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LPS 1175: Issue 7

## Fabricated Steel Security Access Covers



EJ is the world leader in the design, manufacture and distribution of access solutions for water, sewer, drainage, telecommunications and utility networks.

From the site survey stage through to the design, installation and maintenance of your product, EJ are committed to working with you, offering custom-built access solutions that meet the highest standards in the world.

Safety is a core value for EJ. Our access covers are available with lift assistance in accordance with manual handling regulations, fall through protection safety grids and a range of bespoke locking variants are also available.

EJ manufactures an extensive range of steel access solutions in our world-class production facilities, certified to the ISO 9001, ISO 14001 and OHSAS 18001 management systems.

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Drawings, photographs and weights are given as an indication only without any contractual value.

Our policy is one of continuous product improvement, EJ reserve the right to modify product specifications without prior notice.



**Shared commitment.  
Common bond.**

We've been on parallel paths: committed to creating the best infrastructure access solutions for our customers and backing them with unparalleled customer care. This commitment is our common bond. It melts distance, cultures and language. It's what strengthens us as a company under our name EJ.

Together, we are the world leader in the design, manufacture and distribution of access covers and gratings for water, sewer, drainage, telecommunications and utility networks.

**Global expertise.  
Local understanding.**

As a worldwide company, we excel at serving our customers by leveraging our global and local strengths. To ensure every customer benefits from our global learning, we collaborate across departments. From Design to Manufacture, Research to Customer Care-from North America to France, Australia to the UK: we share facts, data and developments across all disciplines.

This expertise includes the intelligence we gain through in-house research, on-road testing, and through participation in Standards committees around the world. Our research and collaboration gives us the edge in creating the best infrastructure solutions available: solutions that lead the industry, act as best-in-class benchmarks, and satisfy the most demanding customer expectation.

Our distribution network, manufacturing facilities, and highly developed understanding of local cultures and standards puts us in a perfect place to back our solutions with knowledgeable and responsive customer service. Our modern, regional production capabilities put inventories within quick reach of our customers. The result: Our customers have unrivalled access to innovations, inventories and service in the field.

**Our people:  
Our core strength.**

Along with our distributors and agents, we take pride in what we do. We are honest and genuinely committed to creating and maintaining real, long-lasting relationships. We work where you work, we live where you live. We hire the right people, and give them superior knowledge. It is our employees' world class knowledge and expertise that continues to keep us leading in our globally competitive industry.

We are fortunate to have a long history of attracting and retaining outstanding people. Our workforce is diverse, knowledgeable and loyal, and often includes multiple generations from the same family. Our passionate and dedicated teams repeatedly earn recognition for their high degree of professionalism.



We are a global enterprise that spans 5 continents promoting innovation, quality and a commitment to customer service.



Located in **Ardenne**, France, we have another fabrication facility containing the most advanced technology in Europe such as plasma cutting & robotic welding, and provides high volume capacity as well as tailor-made solutions to the marketplace. Management system certification includes ISO 9001, ISO 14001, and OHSAS 18001 for quality, environment, health and safety.



Our UK head office is located in **Nuneaton**. The primary UK operation is run from here and the site includes a fabricated steel facility and 3 acres of yard storage. Management system certification includes ISO 9001 for quality.



Located in **Birr**, Ireland we have a fabricated steel facility. Management system certification includes ISO 9001, ISO 14001 and OHSAS 18001 for quality, environment, health and safety.





# For over 130 years, we have fostered strong relationships around the world.

## Ingenuity and craft

With ingenuity and craft, we have pioneered products that serve as the infrastructure of neighbourhoods, villages and cities.

## Integrity and heart

With integrity and heart, we have responded to our customers' needs and expectations and built names for ourselves. Our family heritage and legacy have been the cornerstone of our journey and our inspiration to grow.





## Fabricated Security Steel Project Examples

Project	Product Supplied
DSR SEMD Security Upgrade Project, Severn Trent Water	GARRISON™ LPCB Upstand Covers GARRISON™ LPCB Flush Covers
SEMD Security Upgrade Project, Anglian Water	GARRISON™ LPCB Upstand Covers GARRISON™ LPCB Flush Covers
M6 Junction 16-19, Highways England	GARRISON™ LPCB SR3 Flush Covers
M6 Junction 2-4, Highways England	GARRISON™ LPCB SR3 Flush Covers
Thirlmere Mains Upgrade, United Utilities	GARRISON™ LPCB SR4 Flush Covers
Anglian Water, Deanshanger	GARRISON™ LPCB Upstand Covers
Leathern Bottle	GARRISON™ LPCB Upstand Covers GARRISON™ LPCB Hybrid Covers
Oxton STW, NMC Nomenca	GARRISON™ LPCB Upstand Covers GARRISON™ LPCB Flush Covers
Basingstoke STW, Thames Water	DEFENSO® FF SR4
Ogbourne WTW, Thames Water	DEFENSO® AG, FF
Bibury WTW	DEFENSO® AG
Stockcross WBS	Combined AG Covers with anti-slip & external handrails
Playhatch WTW	DEFENSO® AG
Toot Balden WBS	DEFENSO® AG
Warwick Road WBS	DEFENSO® FF SR3
Ninevah WBS	DEFENSO® AG
Leckhampstead WTW	DEFENSO® AG
Marlow WTW	DEFENSO® AG
Barrow Hill Reservoir	Bespoke combined FF, TS, AG Cover with additional pipe surround
Southfleet (London Road) WBS	DEFENSO® AG
Woodways WBS	DEFENSO® AG
Erith WBS	DEFENSO® FF
Marston WBS	DEFENSO® AG
Cleeve WTW	DEFENSO® AG
Wetheridge Hill WTW	DEFENSO® AG
Wilmington WTW	DEFENSO® AG, FF
Lullingstone WTW	DEFENSO® AG
New River Head TWRM	DEFENSO® AG, FF
Holland Park TWRM	DEFENSO® AG, FF
Blakes Lock, Thames Water	DEFENSO® FF

# GARRISON™ Range FACTA



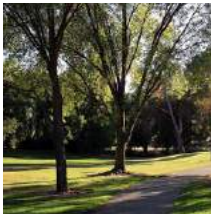
# FACTA

## Loading Standard

EJ are founder members of FACTA, an association set up in 1993 by leading manufacturers of steel access covers and frames to promote a standard for steel products.

FACTA has been very successful and has become a well-specified standard within the UK construction industry.

Class AA



Pedestrian Only

Class AAA



Occasional Slow Moving Cars

Class B



Slow Moving Cars

Class C



Slow Moving Heavy Vehicles

Class D



Slow Moving Lorries

FACTA Class	Wheel Load (Slow Moving Pneumatic*)	Wheel Load (Slow Moving Solid*)	FACTA in Service Test Load (kN)	FACTA Ultimate Test Load (kN)
AA	1.5 tonne	N/A	19	31
AAA	2.5 tonne	0.5 tonne	32	52
B	5.0 tonne	0.75 tonne	63.25	101
C	6.5 tonne	1.0 tonne	82.5	132
D	11 tonne	3.0 tonne	137.5	220

### FACTA requirement

The Permanent Set reading only recorded on removal of the 5th test load.

The Permanent Set reading can be taken anywhere on the cover.

Acceptable Permanent set for class C and above shall NOT exceed test opening multiplied by 0.8%.

(600x600mm x 0.8% = 4.8mm)

\* Slow moving wheel loads are deemed to be speeds no greater than 20 mph, in low intensity trafficked areas. Where higher intensity traffic is expected, a higher load classification of cover is recommended or an iron cover.



# Upstand Range of Access Covers

## GARRISON™ UPSTAND SR4



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Cert No. 1187a/12

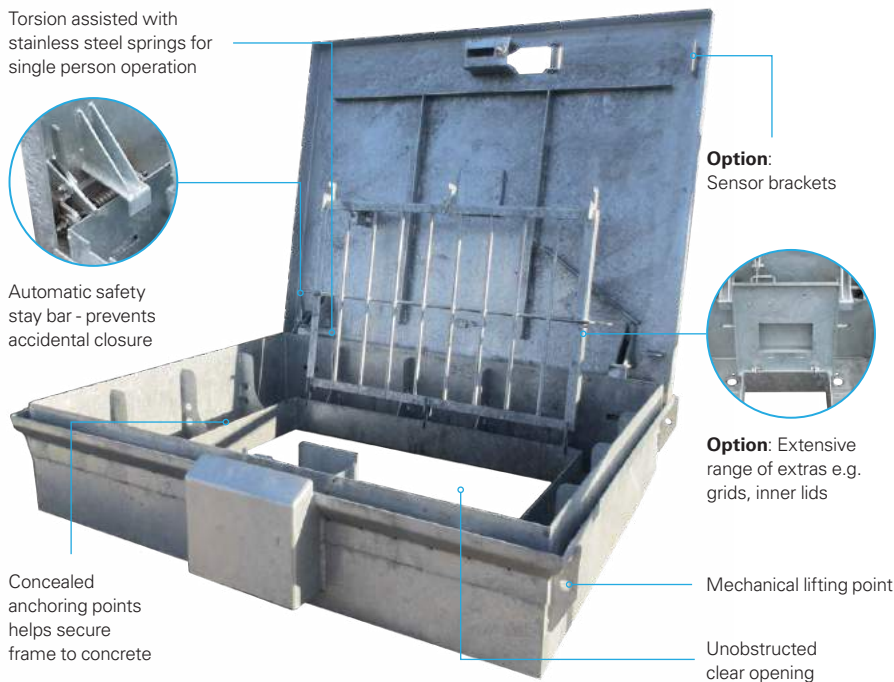
**Place of installation:** For medium to high-risk sites - SR4  
**Material:** Hot Dipped galvanised after manufacture to BS EN ISO 1461.  
 Stainless Steel  
**Manufactured Within:** ISO 9001:2015 QMS  
**Overall Depth:** 300 mm  
**Loading:** FACTA Class AA - Pedestrian Only  
**Padlock Options:** A, C to K (See page 34/35)

Torsion assisted with stainless steel springs for single person operation



Automatic safety stay bar - prevents accidental closure

Concealed anchoring points helps secure frame to concrete



**Option:** Sensor brackets



**Option:** Extensive range of extras e.g. grids, inner lids

Mechanical lifting point

Unobstructed clear opening

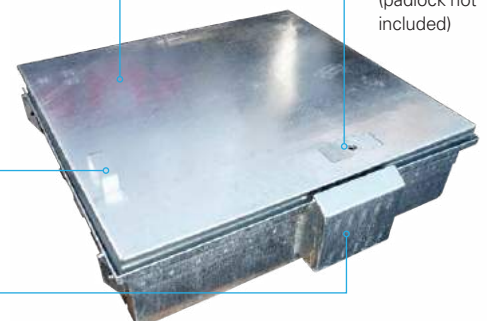


**Option:** Plain plate or chequer plate finish

Easy-lift handle

Patent protected locking device

High-security padlock point (padlock not included)



Wide range of clear openings available

## GARRISON™ UPSTAND SR4

The GARRISON™ UPSTAND has the facility for an A, C to K padlock (padlock not supplied). In addition, it is also galvanised in accordance with BS EN 1461, a standard which guarantees maximum life expectancy and protection against corrosion.

### Options

- Single Skin Cover
- Double Skin Cover
- Sealed Internal Cover
- Stainless Steel Open Mesh Vent
- Cable Tidy Fixing Points
- Frame Cable Entry Points
- Vibration Sensor Mounting Facility
- Proximity Sensor Mounting Facility
- Float Sensor Mounting Facility
- Safety Grids: Lattice, Open Mesh or Jail Type (Continuous or Split - See page 19)
- Plain Plate or Chequer Plate Finish
- Internal Telemetry Holes
- Anti-Slip Coating (Plain Plate Only)
- Full Stainless Steel Product
- Long Life Galvanisation
- Powder Coating
- Barrier System

### GARRISON™ UPSTAND SR4 Clear Opening Sizes

Type	Minimum Size W x L (mm)	Maximum Size W x L (mm)
Single leaf	300 x 300	1200 x 1800
Twin leaf in-line hinged	300 x 600	1200 x 3600
Twin leaf end hinged	300 x 600	1800 x 2400
Quad leaf	600 x 600	2400 x 3600
Multi leaf in-line hinged	300 x 600	1200 x Unlimited

[Non-standard sizes available](#)

#### Protective Coatings:

Long Life Galvanisation enhances the durability of the unit and involves Grit Blasting to SA 2 ½ (ISO 7079), carried out prior to galvanising. By carrying this out, we can double the service life of the unit.

Powder coating increases durability and resistance to corrosion. It's coated on top of the normal BSEN ISO 1461 galvanising coating and offers a greater resistance to chipping, scratching, fading, and wearing than other finishes.

# Hybrid Upstand Range of Access Covers

## GARRISON™ HYBRID SR4 or SR3

**Place of installation:** For medium to high-risk sites - SR4, low to medium risk sites - SR3  
**Material:** Hot Dipped galvanised after manufacture to BS EN ISO 1461.  
 Stainless Steel  
**Manufactured Within:** ISO 9001:2015 QMS  
**Overall Depth:** 126 mm  
**Loading:** FACTA Class AA - Pedestrian Only  
**Padlock Options:** **SR4** - A, C to K  
**SR3** - A to M, R, S (See page 34/35)



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 SR3 Cert No. 1187a/08  
 SR4 Cert No. 1187a/10

M16 lock & lift points



Automatic safety stay bar - prevents accidental closure

High-security padlock point (padlock not included)

**Option:** Sensor brackets

Torsion assisted with stainless steel springs for single person operation

**Option:** Grid handle

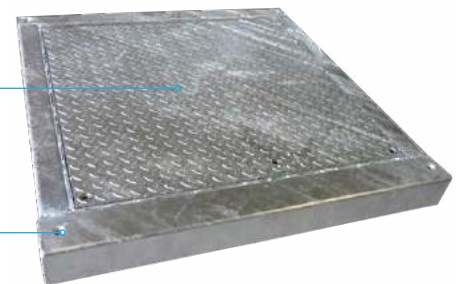
**Option:** Extensive range of grids



**Option:** Frame cable entry point

**Option:** Plain plate or chequer plate finish

Mechanical lifting points



Wide range of clear openings available



## GARRISON™ HYBRID SR4/3

The GARRISON™ HYBRID has the facility for an A, C to K (SR4) and A to M, R, S (SR3) padlock (padlock not supplied) and features an M16 lock & lift mechanism to lock/unlock covers. In addition, it is also galvanised in accordance with BS EN 1461, a standard which guarantees maximum life expectancy and protection against corrosion.

**SR4/3:** Padlock point required for each cover

### Options/Features

- Cable Tidy Fixing Points
- Frame Cable Entry Points
- Vibration Sensor Mounting Facility
- Proximity Sensor Mounting Facility
- Safety Grids: Lattice, Open Mesh or Jail Type (Continuous or Split - See page 19)
- Internal Telemetry Holes
- Plain Plate or Chequer Plate Finish
- Anti-Slip Coating (Plain Plate Only)
- Full Stainless Steel Product
- Long Life Galvanisation
- Powder Coating
- Barrier System

### GARRISON™ HYBRID SR4 or SR3 Clear Opening Sizes

(Not fully unobstructed when grids are fitted)

Type	Minimum Size W x L (mm)	Maximum Size W x L (mm)
Single leaf	300 x 300	1200 x 1500
Twin leaf in-line hinged	300 x 600	1200 x 3000
Multi leaf in-line hinged	300 x 600	1200 x Unlimited

[Non-standard sizes available](#)

### Protective Coatings:

Long Life Galvanisation enhances the durability of the unit and involves Grit Blasting to SA 2 ½ (ISO 7079), carried out prior to galvanising. By carrying this out, we can double the service life of the unit.

Powder coating increases durability and resistance to corrosion. It's coated on top of the normal BSEN ISO 1461 galvanising coating and offers a greater resistance to chipping, scratching, fading, and wearing than other finishes.

# Flush Fit Range of Access Covers

## GARRISON™ FLUSH SR4 or SR3

**Place of installation:** For medium to high-risk sites - SR4, low to medium risk sites - SR3

**Material:** Hot Dipped galvanised after manufacture to BS EN ISO 1461.  
Stainless Steel

**Manufactured Within:** ISO 9001:2015 QMS

**Overall Depth:** 126 mm

**FACTA Class AA:** Pedestrian Only

**FACTA Class AAA:** Occasional Slow Moving Cars

**FACTA Class B:** Slow Moving Cars

**FACTA Class C:** Slow Moving Heavy Vehicles

**FACTA Class D:** Slow Moving Lorries

**Padlock Options:** **SR4** - A, C to K

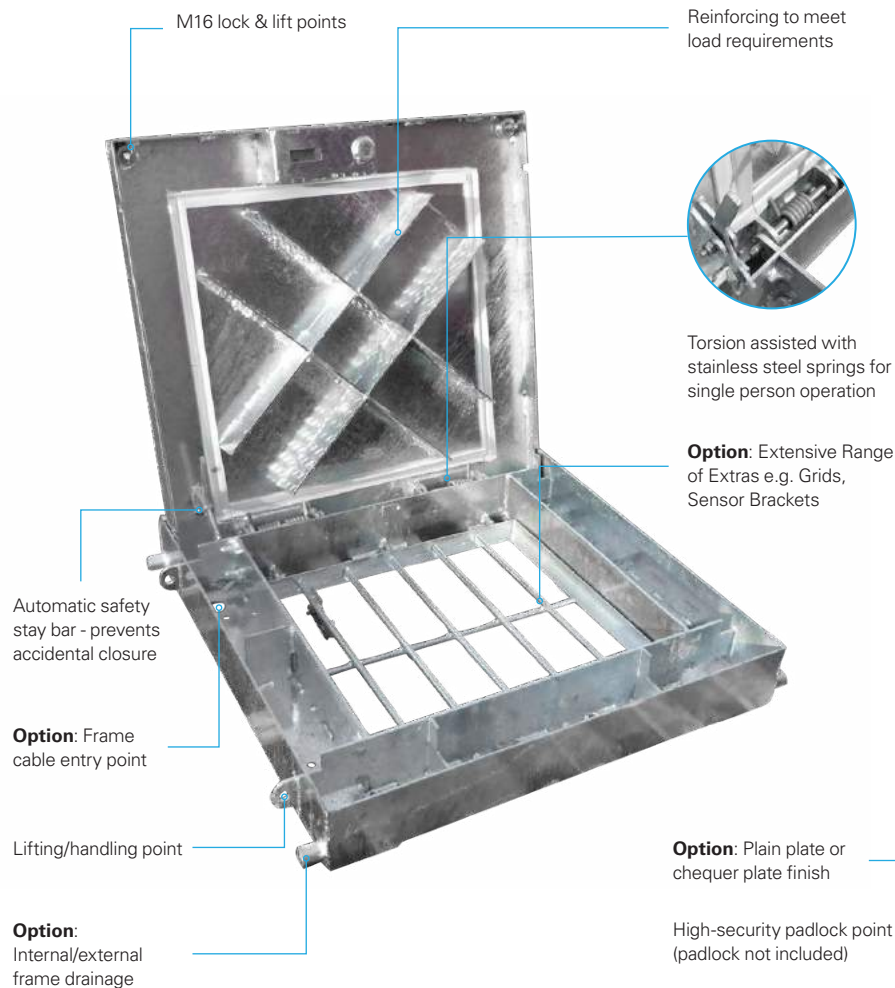
**SR3** - A to M, R, S (See page 34/35)



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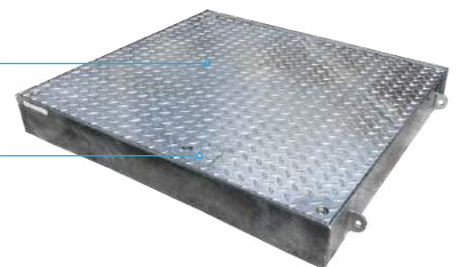
SR3 Cert No. 1187a/07

SR4 Cert No. 1187a/09



**Option:** Plain plate or chequer plate finish

High-security padlock point (padlock not included)



Wide range of clear openings available

## GARRISON™ FLUSH SR4/3

The GARRISON™ FLUSH has the facility for an A, C to K (SR4) and A to M, R, S (SR3) padlock (padlock not supplied) and features an M16 lock & lift mechanism to lock/unlock covers. In addition, it is galvanised in accordance with BS EN 1461, a standard which guarantees maximum life expectancy and protection against corrosion.

**SR4/3:** Padlock point required for each cover

### Options

- Cable Tidy Fixing Points
- Frame Cable Entry Points
- Vibration Sensor Mounting Facility
- Proximity Sensor Mounting Facility
- Safety Grids: Lattice, Open Mesh or Jail Type (Continuous or Split - See page 19)
- Internal Telemetry Holes
- Plain Plate or Chequer Plate Finish
- Anti-Slip Coating (Plain Plate Only)
- Full Stainless Steel Product
- Internal/external frame drainage
- Long Life Galvanisation
- Powder Coating
- Barrier System

## GARRISON™ FLUSH SR4 or SR3 Clear Opening Sizes

(Not fully unobstructed when grids are fitted)

Type	Minimum Size W x L (mm)	Maximum Size W x L (mm)
Single leaf	300 x 300	1200 x 1500
Twin leaf in-line hinged	300 x 600	1200 x 3000
Multi leaf in-line hinged	300 x 600	1200 x Unlimited

[Non-standard sizes available](#)

### Protective Coatings:

Long Life Galvanisation enhances the durability of the unit and involves Grit Blasting to SA 2 ½ (ISO 7079), carried out prior to galvanising. By carrying this out, we can double the service life of the unit.

Powder coating increases durability and resistance to corrosion. It's coated on top of the normal BSEN ISO 1461 galvanising coating and offers a greater resistance to chipping, scratching, fading, and wearing than other finishes.





## Optional Accessories

### Safety Grids

Safety is a core value for EJ. For this reason, we do not compromise when designing and manufacturing safety grids. Our safety grids have been designed for different applications from working platforms to fall arrest.

All of our safety grids are available with padlock facilities.



#### Open Mesh 'Working Platform'

Suffix /GRID1 when ordering. Mesh has 25x3mm bearer bars at 41mm centres and twisted transverse bars at 100mm centres.



#### Split Open Mesh 'Working Platform'

Suffix /GRID1S when ordering. Mesh has 25x3 mm bearer bars at 41mm centres and twisted transverse bars at 100mm centres.



#### Jail Type 'Personnel Protection'

Suffix /GRID2 when ordering. Bars are Max 100 mm centres.



#### Split Jail Type 'Personnel Protection'

Suffix /GRID2S when ordering. Bars are Max 100 mm centres.



#### Lattice Type 'Fall Arrest'

Suffix /GRID3 when ordering. Bars are Max 100 mm centres (BS9124)



#### Split Lattice Type 'Fall Arrest'

Suffix /GRID3S when ordering. Bars are Max 100 mm centres (BS9124)



## DEFENSO® Range EN 124







## EN 124

### Loading Standard

BS EN 124 is a performance standard which states the design and load performance to suit predefined types of applications. Products designed to BS EN 124 are grouped and classified depending on their place of installation. EJ products satisfy the EN124: 2015 standard and EJ are members of the EN124 review committee.

A 15



B 125



C 250



D 400



EN 124 Class	EN 124 Test Load (kN)	Loading Application
A15	15	Footways, pedestrian and cycle areas.
B125	125	Footways, pedestrian areas, car parks.
C250	250	Slow moving, occasionally trafficked areas, parking areas.
D400	400	For all types of road vehicles in areas of low speeds (20mph max) and low traffic intensity (inc. pedestrian streets), forecourts, hard shoulders and parking areas.

#### Permanent Set reading - residual deflection

##### EN 124 requirement

The Permanent Set reading must be taken after applying 2/3 of the test load 5 times.

The Permanent Set reading must be taken at the geometric centre of the cover (measured where the load is applied and the worst case scenario).

Acceptable Permanent set for class C250 and above: (7.8 a&c) =  $1/300 \times (600 \times 1) = 2\text{mm}$  & (7.8b) =  $1/500 \times (600 \times 1) = 1.2\text{mm}$ .

- \* Slow moving wheel loads are deemed to be speeds no greater than 20 mph, in low intensity trafficked areas. Where higher intensity traffic is expected, a higher load classification of cover is recommended or an iron cover.

## Specifying Guide

### How to select your cover

From the site survey stage through to the design, installation and maintenance of your product, EJ are committed to working with you, offering custom built access solutions that meet the highest standards in the world. Select your choice of access cover from the options listed below by using the abbreviations (in bold) and following the column sequence. For example, Cover type, Loading, Finish, Size / Chamber opening etc.

#### Access Covers - Solid Top

Cover Type	EN 124 Loading	Finish	Size /Chamber Opening	Opening	Lift Assist	Odour Seal	Locking Mechanisms
Above Ground- <b>AG</b>	15 kN- <b>1</b>	Solid top- <b>S</b>	1st dimension indicates the cover hinge side	Hinged- <b>A</b>	Torsion Springs- <b>H</b>	Seal- <b>J</b>	Padlock facility 1 Padlock- <b>V1</b>
Flush Fit- <b>FF</b>	125 kN- <b>2</b>		A x B for example: 1500 x 700mm = <b>150 070</b>		Compression Strut- <b>HR</b>		Padlock facility 2 Padlocks- <b>V2</b>
	250 kN- <b>3</b>				Gas Strut- <b>U</b>		Padlock facility 3 Padlocks etc- <b>V3</b>
	400 kN- <b>4</b>				Stainless Steel Gas Strut- <b>UI</b>		M16 bolt (Socket head capscREW)- <b>M16</b>
							OTC bolt- <b>VOTC</b>
							(Padlock supplied by others)

A flush fit cover, 125kN loading, solid top with a clear opening of 1500 x 700mm, hinged, torsion spring, odour sealed and lockable would contain the following abbreviations: **FF 2 S 150 070 A H J V1**

#### Additional specifications - abbreviations can be added to the end of the product code

100 µm = 100 Micron Galvanisation

140 µm= 140 Micron Galvanisation

IM = Insect Mesh

AB = Alarm Bracket

AI = Alarm Installed

MS = Motion Sensor Installed

DS = Double Skin - secondary protection

VS = Vibration Sensor Bracket (only available on Double Skin units)

PT = Painted

AS = Anti-skid coating

EC = Epoxy Coating

ME = Moat Draining Externally

MI = Moat Draining Internally

#### Additional Security for Key Assets

##### Accredited by the Loss Prevention Certification Board (LPCB)

LPCB Security Rating 3

**SR3**

LPCB Security Rating 4

**SR4**

**Place of installation:** For medium to high-risk sites - SR4, low to medium risk sites - SR3

**FF1S 15 kN:** Footways, pedestrian and cycle areas.

**FF2S 125 kN:** Footways, pedestrian areas, car parks.

**FF3S 250 kN:** Slow moving, occasionally trafficked areas, parking areas.

**FF4S 400 kN:** For all types of road vehicles in areas of low speeds (20mph max) and low traffic intensity (inc. pedestrian streets), forecourts, hard shoulders and parking areas.

**Material:** Hot dip galvanised mild steel  
Stainless steel



# Upstanding Range of Access Covers

## DEFENSO® AG SR4 or SR3



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SR3 Cert No. 1187a/04

SR4 Cert No. 1187a/01

- Place of installation:** Non trafficked areas where frequent access is required.  
For medium to high-risk sites - SR4, low to medium risk sites - SR3
- Material:** Hot dip galvanised mild steel.  
Stainless Steel
- Padlock Options:** **SR4** - A, C to E, J to Q  
**SR3** - D, E, J, K, M to Q (See page 34/35)

Padlock location  
(not included)

Torsion spring  
assisted cover  
316 Stainless  
Steel springs lifting  
effort reduced to  
less than 25kg  
Anti-Slamming

**Option:** Alarm and  
junction box brackets

Holding down  
anchor points  
internal to frame  
(For M16 bolts  
not provided)

High-security  
padlock point  
(not included)

Unobstructed  
clear opening

**Option:** Anti-insect  
mesh vent

**Option:**  
Inner lid for chambers  
requiring secondary  
contamination protection

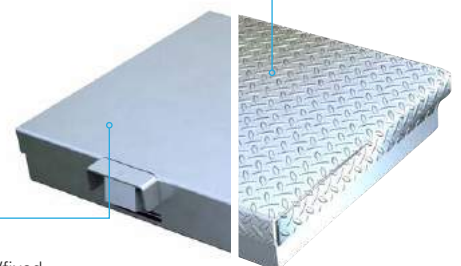
Lifting handle

Ergonomic hand  
operated safety  
blocking system

**Option:** Plain plate or  
chequer plate finish

Cover and frame are mounted/fixed  
Above Ground level

Watertight to  
rainwater due to the  
dome-shaped cover



Wide range of clear openings available

## DEFENSO® AG SR4/3

### How to specify your product.

To order an above ground unit, single skin, Level 4 security rating, 1500 x 500 mm clear opening, hinged, padlockable with a seal and safety grid use:

**AG1S SR4 150 050 A V H J GS**

For additional detailed specification on safety grids please refer to page 32.

### Abbreviations for Specifying Fabricated Steel Products

<b>AG</b>	Above Ground	<b>AB</b>	Alarm Bracket
<b>1S</b>	Single Skin, Smooth Surface Finish	<b>IM</b>	Insect Mesh
<b>1DS</b>	Double Skin, Smooth Surface Finish	<b>VS</b>	Vibration Sensor Bracket
<b>1ST</b>	Single Skin, Chequer Surface Finish	<b>PT</b>	Painted
<b>1DST</b>	Double Skin, Chequer Surface Finish	<b>LKF</b>	Anti-skid coating (PREMARK type)
<b>1DSJ</b>	Double Skin, Inner Cover Odour Sealed	<b>EC</b>	Epoxy Coating
<b>A</b>	Hinged	<b>100µm</b>	100 Micron Galvanisation
<b>H</b>	Torsion Springs	<b>140µm</b>	140 Micron Galvanisation
<b>V1</b>	Padlockable via 1 Padlock	<b>SR3</b>	LPCB Certified Security Rating 3
<b>V2</b>	Padlockable via 2 Padlocks	<b>SR4</b>	LPCB Certified Security Rating 4
<b>J</b>	Outer Cover Odour Sealed	<b>ME</b>	Moat Draining Externally
<b>GS30JB 1B</b>	300kg resistant, Jail Bar Type Grid, hinged on the opposite side to cover hinge (see page 32 for more options)	<b>MI</b>	Moat Draining Internally
		<b>SN</b>	Sensors different types available

### DEFENSO® AG SR4 & SR3 Clear Opening Sizes

Type	Minimum Size W x L (mm)	Maximum Size W x L (mm)
Single leaf	SR3: 300 x 300 SR4: 350 x 350	SR3: 1200 x 1500 SR4: 1000 x 1200
Twin leaf end-line hinged	800 x 400	SR3: 2200 x 1500 SR4: 2000 x 1200
Multi leaf in-line hinged	400 x 800	SR3: 1200 x Unlimited SR4: 1000 x Unlimited

Non-standard sizes available

### Other key features for our fabricated products include:

Increased thickness of zinc coating through galvanisation for enhanced durability. By increasing the thickness we can double the service life of the unit. Site-specific factors which may affect the average corrosion rate (µm per annum) can be taken into account at the design stage.

Powder coating for durability and increased resistance to corrosion. We can offer powder coating to the C5 Industrial and C5 Marine categories. Powder coated surfaces are more resistant to chipping, scratching, fading, and wearing than other finishes.

# Flush Fit Range of Access Covers

## DEFENSO® FF SR4 or SR3

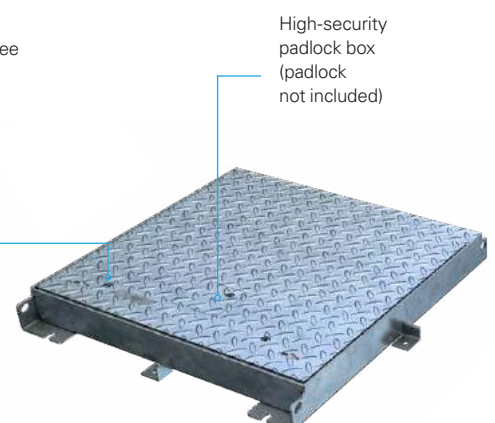
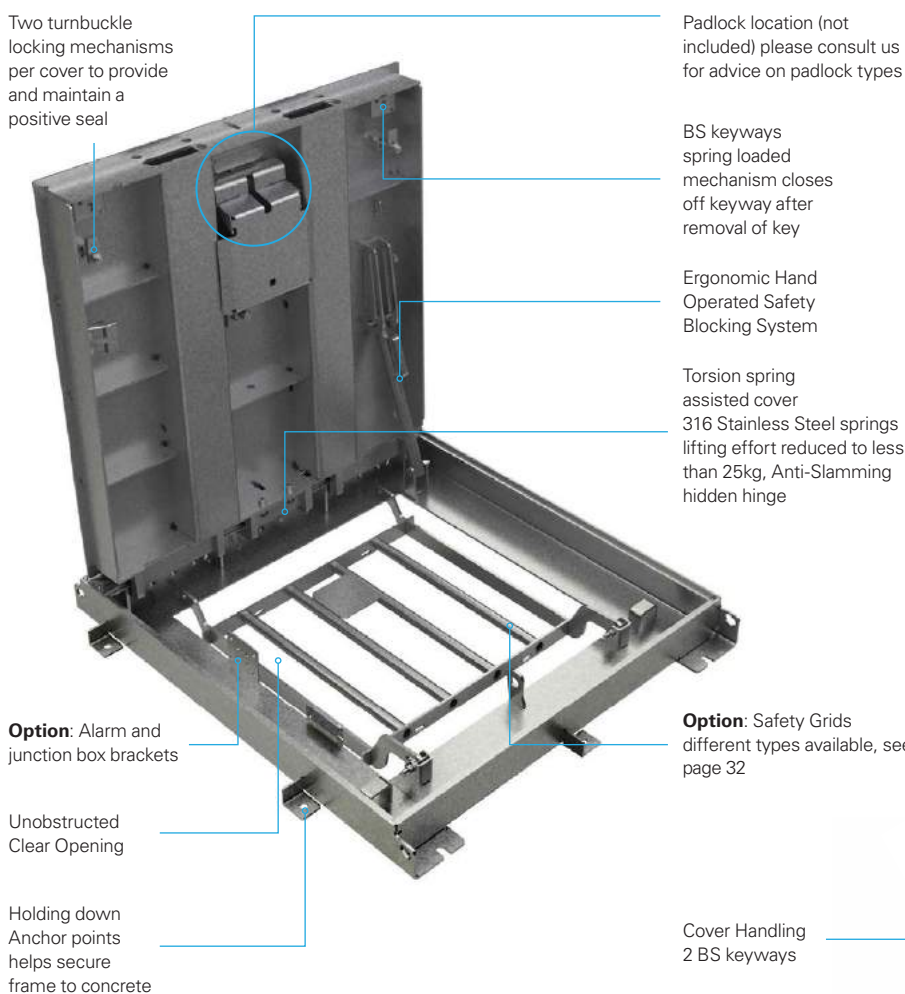


LPS 1175: Issue 7

SR3 Cert No. 1187a/02

SR4 Cert No. 1187a/03

- Place of installation:** For medium to high-risk sites - SR4, low to medium risk sites - SR3
- FF1S 15 kN:** Footways, pedestrian and cycle areas.
- FF2S 125 kN:** Footways, pedestrian areas, car parks.
- FF3S 250 kN:** Slow moving, occasionally trafficked areas, parking areas.
- FF4S 400 kN:** For all types of road vehicles in areas of low speeds (20mph max) and low traffic intensity (inc. pedestrian streets), forecourts, hard shoulders and parking areas.
- Material:** Hot dip galvanised mild steel.  
Stainless Steel
- Padlock Options:** **SR4** - A, C to E, G to I, N  
**SR3** - A, C to E, G to K, M to Q (See page 34/35)



Wide range of clear openings available



## DEFENSO® FF SR4/3

### How to specify your product.

To order a flush fit unit 250kN loading, single skin, 1000 x 1000 mm clear opening, Level 4 security rating, hinged, padlockable with a seal and safety grid use:

#### FF3S SR4 100100 A V H J GS

For additional detailed specification on safety grids please refer to page 32.

### Abbreviations for Specifying Fabricated Steel Products

<b>FF1</b>	15 kN Solid Top	<b>AB</b>	Alarm Bracket
<b>FF2</b>	125 kN Solid Top	<b>GS 30...</b>	Safety Grid 300 kg resistant, please see page 32 for additional options.
<b>FF3</b>	250 kN Solid Top	<b>VS</b>	Vibration Sensor Bracket
<b>FF4</b>	400 kN Solid Top	<b>PT</b>	Painted
<b>S</b>	Single Skin, Chequer Surface Finish	<b>LKF</b>	Anti-skid coating (PREMARK type)
<b>A</b>	Hinged	<b>EC</b>	Epoxy Coating
<b>H</b>	Torsion Springs	<b>100µm</b>	100 Micron Galvanisation
<b>V1</b>	Padlockable via 1 Padlock	<b>140µm</b>	140 Micron Galvanisation
<b>V2</b>	Padlockable via 2 Padlocks	<b>SR3</b>	LPCB Certified Security Rating 3
<b>V3</b>	Padlockable via 3 Padlocks etc	<b>SR4</b>	LPCB Certified Security Rating 4
<b>J</b>	Odour Sealed		

### DEFENSO® FF SR4 & SR3 Clear Opening Sizes

Type	Minimum Size W x L (mm)	Maximum Size W x L (mm)
Single leaf	400 x 400	A 15 - B 125: 1100 x 1500 C 250: 1000 x 1500 D 400: 1000 x 1200
Twin leaf end-line hinged	800 x 400	A 15: 2000 x 1500 B 125 - C 250: 1800 x 1500 D 400: 1500 x 1100
Multi leaf in-line hinged	400 x 800	1000 x Unlimited

[Non-standard sizes available](#)

### Other key features for our fabricated products include:

Increased thickness of zinc coating through galvanisation for enhanced durability. By increasing the thickness we can double the service life of the unit. Site-specific factors which may affect the average corrosion rate (µm per annum) can be taken into account at the design stage.

Powder coating for durability and increased resistance to corrosion. We can offer powder coating to the C5 Industrial and C5 Marine categories. Powder coated surfaces are more resistant to chipping, scratching, fading, and wearing than other finishes.

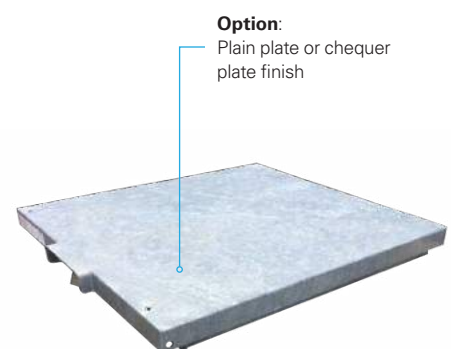
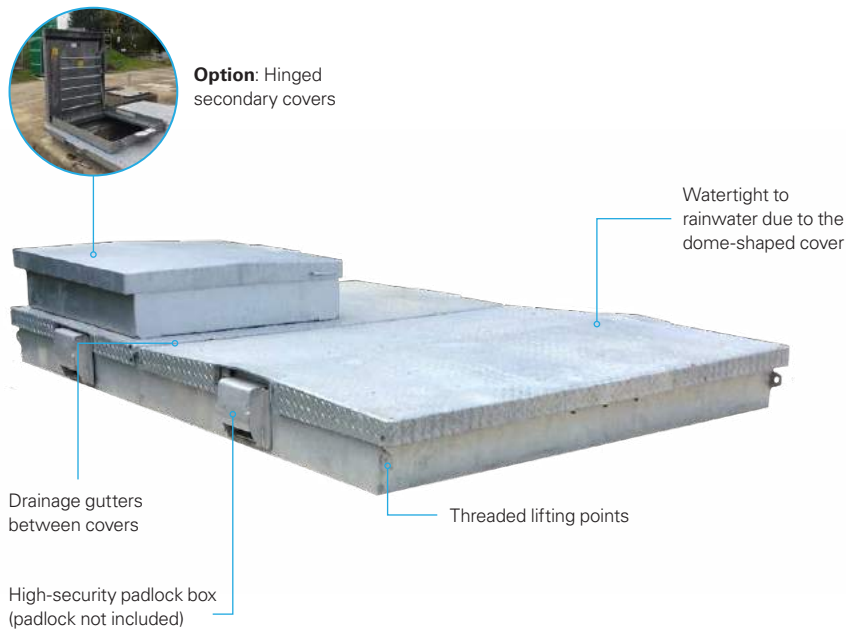
# Upstand Lift-Off Range of Access Covers

## DEFENSO® AT SR4 or SR3

- Place of installation:** Non trafficked areas where frequent access is required.  
For medium to high-risk sites - SR4, low to medium risk sites - SR3
- Material:** Hot dip galvanised mild steel.  
Stainless Steel
- Padlock Options:** **SR4** - A, C to E, J to Q  
**SR3** - D, E, J, K, M to Q (See page 34/35)



LPS 1175: Issue 7  
SR3 Cert No. 1187a/06  
SR4 Cert No. 1187a/05



Wide range of clear openings available

## DEFENSO® AT SR4/3

### How to specify your product.

To order an upstand unit 15kN loading, single skin, 1000 x 1000 mm clear opening, Level 4 security rating, padlockable with a seal and safety grid use:

#### AT1S SR4 100100 V J GS

For additional detailed specification on safety grids please refer to page 32.

### Abbreviations for Specifying Fabricated Steel Products

<b>AG</b>	Above Ground	<b>VS</b>	Vibration Sensor Bracket
<b>1S</b>	Single Skin, Smooth Surface Finish	<b>PT</b>	Painted
<b>1ST</b>	Single Skin, Chequer Surface Finish	<b>EC</b>	Epoxy Coating
<b>V</b>	Padlockable via 2 Padlocks	<b>100µm</b>	100 Micron Galvanisation
<b>J</b>	Outer Cover Odour Sealed	<b>140µm</b>	140 Micron Galvanisation
<b>GS30JB</b>	300kg resistant, Jail Bar Type Grid (see page 32 for more options)	<b>SR3</b>	LPCB Certified Security Rating 3
<b>IM</b>	Insect Mesh	<b>SR4</b>	LPCB Certified Security Rating 4
<b>AB</b>	Alarm Bracket	<b>MI</b>	Moat Draining Internally

### DEFENSO® AT SR4 & SR3 Clear Opening Sizes

Type	Minimum Size W x L (mm)	Maximum Size W x L (mm)
<b>Multi leaf</b>	SR3: 400 x 700 SR4: 400 x 700	SR3: 2500 x Unlimited SR4: 2500 x Unlimited
<b>Multi leaf (with beams)</b>	SR4: 1000 x 1000	SR4: 7400 x Unlimited

Non-standard sizes available

### Other key features for our fabricated products include:

Increased thickness of zinc coating through galvanisation for enhanced durability. By increasing the thickness we can double the service life of the unit. Site-specific factors which may affect the average corrosion rate (µm per annum) can be taken into account at the design stage.

Powder coating for durability and increased resistance to corrosion. We can offer powder coating to the C5 Industrial and C5 Marine categories. Powder coated surfaces are more resistant to chipping, scratching, fading, and wearing than other finishes.



# Wall-Mounted Range of Access Covers

## DEFENSO® AW SR4 or SR3

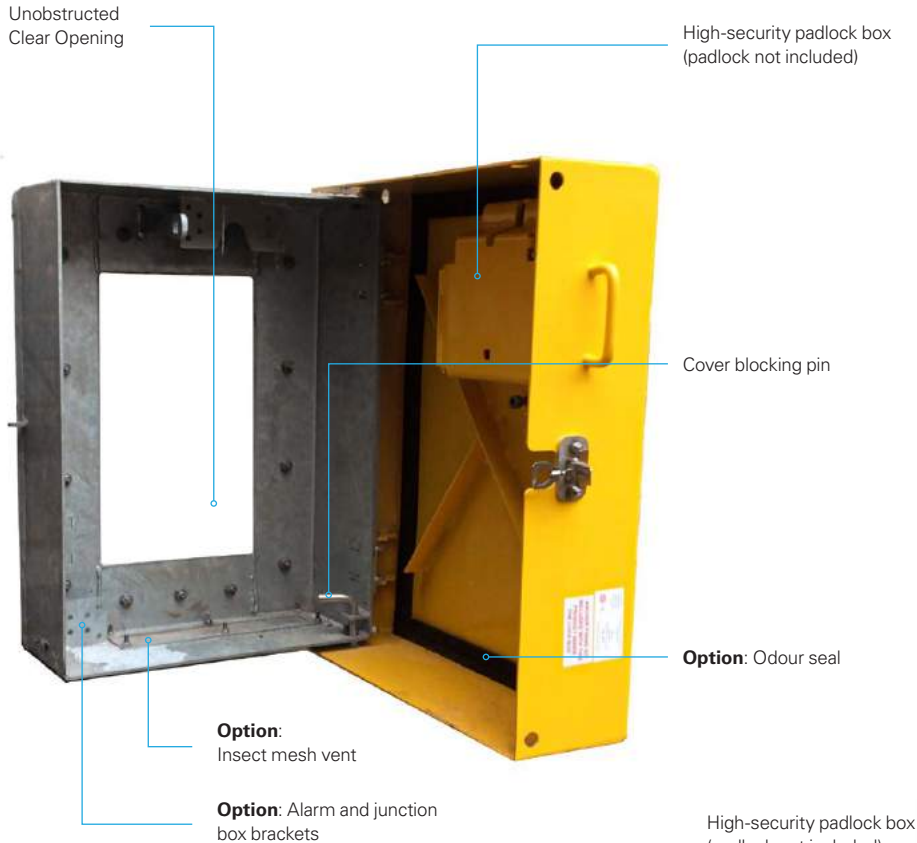


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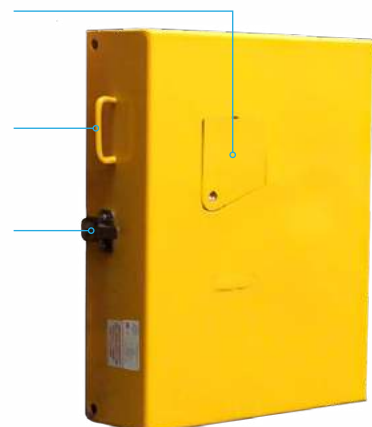
SR3 Cert No. 1187a/13

SR4 Cert No. 1187a/14

- Place of installation:** Non trafficked areas where frequent access is required.  
For medium to high-risk sites - SR4, low to medium risk sites - SR3
- Material:** Hot dip galvanised mild steel.  
Stainless Steel
- Padlock Options:** **SR4** - E, I, N  
**SR3** - A, C, to E, G to K, M to Q (See page 34/35)



- High-security padlock box (padlock not included)
- Operational Handle
- Locking Tensioner Clasp



Wide range of clear openings available

## DEFENSO® AW SR4/3

### How to specify your product.

To order a wall mounted unit 15kN loading, single skin, 400 x 400 mm clear opening, Level 4 security rating, hinged, padlockable, odour sealed with an insect mesh vent and alarm and sensor brackets use:

**AW1S SR4 040040 A H V J IM AV VS**

For additional detailed specification on safety grids please refer to page 32.

### Abbreviations for Specifying Fabricated Steel Product

<b>AW</b>	Wall-Mounted	<b>VS</b>	Vibration Sensor Bracket
<b>1S</b>	Single Skin, Smooth Surface Finish	<b>PT</b>	Painted
<b>A</b>	Hinged	<b>EC</b>	Epoxy Coating
<b>H</b>	Torsion Springs	<b>100µm</b>	100 Micron Galvanisation
<b>V</b>	Padlockable via 1 Padlock	<b>140µm</b>	140 Micron Galvanisation
<b>J</b>	Outer Cover Odour Sealed	<b>SR3</b>	LPCB Certified Security Rating 3
<b>IM</b>	Insect Mesh	<b>SR4</b>	LPCB Certified Security Rating 4
<b>AB</b>	Alarm Bracket		

### DEFENSO® AW SR4 & SR3 Clear Opening Sizes

Type	Minimum Size W x L (mm)	Maximum Size W x L (mm)
Single leaf vertical	300 x 300	700 x 700

[Non-standard sizes available](#)

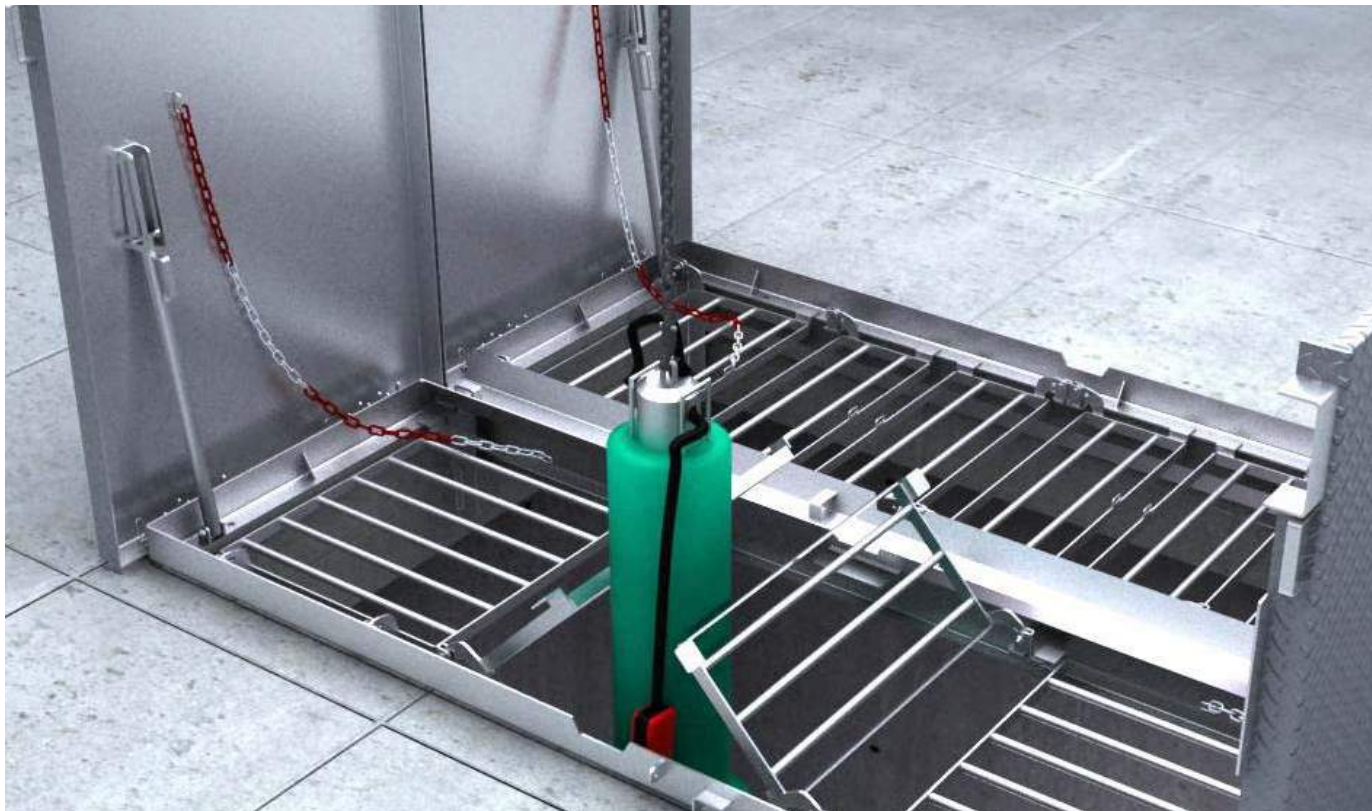
### Other key features for our fabricated products include:

Increased thickness of zinc coating through galvanisation for enhanced durability. By increasing the thickness we can double the service life of the unit. Site-specific factors which may affect the average corrosion rate (µm per annum) can be taken into account at the design stage.

Powder coating for durability and increased resistance to corrosion. We can offer powder coating to the C5 Industrial and C5 Marine categories. Powder coated surfaces are more resistant to chipping, scratching, fading, and wearing than other finishes.

## Safety/Security Options and Accessories

At EJ, we incorporate safety practices into every process, product and service we provide - from design and manufacture through to distribution and end use. Our highly trained and experienced in-house product development teams will provide optimum solutions to meet customers' installation requirements and operational needs.



### Specifications

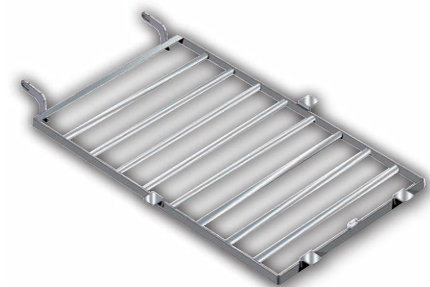
- Resistance 150 or 300 kg
- Auto blocking at 90°
- One man operation (lifting effort less than 25 kg)
- Lockable on request (padlock not supplied)
- Removable
- Delivered with a lifting chain for safety grids
- Assembled on a product or wall chamber mounting option

### Safety Grids

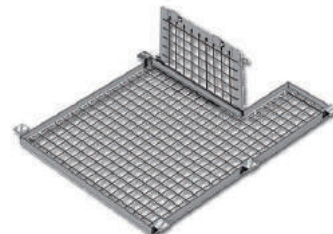
Item	Load bearing	Structure type	Safety blocking at 90°	No of parts	Location of Safety Grid hinge
Safety Grid- <b>GS</b>	300 kg- <b>30</b>	Jail Bar- <b>J</b>	Blocking- <b>B</b>	<b>1</b>	Hinged on left side - <b>L</b>
	150 kg- <b>15</b>	Welded Mesh (50 x 50 mm)- <b>M05</b>	No blocking- <b>NB</b>	<b>2</b>	Hinged on right side - <b>R</b>
				<b>3</b>	Hinged on cover side - <b>F</b>
		Walk on- <b>W</b>		<b>4</b>	Hinged on opposite side to cover hinge - <b>B</b>
		Glass Reinforced Plastic- <b>GRP</b>			

Product selection and site risk assessment are the responsibility of the project designer. The above information serves as a guide only, our experienced technical team are available for site visits and to make recommendations on choosing the correct access solution. Please contact us on +44 (0) 24 7664 1777 - [uk.sales@ejco.com](mailto:uk.sales@ejco.com)



**Jail bar type grid****Mesh type grid to be fixed to the chamber wall****Grids with secondary hatch or cut out**

Allows access to equipment without opening the grid completely.

**2, 4, 6 part safety grids:**

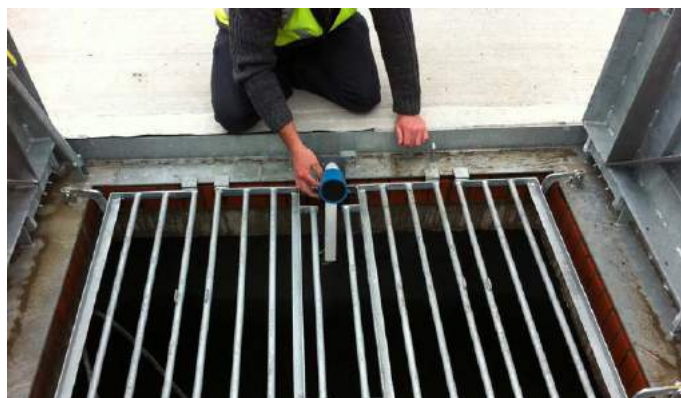
suited for pump removal

2LR (Grids hinged on adjacent sides to the Cover hinge side i.e Left and Right)

2FB (Grids hinged on parallel sides to the Cover hinge side i.e Front and Back) used for extraction of 1 pump

4LR or 4FB Grid layout, is used for extraction of 2 pumps.

6LR or 6FB Grid layout, is used for extraction of 3 pumps.

**Safety railings**

Various options on safety and fall protection railings are available in compliance with Health and Safety regulations.

A 300kg resistant, jail bar type grid, with a safety block at 90°, hinged on the opposite side to cover hinge would contain the following abbreviations: **GS 30 J B 1 B**

## LPCB Approved Compatible Padlocks

Padlock Reference	Padlock		Cylinder		'Plus' Rating
	Manufacturer	Model	Manufacturer	Model	
<b>A</b>	Abloy	PL340/25	Abloy	Disklock Pro	+
				High Profile	+
				Novel	+
				Protec	+
				Protec2	+
				Sentry	+
<b>B</b>	Abloy	PL341/25	Abloy	Protec	+
<b>C</b>	Abloy	PL342	Abloy	Disklock Pro	+
				High Profile	+
				Novel	+
				Protec	+
				Protec2	+
				Sentry	+
<b>D</b>	Abloy	PL350/25	Abloy	Disklock Pro	+
				High Profile	+
				Novel	+
				Protec	+
				Protec2	+
				Sentry	+
<b>E</b>	Abloy	PL362	Abloy	Disklock Pro	+
				High Profile	+
				Novel	+
				Protec	+
				Protec2	+
				Sentry	+
<b>F</b>	Abloy	PL662	Abloy	Protec	+
				Protec2	+
				Sentry	+
<b>G</b>	Abloy	PLLW340/25	Abloy	Protec Cliq/Cliq Remote	+
				Protec2 Cliq/Cliq Remote	+
<b>H</b>	Abloy	PLLW350/25	Abloy	Protec Cliq/Cliq Remote	+
				Protec2 Cliq/Cliq Remote	+
<b>I</b>	Abloy	PLLW362	Abloy	Protec Cliq/Cliq Remote	+
				Protec2 Cliq/Cliq Remote	+
<b>J</b>	Kaba	K15	Kaba	20	-

To achieve the desired LPCB security rating, a compatible padlock must be used.

## LPCB Approved Compatible Padlocks

Padlock Reference	Padlock		Cylinder		'Plus' Rating
	Manufacturer	Model	Manufacturer	Model	
<b>K</b>	Kaba	K18	Kaba	20	-
<b>L</b>	Kaba	P6062	Kaba	K20	-
				experT/experT+	-
				Quattro pluS/Quattro pluS+	-
				experT/experT+ (anti-drill)	-
				Quattro pluS/Quattro pluS+ (anti-drill)	-
<b>M</b>	Kaba	P8065	Kaba	pExtra/pExtra+	-
				K20	-
				experT/experT+	-
				Quattro pluS/Quattro pluS+	-
				experT/experT+ (anti-drill)	-
<b>N</b>	Kaba	P8093	Kaba	Quattro pluS/Quattro pluS+ (anti-drill)	-
				experT/experT+	-
<b>O</b>	Pickersgill Kaye	Kaye-Rota open body	Abloy	Quattro pluS/Quattro pluS+	-
				Disklock Pro	+
				Protec	+
				Protec2	+
<b>P</b>	Pickersgill Kaye	Kaye-Rota semi-enclosed body	Abloy	P600	-
				20	-
				experT	-
				Disklock Pro	+
				Protec	+
<b>Q</b>	Pickersgill Kaye	Kaye-Rota fully-enclosed body	Abloy	Protec2	+
				P600	-
				20	-
				experT	-
				Disklock Pro	+
<b>R</b>	Squire	SS65S LEV3	Squire	6 pin	-
<b>S</b>	Squire	SS65 M3ARX LEV3	Medeco	M3 ARX	+

To achieve the desired LPCB security rating, a compatible padlock must be used.



# GARRISON™ FLUSH

## Installation Instructions



### Pre Despatch Inspections

This product is produced in accordance with our ISO 9001:2015 Quality System, and as such has been fully assembled, tested for fitness for purpose and inspected prior to delivery. This product has been galvanised in accordance with BS EN 1461, a standard which guarantees maximum life expectancy and protection against corrosion.

### Installation

1. The chamber opening structure and rebate to accommodate the product must have been produced in C25 concrete as a minimum specification, and be at least 400 mm wide and 200 mm deep around the chamber opening.
2. Ensure that the chamber opening area is clean and clear of all debris and remove as much dust etc. as possible, wash down with water if necessary.
3. Lower the cover into position centrally over the chamber opening, onto a layer of bedding concrete, using mechanical lifting points. The lids will need to be opened to aid the correct positioning of the cover. The levelling bolt facility positioned in each corner will aid the adjustment of height in each location in order to level the product and ensure no frame twist and correct locking facility alignment.
4. We must stipulate the use of the chemical fixings Rawlplug R-KF2 / KSF in M12 for the installation of this product, to achieve full compliance with LPS1175 Security Rating 3 and 4. Method statements and data/safety sheets can be downloaded from the Rawlplug website.
5. Set the levels of the cover by use of packers.
6. Drill through the fixing holes for M12 fixings on the inner flange of the frame and install these fixings. We suggest fixing the 4 corners first and then work into the centre on each side.
7. With the levels set, the lids may be opened and closed several times, to check correct lid alignment and operation. Internal and external grouting can now take place.
8. All fixings should have their exposed threads burred or welded, to eliminate the possibility of any accomplice tampering. Twisting of the frame will cause lid and frame to misalign.
9. Where concrete bedding has been used, allow sufficient time for the concrete bedding to fully cure before any further use.

**Please note these instructions are provided for general information. The contractor installing the product is responsible for carrying out local risk assessment and safely installing the product.**

# GARRISON™ UPSTAND & HYBRID

## Installation Instructions



### Installation

1. The chamber opening structure, where the product is to be fitted must have been produced in C25 concrete as a minimum specification, and be at least 200 mm wide and 200 mm deep around the chamber opening.
2. Ensure that the chamber opening area is clean and clear of all debris and remove as much dust etc. as possible, wash down with water if necessary.
3. Lower the cover into position centrally over the chamber opening, onto a layer of bedding concrete, using mechanical lifting points. Both inner and outer lids (where applicable) will need to be opened to aid the correct positioning of the cover. The levelling bolt facility positioned in each corner will aid the adjustment of height in each location in order to level the product and ensure no frame twist and correct locking facility alignment.
4. We would stipulate the use of chemical fixings such as Rawlplug R-KF2 / KSF in M12 for the installation of this product. Method statements and data/safety sheets can be downloaded from the Rawlplug website.
5. Set the levels of the cover by use of packers.
6. Drill through the fixing holes for M12 fixings on the inner flange of the frame and install these fixings. We suggest fixing the 4 corners first and then work into the centre on each side. If a temporary transit beam is present, (this will be on twin and triple units) fit all fixings up to these beams, then unbolt the temporary beams, which will then allow their removal. If this then exposes more fixings positions, then drill and fit these last 2 fixing bolts. Do not be tempted to remove this temporary beam before all other fixings have been fitted.  
With the levels set, the lids may be opened and closed several times, to check correct lid alignment and operation. Internal and external grouting can now take place. Alternatively, Marine silicon sealant may be used in place of the grouting mix.
7. All fixings should have their exposed threads burred or welded, to eliminate the possibility of any accomplice tampering. Twisting of the frame will cause lid and frame to misalign.
8. Where concrete bedding has been used, allow sufficient time for the concrete bedding to fully cure before any further use.

**Please note these instructions are provided for general information. The contractor installing the product is responsible for carrying out local risk assessment and safely installing the product.**

# DEFENSO® FF

## Installation Instructions

### Handle

Lift product using lifting points provided on the frame. Check the load capacity of the slings/chains according to the weight indicated on the product data sheet or on the product.

### Preparation

1. Prepare the rebate corresponding to the dimensions and material shown on the product data sheet. (Concrete 3000psi (20MPa) mini and concrete block full solid 12MPa mini)
2. Clean the rebated surfaces.

### Installation, levelling and shuttering

1. Locate and centre the product over the clear opening of the chamber. Refer to the product data sheet and if necessary temporarily open the hatch and then close it after centering.
2. Level the frame using nuts and bolt system M12 or M14 (not supplied) in Ø16mm holes in the frame or shims as necessary.
3. Drill and place bolts into each of the holes in the frame.  
(If the frame is in several sections, each section must have the minimum bolts required)
  - For concrete: Use anchor bolts M16x130 mini grade 8.8 mini  
Adapted to chamber material, refer to the manufacturer requirements.
  - For structural steelwork:  
Use screw M16x40 mini grade 8.8 mini with nut M16 grade 08 mini

### Finishing

1. Prepare the concrete infill mortar according to the manufacturer's recommendations. Concrete 3000psi (20MPa minimum). A quick-setting non-shrink mortar is recommended where normal curing time for standard mortar cannot be secured.
2. Pack the mortar under the frame and along the formwork. The frame must be fully seated on the bedding material to ensure a uniform distribution of the load and to avoid distortions.
3. Fill the rebate around the frame with mortar and if a layer of asphalt is required, leave a 20mm gap from mortar to ground level for asphalt to be laid up to the frame.
4. Where required cover concrete with wet canvas or tarpaulin to prevent excessive drying. Wait for complete curing of concrete.
5. Remove shuttering and render the chamber wall with mortar if necessary.
6. Open the cover and clean the product with water if necessary.
7. Close the product and fit the appropriate certified padlock as required.

**Please note these instructions are provided for general information. The contractor installing the product is responsible for carrying out local risk assessment and safely installing the product.**



# DEFENSO® AG

## Installation Instructions

### Handle

Lift product using slings. Check the load capacity of the slings according to the weight indicated on the product data sheet or on the product.

### Preparation

1. Prepare the chamber corresponding to the dimensions and material shown on the product data sheet.
2. Remove any existing sealant/debris and clean the surface around the opening.
3. If the product is SR4 rated, place two small beads of one part polysulphide sealant either side of bolt holes to be drilled.

### Installation, levelling and shuttering

1. Locate and centre the product over the clear opening of the chamber. Refer to the product data sheet and open the hatch.
2. Ensure the product is level on all four sides and shim as necessary.
3. Drill and place bolts into each of the holes in the frame (11 Bolts minimum for SR4).  
(If the frame is in several sections, each section must have the minimum bolts required)
  - For concrete: Use anchor bolts M16x130 mini grade 8.8 mini  
Adapted to chamber material, refer to the manufacturer requirements.
  - For structural steelwork:  
Use screw M16x40 mini grade 8.8 mini with nut M16 grade 08 mini

### Finishing

1. Tighten all bolts and check the product is still level on all four sides.
2. Check the operation of all associated moving parts (Covers, safety grids, blocking arms, inner covers, padlock boxes, sealing screws) to ensure there are all working correctly.
3. If the cover is not closing or opening correctly, please check the levels again as the frame may have twisted when the bolts were tightened or is no longer level.
4. Seal both the inside edge and external edge with one part polysulphide sealant to ensure the product is watertight.
5. Clean the product with water if necessary.
6. Fit the appropriate certified padlock as required.

**Please note these instructions are provided for general information. The contractor installing the product is responsible for carrying out local risk assessment and safely installing the product.**

## Installation Service

From the site survey stage through to the design and installation of your product, EJ are committed to working with you, offering custom-built access solutions that meet the highest standards in the world.





## Installation Service

Our installation service includes in-depth site surveys, bespoke design and removal of existing assets. Get in touch today to discuss your installation requirements.





## Installation Service

### Project Examples





## Installation Service

### Project Examples





ejco.com



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marks

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Security Access Covers**  
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