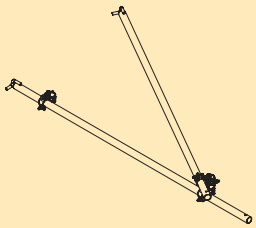
Connecting several storeys of a building with the climbing formwork by means of an external stair tower mounted on a bracket platform.

Assembly of the anchoring on the concrete wall is carried out directly from the stair tower. Additional working platforms are not required.

UDS System

Stair tower units
Due to the modular design principle, quantities of required materials can quickly be determined and easily ordered.

Triangular anchor on the inner and outer legs



Short wall tie only on the inner leg

Apart from the anchorage for the standard configuration shown above, a wide range of other solutions are available which are planned and calculated by PERI according to project specifications. This includes, for example, solutions for large wall spacings or anchoring on climbing rails.

Staircase Alu 75 (UDI System)

Adjustments in 25 cm increments with Rosett Flex

The staircase units have the grid dimensions of the PERI UP Rosett Flex scaffold provide a high level of flexibility and all the advantages of a modular scaffolding. The staircases with 75 cm widths serve as access to working areas or construction sites, and reach heights of up to 90 m.

All decking widths as well as the Staircases Alu 75 match the grid dimensions of the standards and ledgers (25 cm or 50 cm). They are installed on UH Ledgers. All this results in a high degree of flexibility regarding scaffold adjustment.

Height adjustments for building openings are carried out independently of the floor heights by means of brackets and short flights of stairs (1.50 m long, 50 cm/100 cm high).

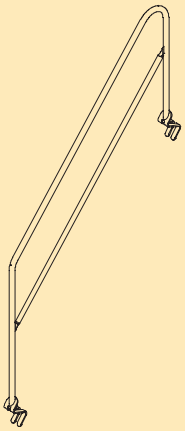
Due to the grid dimensions of 25 cm, staircase units can be installed next to each other with upward and downward movements being separated by means of handrails inserted in the stringers.

Stair towers with staircase units in the same direction have the advantage that flights of stairs and landings along with working levels are available.

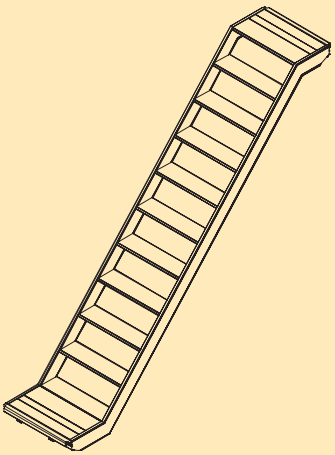
Stair towers with alternating staircase units provide greater head clearance and shorter walking distances for site personnel between levels.

UDI System

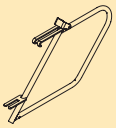
Stair Guardrail UAG



Staircase UAS 75 x 250/200
Staircase UAS 75 x 300/200



Stair Guardrail UAH



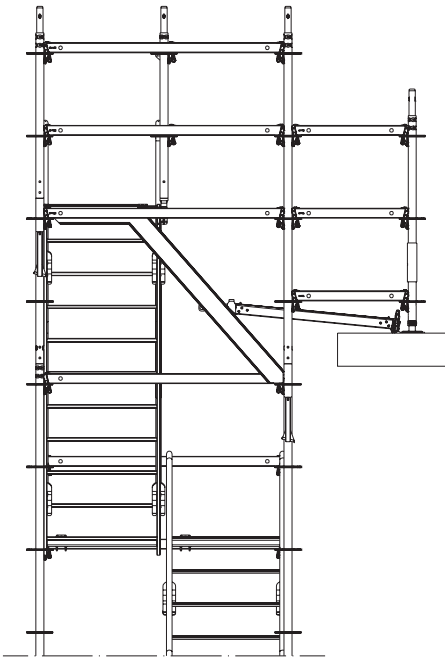
Staircase Alu 75 (UDI System)
Height adjustments using brackets

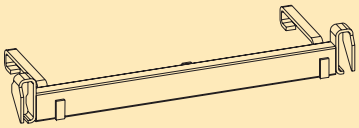
For the two staircase units, Alu 64 and Alu 75, height adjustments take place by means of the laterally mounted brackets. As a result, the stair tower floor height of 2 m remains constant over the entire height which simplifies planning and assembly.

For stabilising the brackets, installation of a few additional ledgers in the stair tower is sufficient. Additional anchors are not necessary.

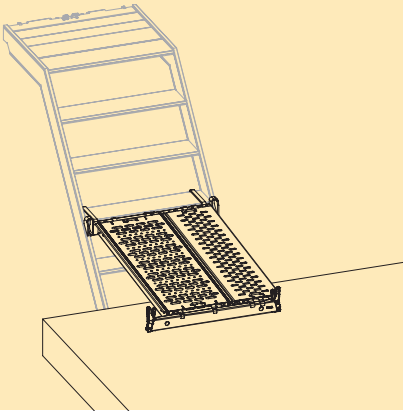
Smaller height adjustments are carried out using ramps with industrial decking, whereby the rectangular profile for fixing the decks through the "ledger-to-stair" procedure is mounted on a step.

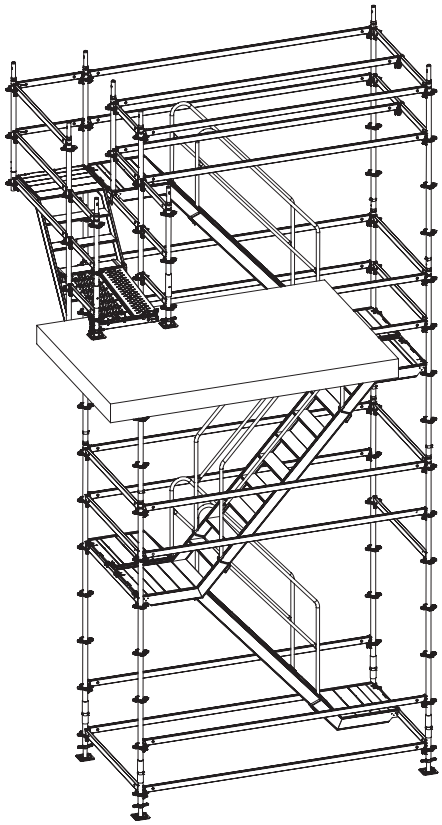
The stair tower is erected using regular floor heights of 2.00 m. Adjustments to the openings on the building are carried out on brackets - suspended on the outside - with short staircase units with 1.50 m lengths and heights of 50 or 100 cm.





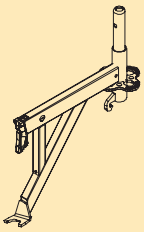
With the "ledger-to-stair" which is attached on a step, height adjustments up to 50 cm can be created by means of industrial decking as a ramp.



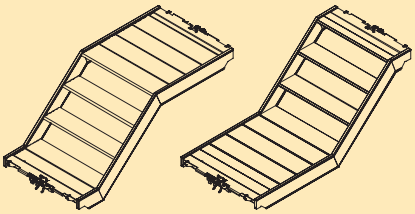


UDI System

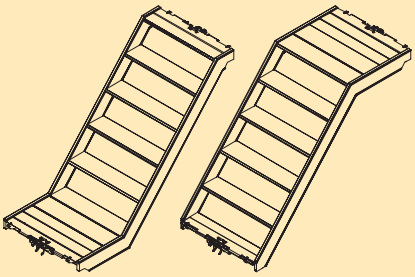
Console UCM 75 with Spigot



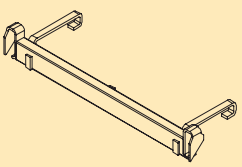
Staircase UAS 75 x 150/50 S
Staircase UAS 75 x 150/50 T



Staircase UAS 75 x 150/100 S
Staircase UAS 75 x 150/100



Waler on Staircase UAS 75



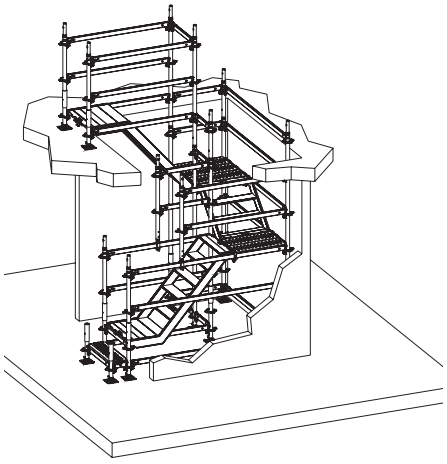
Staircase Alu 75 (UDI System)

Stairwell staircases for access and finishing

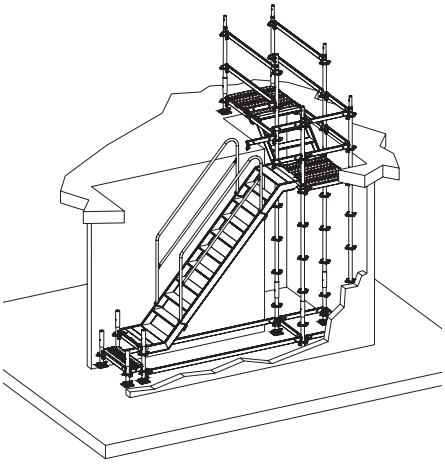
With the stairwell staircases, compact access means can be provided on the inside of buildings with small staircase wells. At the same time, the stairs serve as working platforms for carrying out further work on the sides of the walls.

The staircase units have the grid dimensions of the Rosett Flex modular scaffold and offer the required adaptability of stairs to suit small areas and narrow geometries.

With standard components, access can be created to all floors in height increments of 25 cm. Standard configurations are available for the common floor height of 2.75 m.

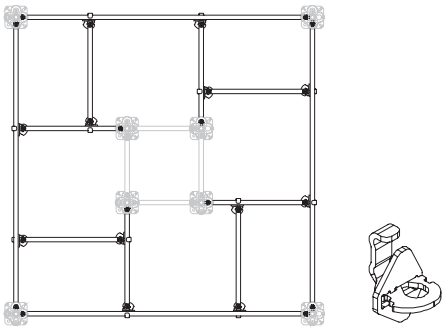


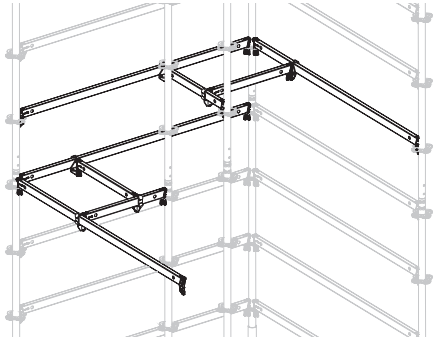
Standard stair configuration for a 2.75 m floor height:
Rectangular ground plan with clear dimensions between the walls of 2.10 x 2.20 m.



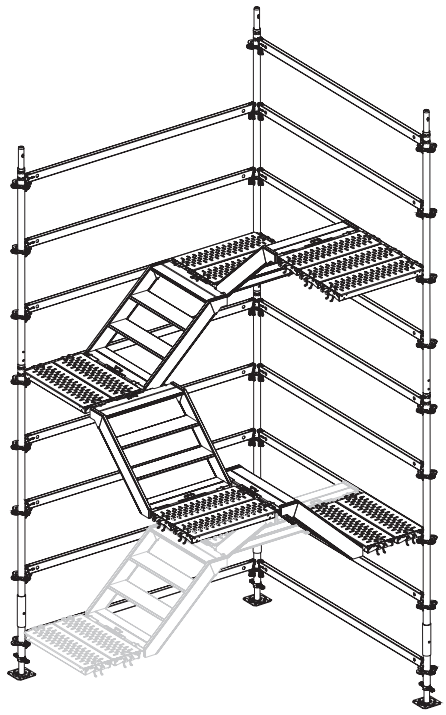
Standard stair configuration for a 2.75 m floor height:
L-shaped ground plan with clear dimensions of 3.40 m x 1.00 m and 1.20 m x 1.00 m.

Solution for small spaces





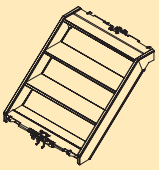
Ledgers under an angle of 90 degrees are mounted at the same height using ledger-to-ledger couplers.



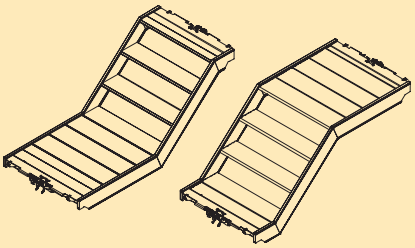
Decks and stairs are positioned on the ledgers. Due to the grid dimension of 25 cm, all bays can be completely closed leaving no gaps.

UDI System

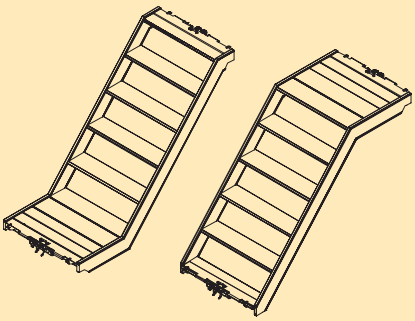
Staircase UAS 75 x 75/50



Staircase UAS 75 x 150/50 S
Staircase UAS 75 x 150/50 T



Staircase UAS 75 x 150/100 S
Staircase UAS 75 x 150/100



Staircase Steel 100 (UDI System)

Stairway with a 1.00 m width consisting of light-weight individual components

The PERI UP Staircase Steel is erected as a 10-leg tower complete with separate landings, and used on construction sites with high requirements regarding loads and accessibility.

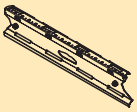
With a step width of 100 cm, the stair tower provides easy and comfortable access - with sufficient space for site personnel to pass each other. With a permissible load of 3 kN/m², it can be assembled up to a height of 50 m. Assembly is simple and fast without requiring any tools: the stringers are mounted first followed by the steps which interlock during installation. The top step secures all the others.

For accommodating 3.0 kN/m², the site stairs are ereceted as a 10-legged tower with alternating staircase units and separate landings. The landing widths can be selected as required but should be at least the width of the stairs.

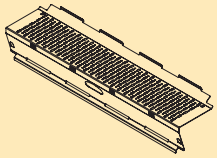
The stair width of 100 cm is easily accessible with sufficient space for site personnel to pass each other as well as for transporting injured persons.

UDI System

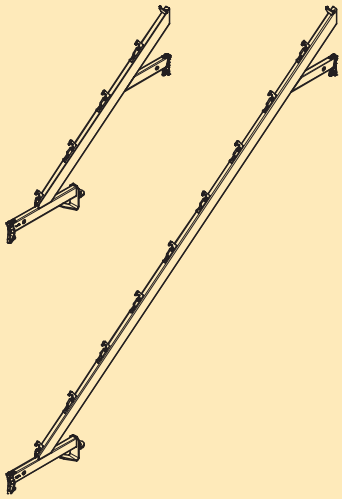
End Step UAE 100



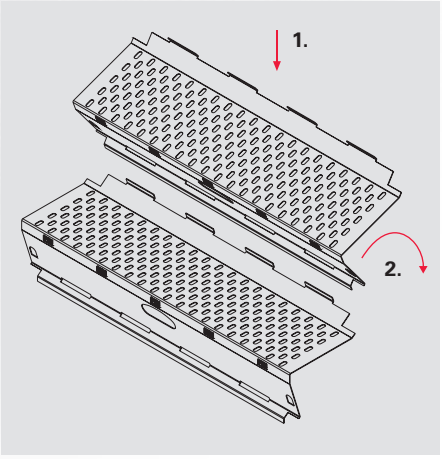
Stair Step UAR 100



Stair Stringer UA 125/100
Stair Stringer UA 250/200



Assembly without tools: the second step is securely connected to the previous step simply by placing in position and turning.



Staircase Steel 100 (UDI System)

Non-slip access to construction sites or into buildings

Slip resistance is - in addition to safe transfer of loads - an important requirement for all stairs. The steps of the Staircase Steel are likewise perforated as the UDI and UDG decks. The trumpet-shaped openings are bent upwards and are safe to use even with oil-smeared shoes. With an additional Edge Profile on the ledgers at the start of the stairs, the upper corner is also slip resistant.

The possibility of small objects falling to the ground is also prevented: the steps are fitted with closed webs while toe boards along the landing edges providing an additional safety feature.

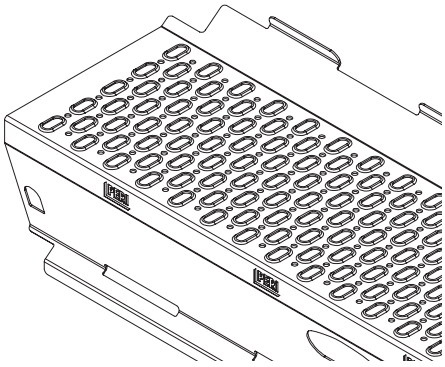


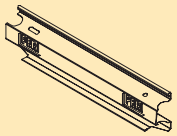
Photo left:
The Staircase Steel 100 is ideally suited for use as construction site access. The maximum live load of a tower is 40 kN.

The toe boards along the landings prevent small objects from falling to the ground.

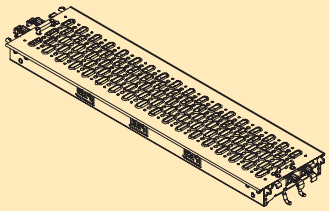
Perforated step surfaces and perforated decking provide a high level of slip resistance. At the same time, ice formation is made difficult in the winter as water drains away leaving little water to freeze.

UDI System

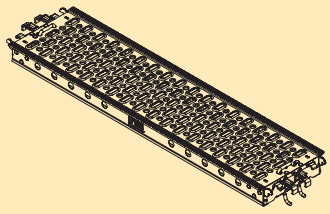
Toe Board Steel UPY 150
Toe Board Steel UPY 200



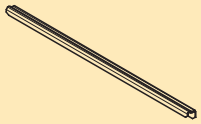
Industrial Deck Steel UDI 25 x 50
Industrial Deck Steel UDI 25 x 75
Industrial Deck Steel UDI 25 x 100
Industrial Deck Steel UDI 25 x 125
Industrial Deck Steel UDI 25 x 150
Industrial Deck Steel UDI 25 x 200
Industrial Deck Steel UDI 25 x 250
Industrial Deck Steel UDI 25 x 300



Steel Deck UDG 25 x 50
Steel Deck UDG 25 x 75
Steel Deck UDG 25 x 100
Steel Deck UDG 25 x 125
Steel Deck UDG 25 x 150
Steel Deck UDG 25 x 200
Steel Deck UDG 25 x 250
Steel Deck UDG 25 x 300



Edge Profile UH 100



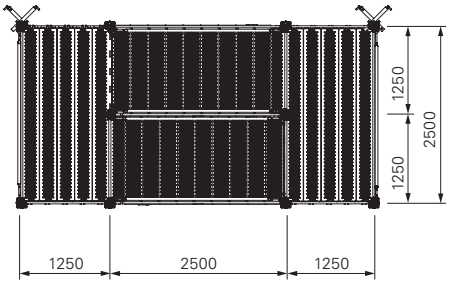
Staircase Steel 125 (UDI System)

Clear width of 1.20 m is ideally suited for frequent use

The flights of stairs of the Staircase Steel 125 differ from the Staircase Steel 100 only through the wider steps; all other components are the same. The maximum height of the stairs in the standard configuration is limited to 40 m due to the larger areas for the live loads.

With step widths of 125 cm, the clear width of 120 cm between the legs that is required in some countries is fulfilled. Based on the average shoulder width of 60 cm, convenient and comfortable passing on the stairs is realized. Using this site staircase is both practical and sensible on those construction sites where the stairs are in frequent use by the workers.

The Site Staircase 125 has a clear width of 120 cm between the legs of the modular scaffold and can be easily and safely accessed by site personnel carrying tools or building materials.

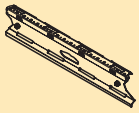


Comfortable access, fast rescue of injured persons on stretchers, wide landings with light-weight individual components as before which are installed without the need of tools – the main features of the Staircase Steel 125.

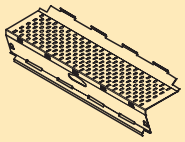
Wide site staircases for accessing the formworking and concreting levels during the construction of a dam.

UDI System

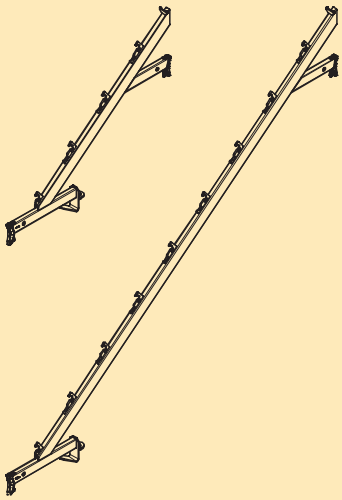
End Step UAE 125



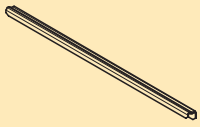
Stair Step UAR 125



Stair Stringer UA 125/100
Stair Stringer UA 250/200



Edge Profile UH 125



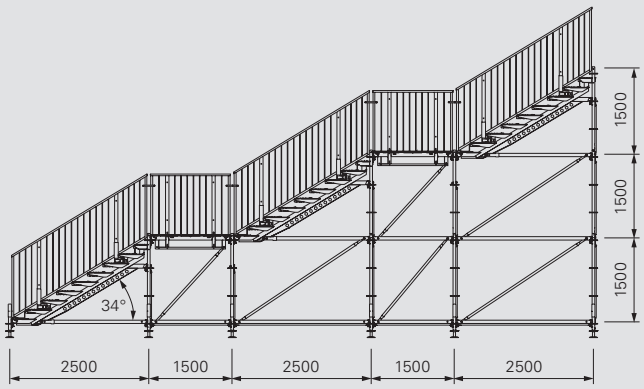
Access in public areas – an overview

Continuous and dog-legged staircases as well as stair towers

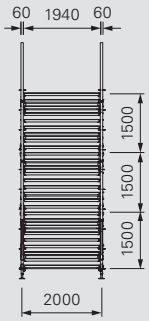
Single width and linked continuous staircases ➡ Page 36

Public 150, 200 and 250 (UDS System)

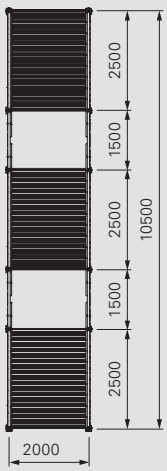
e.g. single continuous staircase, 200 cm wide



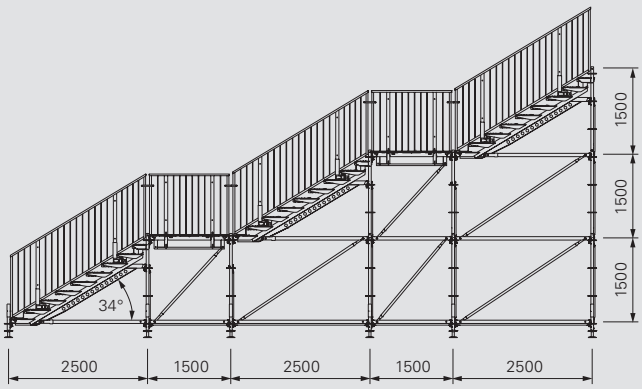
Staircase units in the same direction



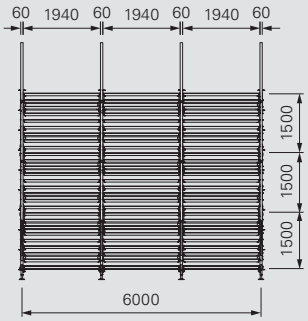
Possible flight widths:
150 cm, 200 cm, 250 cm



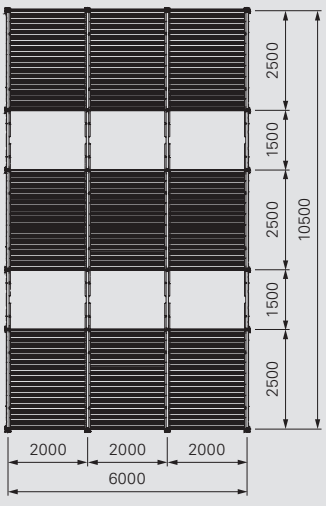
e.g. triple bank of continuous staircase, 600 cm wide



Staircase units in the same direction

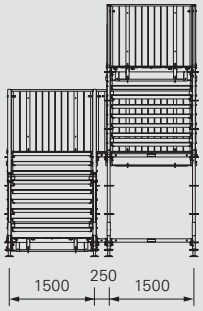


Possible flight widths:
150 cm, 200 cm, 250 cm

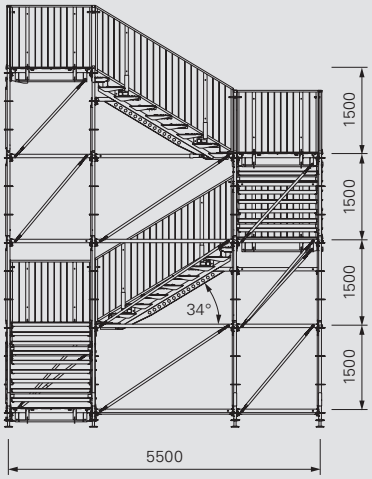


Dog-legged staircases and stair towers ➡ Page 42

Public 150 (UDS System)



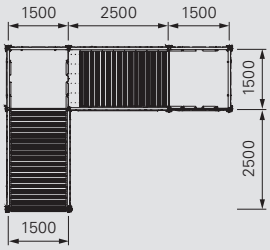
Possible flight width: 150 cm



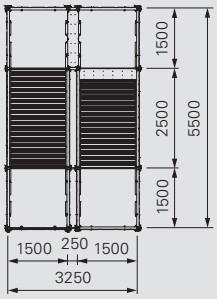
Possible flight width: 150 cm

Examples of possible ground plans:

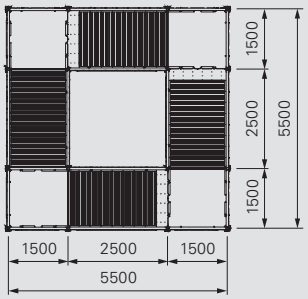
Dog-legged flights of stairs



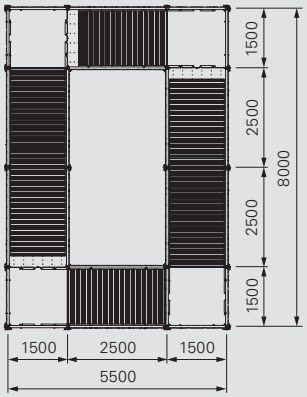
Stair tower without stair well



Stair tower with square-shaped ground plan



Stair tower with rectangular ground plan



Public – Access in Public Areas (UDS System)

Single width continuous staircases as escape or emergency stairs

Single width continuous staircase 250 cm wide. The landings are arranged after 18 steps.

For stairs used in public areas, special attention is paid to providing complete safety for the users. Existing regulations are frequently tightened through additional requirements. PERI Public corresponds to all the latest requirements and is used to realize a wide range of structures using very few individual components.

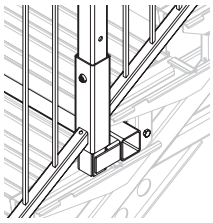
PERI Public has been designed for live loads of up to 7.5 kN/m² and the guardrails for loads of up to 2.0 kN/m which meet the highest safety requirements. In addition, geometrical requirements regarding the rise/tread ratio, safety barriers and climbing over guardrails are fulfilled as well as being vandal-proof to a very high level.

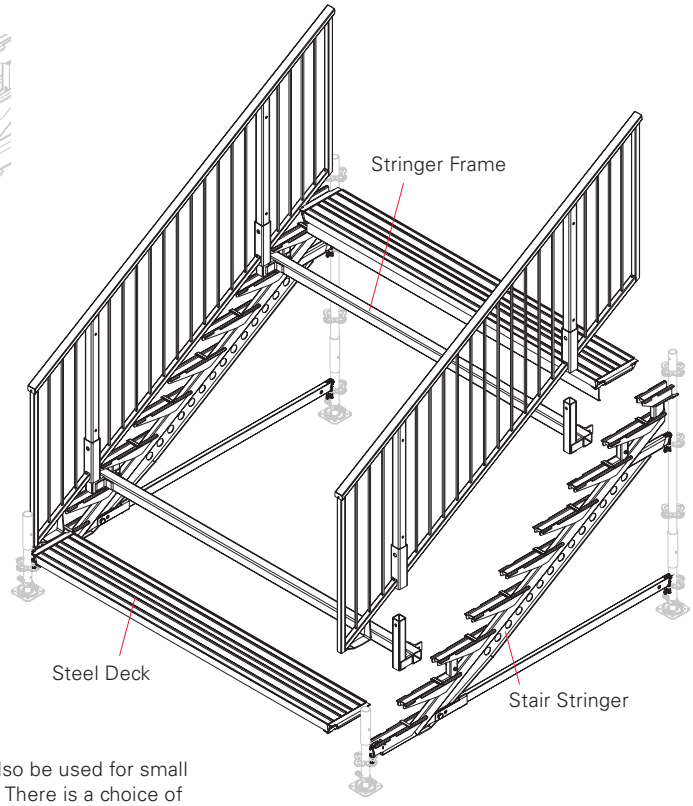
Possible structures with PERI Public:

- single width continuous staircases 150 cm, 200 cm or 250 cm wide
- linked continuous staircases with different widths as a succession of single continuous staircases
- dog-legged staircases as well as
- stair towers with and without a stairwell.

Typical applications are as access to grandstands, accessing temporary pedestrian bridges or as a replacement for indoor and outdoor stairs during refurbishment.

Assembly of the PERI Public
1. Mount the Stair Stringer on the scaffold sub-construction.
2. Fix the Stringer Frame for the guardrails.
3. Install the Steel Decking.
4. Insert the Guardrails which simultaneously secure the decking against removal.

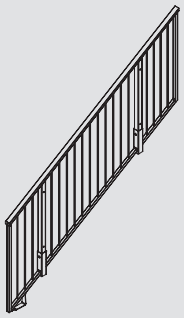




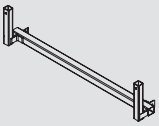
PERI UP Public can also be used for small heights from 150 cm. There is a choice of widths - 150, 200 or 250 cm - with a depth of 250 cm.

UDS System

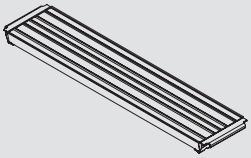
Stair Guardrail UZG 250/150



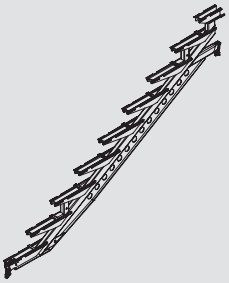
Stringer Frame UZF 150
Stringer Frame UZF 200
Stringer Frame UZF 250



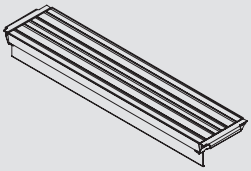
Steel Deck UDS 32 x 150
Steel Deck UDS 32 x 200
Steel Deck UDS 32 x 250



Stair Stringer UZS 250/150



Steel Deck UDS 32 x 150 Public
Steel Deck UDS 32 x 200 Public
Steel Deck UDS 32 x 250 Public



Public – Access in Public Areas (UDS System)

Linked continuous staircases e.g. for separate directions of movement

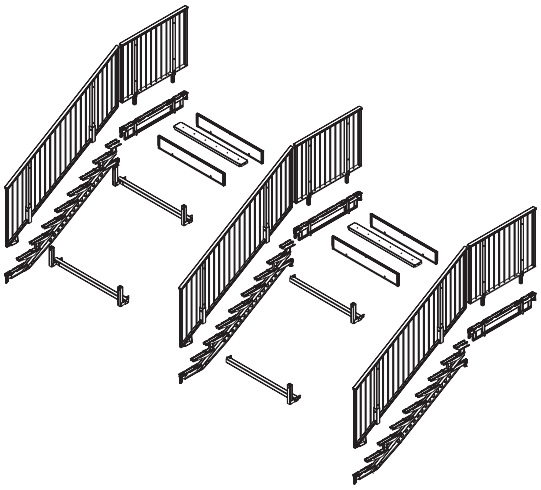
Solution for a trade fair: Stairway leading to a pedestrian bridge over a multi-lane road with seperate routes for up and down.

Entry to the platforms via temporary stairways and pedestrian bridge allowed the construction of the new facility to take place.

With the stair stringers of the PERI UP Public, steel decks can be installed on the left and right of the stringers. With this, any required width for the bank of continuous staircases can be assembled whereby the width of each individual flight of stairs can be freely chosen.

150 cm, 200 cm and 250 cm widths are available which fulfil the clear minimum width requirements of 120 cm, 180 cm or 240 cm for public stairs in each case. The flights of stairs provide safe accessibility due to guardrails on both sides and separate large crowds into smaller and manageable groups.

Directions of movement can be specified which contribute to very effective use of the stairs by large crowds of people, e.g. at trade fairs and football matches.



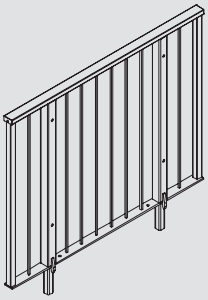
Wide, linked continuous staircases are created through additions on both sides of the stair stringer with the same components as for single continuous staircases.

Due to the intermediate guardrails, the stairs and landings are safe to use, also with wide banks of continuous staircases.

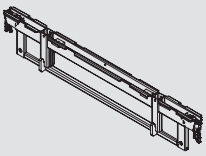
The steel decks for the steps are secured via vandal-proof bolted guardrails which prevents them from being removed.

UDS System

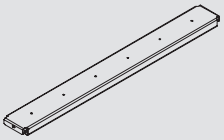
Stair Guardrail UZG 150



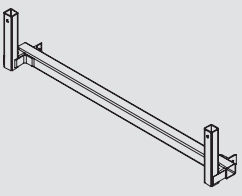
Landing Transom UZL 150



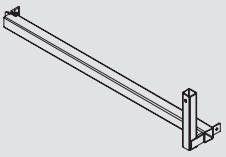
Gap Filler UZD 150 x 16
Gap Filler UZD 200 x 16
Gap Filler UZD 250 x 16



Stringer Frame UZF 150
Stringer Frame UZF 200
Stringer Frame UZF 250



End Guardrail Post UZE 150
End Guardrail Post UZE 200
End Guardrail Post UZE 250



Public – Access in Public Areas (UDS System)

Bank of continuous staircases of different widths complete with statical proof

Especially at major events such as sports championships and concerts, additional access routes for pedestrians must be available for ensuring safe and effective crowd management for short periods at a time. In particular, for entering and leaving halls, stadiums or parking facilities, stairs are required. With the PERI UP Public, a solution is available for every requirement.

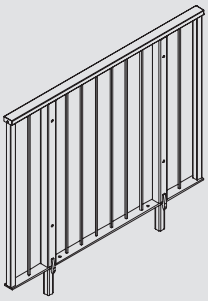
Regardless whether it is wide stairways or small, separate entrances for reporters or athletes, the stairs can be adjusted for almost any loads, geometry and number of users.

Linked continuous staircases with inner guardrails to allow segregation of routes.

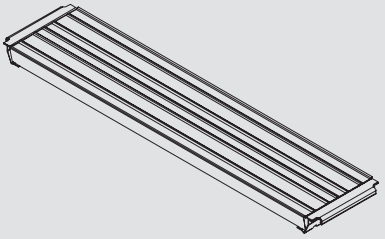
Bank of continuous staircases for the refurbishment of a football stadium. This was needed for the football matches at weekends and was moved by crane to a storage area during the week to allow construction work to continue.

UDS System

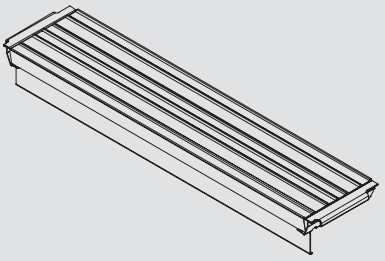
Stair Guardrail UZG 150



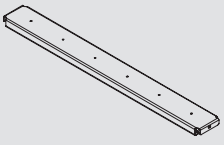
Steel Deck UDS 32 x 150
Steel Deck UDS 32 x 200
Steel Deck UDS 32 x 250



Steel Deck UDS 32 x 150 Public
Steel Deck UDS 32 x 200 Public
Steel Deck UDS 32 x 250 Public



Gap Filler UZD 150 x 16
Gap Filler UZD 200 x 16
Gap Filler UZD 250 x 16



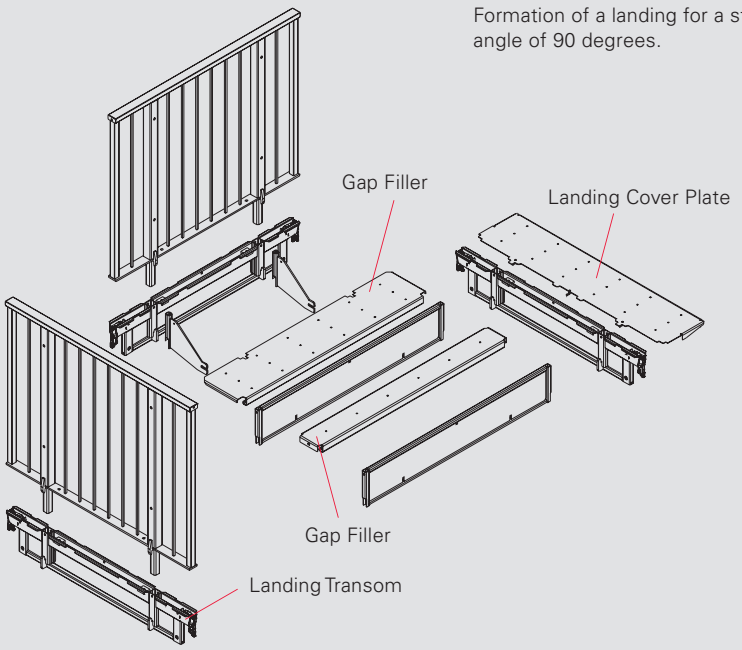
Public – Access in Public Areas (UDS System)
Dog-legged staircases

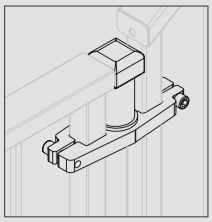
Speaker´s lectern positioned at the highest point of a representative staircase and accessible from two sides.

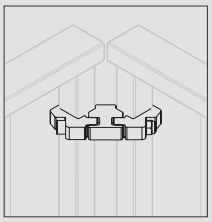
On every 150 cm wide landing, the direction of the staircase can be changed by 90° or 180°. This results in dog-legged staircases which are used, for example, for accessing stages with entrances and exits on both sides.

The transition between two guardrails is realised by means of guardrail connectors which are arranged in a straight line or over the corner into which a guardrail filler can also be installed.

Formation of a landing for a stair angle of 90 degrees.



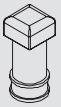




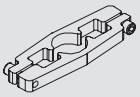
In order to ensure that fingers are not trapped, the connector prevents various movements of the guardrails between the transition areas.

UDS System

Guardrail Filler

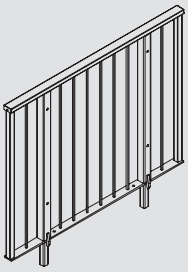


Guardrail Connector, Straight

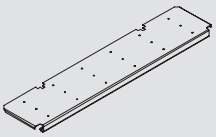


Guardrail Connector, Corner

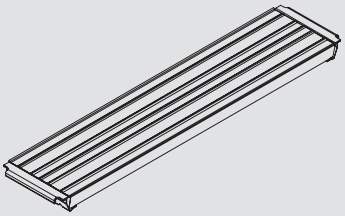
Stair Guardrail UZG 150



Gap Filler UZD 150 x 31



Steel Deck UDS 32 x 150



Landing Cover Plate UZD 150/25

Public – Access in Public Areas (UDS System)

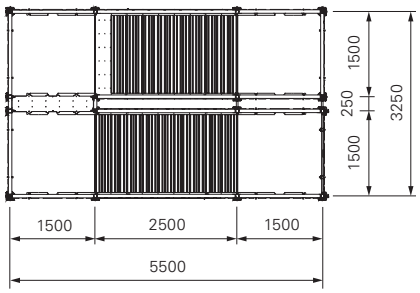
Stair towers with and without stairwells

Stair tower inside a church which serves as an emergency stairway in case the electrically-operated elevator breaks down.

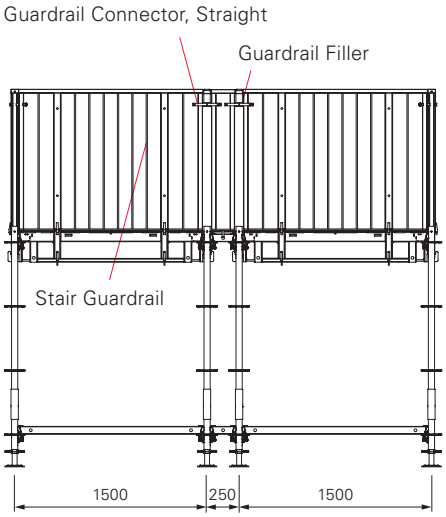
Stair towers with PERI Public can be adapted to suit existing ground plans. This results in minimum dimensions of 3.25 m x 5.50 m.

Depending upon customer requirements and structural conditions - and on the basis of the minimum dimensions - other geometries can be selected for the stair tower by changing the lengths of the staircase units. In this way, stair towers are formed around a stair well.

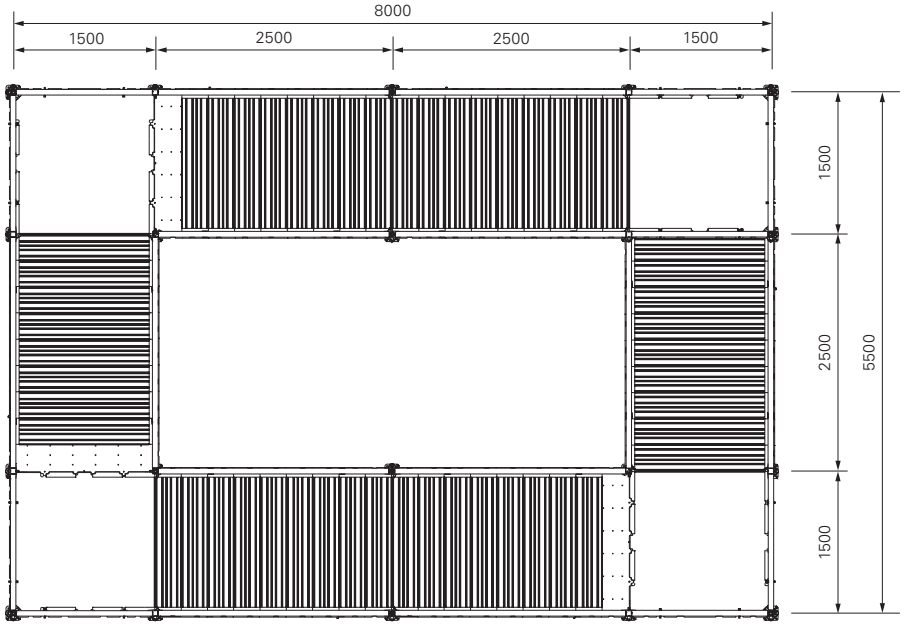
For standard live loads, stair towers can be erected up to heights of 24 m. Depending on the country and application, the live loads range between 3.5 kN/m² and 7.5 kN/m².



Stair tower with minimum dimensions of 3.25 m x 5.50 m.



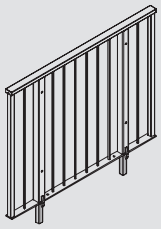
Stair tower erected around a stairwell with ground plan dimensions of 5.50 m x 8.00 m. In the longer direction, two staircase units with a total of 18 steps are arranged one behind the other.



UDS System

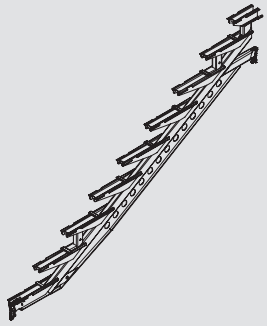
Standard UVR 300 Public

Stair Guardrail UZG 150

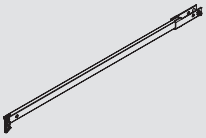


Guardrail Frame UZG 25

Stair Stringer UZS 250/150



H-Ledger with Lap UHP 200



PERI UP Access Technology
Technical details

Details		Means of access for construction sites and industry							
		Hatches		Access Deck		Access Deck		Access Deck with Ladder	
		UAF 50 x 75	UAF 75 x 100	UAL-2 64 x 150	UAL-2 64 x 200	UAL 75 x 250	UAL 75 x 300	UAL-2 64 x 250	UAL-2 64 x 300
		System UDI		System UDS		System UDI		System UDS	
Loads									
Dead Weight /Deck	kg	9.33	15.7	14.9	18.3	25.2	26.7	25.4	28.7
Dead Weight/m Height	kg/m	–	–	45 – 54	49 – 59	71 – 75	77 – 80	54 – 64	57 – 69
Live Load/Deck	kN/m²	2.00 (=LC3)		2.00 (=LC3)		2.00 (=LC3)		2.00 (=LC3)	
Live load on complete construction	kN/m²	2.00		2.00		2.00		2.00	
max. possible number of persons	–	1	2	2	2	4	5	3	4
Geometry									
Ladder: inclined	Degree	68	68	69	69	69	69	69	69
Ladder: length	cm	217	217	214	214	214	214	214	214
Ladder: rung spacing	cm	28	28	28	28	28	28	28	28
Ladder: width	cm	35	35	35	35	35	35	35	35
Level height between decking	cm	200	200	200	200	200	200	200	200
Clear headroom	cm	193	193	191	191	193	193	191	191
Guardrail heights	cm	100 ± 5	100 ± 5	100 ± 5	100 ± 5	100 ± 5	100 ± 5	100 ± 5	100 ± 5
Clear distance between guardrails	cm	≤ 47	≤ 47	≤ 47	≤ 47	≤ 47	≤ 47	≤ 47	≤ 47
Number of legs	–	4	4	4	4	4	4	4	4
Ground plan dimensions W x L	m x m	75 x L L ≤ 300	75 x L L ≤ 300	72 x 150 104 x 150	72 x 200 104 x 200	75 x 250 100 x 250	75 x 300 100 x 300	72 x 250 104 x 250	72 x 300 104 x 300
max. distance to wall	cm	10 to 80 see working scaffold		10 to 80 see working scaffold		10 to 80 see working scaffold		10 to 80 see working scaffold	
max. height of standard configuration	m	–	–	24	24	24	24	24	24
max. height approx.	m	100	100	100	100	90	80	100	90
Equipment variations									
uncladded	–	ja	ja	ja	ja	ja	ja	ja	ja
with nets	–	ja	ja	ja	ja	ja	ja	ja	ja
with tarpaulin	–	ja	ja	ja	ja	ja	ja	ja	ja
Anchoring									
Anchor spacing/No. of anchors	–	see anchor arrangement of working scaffold		see anchor arrangement of working scaffold		see anchor arrangement of working scaffold		see anchor arrangement of working scaffold	
Assembly instructions	–	PERI UP Rosett Flex Working Scaffold 100 with Steel Deck UDI		PERI UP T 72 Working Scaffold or PERI UP Rosett 72 Working Scaffold		PERI UP Rosett Flex Working Scaffold 100 with Steel Deck UDI		PERI UP T 72 Working Scaffold or PERI UP Rosett 72 Working Scaffold	
Standards / Regulations									
Germany	–	DIN EN 12811-1		DIN EN 12811-1		DIN EN 12811-1		DIN EN 12811-1	
Europe	–	e.g. F: NF EN 12811-1 GB: BSI EN 12811-1		e.g. F: NF EN 12811-1 GB: BSI EN 12811-1		e.g. F: NF EN 12811-1 GB: BSI EN 12811-1		e.g. F: NF EN 12811-1 GB: BSI EN 12811-1	
World	–	–		–		–		–	

		Means of access for construction sites and industry				Access in public areas	
Details		**Staircases up to 2.0 kN/m²**		**Staircases up to 3.0 kN/m²**		**Public**	
		Alu 64	**Alu 75**	**Steel 100**	**Steel 125**	**Public 150**	**Public 200 Public 250**
		System UDS	**System UDI**	**System UDI**		**System UDS**	
Loads							
Dead Weight/Staircase	kg	Length 250: 25.3 Length 300: 29.6	Length 250: 28.1 Length 300: 33.1	Step 100: 7.4 Step 125: 9.3 Stair Stringer: 15.3		Steel Deck 150: 11.2 Steel Deck 250: 17.0 Stair Stringer: 42.8	
Dead Weight/m Height	kg/m	82 – 115	82 – 117	205	230	> 360	
Live load per flight of stairs	kN/m²	2.00		3.00		3.50 – 7.50	
Live load on complete construction	kN	23.20	26.60	40.00		complete stairs including all landings	
max. possible number of persons	–	15 - 20		40		up to 10 persons/m²	
Geometry							
Inclination of stairs	Degree	48	48	39	39	34	34
clear step width	cm	58	67	100	125	150	200, 250
Step depth/height	cm/cm	15/ 20	15/ 20	29/ 20	29/ 20	32/ 17	32/ 17
Staircase unit width	cm	62	71	100	125	150	200, 250
Floor height per staircase unit	cm	200	200	200	200	150	150
clear headroom	cm	191	193	193 + 243	193 + 243	294	294
Guardrail heights	cm	100 ± 5	100 ± 5	100 ± 5	100 ± 5	110	110
clear distance between guardrails	cm	≤ 47	≤ 47	≤ 47	≤ 47	vertical ties every 10 cm	
No. of legs	–	4		10		Stair tower: 16 otherwise: dependent on stair geometry	
Ground plan dimensions W x L	m x m	150 x 250 150 x 300		200 x 450 200 x 550	250 x 500 250 x 550	≥ 325 x 550	dependent on stair geometry
max. distance to wall	cm	≤ 30 > 30 verification required		≤ 200		project-specific verification required	
max. height of standard configuration	m	70	66	50	40	12	dependent on staircase unit width and load
max. height approx.	m	90	90	80	70	30	
Equipment variations							
uncladded	–	yes	yes	yes	yes	yes	yes
with nets	–	not in standard configuration, project-specific verification required		not in standard configuration, project-specific verification required		not in standard configuration, project-specific verification required	
with tarpaulin	–	not in standard configuration, project-specific verification required		not in standard configuration, project-specific verification required		not in standard configuration, project-specific verification required	
Anchoring							
Anchoring levels (height examples)	–	H = 14 m: 2 H = 30 m: 5	H = 14 m: 2 H = 30 m: 5	H = 14 m: 2 H = 30 m: 4		project-specific verification required	
Assembly instructions	–	PERI UP Rosett Staircase Alu 64	PERI UP Rosett Flex Staircase Alu 75	PERI UP Rosett Flex Staircase Steel 100 and 125		PERI UP Rosett Stair Public 150, 200, 250	
Standards / Regulations							
Germany	–	DIN EN 12811-1		DIN EN 12811-1		DIN EN 13814, State Building Codes, Regulations on Places of Assembly	
Europe	–	e.g. F: NF EN 12811-1 GB: BSI EN 12811-1		F: NF P 93-522 other, e.g. GB: BSI EN 12811-1		A: ÖNORM EN 13814 F: NF EN 13814 I: UNI EN 13814	
World	–	–		–		e.g. from UEFA, FIFA Olympic Committee country-specific requirements	

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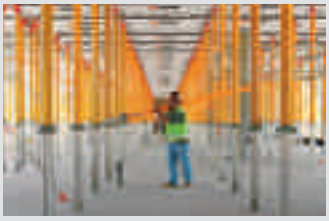

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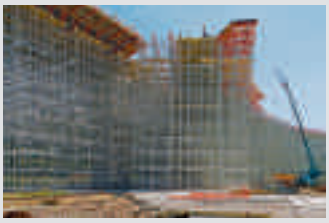

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