



ACO Access

Iron and steel cover & frame systems

Rhinocast® - ductile iron access covers

Urbanfil® - galvanised steel access covers

Servokat - assisted lift access covers

ACO. we care for water



## The ACO Group

Climate change sets organisations a challenge to react effectively with innovative solutions to new environmental conditions. With a necessary integrated approach, ACO provides solutions for professional surface water management. To compliment these intelligent systems, ACO manufactures a range of service enclosures including access covers.

Founded in 1946, the ACO Group is a foremost supplier of drainage systems and utility enclosures. Major innovative strengths of the ACO Group are its continuous research and development and technical expertise in the use of polymer concrete, plastics, cast iron, stainless steel and cement concrete.

## ACO in New Zealand

ACO introduced the concept of modular Polymer Concrete surface drainage systems to New Zealand over 25 years ago. Today ACO Limited in New Zealand is a sales and marketing company with access to ACO's global strong manufacturing bases. Established in 2012, ACO uses a variety of materials for its extensive range of surface water drainage, utility enclosure, building drainage and residential products.

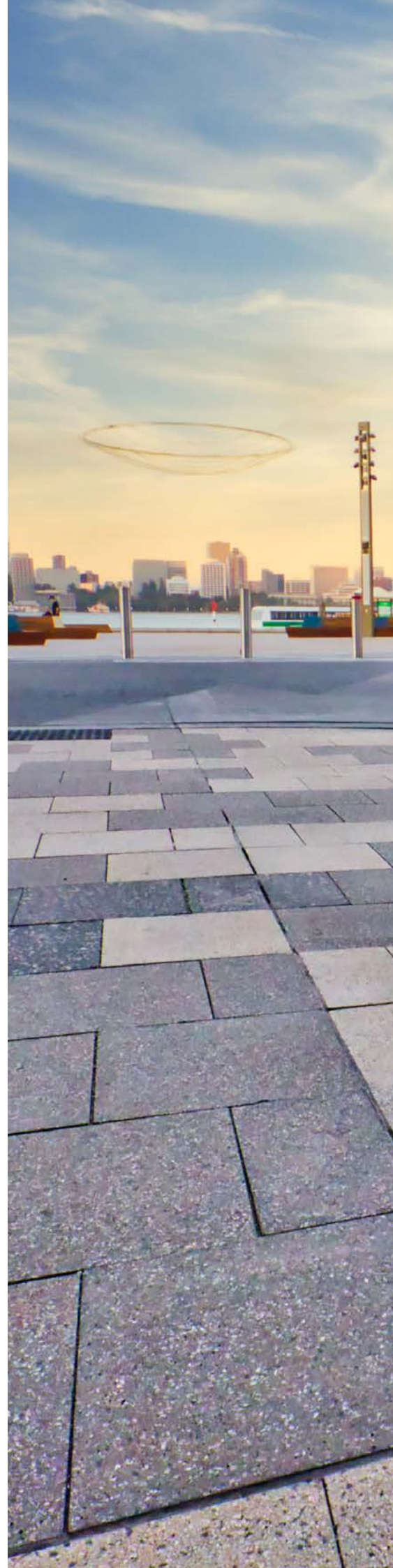
## ACO Access

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ACO is Australia's foremost supplier of cover and frame systems for buildings, urban and civil infrastructure projects. ACO manufactures a range of high quality AS 3996 compliant access covers, that enable decorative floor finishes to be maintained with minimal interference, whilst providing quick and easy access to underground services.

The range comprises Infill and Solid Top covers in single part, 2-part, trench run and multipart configurations. ACO offers a choice of iron and steel access covers for use in various applications such as stormwater, sewer infrastructure, electrical, mechanical and communications. They are typically used in floors and pavements inside and outside of buildings from light to heavy duty applications.



# Contents

<b>1</b>	<b>ACO Access</b>	
	Materials	4
	Product Range	4
	Product Selector	6
	Choosing The Right Access Cover	8
<b>2</b>	<b>Rhinocast® - ductile iron covers</b>	12
	Product Features	13
	Single Part Infill	14
	Single Part Solid Top	16
	Circular Infill	18
	Circular Solid Top	19
	2-Part Infill	20
	2-Part Solid Top	22
	Multiparts & Trench Runs	24
	ACC Covers	26
<b>3</b>	<b>Urbanfil® - galvanised steel covers</b>	28
	Product Features	29
	Tilemate Single Part	30
	Tilemate 2-Part	31
	Pavermate® Single Part	32
	Pavermate® 2-Part	33
<b>4</b>	<b>Servokat - assisted lift covers</b>	34
	Product Features	35
<b>5</b>	<b>Technical Support</b>	
	Engineered Solutions	36
	Installation Guidance	38
	Maintenance	40

## Materials

ACO's cover and frame systems are manufactured from either cast iron or galvanised mild steel. The choice of materials is available to provide a range of solutions to meet various application requirements - from loading, durability to aesthetics.



### Cast Iron

Ductile iron castings

Rhinocast® access covers are manufactured from spheroidal graphite cast iron (ductile iron) conforming to the requirements of AS 3996 with a specified tensile strength of 600MPa.



### Mild Steel

Galvanised steel fabrications

Urbanfil® access covers are manufactured from Grade 250 steel, welded to AS 1554.1 and hot dipped galvanised to AS 4680. This conforms to the requirements of AS 3996.

## Product Range

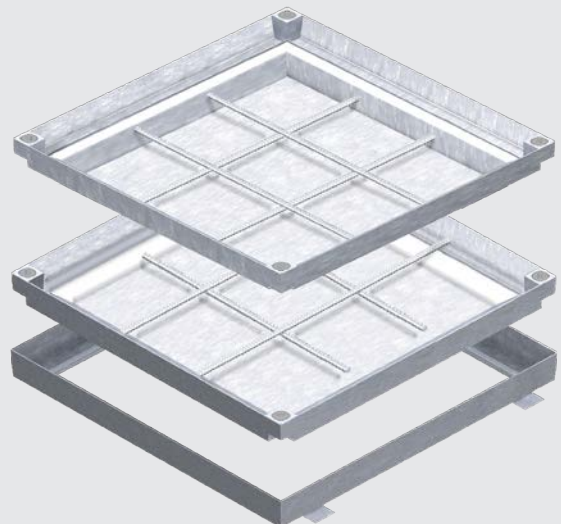
ACO manufactures a range of high quality AS 3996 access covers, that provide quick and easy access to underground services. Infill covers enable decorative floor finishes to be maintained with minimal interference. The range comprises Infill and Solid Top covers in single part, 2-part, trench run and multipart configurations.

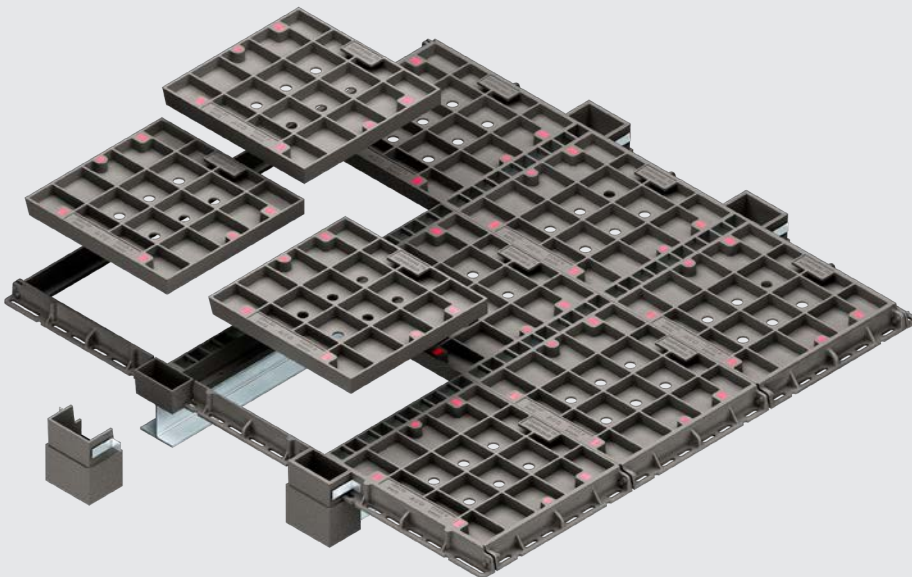
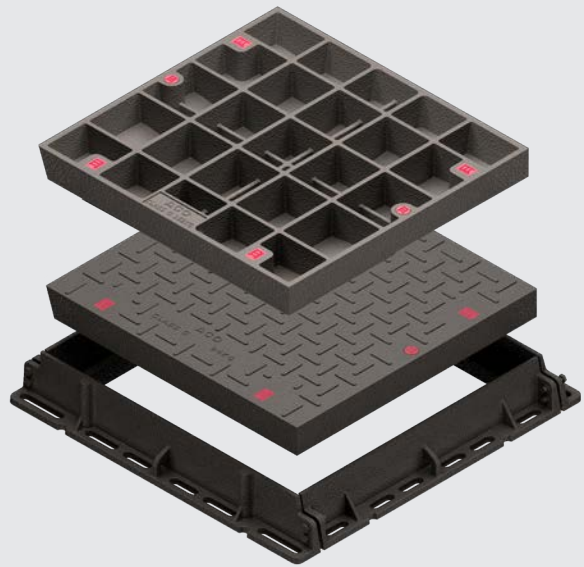
### Rhinocast® iron access covers

Square/rectangular covers, see page 14

Circular covers, see page 18



AS 3996 Load Class	Approximate Nominal Wheel Load
A 	330 kg
B 	2,670 kg
C 	5,000 kg
D 	8,000 kg
E 	13,700 kg
F 	20,000 kg
G 	30,000 kg

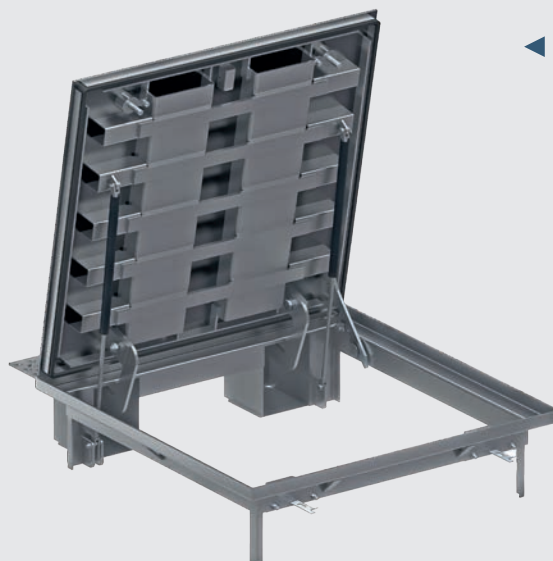




### Urbanfil® steel access covers

Tilemate covers, see page 30  
Pavermate® covers, see page 32

AS 3996 Load Class	Approximate Nominal Wheel Load
 A	330 kg
 B	2,670 kg



### Servokat assisted lift access covers\*

Square/rectangular covers, see page 34

AS 3996 Load Class	Approximate Nominal Wheel Load
 A	330 kg
 B	2,670 kg
 C	5,000 kg
 D	8,000 kg
 E	13,700 kg

\*Available in mild steel and stainless steel.

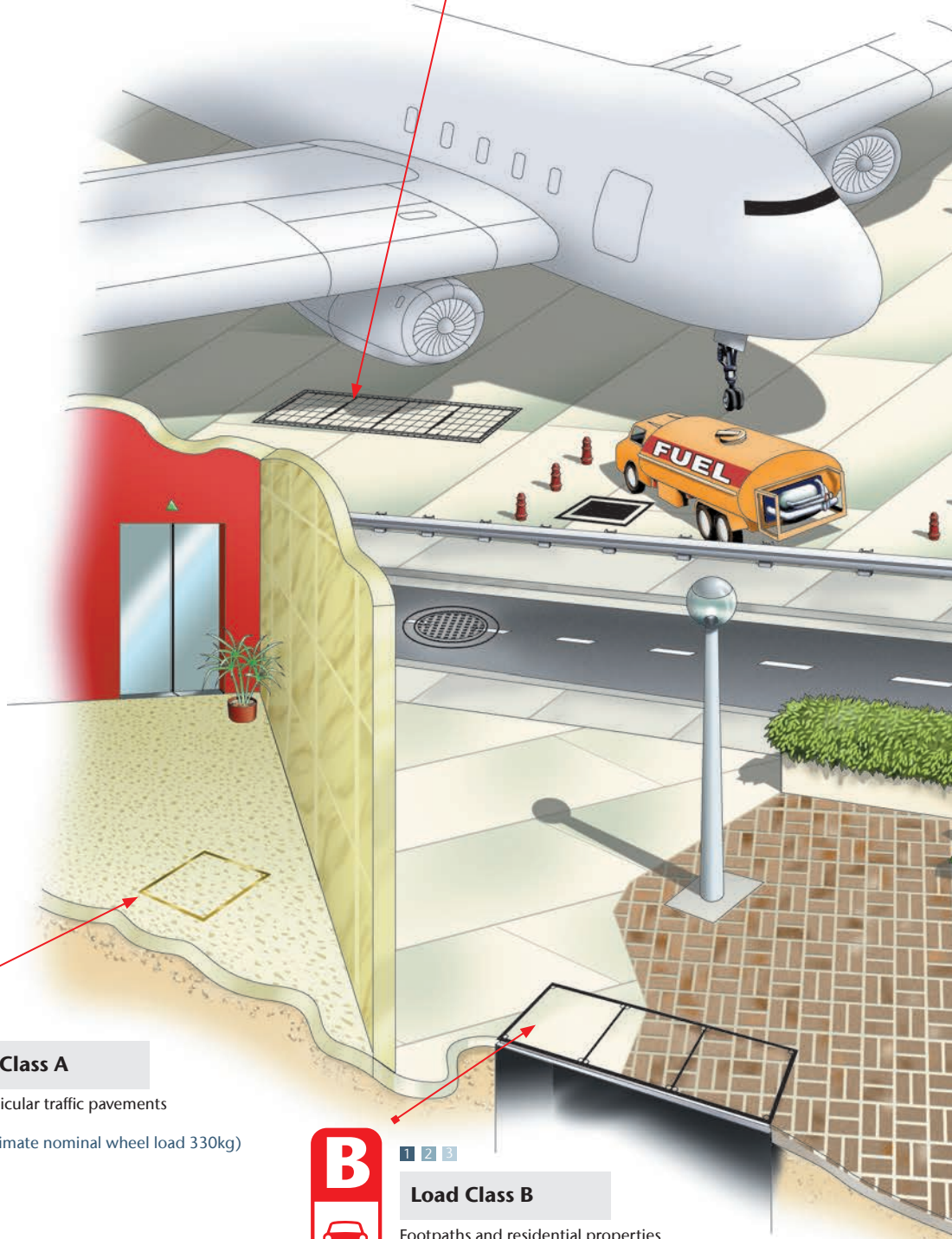
# Product Selector

This diagram is provided as a guide to aid selection of the correct access cover. It illustrates the typical locations where access covers are used. The Load Classes shown for each application are indicative only and it is the customer's responsibility to determine/verify the anticipated design loads for each application. Engineering advice may be necessary. For more information on deciding between iron or steel access covers, see page 11.

- 1 Rhinocast® iron covers
- 2 Urbanfil® steel covers
- 3 Servokat covers



**1**  
**Load Class G**  
 Airport aprons, military bases, container terminals, wharves and mining sites  
 (Approximate nominal wheel load 30,000kg)



**1 2 3**  
**Load Class A**  
 Non vehicular traffic pavements  
 (Approximate nominal wheel load 330kg)



**1 2 3**  
**Load Class B**  
 Footpaths and residential properties  
 (Approximate nominal wheel load 2,670kg)



1 3

### Load Class E

Freeway and motorway carriageways, heavy industrial areas with container forklifts

(Approximate nominal wheel load 13,700kg)



1

### Load Class F

Airport aprons, military bases, container terminals, wharves and mining sites

(Approximate nominal wheel load 20,000kg)



1 2 3

### Load Class B

Footpaths and residential properties

(Approximate nominal wheel load 2,670kg)



1 3

### Load Class D

Major roads, freeway shoulders, warehouse and loading docks

(Approximate nominal wheel load 8,000kg)



1 3

### Load Class C






Car parks and pedestrian malls

(Approximate nominal wheel load 5,000kg)

## Choosing the Right Access Cover

Choosing the right access cover for a given application is essential to prevent problems and product failures in the future. The key factors to consider are listed below and covered in more detail on pages 9-11 (see page 41 for glossary).

ACO can also offer additional advice for choosing the right access cover.

- 1 Load Class**  Choose the correct access cover to withstand the anticipated type and frequency of traffic. ACO covers are designed for AS 3996 loadings (see opposite for information).
- 2 Size**  Access cover sizes are specified by their clear opening. ACO offers a range of sizes & configurations ; Single part, 2-part, Trench Runs and Multiparts.
- 3 Aesthetics**  Infill covers allow for materials to match the pavement. Decorative brass or stainless steel edging can be added to rectangular and square Infill covers.
- 4 Gas and water tight**  All single part covers are gas and water tight under normal atmospheric pressure. Hold down bolts are available to assist with back pressure applications.
- 5 Security**  Certain covers are bolted as standard, others can have bolts added as an option. Security bolts are also available.
- 6 Cover orientation**  Covers should be positioned to avoid obstacles that may prevent easy cover removal.
- 7 Handling**  If there are manual handling restrictions during installation and ongoing maintenance, smaller individual covers can be combined to create the required opening or assist lift covers are available.



1

Load Class



As part of ACO's continuous product development and commitment to quality, ACO has a NATA accredited laboratory (Licence no. 15193), operated by fully trained and certified technicians using calibrated equipment. ACO is qualified to issue NATA endorsed reports to AS 3996, EN 124 and EN 1433.



AS 3996 – Clause 3.1  
Load classification

Access covers are categorised by load classes and are tested in accordance to the Standard. The appropriate class depends on the application (see page 6,7). The table below is an adaptation of Table 3.1 of AS 3996 and is referenced to EN 124. In practice, there are a number of key factors affecting a cover's resistance to load:

- **Type of traffic** - pedestrians, cars, trucks, forklifts etc. crossing cover. For trolleys and forklifts particularly, consider weight of loads being carried.
- **Frequency of traffic** - frequent traffic may require a heavier duty cover.
- **Speed of traffic** - fast moving traffic can intensify the load effect.
- **Position of cover** - if the cover is positioned where traffic will be turning, braking or if the cover is installed at the bottom of a ramp, it will be subjected to extreme forces.
- **Wheel type** - solid tyres exert loads through smaller contact areas than pneumatic tyres. A heavier duty cover may be required.

AS 3996: table of load classifications

<b>10kN</b> <i>Extra light duty</i>	<b>80kN</b> <i>Light duty</i>	<b>150kN</b> <i>Medium duty</i>	<b>240kN</b> <i>Heavy duty</i>	<b>400kN</b> <i>Extra heavy duty</i>	<b>600kN</b> <i>Extra heavy duty</i>	<b>900kN</b> <i>Extra heavy duty</i>

Typical Uses

Footpaths and areas accessible to pedestrians and cyclists	Residential properties and footpaths suitable for light vehicles	Malls and pedestrian areas open to slow moving commercial vehicles	Major roads, freeway shoulders and loading docks	Carriageways of freeways and heavy industrial areas	Docks and aircraft pavements subjected to high wheel loads	Docks and aircraft pavements subjected to very high wheel loads
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Approximate Nominal Wheel Load

330 kg	2,670 kg	5,000 kg	8,000 kg	13,700 kg	20,000 kg	30,000 kg
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EN 124 Equivalent

Class A 15kN	Class B 125kN	Class C 250kN	Class D 400kN	Class E 600kN	Class F 900kN
Rhinocast® - Ductile Iron Covers					
Square/rectangular covers, see page 14					
Circular covers, see page 18					
Urbanfil® - Galvanised Steel Covers <sup>1</sup>					
Tilemate covers, see page 30					
Pavermate® covers, see page 32					
Servokat - Assisted Lift Covers <sup>2</sup>					
Square/rectangular covers, see page 34					

Notes:

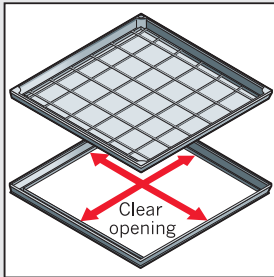
- The industry standard is for covers to be tested in the single cover format.
- 1 In block paved areas, pavers can decrease the stated loading of the access cover.
- 2 Not certified to AS 3996 but have been tested to EN 124.

## 2 Size



### Clear opening

The unobstructed opening inside the frame. Dimensions are given as width (W) by length (L).



Ductile iron covers are specified with the width parallel to the lifting end. Length is parallel to the direction of cover removal.

### Single part cover

An access cover where a single cover is used.

### Two-part cover

An access cover where two covers are seated lengthways in a single frame.

### Trench run

An access cover where multiple covers are seated lengthways in a single frame.

### Multipart

An access cover where multiple covers are seated both lengthways and widthways in a single frame. Beams are required to support the covers but are removable to provide full access.

## 3 Aesthetics



### Infill materials

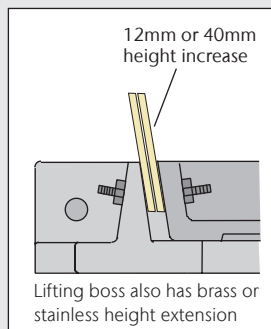
Infill covers offer recesses that can be filled with materials to match or complement the surrounding pavement.

A maximum tile depth of 20mm and maximum paver depth of 40mm is recommended.

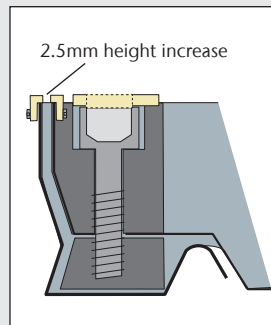
Tiles or pavers must be fully restrained and bonded to the concrete bed to prevent damage to the cover and frame. An epoxy mortar is recommended (see page 39).

### Decorative edging

A strip of stainless steel or brass can be factory fixed to the edge of the cover and frame for an attractive finish.



Ductile iron covers  
Height increase: 12 or 40mm  
Width/length increase: 12mm



Galvanised steel covers  
Height increase: 2.5mm  
Width/length increase: 5mm

## 4 Gas and water tight



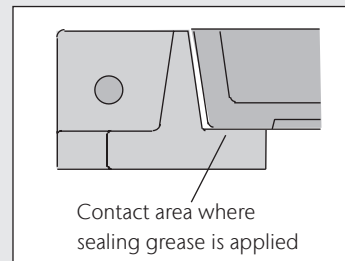
All covers are gas and water sealed as standard to normal atmospheric pressure (up to 0.5kPa). This type of seal also offers a seal against odours.

### Pressure tight

For applications where back pressure is over 0.5kPa, the addition of locking bolts helps prevent the cover from dislodging.

### Seal

There is a point of contact between the frame and cover where the seal is produced. The seal can be achieved with grease (Rhinocast®) or a 'rubber' gasket (Urbanfil® and Servokat).



Contact area where sealing grease is applied



Contact area where the 'rubber' is fitted

## 5 Security



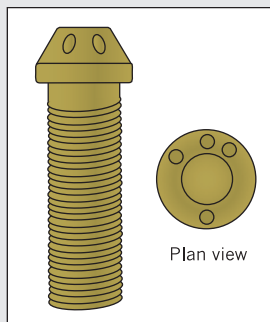
### Locking

For additional security or for back pressure applications, locking bolts are added to the cover and are fastened to the frame through locking bosses fitted to the cover. The cover and frame is drilled and tapped to accept the locking bolt.

Note: all covers are locked as standard.

### Security bolt

A tamper resistant locking bolt is for security applications. Special tools are required to remove the bolt.



## 6 Cover orientation



### Maintenance

For iron covers, the lifting holes should never be positioned near a barrier or wall. This prevents cover removal (see pages 40,41).

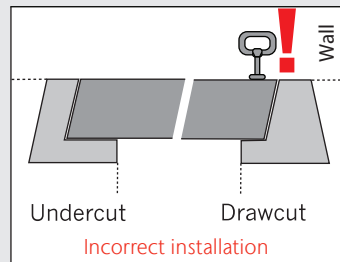
The lifting keyholes are located at the drawcut end.

### Drawcut

Top of cover overhangs the bottom making an obtuse angle. This is at the lifting end of a Rhinocast® iron cover.

### Undercut

Top of cover is set back from the bottom, making an acute angle.



## 7 Handling



### Work cover lifting guidelines

According to Safework Australia, lifting, pulling and pushing requirements vary across each state/territory, visit [www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au)

### Assisted lift

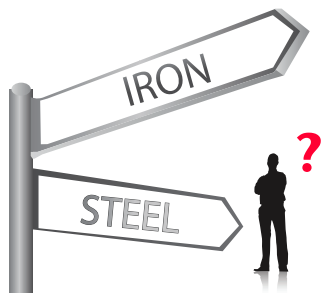
A gas or hydraulic strut is fitted to the frame and cover to enable the cover to be easily lifted. Refer to Servokat covers (see page 34).

### Lifting keys

Iron and galvanised steel covers can be lifted using Australian Standard lifting keys. A selection of short handle and long handle mechanical lifters are available (see pages 40,41).

The lifting key is inserted in a cover's lifting keyhole which enables the key to be turned.

### Iron OR steel access covers?



ACO's access covers are made from either steel or iron. Iron is the most robust material, however steel covers may better suit most floors and light duty pavements.

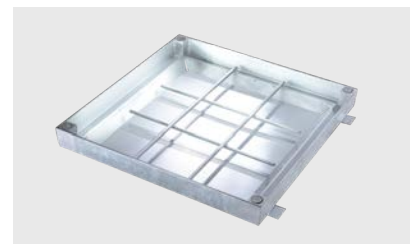
### ACO's iron covers – benefits

- Iron is the most robust material
- Load rated to Class G – AS 3996
- Choice of brass or stainless steel edging available
- Variety of edge heights to accommodate different finishing materials
- Covers do not depend on infill materials for strength
- 3rd party accredited



### ACO's steel covers – benefits

- Load rated to Class B – AS 3996
- Sizes can be customised
- Decorative brass edge available for tile or terrazzo applications
- Edge is not mandatory for tiles and pavers
- No grease is required, keeping hardstand surfaces oil free
- Covers can be opened in any direction
- Australian made



# Rhinocast® - Ductile Iron Access Covers

## Typical Applications

- Internal areas
- Streetscapes
- Parks / recreational area
- Urban public spaces
- Docks and ports
- Airports
- Roads and carriageways
- Bus and rail
- Electrical, mechanical & communication
- Tradewaste, sewerage and stormwater



Decorative edge can be attached to the cover and frame during manufacture for aesthetic areas and adds 12 or 40mm to the overall depth (see page 39)



Solid Top covers with slip resistant surface to AS 4586



Frames complete with anchor and lifting provisions (Class D & G only)



Solid Top covers to meet water authority requirements



Infill covers with stainless steel decorative edging



Infill covers up to Class G loading

## Product Features

- Third party accredited
- Standard covers can be assembled by ACO to produce multipart and trench run systems (see page 24)
- Certified to Load Class B, C, D or G (AS 3996)
- 600 MPa tensile strength
- Sealed to 0.5kPa
- Drawcut/undercut profile of cover and frame allows the cover to slide out, in one direction only
- Reinforcing ribs cast into the cover provide strength
- Plastic dust caps prevent lifting keyholes filling with dirt
- Optional brass or stainless steel decorative edging adds 12mm or 40mm to overall height to allow for use with tiles or brick pavers

To compare with steel covers (see page 11).



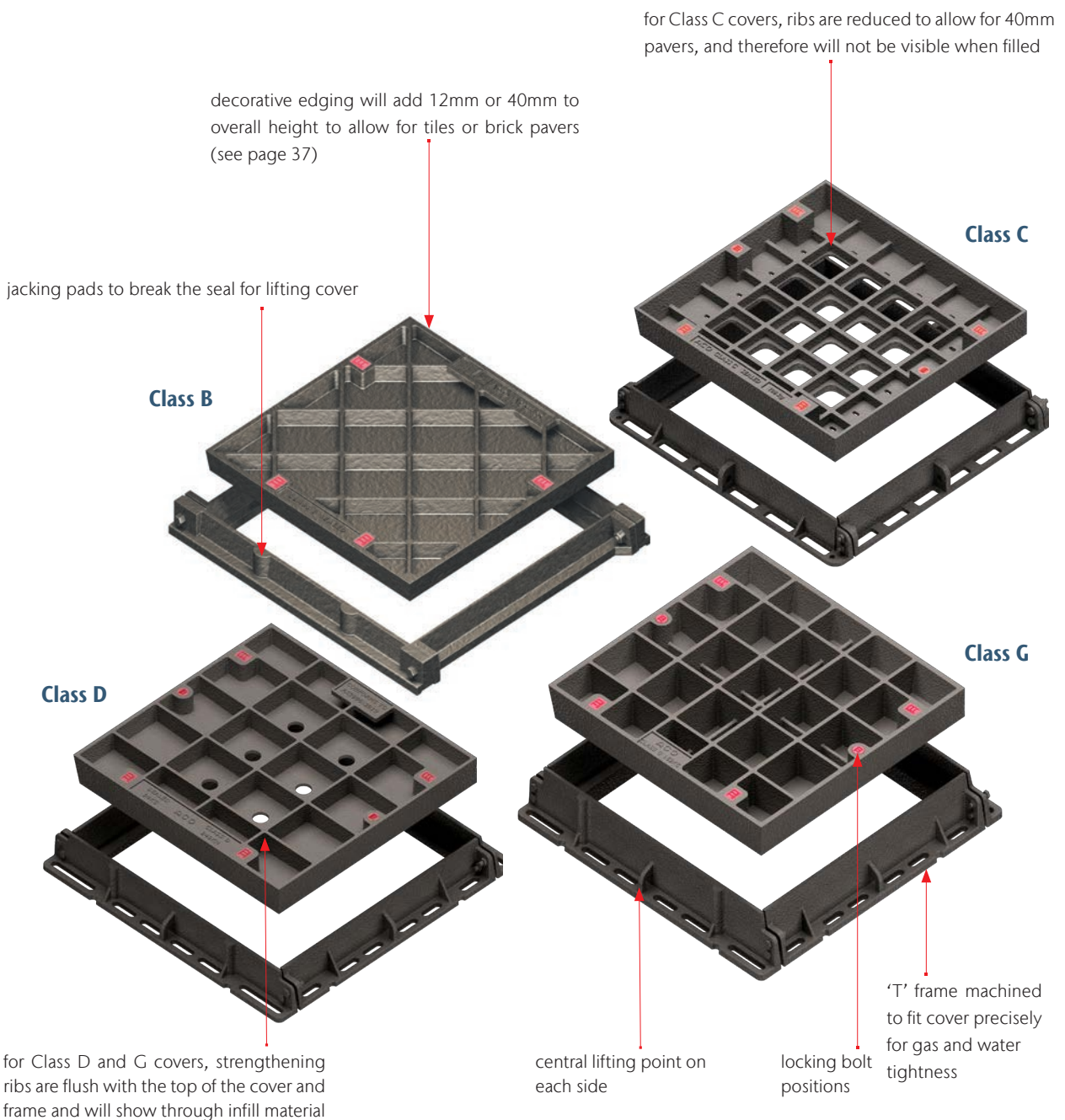
# Rhinocast® - Single Part Infill Iron Access Covers

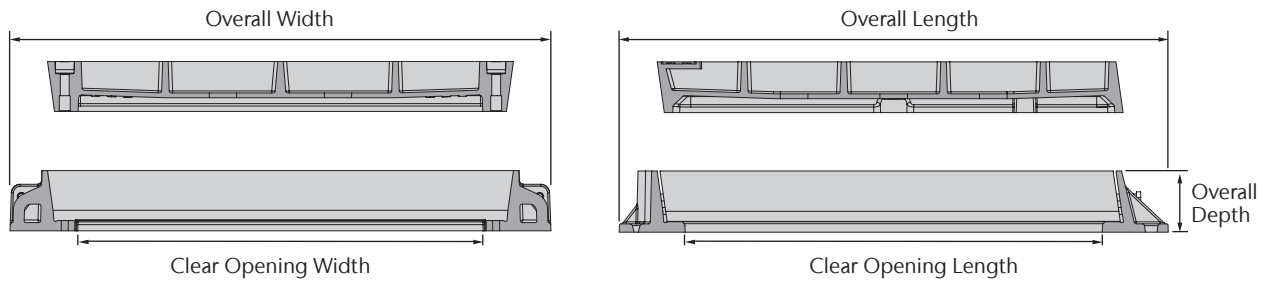
Single part square and rectangular units can be used to provide access to underground stormwater/sewer systems, electricity and communication enclosures, valves and junction boxes.

Standard covers can be assembled to produce multipart and trench run systems (see page 24).



## Features





## Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
<b>Class B - AS 3996 - 80kN</b>								
DI33B	85010	300 x 300	450 x 410	55	18	30	BE/SS-12/40	SL/SB
DI44B	85014	450 x 450	600 x 560	55	22	40	BE/SS-12/40	SL/SB
DI46B	85020	450 x 600	600 x 710	55	30	49	BE/SS-12/40	SL/SB
DI64B	85037	600 x 450	750 x 560	55	28	53	BE/SS-12/40	SL/SB
DI66B	85045	600 x 600	750 x 710	55	37	59	BE/SS-12/40	SL/SB
DI67B	85125	600 x 750	750 x 860	55	43	70	BE/SS-12/40	SL/SB
DI76B	85052	750 x 600	900 x 710	55	45	71	BE/SS-12/40	SL/SB
DI77B	85061	750 x 750	900 x 860	55	62	90	BE/SS-12/40	SL/SB
DI94B	85119	900 x 450	1050 x 560	55	45	66	BE/SS-12/40	SL/SB
DI96B	85078	900 x 600	1050 x 710	55	58	84	BE/SS-12/40	SL/SB
DI97B	85086	900 x 750	1050 x 860	55	71	98	BE/SS-12/40	SL/SB
DI99B	85093	900 x 900	1050 x 1010	55	86	114	BE/SS-12/40	SL/SB
<b>Class C - AS 3996 - 150kN - reduced ribs for 40mm deep pavers</b>								
DI44C	142313	450 x 450	622 x 619	85	30	63	BE/SS-12/40	SL/SB
DI66C	142314	600 x 600	772 x 769	85	56	98	BE/SS-12/40	SL/SB
DI96C	142315	900 x 600	1072 x 769	85	75	123	BE/SS-12/40	SL/SB
DI99C	142316	900 x 900	1072 x 1069	85	102	160	BE/SS-12/40	SL/SB
<b>Class D - AS 3996 - 240kN</b>								
DI33D#	89010	300 x 300	512 x 512	100	32	54	BE/SS-12/40	SL/SB
DI44D	143029	450 x 450	640 x 640	88	35	70	BE/SS-12/40	SL/SB
DI46D	143030	450 x 600	640 x 790	88	43	83	BE/SS-12/40	SL/SB
DI64D	143031	600 x 450	790 x 640	88	47	86	BE/SS-12/40	SL/SB
DI66D	143032	600 x 600	790 x 790	88	57	102	BE/SS-12/40	SL/SB
DI67D	143033	600 x 750	790 x 940	88	67	116	BE/SS-12/40	SL/SB
DI76D	143034	750 x 600	940 x 790	88	68	117	BE/SS-12/40	SL/SB
DI77D	143035	750 x 750	940 x 940	88	83	136	BE/SS-12/40	SL/SB
DI94D	143036	900 x 450	1090 x 640	88	65	113	BE/SS-12/40	SL/SB
DI96D	143037	900 x 600	1090 x 790	88	84	137	BE/SS-12/40	SL/SB
DI97D	143038	900 x 750	1090 x 940	88	98	156	BE/SS-12/40	SL/SB
DI99D	143039	900 x 900	1090 x 1090	88	117	179	BE/SS-12/40	SL/SB
<b>Class G - AS 3996 - 900kN</b>								
DI44G	143012	450 x 450	640 x 640	120	53	103	n/a	SL/SB
DI46G	143013	450 x 600	640 x 790	120	62	119	n/a	SL/SB
DI64G	143014	600 x 450	790 x 640	120	80	136	n/a	SL/SB
DI66G	143015	600 x 600	790 x 790	120	93	156	n/a	SL/SB
DI67G	143016	600 x 750	790 x 940	120	106	175	n/a	SL/SB
DI76G	143017	750 x 600	940 x 790	120	127	196	n/a	SL/SB
DI77G	142924	750 x 750	940 x 940	120	131	204	n/a	SL/SB
DI94G	143018	900 x 450	1090 x 640	120	153	221	n/a	SL/SB
DI96G	143019	900 x 600	1090 x 790	120	173	248	n/a	SL/SB
DI99G	143142	900 x 900	1090 x 1090	120	192	280	n/a	SL/SB

\* Decorative Brass (BE) or Stainless Steel (SS) edging can be added - just specify BE or SS and height (12mm or 40mm) after part no.

\*\* Bolts are standard for each cover, specify Standard Locking bolts (SL) or security rated Security Bolts (SB) after part no.

If structural locking bolts are required, contact ACO.

# This size comes with a Cellular Frame.

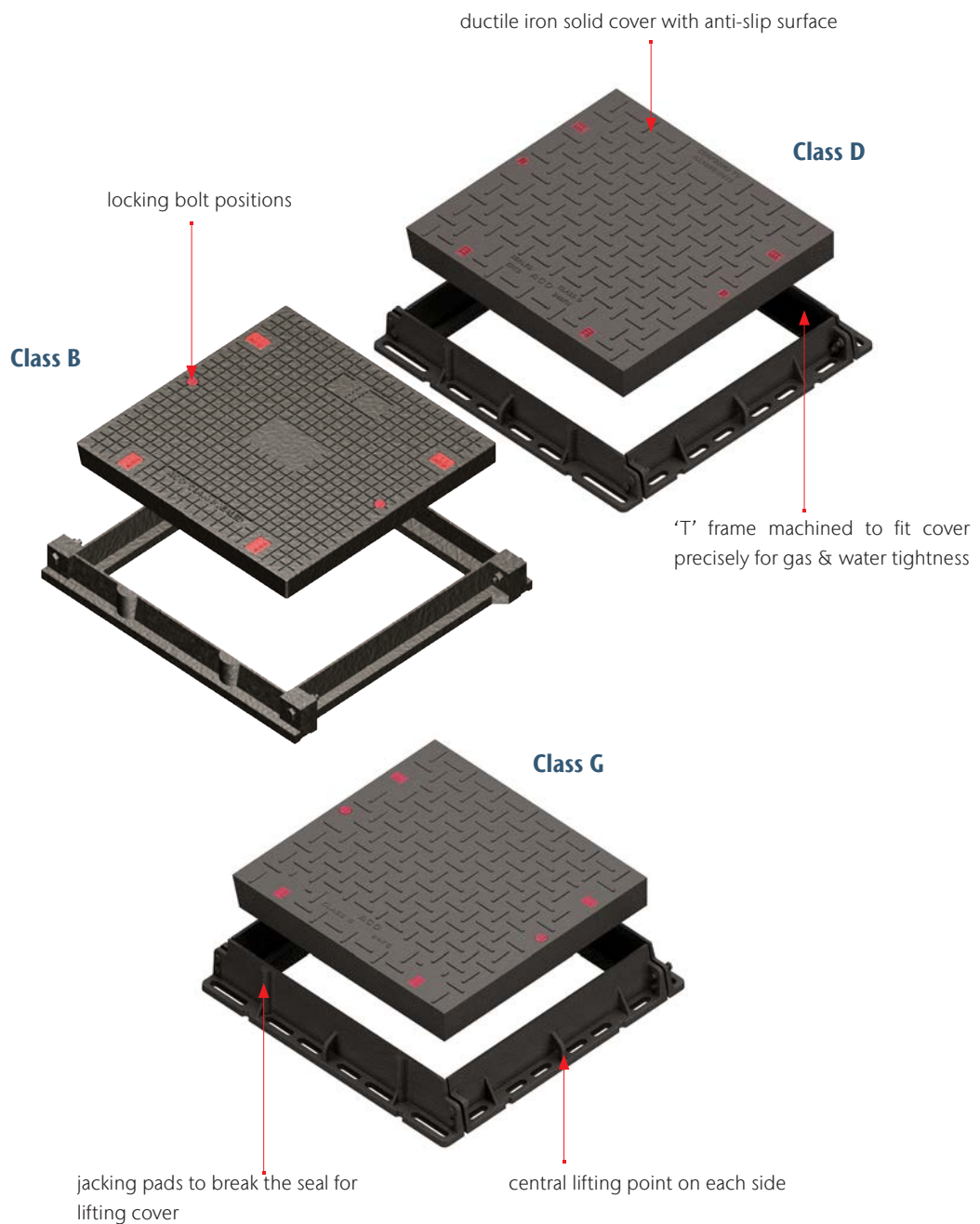
## Rhinocast® - Single Part Solid Top Iron Access Covers

Single part square and rectangular units can be used to provide access to underground stormwater/sewer systems, electricity and communication enclosures, grease traps, valves and junction boxes.

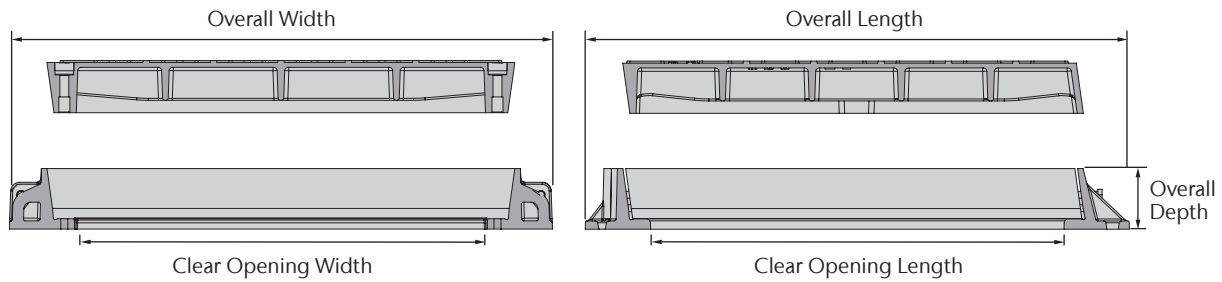
Standard covers can be assembled to produce multipart and trench run systems (see page 24).






### Features







## Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
	<b>Class B - AS 3996 - 80kN</b>							
DIS44B	85249	450 x 450	600 x 560	55	22	44	n/a	SL/SB
DIS46B	85261	450 x 600	600 x 710	55	29	55	n/a	SL/SB
DIS64B	85236	600 x 450	750 x 560	55	26	53	n/a	SL/SB
DIS66B	85222	600 x 600	750 x 710	55	39	63	n/a	SL/SB
DIS67B	85215	600 x 750	750 x 860	55	44	76	n/a	SL/SB
DIS74B	85298	750 x 450	900 x 560	55	39	66	n/a	SL/SB
DIS76B	85287	750 x 600	900 x 710	55	53	81	n/a	SL/SB
DIS77B	85274	750 x 750	900 x 860	55	62	95	n/a	SL/SB
DIS94B	85208	900 x 450	1050 x 560	55	48	83	n/a	SL/SB
DIS96B	85253	900 x 600	1050 x 710	55	58	86	n/a	SL/SB
DIS99B	143110	900 x 900	1050 x 1050	55	82	136	n/a	SL/SB
	<b>Class D - AS 3996 - 240kN</b>							
DIS33D#	143114	300 x 300	512 x 512	100	32	54	n/a	SL/SB
DIS44D	143041	450 x 450	640 x 640	88	35	70	n/a	SL/SB
DIS46D	143042	450 x 600	640 x 790	88	45	85	n/a	SL/SB
DIS64D	143043	600 x 450	790 x 640	88	43	82	n/a	SL/SB
DIS66D	143044	600 x 600	790 x 790	88	57	102	n/a	SL/SB
DIS74D	143046	750 x 450	940 x 640	88	55	99	n/a	SL/SB
DIS76D	143047	750 x 600	940 x 790	88	68	117	n/a	SL/SB
DIS77D	143048	750 x 750	940 x 940	88	84	137	n/a	SL/SB
DIS94D	143049	900 x 450	1090 x 640	88	70	118	n/a	SL/SB
DIS96D	143050	900 x 600	1090 x 790	88	86	140	n/a	SL/SB
DIS99D	143051	900 x 900	1090 x 1090	88	120	182	n/a	SL/SB
	<b>Class G - AS 3996 - 900kN</b>							
DIS44G	143020	450 x 450	640 x 640	120	51	101	n/a	SL/SB
DIS46G	143021	450 x 600	640 x 790	120	66	122	n/a	SL/SB
DIS66G	143022	600 x 600	790 x 790	120	95	158	n/a	SL/SB
DIS67G	143023	600 x 750	790 x 940	120	109	178	n/a	SL/SB
DIS76G	143024	750 x 600	940 x 790	120	128	196	n/a	SL/SB
DIS77G	142923	750 x 750	940 x 940	120	143	204	n/a	SL/SB
DIS94G	143145	900 x 450	1090 x 640	120	161	230	n/a	SL/SB
DIS96G	143026	900 x 600	1090 x 790	120	175	250	n/a	SL/SB
DIS97G	143027	900 x 750	1090 x 940	120	182	264	n/a	SL/SB
DIS99G	143144	900 x 900	1090 x 1090	120	217	305	n/a	SL/SB

\* Decorative edging - not available with solid top covers.

\*\* Bolts are standard for each cover, specify Standard Locking bolts (SL) or security rated Security Bolts (SB) after part no. If structural locking bolts are required, contact ACO.

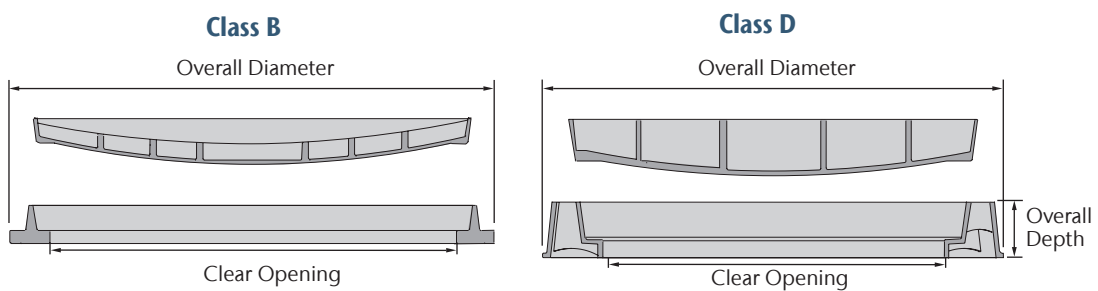
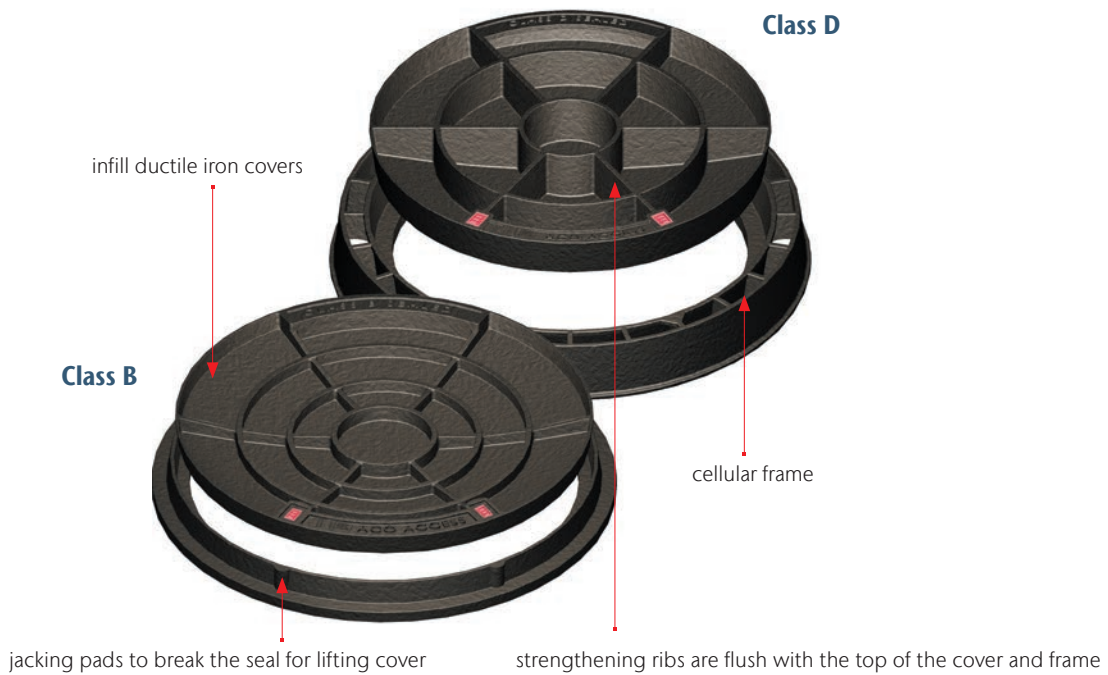
# This size comes with a Cellular Frame.

# Rhinocast® - Circular Infill Iron Access Covers



Circular Infill units can be used to provide access to underground stormwater/sewer systems, electricity and communication enclosures.



## Features



## Parts list

Type	Part No.	Clear Opening Dia (mm)	Overall Dia (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
 <b>Class B - AS 3996 - 80kN</b>								
60ORB	85107	615	735	58	30	55	n/a	SL/SB
 <b>Class D - AS 3996 - 240kN</b>								
60ORD	89109	615	830	102	51	98	n/a	SL/SB

\* Decorative edging - not available with circular covers.

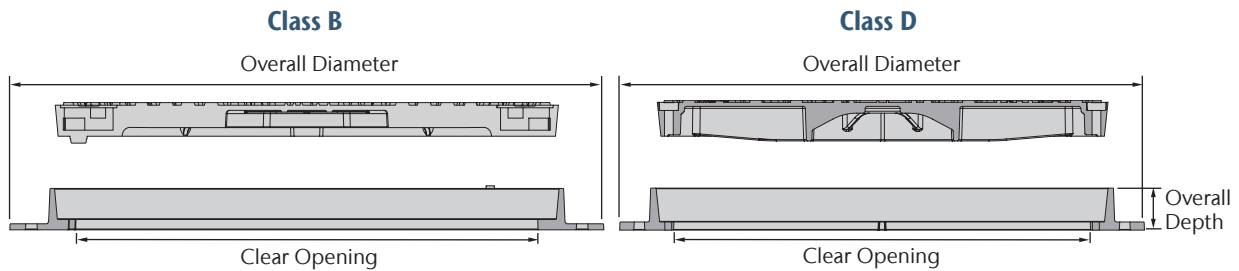
\*\* Bolts are standard for each cover, specify Standard Locking bolts (SL) or security rated Security Bolts (SB) after part no. If structural locking bolts are required, contact ACO.

# Rhinocast® - Circular Solid Top Iron Access Covers



Circular Solid Top units can be used to provide access to underground stormwater/sewer systems, tradewaste enclosures.



## Features



## Parts list

Type	Part No.	ID Label	Clear Opening Dia (mm)	Overall Dia (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Locking Option**
<b>Class B - AS 3996 - 80kN</b>								
								
375SB	143123	Blank	375	460	50	18	27	SL/SB
375SB	85110	Sewer	375	460	50	18	27	SL/SB
600SB	85142	Sewer	600	700	50	28	43	SL/SB
600SB	85196	Stormwater	600	700	50	28	43	SL/SB
615SB	142937	Sewer	615	715	55	26	40	SL/SB
<b>Class D - AS 3996 - 240kN</b>								
								
375SD	143124	Blank	375	460	60	21	31	SL/SB
375SD	89100	Sewer	375	460	60	21	31	SL/SB
600SD	89183	Sewer	600	700	72	43	63	SL/SB
600SD	89155	Stormwater	600	700	72	43	63	SL/SB
615SD	142997	Sewer	615	715	72	31	51	SL/SB
615SD	142998	Stormwater	615	715	72	31	51	SL/SB
615SD	142999	Grease trap	615	715	72	31	51	SL/SB

\*\* Bolts are standard for each cover, specify Standard Locking bolts (SL) or security rated Security Bolts (SB) after part no. If structural locking bolts are required, contact ACO.

## Rhinocast® - 2-part Infill Iron Access Covers

2-part units combine two standard covers in a single run. They are used where a single part cover does not offer a large enough clear opening, or if smaller individual covers are required for easier lifting.

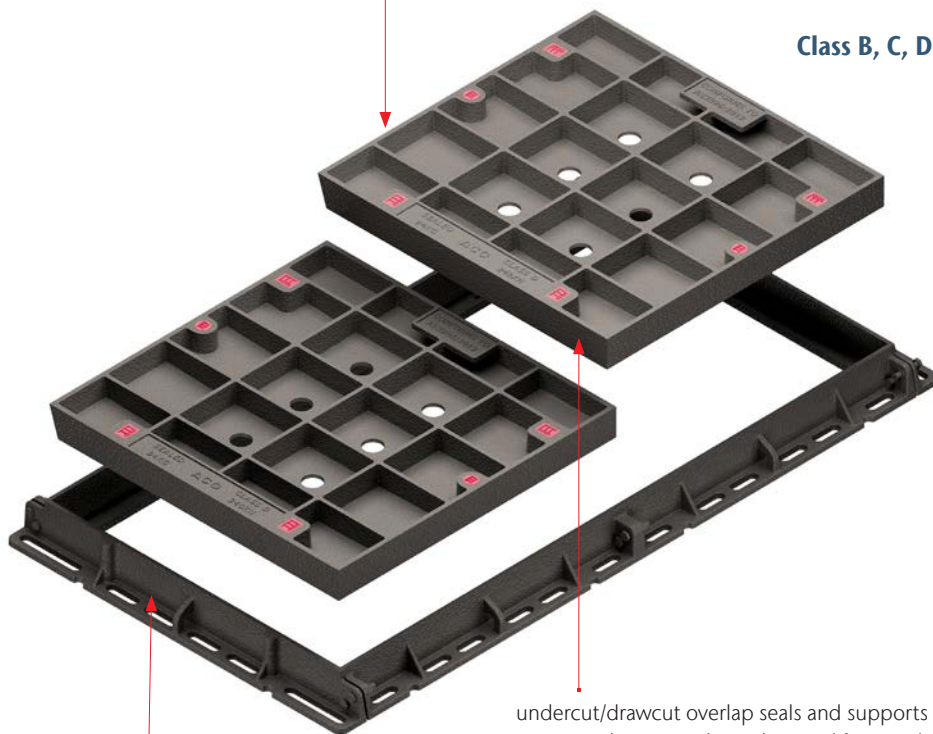
Common applications include access to grease traps, underground stormwater/sewer systems, electricity and communication enclosures, valves and junction boxes.



### Features

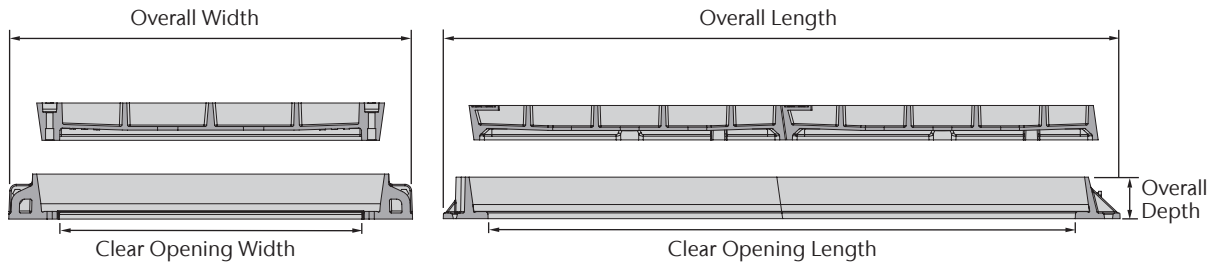
provided widths and loading are the same, any standard covers can be combined to create 2-part units

**Class B, C, D & G**



frame fits around both covers without the need for additional support

undercut/drawcut overlap seals and supports the covers at the join without the need for crossbars



Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
<b>Class B - AS 3996 - 80kN</b>								
DI249B	85418	450 x 945	600 x 1055	55	22/22	79	BE/SS-12/40	SL/SB
DI2412B	85433	450 x 1245	600 x 1355	55	30/30	88	BE/SS-12/40	SL/SB
DI269B	85444	600 x 945	750 x 1055	55	28/28	94	BE/SS-12/40	SL/SB
DI2612B	85465	600 x 1245	750 x 1355	55	37/37	106	BE/SS-12/40	SL/SB
DI2615B	85555	600 x 1545	750 x 1655	55	43/43	128	BE/SS-12/40	SL/SB
DI2712B	85477	750 x 1245	900 x 1355	55	45/45	131	BE/SS-12/40	SL/SB
DI2715B	85499	750 x 1545	900 x 1655	55	62/62	166	BE/SS-12/40	SL/SB
DI299B	85159	900 x 945	1050 x 1055	55	45/45	116	BE/SS-12/40	SL/SB
DI2910B	85510	900 x 1095	1050 x 1205	55	45/58	134	BE/SS-12/40	SL/SB
DI2912B	85503	900 x 1245	1050 x 1355	55	58/58	152	BE/SS-12/40	SL/SB
DI2915B	85524	900 x 1545	1050 x 1655	55	71/71	190	BE/SS-12/40	SL/SB
DI2918B	85548	900 x 1845	1050 x 1955	55	86/86	252	BE/SS-12/40	SL/SB
<b>Class C - AS 3996 - reduced ribs for 40mm deep pavers</b>								
DI249C	142355	450 x 955	622 x 1124	85	30/30	107	n/a	SL/SB
DI2612C	142356	600 x 1255	722 x 1424	85	56/56	170	n/a	SL/SB
DI2912C	142357	900 x 1255	1072 x 1424	85	75/75	217	n/a	SL/SB
DI2915C	143171	900 x 1555	1072 x 1724	85	75/102	252	n/a	SL/SB
DI2918C	142358	900 x 1855	1072 x 2024	85	102/102	287	n/a	SL/SB
<b>Class D - AS 3996 - 240kN</b>								
DI249D	143173	450 x 960	640 x 1150	88	35/35	119	BE/SS-12/40	SL/SB
DI2411D	143174	450 x 1110	640 x 1300	88	35/43	122	BE/SS-12/40	SL/SB
DI2412D	143175	450 x 1260	640 x 1450	88	43/43	147	BE/SS-12/40	SL/SB
DI269D	143176	600 x 960	790 x 1150	88	47/47	146	BE/SS-12/40	SL/SB
DI2611D	143177	600 x 1110	790 x 1300	88	47/57	160	BE/SS-12/40	SL/SB
DI2612D	143178	600 x 1260	790 x 1450	88	57/57	173	BE/SS-12/40	SL/SB
DI2712D	143180	750 x 1260	940 x 1450	88	68/68	202	BE/SS-12/40	SL/SB
DI2715D	143182	750 x 1560	940 x 1750	88	83/83	238	BE/SS-12/40	SL/SB
DI299D	143183	900 x 960	1090 x 1150	88	65/65	192	BE/SS-12/40	SL/SB
DI2911D	143184	900 x 1110	1090 x 1300	88	65/84	212	BE/SS-12/40	SL/SB
DI2912D	143185	900 x 1260	1090 x 1450	88	84/84	232	BE/SS-12/40	SL/SB
DI2915D	143187	900 x 1560	1090 x 1750	88	84/117	270	BE/SS-12/40	SL/SB
DI2918D	143189	900 x 1860	1090 x 2050	88	117/117	308	BE/SS-12/40	SL/SB
<b>Class G - AS 3996 - 900kN</b>								
DI249G	143190	450 x 960	640 x 1150	120	53/53	178	n/a	SL/SB
DI2411G	143191	450 x 1110	640 x 1300	120	53/62	192	n/a	SL/SB
DI2412G	143192	450 x 1260	640 x 1450	120	62/62	207	n/a	SL/SB
DI269G	143193	600 x 960	790 x 1150	120	80/80	237	n/a	SL/SB
DI2611G	143194	600 x 1110	790 x 1300	120	80/93	256	n/a	SL/SB
DI2612G	143195	600 x 1260	790 x 1450	120	93/93	275	n/a	SL/SB
DI2615G	143197	600 x 1560	790 x 1750	120	106/106	313	n/a	SL/SB
DI2712G	143198	750 x 1260	940 x 1450	120	127/127	349	n/a	SL/SB
DI2715G	143200	750 x 1560	940 x 1750	120	131/131	367	n/a	SL/SB
DI299G	143201	900 x 960	1090 x 1150	120	153/153	395	n/a	SL/SB
DI2911G	143202	900 x 1110	1090 x 1300	120	153/173	421	n/a	SL/SB
DI2912G	143203	900 x 1260	1090 x 1450	120	173/173	447	n/a	SL/SB
DI2918G	143206	900 x 1860	1090 x 2050	120	192/192	509	n/a	SL/SB

\* Decorative Brass (BE) or Stainless Steel (SS) edging can be added - just specify BE or SS and height (12mm or 40mm) after part no.  
 \*\* Bolts are standard for each cover, specify Standard Locking bolts (SL) or security rated Security Bolts (SB) after part no.  
 If structural locking bolts are required, contact ACO.

## Rhinocast® - 2-part Solid Top Iron Access Covers

2-part units combine two standard covers in a single run. They are used where a single part cover does not offer a large enough clear opening or if smaller individual covers are required for easier lifting.

Common applications include access to grease traps, underground stormwater/sewer systems, electricity and communication enclosures, valves and junction boxes.

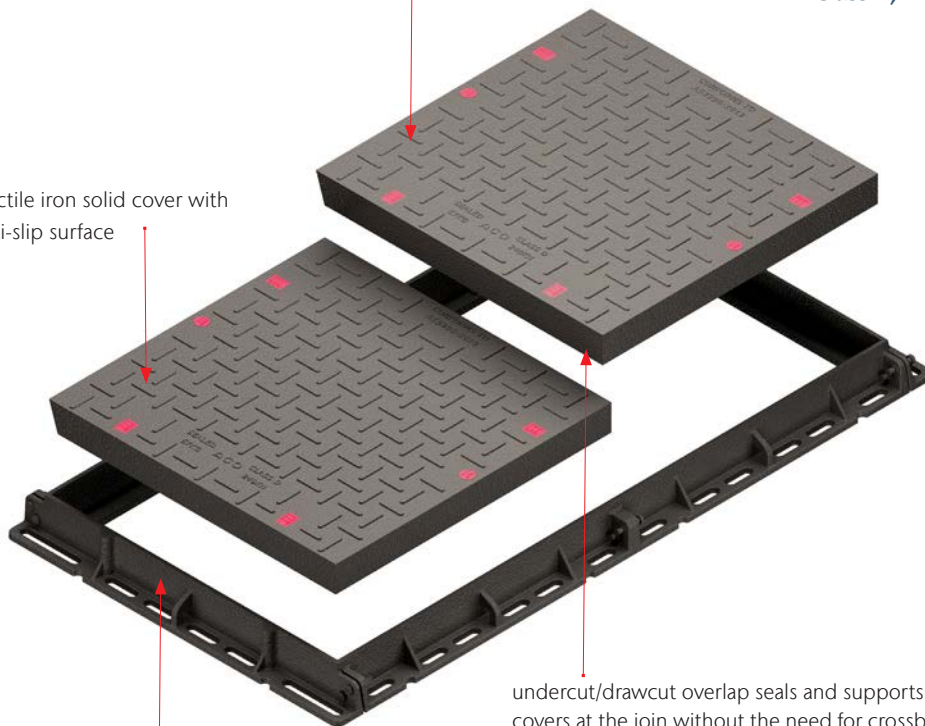


### Features

provided widths and loading are the same, any standard covers can be combined to create 2-part units

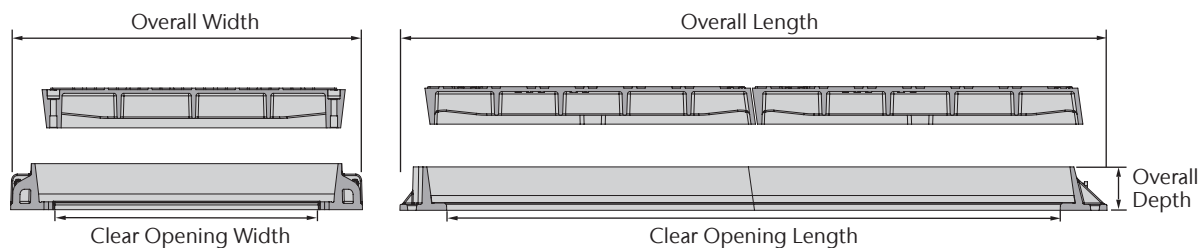
**Class B, D & G**

ductile iron solid cover with anti-slip surface






undercut/drawcut overlap seals and supports the covers at the joint without the need for crossbars

frame fits around both covers without the need for additional support, the undercut/drawcut profile supports covers across the middle



## Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
	<b>Class B - AS 3996 - 80kN</b>							
DIS249B	143207	450 x 945	600 x 1055	55	22/22	76	n/a	SL/SB
DIS2410B	85109	450 x 1095	600 x 1205	55	22/29	86	n/a	SL/SB
DIS2412B	86853	450 x 1245	600 x 1355	55	29/29	95	n/a	SL/SB
DIS269B	80753	600 x 945	750 x 1055	55	26/26	87	n/a	SL/SB
DIS2612B	143212	600 x 1245	750 x 1355	55	39/39	119	n/a	SL/SB
DIS279B	143213	750 x 945	900 x 1055	55	39/39	116	n/a	SL/SB
DIS2710B	143214	750 x 1095	900 x 1205	55	39/53	133	n/a	SL/SB
DIS2712B	143066	750 x 1245	900 x 1355	55	53/53	150	n/a	SL/SB
DIS2715B	143217	750 x 1545	900 x 1655	55	62/62	173	n/a	SL/SB
DIS299B	89953	900 x 945	1050 x 1055	55	48/48	137	n/a	SL/SB
DIS2910B	143219	900 x 1095	1050 x 1205	55	48/58	150	n/a	SL/SB
DIS2912B	143220	900 x 1245	1050 x 1355	55	58/58	163	n/a	SL/SB
DIS2918B	143223	900 x 1845	1050 x 1955	55	82/82	222	n/a	SL/SB
	<b>Class D - AS 3996 - 240kN</b>							
DIS249D	143224	450 x 960	640 x 1150	88	35/35	119	n/a	SL/SB
DIS2411D	143225	450 x 1110	640 x 1300	88	35/45	133	n/a	SL/SB
DIS2412D	143226	450 x 1260	640 x 1450	88	45/45	147	n/a	SL/SB
DIS269D	143227	600 x 960	790 x 1150	88	43/43	139	n/a	SL/SB
DIS2611D	143228	600 x 1110	790 x 1300	88	43/57	157	n/a	SL/SB
DIS2612D	143229	600 x 1260	790 x 1450	88	57/57	175	n/a	SL/SB
DIS279D	143232	750 x 960	940 x 1150	88	55/55	167	n/a	SL/SB
DIS2711D	143233	750 x 1110	940 x 1300	88	55/68	184	n/a	SL/SB
DIS2712D	143234	750 x 1260	940 x 1450	88	68/68	201	n/a	SL/SB
DIS2715D	143236	750 x 1560	940 x 1750	88	84/84	241	n/a	SL/SB
DIS299D	143237	900 x 960	1090 x 1150	88	70/70	201	n/a	SL/SB
DIS2911D	143238	900 x 1110	1090 x 1300	88	70/86	221	n/a	SL/SB
DIS2912D	143239	900 x 1260	1090 x 1450	88	86/86	241	n/a	SL/SB
DIS2915D	143241	900 x 1560	1090 x 1750	88	86/120	283	n/a	SL/SB
DIS2918D	143242	900 x 1860	1090 x 2050	88	120/120	325	n/a	SL/SB
	<b>Class G - AS 3996 - 900kN</b>							
DIS249G	143243	450 x 960	640 x 1150	120	51/51	174	n/a	SL/SB
DIS2411G	143244	450 x 1110	640 x 1300	120	51/66	194	n/a	SL/SB
DIS2412G	143245	450 x 1260	640 x 1450	120	66/66	215	n/a	SL/SB
DIS2612G	143246	600 x 1260	790 x 1450	120	95/95	279	n/a	SL/SB
DIS2615G	143248	600 x 1560	790 x 1750	120	109/109	319	n/a	SL/SB
DIS2712G	143249	750 x 1260	940 x 1450	120	128/128	323	n/a	SL/SB
DIS2715G	143251	750 x 1560	940 x 1750	120	143/143	393	n/a	SL/SB
DIS299G	143252	900 x 960	1090 x 1150	120	161/161	411	n/a	SL/SB
DIS2911G	143253	900 x 1110	1090 x 1300	120	161/175	431	n/a	SL/SB
DIS2912G	143254	900 x 1260	1090 x 1450	120	175/175	451	n/a	SL/SB
DIS2915G	143256	900 x 1560	1090 x 1750	120	175/217	505	n/a	SL/SB
DIS2918G	143258	900 x 1860	1090 x 2050	120	217/217	559	n/a	SL/SB

\* Decorative edging - not available with solid top covers.

\*\* Bolts are standard for each cover, specify Standard Locking Bolts (SL) or security rated Security Bolts (SB) after part no. If structural locking bolts are required, contact ACO.

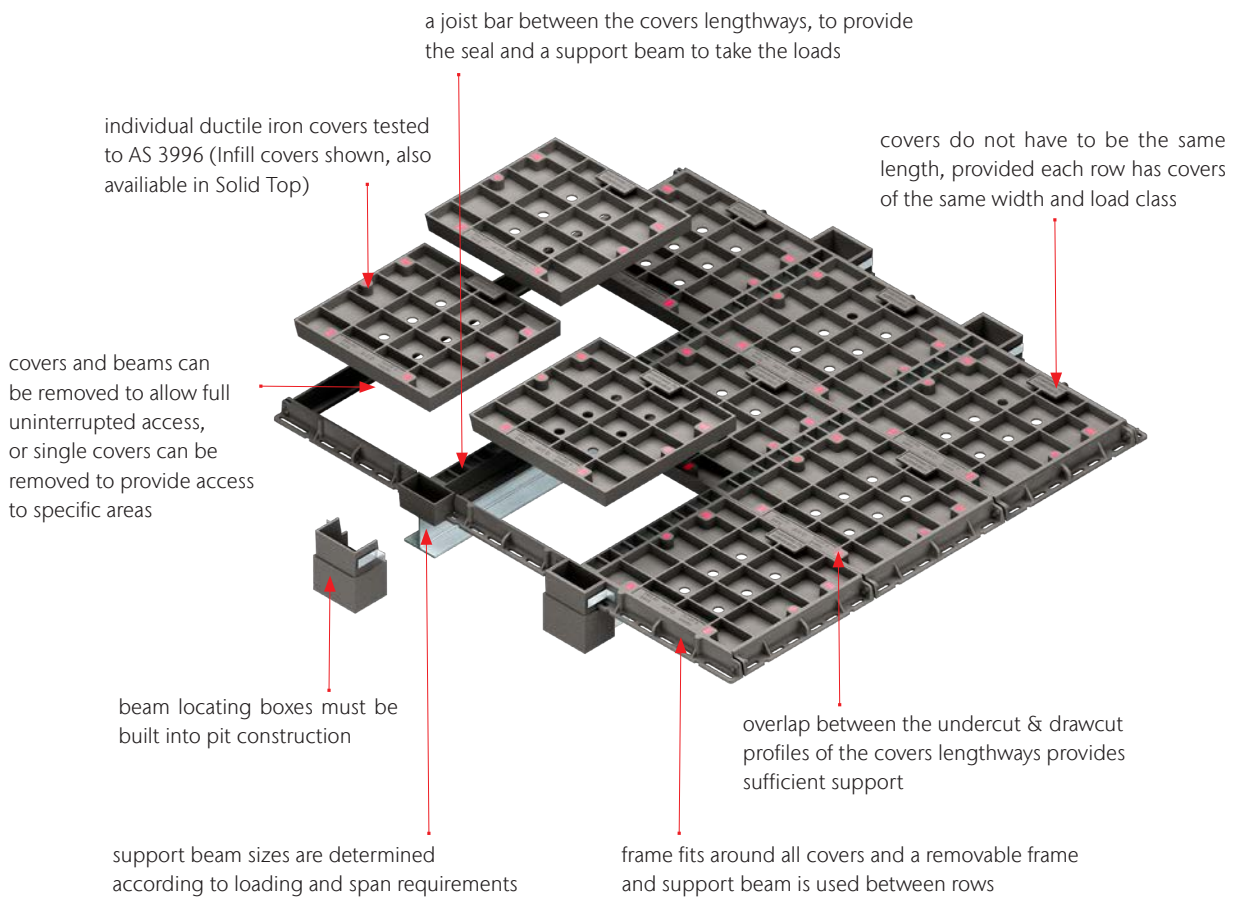
# Rhinocast® - Multipart and Trench Run Systems

Multipart units combine standard size covers in multiple rows and lengths. They are used where a single part cover does not offer a large enough clear opening or if smaller individual covers are required for easier lifting.

All covers and beams can be removed to allow full uninterrupted access, or single covers can be removed to provide access to specific areas.



## Features

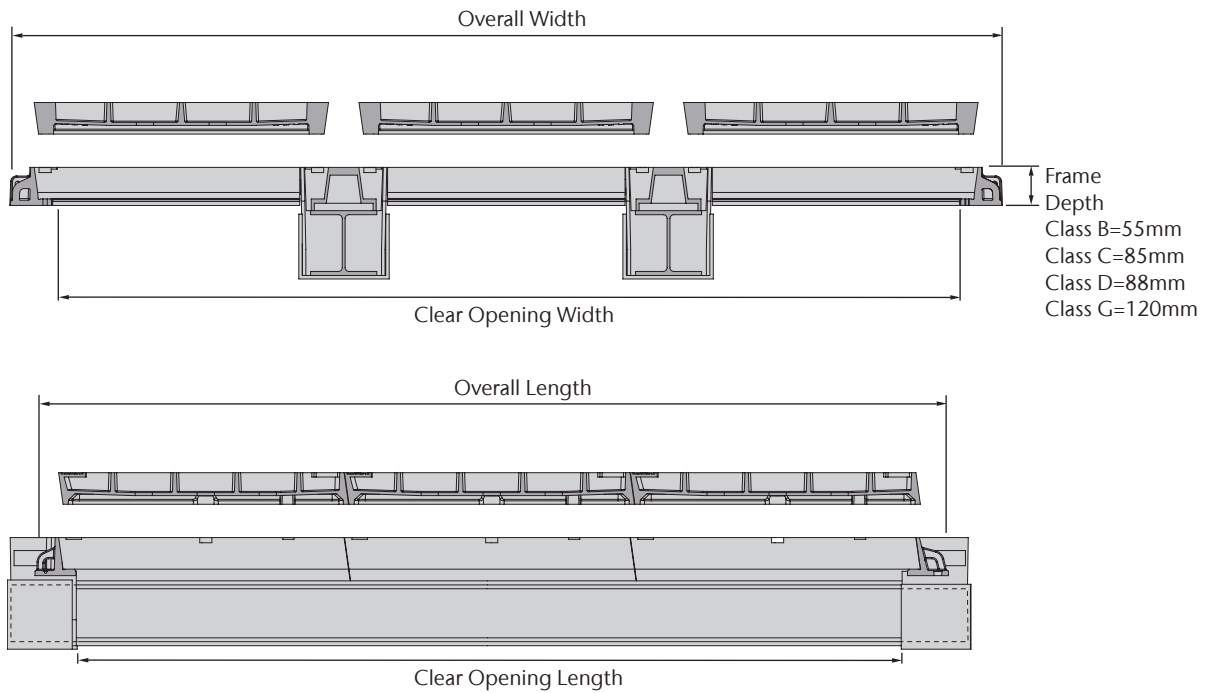


### Trench runs



Trench runs combine standard size covers in a single run. They are produced in widths of 450, 600, 750 or 900mm clear opening in any lengths (Infill covers in Class B & D can also be produced in 300mm width).







## Parts list

Type	Part No.	Clear Opening W x L (mm)	No. Parts	Covers W x L	Load Bearing Beams Required	Decorative Edging*	Locking Option**
 <b>Class B - AS 3996 - 80kN</b>							
DIMP109B	85817	1000 x 945	4-Part	2 x 2	1 x 150mm UC	BE/SS-12/40	SL/SB
DIMP1312B	85822	1300 x 1245	4-Part	2 x 2	1 x 150mm UC	BE/SS-12/40	SL/SB
DIMP1323B	85839	1300 x 2340	6-Part	2 x 3	1 x 150mm UC	BE/SS-12/40	SL/SB
DIMP1615B	85843	1600 x 1545	4-Part	2 x 2	1 x 150mm UC	BE/SS-12/40	SL/SB
DIMP1925B	85850	1900 x 2535	8-Part	2 x 4	1 x 150mm UC	BE/SS-12/40	SL/SB
DIMP2015B	85864	2000 x 1545	6-Part	3 x 2	2 x 150mm UC	BE/SS-12/40	SL/SB
DIMP2019B	85870	2000 x 1935	12-Part	3 x 4	2 x 150mm UC	BE/SS-12/40	SL/SB
DIMP2423B	85888	2450 x 2340	9-Part	3 x 3	2 x 150mm UC	BE/SS-12/40	SL/SB
 <b>Class D - AS 3996 - 240kN</b>							
DIMP109D	143259	1050 x 960	4-Part	2 x 2	1x 250mm UB	BE/SS-12/40	SL/SB
DIMP1312D	143260	1350 x 1260	4-Part	2 x 2	1x 250mm UB	BE/SS-12/40	SL/SB
DIMP1323D	143261	1350 x 2370	6-Part	2 x 3	1x 250mm UB	BE/SS-12/40	SL/SB
DIMP1615D	143262	1650 x 1560	4-Part	2 x 2	1x 250mm UB	BE/SS-12/40	SL/SB
DIMP1926D	143263	1950 x 2580	8-Part	2 x 4	1x 250mm UB	BE/SS-12/40	SL/SB
DIMP2115D	143264	2100 x 1560	6-Part	3 x 2	2x 250mm UB	BE/SS-12/40	SL/SB
DIMP2120D	143265	2100 x 2070	9-Part	3 x 3	2x 250mm UB	BE/SS-12/40	SL/SB
DIMP2523D	143266	2550 x 2370	9-Part	3 x 3	2x 250mm UB	BE/SS-12/40	SL/SB

Other sizes including Class G is available.

\* Decorative Brass (BE) or Stainless Steel (SS) edging can be added - just specify BE or SS and height (12mm or 40mm) after part no.

\*\* Optional locking bolts are available for security or back pressure applications - specify Standard Locking bolts (SL) or Security Bolts (SB) after part no.

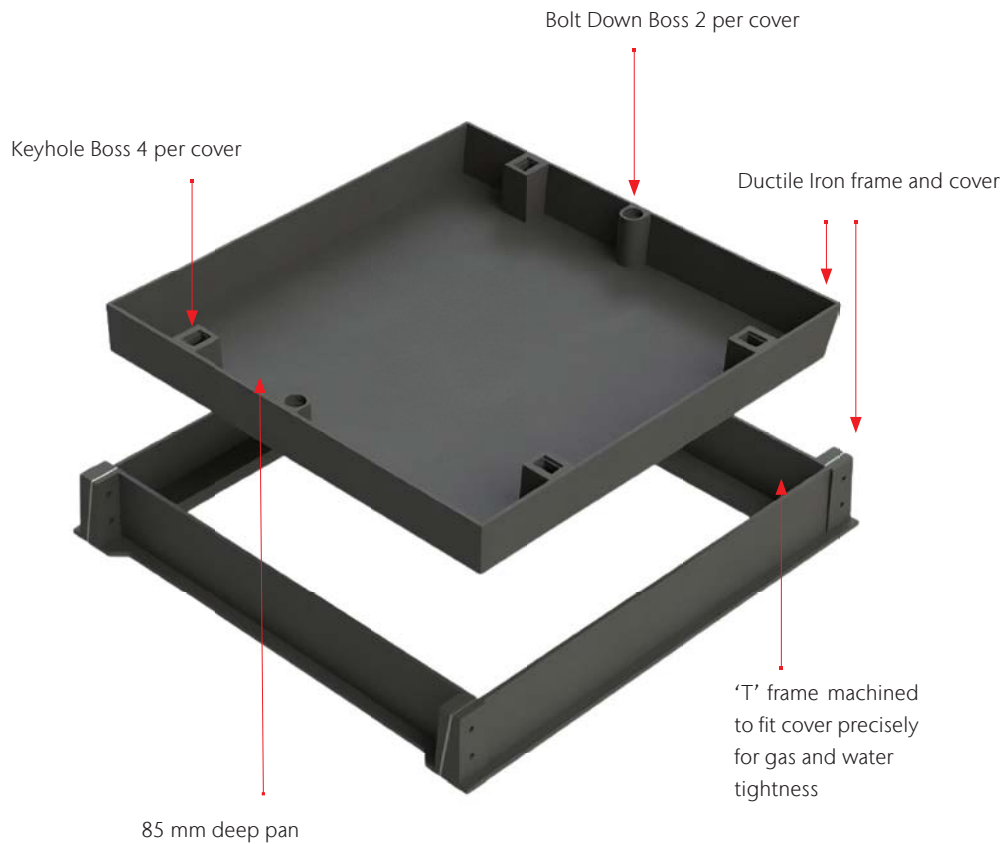
## Rhinocast® - ACC Paver Cover - Ductile Iron Cover & Frame

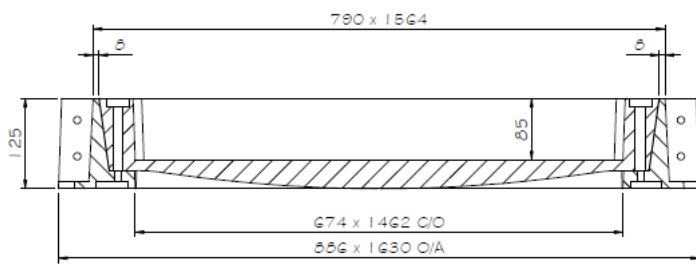
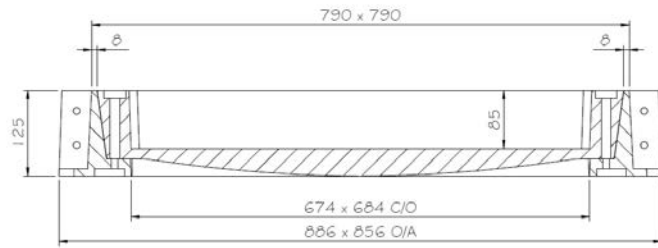
Rhinocast® - ACC Paver Covers with Ductile Iron Cover and Frame have a 85 mm deep pan to be filled with matching pavers. The cover is available as single part and two part unit and can be used to provide access to underground stormwater/sewer systems, electricity and communication enclosures, valves and junction boxes.

The covers can be removed to allow full uninterrupted access, or single covers can be removed to provide access to specific areas.




### Features





### Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging	Locking Option
	<b>Class D - AS 3996 - 240kN</b>							
	141736	674 x 684	886 x 856	125	-	157	n/a	SL/SB
	141737	674 x 1462	886 x 1630	125	-	299	n/a	SL/SB

# Urbanfil® - Galvanised Steel Access Covers

## Typical Applications

- Internal areas
- Streetscapes
- Urban public spaces
- Parks/recreational areas
- Bus/rail platforms
- Shopping centres
- Electrical, mechanical and communications



Four high tensile steel M16 recessed socketed locking bolts per cover with plastic cap to protect from dirt ingress



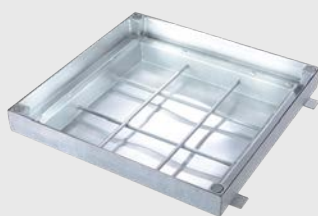
Seal provides weather resistance without the need for grease



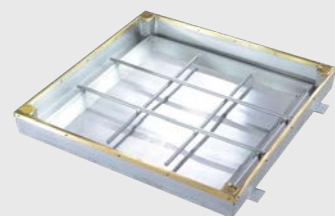
Steel bars to reinforce concrete beneath tiles & pavers



Tilemate™ - standard access covers, recessed for tiles



Pavermate® - deep access covers, recessed for pavers



Decorative brass edging for aesthetic areas, available for all covers

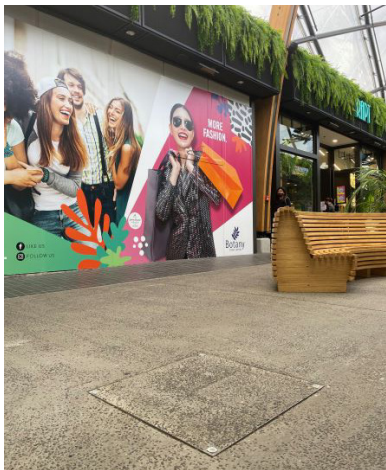
## Product Features

Tilemate™ covers for use with tiles, concrete and epoxy floors.

Pavermate® covers for use with brick pavers.

- All covers are designed to suit Class B loading (AS 3996) when tested filled
- 2mm thick steel frame and cover welded to AS 1554.1 and galvanised to AS 4680
- All covers have a seal to protect against odours and water ingress
- Concrete ties on all frames to ensure keying in surrounding concrete
- Four high tensile steel M16 locking bolts per cover, Security Bolts available for maximum security
- Lifting keyholes conforms to AS 3996 and uses Australian Standard lifting keys
- Steel reinforcing bars fixed to the base of all covers
- Frame and cover profile allows covers to be removed with a sliding action in any 4 directions
- Brass decorative edge option for superior aesthetics
- Australian made

To compare with iron covers (see page 11).

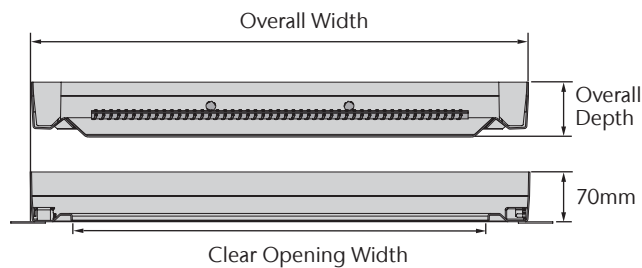
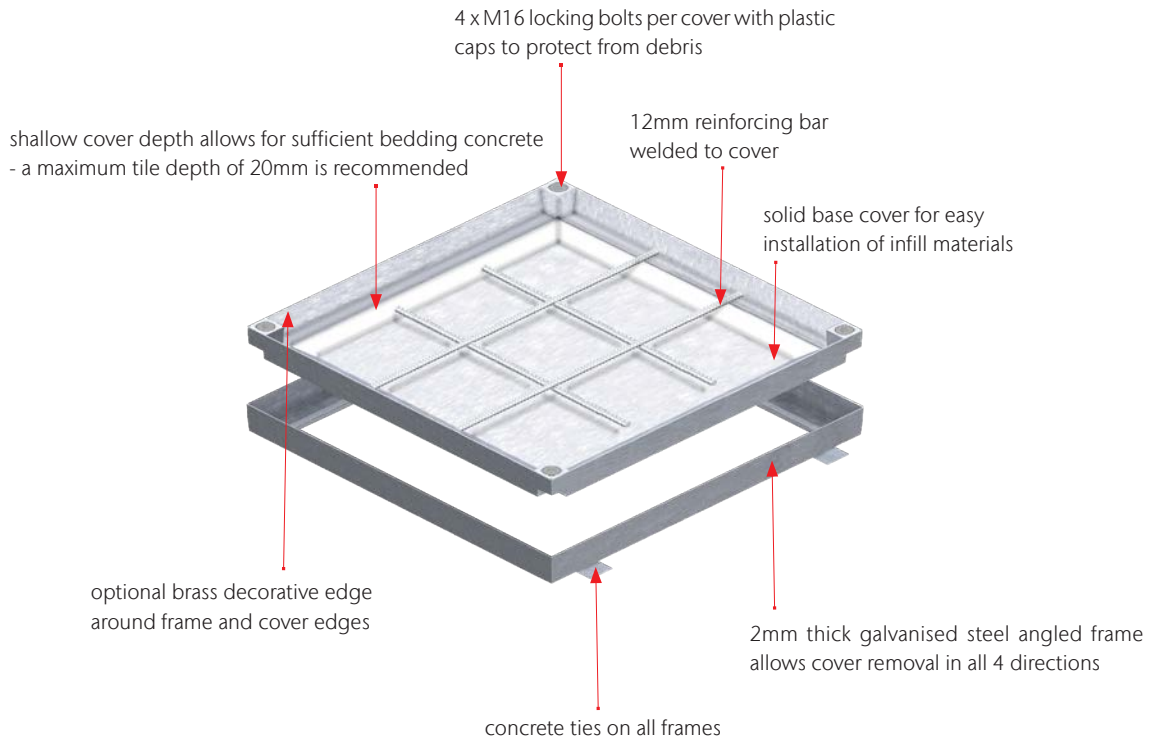


# Urbanfil® Tilemate™ - Single Part Steel Access Covers

A range of standard depth steel recessed cover & frame systems for use with tiles, concrete and epoxy floors. The steel base is fitted with reinforcing bars to provide flexural strength with concrete poured in situ. Brass edging is an option for aesthetic applications.

Tilemate™ covers are to be filled with concrete to a minimum depth of 45mm. Concrete is integral to the strength of the cover (see page 39).

## Features



## Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
<b>Class B - AS 3996 - 80kN</b>								
TM24B	80150	200 x 450	323 x 573	85	8.0	13.0	BE	SB
TM33B	81686	300 x 300	423 x 423	85	7.1	11.9	BE	SB
TM36B	81225	300 x 600	423 x 723	85	11.0	16.0	BE	SB
TM365B	80450	350 x 650	473 x 773	85	11.0	16.0	BE	SB
TM44B	81520	450 x 450	573 x 573	85	10.7	16.8	BE	SB
TM46B	81547	450 x 600	573 x 723	85	13.2	19.9	BE	SB
TM66B	81565	600 x 600	723 x 723	85	15.7	23.0	BE	SB
TM67B	81586	600 x 750	723 x 873	85	18.6	26.7	BE	SB
TM69B	82018	600 x 900	723 x 1023	85	20.9	29.6	BE	SB
TM77B	81601	750 x 750	873 x 873	85	21.5	30.2	BE	SB
TM94B	81661	900 x 450	1023 x 573	85	17.6	25.7	BE	SB
TM99B	81645	900 x 900	1023 x 1023	85	27.6	37.5	BE	SB

\* Decorative Brass (BE) edging can be added - just specify BE after part no.

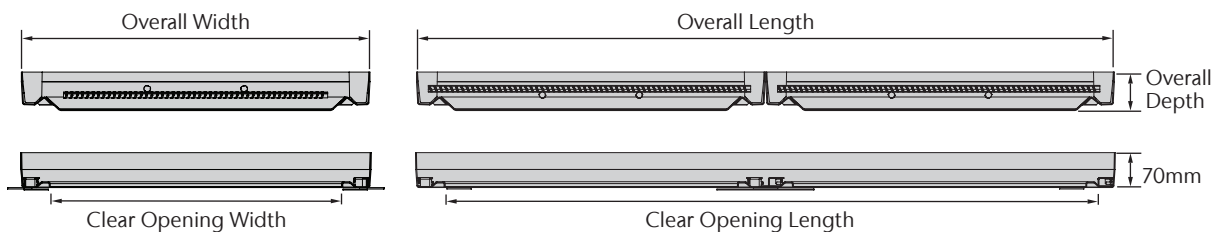
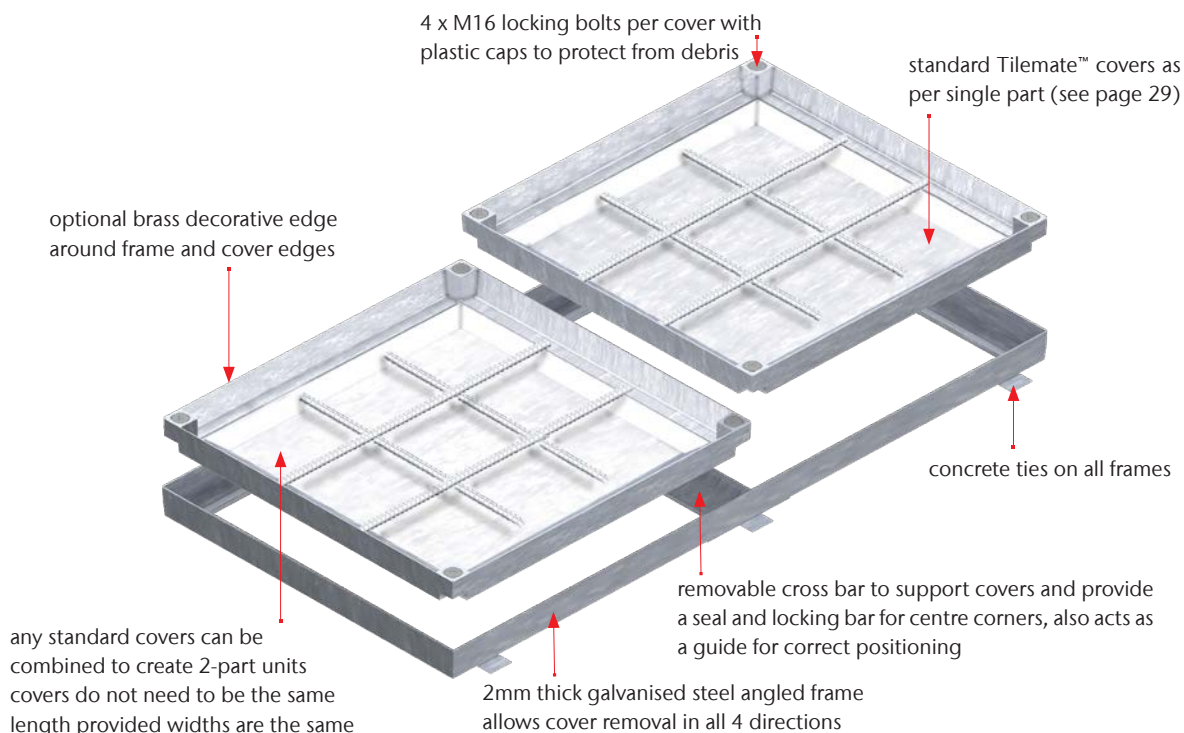
\*\* Optional security bolts are available for security applications - specify Security Bolts (SB) after part no.

# Urbanfil® Tilemate™ - 2-Part Steel Access Covers

2-part units combine two standard covers in a single run. For use with tiles, concrete and epoxy floors. The steel base is fitted with reinforcing bars to provide flexural strength with concrete poured in situ. Brass edging is an option for aesthetic applications.

Tilemate™ covers are to be filled with concrete to a minimum depth of 45mm. Concrete is integral to the strength of the cover (see page 39).

## Features



## Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
<b>Class B - AS 3996 - 80kN</b>								
TM2410B	82521	450 x 1020	573 x 1143	85	7.1/7.1	33.0	BE	SB
TM2411B	82540	450 x 1170	573 x 1293	85	7.1/10.7	36.1	BE	SB
TM2413B	82567	450 x 1320	573 x 1443	85	13.2/13.2	39.2	BE	SB
TM2610B	82585	600 x 1020	723 x 1143	85	13.2/13.2	39.2	BE	SB
TM2611B	82606	600 x 1170	723 x 1293	85	13.2/15.7	39.9	BE	SB
TM2613B	82628	600 x 1320	723 x 1443	85	15.7/15.7	45.5	BE	SB
TM2614B	82640	600 x 1470	723 x 1593	85	15.7/18.6	49.1	BE	SB
TM2616B	82665	600 x 1620	723 x 1743	85	18.6/18.6	52.0	BE	SB
TM2617B	82681	600 x 1770	723 x 1893	85	18.6/20.9	55.6	BE	SB
TM2619B	82706	600 x 1920	723 x 2043	85	20.9/20.9	58.6	BE	SB
TM2713B	82724	750 x 1320	873 x 1443	85	18.6/18.6	52.7	BE	SB
TM2714B	82745	750 x 1470	873 x 1593	85	18.6/21.6	56.3	BE	SB
TM2716B	82762	750 x 1620	873 x 1743	85	21.6/21.6	59.9	BE	SB
TM2913B	82783	900 x 1320	1023 x 1443	85	20.9/20.9	58.7	BE	SB

\* Decorative Brass (BE) edging can be added - just specify BE after part no.

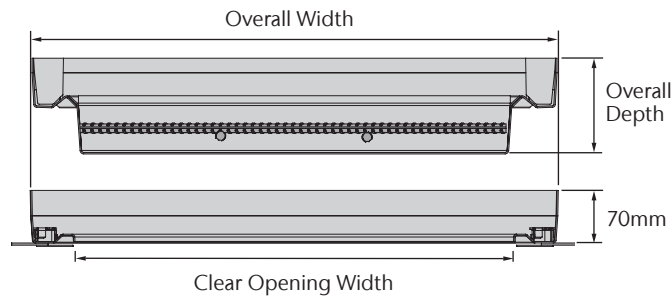
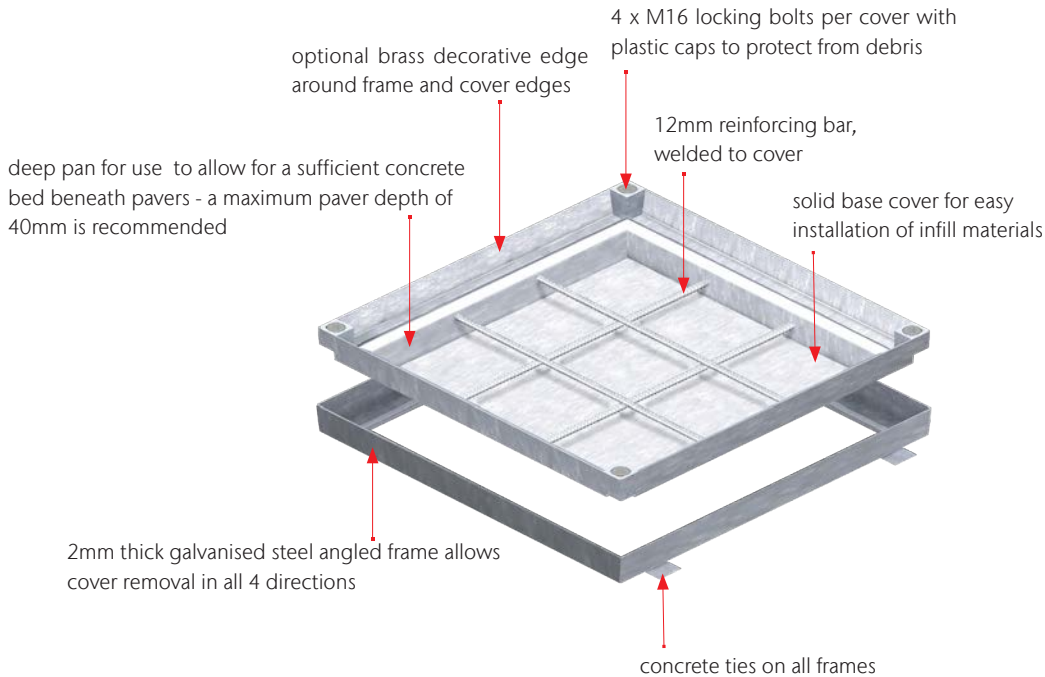
\*\* Optional security locking bolts are available for security applications - specify Security Bolts (SB) after part no.

# Urbanfil® Pavermate® - Single Part Steel Access Covers

A range of deep pan steel cover & frame systems for use with brick pavers. The steel base is fitted with reinforcing bars to provide flexural strength with concrete poured in situ. Brass edging is an option for aesthetic applications.

Pavermate® covers are to be filled with concrete to a minimum depth of 45mm. Concrete is integral to the strength of the cover (see page 39).

## Features



## Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
<b>Class B - AS 3996 - 80kN</b>								
PM24B	80151	200 x 450	323 x 573	135	8.0	13.0	BE	SB
PM33B	81297	300 x 300	423 x 423	135	6.7	1.2	BE	SB
PM36B	81340	300 x 600	423 x 723	135	11.0	16.0	BE	SB
PM365B	80451	350 x 650	473 x 773	135	11.0	17.0	BE	SB
PM44B	81305	450 x 450	573 x 573	135	11.4	17.0	BE	SB
PM46B	81312	450 x 600	573 x 723	135	12.5	18.9	BE	SB
PM66B	81948	600 x 600	723 x 723	135	14.9	21.9	BE	SB
PM67B	81353	600 x 750	723 x 873	135	17.8	25.4	BE	SB
PM69B	81364	600 x 900	723 x 1023	135	20.0	28.3	BE	SB
PM77B	81372	750 x 750	873 x 873	135	20.7	28.9	BE	SB
PM94B	81338	900 x 450	1023 x 573	135	17.9	25.5	BE	SB
PM99B	81992	900 x 900	1023 x 1023	135	26.5	36.0	BE	SB

\* Decorative Brass (BE) edging can be added - just specify BE after part no.

\*\* Optional security locking bolts are available for security applications - specify Security Bolts (SB) after part no.

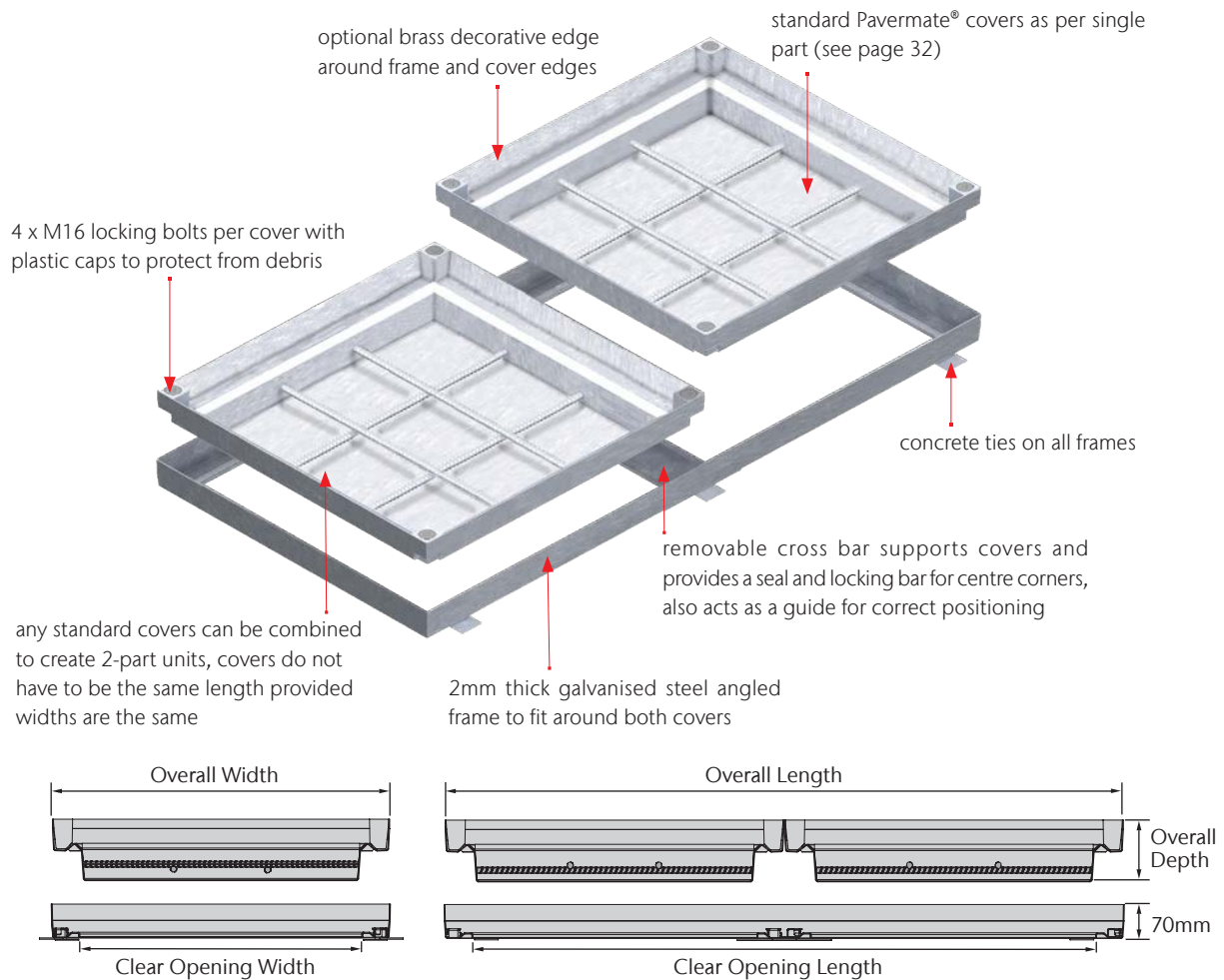


## Urbanfil® Pavermate® - 2-Part Steel Access Covers

2-part units combine two standard size covers in a single run for use with brick pavers. The steel base is fitted with reinforcing bars to provide flexural strength with concrete poured in situ. Brass edging is an option for aesthetic applications.

Pavermate® covers are to be filled with concrete to a minimum depth of 45mm. Concrete is integral to the strength of the cover (see page 39).

### Features



### Parts list

Type	Part No.	Clear Opening W x L (mm)	Overall W x L (mm)	Overall Depth (mm)	Cover Wgt (kg)	Overall Wgt (kg)	Decorative Edging*	Locking Option**
<b>Class B - AS 3996 - 80kN</b>								
PM2410B	82358	450 x 1020	573 x 1143	135	11.4/11.4	33.9	BE	SB
PM2411B	82366	450 x 1170	573 x 1293	135	11.4/12.5	35.9	BE	SB
PM2413B	82373	450 x 1320	573 x 1443	135	12.5/12.5	37.9	BE	SB
PM2610B	82384	600 x 1020	723 x 1143	135	12.5/12.5	39.7	BE	SB
PM2611B	82398	600 x 1170	723 x 1293	135	12.4/14.9	39.6	BE	SB
PM2613B	82405	600 x 1320	723 x 1443	135	14.9/14.9	39.2	BE	SB
PM2614B	82417	600 x 1470	723 x 1593	135	14.9/17.8	44.7	BE	SB
PM2616B	82422	600 x 1620	723 x 1743	135	17.8/17.8	50.4	BE	SB
PM2617B	82436	600 x 1770	723 x 1893	135	17.8/20.0	57.5	BE	SB
PM2619B	82443	600 x 1920	723 x 2043	135	20.0/20.0	56.9	BE	SB
PM2713B	82450	750 x 1320	873 x 1443	135	17.8/17.8	51.1	BE	SB
PM2714B	82464	750 x 1470	873 x 1593	135	17.8/20.7	54.7	BE	SB
PM2716B	82471	750 x 1620	873 x 1743	135	20.7/20.7	58.2	BE	SB
PM2913B	82488	900 x 1320	1023 x 1443	135	17.9/17.9	55.3	BE	SB

\* Decorative Brass (BE) edging can be added - just specify BE after part no.

\*\* Optional security locking bolts are available for security applications - specify Security Bolts (SB) after part no.

# Servokat - Assisted Lift Access Covers

## Typical Applications

- Apron areas – airports, docks
- Urban public spaces – streetscapes, courtyards
- Industrial areas – factories, warehousing, energy plants
- Transport corridors – rail, bus, road



### Loadings

- Covers are tested to Class B 125kN or Class D 400kN (EN 124)
- EN 124 uses a 250mm diameter test block



### Sizes

- Typical single part, clear opening sizes of 600 x 600 mm, 800 x 800 mm, 1000 x 1000 mm, 1200 x 1200 mm, 1500 x 1500 mm are available as standard. Other sizes are also available



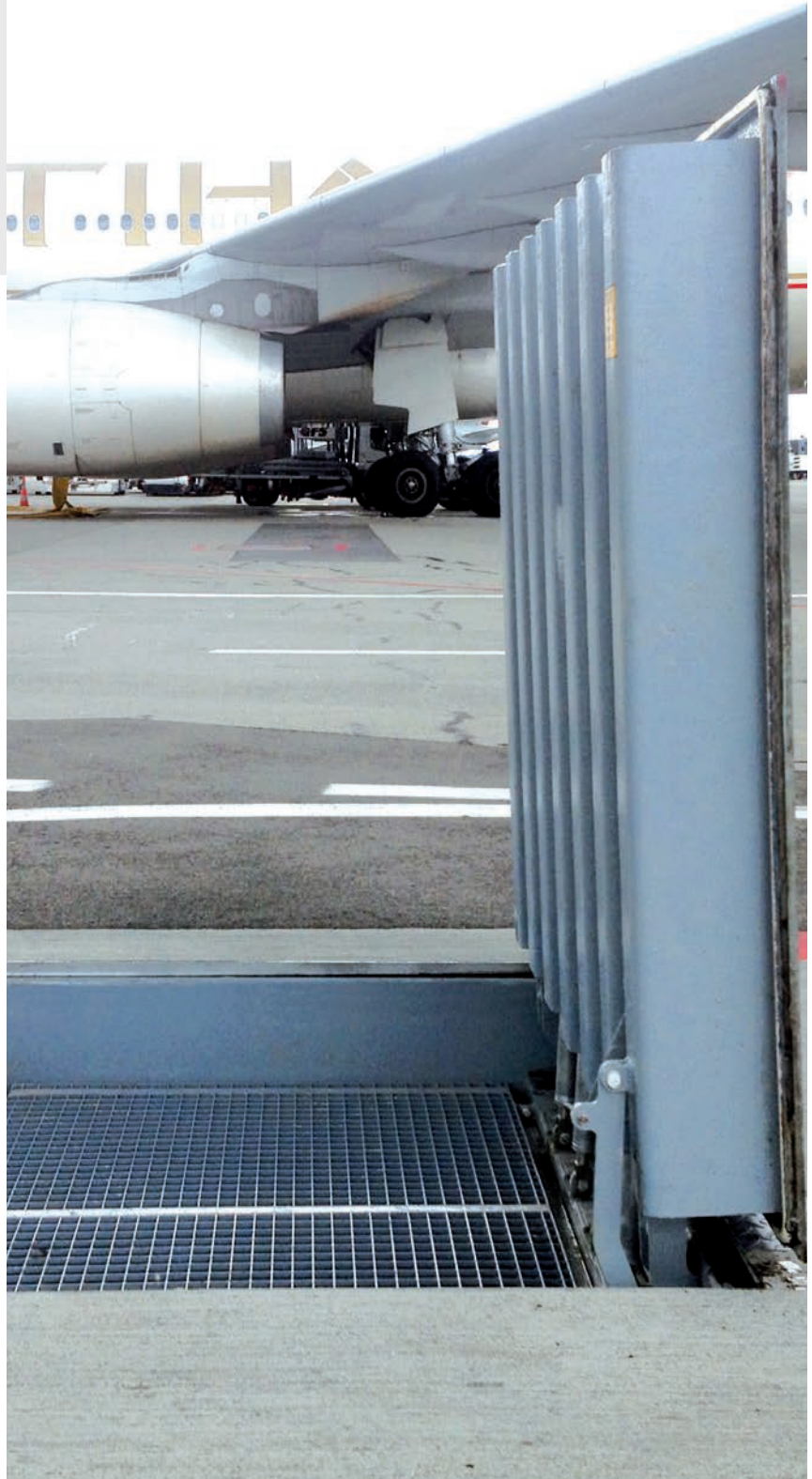
### Styles

- Galvanised steel or stainless steel
- Galvanised steel frame and infill covers (concrete filled)
- Solid Top or paver infill covers available

## Product Features

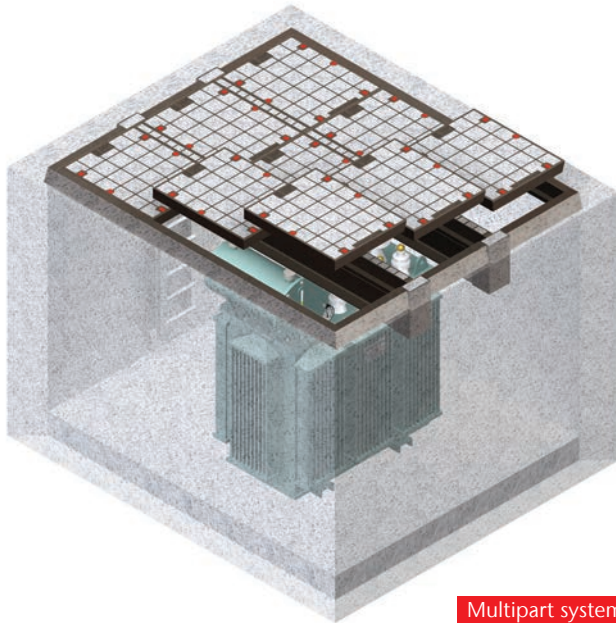
Assisted lift covers are the ideal solution for applications where frequent access to utilities or machinery beneath is required. The cover is hinged to the frame and a strut allows for easy opening.

- Gas or hydraulic cylinder options
- Rubber seal in frame ensures gas and water tight seal
- Cover can be opened from above or below
- A stop latch holds the hinged cover open to prevent it from accidentally closing



## Technical Support – Engineered Solutions

### Multipart and trench run systems



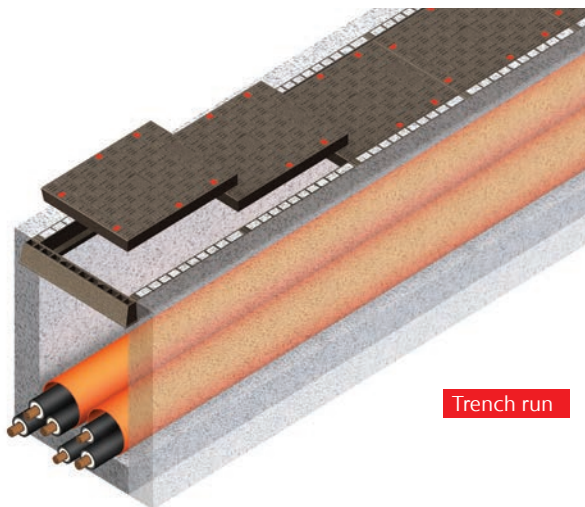
Due to the endless supply of sizes available, ACO will design a multiple cover system using standard parts and pieces closest to your requirements. This is done free of charge and without obligation.

ACO will issue engineers and installers a CAD technical drawing showing the necessary requirements for the construction of the pavement or slab rebate prior to the installation of the multipart. Allowances are made for the placement of both the side and end frames; and the structural beams underlying the joists.

On the drawing, all covers are numbered so that the installer may position and remove them in the correct sequence before pouring and formwork stripping operations.

#### ACO's support beam selection is based on the following assumptions:

1. Nominal wheel loads from AS 3996, Table 3.1
2. The limit state design in accordance to AS 4100
3. Allowable spans have been calculated with single or double wheel loads (dependant, on the largest of the two bending moments)
4. Some lateral restraint to the beams from the covers has been assumed
5. Beams have adequate support at each end and are secured in position



In order for ACO to produce a drawing, the following information is required:

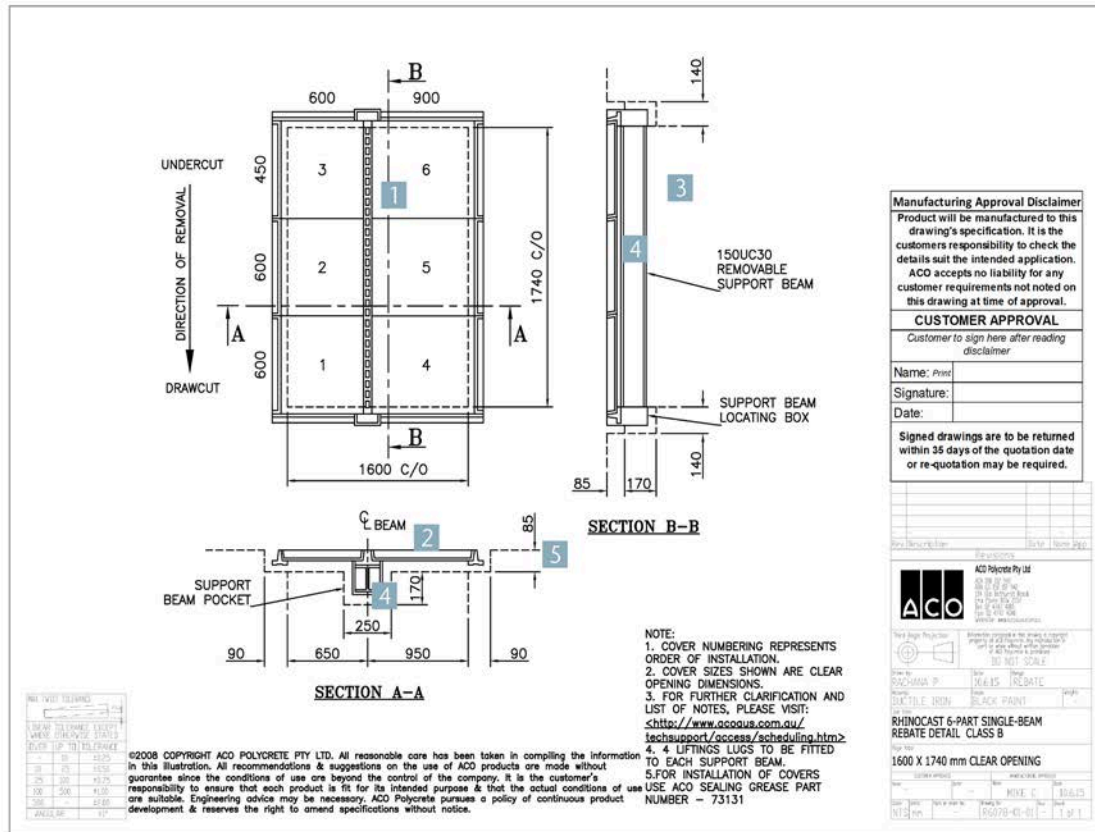
- Pit clear opening
- Load class
- Physical restrictions eg. position of obstacles that may restrict cover removal and any depth/width restrictions (in the slab)

ACO's CAD drawings provided (see opposite) show the:

- Multipart or trench run cover plan
- Slab cross section along the width and length of the system

# Technical Support – Engineered Solutions

Typical CAD printout provides:



- 1 Multipart cover plan showing cover placement/ removal sequence
- 2 Slab cross section along width of multipart
- 3 Slab cross section along length of multipart
- 4 Removable structural beam
- 5 Pit rebate dimensions (dotted lines)



To request this service, visit [www.acoaccess.com.au/product-support/request-design-assistance/#MultipartRequest](http://www.acoaccess.com.au/product-support/request-design-assistance/#MultipartRequest)

## Servokat - Assisted lift access covers

Assisted lift covers are suited for applications where frequent access to utilities or machinery beneath is required. As these covers need to suit very specific design or client requirements, they need to be specially ordered. ACO will require the following information:

- Gas or hydraulic strut preference
- Pit clear opening
- Load class
- Other specific design preferences



To request this service, visit [www.acoaccess.com.au/product-support/request-design-assistance/#MultipartRequest](http://www.acoaccess.com.au/product-support/request-design-assistance/#MultipartRequest)

ACO will provide:

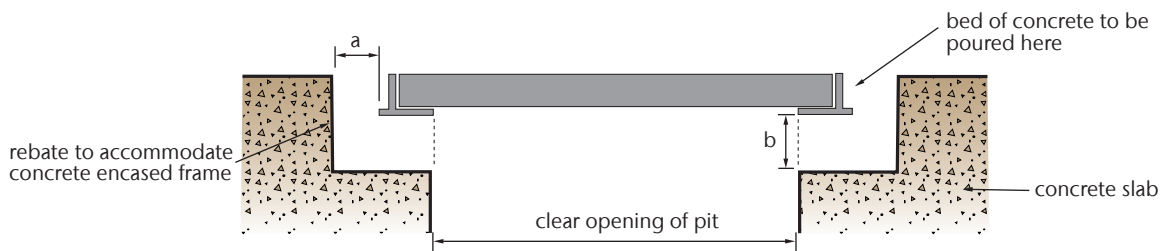
- Custom design and quote
- Custom rebate and cover scheduling drawings (if required)

# Technical Support – Installation Guidance

## Key installation considerations

- Load Class - select correct cover and rebate to suit load class. The frame is designed to be fully supported by a bed of concrete - see diagram below
- Install with cover positioned in frame
- Decorative edging may require a deeper rebate than specified, depending on finish level (see page 39)
- Tiles or pavers should be fully restrained and bonded to the concrete bed. An epoxy mortar is recommended
- Cover and frame are a matching pair and should not be switched as fit and seal may be compromised
- Ensure that there is no rock between cover & frame otherwise seal will be compromised and service life will be reduced
- Concrete of a minimum strength of 32MPa and minimum aggregate of 12mm is recommended
- Position so that removal of cover is not obstructed by a wall, kerb etc.
- Applications where back pressure is expected may require additional reinforcing and/or structural bolts to hold the frame and cover in position. Engineering advice should be sought
- Urbanfil® covers are to be filled to a minimum concrete depth of 45mm, with minimum strength 32MPa and minimum cement content of 400kg/m<sup>3</sup>. Concrete is integral to the strength of the cover.

## Installation guide



Load Class	a	b
B	30	30
C/D	50	50
G	50	75

## Rebate dimensions

Due to the varying frame dimensions for different covers and decorative edging options, dimensions shown indicate the minimum amount of concrete required around the frame.

1. Form the access pit and rebate to size required - see above diagram.
2. Position frame and cover in rebate.
3. Check unit is level and does not rock.
4. Pour concrete around frame and into cover (if applicable), vibrate to ensure all cavities in and around the frame are filled.
5. Level and finish concrete or lay pavers or pavement material.
6. Allow concrete to cure before removing cover - early removal may cause twisting of the frame.

Full details at [www.aocoaccess.com.au/product-support/installation-guidance/](http://www.aocoaccess.com.au/product-support/installation-guidance/)



# Technical Support – Installation Guidance

## Multipart installation

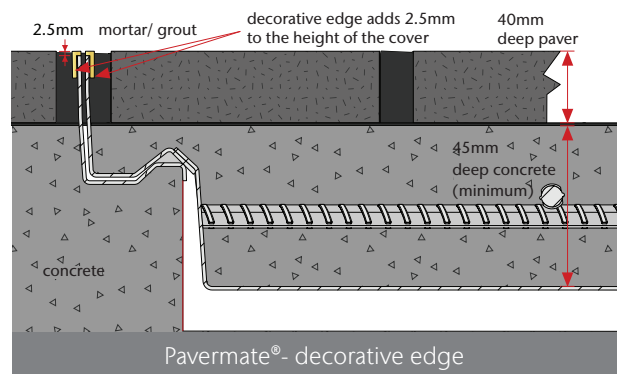
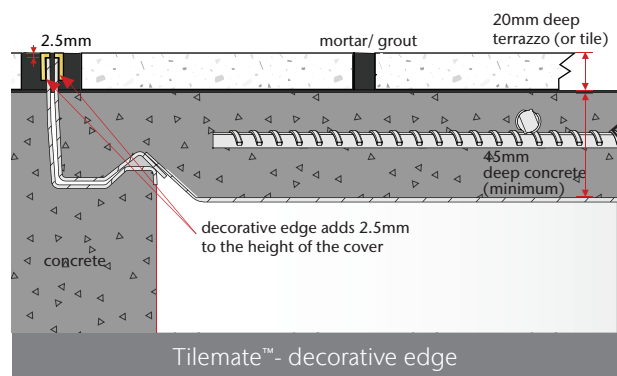
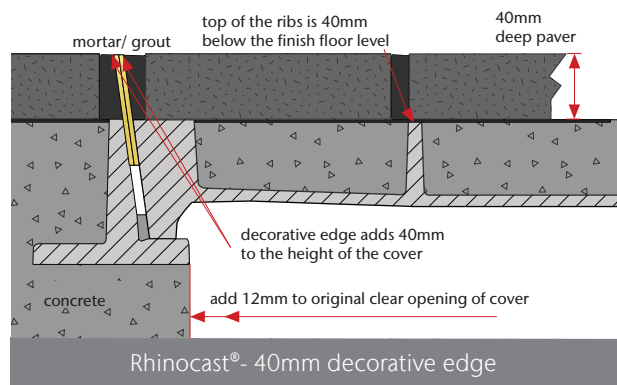
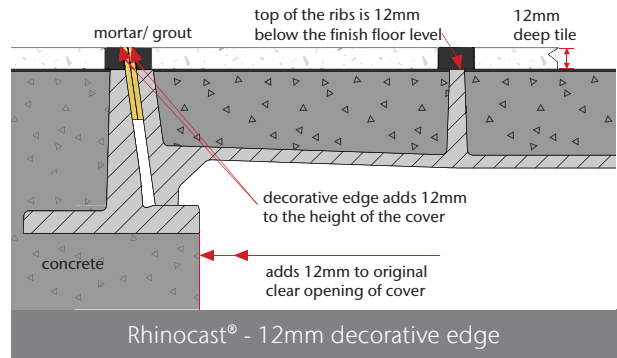
Installing multipart access covers is a multistep process that must be followed carefully to ensure a durable and functional service life. These are the key steps:

1. Check delivered components and site installation documentation i.e. cover schedule/rebate drawing.
2. Form the access pit rebate to establish correct pit clear opening and provision for frame and beam pockets.
3. Set up the frame in the correct sequence ensuring it is level and square.
4. Add the joist bar/beam sections. These are lowered into their corresponding wall boxes.
5. Prepare for the pour. Covers are positioned, multipart levelled and formwork and shuttering is set.
6. The concrete is poured to the correct specification.
7. Formwork is stripped at the appropriate time.
8. Prepare the multipart for service.

To view a tutorial based on a 9-part multipart Rhinocast® multipart system, visit <https://www.youtube.com/watch?v=Fhxqfrnrj8A>

### Note about weatherproofing

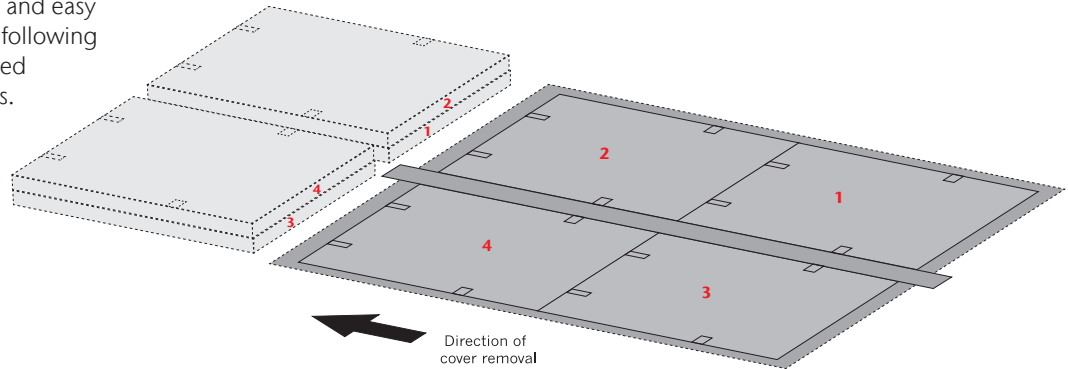
AS 3996 requires compliance in a number of areas including gas and water tightness. Due to the number of removable components including beams and individual covers, multipart access covers by their very design cannot be made water tight. This is why AS 3996 excludes large access cover systems from its scope. ACO multipart covers are suitable for applications requiring general weather resistance on well drained enclosures. A reasonable degree of weather resistance can be achieved by sealing the edges of covers, frame interfaces and lifting holes each time the cover is repositioned after access.



# Technical Support - Maintenance

## Rhinocast®

To ensure long service and easy removal of covers, the following steps should be followed whenever lifting covers.



### Tools Required:

- Lifting keys
- Shifting spanner
- 2 lengths of water pipe approx. 25mm dia (150mm longer than the width of the cover)
- Screwdriver
- Paint scraper
- Wire brush

Note: square covers will fit diagonally through the frame so care should be taken not to drop the cover through the clear opening.

#### Rhinocast® Lifting Keys & Caps

Short Handle (pair)	84654
Long Handle (pair)	84854
Sealing Grease (4L)	73131
Rectangular caps (long)	84622
Rectangular caps (short)	84620
Round caps	84626

### Rhinocast® Cover Removal

1. Remove dust caps and ensure recesses are free from debris.
2. Insert key and rotate clockwise a quarter turn, lock in position. Position jacking screw over frame and screw down using shifting spanner to break the seal.

If there are difficulties breaking seal, apply penetrating oil and allow a minimum of 24 hours, tap joint with hammer (taking care not to damage decorative edge) and try jacking screw again. Protect decorative edge and pavement finish where necessary.

3. Once seal is broken, using standard, long handled lifting keys, lift the cover by leaning forward on the handles. Insert two sections of pipe to enable the cover to be rolled clear of the opening.
4. For multiparts, remove covers in order and stack at the end of the row as shown on diagram above.

### Rhinocast® Cover Replacement

1. Use a wire brush or scraper to remove any dirt, debris or rust from the cover and frame.
2. Liberally apply sealing grease to seat area of cover and frame.
3. Using long handled lifting keys and pipe sections, roll cover back into position and gently lower onto frame seat.
4. Lift and lower cover again to evenly distribute sealing grease.
5. For multiparts, replace in reverse order to ensure each cover is returned to its correct position. Replace dust caps.



Short handle lifter - Part No. 84654



Long handle lifter - Part No. 84854



# Technical Support - Maintenance

## Urbanfil®

To ensure long service and easy removal of covers, the following steps should be followed whenever lifting the cover.

### Tools Required:

- Short handle lifting key
- Screwdriver
- Locking key
- Brush

Note: square covers will fit diagonally through the frame so care should be taken not to drop the cover through the clear opening.



### Urbanfil® Lifting Keys & Caps

Universal lifting key	84306
Allen Locking Key-14mm	84313
Round caps (grey)	84329
Round caps (gold)	84334



## Urbanfil® Cover Removal

1. Remove dust caps and use locking key to unbolt cover.
2. Using short handle lifting keys or mobile lifting equipment remove cover(s).

## Urbanfil® Cover Replacement

1. Use soft brush to clean seat area of frame.
2. Position covers in original position and orientation.
3. Replace bolts and dust caps.

## Glossary

### Anti-slip surface

A textured finish on Solid Top covers to reduce the risk of slipping.

### Concrete ties

Profile that holds the frame into the concrete bed and prevents the frame being lifted out of its surround.

### Decorative edging

A strip of stainless steel or brass factory fixed to edge of the cover and frame for an attractive finish.

### Drawcut

Top of iron cover overhangs the bottom.

### Infill cover

A cover that has recesses for concrete infill material added on site. Also allows infill flooring and paving materials to compliment or match surrounding area.

### Keyhole cap

A cap above the keyhole to prevent dirt and debris ingress.

### Lifting keyhole

The recess where the lifting key is inserted and turned to enable the cover to be lifted. ACO's covers use standard lifting keys to AS 3996.

### Reo-bar

Steel bars used for reinforcing Urbanfil® access covers. These are integral to the covers' strength.

### Seating

The horizontal member of the frame upon which the cover sits and seals.

### Undercut

Top of iron cover set back from the bottom.

### Zinc seal

Zinc is used to seal the joint between cast iron frames. Zinc provides seal that does not deteriorate in extreme temperatures.

## Other ACO Civil Construction Products

### ACO Cablemate

A range of electrical and communication cable pits and surface ducting systems.

### ACO Drain

A range of grated trench drainage systems and pits made from polymer concrete. Grates are available in all materials and finishes.

### ACO Infrastructure

A range of trench drainage systems for roads, ports, airports and rail.

### ACO StormBrixx

Retention, infiltration and detention geocellular stormwater tanks.

For more info visit : [www.askaco.nz](http://www.askaco.nz)

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