



Fallguard® A12, AL2 & INVISIRUNG™

Vertical Fall Arrest Ladder Systems



Metreel

Introduction

Manufactured and tested in accordance with BS EN353-1, Metreel's **Fallguard®** and **Invisirung™** Ladder System has been developed to provide the ultimate vertical fall arrest system.

Unlike other track based systems, **Fallguard®** and **Invisirung™** has a unique asymmetrical profile, which coupled with its retaining carriage ensures correct orientation during insertion every time,



without the need of additional bolt on guides.

Utilising the many features of the **Fallguard®** and **Invisirung™** system, users can negotiate both vertical and horizontal travel, without disconnecting from the safety system, to access all areas and perform their work in complete safety.

The **Fallguard®** and **Invisirung™** system incorporates notches within the track profile, which enables the retaining carriage to 'lock off' should a fall occur or even when resting. These notches can also be used for fixing various accessories and mounting brackets without compromising the safety of the user.

The notches are evenly spaced along each profile length and are closely positioned so that should a fall occur it is quickly arrested therefore reducing the shock loading to the body.



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Vertical Fall Arrest & Safety Access

TECHNICAL

Fallguard® A12 Safety Ladder & Safety Rail Systems

- Supplied as a double rung ladder with integral safety rail or as a safety rail only to be installed on existing ladders or climbing stirrups.

Technical Data:

- Material: Hot dipped galvanised steel (single dipped to DIN 50976)
- Asymmetrical C Shaped profile 3 mm thick
- Rail slot asymmetrical
- Punched notches situated in the rear of the profile every 40 mm for the catching mechanism (Retaining Carriage)
- Sheet metal rungs welded-on the back of the rail
- Double rung with anti-slip surface complete with additional 20 mm high foot stop rims at each end.
- Safety ladder specification as to VBG 74 and DIN 18799 Part 2 and EN 353 Part 1

Information:

- The **Fallguard®** - Fall arrest system A12 is made in accordance with the EC specification guide 89/686/EWG and the Norm EN 353-1.
- The EC type test was carried out by DMT-Research and Testing Institute, Bochum Germany, registration Code-Number 0158, with the certificate ZB 002/95.



A12 Double Rung Ladder installed on telecom structure



A12 Safety Rail installed to existing ladder.



A12 Double Rung Ladder used for maintenance on a floodlight tower

Invisirung™ Safety Ladder System

- Supplied as a single folding rung ladder with integral safety rail and rung open and close locking mechanism.

Technical Data:

- Material:

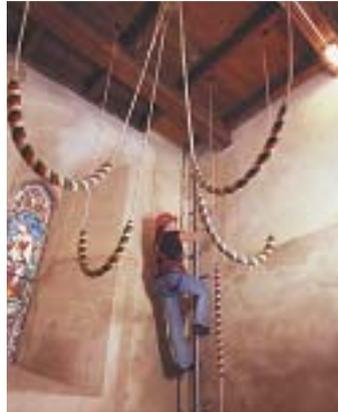
Safety Rail:

Hot dipped galvanised steel (single dipped to DIN 50976)

Rungs:

Stainless Steel (Grade 304)

- Asymmetrical C Shaped profile 3 mm thick
- Rail slot asymmetrical
- Punched notches situated in the rear of the profile every 40 mm for the catching mechanism (Retaining Carriage)
- Single rung with anti-slip surface complete with additional 20 mm high foot stop rims at end.



Invisirung™ used for bell tower access



Invisirung™ fitted to a Dynamic Concepts timber monopole

Information:

- The **Fallguard®** - Fall arrest system A12 is made in accordance with the EC specification guide 89/686/EWG and the Norm EN 353-1.
- The EC type test was carried out by DMT-Research and Testing Institute, Bochum Germany, registration Code-Number 0158, with the certificate ZB 002/95.

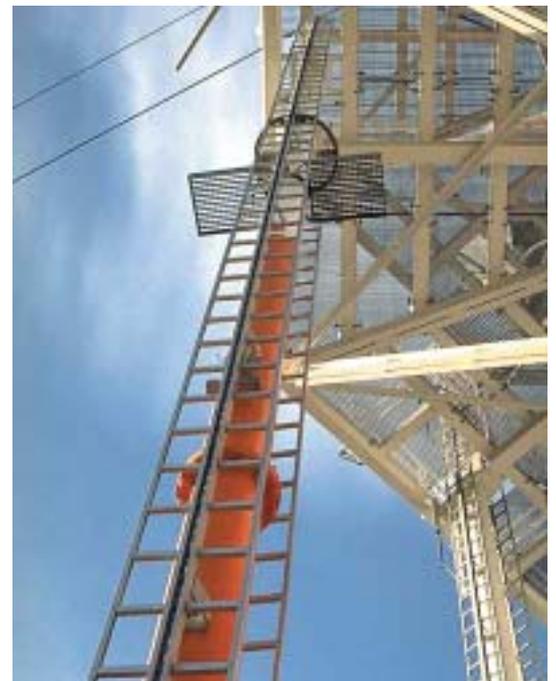
Fallguard® AL2 Safety Ladder and Safety Rail Systems

Specifications:

- The area designated for the retaining carriages should only be used for the purpose intended. Bars, rungs, screw heads and other items prevent the safety equipment from functioning correctly.
- Safety ladders are extremely stable and reliable in use and are extremely resistant to twisting and distortion.
- The rungs are located in a C-shaped chamber behind the running area of the retaining carriage.
- Asymmetrical design of the rail prevents incorrect insertion of the retaining carriage.
- The design of the rotating switch also prevents incorrect fitting and use of the retaining carriage.
- The retaining carriage, which is supplied with horizontal and vertical rollers, guarantees excellent running characteristics during ascent and descent.
- The rungs are manufactured from rectangular tubes 150mm in length and have a 20mm anti slip tread.
- Distance between the rungs is 280 mm.

Notes on the material characteristics:

- Material : Al Mg Si 0,5 strength to 25 DIN 1725 Part 1 (EN AW-6060 EN 755)
- Tensile Strength : 245 N/mm²
- Proof Stress : 195 N/mm²
- Ductile Yield A5 : 8 %
- Heat-Hardened
- Anodised corrosion protection (anodic oxidation) to DIN 17 611-E6 – Silver. Layer thickness 20 microns.



AL2 Double Rung Ladder with side stringers used to access various platforms on utility tower

Vertical Fall Arrest & Safety Access

TECHNICAL

A12 Safety Ladder with double rungs and A12 Safety Rail



Safety Ladder & Safety Rail to EN 353 Part 1

Safety Rails

The rail profile is 3mm thick material punched with square holes and notches at 40mm intervals. The notches are for arresting the retaining carriage and the square holes for fixing purposes.

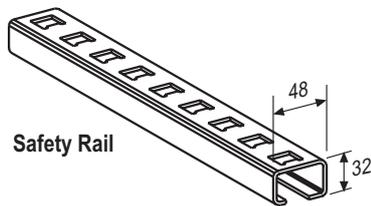
Rungs

Welded onto the rear of the safety rail each rung has 20mm side step width with an anti-slip surface.

Rungs are spaced every 280mm.

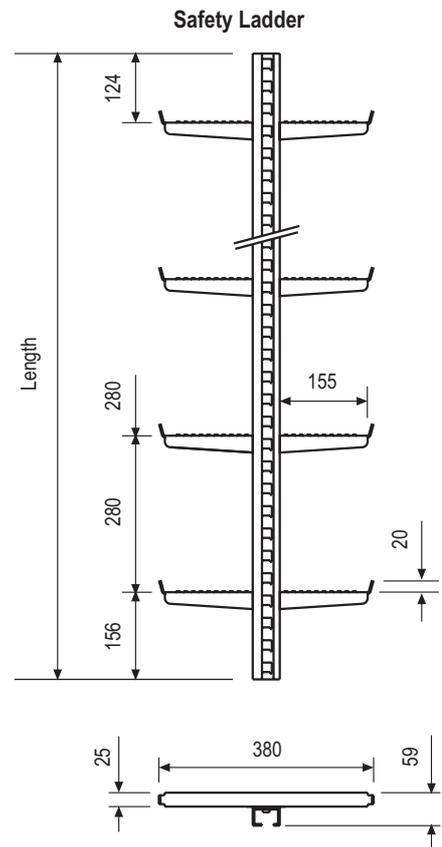
Support centres: 1400mm Max.

Minimum of 4 supports per complete ladder system



Safety Rail

Length (mm)	Safety Ladders			Safety Rail		
	Material		Weight (kg)	Material		Weight (kg)
	Galvanised Steel Part No.	Stainless Steel Part No.		Galvanised Steel Part No.	Stainless Steel Part No.	
560	616 020 056	616 024 056	2.4	601 060 056	601 062 056	1.4
840	616 030 084	616 034 084	3.6	601 060 084	601 062 084	2.1
1120	616 040 112	616 044 112	4.8	601 060 112	601 062 112	2.8
1400	616 050 140	616 054 140	6.0	601 060 140	601 062 140	3.5
1680	616 060 168	616 064 168	7.2	601 060 168	601 062 168	4.2
1960	616 070 196	616 074 196	8.4	601 060 196	601 062 196	4.9
2240	616 080 224	616 084 224	9.6	601 060 224	601 062 224	5.6
2520	616 090 252	616 094 252	10.8	601 060 252	601 062 252	6.3
2800	616 100 280	616 104 280	12.0	601 060 280	601 062 280	7.0
3080	616 110 308	616 114 308	13.2	601 060 308	601 062 308	7.7
3360	616 120 336	616 124 336	14.4	601 060 336	601 062 336	8.4
3640	616 130 364	616 134 364	15.6	601 060 364	601 062 364	9.1
3920	616 140 392	616 144 392	16.8	601 060 392	601 062 392	9.8
4200	616 150 420	616 154 420	18.0	601 060 420	601 062 420	10.5
4480	616 160 448	616 164 448	19.2	601 060 448	601 062 448	11.2
4760	616 170 476	616 174 476	20.4	601 060 476	601 062 476	11.9
5040	616 180 504	616 184 504	21.6	601 060 504	601 062 504	12.6
5320	616 190 532	616 194 532	22.8	601 060 532	601 062 532	13.3
5600	616 200 560	616 204 560	24.0	601 060 560	601 062 560	14.0



Bends

For A12 Safety Ladder with double rungs and A12 Safety Rails

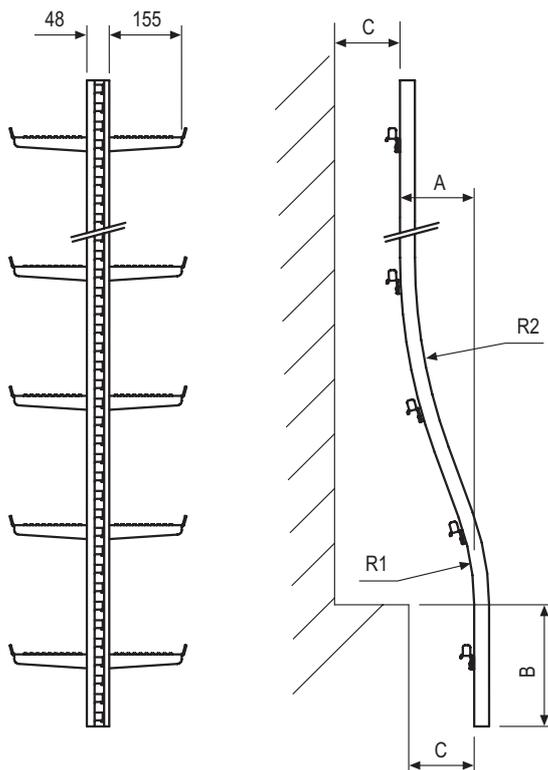
Bends

- All bends are factory made.
- Available as Galvanised Steel or Stainless Steel
- When enquiring, please supply a sketch similar to those below including all necessary dimensions as per the following:

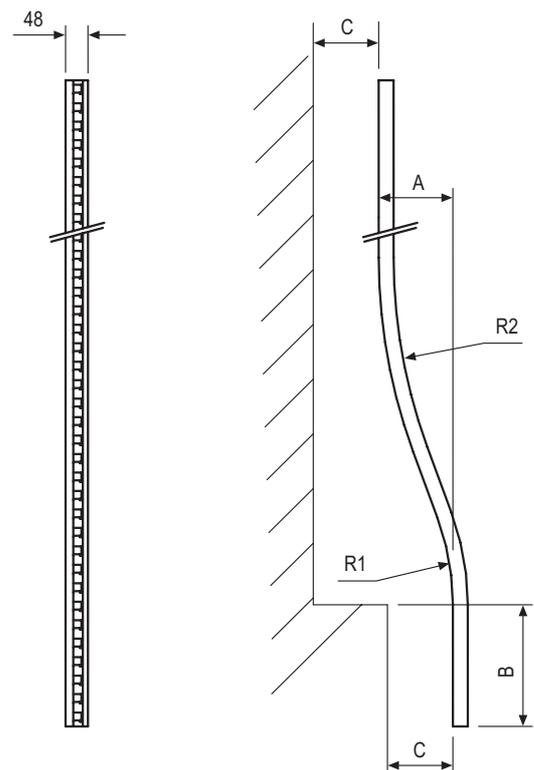
- A = Projecting Part
- B = Straight Section
- R₁ = Radius min. 500 mm
- R₂ = Radius min. 1000 mm
- C = Distance from fixing surface min. 160 mm
(Depending on the type of brackets for ladders.)

ORDERED TO CUSTOMER SPECIFICATION

Safety Ladder



Safety Rail



Vertical Fall Arrest & Safety Access

TECHNICAL

Invisirung™ Safety Ladder with single fold away rungs



Safety Ladder to EN 353 Part 1

Safety Rails

The rail profile is 3mm thick material punched with square holes and notches at 40mm intervals. The notches are for arresting the retaining carriage and the square holes for fixing purposes.

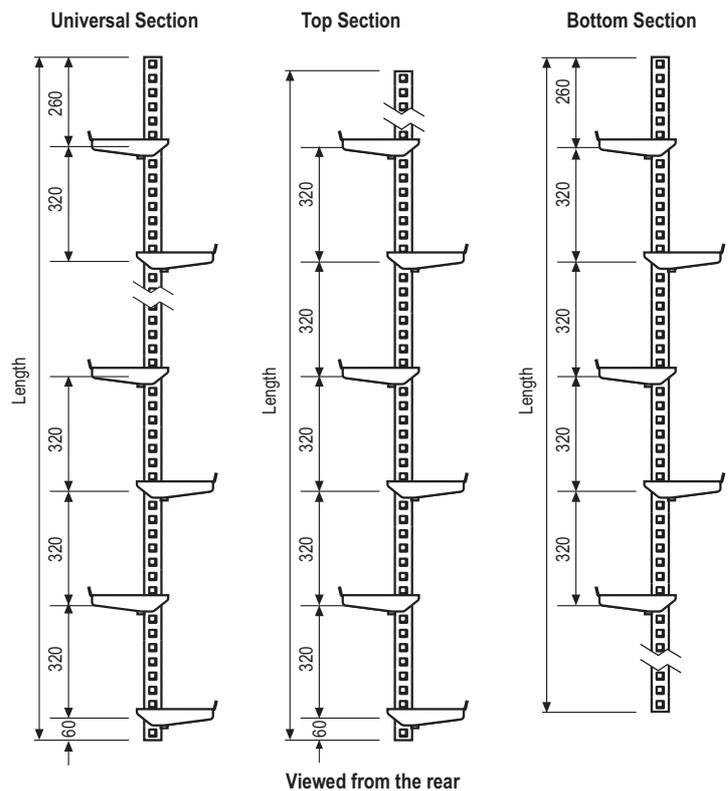
Rungs

bolted onto the rear of the safety rail each rung has 20mm side step width with an anti-slip surface. Rungs lock in open and closed position.

Rungs are spaced every 320mm.

Support centres: 1280mm Max. based on a pitch of 320mm

Minimum of 4 supports per complete ladder system



Universal Ladder Sections

Order No.	Ladder Length (mm)	No. of Rungs	Weight (kg)
M61 060 448	4480	14	20.7
M61 060 512	5120	16	23.82

Top and Bottom Ladder Sections

Top Part No	Bottom Part No	No. of Rungs	Ladder Length (mm)	Weight (kg)
M61 060 056	M61 061 056	1	560	2.08
M61 060 084	M61 061 084	2	840	3.46
M61 060 112	M61 061 112	3	1120	4.84
M61 060 140	M61 061 140	4	1400	6.22
M61 060 168	M61 061 168	5	1680	7.60
M61 060 196	M61 061 196	6	1960	8.98
M61 060 224	M61 061 224	7	2240	10.36
M61 060 252	M61 061 252	7	2520	11.06
M61 060 280	M61 061 280	8	2800	12.44
M61 060 308	M61 061 308	9	3080	13.82
M61 060 336	M61 061 336	10	3360	15.20
M61 060 364	M61 061 364	11	3640	16.58
M61 060 392	M61 061 392	12	3920	17.96
M61 060 420	M61 061 420	13	4200	19.34
M61 060 476	M61 061 476	14	4760	21.42
M61 060 504	M61 061 504	15	5040	22.80
M61 060 532	M61 061 532	16	5320	24.18
M61 060 560	M61 061 560	17	5600	25.56

Configuring Systems

When specifying a system please note that the following conditions must be considered:-

Ladder with one section

Use either a universal or top ladder sections.

Ladder with two sections

Use either, the universal ladder section with either a top or bottom ladder section or a top and bottom ladder section.

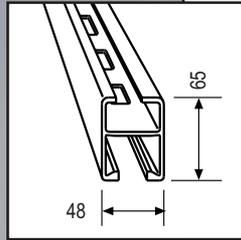
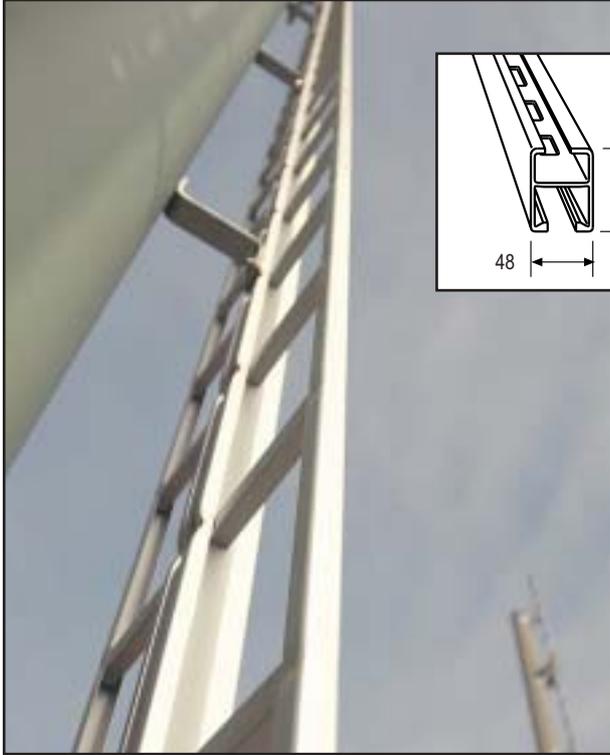
Ladder with three or more sections

Use only universal ladder sections or universal sections in conjunction with either top and / or bottom sections. This ensures correct alignment of rungs.

Vertical Fall Arrest & Safety Access

TECHNICAL

AL2 Safety Ladder with double rungs and AL2 Safety Rail



Safety Ladder & Safety Rail as to EN 353 Part 1

Safety Rails

The rail profile is 3mm thick material punched with square holes and notches at 40mm intervals. The notches are for arresting the retaining carriage and the square holes for fixing purposes. The safety rail is formed as an asymmetrical 'H' profile. The front chamber is used for the retaining carriage with slots provided every 70 mm for catching the retaining carriage. The rear chamber is used for fixing purposes.

Rungs:

A rectangular profile with integral tread spaced every 280mm.

Anti-Slip Pegs / Side Stringers:

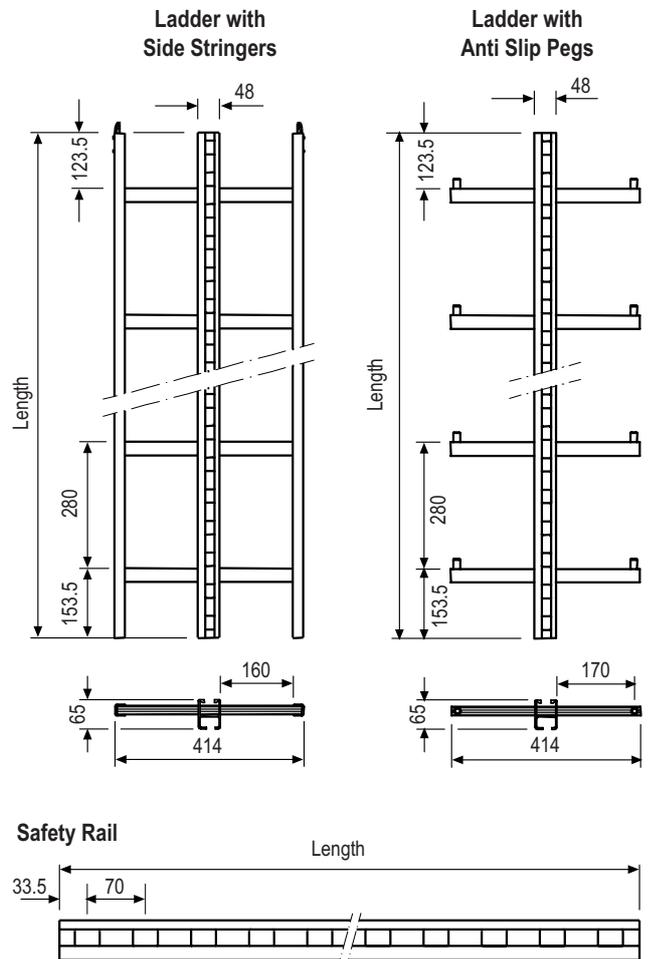
The pegs are 20 mm high. C-profiles serve as side connections with guide pegs at the top.

Support centres: 1680mm Max.

Minimum of 4 supports per complete ladder system

BENDS AVAILABLE ON REQUEST

AL2 With Anti Slip Pegs		AL2 With Side Stringers		AL2 Rail Only		Length (mm)
Part No	Kg	Part No	Kg	Part No	Kg	
687 001 056	1.8	687 020 056	1.9	677 010 056	1.0	560
687 001 084	2.7	687 030 084	2.9	677 010 084	1.5	840
687 001 112	3.6	687 040 112	3.9	677 010 112	2.0	1120
687 001 140	4.5	687 050 140	4.9	677 010 140	2.5	1400
687 001 168	5.4	687 060 168	5.9	677 010 168	3.0	1680
687 001 196	6.3	687 070 196	6.9	677 010 196	3.5	1960
687 001 224	7.2	687 080 224	7.9	677 010 224	4.0	2240
687 001 252	8.1	687 090 252	8.9	677 010 252	4.5	2520
687 001 280	9.0	687 100 280	9.9	677 010 280	5.0	2800
687 001 308	9.9	687 110 308	10.9	677 010 308	5.5	3080
687 001 336	10.8	687 120 336	11.9	677 010 336	6.0	3360
687 001 364	11.7	687 130 364	12.9	677 010 364	6.5	3640
687 001 392	12.6	687 140 392	13.9	677 010 392	7.0	3920
687 001 420	13.5	687 150 420	14.9	677 010 420	7.5	4200
687 001 448	14.4	687 160 448	15.9	677 010 448	8.0	4480
687 001 476	15.3	687 170 476	16.9	677 010 476	8.5	4760
687 001 504	16.2	687 180 504	17.8	677 010 504	9.0	5040
687 001 532	17.1	687 190 532	18.8	677 010 532	9.5	5320
687 001 560	18.0	687 200 560	20.8	677 010 560	10.0	5600



Vertical Fall Arrest & Safety Access

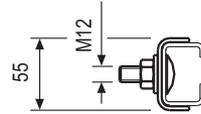
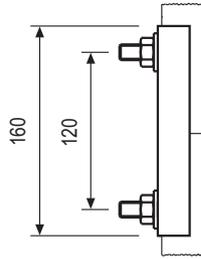
TECHNICAL

Rail Connectors

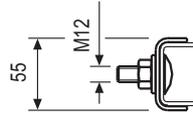
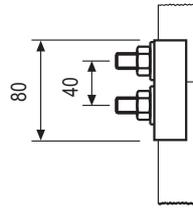
For connecting safety ladder and safety rail sections.

Note.

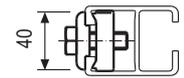
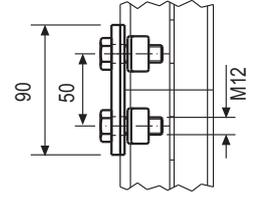
For AL2 rail provide small gaps between adjacent rails for expansion - see installation instructions.



A12 Safety Ladder & Safety Rail



Invisirung™



AL2 Safety Ladder & Safety Rail

Part No	For Use With	Material	Weight (kg)
652 210 045	A12 Safety Ladder & Rail	Galv. Steel	0.5
652 210 047		St. Steel	0.5
M52 210 045	Invisirung™	Galv. Steel	0.35
673 002 001	AL2 Safety Ladder & Rail	Aluminium	0.25

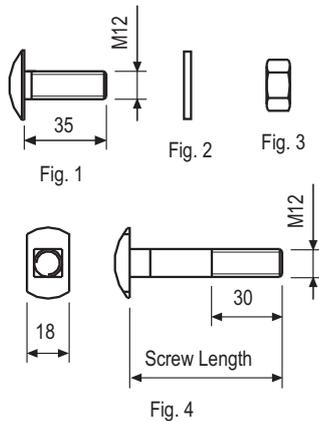
Fixings

For attaching components and brackets to the safety ladder or safety rail. Fixings are usually supplied with all brackets and components, please confirm this when ordering.

Note.

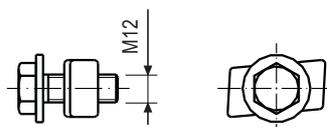
Normal bolt fixings cannot be used to connect direct to the safety rail section.

A12 Safety Ladder, A12 Safety Rail & Invisirung™

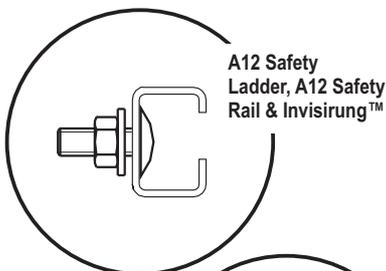


Part No	Description	Material	Weight (kg)
652 210 041	Screw Kit (Comprising Fig. 1, 2 & 3)	St. Steel	0.08
652 215 010	Oval head bolt M12 x 35 (Full Thread) - Fig. 1	St. Steel	0.05
652 215 015	Oval head bolt M12 x 50 (Set Screw) - Fig. 4	St. Steel	0.06
652 215 020	Oval head bolt M12 x 65 (Set Screw) - Fig. 4	St. Steel	0.08
936 7961 2940	Spring Washer M12 Fig. 2	St. Steel	0.01
910 934 1240	Hex Head Nut M12 Fig. 3	St. Steel	0.02

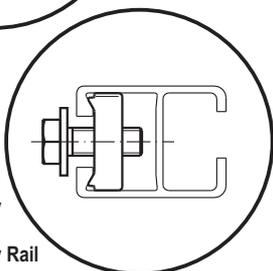
AL2 Safety Ladder & AL2 Safety Rail



Part No	Item	Kg
690 048 101	M12 Screw, Special Nut & Curved Washer	0.2



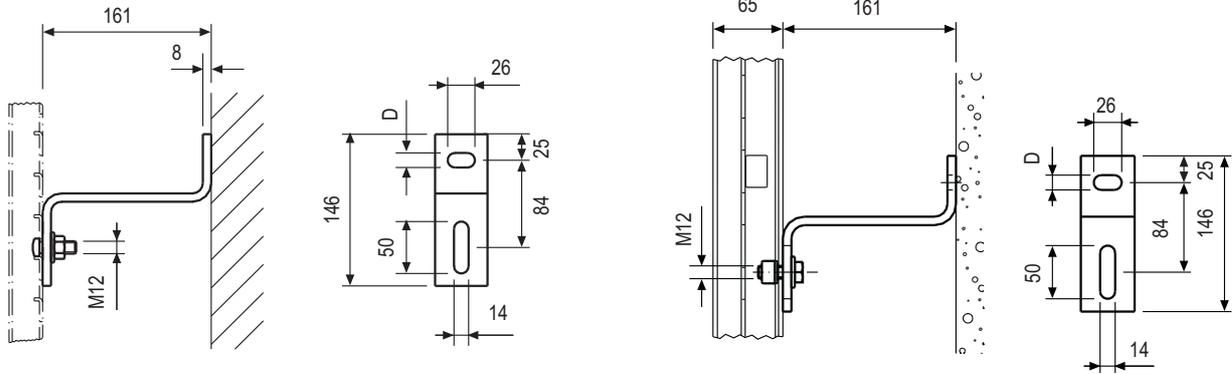
A12 Safety Ladder, A12 Safety Rail & Invisirung™



AL2 Safety Ladder & AL2 Safety Rail

'Z' Brackets

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

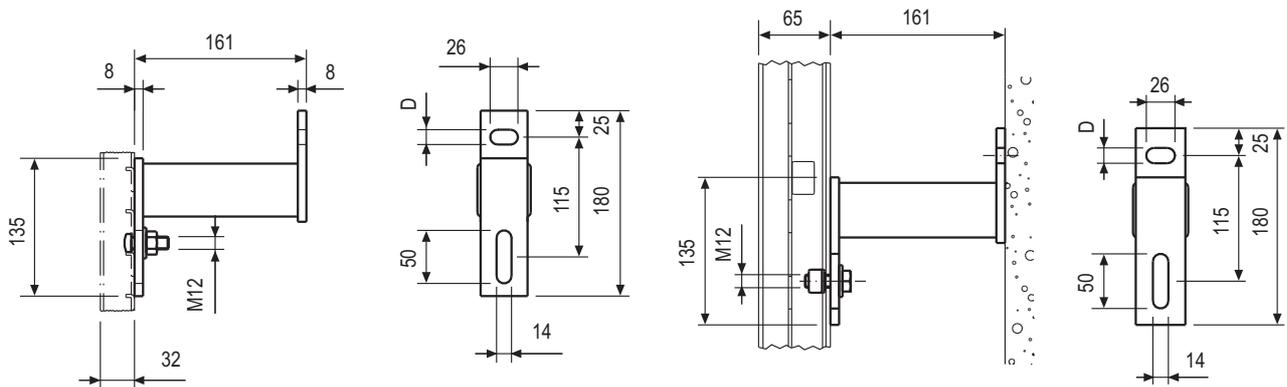
Part No	Material	D (mm)	Kg
652 210 035	Galvanised Steel	10.5	1.0
652 210 030	Galvanised Steel	14.0	1.0
652 210 031	St. Steel 1.4571	10.5	1.0
652 210 032	St. Steel 1.4571	14.0	1.0

AL2 Safety Ladder & AL2 Safety Rail

Part No	Material	D (mm)	Kg
673 002 002	Galvanised Steel	10.5	1.0
673 002 003	Galvanised Steel	14.0	1.0
673 002 004	St. Steel 1.4571	10.5	1.0
673 002 005	St. Steel 1.4571	14.0	1.0

Rectangular Tube Brackets

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

Part No	Material	D (mm)	Kg
652 210 204	Galvanised Steel	10.5	1.5
352 210 202	Galvanised Steel	14.0	1.5
652 210 205	St. Steel 1.4571	10.5	1.5
652 210 203	St. Steel 1.4571	14.0	1.5

AL2 Safety Ladder & AL2 Safety Rail

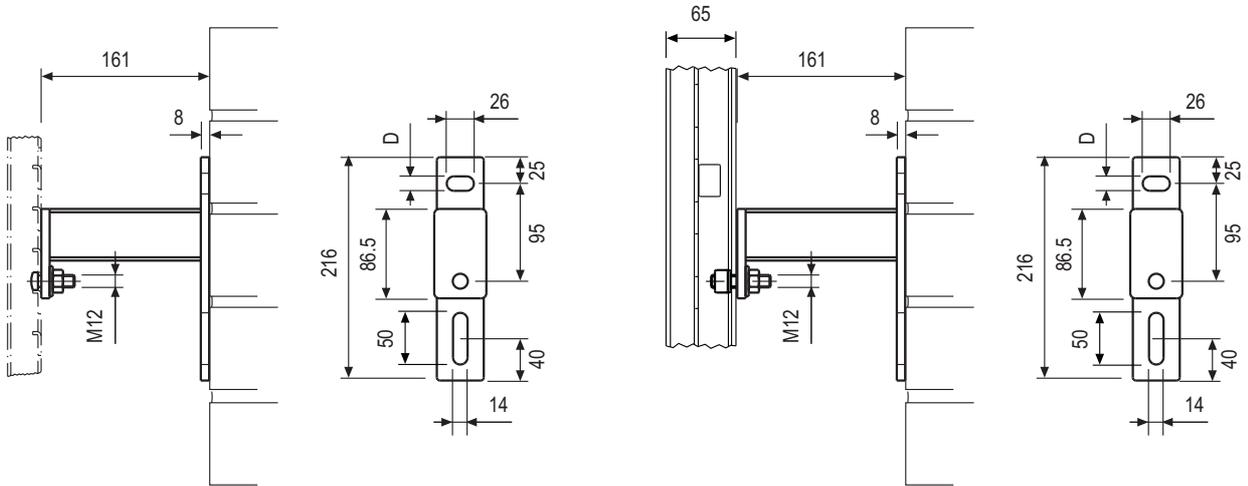
Part No	Material	D (mm)	Kg
673 001 008	Galvanised Steel	10.5	1.5
673 001 006	Galvanised Steel	14.0	1.5
673 001 009	St. Steel 1.4571	10.5	1.5
673 001 007	St. Steel 1.4571	14.0	1.5

Vertical Fall Arrest & Safety Access

TECHNICAL

Brickwork Brackets

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

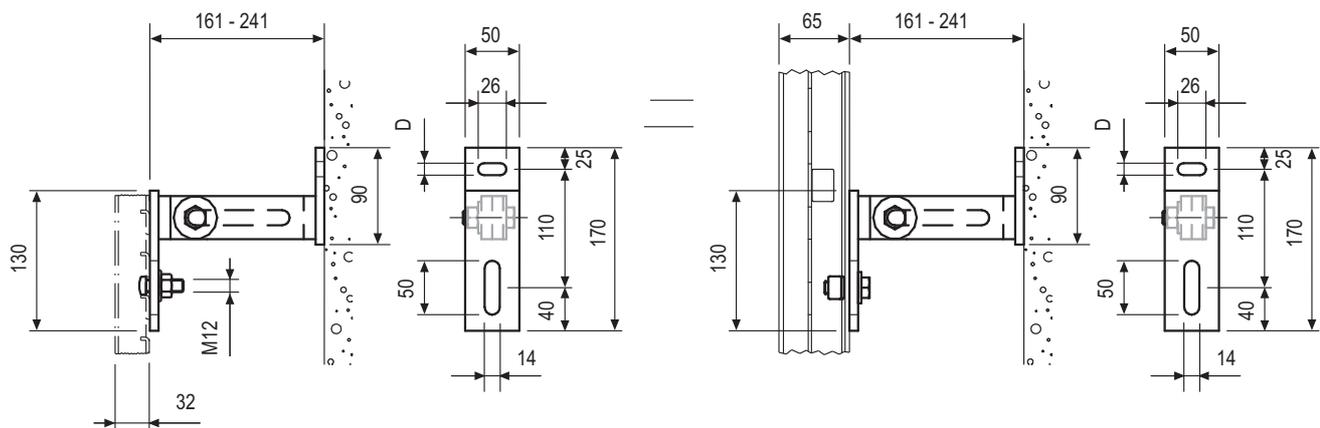
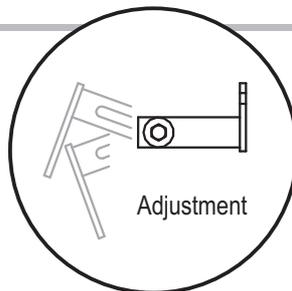
Part No	Material	D (mm)	Kg
M52 210 960	Galvanised Steel	10.5	1.0
M52 210 961	Galvanised Steel	14.0	1.0

AL2 Safety Ladder & AL2 Safety Rail

Part No	Material	D (mm)	Kg
M73 210 960	Galvanised Steel	10.5	1.0
M73 210 961	Galvanised Steel	14.0	1.0

Adjustable Brackets

For fixing to A12 and AL2 Ladders



A12 Safety Ladder and A12 Safety Rail

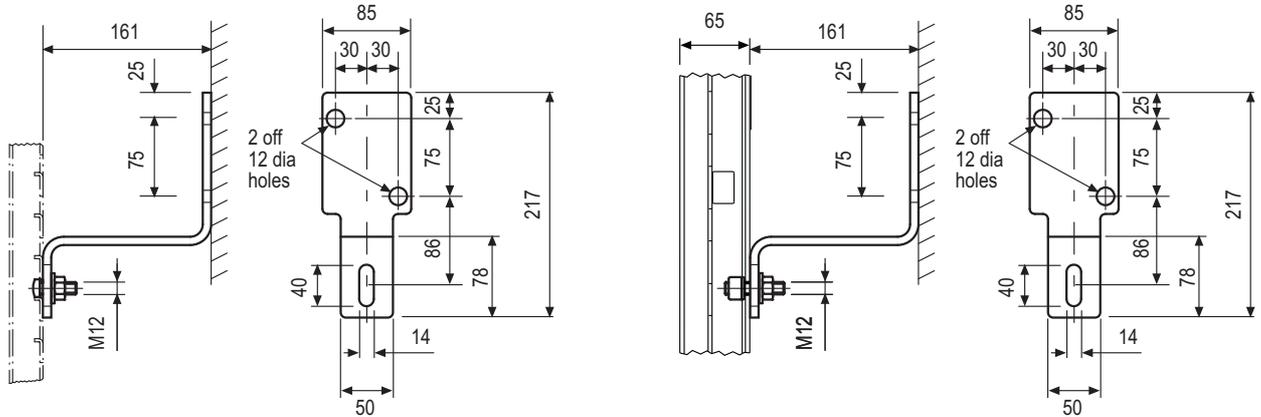
Part No	Material	D (mm)	Kg
???	Galvanised Steel	10.5	1.0
???	Galvanised Steel	14.0	1.0
???	St. Steel 1.4571	10.5	1.0
???	St. Steel 1.4571	14.0	1.0

AL2 Safety Ladder & AL2 Safety Rail

Part No	Material	D (mm)	Kg
673 001 004	Galvanised Steel	10.5	1.0
673 004 001	Galvanised Steel	14.0	1.0
673 001 005	St. Steel 1.4571	10.5	1.0
673 004 002	St. Steel 1.4571	14.0	1.0

Wooden Pole Brackets

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

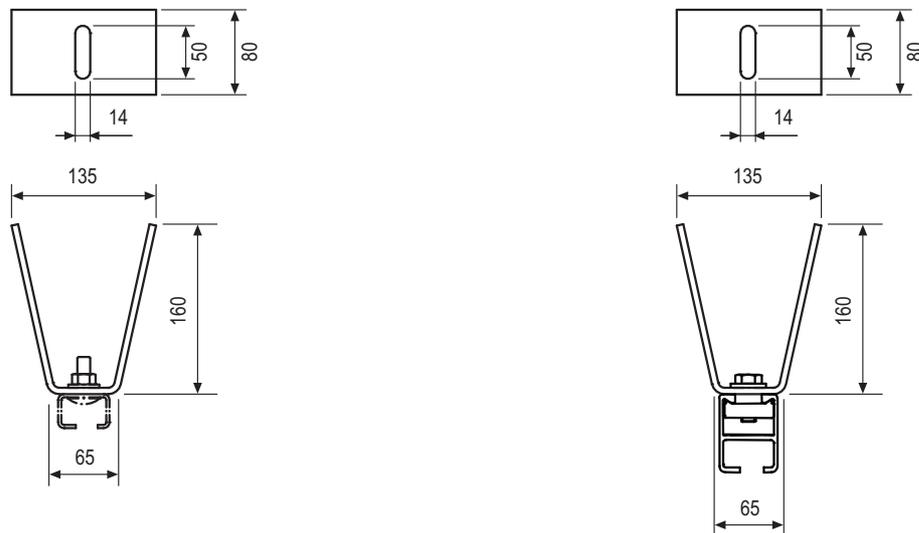
Part No	Material	Kg
M52 210 920	Galvanised Steel	1.0

AL2 Safety Ladder & AL2 Safety Rail

Part No	Material	Kg
M73 210 920	Galvanised Steel	1.0

Weld Brackets

For fixing to A12, AL2 and Invisirung™ Ladders



**A12 Safety Ladder, A12 Safety Rail & Invisirung™
(fixing Screws not provided)**

Part No	Material	Kg
652 205 035	Steel (Plain)	1.4
652 205 037	Steel (coated with primer)	1.4
652 205 036	St. Steel 1.4571 (not etched)	1.4

**AL2 Safety Ladder & AL2 Safety Rail
(fixing Screws not provided)**

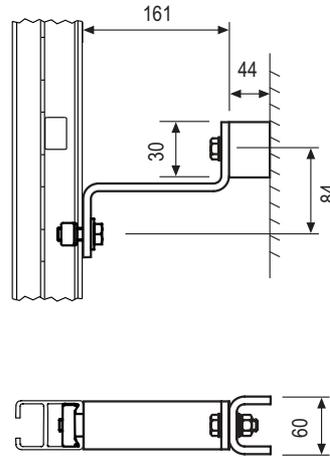
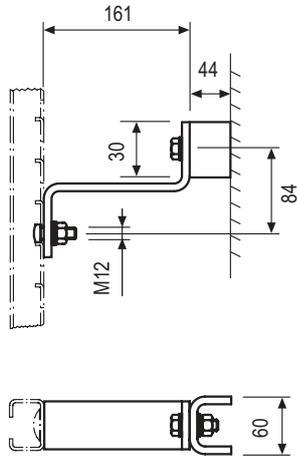
Part No	Material	Kg
673 002 006	Steel (plain)	1.0
673 002 008	Steel (coated with primer)	1.0
673 002 007	St. Steel 1.4571 (not etched)	1.0

Vertical Fall Arrest & Safety Access

TECHNICAL

Welding / 'Z' Bracket Combination

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

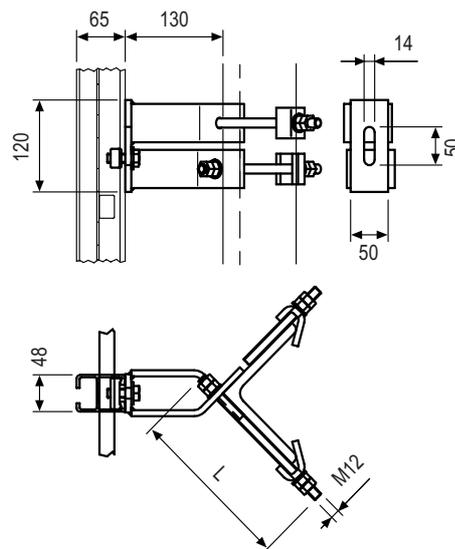
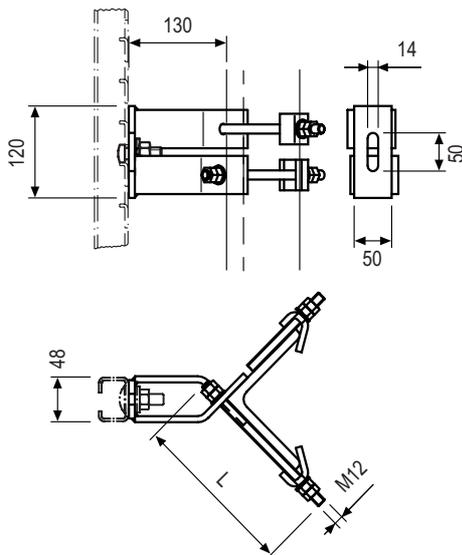
Part No	Item / Material	Kg
652 210 030	'Z' Bracket / Galvanised	1.0
M52 210 957	Welded Lug / Plain Steel	0.7

AL2 Safety Ladder & AL2 Safety Rail

Part No	Item / Material	Kg
673 002 003	'Z' Bracket / Galvanised	1.0
M52 210 957	Welded Lug / Plain Steel	0.7

Angle Brackets

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

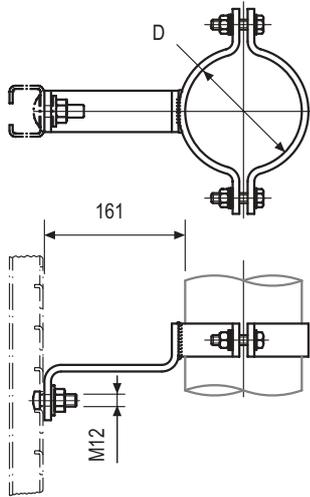
Part No	Material	D (mm)	Kg
652 211 000	up to 130 x 130	220	1.6
652 211 001	from 130 x 130 to 200 x 200	300	1.8
652 211 002	from 200 x 200 to 250 x 250	350	1.9

AL2 Safety Ladder & AL2 Safety Rail

Part No	Material	D (mm)	Kg
673 004 056	up to 130 x 130	220	1.6
673 004 057	from 130 x 130 to 200 x 200	300	1.8
673 004 058	from 200 x 200 to 250 x 250	350	1.9

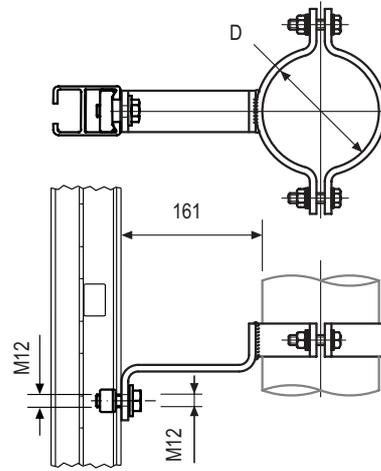
Clamp Brackets

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

Part No	Material	D (mm)	Kg
M52 210 904	Galvanised Steel	88.9	1.4
M52 210 900	Galvanised Steel	114.3	1.5
M52 210 901	Galvanised Steel	139.7	1.6
M52 210 902	Galvanised Steel	168.3	1.7
M52 210 903	Galvanised Steel	193.7	1.8

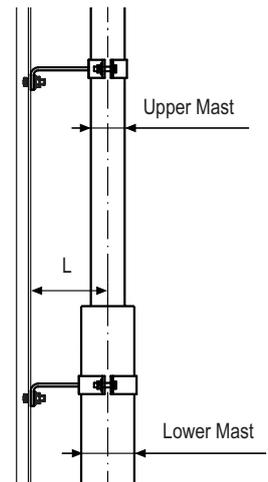
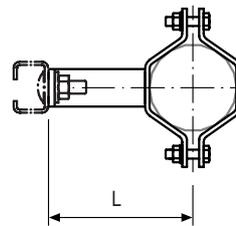


AL2 Safety Ladder & AL2 Safety Rail

Part No	Material	Mast Dia.	Kg
M73 210 904	Galvanised Steel	88.9	1.4
M73 210 900	Galvanised Steel	114.3	1.5
M73 210 901	Galvanised Steel	139.7	1.6
M73 210 902	Galvanised Steel	168.3	1.7
M73 210 903	Galvanised Steel	193.7	1.8

Multi Section Clamp Brackets

For fixing to A12 and Invisirung™ Ladders



for Ø in mm	Order No. 652 211 ___ complete with relevant final number from the system dimension L = mm (below)										
	178	184	190	203	213	217	230	243	255	269	308
80.0					010	011					
88.9		012	013	014	015	016	017	018	019		
101.6			020	021	022	023	024	025	026		
114.3				027	028	029	030	031	032	033	
139.7					034	035	036	037	038	039	
159.0						040	041	042	043	044	
168.3							045	046	047	048	
193.7								049	050	051	
219.1									052	053	
244.5											
273.0											
350.0											

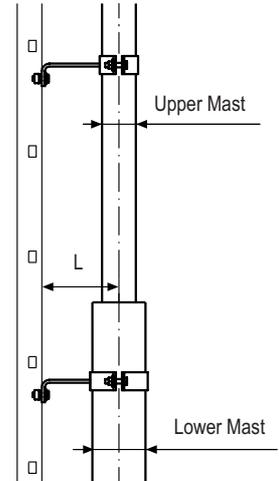
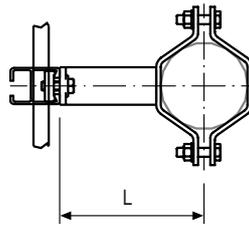
System dimension L used in equipment always results from the smallest mast diameter which is given. The Measurement L decides the selection of the further fixings to be used in the same system.

Vertical Fall Arrest & Safety Access

TECHNICAL

Multi Section Clamp Brackets

For fixing to AL2 Ladders

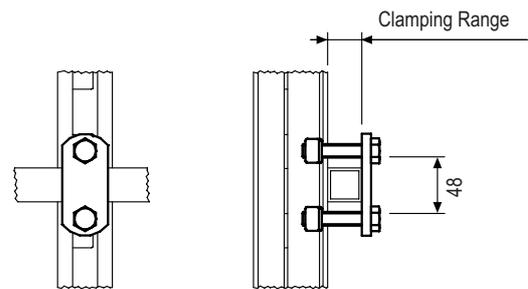
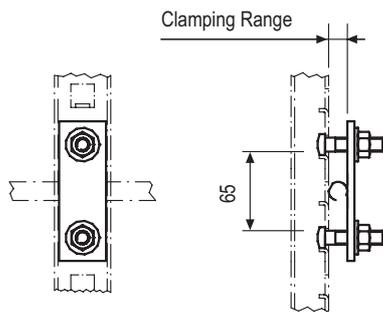


for Ø in mm	Order No. 673 004 ___ complete with relevant final number from the system dimension L = mm (below)										
	178	184	190	203	213	217	230	243	255	269	308
80.0				011	012						
88.9	013	014	015	016	017	018	019	020			
101.6		021	022	023	024	025	026	027			
114.3			028	029	030	031	032	033	034		
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											

System dimension L used in equipment always results from the smallest mast diameter which is given. The Measurement L decides the selection of the further fixings to be used in the same system.

Rung Mounted Brackets (Round/Square)

For fixing of A12 and AL2 Safety Rails to existing ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

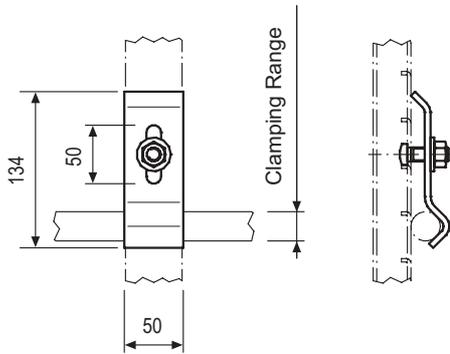
Part No	Clamping Range	Material	Kg
652 210 005	16 to 25mm	Galv. Steel	0.3
652 210 010	25 to 40mm	Galv. Steel	0.3
652 220 210	16 to 25mm	St. Steel	0.3
652 220 211	25 to 40mm	St. Steel	0.3

AL2 Safety Ladder & AL2 Safety Rail

Part No	Clamping Range	Material	Kg
690 100 115	15 to 20mm	St. Steel	0.5
690 100 120	20 to 25mm	St. Steel	0.5
690 100 125	25 to 30mm	St. Steel	0.5

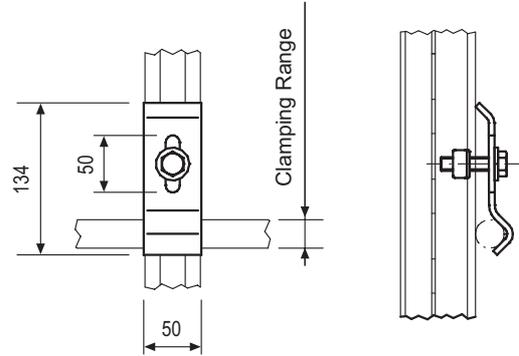
Rung Mounted Brackets (Round)

For fixing of A12 and AL2 Safety Rails to existing ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

Part No	Clamping Range	Material	Kg
652 210 140	15 to 27mm	Galv. Steel	0.3
652 210 141	15 to 27mm	St. Steel	0.3

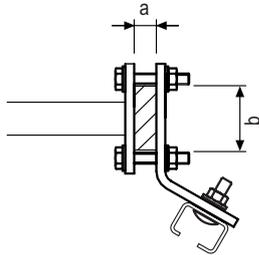


AL2 Safety Ladder & AL2 Safety Rail

Part No	Clamping Range	Material	Kg
673 004 009	15 to 27mm	Galv. Steel	0.3
673 004 010	15 to 27mm	St. Steel	0.3

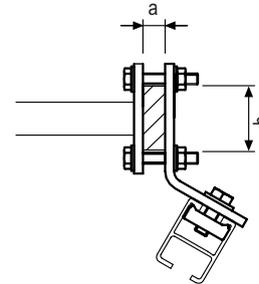
Stile Mounted Brackets (Rectangular)

For fixing of A12 and AL2 Safety Rails to existing ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

Part No	Clamping Range		Material	Kg
	a	b		
652 211 301	6 to 20mm	40 to 60mm	Galv. Steel	1.1
652 211 302	21 to 30mm		Galv. Steel	
652 211 303	31 to 50mm		Galv. Steel	
652 211 304	6 to 20mm	61 to 80mm	Galv. Steel	1.3
652 211 305	21 to 30mm		Galv. Steel	
652 211 306	31 to 50mm		Galv. Steel	
652 211 307	6 to 20mm	40 to 60mm	St. Steel	1.1
652 211 308	21 to 30mm		St. Steel	
652 211 309	31 to 50mm		St. Steel	
652 211 310	6 to 20mm	61 to 80mm	St. Steel	1.3
652 211 311	21 to 30mm		St. Steel	
652 211 312	31 to 50mm		St. Steel	



AL2 Safety Ladder & AL2 Safety Rail

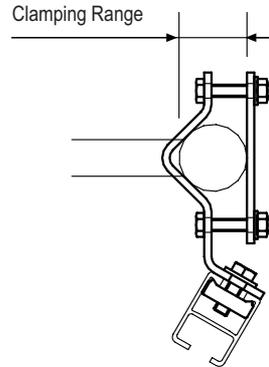
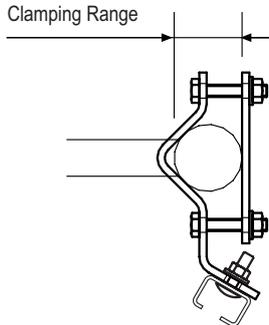
Part No	Clamping Range		Material	Kg
	a	b		
673 005 001	6 to 20mm	40 to 60mm	Galv. Steel	1.1
673 005 002	21 to 30mm		Galv. Steel	
673 005 003	31 to 50mm		Galv. Steel	
673 005 004	6 to 20mm	61 to 80mm	HDG	1.3
673 005 005	21 to 30mm		HDG	
673 005 006	31 to 50mm		HDG	
673 005 007	6 to 20mm	40 to 60mm	St. Steel	1.1
673 005 008	21 to 30mm		St. Steel	
673 005 009	31 to 50mm		St. Steel	
673 005 010	6 to 20mm	61 to 80mm	St. Steel	1.3
673 005 011	21 to 30mm		St. Steel	
673 005 012	31 to 50mm		St. Steel	

Vertical Fall Arrest & Safety Access

TECHNICAL

Stile Mounted Brackets (Round)

For fixing of A12 and AL2 Safety Rails to existing ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

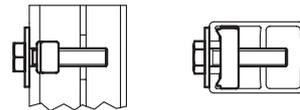
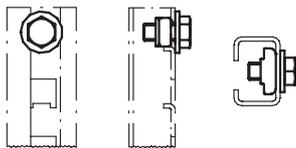
Part No	Clamping Range	Material	Kg
652 205 270	25 to 33mm	Galv. Steel	0.9
652 212 000	34 to 55mm	Galv. Steel	1.1
652 212 010	56 to 80mm	Galv. Steel	1.2
652 205 271	25 to 33mm	St. Steel	0.9
652 212 001	34 to 55mm	St. Steel	1.1
652 212 011	56 to 80mm	St. Steel	1.2

AL2 Safety Ladder & AL2 Safety Rail

Part No	Clamping Range	Material	Kg
673 004 003	25 to 33mm	Galv. Steel	0.9
673 004 005	34 to 55mm	Galv. Steel	1.1
673 004 007	56 to 80mm	Galv. Steel	1.2
673 004 004	25 to 33mm	St. Steel	0.9
673 004 006	34 to 55mm	St. Steel	1.1
673 004 008	56 to 80mm	St. Steel	1.2

Fixed Locks

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

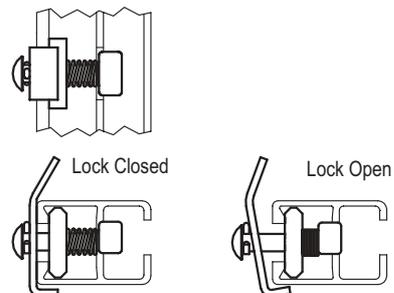
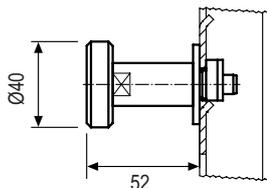
Part No	Material	Kg
652 210 016	Stainless Steel	0.1

AL2 Safety Ladder & AL2 Safety Rail

Part No	Material	Kg
690 251 000	Stainless Steel	0.1

Releasable Locks

For fixing to A12, AL2 and Invisirung™ Ladders



A12 Safety Ladder, A12 Safety Rail & Invisirung™

Part No	Material	Kg
652 220 021	Stainless Steel	0.1

AL2 Safety Ladder & AL2 Safety Rail

Part No	Material	Kg
690 251 010	Stainless Steel	0.2

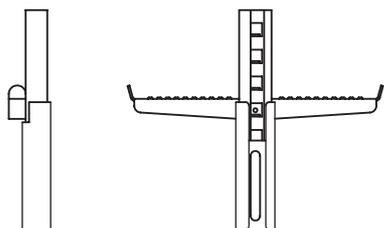
Sectional Monopole Slippage Brackets (Fallguard® A12 and AL2)

This standard 3080mm ladder length provides for up to 160mm of slippage per joint for monopole masts manufactured from more than one section. Each joint requires the installation of this length. Please consult our sales office for advice on how to incorporate this into your mast design.

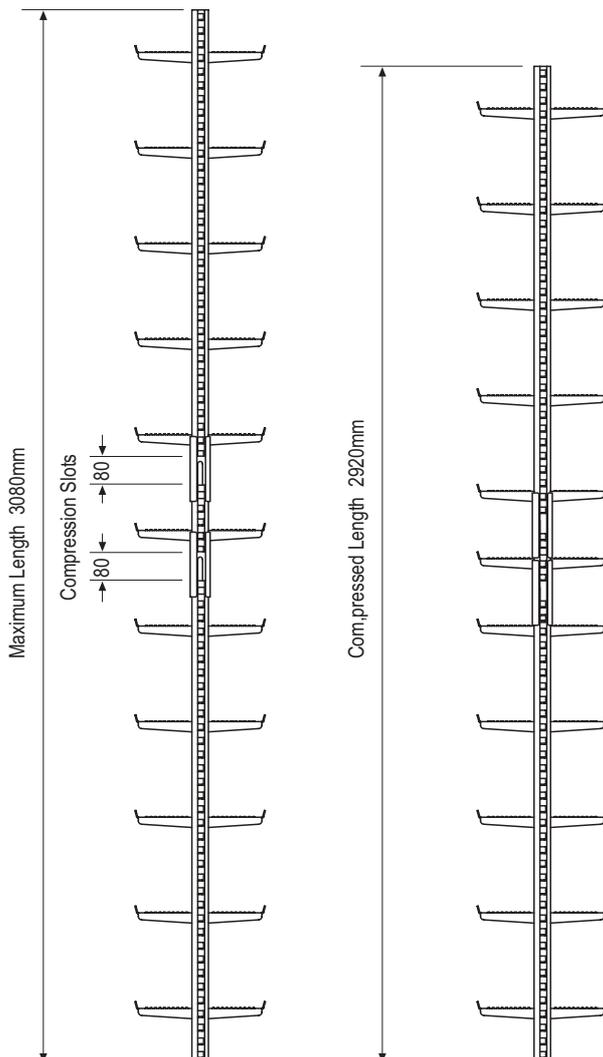
Part No	Material	Kg
M52 300 300	Galvanised	14.0
M52 300 301	Stainless Steel	14.0

Sliding Section

To increase the slippage amount if the standard 160mm is in sufficient additional sliding sections can be added, see below. For each sliding section add 280mm to the maximum ladder length.

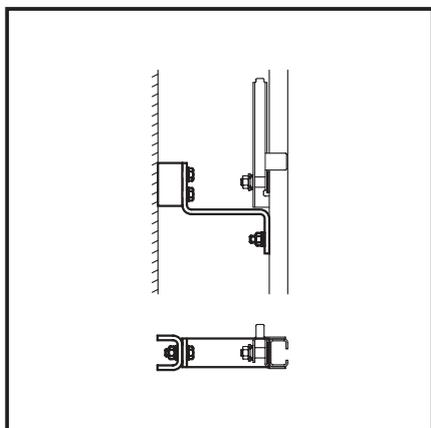


Part No	Material	Kg
M52 300 303	Galvanised	2.0
M52 300 304	Stainless Steel	2.0

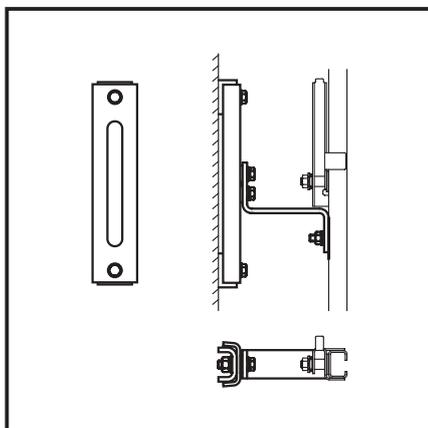


Sectional Monopole Slippage Brackets (Invisirung™)

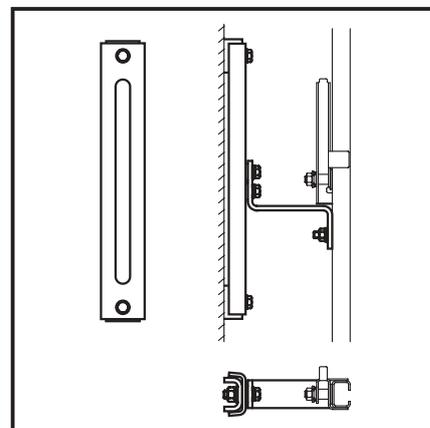
This bracket combination facilitates a maximum of 320mm slippage over a monopole constructed of more than one section. To ensure that correct configuration is selected, please provide mast drawing with your enquiry so that correct fixing positions are advised prior to fabrication.



Part No: **M52 210 950** - Fixed Position
Used on the top / first section of a mast.



Part No: **M52 210 951** - Slippage Bracket 160mm
Used on the second section, this bracket provides for the maximum of 320mm slippage.



Part No: **M52 210 952** - Slippage Bracket 320mm
This bracket should be used on the lower mast sections. Each system must have at least 2 fixed position brackets.

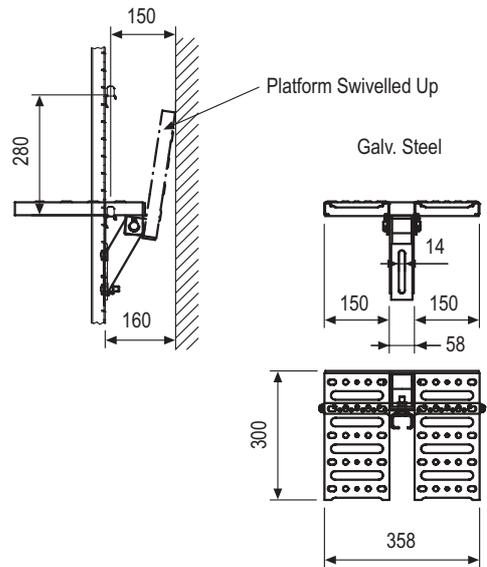
Vertical Fall Arrest & Safety Access

TECHNICAL

Rest Platforms (Recommended every 6-9 metres)

For A12 Safety Ladders & Safety Rails

- For existing ladders, stringers must have an inside minimum width of 380mm so that the Safety Rail can be installed.
- The required rung spacing is 280mm minimum.
- The Resting Platform is bolted to the back of the Safety Rail. No additional fixtures are required.
- Two foot platforms each offering 150 x 300mm foot space.
- When in use, the foot platform rests on the rung.
- The rest platform is stored by being swivelled backwards when not in use.



Part No	Tread	Material	Kg
652 210 050	Punched Holes	Galv. Steel	3.8
652 220 050	Chequered Plate	S. Steel	3.8

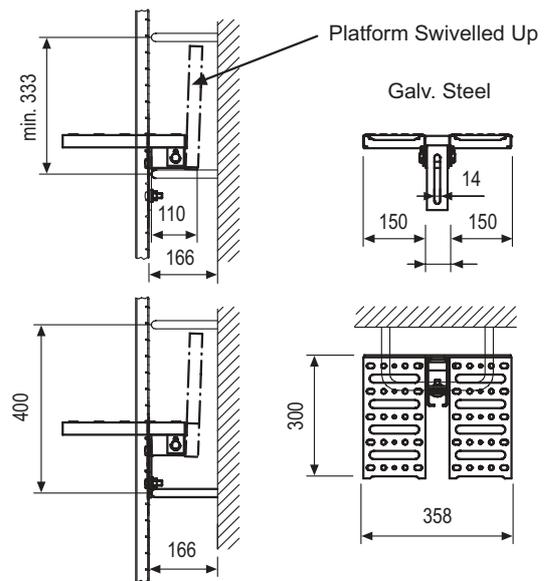
Also Available

- **M52 210 055** Platform for use with 220mm rung spacing (Galv. Steel)
- **M52 210 056** Narrow Platform (Galv. Steel)
- **M52 200 060** Platform for use with Invisirung™ (Galv. Steel)

Rest Platforms (Recommended every 6-9 metres)

For A12 Safety Rails mounted to existing stirrups

- The required stirrup spacing is 333mm minimum, however please note at this spacing the foot space is reduced to 110mm which is not recommended - consult our sales office for advice.
- Preferred stirrup spacing is 400mm
- The Resting Platform is bolted to the back of the Safety Rail. No additional fixtures are required at the ground level.
- Two foot platforms each offering 150 x 300mm foot space.
- When in use, the foot platform rests on the rung.
- The rest platform is stored by being swivelled backwards when not in use.

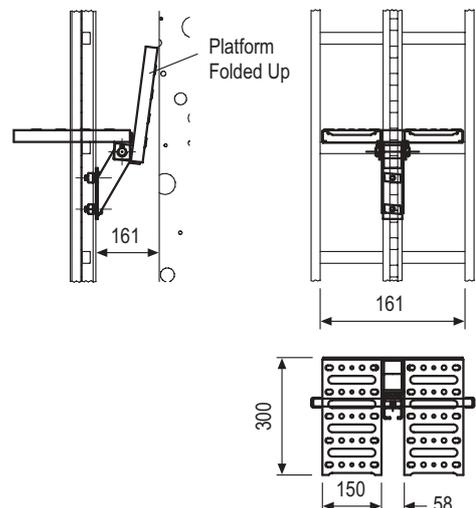


Part No	Tread	Material	Kg
652 210 051	Punched Holes	Galv. Steel	3.8
652 220 056	Chequered Plate	S. Steel	3.8

Rest Platforms (Recommended every 6-9 metres)

For AL2 Safety Ladders & Safety Rails

- For existing ladders, stringers must have an inside minimum of 370mm so that the platform can be installed.
- Rung size maximum 25 x 25mm.
- Rung must be spaced at a minimum of 280mm.
- The folding platform is attached to the safety rail using two standard AL2 fixings (supplied).
- Two foot platforms : 150 x 300mm.
- When in use the platform lies on the rung; when folded they do not interfere with normal climbing.



Part No	Tread	Material	Kg
673 003 003	Punched Holes	Galv. Steel	3.8

Vertical Fall Arrest & Safety Access

For fixing to A12, AL2 and Invisirung™ Ladders

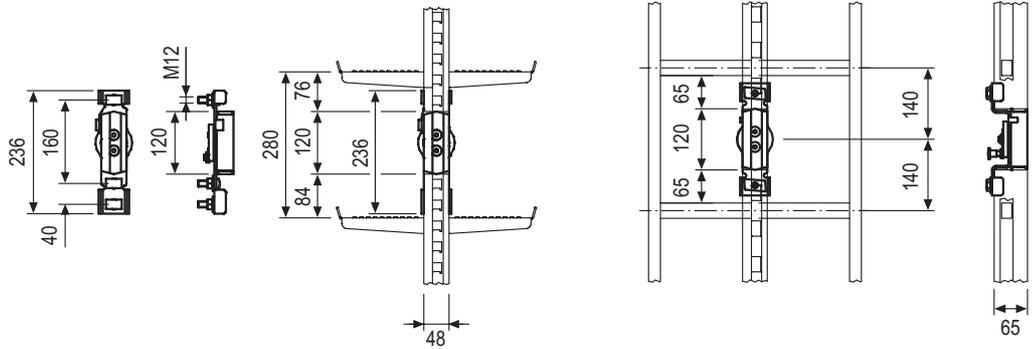
TECHNICAL

Entry/Exit Sections

For fixing to A12 and AL2 Safety Ladders

The Entry/Exit section allows for easy insertion and removal of the retaining carriage and can be provided at any location, within the ladder system, where it is safe to use, e.g. platforms.

- The unit should be installed approx. 1100 mm above the work platform.
- The swivel section rotates 90° to allow the retaining carriage to be removed or inserted, whilst blocking the vertical path.
- The ladder section, to which the unit is to be fitted, must be adjusted as shown to maintain the rung distance of 280 mm.



A12 Safety Ladder & A12 Safety Rail

Part No	Material	Kg
652 210 080	Galv. Steel	1.6
652 210 081	Stainless Steel	1.6

AL2 Safety Ladder & AL2 Safety Rail

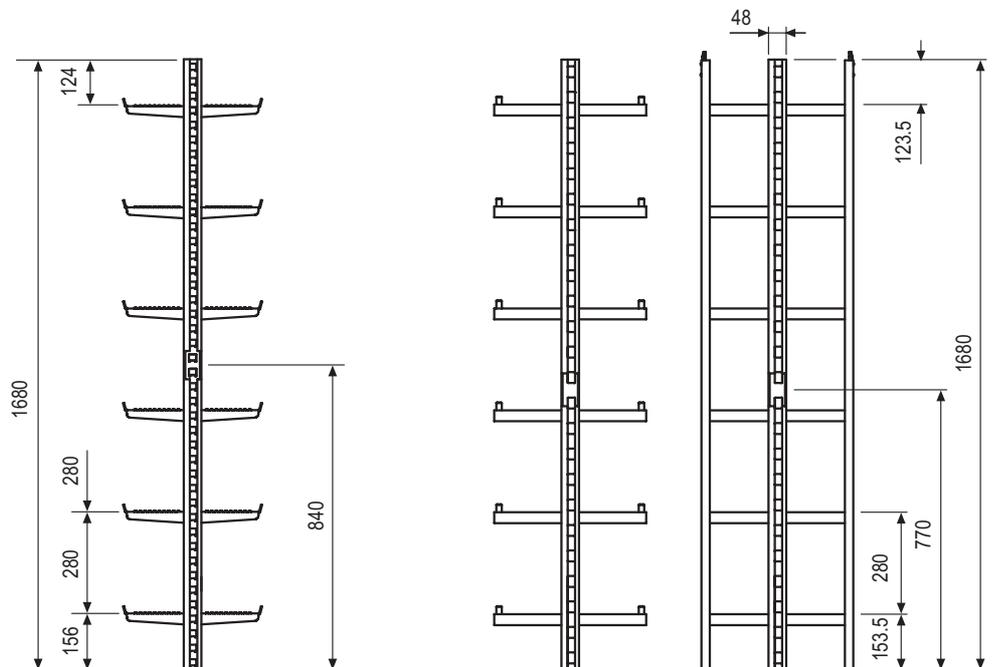
Part No	Material	Kg
673 001 001	Galv. Steel/Stainless Steel	1.6

Cut-out Inserts

For fixing to A12, AL2 and Invisirung™ Safety Ladders and Safety Rails

Safety ladders with a cut-out enable easy insertion or removal of the retaining carriage along the ladder. To prevent unintentional removal of the retaining carriage, a releaseable lock should be fitted around the cutout position.

Featured within this catalogue are details of our standard 1.68m ladder section with central cut-out. If you would prefer the cut-out to be located in a different position to the standard please consult our sales office for further details.



A12 Safety Ladder & A12 Safety Rail

Part No	Material	Kg
618 060 168	Galv. Steel	7.2
618 064 168	Stainless Steel	7.2

AL2 Safety Ladder & AL2 Safety Rail

Part No	Ladder Type	Kg
687 005 168	With Anti Slip Pegs	5.4
687 006 168	With Side Stringers	5.9

Vertical Fall Arrest & Safety Access

TECHNICAL

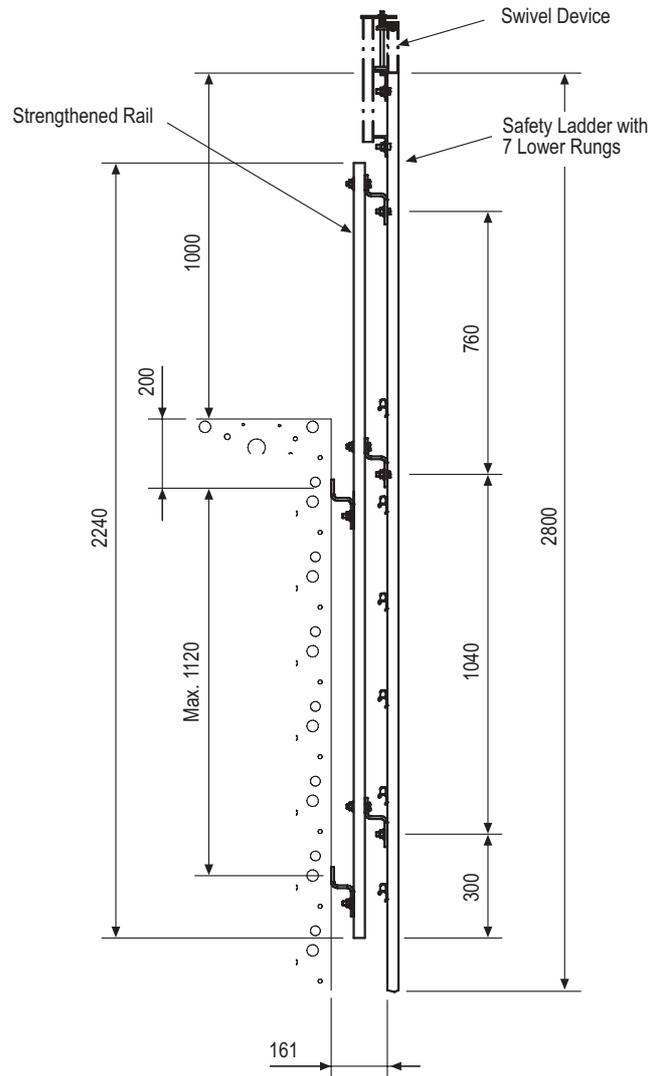
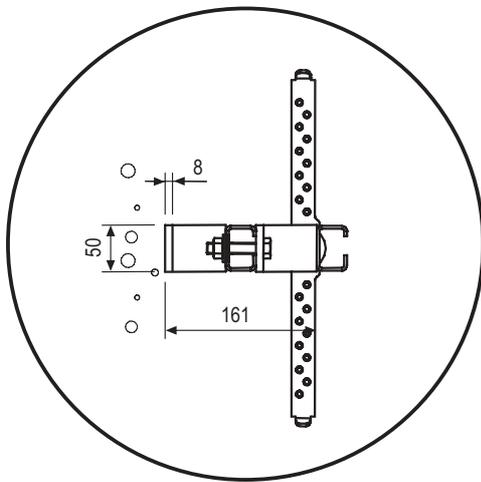
Straight Step-Over with Swivel Device

For A12 Safety Ladder Systems

Step-over to a standing area at the top end of a ladder, e.g. stepping onto a roof.

A complete Step-Over consists of a Safety Ladder with 7 Lower Rungs, a Strengthened Rail and a Swivel Device. Details of all three elements are shown below and should be ordered separately.

The design of the ladder installation must consider that the Swivel Device should be positioned approximately 1000mm above the roof line.



Safety Ladder with 7 Lower Rungs

Part No	Material	Kg
616 070 280	Galvanised Steel	11.0
616 074 280	Stainless Steel	11.0

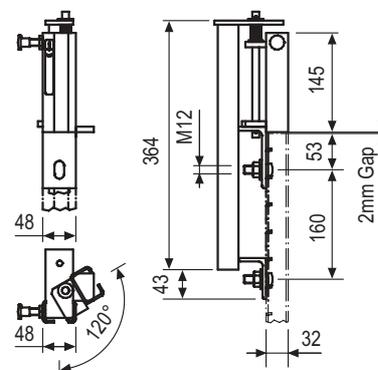
Strengthened Rail with 5 Brackets

Part No	Material	Kg
652 210 310	Galvanised Steel	16.0
652 220 310	Stainless Steel	16.0

Swivel Entry/Exit

Part No	Material	Direction	Kg
652 210 110	Galvanised Steel	Right	1.3
652 210 111	Stainless Steel	Right	1.3
652 210 112	Galvanised Steel	Left	1.3
652 210 113	Stainless Steel	Left	1.3

Swivel Device



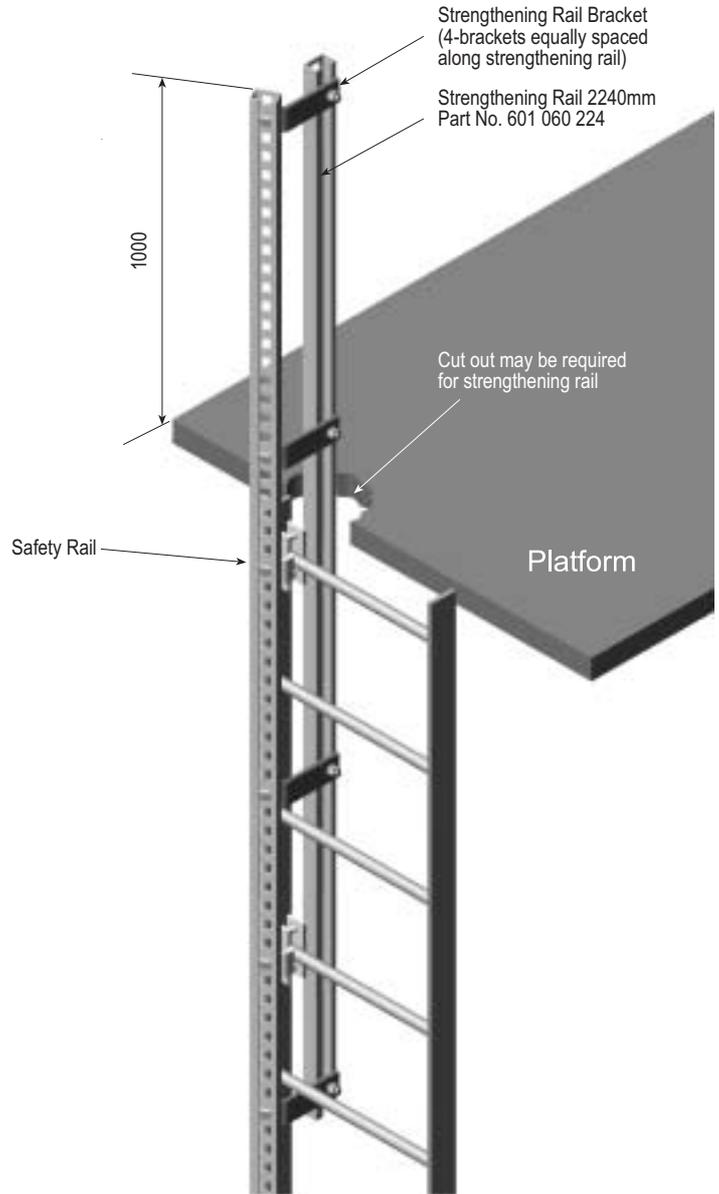
Straight Step-Over with Swivel Device

For A12 Safety Ladder Systems

Step-over to a standing area at the top end of a ladder, e.g. stepping onto a roof.

A complete Step-Over consists of a Safety Ladder with 7 Lower Rungs, a Strengthened Rail and a swivel device or lock.

The design of the ladder installation must consider that the swivel device or lock should be position approximately 1000mm above the roof line.



Safety Rail

Part No	Material	Kg
601 060 280	Galvanised Steel	7.0

Strengthened Rail

Part No	Material	Kg
M52 210 400	Galvanised Steel	16.0

Strengthened Rail

Part No	Material	Kg
M52 210 400	Galvanised Steel	16.0

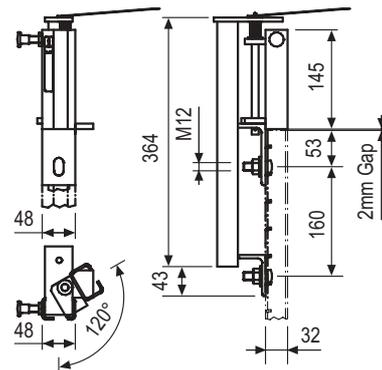
Strengthened Rail

Part No	Material	Kg
M52 210 400	Galvanised Steel	16.0

Swivel Entry/Exit & Lock

Part No	Material	Direction	Kg
652 210 110	Galvanised Steel	Right	1.3
652 210 111	Stainless Steel	Right	1.3
652 210 112	Galvanised Steel	Left	1.3
652 210 113	Stainless Steel	Left	1.3
652 220 021	Stainless Steel	Releasable lock	0.1

Swivel Device



Vertical Fall Arrest & Safety Access

TECHNICAL

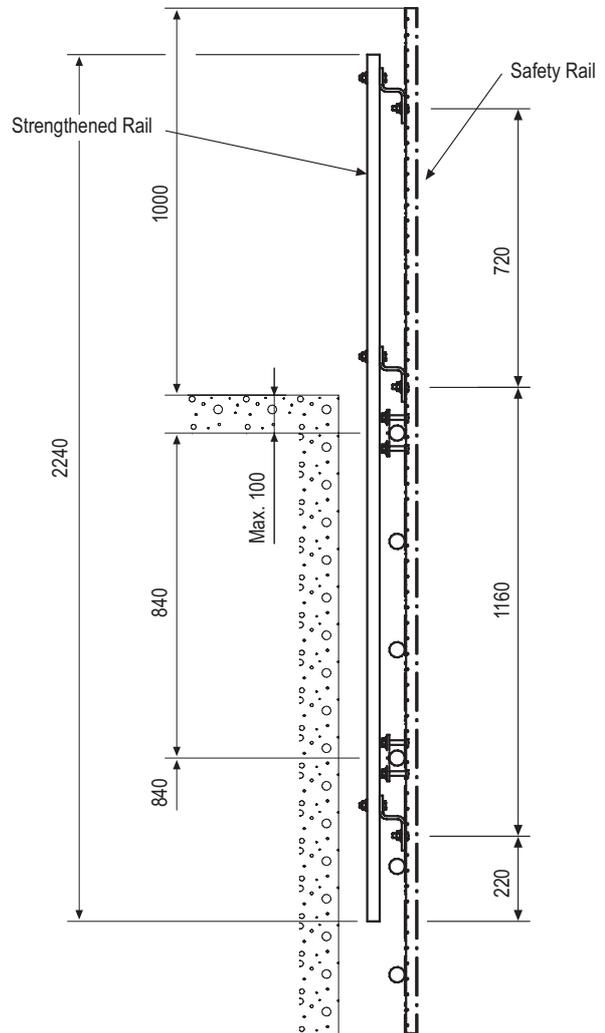
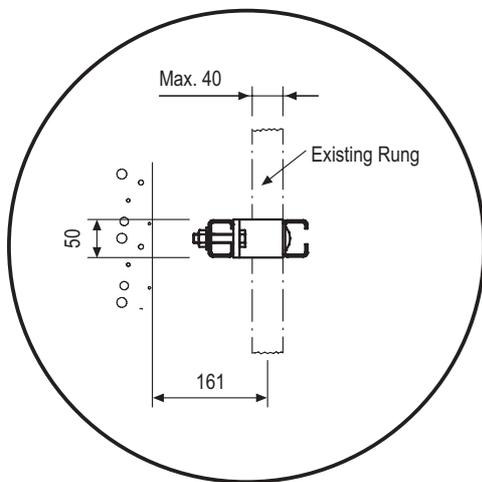
Straight Step-Over with Swivel Device

For A12 Safety Rail Systems

Step-over to a standing area at the top end of a ladder, e.g. stepping onto a roof.

A complete Step-Over consists of a Safety Rail, a Strengthened Rail and a Swivel Device. Details of all three elements are shown below and should be ordered separately.

The design of the ladder installation must consider that the Swivel Device should be position approximately 1000mm above the roof line.



Safety Rail

Part No	Material	Kg
601 060 280	Galvanised Steel	7.0
601 062 280	Stainless Steel	7.0

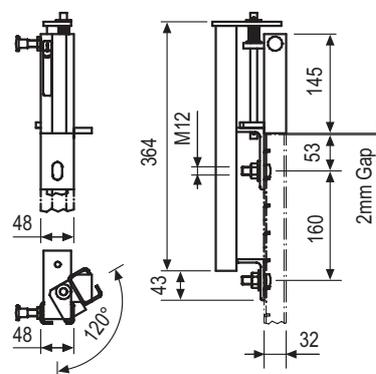
Strengthened Rail

Part No	Material	Kg
652 210 311	Galvanised Steel	16.0
652 220 311	Stainless Steel	16.0

Swivel Entry/Exit

Part No	Material	Direction	Kg
652 210 110	Galvanised Steel	Right	1.3
652 210 111	Stainless Steel	Right	1.3
652 210 112	Galvanised Steel	Left	1.3
652 210 113	Stainless Steel	Left	1.3

Swivel Device



Straight Step-Over with Swivel Device

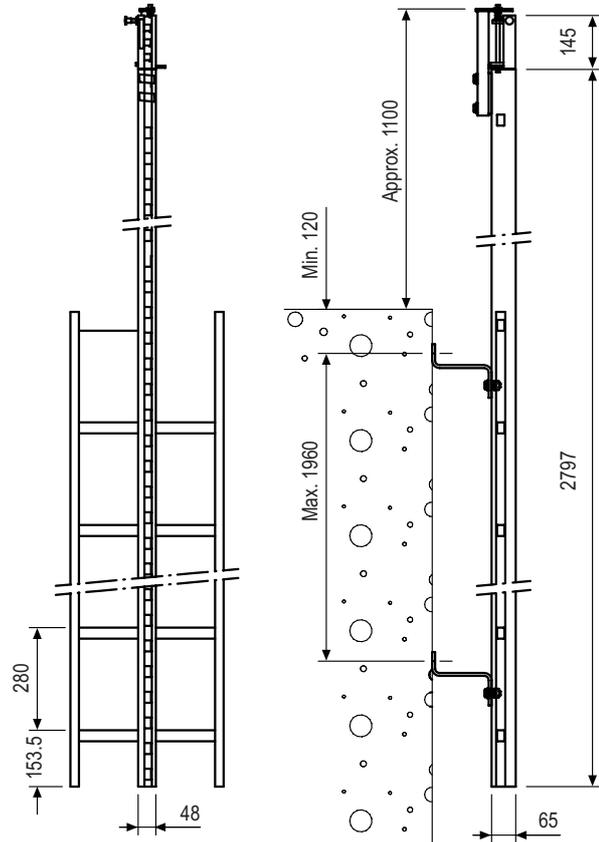
For AL2 Safety Ladder Systems

Step-over to a standing area at the top end of a ladder, e.g. stepping onto a roof.

These items are purchased as complete step-over sections. Choose between ladders with stringers or anti slip pegs, left or right swivel device.

The swivel device can also be purchased separately for use in other applications.

The design of the ladder installation must consider that the Swivel Device should be position approximately 1000mm above the roof line.



Side Stringer Step-Over with Swivel Device

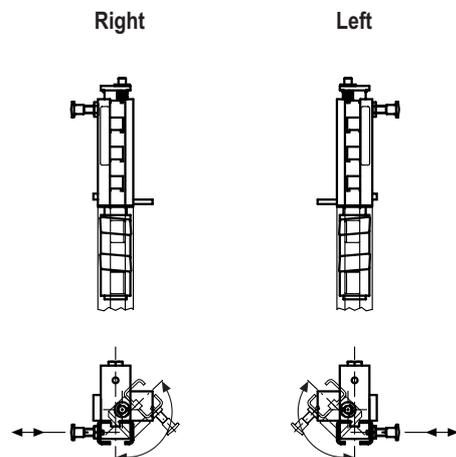
Part No	Material	Direction	Kg
687 070 280	Al. / Galv. Steel	Right	10.0
687 071 280	Al. / Galv. Steel	Left	10.0

Anti Slip Pegs Step-Over with Swivel Device

Part No	Material	Direction	Kg
683 070 002	Al. / Galv. Steel	Right	10.0
683 070 004	Al. / Galv. Steel	Left	10.0

Swivel Device

Part No	Material	Direction	Kg
673 003 001	Al. / Galv. Steel	Right	1.1
673 003 002	Al. / Galv. Steel	Left	1.1



Vertical Fall Arrest & Safety Access

TECHNICAL

Curved Step-Over

For A12 Safety Ladder Systems

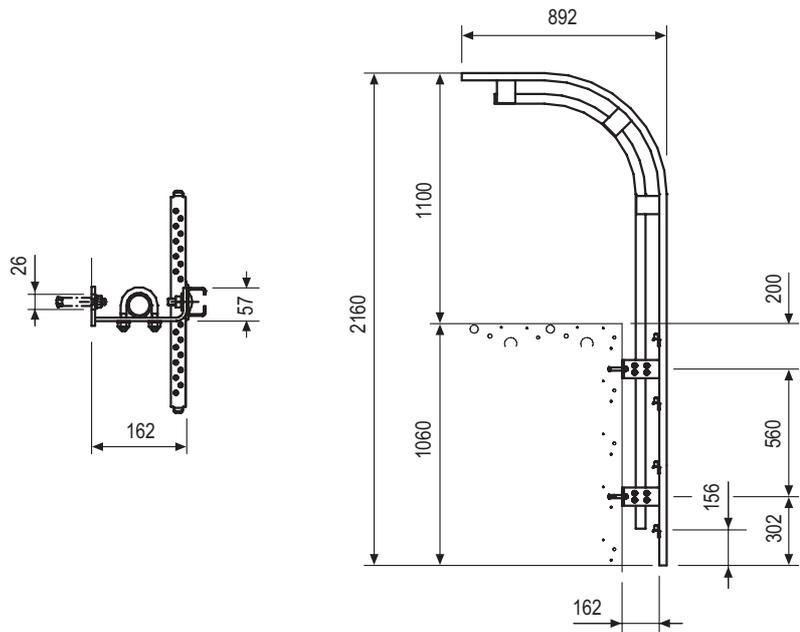
Step-over to a standing area at the top end of a ladder, e.g. stepping onto a roof.

The protected step-over is held firm with two brackets 200mm beneath the standing surface and secured with anchors. Anchors not provided.

A universal releasable lock must be fitted to the end of the curved upper section.

Curved Step-Over with 4 Rungs

Part No	Material	Kg
652 210 070	Galvanised Steel	22.0
652 210 071	Stainless Steel	22.0



Curved Step-Over

For AL2 Safety Ladder Systems

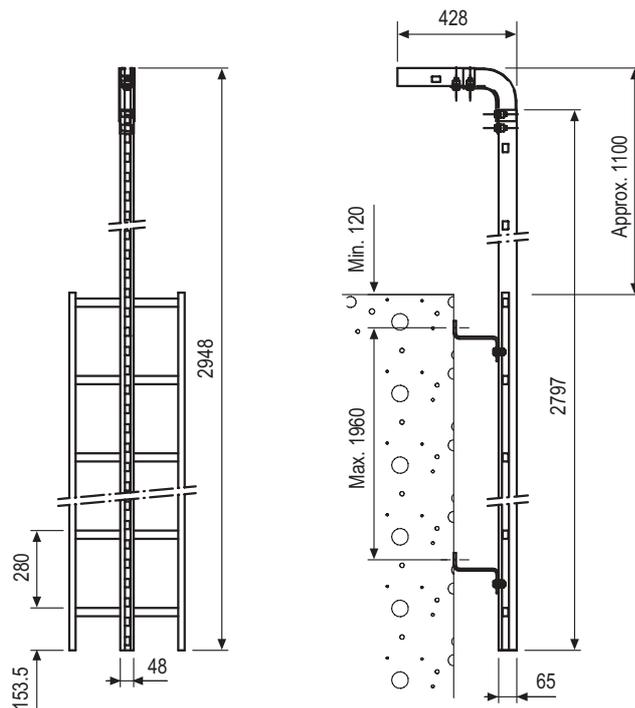
Step-over to a standing area at the top end of a ladder, e.g. stepping onto a roof.

The protected step-over is held firm with two brackets 200mm beneath the standing surface and secured with anchors. Anchors not provided.

A universal releasable lock must be fitted to the end of the curved upper section.

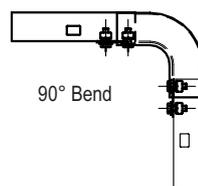
Curved Step-Over

Part No	Ladder Type	Kg
687 072 280	With Side Stringers	11.00
687 071 002	With Anti Slip Pegs	11.00



90° Bend Only

Part No	Material	Kg
673 003 007	Aluminium	2.0



Switch Unit

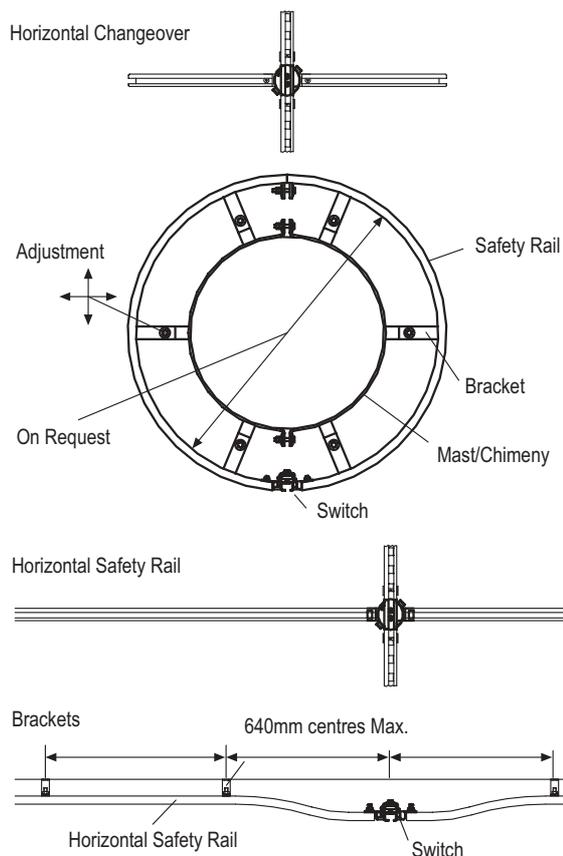
For A12 and AL2 Safety Ladder Systems

Horizontal switch, provides access from vertical A12 (Galvanised) or AL2 System (Aluminium) to horizontal A12 (Galvanised) system.

The switch can be turned 90° to allow movement from the vertical safety rail to the horizontal without detaching from the safety system.

When installing the swivel section it is necessary to maintain the rung distance of 280 mm. When assembling the horizontal rail, it should be noted that the rail is asymmetrical. The wider portion is towards the top.

Note: The horizontal safety rail is only available in Galvanised finish, has no notches and is for restraint purposes only.



Switch Only

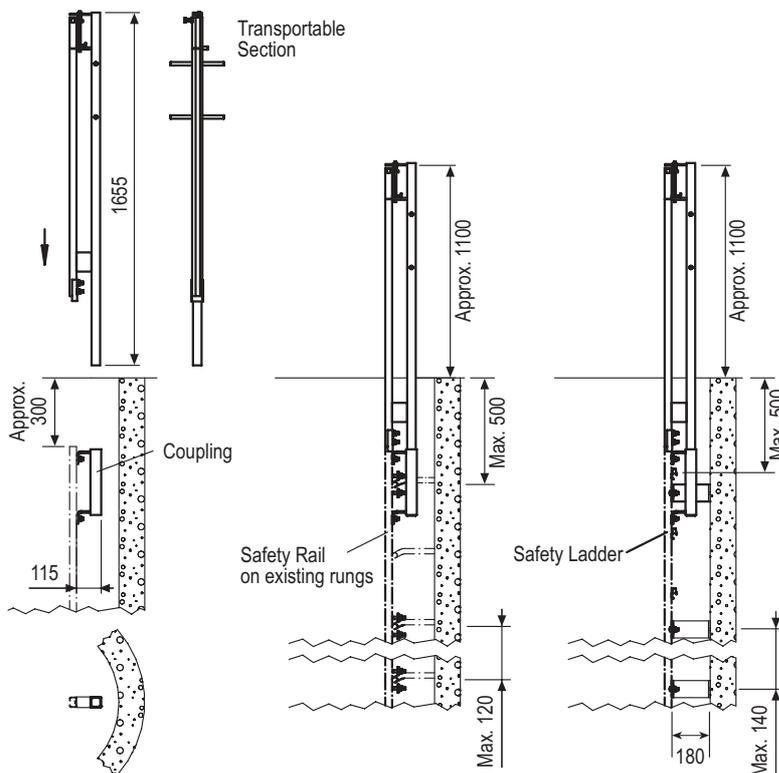
Part No	Material	Kg
652 210 075	Galvanised Steel	2.0
652 210 078	Stainless Steel	2.0
673 000 001	Aluminium	2.0

Transportable Access Rail

For A12 Safety Ladder Systems

For use on shafts or manholes in combination with the A12 Safety Ladder System. The access rail is locked into the coupling and removed after climb completed.

Part No	Description	Kg
652 222 000	Transportable Rail	-
652 222 010	Coupling	1.9
652 210 220	Bracket for Ladder Mounting	1.4



Vertical Fall Arrest & Safety Access

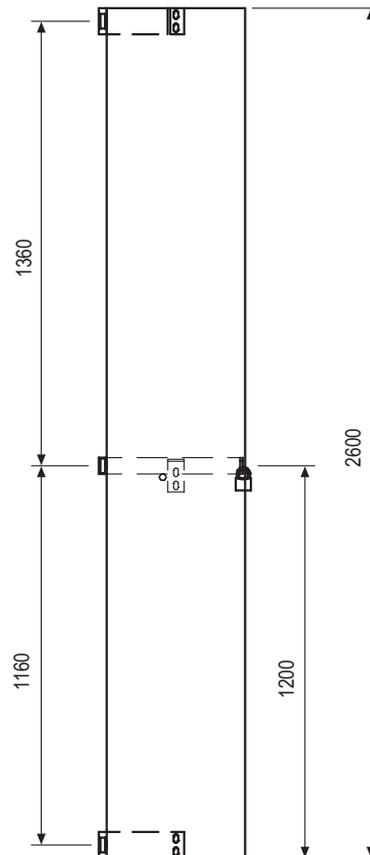
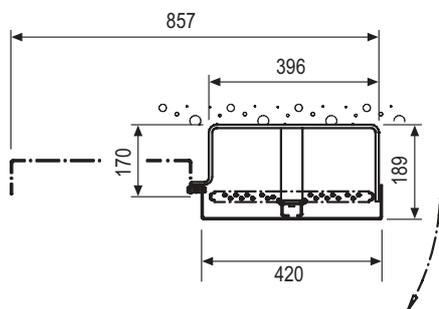
TECHNICAL

Hinged Non Access Door Cover

For AL2 Safety Ladder Systems

Opens 180° to the left hand side. Locked with a padlock supplied with cover. Secured with three hinges on the back of the rail. First bracket should be installed below the first rung. No additional fixings required.

Part No	Material	Kg
652 210 091	Cover Aluminium Brackets Galvanised	8.2

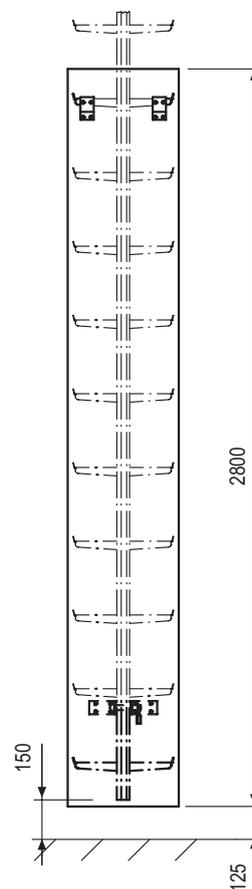
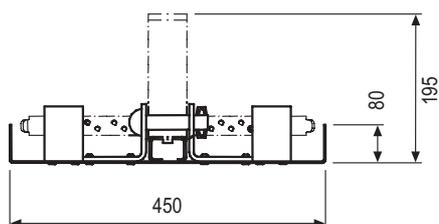


Clip-On Non Access Door Cover

For AL2 Safety Ladder Systems

Locked cover for A12 Safety Ladder. The cover hangs on two upper rungs and is locked below with a padlock.

Part No	Material	Kg
652 210 095	Aluminium with Padlock	6.5
M52 210 095	Aluminium without Padlock	6.0



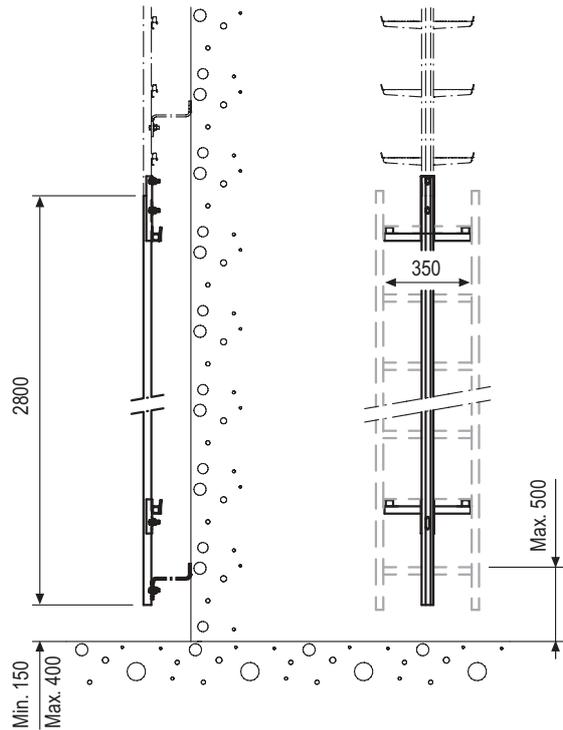
Non Access - Removable Ladder

For A12 Safety Ladder Systems

A12 Safety Rail with hooks behind for removable 2 part aluminium ladder prevents unauthorised access.

The Safety rail section must be installed at the bottom end of the system so that when the aluminium removable ladder is attached the first rung is no higher than 560mm above ground level.

Part No	Description	Kg
652 210 810	Safety Rail with Hooks	10.0
515 000 001	Two Part Collapsible Ladder	6.7

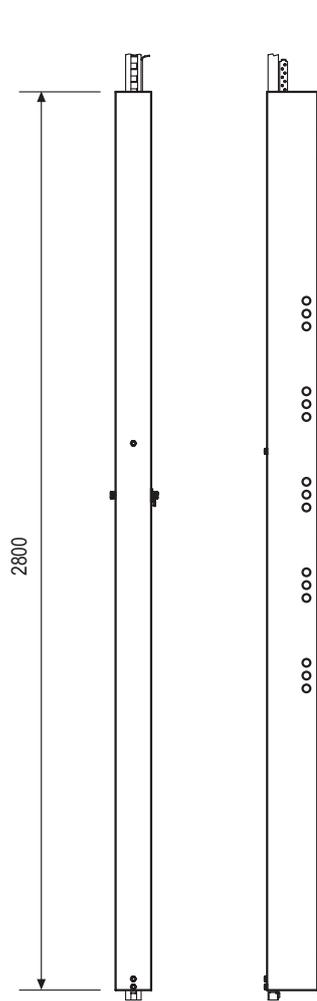


Clip-On Non Access Door Cover

For Invisirung™ Safety Ladder Systems

Locked cover for Invisirung™ Safety Ladder. The cover locates in the bottom punched hole of the safety rail and is secured by a through bolt to which a padlock can be fitted. Padlock is not supplied with cover.

Part No	Material	Kg
M52 200 090	Aluminium	6.7



Vertical Fall Arrest & Safety Access

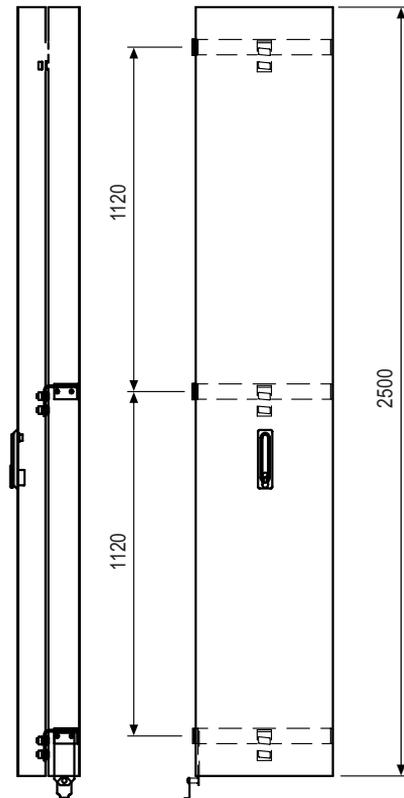
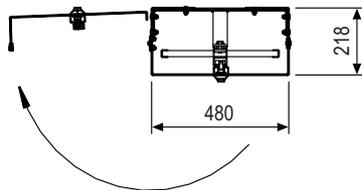
TECHNICAL

Hinged Non Access Door Cover

For AL2 Safety Ladder Systems

Designed to secure against unauthorised climbing. Door covers both front and rear of the ladder and rotates 180° for easy access. Three fixings are mounted to the safety ladder, to which the hinges for the door are fixed. Available for left or right opening. Locking and unlocking is by pivoted lever which is secured by unique key.

Part No	Material	Kg
673 003 005	Aluminium Cover, Galv Fixings	22

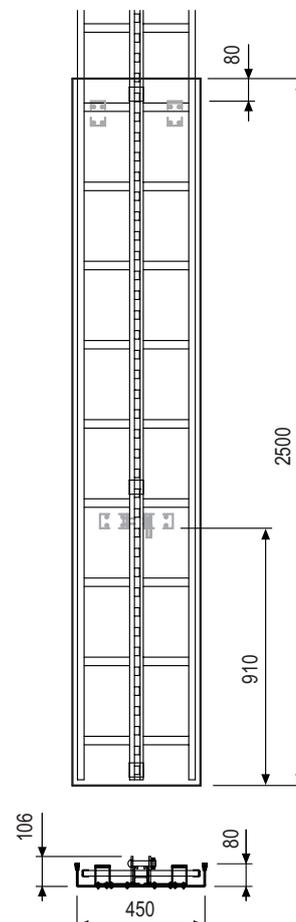


Clip-On Non Access Door Cover

For AL2 Safety Ladder Systems

Designed to secure against unauthorised climbing. Door is attached by clipping over rungs, no fixings to structure necessary. Final locking is via padlock (not supplied).

Part No	Material	Kg
673 003 006	Aluminium	9



Planning Guidelines

General

Safety ladders, safety rails and accessories should only be used in accordance with current regulations for the safe climbing of high structures, not for lifting or transportation of loads.

The building or relevant structure, to which the ladder will be attached must be capable of withstanding a fall arrest system according to **BS EN353-1**.

The drop or fall load should be assumed as **6kN** spread over a minimum of **4 brackets**.

In principle there is no limit to the height of the installation. Consideration must be given to rest areas and operator fatigue over longer climbs.

The spacing of the brackets over the complete ladder must conform to the following:-

Fallguard® A12 Safety Ladder & A12 Safety Rail	Maximum Spacing: 1400mm
Invisirung®	Maximum Spacing: 1280mm
Fallguard® AL2 Safety Ladder & AL2 Safety Rail	Maximum Spacing: 1680mm

Using the A12 or AL2 systems on out of line building surfaces can be accommodated by utilizing special manufactured bends.

Ladder Configuration can be 5° backwards from vertical or 45° forward of vertical. Sideways deviation from vertical is not permissible.

Bottom Climbing Section

The lowest section of the ladder should be designed to start 150mm above ground level to allow for the retaining carriage to be inserted, if this is not possible a Cut-Out Section can be used.

Non access covers should always be used to protect against unauthorised climbing.

Upper Climbing Section

To offer complete safety when climbing our systems at height, we offer various devices such as locks, entry and exit sections and transfers. One of these many items should always be used at end of the climbing path, thus preventing unintentional removal of the climbing carriage.

Rest platforms must be provided every 6-9 metres in accordance with the regulations. Our rest platforms allow the user to rest during a longer climb or carry out work without detaching from the safety ladder.

Note

Companies and operators may only use safety ladders which are supplied with the appropriate safety certificate.

Basic principles

Damaged parts, or parts which have been placed under greater than average loads, for example due to a fall, must not be used until they have been inspected by a technical expert.

A technical expert is a person who among others has received instruction as an independent expert in accordance with Regulation BGG 906 – Basic principles for selection, instruction and proof of competence of technical experts in the field of personal safety equipment.

It is necessary to inspect the ladder systems and components and to inform employees of the correct climbing procedures, the use of safety harnesses, the retaining carriage etc. (at least annually).

CAUTION!!! Read all instructions relating to the product

Vertical Fall Arrest & Safety Access

TECHNICAL

Introduction

Slimline Masts are becoming a popular choice for many companies trying to minimise the environmental issues of such structures. A key problem for this type of mast is access for maintenance and servicing. Fitting a standard ladder defeats the whole point of a slimline design and in addition unauthorised access presents its own problem.

The **AL2 MOBIL** and **MOBIL F** systems, from Metreel, offers a perfect solution for this type of application. This non permanent ladder is installed as you climb! Simply transport the ladder sections to site and assemble as you climb. Within a matter of minutes, a completely safe fall arrest ladder is available for your engineers to carry out their work – no need for expensive access platforms. Diismantle after use and stow away for the next job.

Both systems are produced in accordance with the EU Directive 89/686/EC and Standard EN 353-1, copies of certification can be made available to anyone wishing to view these documents. These systems are designed as non permanent vertical fall arrest ladders, and as such should only be left in the installed position whilst in use.

AL2 MOBIL

Manufactured from aluminium and comprising a central upright ladder with side stringers. Bracket location slots at set mid rung position at intervals of 280mm - no slot provided around the coupling area located under first rung of each ladder section.

Top end of ladders section contains self locking safety catch preventing retaining carriage from exiting system until next ladder section is inserted. Lower section of ladder houses a coupling mechanism that automatically engages with the safety catch and provides a secure connection with the ladder section beneath.

Various bracket configurations available, all of which are designed for quick and easy fastenening during installation.



AL2 MOBIL F

The **AL2 MOBIL F** system consists of individual ladder parts with a quick fit bracket system mounted to the back of the rail. These brackets are equipped with web straps and a ratchet, locking catch or fixed stop catch at the top, and a connector or supporting base at the bottom.

The system is typically used on round masts, including those which differ in diameter over the length of the complete mast.

The **AL2 MOBIL F** system requires no brackets fixed to the mast for its support, therefore simply attach to any suitable mast and climb in complete safety.

AL2 MOBIL

Long ladder sections (e.g. 2240mm and above) are recommended for use only as a bottom sections (handling is difficult at height due to weight, wind force etc.)

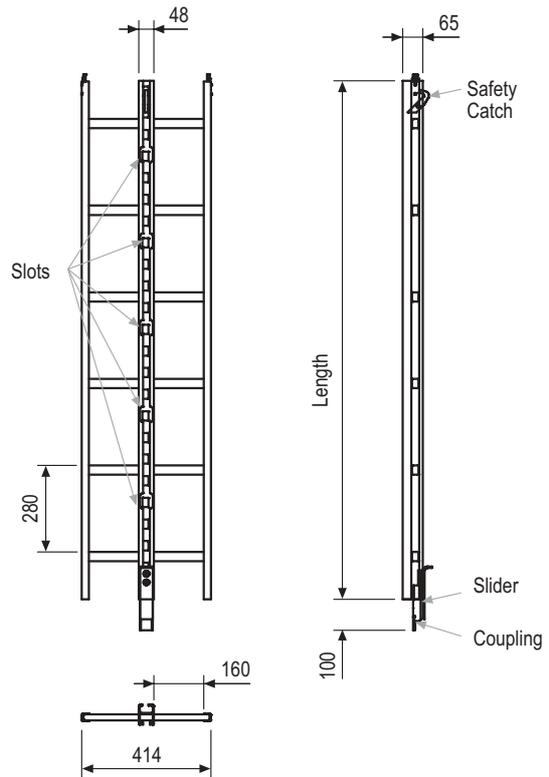
A minimum of 2 brackets must be attached to each ladder section. Maximum distance between any two brackets should not be greater than 1680mm and must comply to the standard pitch of 280mm.

Brackets should not be planned for locating around the joint area. All brackets must be installed in perfect alignment.

Only use fixings plugs which have been approved by relevant authorities.

Part No	Length	Material	Kg
687 065 168	Safety Ladder 1680mm	Aluminium	6
687 075 196	Safety Ladder 1960mm	Aluminium	7
687 085 224	Safety Ladder 2240mm	Aluminium	8
687 095 252	Safety Ladder 2520mm	Aluminium	9
687 105 280	Safety Ladder 2800mm	Aluminium	10
687 115 308	Safety Ladder 3080mm	Aluminium	11
690 000 020	Straight Spanner*	Steel	--

*For use with Bolt On and Mast Clamp Brackets

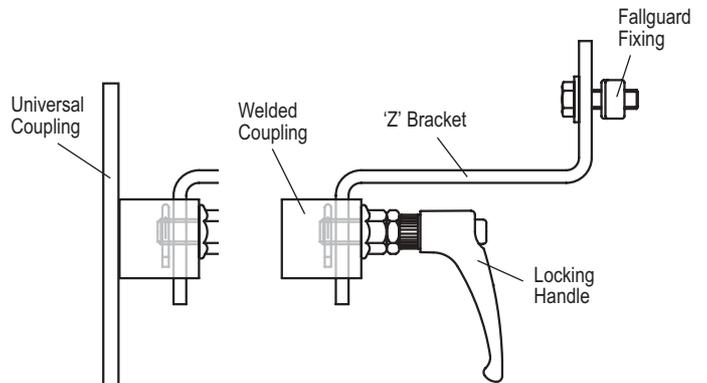


Coupling Brackets

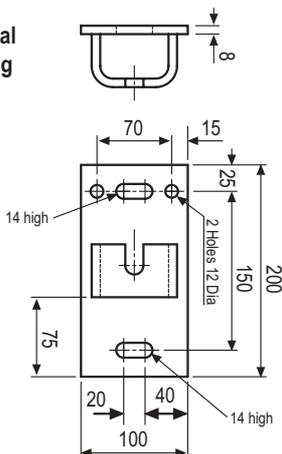
This bracket is formed by two halves, one being fitted to the structure and the other being attached to the ladder section. The two alternative coupling brackets, which are fitted to the building structure, can be supplied in many finishes to blend in with the application environment.

Simply hook up the 'Z' brackets on the ladder section into the couplings on the building structure, tighten the fastener using the handle and ladder section is safe to climb.

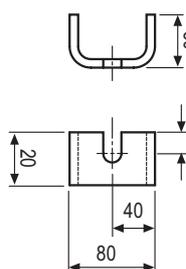
Part No	Description	Material
M90 100 301	Welded Coupling	Steel (untreated)
M90 100 300	Universal Coupling	Galv. Steel
M90 100 302	'Z' Bracket	St. Steel



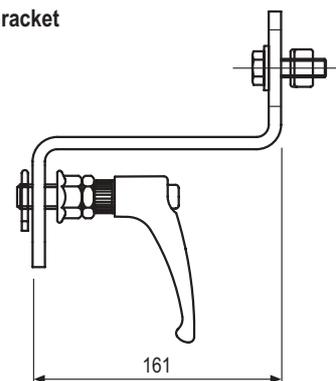
Universal Coupling



Welded Coupling



Quick Fit 'Z' Bracket



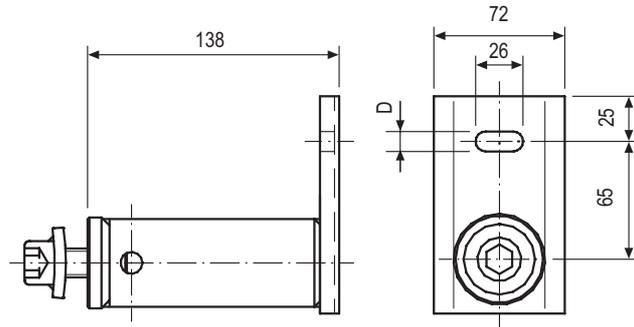
Vertical Fall Arrest & Safety Access

TECHNICAL

Bolt On Brackets

The standard bolt-on bracket consists of a plate with a round spacer, manufactured from hot galvanised steel with a location screw made from stainless steel.

The bracket is attached to the structure and the ladder sections are secured to these brackets when in use.



Part No	Description	Material	Kg
690 100 150	Bracket : D = 10.5mm	Galv.St + St. St.	1.5
690 100 151	Bracket : D = 14.0mm	Galv.St + St. St.	1.5

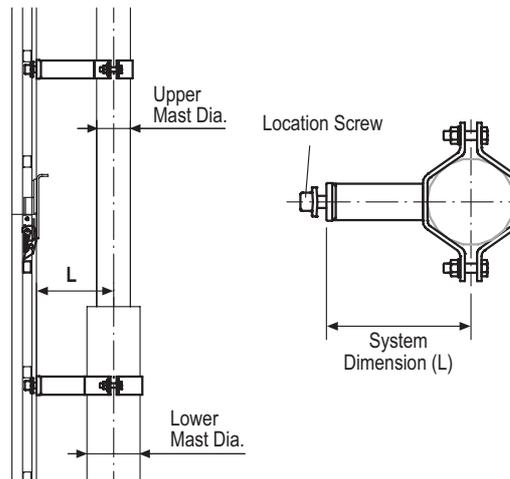
Mast Clamp Brackets

The fixing is identified by :

- the mast diameter at the location where the fixing is mounted,
- system dimension L (Mast centre to back of rail)

Example: Diameter = 80mm
System Dim (L)= 203mm

Name : Fixing Ø80 / 203
Part No. : 690 300 060



for Ø in mm	Order No. 690 300 _ _ _ complete with relevant final number from the system dimension L = mm (below)										
	178	184	190	203	213	217	230	243	255	269	308
80.0				060	061						
88.9	050	054	053	051	052	055	056	057			
101.6		090	092	093	094	095	091	096			
114.3			040	042	043	044	045	041	046		
139.7				020	022	023	024	021	025		
159.0					030	032	033	034	031		
168.3						070	071	072	073		
193.7							080	081	082		
219.1								010	011	012	
244.5											
273.0											
350.0											100

Other versions are available on request

System dimension L used in equipment always results from the smallest mast diameter which is given. The Measurement L decides the selection of the further fixings to be used in the same system.

AL2 MOBIL F

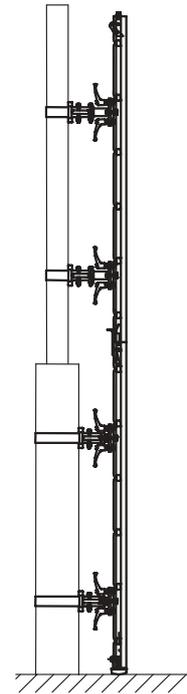
The **AL2 MOBIL F** system consists of individual ladder parts with a quick fit bracket system mounted to the back of the rail. These brackets are equipped with web straps and a ratchet, locking catch or fixed stop catch at the top, and a connector or supporting base at the bottom.



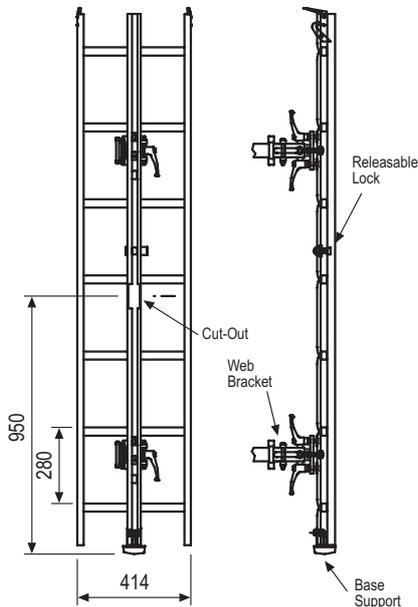
The system is typically used on round masts, including those which differ in diameter over the length of the complete mast.

The **AL2 MOBIL F** system requires no brackets fixed to the mast for its support, therefore simply attach to any suitable mast and climb in complete safety.

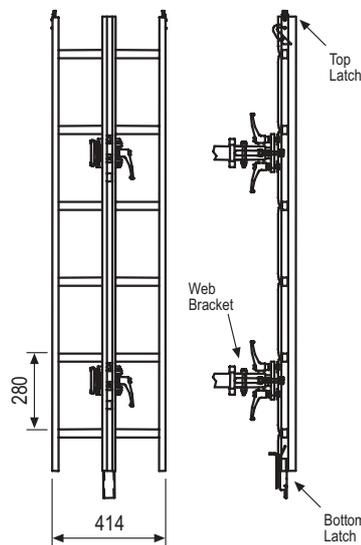
Typical layout of MOBIL F System installed on a two section round mast



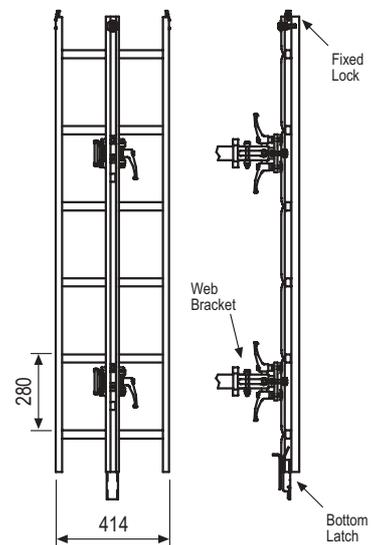
Bottom Ladder Section



Middle Ladder Section



Top Ladder Section



CAUTION!!!

The climbing protection system should only be used with a **safety harness** in accordance with **EN 361** and with a **Fallguard retaining carriage type AL-D**, following the **AS 02 K8** instructions for use.

Vertical Fall Arrest & Safety Access

TECHNICAL

MOBIL F Ladder Sections

Bottom Section:

- length 1960mm.
- lower end has integral base support for standing ladder on ground.
- with entry/exit section and releasable lock for inserting or removing the retaining carriage.
- upper end has latch which locks automatically.

Middle Section:

- length 1960mm or 1680mm.
- lower end has connector, into which the locking latch engages.
- upper end has latch which locks automatically.

Top Section:

- length 1960mm or 1680mm
- lower end has connector, into which the locking latch engages
- upper end has a fixed lock.

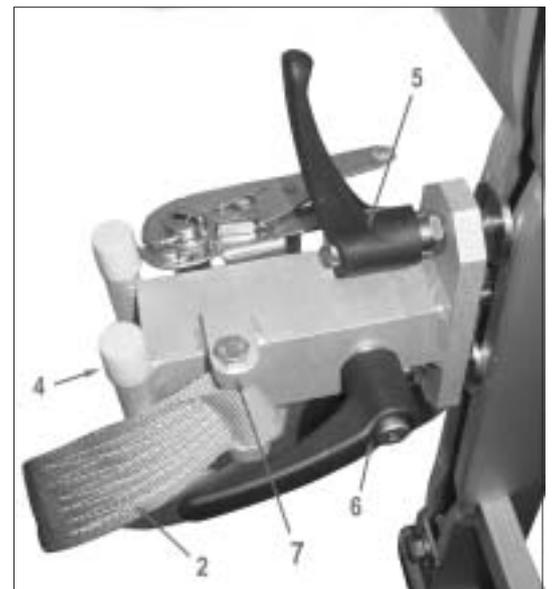


Adjustable Bracket

Part No	Section	Length	Material	Kg
687 008 196	Bottom	1960mm	Aluminium	11.5
687 002 196	Middle	1960mm	Aluminium	11.5
687 002 168		1680mm	Aluminium	10.5
687 004 196	Top	1960mm	Aluminium	11.5
687 004 168		1680mm	Aluminium	10.5

Spare Parts

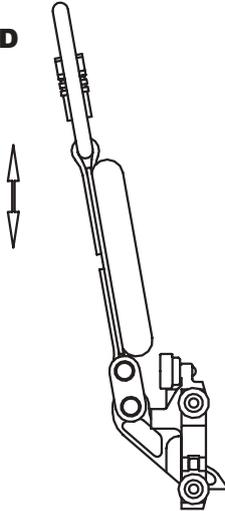
Part No	Description	Pos.
673 006 001	Complete Web Strap Bracket	1
672 007 009	Webbing Strap	2
672 007 008	Ratchet	3
672 007 007	Protective Caps	4
520 001 040	Clamping Lever	5
672 007 005	Clamping Lever with Bolt	6
900 931 890 40	M8 hexagon nut with clamping part	7



Retaining Carriages

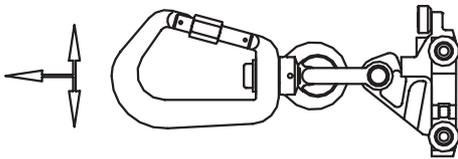
A Fallguard® Retaining Carriage must be used with all systems to safely climb.

Type AL-D



Part No	Type	Kg
690 208 034	AL-D Retaining Carriage with steel safety hook and fall arrest damper. <i>Recommended for confined spaces</i>	1.0

Type AL-R

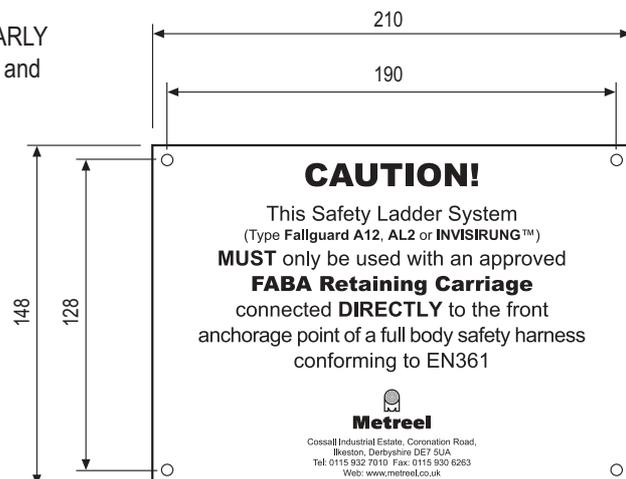


Part No	Type	Kg
690 208 040	AL-R Retaining Carriage with steel safety hook. <i>Recommended for most applications</i>	1.0

Instruction Shield

The instruction shield **MUST** be installed so that it can be **CLEARLY** seen before climbing. It is recommended to permanently install and secure at head height, near the entry point.

Part No	Kg
652 210 701	0.1





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