

DUCTILE MANHOLE COVERS
GULLY GRATINGS
COMPOSITE COVERS
DUCT ACCESS CHAMBERS
POROUS PAVING
MODULAR MANHOLE LADDER
ATTENUATION CRATES



R&B UK JT Limited
Court 2000, Bridgnorth Road,
Madeley, Telford,
Shropshire, TF7 4JB

Tel: +44 (0) 1952 580 554
Fax: +44 (0) 1952 580 527
Email: sales@randb-uk.com
www.randb-uk.com

PRODUCT CATALOGUE

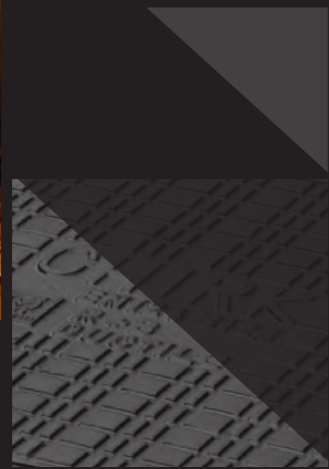
ISSUE 8



The information given in this literature is, to the best of our knowledge, correct at the time of going to print. However, R&B UK JT Ltd is constantly looking at ways of improving their products and services and therefore reserve the right to change, without prior notice, any data changed contained in this publication. Any orders placed will be subject to our Standard Conditions of Sale, available on request.

R&BUKJT/01/2015/V8

Manufacturers of Ductile Iron, Highway and Municipal Access Covers & Gratings.



ESTABLISHED IN 1988, R&B UK JT LTD ARE SPECIALIST MANUFACTURERS AND DISTRIBUTORS OF ACCESS COVERS, GULLY GRATINGS AND FRAMES.

Based in Telford, Shropshire we are ideally situated to access all major motorway networks and operate a nationwide delivery service from single items to full loads.

We offer a complete range of municipal castings in Grey and Ductile iron, together with a full range of Fabricated Steel access covers and ladders, continuous ducting, stainless steel and brass finished items. All items are fabricated to customer's drawings or purpose-designed to suit on-site applications.

Our highly-experienced sales staff have an in-depth knowledge of a very broad spectrum of Grey/Ductile Iron and Fabricated Steel Products in general, and we are confident that any enquiry can be dealt with to your total satisfaction.

We are currently supplying products into European and Middle East markets and offer a full export quotation service from containerised/conventional shipment to any International destination

PRODUCT CERTIFICATION AND QUALITY ASSURANCE

Our Comprehensive range of Ductile Iron Castings Includes IMPACT (HA104/09), Classic and bespoke design products manufactured to clients specification.

We have products available to BS EN124:1994 B125, C250, D400 and E600 loadings. This range is further complimented with our fully certified grey iron A15 products, for light duty applications. We also operate an audited and accredited ISO9001:2008 Quality Management System to ensure our products are of the highest quality possible. CE Marked product will be available following the harmonisation and publication of the newly revised EN124 when ratified.

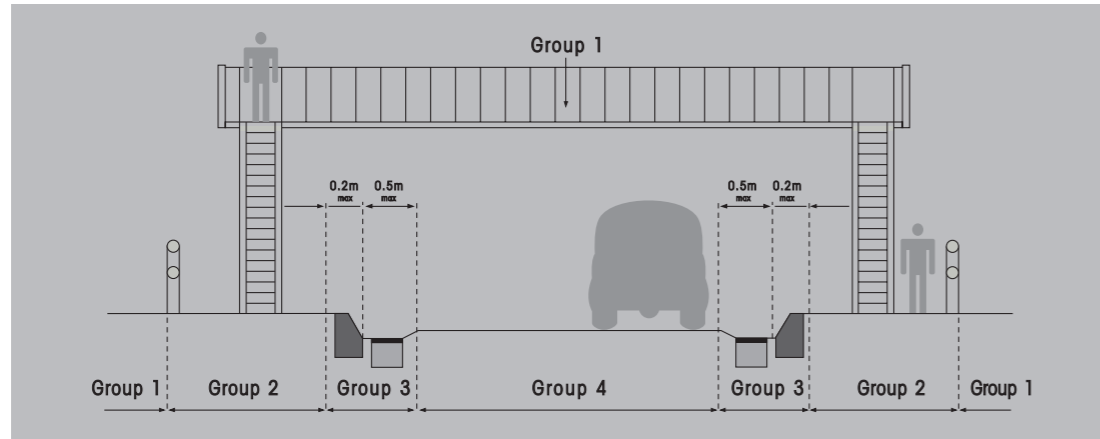


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BS EN 124

The selection of the appropriate class is the responsibility of the designer. When in doubt the stronger class should be selected.



GROUP	CLASS	
1	min .Class A15	Areas which can only be used by pedestrians and pedal cyclists.
2	min .Class B125	Footways, pedestrian areas and comparable areas, car parks or car parking areas.
3	min .Class C250	For gully tops installed in the area of kerbside channels of roads (fig 1) which when measured from the kerb edge, extend a maximum of 0.5m into the carriageway and a maximum of 0.2m into the footway.
4	min .Class D400	Carriageway roads (including pedestrian streets), hard shoulders (fig 1 & 2) and parking areas for all types of road vehicles.
5	min .Class E600	Areas imposing high wheel loads eg. Docks and aircraft pavements
6	min .Class F900	Area imposing particularly high wheel loads, eg aircraft pavements.

ICON DETAILS



Suitable for use in domestic areas used by pedestrians and pedal cyclists.



Suitable for areas subject to slow moving heavy loadings. eg industrial premises.



Suitable for use in car parks and areas of slow moving access to light commercial vehicles.



Includes a security locking feature to deter unauthorised access including high security options.



Suitable for use in conditions of heavy traffic eg: main city streets and roads.



(For Access Covers Only)
Includes a feature which reduces egress of unwanted odours, gases and the ingress of water.



Suitable for use where continuous high levels of fast-moving traffic are present.

- **Double Triangular** - Covers comprising of two triangular elements for the purpose of providing stable seating under load and convenience of lighter weight due to slip cover configuration
- **Clear Opening** - The nominal unobstructed access opening in a frame, neglecting minor intrusions such as the corner seatings of some rectangular frames.
- **Watertight** - Proof against the passage of surface water of a minimal depth and at atmospheric pressure.
- **Pressure Tight** - Proof against the escape of fluids/gases at a specified pressure.
- **Recessed Cover** - Cover recessed to accept the insertion of chosen material usually to match the surrounding area.
- **Ventilated** - Cover and/ or frame provided with opening to allow free circulation of air within the chamber.
- **Safety Grid** - A fabricated steel grid housed under a cover when installed to hold an accidentally dropped cover.
- **Sealing Plate** - Galvanised steel or GRP located under the cover to provide additional protection against the sand/silt etc.
- **Prising Slot** - Recesses to receive a prising bar for the purpose of loosening a cover prior to lifting
- **Frame Bearing Area** - The surface of the underside of the frame which rests upon the supporting structure.
- **Nominal Bearing Pressure** - The bearing pressure calculated by dividing the test load (BS EN 124) by the Frame Bearing Area.
- **Single Seal** - Vertical relationship between a cover edge and frame with the bottom sitting in the seal as shown in detail
- **Double seal** - Duplicate vertical relationship between a cover edge and frame with the bottom sitting in the seal as shown in detail
- **Plain Seated** - Not sealed, but jointed contact between a cover edge and frame
- **Keyholes** - Closed keyholes prevent ingress of water and debris and escape of odours, open keyholes do not.
- **Locking** - Either screwed down or fitted with a turn buckle system to deter unauthorised lifting.
- **Loosely coupled** - Two halves of a double triangular cover are loosely coupled to prevent separation when lifting yet allow permitted deflection under traffic loads.
- **Seating** - The bearing surface between the cover and frame.
- **Waterway** - The drainage area of a gully grating in square centimetres.

WHAT IS DUCTILE IRON

Ductile iron is not a single material but is part of a group of materials which can be produced to have a wide range of properties through control of the microstructure. The common defining characteristic of this group of materials is the morphological structure of the graphite. In ductile irons, the graphite is in the form of spherical nodules rather than flakes (as in grey iron), thus inhibiting the creation of cracks and providing the enhanced ductility that gives the alloy its name. The formation of nodules is achieved by addition of nodulizing elements, most commonly magnesium.

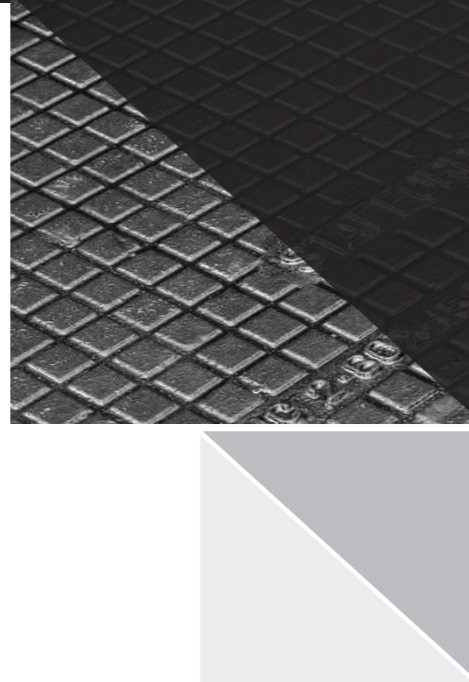
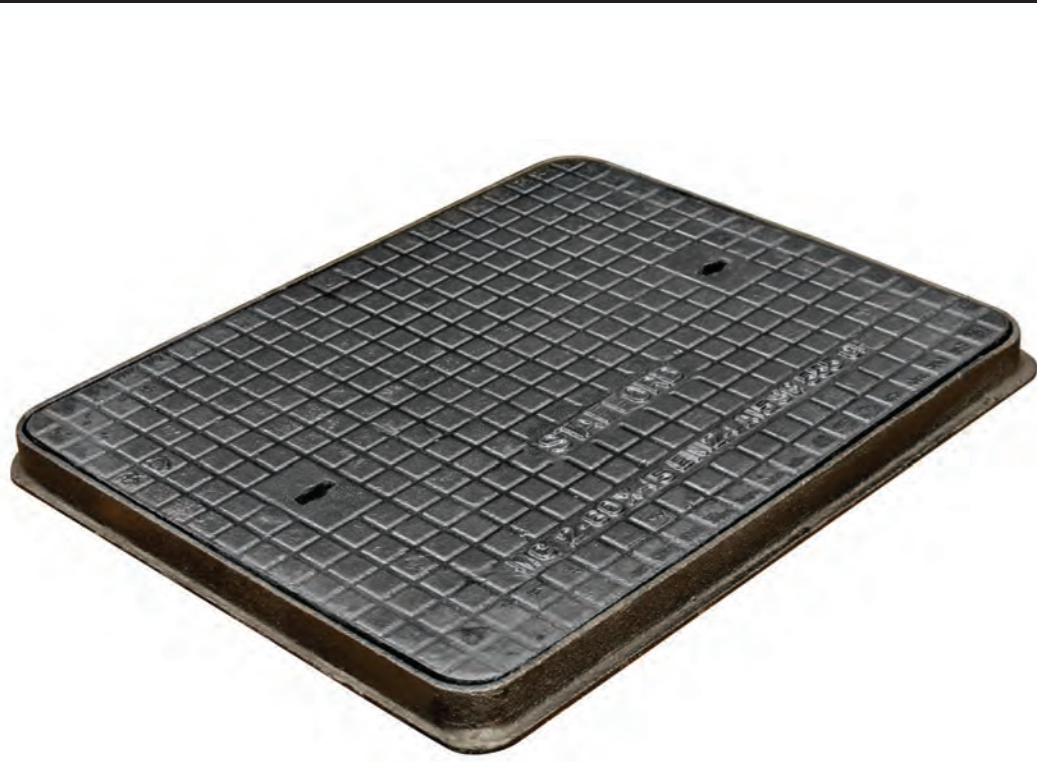
WHY WE USE DUCTILE IRON

Ductile iron offers superior hardness and durability when compared to grey iron as well as offering a high strength to weight ratio allowing producers to manufacture lightweight castings that can allow for 50% weight saving over traditional grey iron castings. All of this therefore minimises the risk to the user as the castings are easier and lighter to handle and with an ever changing marketplace that specially requires less risk to the manual user and installer ductile iron is the perfect material to use. Ductile iron also offers a component that reduces the possibility of breakages and failure when installed and in transit, we see these points as key features as it offers the customer a high quality of material and less risk compared to the use of other metals.



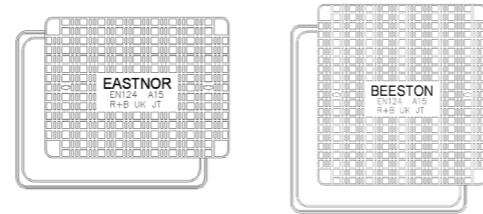
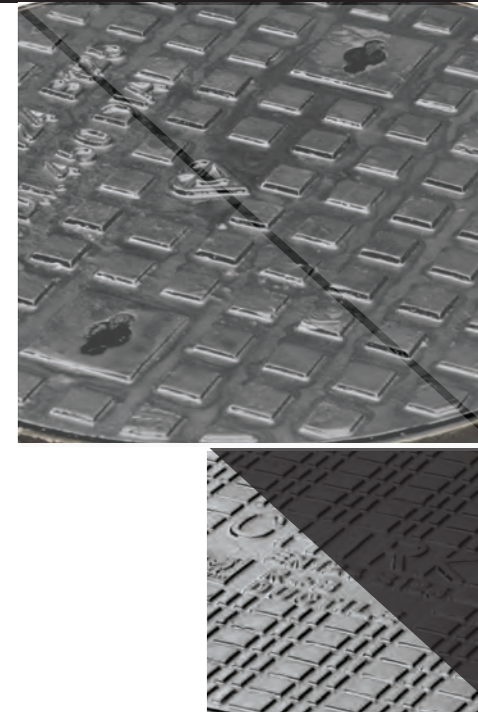
A15

Areas which can only be used by pedestrians and pedal cyclists



B125

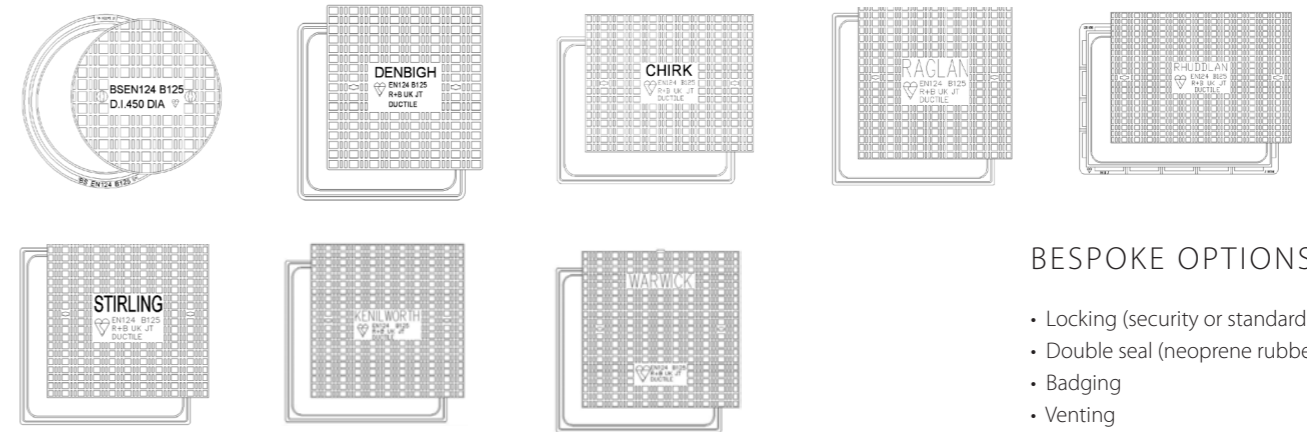
Suitable for use in domestic areas with occasional light vehicular access.



BESPOKE OPTIONS

- Locking (security or standard screws)
- Double seal (neoprene rubber seal)
- Badging
- Venting

PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
1020D	EASTNOR	600 x 450	680 x 545	Single Seal, Solid Top	30
1021D	BEESTON	600 x 600	690 x 690	Single Seal, Solid Top	30



BESPOKE OPTIONS

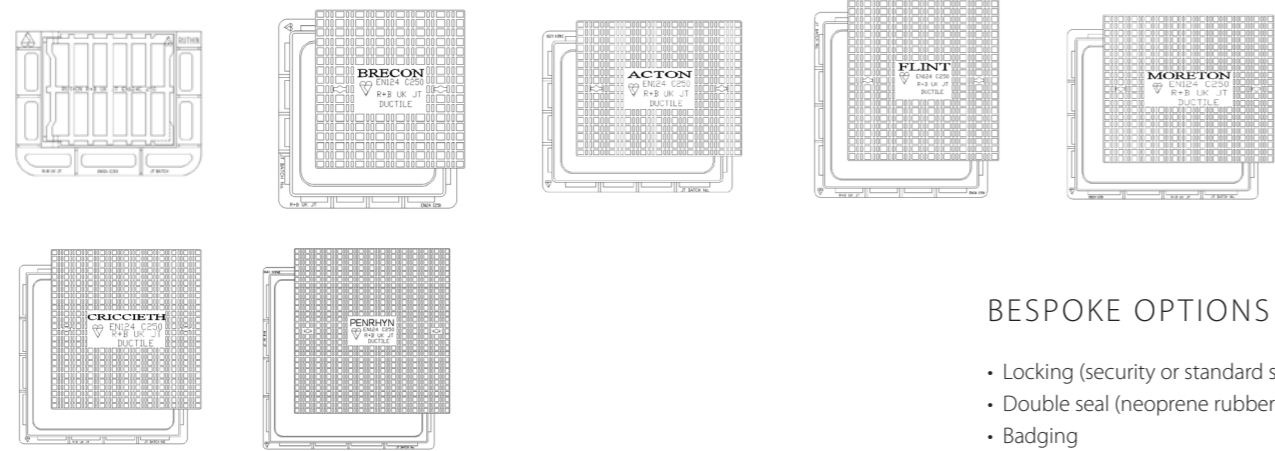
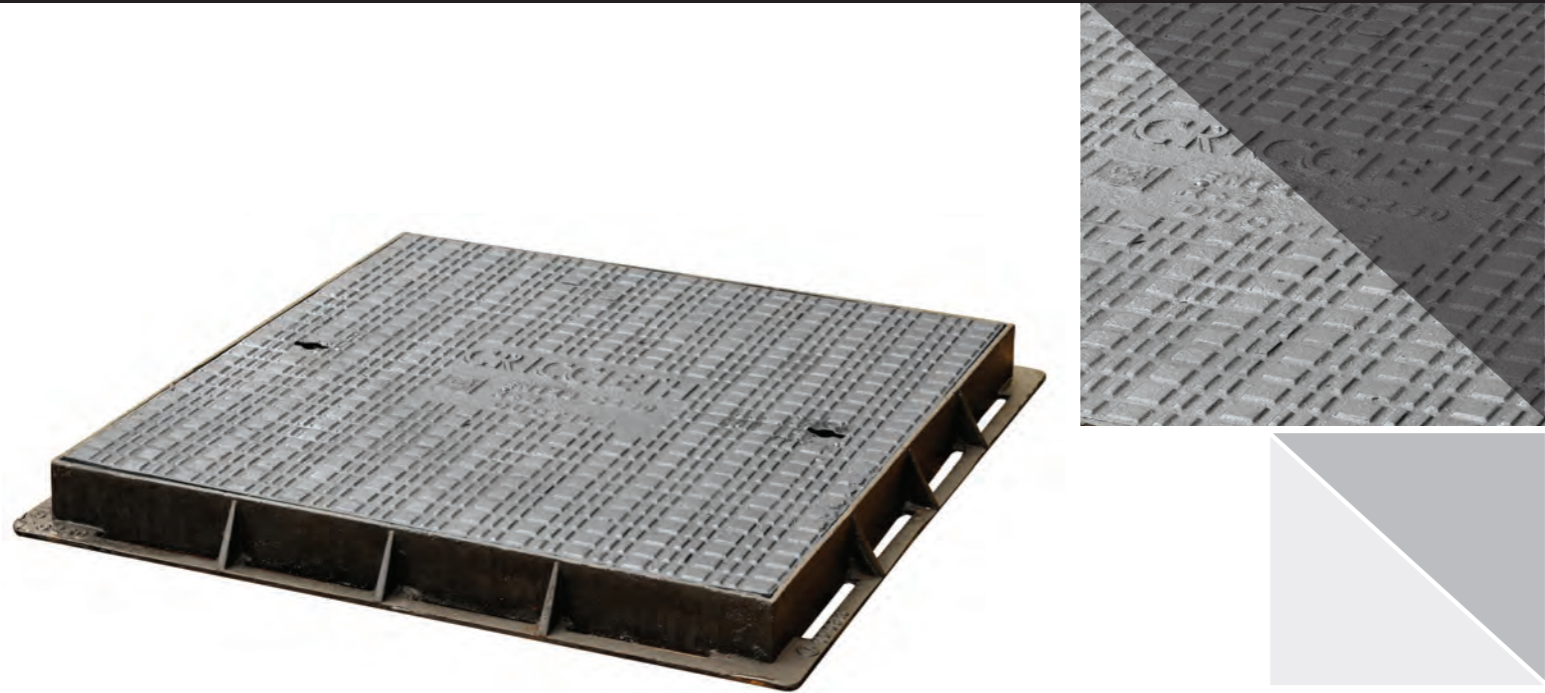
- Locking (security or standard screws)
- Double seal (neoprene rubber seal)
- Badging
- Venting

PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
3001D	PPIC	450 Dia	550 Dia	Single Seal, Solid Top	40
1014D	DENBIGH	450 x 450	520 x 520	Single Seal, Solid Top	45
1006D	CHIRK	600 x 450	675 x 520	Single Seal, Solid Top	40/75
1005D	RAGLAN	600 x 600	665 x 665	Single Seal, Solid Top	40/75
1004D	LIFFEY	600 Dia	700 x 700	Single Seal, Solid Top	75
1010D	RHUDDLAN	750 x 600	840 x 695	Single Seal, Solid Top	45
1016D	STIRLING	675 x 675	760 x 760	Single Seal, Solid Top	45
1080D	KENILWORTH	750 x 750	850 x 850	Single Seal, Solid Top	45
1008D	CONWAY	900 x 600	1024 x 724	Single Seal, Solid Top	45
1015D	WARWICK	900 x 900	1010 x 1010	Single Seal, Solid Top	50
1028D	LUDLOW	1220 x 675	1345 x 800	Single Seal, Solid Top	50



C250

For use in car parks, industrial or commercial areas carrying slow moving traffic.



BESPOKE OPTIONS

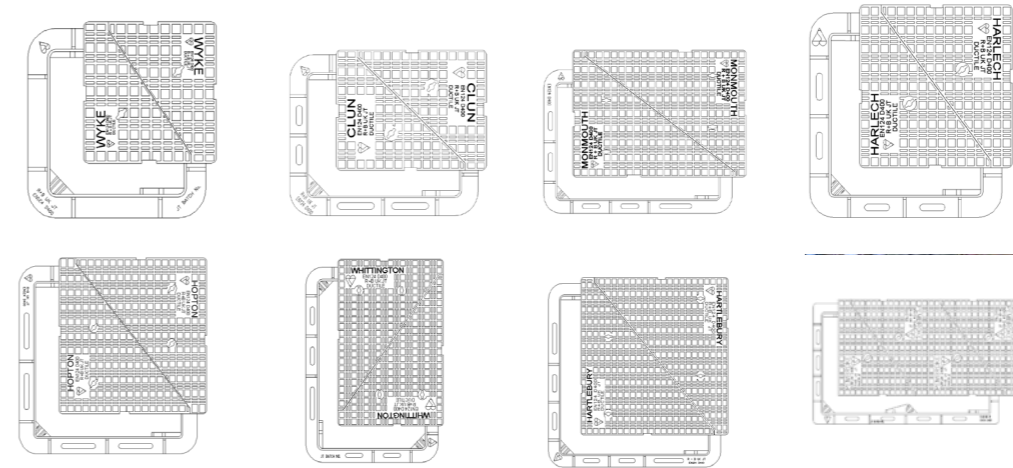
- Locking (security or standard screws)
- Double seal (neoprene rubber seal)
- Badging
- Venting

PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
CDG18TF	RUTHIN	365 x 310	515 x 40	Traffic Flow GG+F	75
1013D	BRECON	450 x 450	600 x 600	Single Seal, Solid Top	45
1012D	ACTON	600 x 450	750 x 600	Single Seal, Solid Top	45
1012D/TS	ACTON (TRAFFIC SIGNAL)	600 x 450	750 x 600	Single Seal, Solid Top	45
1011D	FLINT	600 x 600	650 x 650	Single Seal, Solid Top	45
1009D	MORETON	750 x 600	900 x 750	Single Seal, Solid Top	50
1037D	CRICCIETH	750 x 750	900 x 900	Single Seal, Solid Top	75
1007D	CROFT	900 x 600	1050 x 760	Single Seal, Solid Top	45
1038D	PENRHYN	900 x 900	1050 x 1050	Single Seal, Solid Top	75



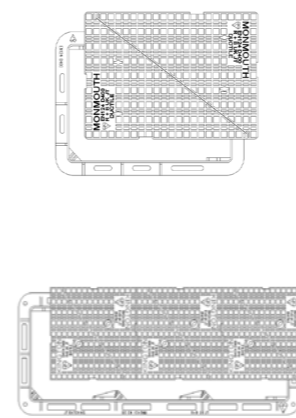
D400

Areas subject to fast moving traffic, so it is recommended in motorway application 150mm frame is specified.



BESPOKE OPTIONS

- Sealing plates (pressure tight 1 BAR available)
- Locking (security or standard screws)
- Badging
- Venting
- Safety grids



PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
1053D	WYKE	450 x 450	605 x 605	Double Tri	100
1026D	CLUN	600 x 450	760 x 620	Double Tri	100
1001D	MONTGOMERY	600 x 600	690 x 690	Double Tri	100/150
1017D	HARLECH	675 x 675	780 x 780	Double Tri	100/150
1019D	MONMOUTH	750 x 600	900 x 780	Double Tri	100/150
1036D	HOPTON	750 x 750	920 x 920	Double Tri	100/150
1018D	WHITTINGTON	900 x 600	1060 x 770	Double Tri	100/150
1035D	HARTLEBURY	900 x 900	1070 x 1070	Double Tri	100/150
1022D	PEMBROKE	1220 x 675	1378 x 820	Double Tri	100/150
1039D	KINGTON	1800 x 675	1965 x 850	Double Tri	150
1027D	LINCOLN	1000 x 1000	1150 x 1150	Double Tri	100
1063D	WINDSOR	1200 x 900	1300 x 1000	Double Tri	100
1025D	BRIDGNORTH	1200 x 1200	1350 x 1350	Double Tri	100



D400

Areas subject to fast moving traffic, so it is recommended in motorway application 150mm frame is specified.



D400 Surface Boxes

Options Badged SV, AV, WATER, FH, WO, METER, GAS, other badging available on request
Black coating Chained lids.

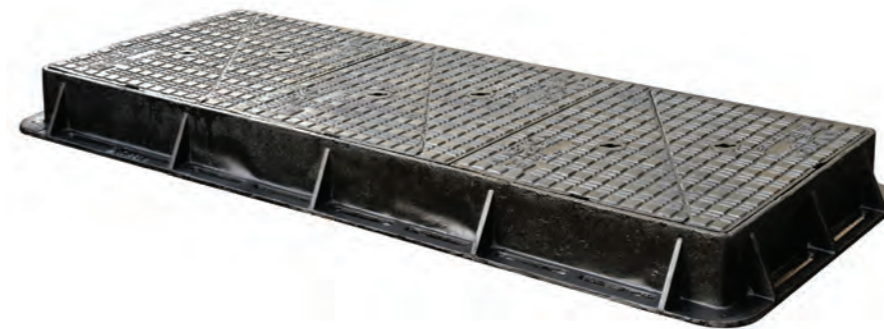


PRODUCT CODE	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
1055D	150 x 150	260 x 260	Solid Top	100
1056D	225 x 225	335 x 335	Solid Top	100
1057D	300 x 300	410 x 410	Solid Top	100
1058D	380 x 230	530 x 530	Solid Top	100
1065D	430 x 280	550 x 400	Solid Top	100
1054D	150 x 150	230 x 230	Loop Box	150



E600

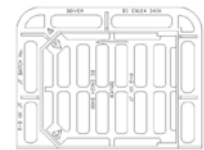
Areas subject to exceptionally high wheel loads Eg: dock yards and air craft pavements.



BESPOKE OPTIONS

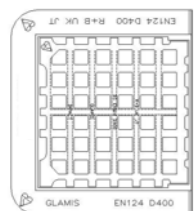
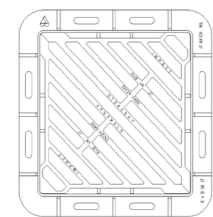
- Sealing plates (pressure tight 1 BAR available)
- Locking (security or standard screws)
- Badging
- Venting
- Safety grids

PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
1060D	MONTGOMERY	600 x 600	800 x 800	Double Tri	150
1061D	PEMBROKE	1220 x 675	1385 x 885	Double Tri	150
1062D	KINGTON	1800 x 675	2070 x 955	Double Tri	150
1062E	HARLECH	675 x 675	825 x 825	Double Tri	150
CGE23TF150	DOVER	420 x 420	540 x 540	Traffic Flow	150



R&B's unique spring lock design available on 420 x 420 and 430 x 370 Traffic flow hinged Gully Gratings and Frames

PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	GRATING	DEPTH (MM)
CGD25TF	DOVER	365 x 310	450 x 384	Traffic Flow	100
CGD22TF	DOVER	430 x 370	580 x 460	Traffic Flow	100
CGD24TF/1W	DOVER	420 x 420	570 x 500	Traffic Flow	100/150
CGD24TF	DOVER	420 x 420	570 x 500	Reversible	100
CGD24KB	DOVER	420 x 420	570 x 500	Kerb Hinged	100
CGD26KB/PED	GLAMIS	420 x 420	570 x 500	Pedestrian	100
CGD19D	RIPLEY	420 x 420	575 x 510	Double Triangular	100/150
1024D	BERKELEY	500 x 350	652 x 435	Traffic Flow	100
CDG28KB	DUDLEY	600 x 450	760 x 540	Reversible	100/150
1023D	STOKESAY	600 x 600	755 x 755	Double Triangular	100/150
CGD29HDT	RIPLEY H	430 x 370	520 x 524	Hinged + Double Triangular	100
CGD40	DOVER	430x 370	580 x 460	Hinged	150
CGD31V	YORK	650 x 650	790 x 810	V Profile	150
1045D	HALKYN	480 x 370	560 x 410	Half Batter	150 / 200
1052D	GLIN	480 x 370	560 x 410	45° Splay	150 / 200





TELECOMMUNICATIONS COVERS

TUFTAC

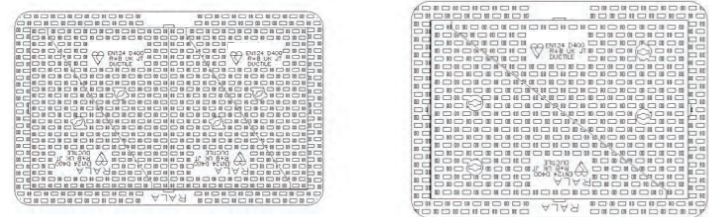
TUFTAC is a ductile iron manhole cover and frame, which is inset with an industry unique, special mastic asphalt (MA) formulation.



TUFTAC

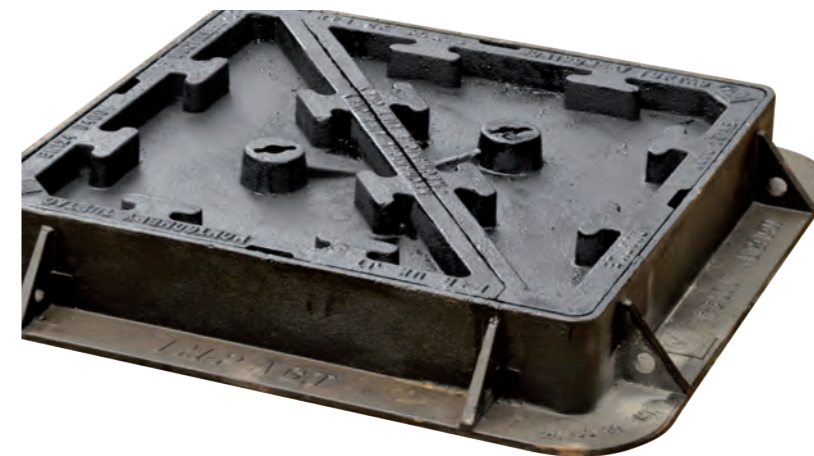
SKID RESISTANT MANHOLE COVERS

The ductile iron covers and frames are designed to pass the statutory highway loading requirements but unlike conventional ductile iron covers that have a dangerously low skid resistance, the MA surface has a high skid resistance at least equal to the surrounding road surface.



Floating frame allows easy height adjustment of frame bedding to suit the profile of the highway.

Open ended keyways drain water, but prevent objects being dropped into the chamber.



TUFTAC FEATURES

- The ironwork has passed independently conducted D400 load testing both filled and unfilled
- It is BS EN124 D400 accredited.
- The cover can be supplied filled or can be filled on site, the surface can be finished to compliment the surrounding surface characteristics, no more grip, no less!
- The MA infill can be supplied in many colours to match adjacent road colours.
- The MA infill is Carbon Neutral and can be fully recycled.
- The MA infill can be resurfaced when worn, however MA is famous for its good wear characteristics.
- The cover features a non-rocking three point suspension design.
- Patented design.

PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
WHITTINGTON TELECOMS	896 x 696	1135 x 840	Double Triangular	150
PEMBROKE TELECOMS	1220 x 665	1460 x 915	Double Triangular	150
CONWAY TELECOMS	896 x 696	1135 x 840	Solid Top	150
LUDLOW TELECOMS	1220 x 665	1460 x 915	Solid Top	150
WHITTINGTON HINGED	896 x 696	1135 x 840	Hinged	150
PEMBROKE HINGED	1220 x 665	1460 x 915	Hinged	150

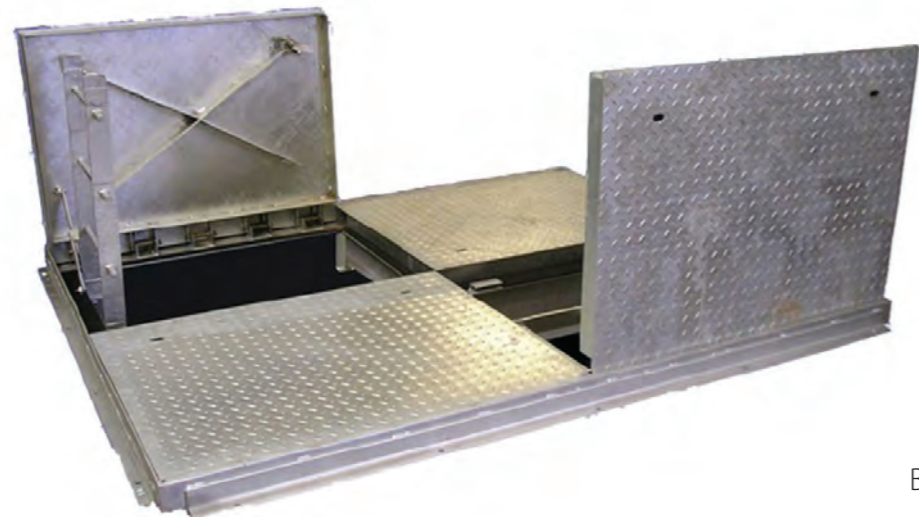
PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
1001D/TUF/	MONTGOMERY TUFTAC	600 x 600	770 x 770	Recessed + Double Tri	100/150
1017D/TUF/	HARLECH TUFTAC	675 x 675	880 x 880	Recessed + Double Tri	100/150
1022D/TUF/	PEMBROKE TUFTAC	1220 x 675	1420 x 860	Recessed + Double Tri	100/150
1039D/TUF/	KINGTON TUFTAC	1800 x 675	2070 x 955	Recessed + Double Tri	100/150

HINGED AND LOCKING D400

PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	COVER	DEPTH (MM)
INTEGRA PEMBROKE	1220 x 675	1380 x 835	Double Tri Hinged	100
INTEGRA LINCOLN	1310 x 850	1470 x 1070	Double Tri Hinged	100

“Devon County Council has tested the MA infill for skid resistance, with various surface dressings giving great results equal to road surface values.”

SOLID TOP FABRICATED STEEL ACCESS COVERS



BESPOKE OPTIONS

- Multiple leaf covers & duct runs
- Can incorporate peep holes
- Plain, grease or neoprene seals
- Locking bolts (including home office approved security bolts)
- Turnbuckle locking devices c/w security lifting keys
- Water and pressure type units available
- Badging & logo's can be applied

A comprehensive range of product accessories is available to enhance, protect and increase safety of our products. The accessories include:

- Sealing plates and Safety Grids
- Personalised Badging

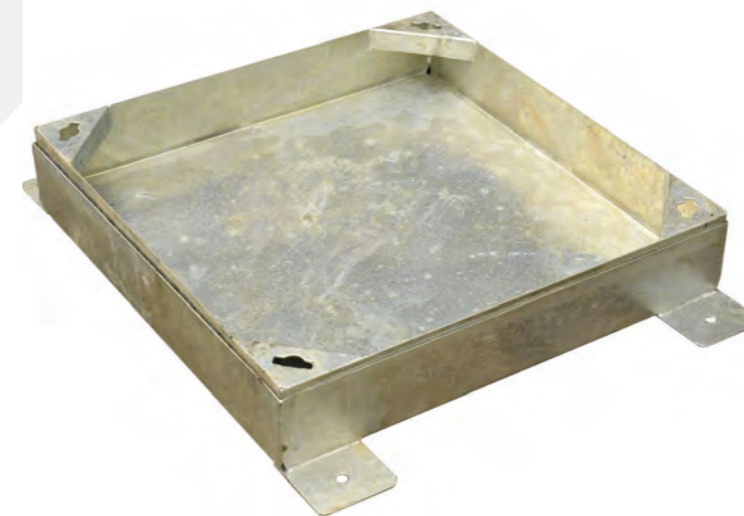
SEALING PLATES AND SAFETY GRIDS

Under surge conditions, pressure concentration in access shafts can lead to covers being forced out of access covers. In situation where this may occur R&B offers a bolt-down mild steel sealing plate for added security. Mild Steel sealing plates also prevent the egress of odours and gases. Mild steel sealing plates are secured to the access covers frame using a total of 12 bolts. The inner plate which is seated on a high strength neoprene rubber seal is then locked to the sub frame with 16 Stainless steel bolts. Our standard sealing plate is produced using 3mm mild steel and can take pressures of up to 0.5 BAR. Special sealing plates can be produced to take much higher water pressures and also can be coated in chemical resistant materials for special applications.

SAFETY GRIDS

Specially designed mild steel safety grids depending on the design of the cover rest on the covers internal lip or pockets that are retrofitted to enable to installation. They prevent the entry of any unwanted objects into the sewer shaft when work is being carried out.

RECESSED COVERS & FRAMES



RECESSED TRAYS

PRODUCT CODE	CLEAR OPENING (MM)	DEPTH	COVER TYPE	LOADING
SBR 60/60	600 x 600	40	Recessed for Screed	10T GLWW
SBR 60/45	600 x 450	40	Recessed for Screed	10T GLWW

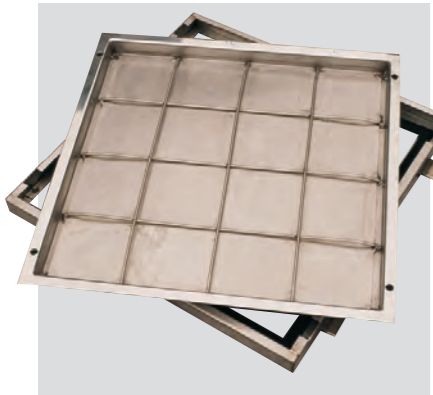
R&B can also offer a wide range of bespoke options on the above covers including locking and double sealed items.

BLOCK PAVIORS

PRODUCT CODE	CLEAR OPENING (MM)	DEPTH	COVER TYPE	LOADING
BP 30/30/80/10	300 x 300	80	Block Pavior	10T GLWW
BP 30/30/80/10RS	300 x 300	80	Block Pavior Square to Round	10T GLWW
BP 45/45/80/10	450 x 450	80	Block Pavior	10T GLWW
BP 45/45/80/10RS	450 x 450	80	Block Pavior Square to Round	10T GLWW
BP 60/45/80/10	600 x 450	80	Block Pavior	10T GLWW
BP 60/60/80/10	600 x 600	80	Block Pavior	10T GLWW
BP 60/60/100/10	600 x 600	100	Block Pavior	10T GLWW
BP 60/60/100/38	600 x 600	100	Block Pavior	38T GLWW
BP 675/675/100/10	675 x 675	100	Block Pavior	10T GLWW
BP 675/675/100/38	675 x 675	100	Block Pavior	38T GLWW
BP 75/60/80/10	750 x 600	80	Block Pavior	10T GLWW
BP 75/75/100/10	750 x 750	80	Block Pavior	10T GLWW

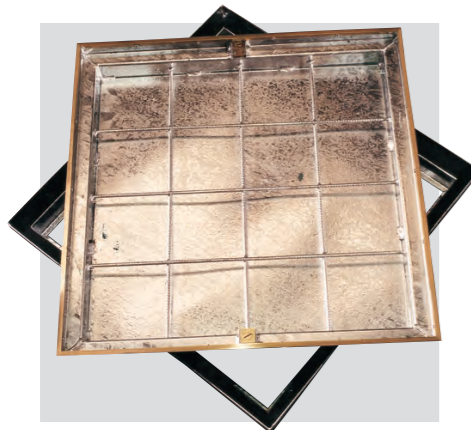
DECORATIVE EDGE PRODUCTS

STAINLESS STEEL EDGE TRAYS



- Stainless steel edged trays are manufactured to take any internal flooring surface.
- Unique locking system
- Actually locks the cover through the edging, so that there are no unsightly bosses protruding, which makes installation much easier than on similar covers especially when tiled.
- Can be manufactured to take flexible floor finishes.
- Covers come locked as standard.
- Available in either mirror or satin finish.
- Can be stainless steel edged with galvanised frame or stainless steel edged with stainless steel frame.
- Manufacture up to fork lift loading.
- Bosses made to suit M12 threaded lifting keys.
- Comes with Neoprene seal as standard.
- Made to any size including continuous duct runs.

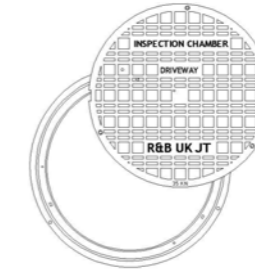
BRASS EDGE STEEL TRAYS



- Manufactured from mild steel galvanised to ISO 1461.
- Can be fitted with either brass or aluminium trim.
- To take any internal flooring system.
- Can be made up to fork lift loading.
- Locked.
- Sealed.
- M12 threaded lifting bosses come as standard.
- Can be manufactured to suit any clear opening.
- Can be made as continuous duct run.

MISCELLANEOUS

POLIGLAS Suitable for use in domestic areas with occasional light vehicular access.

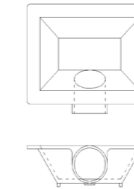


FEATURES

- Single seal plastic frame
- 35 kn loading
- Patented locking system
- Durable Finish
- Non Slip Definition
- Slim line design stacks safely and tidily

PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	DEPTH (MM)
3002-PPIC	Poliglas	450 Dia	550 Dia	44

GULLY CHUTE CONNECTOR

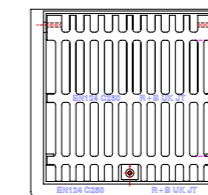


FEATURES

- Ductile Iron of high strength and durability
- 150mm inside diameter outlet
- Designed to compliment standard gully products
- Wide flange for brickwork and mortar

PRODUCT CODE	PRODUCT NAME	OVER BASE (MM)	DEPTH (MM)
2004	Gully Chute	600 x 450	185

CHESTER C250 access covers and frames are designed for use in car parks, industrial or commercial areas carrying slow moving traffic.



FEATURES

- Hinged and locked
- BS EN124 Class C250
- Ductile Iron for lightweight and high strength
- Black Coated finish

PRODUCT CODE	PRODUCT NAME	CLEAR OPENING (MM)	OVER BASE (MM)	DEPTH (MM)
3002-PPIC	Poliglas	450 Dia	550 Dia	44

COMPASS COMPOSITE COVERS

R&B compass range of composite access covers achieved a market leading Skid Resistance Value of 90, when tested by the Materials Laboratory of Devon County Council. All Access Covers are manufactured in SMC [Sheet Moulding Compound] a fibre-reinforced aterial, which consists primarily of thermoset resin, glass fibres and fillers.



- Complies with requirements of EN124
- Impact and weather resistant
- No inherent scrap value
- Locking option
- Corrosion resistant
- Unique multi - direction slip resistant tread pattern
- Lightweight meeting Manual Handling Regulations

COMPOSITE COVERS

PRODUCT CODE	LOADING	'X'	'Y'	DEPTH
CMC30/30	B125	310	295	26
CMC30/45	B125	467	317	26
CMC45/45	B125	469	469	26
CMC60/45	B125	617	468	26
CMC60/60	B125	617	617	26

The table below has been developed from data collected by County Surveyors Society and illustrates the acceptable parameter when tested using the TRRL Pendulum Test in general accordance with BS 6677 part 1:1986

This test provides a slip resistance value (PSRV) for each surface tested. The higher value the greater slip resistance.

FRAMES

PRODUCT CODE	MATERIAL	'X'	'Y'	DEPTH
CFS30/30	Steel	313	298	75
CFS30/45	Steel	469	318	75
CFS45/45	Steel	469	469	75
CFS60/45	Steel	618	469	75
CFS60/60	Steel	618	618	75

TRRL PENDULUM VALUE	CONDITION OF SURFACE
19 and below	Dangerous
20 - 39	Marginal
40 - 74	Satisfactory
above 75	Excellent

FIRMGROUND POROUS PAVING

FirmGround is a UK manufactured strong, versatile and interlocking porous paving system with products available for a wide range of applications.

FirmGround has been specially designed in the UK to allow rain water to drain away whilst still retaining a small amount, this prevents the grass from getting waterlogged and also ensures that it doesn't dry out through lack of water. FirmGround can also be filled with your desired type of gravel reinforcing areas whilst still keeping them naturally attractive.

BENEFITS OF THE FIRMGROUND SYSTEM

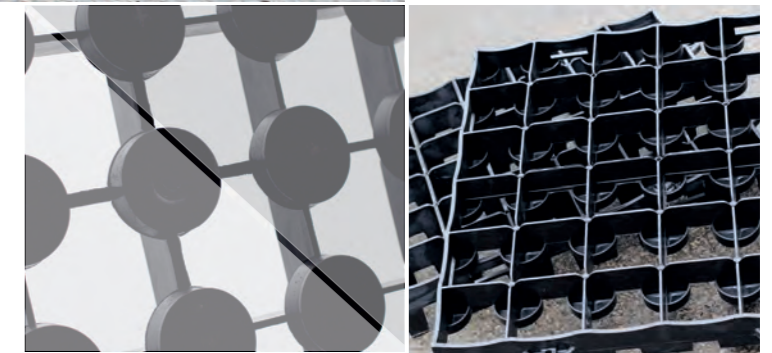
- Made from recycled material & 100% recyclable
- Rapid installation with our unique interlocking system
- UV resistant
- SUDS source control compliant
- Durable and Maintenance free



SUITABLE FOR

- carparks & hardstandings
- footpaths & verges
- pedestrian areas
- bridge abutments
- access roads HGV service access and overflow grass car parking

FirmGround has three products in its range meaning there is a product available for almost every application please call or email our sales team for further information and a speedy competitive quote.



PRODUCT CODE	PRODUCT NAME	NOMINAL SIZE	COVERAGE RATE	FILTRATION RATE	INFILL SURFACE AREA	COMPRESSIVE STRENGTH
FIRMG48	FirmGround 48	500 x 500 x 48mm	4 blocks/m2	>500cm/hour	>90%	>2000KN/m2
FIRMG70	FirmGround 70	500 x 500 x 68mm	4 blocks/m2	>500cm/hour	>90%	>2400KN/m2
FIRMGH	FirmGround Heavy	500 x 500 x 80mm	4 blocks/m2	>250cm/hour	>55%	>2500KN/m2



COMPASS ESTATE

Modular duct access system

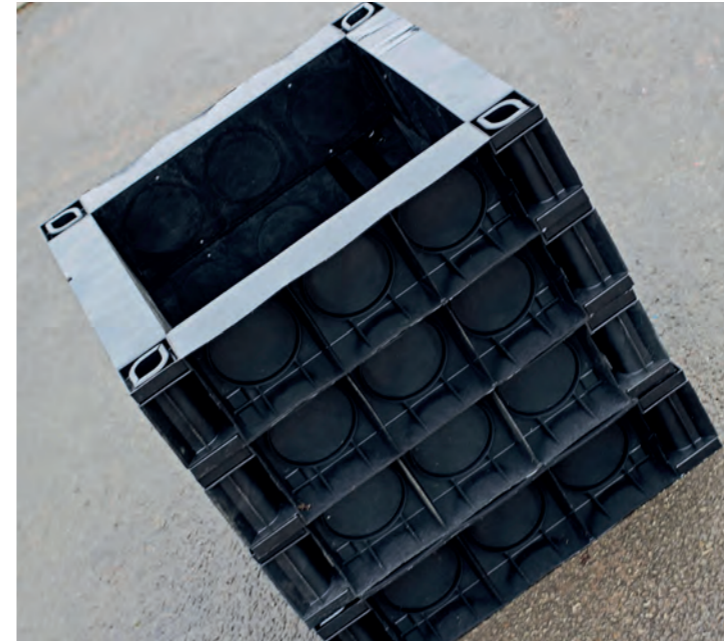
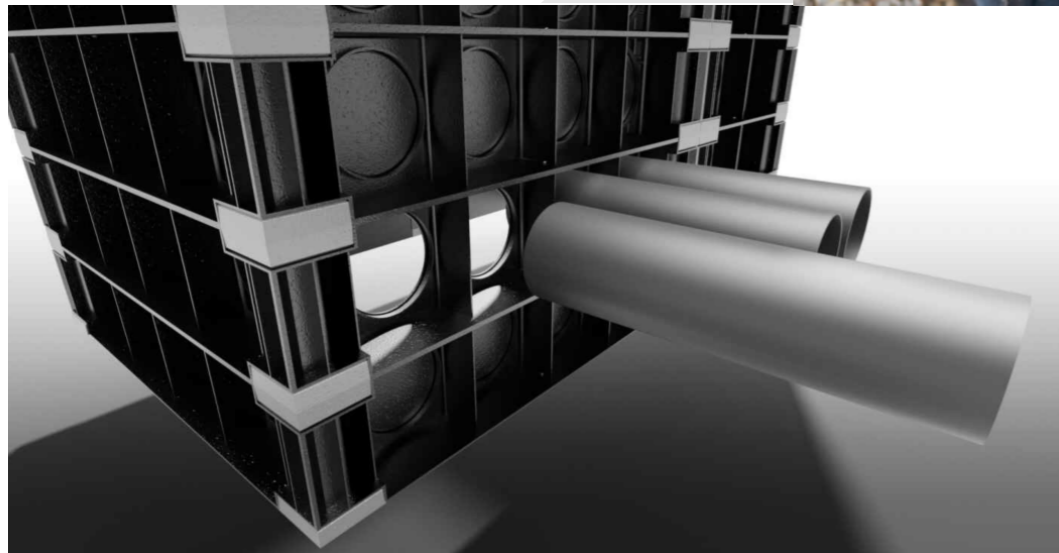
Compass is a range of innovative structural access chambers for underground installations. Ideal for all ducted network applications where access chambers are required for inspection and maintenance, Compass is suitable for all footway and highway projects.

Compass chambers are formed by an interlocking rectangular ring. Available in sizes ranging from 300 x 300 to 1200 x 1200mm

Compass sections are a 150mm deep, with a single reinforced wall design. This makes them lightweight and easy to install. Compass is able to support both BSEN124 B125 and D400 loadings with added reinforcement and concrete surround.

Compass parts are manufactured from 100% recycled polypropylene. All Compass parts are highly resistant to attack from acids and alkalis and other forms of chemical erosion. They are able to withstand high loading forces which means that a concrete backfill is not required in many applications.

Available in sizes ranging from 300 x 300 up to 1200 x 1200

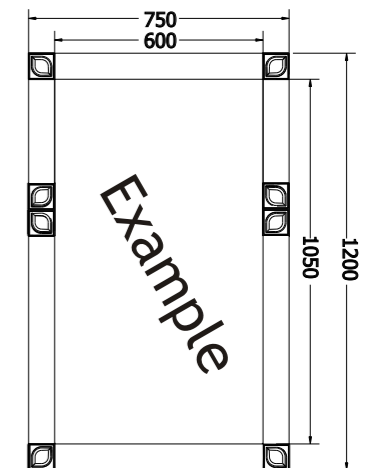
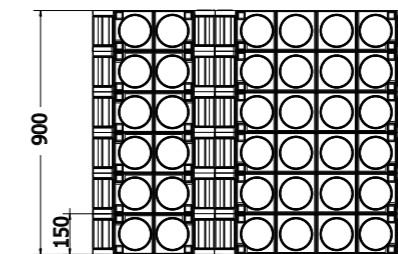
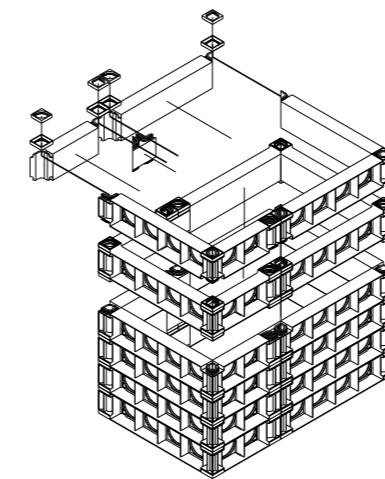


APPLICATIONS

Compass can be used to create Duct Access Chambers, Drawpits, Catchpits, Valve & Meter Chambers, Highway MCX chambers and Rail Chambers. Thanks to their B125 and D400 loading capability. Atlas chambers are suitable for a wide range of applications.

Duct entry options are available with 110mm entries pre-moulded into the wall blocks. Additional larger pre-drilled duct entries can be supplied prior to despatch and meet specific site requirements.

Easily reinforced to meet D400 requirements.



COMPASS HIGHWAY

A cost effective, simple alternative to concrete and brick chambers.

Compass Highway Composite Access Chambers system is a modular twinwall access chamber system which has been designed as a fast-build high strength stress free solution to traditional concrete and brick built chambers. Manufactured from high quality recyclable polypropylene giving ultimate strength whilst keeping transport and handling costs to a minimum. Compass Highway consists of 150mm deep sections which are then stacked to create the required depth.

BENEFITS OF THE HIGHWAYS SYSTEM

- Available in B125, D400 & F900 loadings
- Durable and lightweight
- No need for concrete surround
- Reduced handling & Health and safety risk
- Pre-drilled duct entries available
- Reinforced Twin-wall Design



FEATURES

- Huge Range of sizes available
- Quick and Easy installation
- Manufactured from recycled and fully recyclable materials
- 100 mm Twin-wall design providing excellent strength



Specifically designed to work with Compass Composite Covers



APPLICATIONS

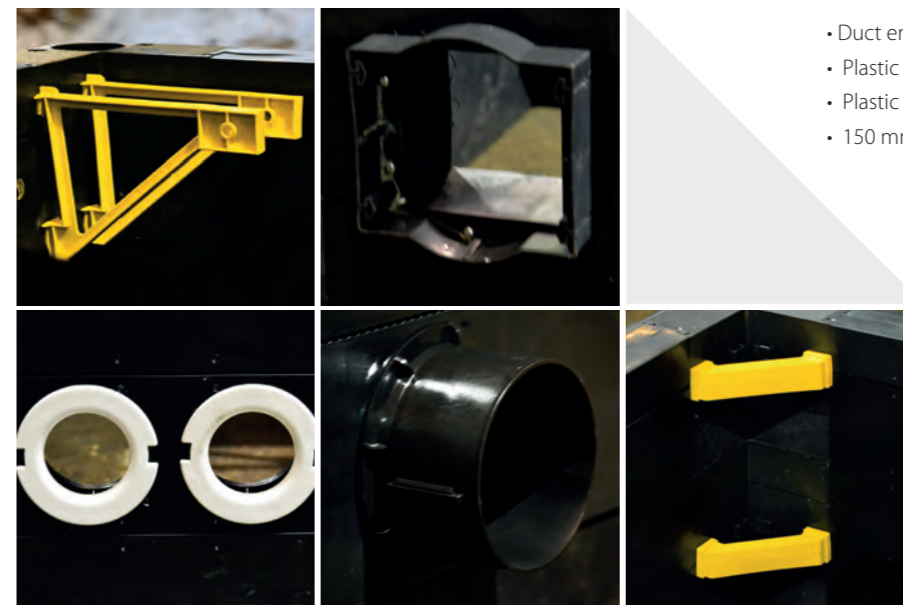
- Street lighting & Traffic signals Chambers
- Jointing/Splicing Chambers
- UTX Chambers
- Cable Drawpits
- Duct Access Chambers
- PRV/MPV Chambers
- Highway MCX Chambers

Light weight chamber construction allows manual handling for rapid on-site installation and removing the machinery costs associated with traditional concrete chamber construction.

Available in a huge range of sizes please call our sales team for further details.

BESPOKE OPTIONS

- Duct entry Bellmouths
- Plastic Step Irons
- Plastic cable bearers and brackets
- 150 mm Duct Entry Reducers



COMPASS ADD-A-STEP™

Modular Manhole Ladder

ADD-A-STEP modular ladders are designed to allow easy access to chambers and are approved for use in potable water, waste water, highly corrosive and general construction applications and are a cheaper, safer more user friendly alternative to traditional stainless steel ladders.

The ADD-A-STEP™ modular ladder system is designed to provide a product that can be supplied off the shelf for next day delivery. Each module of the ADD-A-STEP™ ladder consists of two stiles, one rung and two retaining clips. Each stile measures 360mm long, 80mm wide and 32mm thick maximum dimension. The ladder width outside the stiles (uprights) is 435mm.

The ADD-A-STEP™ ladder has 30mm diameter rungs at 300mm centre spacing and the width or foot space inside the stiles is 375mm. Two types of wall brackets are supplied as standard, one for circular and one for square chambers. The ladder can be assembled on site using the number of modules to achieve any length and can be trimmed to length without the need for expensive cutting equipment. The only piece of equipment required is a standard hand saw of any description.

Assembled in minutes

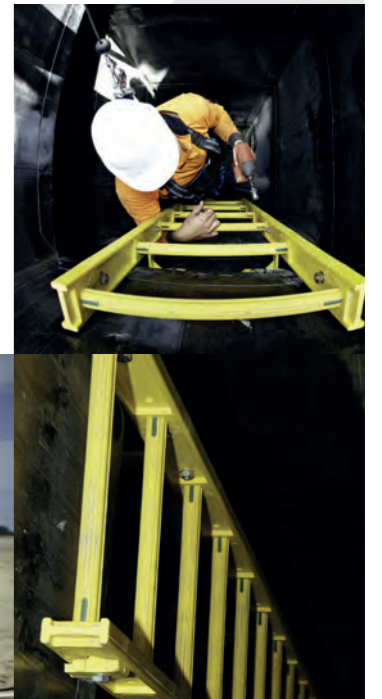
Stainless Steel Pull-ups available to suit ex stock



BENEFITS

The Modular design allows for more economical transportation than fully assembled ladders. The ADD-A-STEP™ ladder requires no maintenance other than occasional cleaning with a pressure hose if desired. The ladder has excellent insulation properties so it can be used in applications where electrical cables are present. The materials used, polybutelene (PBT) are UV tolerant, non-corrosive and ultimately fully recyclable. Being injection moulded ladders can easily be cut on site with no harmful shards or dust given off.

Contractors and Water Utilities will have major benefits regarding Health & Safety issues particularly weight. At approx. 5Kg per linear metre the ladder is significantly lighter than galvanized or stainless steel alternatives. The yellow colour of the ADD-A-STEP™ system has High Visibility properties making it clearly visible when the manhole cover is raised. There is also a proven reduced CAPEX versus stainless steel. The ADD-A-STEP™ system is fully compliant and tested to - BSEN14396.



AQUACRATE

Loadbearing underground water storage/attenuation system

WHAT IS AQUACRATE?

Aquacrate is a UK manufactured load bearing underground water storage attenuation system specifically designed to better manage storm water flow.

THE ADVANTAGES OF AQUACRATE

- Assembled ready to install with up to 75M³ on a full load
- Available in different configurations to meet specific requirements
- High load bearing capability capable of withstanding HGV traffic
- Simple and fast to install with 3 units per M³
Modular size of 1m x 1m plan x 333mm height ensures great
- Versatility in both size and shape of storage
- Small modular height (333mm) allows use with high water tables
- Standard connectivity with both 110 or 160mm connections
- Lightweight units under 20kg removes need for mechanical handling



WHY USE AQUACRATE?

- Prevents extreme peak flows to main drainage and water purification systems
- Rainwater is "cleaned" by the geotextile surround
- Decreases inconvenience of flooding during heavy rain falls
- Allows development of difficult sites by use of attenuation storage
- Decreases environment problems caused by development

DESIGN

Following detailed assessment of the required storm water to be stored (see CIRIA C522, R156 & BRE 365) the total number of Aquacrate units can be calculated using approx. 3/m³ (1000 litres). Decide on the best configuration for the characteristics of the site in question and create the "box" accordingly using the length and width dimensions allowing for a 95% void ratio. Aquacrate is suitable for landscaped and car park areas as well as heavier duty use. As a guide, units require





PRODUCT CODE	PRODUCT NAME	NOMINAL SIZE	CAPACITY	UNIT WEIGHT KG	COMPRESSIVE STRENGTH
AQUA2	Aquacrate2	1000 x 1000 x 333mm	333 Litres	15	>200KN/m ²
AQUA4	Aquacrate4	1000 x 1000 x 333mm	333 Litres	17	>400KN/m ²



from strong copolymer polypropylene

FACTA CLASSIFICATION TABLE

Fabricated access covers complying with the requirement of this specification shall be graded as follows:

FACTA Class	Comparison**	Wheel Loads		Load Test Data	
		Wheel Loads* (slow moving) Pneumatic	Wheel Loads* (slow moving) Solic	Test 1 (Service) (Static Wheel Load plus overload & dynamic effects)	Test 2 (Ultimate) (Test 1 load plus ultimate safety factor)
A 	A15	0.6 tonne (5kN)	n/a	5.0 x 1.0 x 1.0 = 5.0kN	5.0 x 1.6 = 8.0kN
AA 	n/a	1.5 tonne (15kN)	n/a	15.0 x 1.1 x 1.15 = 19.0kN	19.0 x 1.6 = 31.0kN
AAA 	n/a	2.5 tonne (25kN)	0.5 tonne	25.0 x 1.1 x 1.15 = 32.0kN	32.0 x 1.6 = 52.0kN
B 	B125	0.5 tonne (50kN)	0.75 tonne	50.0 x 1.1 x 1.15 = 63.25kN	63.25 x 1.6 = 101.0kN
C 	C250	6.5 tonne (65kN)	1.0 tonne	65.0 x 1.1 x 1.15 = 82.25kN	82.5 x 1.6 = 132.0kN
D 	D400	11.0 tonne (108kN)	3.0 tonne	106.0 x 1.1 x 1.15 = 137.5kN	137.5 x 1.6 = 222.0kN
E 	E600	16.0 tonne (158kN)	5.0 tonne	158.0 x 1.1 x 1.15 = 200.0kN	200.0 x 1.6 = 320.0kN
F 	F900	24.0 tonne (237kN)	n/a	237.0 x 1.1 x 1.15 = 300.0kN	300.0 x 1.6 = 482.0kN

NOTE: Under the "Road Vehicles (Authorised Weight) Regulations 1998", axle weights for the UK are limited to 11.5 tonnes maximum. *Refer to 'Acceptance Test for maximum design load/load bearing capacity.

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

** These comparisons are indicative of the typical suitable area of application of each product class and are not a like-for-like performance comparison.

Comparisons are for guidance only and not intended to be exact.