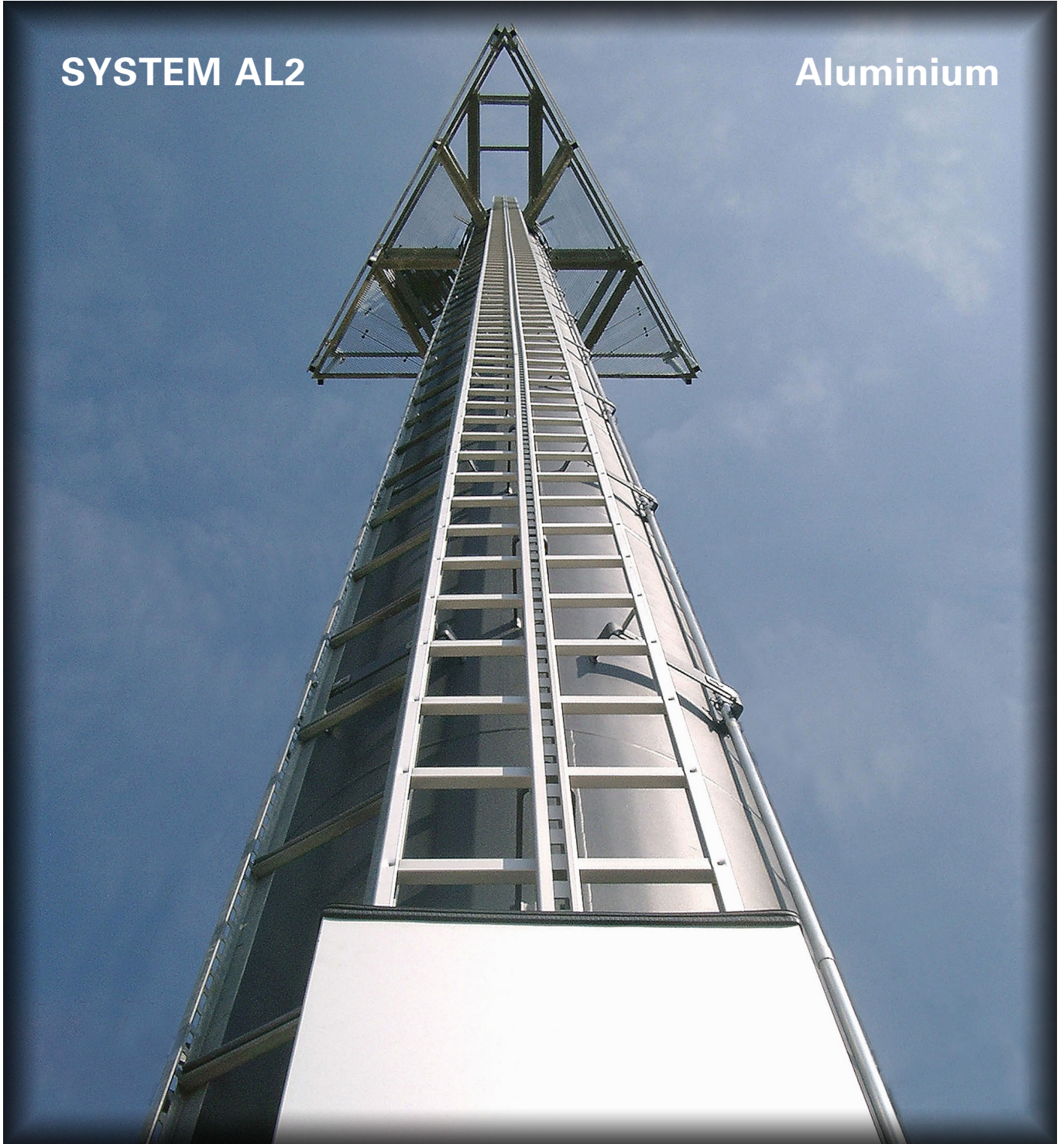


Fall protection

FABA climbing protection

SYSTEM AL2

Aluminium



FABA CLIMBING PROTECTION

APPLICATIONS

FABA Climbing protection systems enable fall-protected use of fixed vertical ladders/manhole steps, such as those found in or on

- towers, stacks, high storage tanks, bridge piers, masts, antenna masts, machines and operating facilities
- high-rise racks and industrial plants, buildings and facades
- pits, mines as well as water and wastewater basins

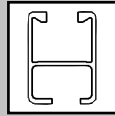
Operating principle

The user to be secured wears a harness with fall-arresting device attached to it. This device travels inside a fixed guide rail. In the event of a fall, the arresting device locks within the rail to prevent an accident.

Advantages

Thanks to its fall prevention device (guided fall arrester), the climbing protection system allows secure ascent and descent to any height or depth. FABA offers the only fall arrest system on the market with an enclosed glide roller system. In this system, the rollers of the fall prevention device (shuttle) travel inside the rail. The result is optimal compensation of local constructive tolerances as well as consistently smooth running of the shuttle at all times. Ultimately, this translates into the elimination of detrimental friction losses. This fact is corroborated by all the professionals using this system on a daily basis. The range of easy to install systems comprises a series of components which can be combined to provide a versatile solution whilst ensuring that all the requirements are fulfilled.

The key component of all the climbing protection systems is the FABA arresting device, also known as a guided fall arrester. All systems conform to DIN 18799 parts 1 and 2, EN 353-1 and 89/686/EEC



SYSTEM AL2

- Available as complete ladder or as fall protection rail only
- In anodised aluminium
- Climbing protection profile dimensions: width 48 mm, height 65 mm
- Material thickness 3 mm
- Catchment spacing for the arresting device 70 mm
- Rung spacing 280 mm
- Max. support bracket distance 2,520 mm
- Fall prevention device also suitable for System A 12
- Also available as mobile, relocatable system



Confined space access



FABA anchor devices:
see inside back cover

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Fastening to the centre of a climbing way	18		
(e.g. step irons)			

Scope of application

This catalogue presents our FABA System AL2 climbing protection ladders and climbing protection rails, which enable fall-protected negotiating of vertical climbing ways. Such ladders and rails are required on structures and buildings such as high-rise buildings and parts of buildings, radio towers and antenna masts, different types of towers, such as cooling towers, etc. bridge piers, high storage tanks, masts, machines and other such operating facilities.

Installation: see installation guide for the system AL2.

FABA climbing protection system AL2

- As complete climbing protection ladder with integrated lifeline as the version **FABA climbing protection ladder AL2 with double rungs and side guide** or **FABA climbing protection ladder AL2 with double rungs and slide pins**.
- As a simple rail for upgrading of existing climbing ways as the version **FABA climbing protection system AL2 (without rungs)**.

Technical data

- H-shaped extrusion with two chambers
- front chamber through which only the fall prevention device travels
- rear chamber for double rungs and fastening material
- Rail slot arranged asymmetrically
- Cut-outs every 70 mm in the central bar for the fall prevention device to catch on
- Double rung made from a rectangular profile with shaped tread surface
- Version with side guide or side slide pins

NOTES:

Climbing protection ladders may only be installed and operated by the employer or operator if a **test certificate** can be provided.

The FABA components are subjected to design checks by a recognised test centre:

DEKRA EXAM GmbH, Dinnendahlstraße 9,
44809 Bochum, Deutschland, Kennziffer 0158
(Test and certification centre for personal protective equipment according to 89/686/EEC).
The same test centre is also responsible for the quality assurance testing of the end product.

Damaged components or components which have been used in a fall may not be used until tested by a technical expert.

It is the obligation of the employer or operator, as the case may be, to instruct the users of climbing protection systems when necessary, although **at least once every year** on the correct use of these systems.

Installation planning aid

- Climbing protection ladders and climbing protection rails with associated accessories may **only be installed and used for the intended purpose:**
Climbing protection ladders are designed for secured climbing only. They are not designed for lifting or transporting loads.
- The foundations or buildings to which they are attached **must have sufficient load bearing capacity.**
- In principle there is no height limit! FABA climbing protection ladders **are attached over the entire height of the building.**

About the bottom entry point

On entry ladders, the climbing protection rail starts at a height of 150 mm above the access level. Alternatively, it is also possible to use a climbing protection ladder with centrally mounted guide rail with release facility. A cover is available to secure the lower part of the climbing way / climbing protection ladder against unauthorized access.

About the upper end of the climbing way

For this part of the system we offer a number of solutions, depending on the local requirements:

- Holding devices; which also enable detachment from the climbing protection system, if required.
- Transfer devices; the user can detach from the climbing protection to access the building.

A catch must always be installed at the top end of the system. Depending on the application, this can be a detachable or permanent catch. Detachment or attaching of the fall arrestor should only be possible from a secure standing location. If the user wishes to leave the climbing protection system, s/he must protect himself against falling in another way.

We can design the climbing protection system according to your specific needs – please contact us to discuss your requirements.

Materials used

Climbing protection systems are subjected to the most diverse climatic conditions and must be able to bear static loads and guarantee fall protection even after many years of service. FABA climbing protection ladders are manufactured to the highest quality standards.

The climbing protection ladder is made from aluminium extruded profiles and is completely anodised.

Associated components (e.g. brackets, connectors, catches, etc.) are made from aluminium, hot-galvanised steel or non-rusting stainless steel. The combinations of different materials do not cause any problems (corrosion).

Material characteristics:

- Material: Al Mg Si 0.5 strength 25
DIN 1725
part 1 (EN AW-6060 EN 755)
- Tensile strength: 245 N/mm²
- Yield point: 195 N/mm²
- Breaking strain A₅: 8 %
- Tempered
- Anti-corrosion Eloxal layer (anodic oxidation), DIN 17 611-E6 – silver colour.
Layer thickness 20 µm.

Instructions for assembly or installation:

As aluminium ladders exhibit a temperature dependent length-expansion relative to a support structure of steel or concrete, then the junctions between ladder ends must have a minimum gap:

Installation at exterior temperature:

- | | |
|--------|--------------------|
| - 10°C | gap approx. 3.5 mm |
| 0°C | gap approx. 3.0 mm |
| + 10°C | gap approx. 2.5 mm |
| + 20°C | gap approx. 1.5 mm |

These values have a tolerance of 0 to + 2 mm.

Applicable regulations

Please observe the generally accepted technical standards when installing climbing protection systems on buildings or structures; we refer in particular to the following:

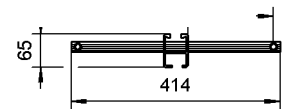
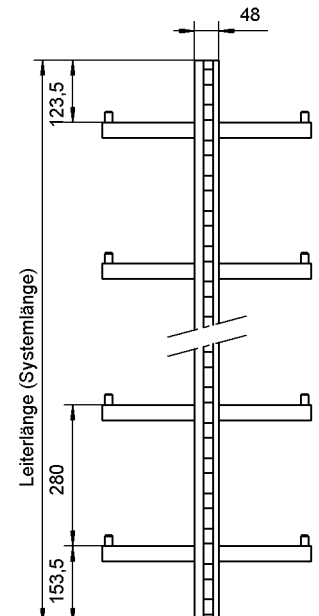
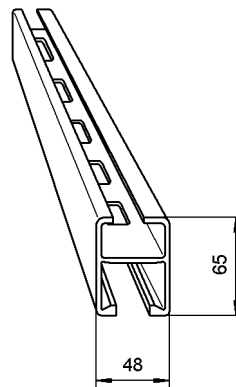
89/686/EEC	Council Directive on personal protective equipment
EN 353-1	Personal protective equipment against falls from a height. Guided type fall arresters including a rigid anchor line
EN 354	Lanyards
EN 355	Energy absorbers
EN 358	Belts for work positioning and restraint and work positioning lanyards
EN 359	Restraint systems
EN 360	Retractable type fall arresters
EN 361	Full body harness
EN 362	Connectors
EN 363	Arrest systems
EN 364	Testing Procedures
EN 365	Instructions for use and marking
EN 795	Anchor devices

Climbing protection ladder without / with side guides

Version conforming to:
EN 353-1

Rail profile:

The climbing protection rail comprises an asymmetric H-profile. The front chamber is solely used for the travel of the fall prevention device. Windows are cut into the web of the rail every 70 mm in order to catch the fall prevention device. In the rear part of the rail there is a chamber with a slit in the back of the rail for receipt of the fasteners for brackets and joint connectors.



Rungs:

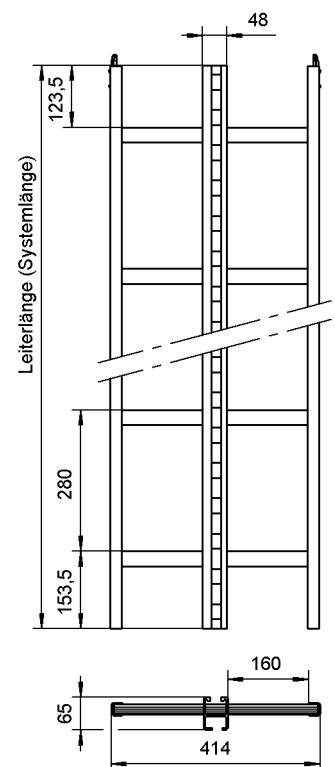
A rectangular profile with a tread surface machined into it. The distance between rungs is 280 mm.

Slide pins / side guides:

The slide pins are 20 mm high. The side guide is made from a C-profile. Guide pins are positioned at the top ends.

Climbing protection ladders with S-sections upon request

Steigschutzleiter mit Seitenführung



Climbing protection ladder without side guides		Climbing protection ladder with side guides		Length (mm)	Material
Order No.:	kg	Order No.:	kg		
687 001 056	1,8	687 020 056	1.9	560	AL - Eloxal coated
687 001 084	2,7	687 030 084	2.9	840	
687 001 112	3,6	687 040 112	3.9	1120	
687 001 140	4,5	687 050 140	4.9	1400	
687 001 168	5,4	687 060 168	5.9	1680	
687 001 196	6,3	687 070 196	6.9	1960	
687 001 224	7,2	687 080 224	7.9	2240	
687 001 252	8,1	687 090 252	8.9	2520	
687 001 280	9,0	687 100 280	9.9	2800	
687 001 308	9,9	687 110 308	10.9	3080	
687 001 336	10,8	687 120 336	11.9	3360	
687 001 364	11,7	687 130 364	12.9	3640	
687 001 392	12,6	687 140 392	13.9	3920	
687 001 420	13,5	687 150 420	14.9	4200	
687 001 448	14,4	687 160 448	15.9	4480	
687 001 476	15,3	687 170 476	16.9	4760	
687 001 504	16,2	687 180 504	17.8	5040	
687 001 532	17,1	687 190 532	18.8	5320	
687 001 560	18,0	687 200 560	20.8	5600	

Climbing protection rail

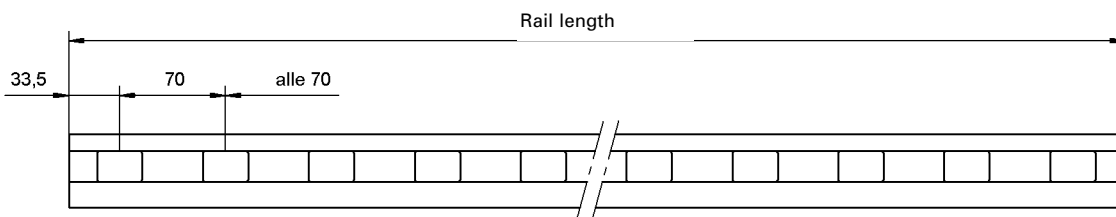
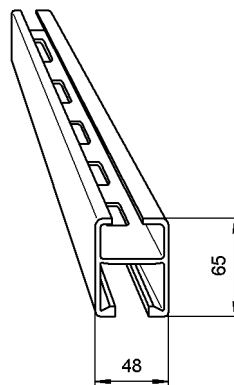
Specification conforming to:

- EN 353 part 1

Rail profile:

The climbing protection rail comprises an asymmetric H-profile. The front chamber is solely used for the travel of the fall prevention device. Windows are cut into the web of the rail every 70 mm in order to catch the fall prevention device.

In the rear part of the rail there is a chamber with a slit in the back of the rail for receipt of the fasteners for brackets and joint connectors.



Order No.:	Designation	Length (mm)	Material	kg
677 010 056	Climbing protection rail	560	Al - Eloxal coated	1,0
677 010 084		840		1,5
677 010 112		1120		2,0
677 010 140		1400		2,5
677 010 168		1680		3,0
677 010 196		1960		3,5
677 010 224		2240		4,0
677 010 252		2520		4,5
677 010 280		2800		5,0
677 010 308		3080		5,5
677 010 336		3360		6,0
677 010 364		3640		6,5
677 010 392		3920		7,0
677 010 420		4200		7,5
677 010 448		4480		8,0
677 010476		4760		8,5
677 010 504		5040		9,0
677 010 532		5320		9,5
677 010 560		5600		10,0

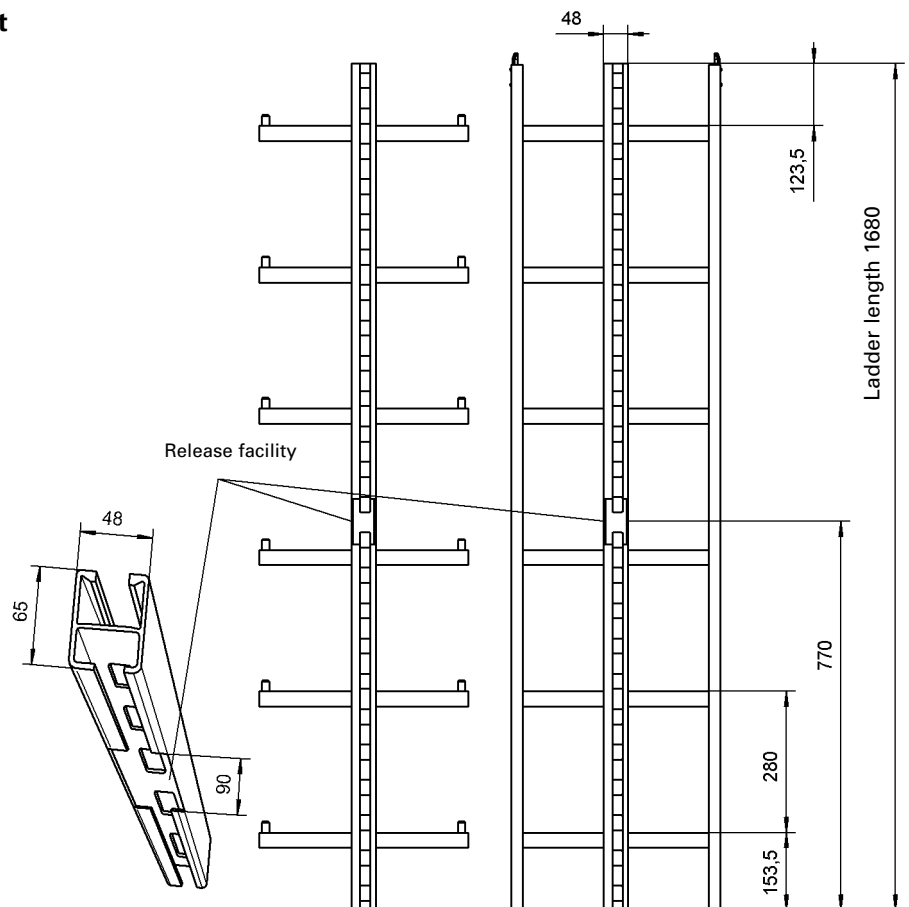
Climbing protection ladder with release facility

Application:

- The climbing protection ladder with release facility enables the comfortable insertion and extraction of the FABA fall prevention device at the lower end of the ladder.
- To prevent unintentional running out of the fall prevention device, a detachable catch should be arranged above the window, please order separately.

Order No.:	Designation	Length	Material	kg
687 005 168	Climbing protection ladder without side guides	1680	AL - Eloxal coated	5,4
687 006 168	Climbing protection ladder with side guides			5,9

The climbing protection ladder with release facility may only be installed as the lowermost ladder segment in a climbing protect



Climbing protection rail or ladder - curved -

Implementation:

For side rail profile and rung see note on page 8.

Curvature

The curvature is created by the manufacturer.

When asking for quotations or making an order, please provide a sketch with local dimensions or specify the required dimensions (dimensions A and B).

- A = offset
- B = straight length
- R1 = radius min. 500 mm
- R2 = radius min. 1000 mm
- C = distance to support structure min. 160 mm

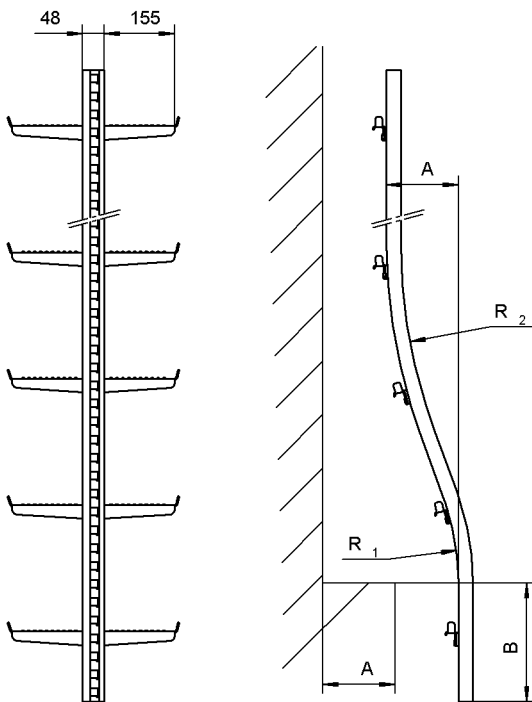


Fig. 1:

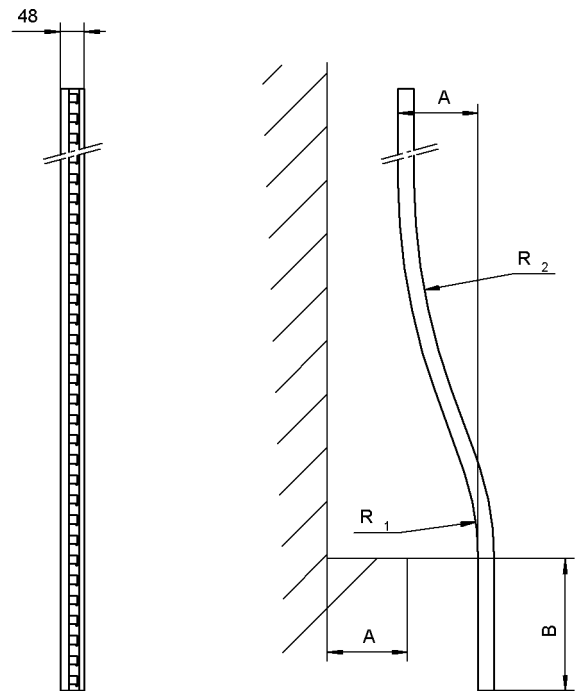


Fig. 2:

Order No.:	Designation	Material	Fig.
as per order	Climbing protection ladder curved	Hot-galv. steel	1
as per order		1.4571	
as per order	Climbing protection rail curved	Hot-galv. steel	2
as per order		1.4571	

Max. permitted distance betw. support brackets

Fastening method	Implementation		
	Climbing protection ladder with side guides	Climbing protection ladder without side guides	Climbing protection rail
max. system distance	2520	1680	2520
Weld-on bracket or clamping device	2520	1680	2520
Connection to steel structures with M12	2520	1680	2520
in manhole rings with anchor bolt FZA 14x60, M10/20 ¹⁾	not applicable	not applicable	not applicable
in concrete at least B25 with anchor bolt FZA 14x60, M10/20 ¹⁾	2520	1680	2520
on brickwork ²⁾	1120	1120	1120
on existing twin-rail ladder	not applicable	not applicable	2520
on existing step irons	not applicable	not applicable	2520

Notes:

- ¹⁾ Fastening can also be carried out using other similar anchor fittings authorized by the building authorities.
- ²⁾ Since there are no approved anchor fittings for use on brickwork, it will be necessary for an anchor fitting manufacturer to check and determine the type and size of anchor fittings to be used by means of tensile tests carried out on-site prior to installation. Documentation and certification of the anchor fittings used must be available.
- ³⁾ Pursuant to BGI 691/4.2.1 (formerly ZH 1/604), the climbing protection rail must be fastened at every third step iron, ensuring that the step irons used for fastening purposes have adequate load bearing capacity.
- ⁴⁾ According to BGI 691/4.3.5 (formerly ZH 1/604), the climbing protection rail must be fastened to the rung or side rail at intervals of no more than 4 rungs.

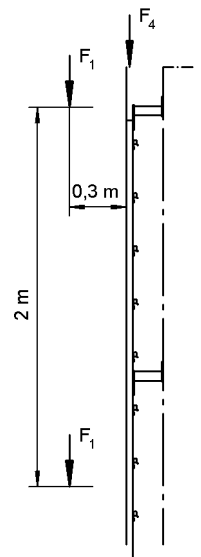
Number of support brackets

- Calculation = total ladder or rail length divided by separation distance between support brackets, round up, + 1 support bracket
- Example (ladder length = 15000 mm, distance between support brackets = 1,680 mm) = $15000 / 1680 = 8.9$ round up + 1 = 10 support brackets, or = $10 + x$, if special components require the use of additional support brackets.
- When using special components, such as entry and exit sections or gates, etc., additional support brackets must be incorporated and their minimum distances observed in accordance with the applicable system installation manual. The support brackets required therefore must be included in the exemplary calculation shown above.

Anchoring forces

In order to calculate the anchoring forces in accordance with DIN 18799 the following tests must be carried out, always using the most unfavourable case for dimensioning purposes:

- Extreme effects (fall load):
In this case, a load of $F_4 = 6$ kN is assumed to act along the rail axis. This load **may** be distributed over 4 fastening elements, if available.
- Varying effects (operating load):
In this case, the overall load on the ladder resulting from operating loads $F_2 = 1.5$ kN, attached eccentrically in front of the side rail at a distance of 30 cm and in 2.0 m intervals from one another in the direction of the ladder, as well as from a horizontally acting load of $F_5 = 0.3$ kN (at the most unfavourable location), must be calculated.



PLEASE OBSERVE

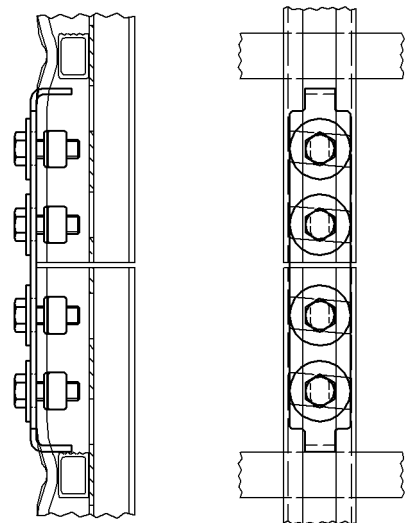
- FABA AL2 Climbing protection systems with an overall height of less than 3,360 mm must be connected to the support structure using at least 3 fasteners.
- For climbing protection systems with a total height of more than 3,360 mm, at least 4 brackets are to be used.
- The support structure to which the FABA AL2 climbing protection system is secured, must be capable of absorbing a falling load of at least 6 kN.
- Each FABA AL2 ladder or rail element is to be fastened to the support structure with at least one bracket. Climbing protection systems installed before 07/2005 do not require upgrading.

Joint connectors

Application:

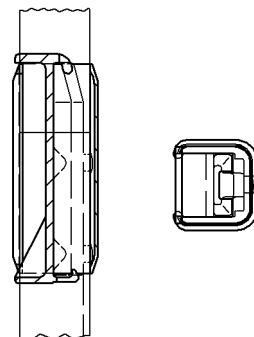
- Joint connector for climbing protection ladders and rails.
- Stainless steel fishplate 1.4571 and shaped nuts M12 hexagon screws A4-70.
- Does not cause any obstruction in the running space for the fall prevention device.
- Flush rail ends achieved by centring using fishplates.
- When installing, observe the gap distances between the rail ends.

Order No.:	Designation	kg
673 002 013	Joint connector	0,25



End cover for side guide

Order No.:	Designation	kg
673 008 010	End cover for side guide	0,25



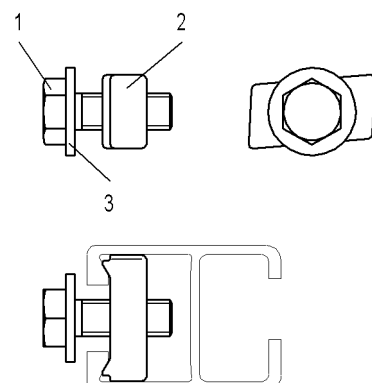
Fittings

Application:

For mounting the FABA A12 climbing protection ladder or rail on customer-provided brackets.

Order No.:	Pos.	Designation Fittings kit:	kg
673 008 010	1	Skt.-screw M12x35 ISO 4017 – A4	0,2
	2	Shaped nut M12 A4	
	3	Spring washer 12 DIN 6796 – A4	

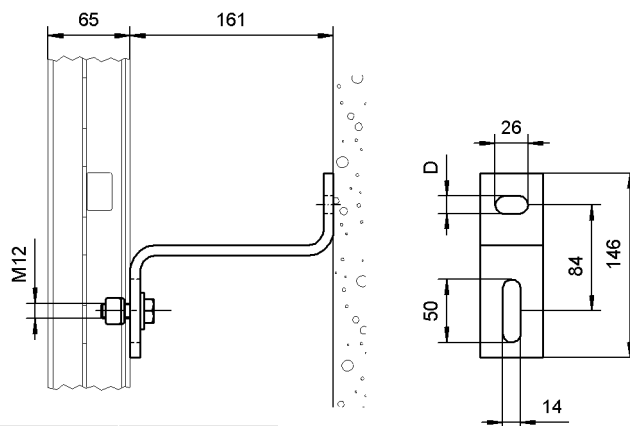
Note: Fittings are only available as a complete kit.



Fastening to a building (*Z-bracket*)

Application:

- Fastening of the FABA climbing protection ladder.
- See table for bracket distance
- Anchor base, reinforced concrete min. B 25 (observe edge distances and wall thickness).
- Use approved anchor fittings only.



Order No.:	Designation	Material	D (mm)	kg
673 002 002 •	Z-bracket	Hot-galv. steel / A4	10,5	1,0
673 002 003			14	
673 002 004 •		1.4571 / A4	10,5	
673 002 005			14	

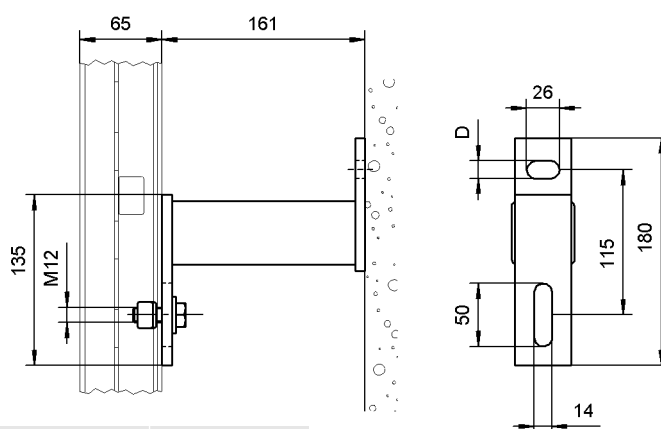
- Designated anchor fitting, see page 27

Fastening to a building (*square tube*)

Recommended for attachment to brickwork, due to reduced shearing forces.

Application:

- Fastening of the FABA climbing protection ladder.
- See table for bracket distance
- Anchor base reinforced concrete min. B 25 (observe edge distances and wall thickness).
- Use approved anchor fittings only.



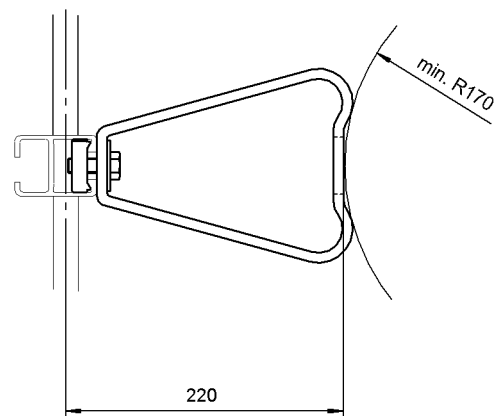
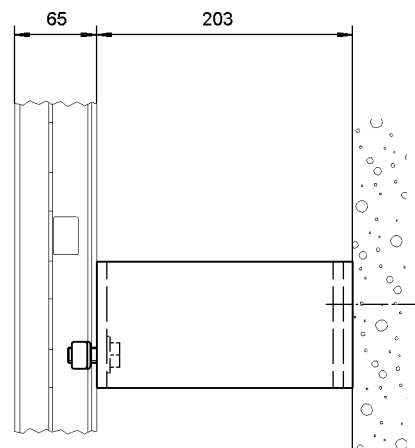
Order No.:	Designation	Material	D (mm)	kg
673 001 008 •	Bracket with square tube	Hot-galv. steel / A4	10,5	1,5
673 001 006			14	
673 001 009 •		1.4571 / A4	10,5	
673 001 007			14	

- Designated anchor fitting, see page 27

Bracket for flat support structure and round masts

Bracket spacing as per table
Anchor base reinforced concrete at least B25
(observe edge distances and wall thickness)

Use approved anchor fittings only.



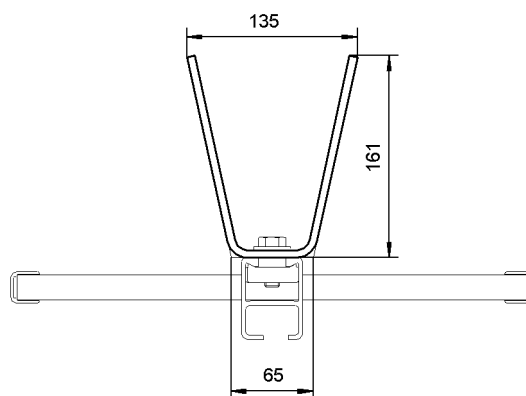
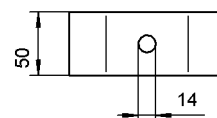
Order No.:	Material	kg
673008030	Al Mg Si 05 F25 natural colour anodised, 20 µm / A4	1,1

Bracket on steel construction

for welding

Application:

- Fastening of the FABA climbing protection ladder.
- See table for bracket distance
- For welding - by a certified welder - on a steel base.
- After welding, protect bracket against corrosion.
- Installation screws must be ordered separately, see page 14.



Order No.:	Material	kg
673 002 006	Steel (untreated)	0,9
673 002 008	Steel (primed with welding primer)	
673 002 007	INOX 1.471 (untreated)	

Fastening to a mast with a clamp

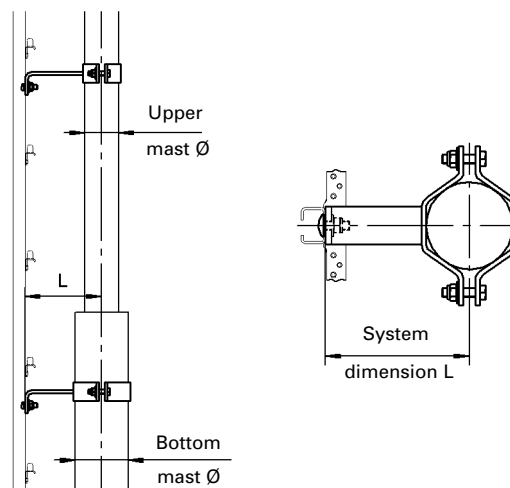
Application:

- Fastening of the FABA climbing protection ladder.
- See table for bracket distance
- Clamps and support spacers in hot-galv. steel, all fittings in A4

The coding of the bracket consists of:

- the mast diameter at the position where the individual bracket is to be mounted,
- the system dimension L (mast centre to back side of rail).

Example: diameter 80 mm,
system dimension 213 mm
designation: support bracket Ø80 / 213



System

Allocation table for mounting clamps:

for Ø in mm	Amend the order number 673,004 ___ with the respectively associated end numbers in the individually specified system dimension L= (see below) mm										
	178	184	190	203	213	217	230	243	255	269	308
80.0				011	012						
88.9	013	014	015	016	017	018	019	020			
101.6		021	022	023	024	025	026	027			
114.3			028	029	030	031	032	033	034		
139.7				035	036	037	038	039	040		
159.0					041	042	043	044	045		
168.3						046	047	048	049		
193.7							050	051	052		
219.1								053	054	055	
244.5											
273.0											
350.0											

Other versions are available upon request

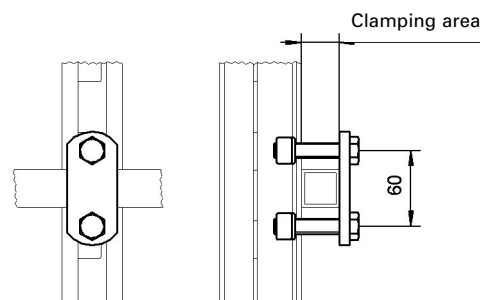
INSTALLATION NOTE:

The system dimension L used in an installation is always defined by the **lowermost** mast diameter. This dimension is crucial for the selection of the other support brackets to be used in the same system dimension L.

Fastening to the centre of a climbing way

Application:

- Fastening of the FABA climbing protection rail.
- See table for bracket distance.
- The bracket is suitable for **round and square profiles**.

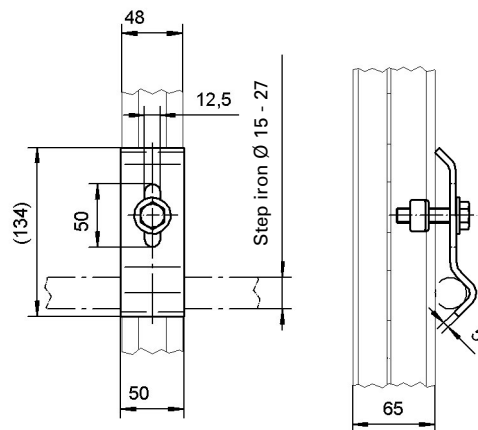


Order No.:	Clamping area	Material	kg
690 100 115	15 - 20 mm	INOX 1.4301	0,5
690 100 120	20 - 25 mm		
690 100 125	25 - 30 mm		

Fastening to the centre of a climbing facility (e.g. step irons)

Application:

- Fastening of the FABA climbing protection rail.
- See table for bracket distance.
- The bracket is only suitable for **round profiles**.
- Clamping area for round profiles from $\varnothing 15$ to $\varnothing 27$ mm.

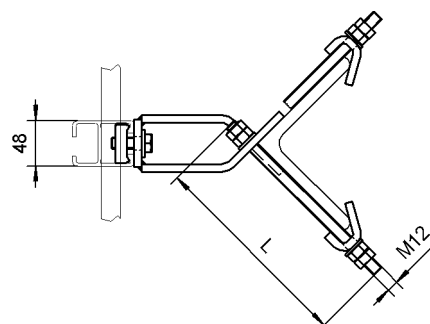
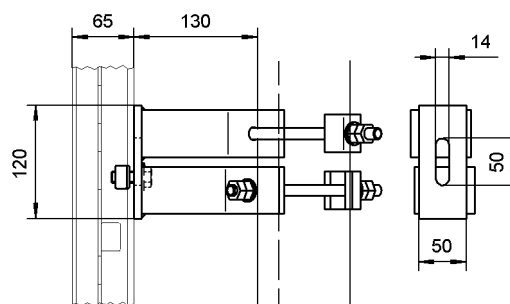


Order No.:	Material	kg
673 004 009	Hot galvanized steel	0,3
673 004 010	INOX 1.4571	

Fastening to a corner post

Application:

- Fastening of the FABA climbing protection ladder to an angle section (e.g. to the corner profile of a lattice mast).
- See table for bracket distance
- Fastening kit to be ordered to suit the angle profile of the building.
- For angle profiles up to 250 x 250 mm.



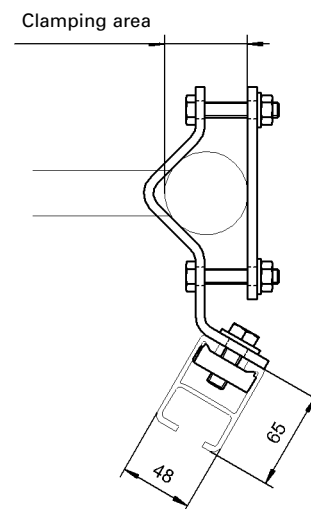
Order No.:	Dimensions of angle profile (mm)	Dimension L (mm)	kg
673 004 056	□ 130 x 130	220	1,6
673 004 057	> 130 x 130 / □ 200 x 200	300	1,8
673 004 058	> 200 x 200 / □ 250 x 250	350	1,9

Support bracket mounted laterally on round side rails

Application:

- Lateral mounting on the side rail of the FABA climbing protection rail.
- The bracket is only suitable for round profiles. Clamping area for round profiles \varnothing 25 mm to \varnothing 80 mm.
- See table for bracket distance.

Order No.:	Clamping area \varnothing (mm)	Material	kg
673 004 003	25 to 33	Hot-galv. steel / A4	0.9
673 004 005	34 to 55		1.1
673 004 007	56 to 80		1.2
673 004 004	25 to 33	1.4571 / A4	0.9
673 004 006	34 to 55		1.1
673 004 008	56 to 80		1.2

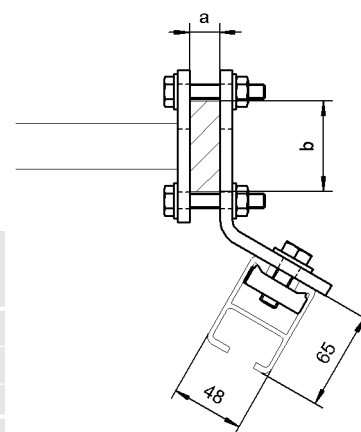


Lateral fastening on square side rails

Application:

- Lateral mounting on the side rail of the FABA climbing protection rail.
- See table for bracket distance.
- The support bracket is suitable for rectangular side rails. Clamping area a x b see table.

Order No.:	Clamping range (mm)		Material	kg
	a	b		
673 005 001	6 to 20	40 to 60	Hot-galv. steel / A4	1.1
673 005 002	21 to 30			1.1
673 005 003	31 to 50			1.1
673 005 004	6 to 20	61 to 80		1.3
673 005 005	21 to 30			1.3
673 005 006	31 to 50			1.3
673 005 007	6 to 20	40 to 60	1.4571 / A4	1.1
673 005 008	21 to 30			1.1
673 005 009	31 to 50			1.1
673 005 010	6 to 20	61 to 80		1.3
673 005 011	21 to 30			1.3
673 005 012	31 to 50			1.3



Catches

for climbing protection ladders or rails

General use:

- Catches must be installed on all the entry and exit points of the rails in order to prevent unwanted running out of the fall prevention device.
- Detachable catches must be installed in those locations where the fall prevention device is to be extracted.
- Fixed catches must be installed in those locations where the fall prevention device is not to be removed.

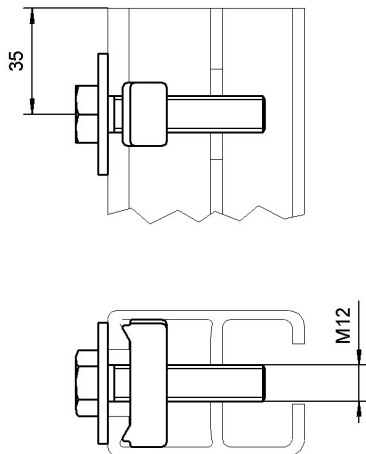


Fig. 1:

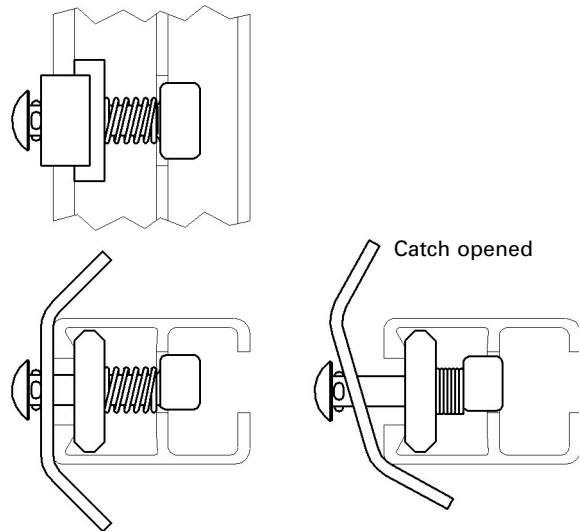


Fig. 2:

Fixed catch (fig. 1)

Suitable for all types manhole steps

- The fixed catch is mounted on the end of the ladder. It blocks the ladder and can not be unlocked.

Order No.:	Material	kg
673 007 030	A4	0.1

Detachable catch (fig. 2)

Suitable for all types manhole steps

- The detachable catch can be arranged on the bottom or top end of the manhole steps.
- The catch must be manually unlocked and then automatically closes (spring).

Order No.:	Material	kg
673 007 010	1.4571 / A4	0.2

Resting platform

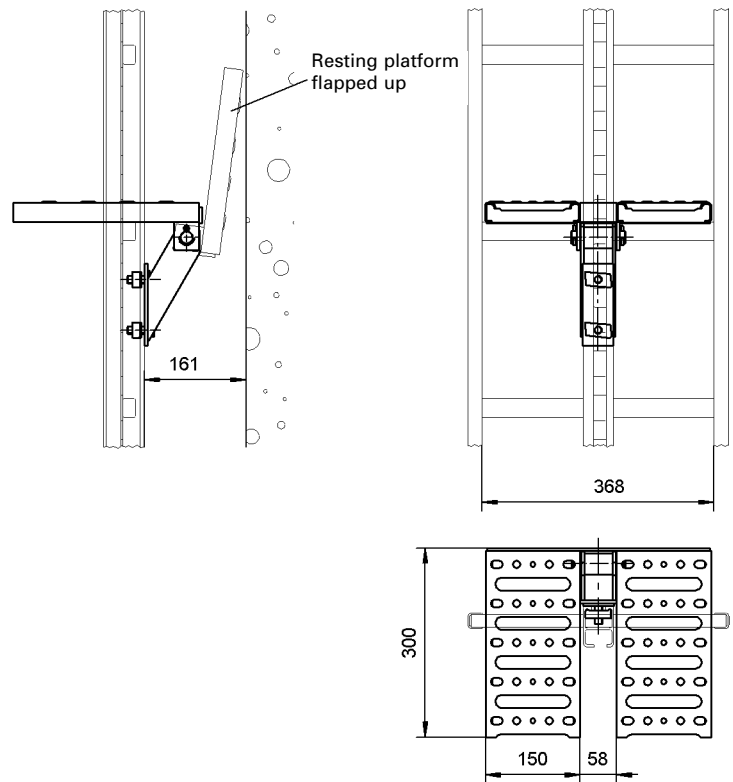
Application:

- For FABA climbing protection ladder with double rung.
- For twin-rail ladder (rail separation at least 380 mm internal width), in which the FABA climbing protection rail has been centrally mounted on the rungs.
- Distance b/w rungs min. 280 mm.
- The resting platform is screwed on the climbing protection rail no fastening to the support structure is required.
- The resting platforms are disposed every 10 m (or every 25 m, dependent on building and standard or legal regulations).

Implementation:

- 2 tread surfaces: each tread surface 150 x 300 mm; in the use position they rest on the rung; in the folded up position they do not impede the climbing way.

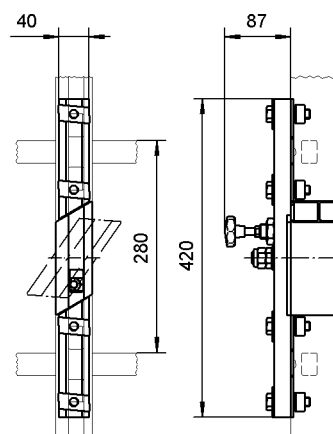
Order No.:	Designation	Tread surface	Material	kg
652 210 050	Type I resting platform	profiled/punched	Hot-galv.st/A4	3,8
652 220 050	platform	chequer plate	1.4571 / A4	5,0



Entry and exit sections

Application:

- The entry and exit section allow the convenient insertion and extraction of the FABA fall prevention device and must be installed at every position of the climbing facility that is intended to ensure safe release from the climbing protection system (e.g. work platforms).
- **The entry and exit section comprises the rotating part with the connections for insertion in the rail section.**
- It should be installed approx. 900 to 1,100 mm above the base.
- The rail central piece can be turned through 30° to the right so that the fall prevention device can be removed.
- Vertical climbing is blocked while the rail piece is turned.



Order No.:	Material	kg
673 007 005	Alu / 1.4571 / A4	1,6

Step-overs

Application:

- Step-over onto a platform on the top end of a fixed ladder, e.g. step-over onto a roof.
- The step-over is fastened to the support structure with two support brackets (see sketch).
- Either a catch (version 1), a pivoting device (version 2) or a curved part (version 3) must be attached at the rail end.

Climbing protection ladder

- The step-over comprises a climbing protection ladder with 7 bottom rungs (system length 2,800 mm), from which the rail projects upwards.

Climbing protection rail

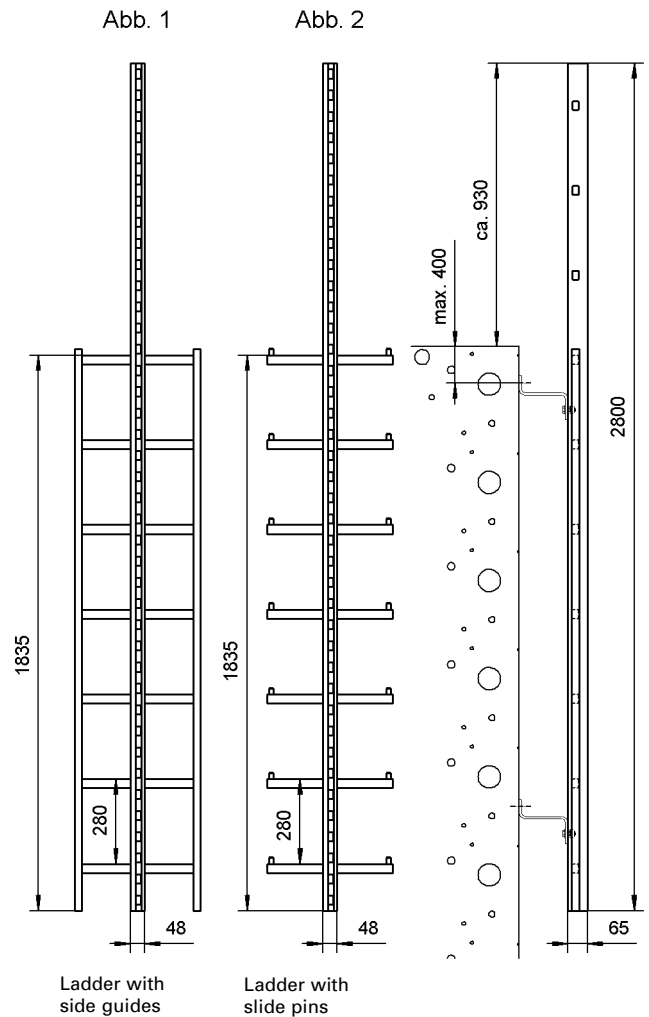
- The corresponding accessory is fitted on the top end of the top rail piece, dependent on whether version 1 to 3 is used (see sketches on the next page).
- When planning the manhole steps, bear in mind the projection of the top rail.

Step-over on AL2 climbing protection rail

- A step-over can also be realized on an AL2 rail without rungs; the same regulations as for the step-over of an AL2 ladder are to be observed.

User advice

- Before removing the fall prevention device from the rail, check that the roof surface is safe to stand on and, if necessary, use an additional securing device (e.g. work positioning lanyard, shock absorber)!



Step-over and accessories

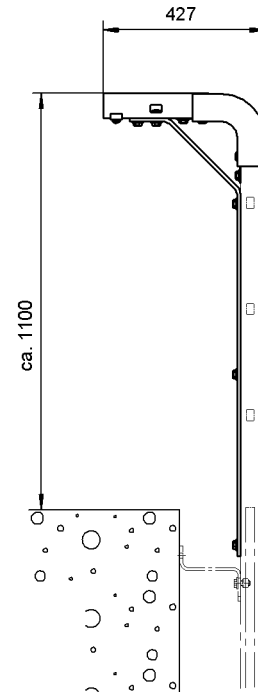
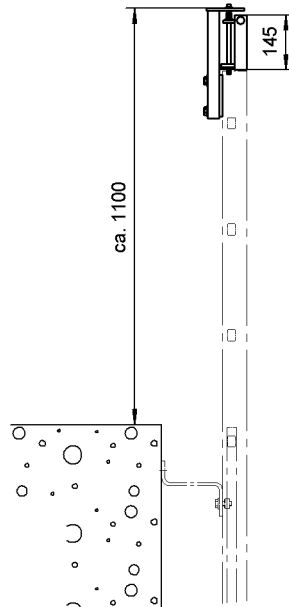
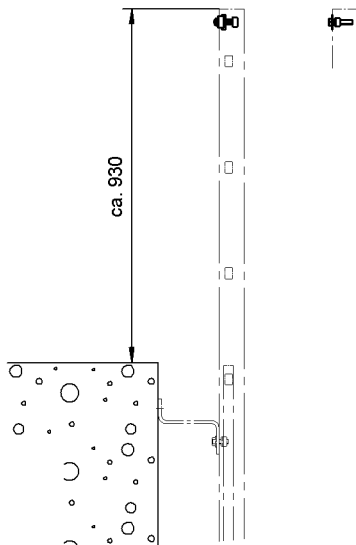
Order No.:	Implementation	Note	Material	kg
687 074 280	Ladder with side guides	Length 2,800 mm, with 7 bottom rungs	Al - Eloxal coated	8,5
684 003 280	Ladder without side guides			8,2
673 007 030	Catch, fixed	for version 1	1.4571	0,1
683 007 010	Catch, detachable			0,2
673 003 001	Pivoting device, right	for version 2	Hot-galv.	1,1
673 003 002	Pivoting device, left			1,1
673 003 007	90° curved part, complete	for version 3	Al - Eloxal coated / 1.4302	2,0

Version 1

Version 2

Version 3

Version 1 (catches): see page 20

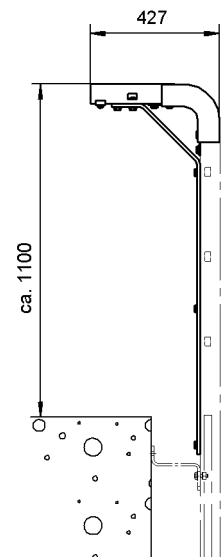
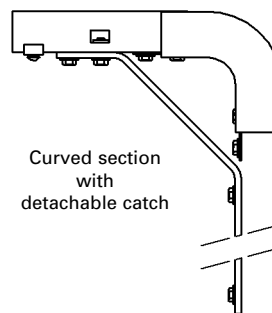
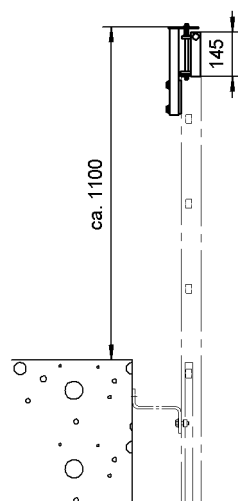
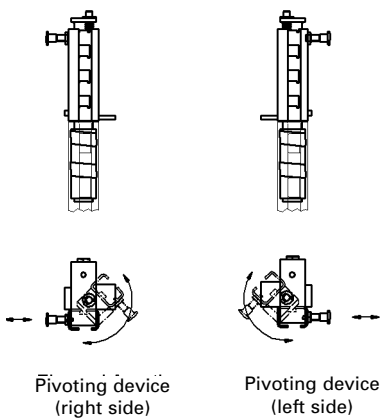


Version 2 (pivoting device):

The pivoting device permits insertion or removal of a fall prevention device from the rail and can be swung through 120°. Supplied complete with fittings.

Version 3 (curved section):

Supplied with the curved section is a detachable catch and a reinforcement with which the curved section can be installed on the rail.



Horizontal transfer with gate

Horizontal transfer with gate (e.g. 360° - surround of a round mast) is designed on a project by project basis.

Application:

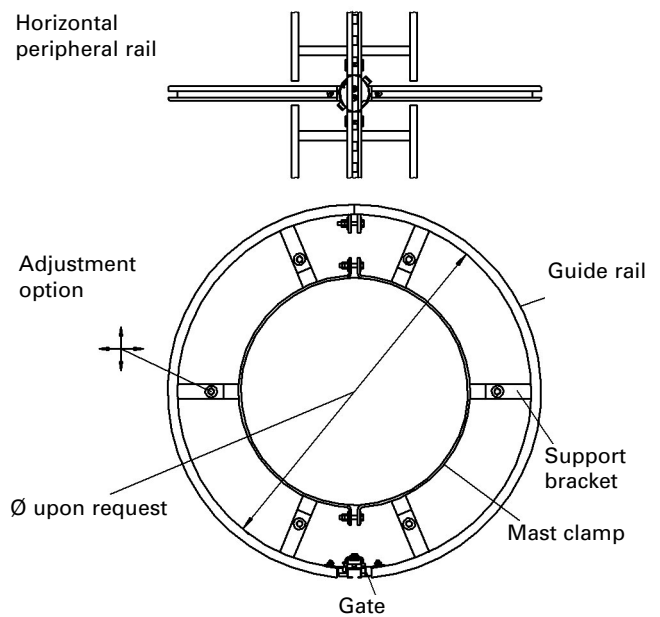
- The gate can be turned through 90° and enables, changing over between a vertical climbing protection system and a horizontally mounted running rail, without detaching from the climbing protection system.

Installation note:

- To maintain the distance between rungs of 280 mm, the FABA climbing protection ladders must be adapted in the area near the gate. When fitting the horizontal rail, note the asymmetry of the rail, the wide arm should be arranged upwards.

ATTENTION:

The peripheral rail and the horizontal transfer section are only approved in "hot-galvanized steel" with the A12 guide rail profile.



Horizontal transfer with gate

Order No.:	Designation	Material	kg
673 000 001	Transfer gate	Hot galv. steel / INOX 1.4301	2,0

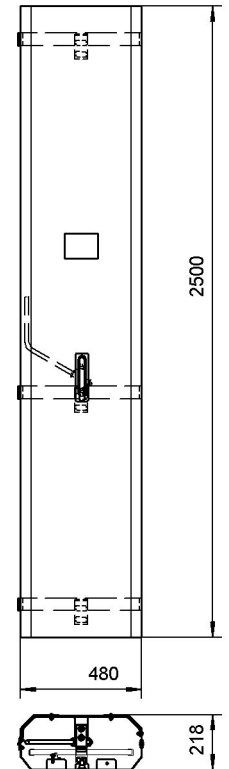
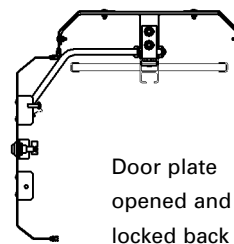
Door cover

for securing the system against unauthorized access

Application:

- Side door cover pivoting through 90° for the climbing protection ladder.
- Rear cladding to prevent climbing, if the rungs can be accessed from the rear.
- Three brackets fitted on the climbing protection ladder, to which the rear cladding, with hinges for the front cover, is fitted.
- Front cover fitted with three hinges, left or right stop possible
- Locking or unlocking using swivel lever closure, which is secured using a semi-cylindrical profile and can only be operated with a key.

Order No.:	Material	kg
673 008 003	Aluminium anodised, bracket in hot-galv. steel / A4	22



Warning sign

Application:

- The warning sign should be attached at the entry point of the climbing protection or the climbing protection ladder / of the manhole steps.
- A suitable location for the sign is within viewing height of the lower access level beside the climbing facility.
- The sign is attached in accordance with the local conditions.
- The warning sign is supplied free of charge.

Order No.:	Size (mm)	Material
518015	210 width x 148 height	Anodised aluminium

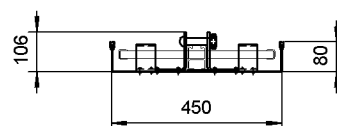
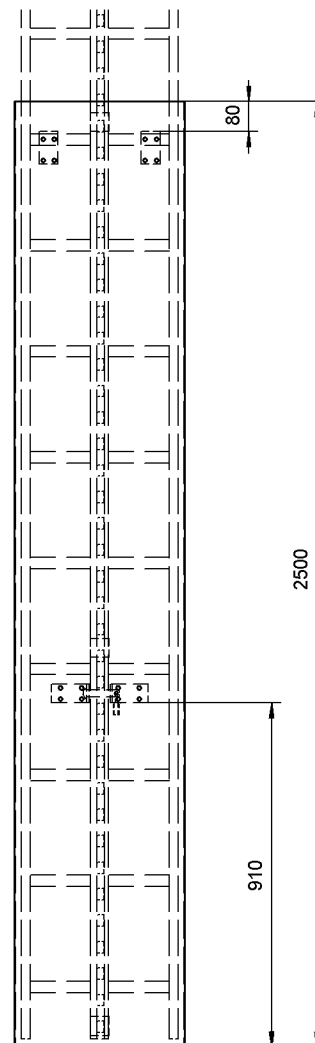
Cover plate

for securing the system against unauthorized access

Application:

- Lockable cover plate for climbing protection ladder.
- The cover plate is hung from two rungs.
No fastening to the support structure required.
- Secured via padlock (included in the delivery).

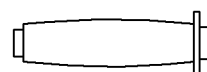
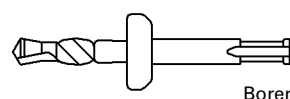
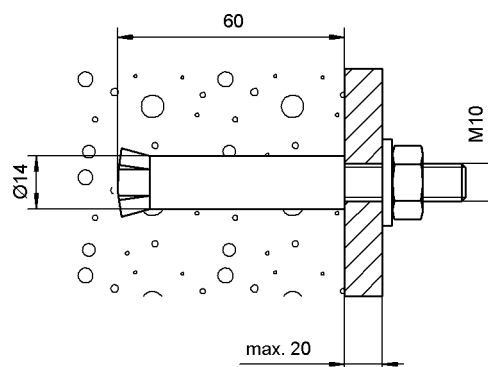
Order No.:	Designation	Material	kg
673 003 006	Cover plate	Aluminium natural colour - anodised	6,5



Anchor bolt

Anchor bolt FZA 14 x 60, M 10/20

- Approved by the building authority;
- For strength class \square B25 concrete;
- Load class 3.5 kN.
- For confirmed pressure zones, the permitted load force is 7.35 kN.
- Thanks to the reduced bore depth (only 65 mm) required, the bolt can also be used in components of limited thickness (e.g. concrete shaft rings).
- No drilling through;
- No leaking anchorage points!
- The cylindrical/conical safety borehole is created easily and quickly using a simple special drill bit.
- This drill bit fits all SDS plus punch tool.
- After insertion of the anchor bolt, the expansion sleeve is expanded with the hammer device.
- For max. fastening distances, see table page 12.



Order No.:	Designation	Remark	Material	kg
501 814 040	Anchor bolt FZA 14 x 60		Mat. no 1.4571	0,4
501 814 050	Drill bit FZUB 14 x 60	For SDS plus hammer drills		
501 814 051	Punch tool FZE 14			

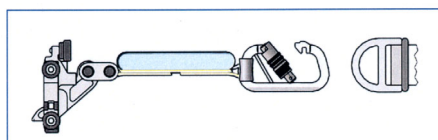
Guided fall arresters

FABA fall prevention device AL-D

for use without back attachment system

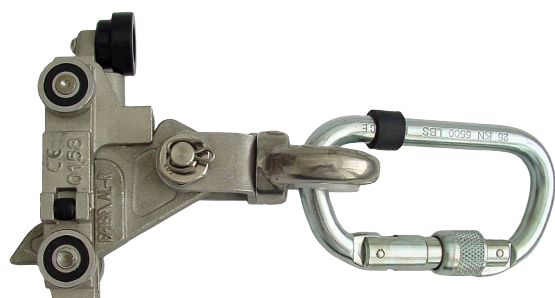


This system is used for limited free space behind the climber (also for laterally mounted rails).

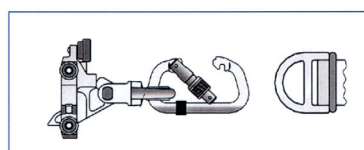


FABA fall prevention device AL-R

for use with back attachment



This system is used for climbing with a back attachment.
Please observe:
Sufficient free space must be available behind the climber.



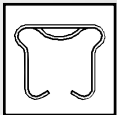
Order No.:	Designation	Application	Material	kg
690 208 034	FABA fall prevention device Type AL-D (with shock absorber) with steel safety hook	without back attachment	Stainless steel Zinc-plated hook	1
690 208 040	FABA fall prevention device Type AL-R with steel safety hook	with back attachment	Stainless steel Zinc-plated hook	0,9

FABA ANCHOR DEVICES

APPLICATIONS

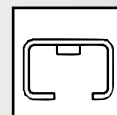
Fall-protected negotiation of elevated workplaces and access ways, e.g.

- *work and access ways on dam walls, bridges, silos and cranes*
- *on towers, sloped and flat roofs, on agitating plants, furnaces and sewage treatment plants, in shafts and pits*
- *on installations intended to facilitate work on vehicle roofs or tank wagons*
- *on walls and facades, e.g. for cleaning tasks*



SYSTEM A 11

- *Launch of the first ever fall prevention system on the German market in 1965*
- *Available as complete ladder or as fall protection rail only*
- *In hot-galvanized steel or stainless steel*
- *Climbing protection profile dimensions: width 68 mm, height 56 mm*
- *Material thickness 2.5 mm*
- *Catchment spacing for the arresting device 140 mm*
- *Rung spacing 280 mm*
- *Max. support bracket distance 1,960 mm*
- *Fall prevention device also suitable for horizontal anchor device*
- *The system can also be used for confined space access*

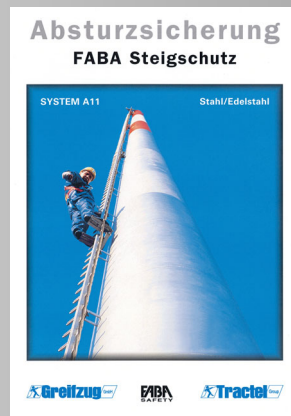


SYSTEM A 12

- *Available as complete ladder or as fall protection rail only*
- *In hot-galvanized steel or stainless steel*
- *Climbing protection profile dimensions: width 48 mm, height 32 mm*
- *Material thickness 3 mm*
- *Catchment spacing for the arresting device 40 mm*
- *Rung spacing 280 mm*
- *Max. support bracket distance 1,680 mm*
- *Fall prevention device also suitable for system AL 2*
- *The system can also be used for confined space access*

OPERATING PRINCIPLE AND ADVANTAGES

The user wears a harness to which a connector is attached (e.g. safety line with shock absorber). This is secured to a travelling shuttle that moves with the user in a fixed rail. Thanks to its smooth running properties, the protection system ensures maximum freedom of movement. The range of systems covers components for all requirements.





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