

# MacBlair Civils

Civil & Environmental Protection



## PRODUCT CATALOGUE

DRAINAGE & WASTE WATER MANAGEMENT SYSTEMS • ACCESS COVERS  
CONSTRUCTION CHEMICALS • GEOFABRICS • LANDSCAPING • STREET FURNITURE

# WELCOME!

MB Civils offer the widest selection of civils and environmental protection products to the civil engineering & construction industries. Our new product catalogue has been developed as a useful reference guide and illustrates just some of the products in our diverse portfolio.

## DIVERSITY

The portfolio of products covers every aspect of the civil engineering and construction industries and encompasses drainage, access covers, environmental protection, geofabrics, hard landscaping and street furniture products.

## CONVENIENCE

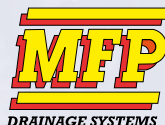
MB Civils' core product range are stocked in each of Macnaughton Blair Ltd's 14 building supplies branches situated across the Province and are available on an ex-yard basis. Bespoke and specialist civils products can be sourced directly from our central depot based at Macnaughton Building Supplies, Belfast.

## SERVICE

Customers requests will be dealt with promptly, efficiently and courteously. Should you require we can deliver all your civils and environmental protection materials direct to your site at a time that suits you and your project.

## TECHNICAL ADVICE

MB Civils and all staff in the branch network are continually being trained to ensure they possess comprehensive knowledge of the materials supplied, thereby ensuring that quality advice for all civils and environmental protection related product is provided for all our customers.



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Macnaughton Blair is the leading builders merchants group in Northern Ireland and the Isle of Man. In Northern Ireland the group trades from 14 locations across the province with one branch in Douglas, Isle of Man.

Each of the branches are long established businesses who continue to serve the local building trade offering customers a huge range of civil and environmental protection products, timber, building materials, plumbing and heating and bathroom supplies. Building materials and products can be collected from the branch or delivered direct to site by our fleet of dedicated delivery vehicles.

# MacBlair

Your **LOCAL** Builders' Merchant

Find your **LOCAL** branch at

**MacBlair.com**



## Branch Network

### Antrim

Springfarm Ind Estate  
BT41 4NT  
T 028 9448 1352

### Ballymoney

24 Ballybrakes Road  
BT53 6LQ  
T 028 2766 4742

### Bangor

70 Balloo Road  
BT19 7PG  
T 028 9127 1792

### Belfast Boucher

4 Balmoral Road  
BT12 6QA  
T 028 9055 1379

### Belfast Duncrue

42-44 Duncrue Crescent  
BT3 9BW  
T 028 9037 0357

### Belfast Rosetta

72 Knockbreda Road  
BT6 0JB  
T 028 9064 1235

### Belfast MacBlair Paint

93 York Road  
BT15 3GY  
T 028 9075 1217

### Coleraine MacBlair Plumbing

5 Loguestown Ind Estate  
BT52 2NS  
T 028 7034 4422

### Coleraine

5 Loguestown Ind Estate  
BT52 2NS  
T 028 7034 4751

### Cookstown

Sandholes Road  
BT80 9AR  
T 028 8676 2211

### Craigavon

42A Seagoe Ind Estate  
BT63 5QE  
T 028 3833 5723

### Downpatrick

20 Church Street  
BT30 6ER  
T 028 4461 6325

### Eglinton

15 Killylane Road  
BT47 3DW  
T 028 7181 0233

### Larne

52 Circular Road  
BT40 3AB  
T 028 2827 2031

### Lisburn

5 Brookmount Road  
BT28 2TD  
T 028 9262 1559

### L'Derry

Unit 2B Altnagelvin Ind Estate  
BT47 2ED  
T 028 7134 8348

### Douglas Isle of Man

Unit 5 Middle River Ind Estate  
IM2 1AL  
T 016 2467 1118

## MacBlairCivils

**Belfast Boucher**

## MacBlairPlumbing

**Antrim**

**Bangor**

**Belfast Boucher**

**Belfast Duncrue**

**Coleraine**

**Cookstown**

**Eglinton**

**Larne**

## MacBlairHire

**Antrim**

**Bangor**

**Belfast Boucher**

**Belfast Duncrue**



**Antrim**

**Bangor**

**Belfast Boucher**

**Coleraine**

**Cookstown**

**Eglinton**

**Larne**

# BELOW GROUND DRAINAGE

## Sewer Drainage

PVC-U house & drain sewer system designed for buried gravity drain & sewer applications such as foul & domestic drains and sewers, sewage treatment and road drainage. The system can be used for laying pipework to shallow gradients. The systems have integral strength and durability but can weigh as little 6% of concrete equivalent pipes providing easier handling, quicker and safer installation.



\* Bends, branches, channel fittings, gullies, grease traps, access junctions & road gullies.

- ✓ Lighter materials & easier handling
- ✓ Faster installation & fewer joints
- ✓ Less likelihood of blockages with smooth non-porous bore

## Twin Wall Pipes & Fittings

Twinwall pipe provides the advantage of a lightweight flexible product combined with high strength and durability.



\* A range of sizes are available.



## Twin Wall Gullies

A high quality, light, easy to handle and install alternative to heavy concrete or clay gullies. They are suitable for both trapped and untrapped systems with 160mm spigot outlet as standard.



\* A range of sizes are available.

## Clay Drainage

Clay drainage meets the needs of specifiers, contractors and ground workers involved in a variety of projects and applications, including adoptable and private sewers, industrial and commercial developments, road construction, sub-soil drainage, power and communications ducting.



## Cast Iron Drainage

There are two cast iron systems for below ground gravity drainage that meet differing product standards.

Ensign drain is tested and kitemarked approved to product standard BS EN 877 is more lightweight iron system with a diameter range of 100mm to 600mm. Pipes are epoxy lined and externally coated with an initial anti-corrosive Zinc layer and a grey acrylic primer. Fittings and couplings are grey epoxy coated.

Timesaver drain tested and kitemark approved to BS437 is a thicker section below ground system with a diameter range of 100, 150 and 225mm. Pipes are epoxy lined and externally coated with a black alkyd primer. Fittings are coated internally and externally in a black water based primer.



- ✓ Less bedding required
- ✓ Ideal choice for below building drainage does not require encasing in concrete
- ✓ Can be layed in shallow trenches
- ✓ Best material for unstable ground and for bridging voids
- ✓ Ideal choice for bridge drainage
- ✓ Vermin resistant
- ✓ Fit and forget drainage for a lifetime

\* A full range of bends and fittings are also available.



\* A wide range of diameters, accessories and fittings are available on request.

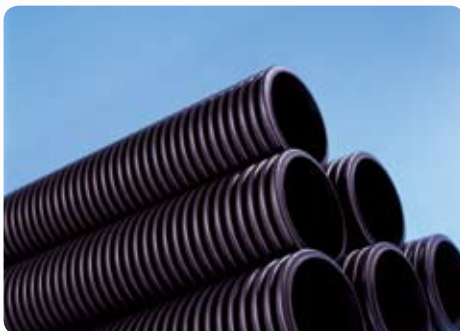
### Land Drainage

Single walled corrugated PVC-U land drainage pipe system which is supplied perforated for the collection and removal of surface and sub surface water. Unperforated variants are also available.



## Twinwall Ducting

The external corrugated profile gives the product added strength. The internal bore is smooth to prevent cables from snagging.



## PVC Ducting

A cost effective alternative for use in light duty applications, e.g. storm drainage & cabling.



## Utility Ducting

Single wall coiled duct for street lighting, CCTV cable and traffic signal applications.

*\* A comprehensive range of fittings & accessories are available on request.*

### Colour Coding for Ducting

Black	Electricity
Orange	Street Lighting
Purple	Motorway Communications
Yellow	Gas
Blue	Water
Green	Cable Television
Grey	Telecommunications



## Duct Access Boxes

Designed to comply with the highways installation directive for a 450mm minimum clearance cover between the surface and ducting for applications in the footways and 750mm for other carriageway installations. Applications include Street Lighting, Traffic Signaling, CCTV Systems Rail & Motorway Communications.

## Pole Housing Units

Specifically designed to assist in the installation of traffic signal poles & the removal & reinstatement of damaged poles.

The Centurion Signal Pole Box allows civil engineering work to be carried out ahead of pole installation and satisfies the highways directive for cover clearance over ducting laid in footpaths.



## Adaptors & Couplings

Adaptors and couplings are primarily used in sewer, drain and other non-pressure applications giving a leak proof seal on virtually any pipe material and diameter.

- ✓ An alternative to a traditional coupling for plain ended pipes
- ✓ Where a post connection is required into an existing drain or sewer
- ✓ For insertion of a new pipe in order to replace a damaged section of existing sewer or drain
- ✓ Where original pipe is to be replaced and is a different diameter and material to that of the replacement pipe
- ✓ Where pipes of different material and diameter require connection, e.g. jointing plot drainage to a private shared sewer
- ✓ Where pipes have been cut or short lengths of pipe require jointing



**MDPE & Fittings**

Medium density polythene pipes and a comprehensive range of Plasson fittings are available from stock.



# ABOVE GROUND DRAINAGE

## Rainwater & Gutter Systems

The Classical range of cast iron rainwater and gutter systems offers a choice of 8 gutter profiles with downpipes and fittings available in round and rectangular. The range is coated in a black water based primer ready for on site painting.

Classical Plus are pre-painted ready to install cast iron systems in a black finish for immediate installation. The coating is a high performance polymer alloy designed to provide a life cycle in excess of 15-20 years.



- ✓ Aesthetic appearance that no other material can match
- ✓ Superior strength withstands heavy snow loads & weight of ladders for routine maintenance
- ✓ Withstand impact accidental or vandalism
- ✓ Longevity – last the life of the building
- ✓ Sustainable – 100% recyclable – made from 97% recycled materials.
- ✓ No painting on site with Classical Plus – reduces labour time by up to 60%

## Timesaver Heritage System

The Timesaver soil system Kitemarked to BS416 Part 2 now contains a push-fit coupling that turns a mechanical pipe system into one with a traditional socket appearance of yesteryear, as depicted in BS416 Part 1 – but, without the labour intensive caulked jointing method.

The black primer coating of the Timesaver system makes it easy to overpaint for external soil stacks, and is the perfect solution for listed buildings and those situated in areas of conservation.

The Heritage Couplings are available in 100mm & 50mm diameters and can be used with the majority of fittings in the Timesaver Range. Pipes are available in the standard 3 metre length for the 50mm diameter and in a new 1.8 metre length in 75mm & 100mm diameter specially introduced for this field of application.

### Features

- ✓ Push-fit couplings in 50, 75 and 100mm diameter
- ✓ 1.8m (6ft) double spigot pipes in 75 and 100mm
- ✓ Extensive range of fittings from the Timesaver soil range
- ✓ Accepted by National Heritage bodies

### Benefits

- ✓ Simple and quick to install push-fit couplings
- ✓ Dramatically reduces labour time compared to the traditional socket and spigot jointing method
- ✓ Utilises all products from the Timesaver soil range
- ✓ Easy to overpaint for external stacks
- ✓ Aesthetic appearance for traditional buildings

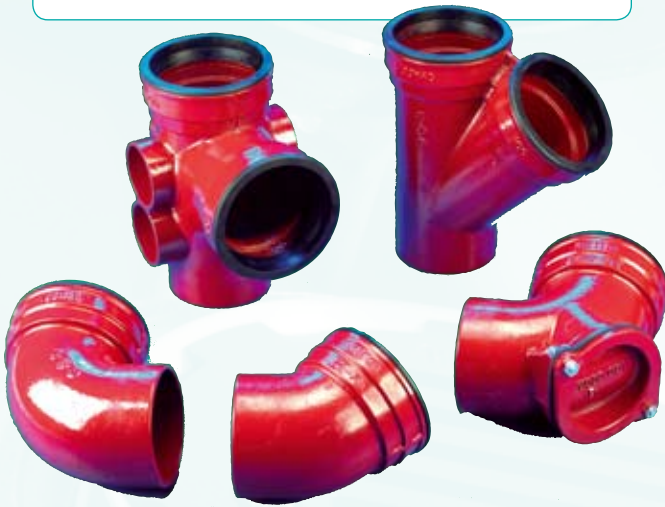
## Ensign Drainage

Ensign is the only cast iron soil system that fully meets all the requirements of product standard BS EN 877. Jointed by unique two-piece ductile iron couplings that are high performance and easy to install. Pipes are epoxy lined and externally coated in a red acrylic primer. Fittings & couplings are red epoxy coated.

- ✓ Strong, lightweight & cost effective system
- ✓ Resistant to extreme temperatures
- ✓ No expansion joints & less embedment
- ✓ Economical connections to waste pipes
- ✓ No fire collars required

## Ensign EEZ-FIT

Ensign EEZI-FIT is a new range of selected socketed fittings & couplings in 100mm diameter that is fully compatible with all Ensign pipes & fittings for gravity sanitary applications. EEZI-FIT provides all the benefits of cast iron with the simplicity of push-fit assembly.



\* A full range of bends & fittings are available from stock



## Roof Drainage

A range of BS EN 12056 compliant metal rain water outlets, available with spigot or screw connection, for vertical, horizontal or 45° discharge, providing optimum drainage performance for regular flat roof applications with waterproofing membranes.



- ✓ Precision cast in aluminum silicon alloy LM6 which is lightweight, strong & corrosion resistant
- ✓ Alternative gunmetal specification available for connection to copper pipework and for installation in copper or lead clad roofs
- ✓ AV high efficiency outlets providing high flow with increasing head of water at the outlet, for optimum roof drainage performance on large roofs with continuous membranes
- ✓ AV range includes special retro-gully for flat roof refurbishment avoiding the need to remove the old rainwater outlet

## Harmer Modulock

A height adjustable, level deck pedestal system for supporting paving slabs, timber slats or timber decking systems on flat roof structures over flat roof drainage.



- ✓ Wide range of height adjustments from 32mm-600mm
- ✓ Fine adjustment for both height & level are possible
- ✓ Spread leveler for correction of cross fall
- ✓ Locating blades on head assist positioning of slabs & maintaining open joints when required.
- ✓ Locating blades can be removed if required
- ✓ Allows for the accommodation of services beneath the floor

## Harmer Uni-Ring

A versatile and economical system for concealing drainage beneath paving slabs.

- ✓ Stackable units with spacers for open joint drainage when required
- ✓ Spacers are collapsible for closed jointing & edge detailing
- ✓ Shims for fine height adjustment
- ✓ Economical & flexible support
- ✓ Full load spread, units not required to subdivide for edge of corner detailing



## Point Gullies

Point gullies provide drainage solutions to suit virtually any interior drainage application, trapped or untrapped, and for installation in all types of flooring.



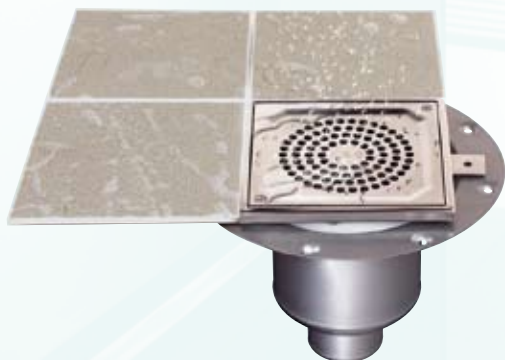
- ✓ 110mm spigot outlet
- ✓ High flow performance
- ✓ Round or square grates in high quality stainless steel and nickel bronze to suit all types of floor finishes
- ✓ Clamping collars for a fully effective seal to damp proof membranes
- ✓ Neoprene ring seals that allow for complete accuracy in rotational alignment and height adjustment
- ✓ Self cleaning and hygienic
- ✓ Virtually maintenance free

## Shower Drainage

Manufactured from corrosion resistant stainless steel, ACO Shower drains can be used in any shower installation where water run-off is from flexible sheet or tiled floor surfaces. The vertical spigot drain has been designed for installation in concrete floors, whilst the horizontal spigot version is ideal for installation in timber floors where it can fit unobtrusively within the floor void.



- ✓ Engineered performance for long life
- ✓ High flow performance
- ✓ Low maintenance
- ✓ Alternative configurations for use in solid concrete or timber joisted floors
- ✓ Adjustable clamping collar for watertight seal with flexible sheet flooring
- ✓ Grate kit for tiled floor installations



## Floor Channels

Modular and bespoke channel systems and grates in both Grade 304 & 316 stainless steel.

### Typical Applications

- ✓ Changing rooms & shower facilities
- ✓ Plant rooms & Wash Down Areas
- ✓ External Areas where corrosion free materials & aesthetic considerations are key requirements
- ✓ Food & Drink processing improved hygiene can be effected by removing bolted joints. For fully welded options contact MB Civils



Modular 2000

Modular 1000



### Typical Applications

- ✓ Suitable for low capacity requirements
- ✓ Ideal as a simple breakwater
- ✓ Allows quick easy jetting of run for easy cleaning

Kitchen Channel

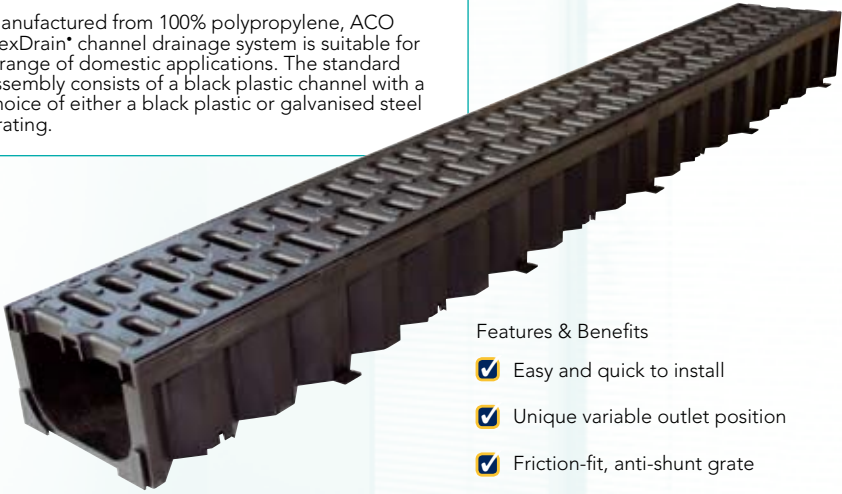


### Typical Applications

- ✓ Ideal for smaller areas including kitchens, food processing & bottling plants
- ✓ Large point discharges of liquid from Bain-Marie kettles or Bratt pans
- ✓ Suited to areas where extra channel & grating width are required for fluid interception

## ACO HexDrain®

Manufactured from 100% polypropylene, ACO HexDrain® channel drainage system is suitable for a range of domestic applications. The standard assembly consists of a black plastic channel with a choice of either a black plastic or galvanised steel grating.



### Features & Benefits

- ✓ Easy and quick to install
- ✓ Unique variable outlet position
- ✓ Friction-fit, anti-shunt grate
- ✓ Choice of black plastic, metallic effect plastic or galvanized steel grates
- ✓ Full accessory pack aids installation
- ✓ Ideal for pedestrian and light vehicle traffic
- ✓ Fully certified and CE marked to Load Class A 15 BS EN 1433:2002
















## ACO HexDrain® Brickslot

Manufactured from 100% recycled polypropylene this system is based on the highly successful ACO HexDrain domestic drainage channel. The 1m black channel has been combined with a new off-set 10mm slot cover specifically designed for use with 50mm and 60mm block paving.

### Features & Benefits

- ✓ Off-set slot enables drainage location adjacent to walls and door thresholds
- ✓ Lightweight design
- ✓ Cover compatible up to and including 60mm deep block paving
- ✓ Easy and quick to install
- ✓ Easily cut up to 500mm lengths
- ✓ Installation guide clearly marked on the brickshot cover
- ✓ Channels clip together for easy use and simple on-site fabrication
- ✓ Full accessory packs aid professional installation
- ✓ Fully certified and CE marked to Load Class A 15 BS EN 1433:2002

PRODUCT NAME	ACO HEXDRAIN	ACO HEXDRAIN BRICKSLOT	ACO RAINDRAIN	ACO PARKDRAIN	ACO SLIMLINE	ACO MULTIDRAIN MID SYSTEM	ACO MULTIDRAIN PPD SYSTEM
APPLICATIONS							
AIRPORTS AND DOCKS	✗	✗	✗	✗	✗	✗	✗
DISTRIBUTION YARDS	✗	✗	✗	✗	✗	✗	✗
HIGHWAYS	✗	✗	✗	✗	✗	✗	✗
INDUSTRIAL ESTATES	✗	✗	✗	✗	✗	✓	✓
LANDSCAPING	✓	✓	✓	✓	✓	✓	✓
PETROL FILLING STATIONS	✗	✗	✗	✓	✗	✓	✓
PRISONS	✗	✗	✗	✓	✗	✗	✗
PRIVATE PARKING AREAS	✓	✓	✓	✓	✗	✓	✓
PUBLIC PARKING AREAS	✗	✗	✓	✓	✗	✓	✓
RAILWAYS	✗	✗	✗	✓	✗	✓	✓
RESIDENTIAL DEVELOPMENTS	✗	✗	✓	✓	✓	✓	✓
SCHOOLS	✗	✗	✗	✓	✓	✓	✓
SUDS	✗	✗	✗	✗	✗	✗	✗
THRESHOLD DRAINAGE	✗	✓	✗	✗	✗	✓	✓
PRODUCT TYPE							
LOAD CLASS	 A 15	 A 15	 B 125	 C 250	 C 250	 D 400 *	 D 400 *
MATERIAL							
HYDRAULIC CAPACITY							
GRATING CHOICE				NA	NA		
FOLDER SECTION	CHANNELS WITH TRADITIONAL GRATINGS	SLOT CHANNEL DRAINAGE	CHANNELS WITH TRADITIONAL GRATINGS	MONOCAST CHANNEL DRAINAGE	SLOT CHANNEL DRAINAGE	CHANNELS WITH TRADITIONAL GRATINGS	CHANNELS WITH TRADITIONAL GRATINGS

\* Not suitable for carriageways of public roads or motorways

ACO KERBDRAIN	ACO S RANGE	ACO ROADRAIN	ACO PROFILE	ACO QMAX	ACO BROUNDRAIN
X	✓	✓	✓	✓	X
✓	✓	✓	✓	✓	X
✓	X	✓	✓	✓	X
✓	✓	✓	✓	✓	X
✓	X	X	✓	✓	✓
✓	✓	✓	✓	✓	X
X	✓	✓	✓	✓	X
✓	X	X	X	X	✓
✓	✓	✓	✓	✓	✓
X	✓	✓	X	X	X
✓	X	X	X	X	✓
X	X	X	X	X	✓
✓	X	X	X	✓	X
X	X	X	X	X	X
					
					NA
					
					NA
NA		NA			NA
COMBINED KERB DRAINAGE	CHANNELS WITH TRADITIONAL GRATINGS	MONOCAST CHANNEL DRAINAGE	SLOT CHANNEL DRAINAGE	SLOT CHANNEL DRAINAGE	LANDSCAPING SYSTEMS

## KEY

## PRODUCT TYPE



**SLOT CHANNEL DRAINAGE**  
Channel Drainage unit with integral slot grating



**CHANNELS WITH TRADITIONAL GRATINGS**  
Channel Drainage unit with removable grating



**MONOCAST CHANNEL DRAINAGE**  
Channel Drainage unit with integral grating



**LANDSCAPING SYSTEMS**



**COMBINED KERB DRAINAGE**  
One piece kerb and drainage unit

LOAD CLASSES AND TYPICAL USES  
ACCORDING TO BS EN 1433:2002

**A 15**  
Pedestrians, cycleways and domestic drives



**B 125**  
Pedestrian precincts, light vehicles, private drives and car parks



**C 250**  
Public parking areas, service stations (cars) and slow moving light commercial vehicles



**D 400**  
Public highways, parking areas for all types of vehicles, distribution yards



**E 600**  
Industrial areas, heavy wheel loads, slow moving HGVs and forklifts, service stations



**F 900**  
Airport runways, very heavy industrial and military installations, service yards and lorry parks

\* Not suitable for carriageways of public roads or motorways

## HYDRAULIC CAPACITY



LOW



MEDIUM



HIGH

## GRATING CHOICE



LIMITED



SMALL



WIDE

## MATERIAL



POLYMER CONCRETE



PLASTIC / COMPOSITE



STEEL

## SUITABILITY



SUITABLE



NOT SUITABLE

## ACO MultiDrain™ MD

Manufactured from high strength polymer concrete, the ACO MultiDrain™ MD channel drainage system is suitable for a range of light to medium duty traffic applications. The system comes complete with protective UltraSTEEL™ galvanised edge rails and a range of ACO Drainlock™ gratings.



### Features & Benefits

- ✓ Wide range of applications including civic areas, pedestrian areas, forecourts & car parks
- ✓ Resin concrete construction offers excellent chemical resistance
- ✓ Available in three channel widths and has a range of constant, sloped and shallow channels available
- ✓ Extensive choice of gratings and accessories
- ✓ Sump & gully outlet connections to underground drainage
- ✓ Quick to install & requires minimum excavation
- ✓ Interlocking male & female profiles and alignment of channels during installation
- ✓ CE marked and BSEN1433:2002 Certified to Load Class D400
- ✓ Fully certified and CE marked to Load Class D 400 BS EN 1433:2002 (This system is not suitable for carriageways of public roads or motorways)



## ACO RainDrain

Manufactured from polymer concrete, ACO RainDrain standard domestic channel assembly consists of a 1m polymer concrete channel & galvanised steel grating. An additional cast iron grating is available for light vehicle traffic, and a full set of accessories are available to provide a wide variety of quick and professional installations.

### Features & Benefits

- ✓ Traditional channel & grate appearance
- ✓ Lightweight, quick & easy to install
- ✓ Choice of galvanised (Load Class A15) and cast iron gratings (load Class B125)
- ✓ Clip locking gratings
- ✓ Extended range of suitable applications
- ✓ Fully certified and CE marked to Load Class A 15 & B 125\* BS EN 1433:2002 (Load Class B 125 with cast iron grating only)

## ACO MultiDrain™ Brickslot

The ACO MultiDrain MD system has a range of has a range of gratings and access units to complement installations which require discreet slot drainage.

### Features & Benefits

- ✓ Discreet high performance slot drainage system for visually sensitive areas
- ✓ Slotted system can minimise the risk of blockage
- ✓ 10mm off set drainage inlet provides heel protection
- ✓ Two slot finishes available, Galvanised or Stainless Steel
- ✓ Gratings available in 500mm and 1000mm lengths. Access units available in 500mm lengths.
- ✓ Gratings suitable for use with the 100mm and 150mm wide channels in the ACO Multidrain™ MD range
- ✓ Certified to BS EN 1433: 2002, Load Class C250 & D400 (Load Class depending on grating selected)



## ACO ParkDrain

ACO ParkDrain is a one-piece polymer concrete drainage system suitable for uses in pedestrian areas, car parks and hard landscaped areas.

### Features & Benefits

- ✓ One piece design means no separate grating specification
- ✓ Level or stepped invert units for efficient scheme design
- ✓ Easy to achieve a watertight seal with sealing groove
- ✓ Lightweight easy one man lift complies with Health & Safety guidelines
- ✓ Certified to BS EN 1433: 2002, Load Class C250



## ACO Roadrain •

A one piece resin concrete drainage system which has been designed as the optimum solution for a wide range of surface drainage applications requiring Load Class D400 to F900 installations.

### Features & Benefits

- ✓ One piece design means no separate grating specifications
- ✓ Integral inlet grating in resin concrete cannot be stolen
- ✓ Sump & gully outlet connections to underground drainage
- ✓ Available in two channel widths: 100mm and 200mm
- ✓ Level or stepped invert units for efficient scheme design
- ✓ Certified to BS EN 1433:2002, Load Class F900



## ACO QMAX •

Economic high capacity drainage system for applications involving large catchment areas. Ideal for situations with varying load classes. Larger capacity units offer attenuation solutions for applicable SUDS applications.

### Features & Benefits

- ✓ Range of sizes available from 225mm-900mm
- ✓ Anchors provided to securely fix the edge rail into the concrete surround
- ✓ Easy connection between each channel – units simply plug into each other
- ✓ 100% watertight system – channel comes complete with neoprene twin lipped seal
- ✓ Unobtrusive continuous slot channel for fast efficient removal of surface water with no carry over in storm conditions
- ✓ Two edge details available to suit application – car park edge for areas where pedestrians are expected & heavy duty for installation in industrial areas & concrete slabs
- ✓ Larger capacity units offer attenuation solutions for applicable SUDS applications
- ✓ Certified to BS EN 1433:2002, Load Class F900



## ACO S Range

A heavy duty channel and grating drainage system with a cast-in ductile iron edge rail, for use in industrial yards, docksides and airports.

### Features & Benefits

- ✓ Available in 100, 150, 200 & 300mm sizes
- ✓ Wide range of applications such as airports, industrial, military bases, bus and freight yards
- ✓ Caters for a wide range of catchment depths and hydraulic capacities
- ✓ Resin concrete has excellent chemical resistance, is strong & rigid for lifetime integrity
- ✓ Available in a range of lengths with heavy duty gratings with eight bolts per metre
- ✓ Suitable for Load Classification F900 applications



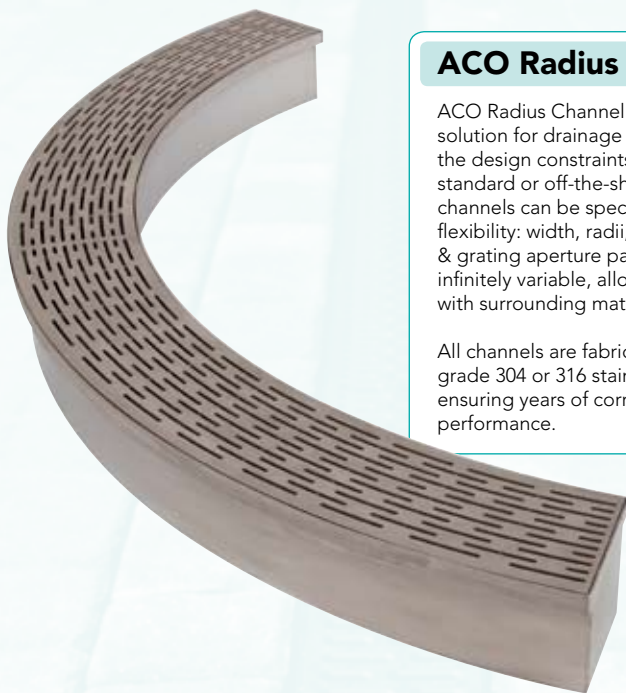
## ACO KerbDrain

A one-piece resin concrete kerb & drainage unit for carriageways, roundabouts, local road schemes, car parking & sustainable system applications.

### Features & Benefits

- ✓ Once piece construction means no separate parts to bed and level
- ✓ Lighter & stronger than conventional concrete
- ✓ High capacity drainage performance
- ✓ Complies fully with the Specification for Highway Works, Clause 516
- ✓ Full range of accessories available for applications including traffic calming, raised carriageways, pick up points and bus stops
- ✓ Same size as traditional HB1, HB2 and splay kerb units
- ✓ Certified to BS EN 1433: 2002, Load class D400





## ACO Radius Channel

ACO Radius Channel offers a bespoke solution for drainage virtually free of the design constraints associated with standard or off-the-shelf product. The channels can be specified with great flexibility: width, radii, channel depth & grating aperture patterns are almost infinitely variable, allowing integration with surrounding materials.

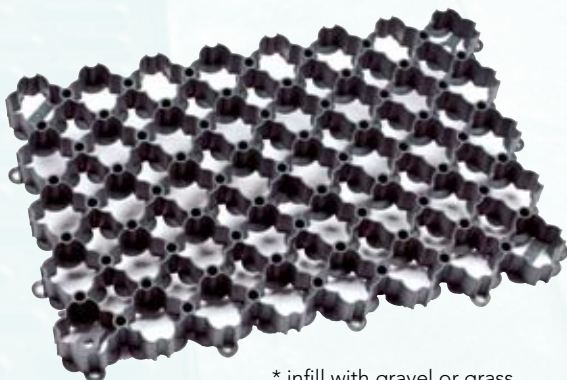
All channels are fabricated in grade 304 or 316 stainless steel ensuring years of corrosion resistant performance.

## ACO GroundGuard

Manufactured from 100% recycled polyethylene, ACO GroundGuard provides a lightweight ground reinforcement system ideal for grass or gravel stabilization. Correctly fitted, ACO GroundGuard has been certified to 250 tonnes per square metre making it suitable for a wide range of applications.

### Features & Benefits

- ✓ Ideal for a wide variety of applications including vehicle & pedestrian traffic, fire access lanes and parking areas
- ✓ Lightweight – just 1kg per piece
- ✓ Easy to handle and install; simple clip together fixings
- ✓ Easily cut to shape for irregular edging
- ✓ Cost effective solution – competitive with asphalt or block paving
- ✓ Suitable for gradients up to 5% or steeper when pegged
- ✓ Eliminates gravel migration or raking



\* infill with gravel or grass

# ATTENUATION & WATER MANAGEMENT SYSTEMS

## ACO Storm Tank

The ACO StormTank product range offers the latest technology in stormwater storage and infiltration. The unique open cell structure of ACO StormTank allows for easy access and maintenance and can be configured to control silt build up.

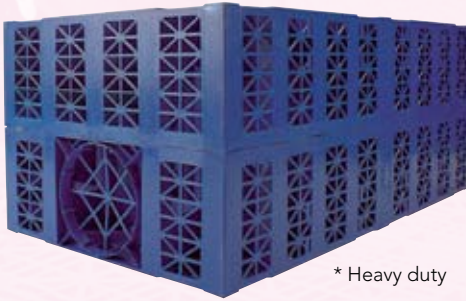


- ✓ Strong, robust and lightweight
- ✓ Independently tested by BSI
- ✓ Free access design allows remote inspection
- ✓ Unique silt management system
- ✓ 97% void ratio
- ✓ Available in a range of heights
- ✓ Full range of ancillaries

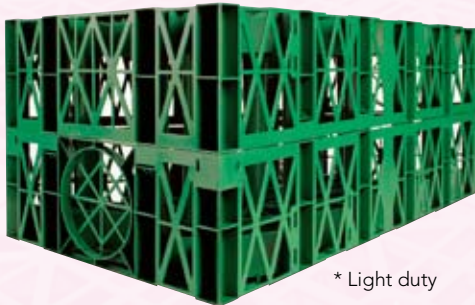


## Wavin Aquacell Stormwater Management System

The Wavin Aquacell Stormwater management system comprises individual modules assembled together to form an underground structure which can either be used for stormwater storage or as an alternative to domestic soakaways.



\* Heavy duty



\* Light duty

- ✓ BBA approved, and meets the Technical Requirements of NHBC
- ✓ 95% void ratio
- ✓ Rapid dispersion capability
- ✓ High Surface Permeability
- ✓ Lightweight & easily assembled
- ✓ Heavy duty options available for deeper installations
- ✓ Full range of ancillaries

Geomembrane & Geotextile products are essential components for the installation, protection & continuing function of attenuation tanks and similar SUDS. MB Civils can supply a range of products specifically aimed at promoting & prolonging sustainable drainage systems.

## Non-woven Geotextiles

Non-woven Geotextiles have a variety of uses in SUDS and are commonly specified as protection fleeces for attenuation tanks, protecting impermeable membranes from puncture and for wrapping modular water storage units/blocks for 'infiltration tanks'.



### Applications

- ✓ Attenuation tanks require both impermeable membrane and a protection fleece, which prevents the membrane from puncture
- ✓ Infiltration Tanks require a highly permeable textile with good filtration properties to prevent particles entering & silting the tank
- ✓ Geo-grids help to stabilize the ground prior to SUDS installation

## GT Membrane Impermeable Lines

MB Civils can supply a range of impermeable lines for wrapping modular water storage units or blocks creating a watertight barrier to prevent storm water from filtering & saturating the surrounding ground. Specialist single sided & double sided joining tapes are available to ensure overlapping joins are fully sealed.

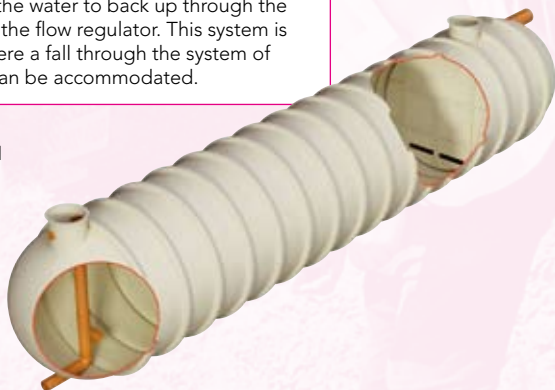


## In-Line Attenuation Tanks

In-line attenuation systems allow the water to back up through the tank and drain by gravity through the flow regulator. This system is normally used for installations where a fall through the system of 2.5-2.6 metres (on a sloped site) can be accommodated.

### IN-LINE ORIFICE TANK SYSTEM V.1

- ✓ An orifice plate system works on the principle that the pressure created at a particular head will result in a particular flow based on the head versus hole size
- ✓ This is a simple & inexpensive system



### IN-LINE ORIFICE TANK SYSTEM V.2

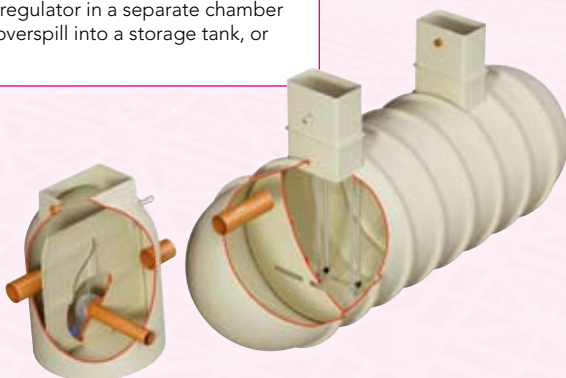
- ✓ A vortex flow regulator works on the principle of including a rotating flow around an opening at a high speed to limit the outflow of the liquid
- ✓ This is the same principle that can be seen in the bath as it empties; the vortex reduces the flow from the bath even though there is a high head

## Off-Line Attenuation Tanks

Off-line tank systems have the flow regulator in a separate chamber and allow the flow to build up and overspill into a storage tank, or tanks, adjacent to the chamber.

### IN-LINE ORIFICE TANK SYSTEM V.2

- ✓ The storage tank is emptied using pumps which are activated when the level in the regulating chamber recedes after the storm
- ✓ This system gives a shallow inlet to outlet dimension and can cater for larger flows



## ACO Q-Brake Flow Regulator

The ACO Q-Brake is a flow regulator which can be installed in the ACO Qmax channel to regulate the discharge flow rate to a sewer or watercourse, and to utilize the storage capacity of the ACO Qmax channel.

- ✓ Occupies no additional volume as it resides inside the channel
- ✓ No extra man holes required
- ✓ Cost effective solution to SUDS applications
- ✓ Laboratory verified performance
- ✓ Silt formation and floating debris encouraged to pass through regulator
- ✓ By-pass facility for heavy storm applications (optional)
- ✓ Stainless steel construction ensures the design life will exceed a 30-year life



## Stormwater Flow Control

Stormwater flow control systems permit precise control of site discharge rates. When combined with a suitable water storage system it provides an industry recognized flow attenuation solution.

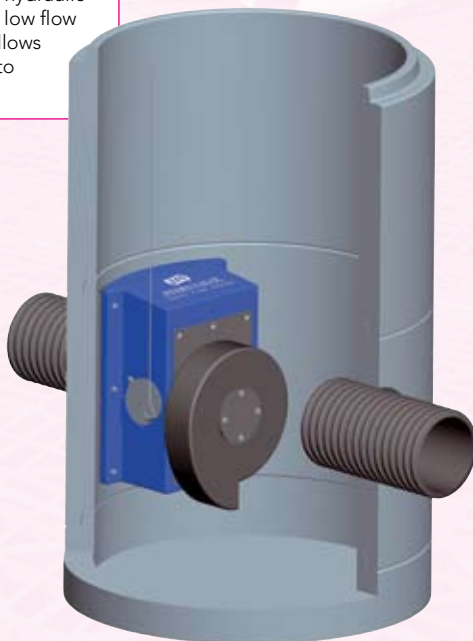


- ✓ Pre-fabricated to customer specification
- ✓ Choice of depth up to a maximum invert level of 6 meters
- ✓ Lightweight, tough & durable chamber design
- ✓ Integrates with other advanced drainage systems
- ✓ Choice of chamber sizes from 1050mm, 1200mm, 1500mm and 1800mm
- ✓ Option of Step Irons to BS1247

## Hydro-valve Vortex Control System

The HYDRO-VALVE controls fluid flow by hydraulic effect without requiring moving parts. At low flow rates, the Hydro-Valve complex design allows water to enter through the inlet passing to the outlet unrestricted.

- ✓ Customised Specifications
- ✓ No external power source
- ✓ Self activating and Self Cleaning
- ✓ Minimal Maintenance
- ✓ The outlet opening is 3-6 times larger than conventional controls
- ✓ Reduce storage requirements by up to 30% compared to an orifice plate
- ✓ Ease of installation compared with conventional vortex valves



## Ezy-Drain

Ezy-Drain system is a revolutionary product that redefines the method of dispensing water into soil. Utilizing recycled synthetics packed around sectional tubes, the Ezy-Drain design offers a packaged solution to avoid drawbacks of using loose quarried aggregates.



### Benefits

- ✓ Speed of installation – up to 4 times faster than traditional methods
- ✓ Minimizes site waste & disposal costs
- ✓ Flexibility removes need for boxes & chambers
- ✓ Higher water dispersion rate than traditional methods

## Envireau Rainwater Harvesting System

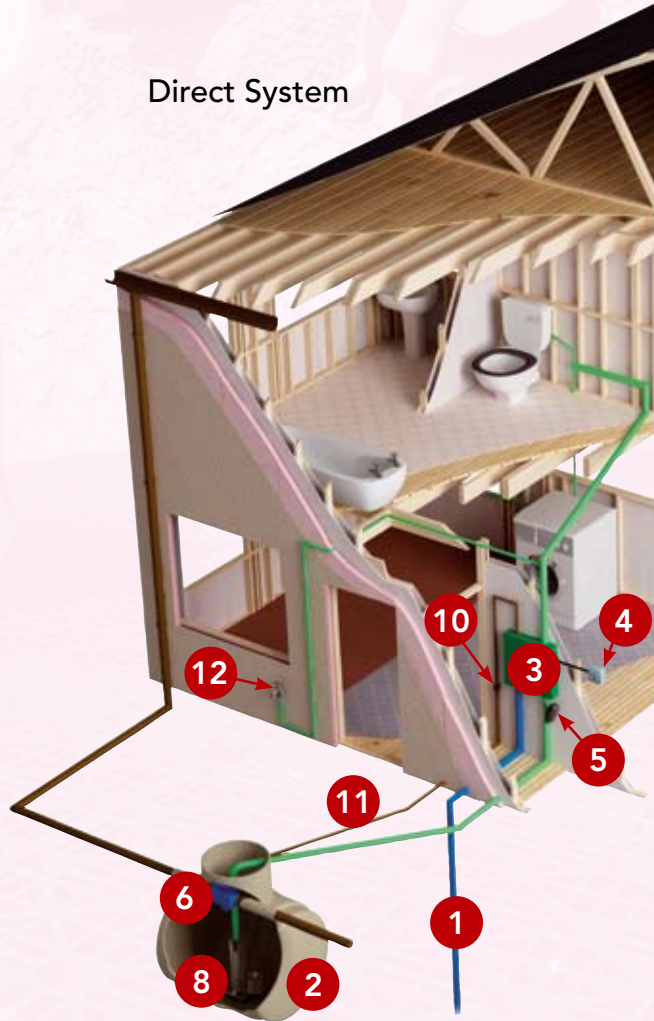
The Envireau Rainwater Harvesting System collects water from domestic & commercial roofs that can then be used for non-potable applications. The used friendly design utilises much of the existing pipework within the building. The main requirement being installation of a rainwater storage tank (with internal pump) selected to meet the roof areas water catchment yield & household requirements.

Typical applications

- ☒ Toilet flushing
- ☒ Hot water
- ☒ Washing machines
- ☒ Water irrigation
- ☒ Car & vehicle washing
- ☒ Washdown practices
- ☒ Irrigation & process

### Direct System

- 1 Water main
- 2 Storage tank
- 3 Main control panel
- 4 Level display unit
- 5 In line filter 120 microns
- 6 Internal rain filter
- 7 External rain filter
- 8 Pump
- 9 Header tank
- 10 Tundish valve
- 11 Mains top-up tank
- 12 External tap

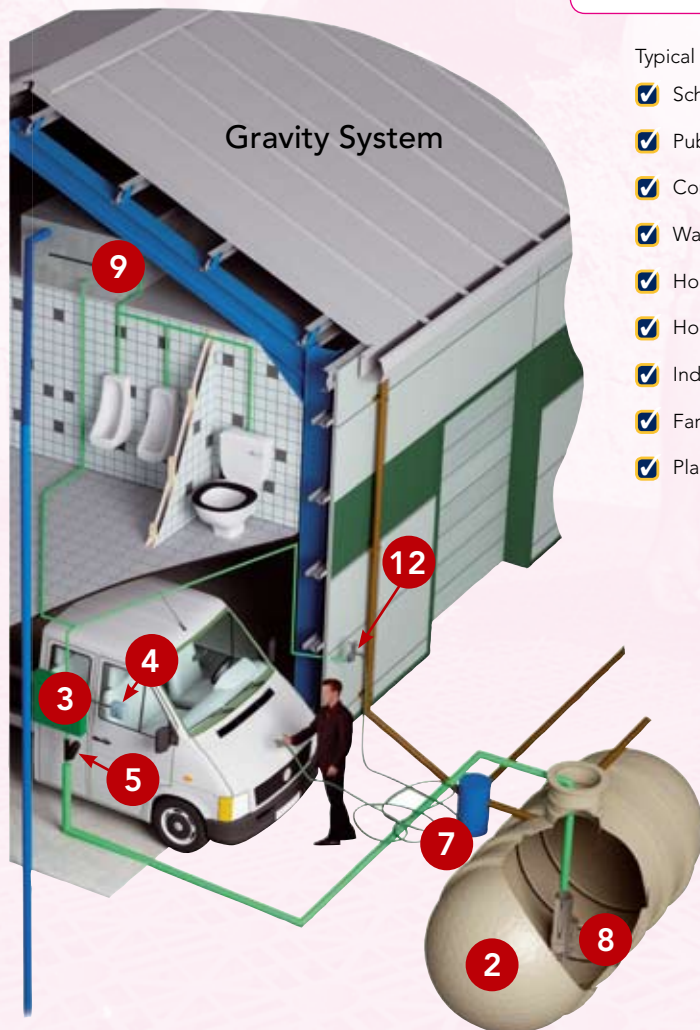


Commercial premises generally have a greater demand for non-potable water for cleaning and toilet facilities. Conversely, by having a large roof area these buildings possess a natural facility to recoup large amounts of water and, in turn, deliver substantial savings.

## Gravity System

### Typical Applications

- ✓ Schools
- ✓ Public buildings
- ✓ Commercial offices
- ✓ Warehouses & factories
- ✓ Holiday accommodation
- ✓ Housing associations
- ✓ Industrial developments
- ✓ Farms & agriculture
- ✓ Plant nurseries & garden centres



## Raintrap

Raintrap is the new inexpensive underground rainwater storage & delivery system. Raintrap collects rainwater from the roof via the existing guttering & downpipe system on the property. The integral leaf filter will remove unwanted debris washed down from the roof thus ensuring good quality stored water. A simple on/off switch operates the pump allowing it to deliver the stored water under pressure to where it is needed.



- ✓ Simple on/off operation
- ✓ Suitable for existing & new homes
- ✓ Automatic rainwater diversion when tank reaches full capacity
- ✓ Internal self-cleaning leaf filter
- ✓ 2800, 3800 & 4600 litre capacities

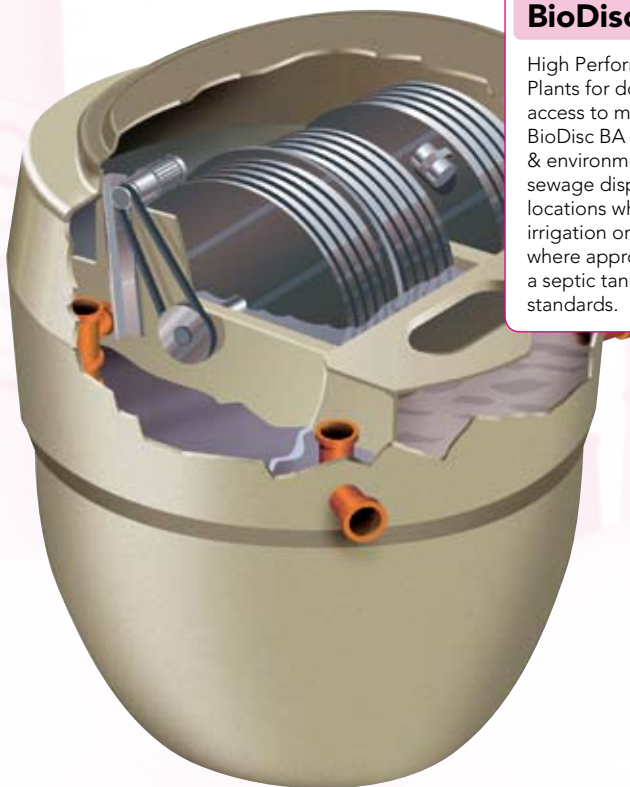


## Aeroclear 6

Manufactured under quality control system to BS EN 150 9001:2000 and constructed using the resin transfer moulding technique. The unit has greater strength for the same weight than tanks manufactured by traditional technologies. Submerged aerated media is used as the operating process resulting in a cleaner, quieter and more efficient treatment plant.

## BioDisc BA

High Performance Package Treatment Plants for domestic dwellings without access to mains drainage. The Klargest BioDisc BA provides a reliable efficient & environmentally safe solution to your sewage disposal needs. It is ideal for locations where discharge is to sub-surface irrigation or to a suitable water course where approved by the regulator and where a septic tank will not meet the required standards.



- ✓ BioDisc operates without noise or odour
- ✓ Maintenance requirements are low with good access
- ✓ Low power consumption at 1.3kw/d – approx. 10-14 pence per day
- ✓ Low sludge build up and large storage capacity
- ✓ Extremely quiet & reliable low power electrical motor

## Reedbeds

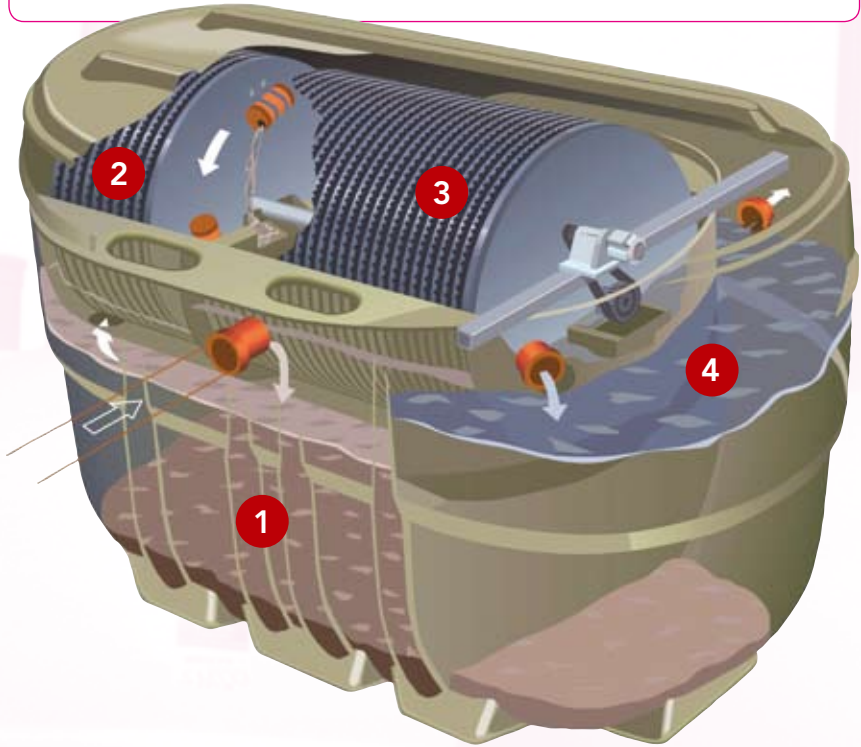
A reed bed is a natural filtration process used in conjunction with a BioDisc or AirFlow Treatment Plant to further enhance the quality of effluent migrating into surrounding watercourse.



- ✓ Tertiary treatment for new applications with tight discharge consents
- ✓ Satisfies new building regulations
- ✓ Improved effluent quality for existing works
- ✓ Very low maintenance
- ✓ Aesthetically pleasing, environmentally friendly & easy to install
- ✓ Significantly improves discharge from a treatment plant

## BioDisc BC-BG

Specialized High Performance Package Treatment Plants for residential & commercial applications. BioDisc Bc to BG units are compact, self contained, single piece treatment plants that utilize natural biological processes to effectively breakdown the pollutants in domestic & commercial waste water.

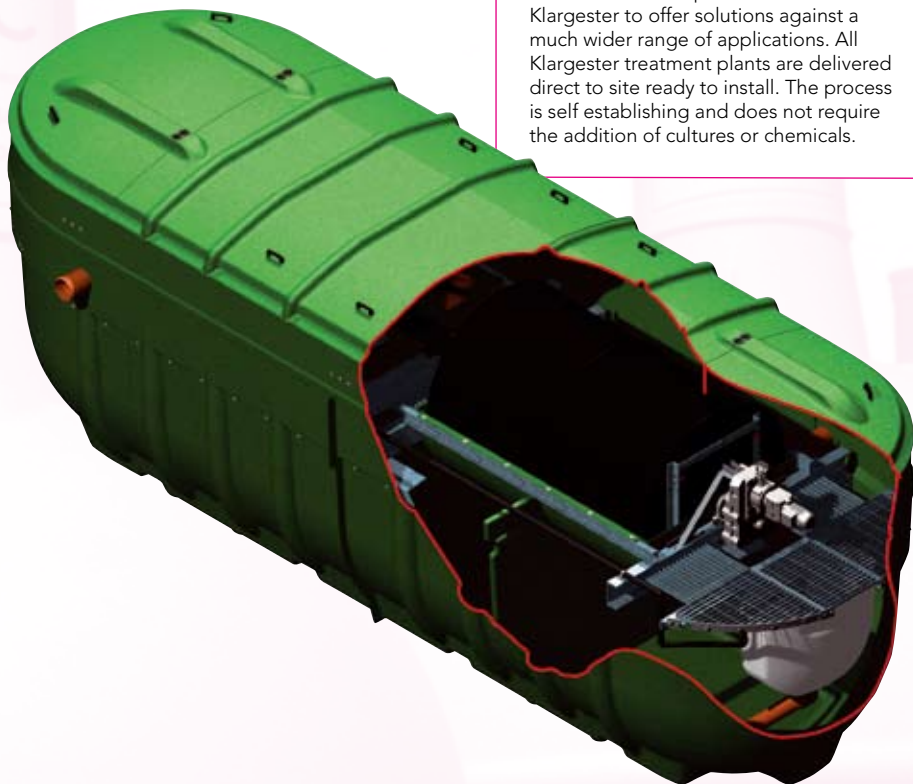


### The Treatment Process

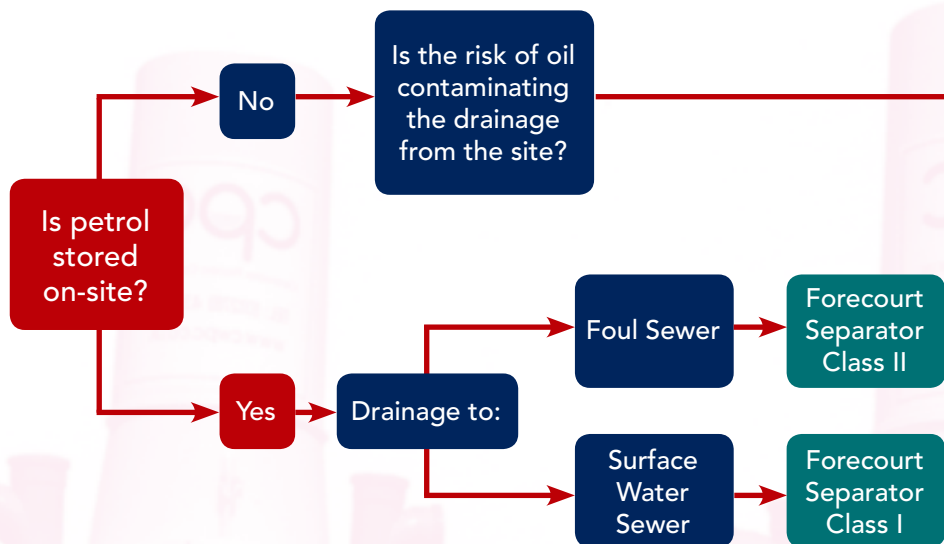
- 1 Waste water flows into primary settlement zone, where the solids are settled out and retained. Accumulated sludge should be drawn out periodically.
  - 2 Partially clarified liquor flows into the managed flow section of the biozone.
  - 3 Here it is buffered both organically & hydraulically before being fed at a controlled rate to the second stage of the BioZone for further biological treatment.
  - 4 Humus solids are settled out in the final settlement tank.
- ✓ Suitable for residential developments, camping sites, leisure developments & commercial schemes with maximum 70 full-time occupants
  - ✓ Nitrification units available where regulations require ammonia removal
  - ✓ Low profile covers to minimise visual impact
  - ✓ Self generating bacteriological process

## BioDisc BH-BL

High Performance Package Treatment Plants for Residential, Business & Leisure Applications. This new range of larger BioDisc treatment plants now enables Klargester to offer solutions against a much wider range of applications. All Klargester treatment plants are delivered direct to site ready to install. The process is self establishing and does not require the addition of cultures or chemicals.



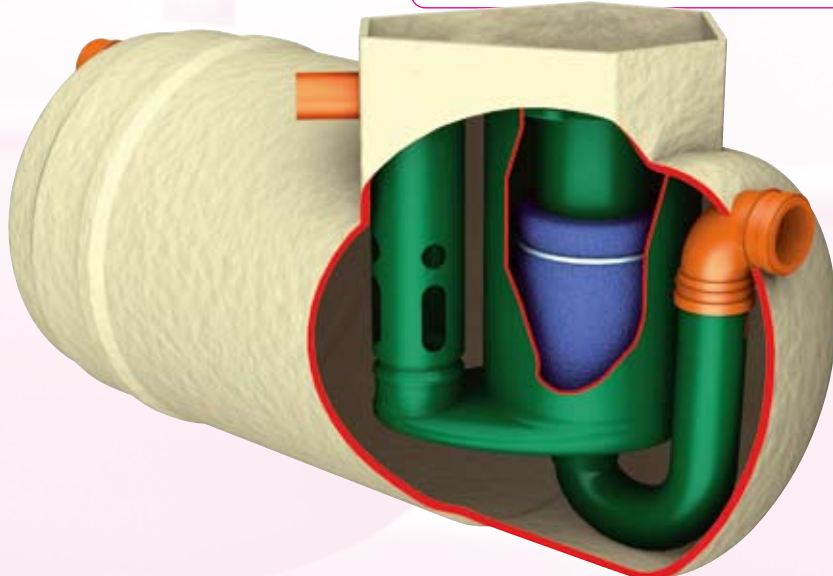
- ✓ Klargester Patented Flow management (KPFM)
- ✓ No process maintenance required
- ✓ Simple mechanics
- ✓ Self generating bacteriological process
- ✓ KPFM provides the capability to adjust plant performance
- ✓ Compliance with BS 6279 and Building Regulations Part H2
- ✓ Low head loss
- ✓ Sludge return pump in final settlement tank to enhance performance. Sludge return can be configured to help overcome seasonal flow variations
- ✓ No odour, fly or environmental nuisance
- ✓ Silent in operation

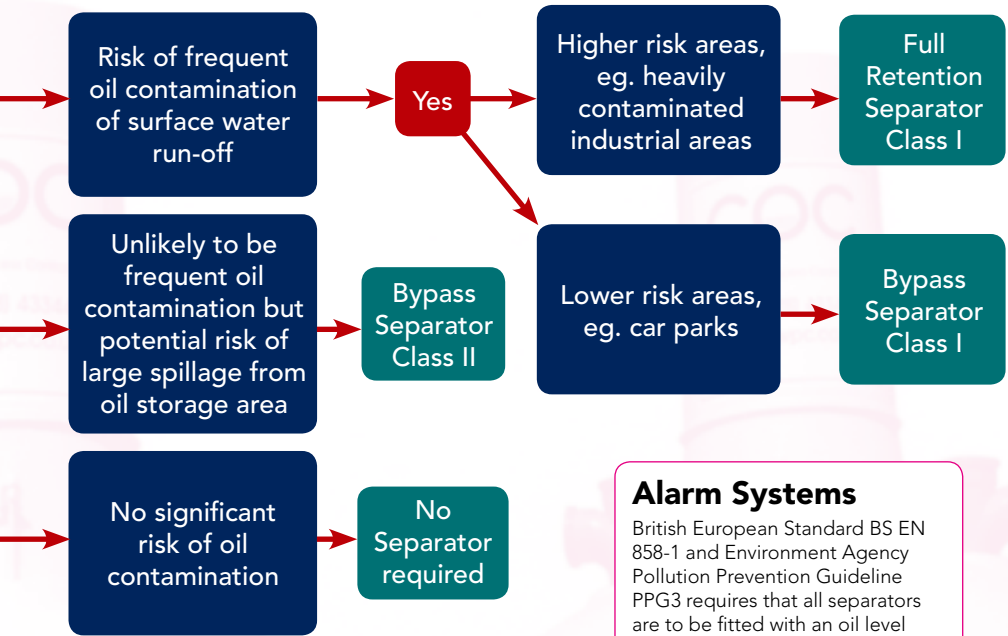


- ✓ All surface water treated
- ✓ Used on high risk sites
- ✓ Sized in litres per second flow
- ✓ Available in class 1 & class 2 formats

### Full Retention Separators

Full Retention Separators are used in high risk spillage areas such as; fuel distribution depots, vehicle workshops & scrapyards.





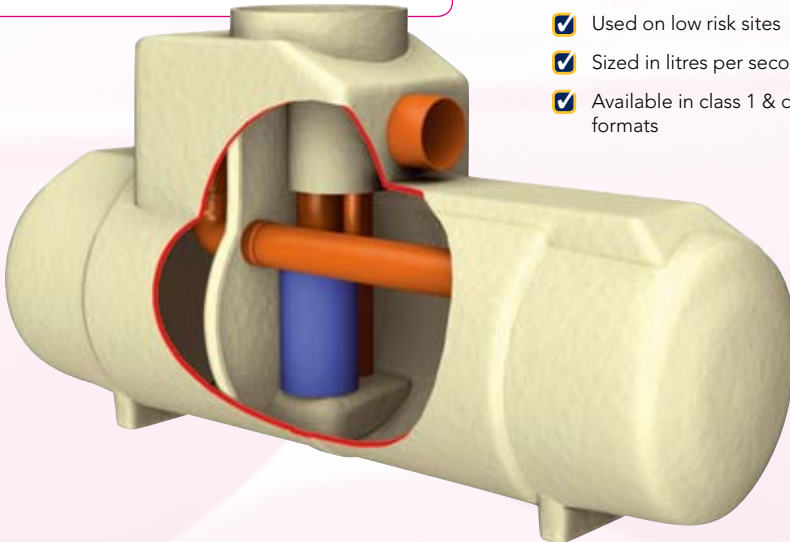
## Bypass Separators

Bypass separators are used when it is considered an acceptable risk not to provide full treatment, for very high flows, and are used where the risk of a large spillage and heavy rainfall occurring at the same time is small, such as; surface car parks, roadways & lightly contaminated commercial areas.

## Alarm Systems

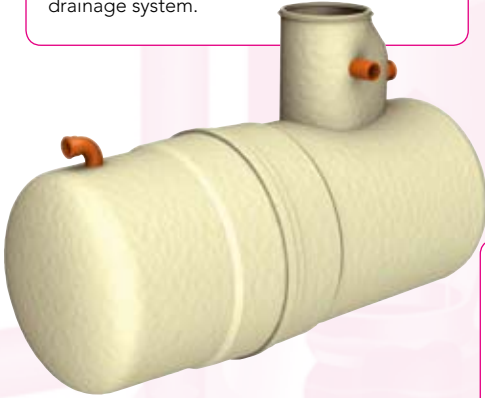
British European Standard BS EN 858-1 and Environment Agency Pollution Prevention Guideline PPG3 requires that all separators are to be fitted with an oil level alarm system and that it should be installed and calibrated by a suitably qualified technician so that it will respond to an alarm condition when the separator requires emptying.

- ✓ All surface water treated
- ✓ Used on low risk sites
- ✓ Sized in litres per second flow
- ✓ Available in class 1 & class 2 formats



## Forecourt Separators

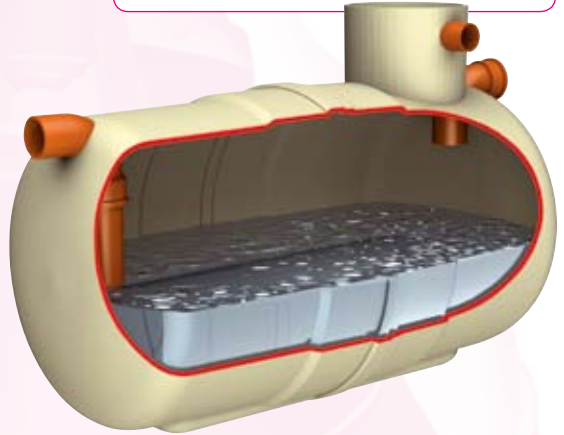
The forecourt separator is designed for installation in petrol filling station forecourts and similar applications. The function of the separator is to intercept hydrocarbon pollutants such as petroleum and oil and prevent their entry to the drainage system.



- ✓ Light & easy to install
- ✓ Inclusive of silt storage volume
- ✓ Fitted inlet/outlet connectors
- ✓ Vent point within necks
- ✓ Extension access shafts for deep inverts
- ✓ Maintenance from ground level
- ✓ Class 1 and Class11 design
- ✓ Automatic closure device

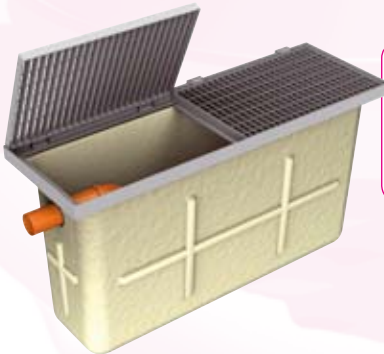
## Wash Down Separators

Used in areas such as car wash and other cleaning facilities that discharge directly into a foul drain, which then feeds to a municipal treatment facility.



Applications include

- ✓ Car wash
- ✓ Tool hire depots
- ✓ Truck cleansing
- ✓ Construction compounds cleansing points



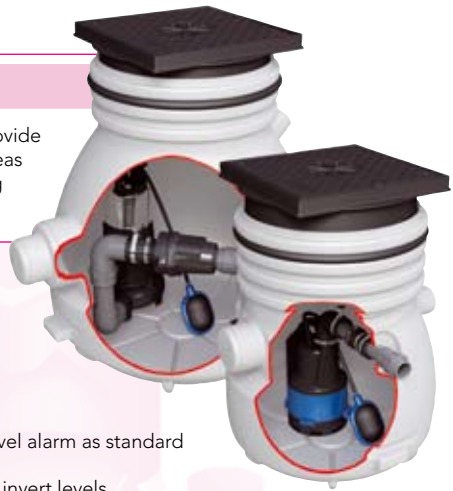
## Car Wash Silt Trap

Car Wash silt trap is designed for use before a separator in car wash applications to ensure effective silt removal.

- ✓ Galvanized heavy duty cover
- ✓ Light and easy to install
- ✓ Maintenance from ground level

## Compact Pump Systems

Designed for rapid installation, the chambers provide simple & speedy dewatering of buildings and areas below the sewer level & are suitable for pumping wastewater in accordance with DIN/EN12056.



- ✓ High level alarm as standard
- ✓ Various invert levels
- ✓ Internal lifting chains & guide rails
- ✓ Wide range of pump options including grinders/macerators
- ✓ Pedestrian/vehicle covers

## Hillmaster Pumping Stations

The Hillmaster range offers a competitive solution to the pumping requirements of both domestic & industrial applications. Often it can be preferable to keep civil work & installation costs to a minimum but such economy should not mean any shortfall in quality.

### Pumpstor 24

A range of high capacity pumping systems available in different chamber sizes for domestic & commercial applications.



- ✓ Multiple valve chamber location & invert options
- ✓ Weir cover screen prevents solids passing main storage chamber
- ✓ High level alarm (as applicable)
- ✓ Totally sealed system
- ✓ Minimum on-site assembly

## Below Ground Polypropylene Grease Traps

An effective and hygienic method of separating fat and grease from waste water flow. Grease traps should be installed close to the source of contamination before any foul waste can enter the drainage flow.

Grease traps are designed for small restaurants, public houses and canteens.

- ✓ Sealed system on all covers
- ✓ Robust, fully welded lightweight & corrosion resistant polypropylene body
- ✓ Six sizes up to 15l/s or 1000 meals per day capacity
- ✓ Lightweight polypropylene sediment basket with handle and location guide for easy maintenance



- ✓ Greatly reduce incidents of blocked drains from catering establishments
- ✓ Improve the performance of septic tanks and field drains
- ✓ Prevent contamination of small sewage treatment plants

## Free Standing Stainless Steel Traps

- ✓ Available in brushed steel & polypropylene finishes
- ✓ Three sizes available and capable of using up to 250 meals per day
- ✓ Lightweight sediment baskets with handle & location guide for easy maintenance



## Compact Stainless Steel Grease Traps



- ✓ Compact size with overall height at 340mm makes this unit ideal for single appliances
- ✓ 1 L/s rate ideal for single appliances
- ✓ Corrosion resistant 316 stainless steel construction
- ✓ Clear height requirement for sediment bucket removal just 535mm
- ✓ ø50mm male connectors supplied complete with 50/40mm push fit/solvent weld adaptor kit
- ✓ Lightweight polypropylene sediment basket with handle and location guide for easy maintenance
- ✓ Air tight metal band snap-fix lid

# MUNICIPAL CASTINGS & ACCESS PRODUCTS

BS EN 1425 Class	LOADING	Test load
A15	Access covers and gratings capable of withstanding a 1.5 tonnes test load. For use in areas where only pedestrians have access.	15 kN
B125	Footway locations and access areas where slow-moving emergency, public service and delivery vans have access and may park (pedestrian precincts, refuse collection access, forecourts and paved parking areas.	125kN
C250	Carriageways carrying all classes of fast-moving traffic but within 0.5m of the kerbside/up to 0.2m into the footway.	250kN
D400	Carriageways, hard shoulders and parking areas for all types of fast moving road vehicles.	400kN
E600	Non-carriageway areas imposing high wheel loads (docksides, airports etc).	600kN
F900	Areas imposing particularly high wheel loads (aircraft aprons etc)	900kN

\* Where there is any doubt, BS EN124 specifies that the higher class product **MUST** be used.

## DEFINITIONS

### Double Seal

A specifically designed mechanical device/support within the frame/cover enabling the placing of two suitable materials thus allowing the cover and frame to be classed as being a double seal system. If installed as recommended by the manufacturer, can be classed as being generally resistant to the egress of odorous gases and ingress of water, dust and debris, with twice the protection of a single seal.

NOTE: This does not imply that the unit will be Pressure-tight or Waterproof.

### Gas Tight

The access cover top designed to prevent the egress of gases to an agreed pressure.

### Locking Device

A means of securing the access cover to the access cover frame by use of an engineered device.

### Locking Screws/Bolts

A means of securing the access cover to the access cover frame by use of screws/bolts.

### Multiple Leaf

An access cover top consisting of two or more access covers within a frame.

### One Man Operation

All manner of operations to cover can be carried out to assembly, e.g. opening, lift-off closing by one person to agreed limits or recognised legislation as regards forces applied, length of reach etc.

### Safety Grid.

A grating fitted within an access cover frame below the cover to prevent the objects cover from falling into the chamber, once the cover is removed or hinged open.

### Support Beam

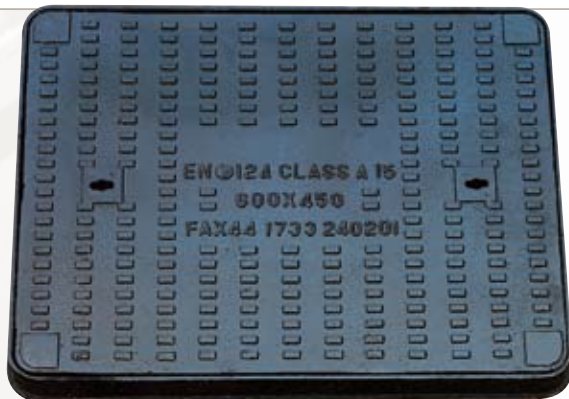
A member used to support the adjacent unsupported edges of a twin/multiple/linear access cover.

### Support Beam Pockets/Bracket

An assembly designed to support and fix the support beam to the chamber wall/supporting face.

## A15 Covers & Frames

The A15 range of cast iron single seal cover & frame is recommended for use in applications in areas where only pedestrians have access. Capable of withstanding a 1.5t load.



- ✓ Single seal
- ✓ Closed Keyways

## B125 Covers & Frames

The B125 range of ductile iron seal cover & frames is recommended for use in pedestrian areas where there is access by light vehicles.



- ✓ Single piece cover
- ✓ Single or double seal
- ✓ Security options available



## D400 Inter-Ax

The D400 Inter-Ax Ductile Iron Cover & Frames range boasts LTS (Load Transfer System) features, reducing the instance of premature failure of access covers by improving load transfer, reducing lateral shift, minimizing frame deflection and preventing bending of the flange. Maintenance-free performance is also derived from the excellent design of the LTS design.



Loading	Size (mm)	Depth (mm)	
		100	150
D400	600 x 600	✓	✓
D400	600 x 450	✓	✗
D400	450 x 450	✓	✗
D400	675 x 675	✓	✓
D400	750 x 600	✓	✓
D400	750 x 750	✓	✗
D400	900 x 600	✓	✗
D400	1250 x 675	✓	✗

- ✓ Double Triangular
- ✓ Non-rock design
- ✓ Reduced infiltration features
- ✓ HA104/2 compliant
- ✓ Special badging on request

## D400 Contractor

The D400 contractor is a heavy duty triangular range of ductile iron covers & frames based upon a standard framed manhole cover design that is cost effective and suitable for all locations.

- ✓ Non-rock 3 point suspension
- ✓ Ductile Iron
- ✓ Closed Keyways
- ✓ Special badging on request
- ✓ HA104/02 compliant
- ✓ Black bitumen coated



## Gully Grating & Frames

MB Civils comprehensive range of gully gratings & frames are recommended for use in city roads carrying continuous heavy traffic. The range includes double triangular non-rocking and captive hinged variants.



Options include

- ✓ Prizing slot
- ✓ Large water area

Options include

- ✓ Pedestrian & Cyclist safe grating design
- ✓ Captive hinged
- ✓ Single piece unit



Options include

- ✓ D400 Classification
- ✓ C250 Classification



## Bridgdek

Bridgdek Drainage System is a comprehensive range of combined kerb and drainage modules that can be used in new build and refurbishment applications. Bridgdek is a patented product and complies with the Manual Contract Documents for Highway Works.



## Iron Kerb Drainage Units



## Bedding Mortars

A cementitious product containing a blend of special cements & graded aggregates, which when mixed with water produce fast setting bedding mortars for the rapid installation of ironwork and highway furniture. They can be applied to depth of 10 – 100mm in one pass and the rapid strength development characteristics allow the road to be opened to traffic between 45–90 minutes after placement, dependent on the grade of product selected.



## Surface Boxes & Accessories



	Comparisons		GLW	Wheel Loads		Typical Applications	
FACT A Class	EN124 Class	BS497 approximate equivalent class	Gross Laden Vehicle Weight (slow moving)	Wheel Loads (slow moving) Pneumatic	Wheel Loads (slow moving) Solid	Pneumatic Tyres	Solid Tyres
A	A15	C	Pedestrian Only	0.6 tonne (5kN)	N/A	Internal and external areas which can only be used by pedestrians or cycles i.e. toilets, changing rooms, footways and cycle tracks	
AA	N/A	N/A	5 tonne	1.5 tonne	N/A	Very light industrial areas, where small trolleys and private cars/vans can manoeuvre i.e Domestic driveways, trolley parks, hospital wards.	
AAA	N/A	N/A	10 tonne	2.5 tonne (25kN)	0.5tonne	Delivery/service areas, shopping malls, light industrial areas	Light industrial areas, where trolleys and light pallet trucks operate.
B	B125	B	Up to 44 tonne	5.0 tonne (50kN)	0.75 tonne	Pedestrian precincts, forecourts, commercial delivery/ parking areas	Factories, industrial plants, where pick-up trucks and small pallet trucks operate
C	C250		Up to 44 tonne but under special conditions	6.5 tonne (65kN)	1.0 tonne	Factories, industrial plants, special axle loads, kerb side drainage	Industrial areas where pallet and small fork-lift trucks operate
D	D400	D	Up to 44 tonne but under special conditions	11.0 tonne (108kN)	3.0 tonne	Heavy duty plant areas, carriageways and industrial service roads where fast moving HGVs reach speeds of 20mph	Heavy industrial areas where medium duty fork-lift trucks operate
E	E600	N/A	Special application vehicles	16.0 tonne (158kN)	5.0 tonne	Dockside and container storage areas where heavy transporters operate	Very heavy industrial areas where large heavy duty fork-lift trucks operate
F	F900	N/A	Special application vehicles	24.0 tonne (237kN)	N/A	Civil and military airfield aprons, where particularly heavy wheel loads are imposed by aircraft and towing vehicles	

## DEFINITIONS

### Access Cover

Assembly consisting of a frame and cover or covers providing access to underground systems.

### Cover

The moveable part(s) of an access cover(s) the chamber or shaft.

### Composite Cover

Recessed cover which relies on structural infill material in order to achieve the stated performance.

### Fabricated Cover

Cover manufactured by welding or pressing of steel, aluminum or similar components.

### Recessed Cover

Fabricated cover the upper surface of which is recessed to allow for the insertion of additional structural or non-structural nature.

### Solid top Cover

Fabricated cover the upper surface of which has no provision for the insertion of additional structural or non-structural infill.

### Frame

The fixed part of an access cover which receives and supports a cover.

### Non-structural Infill

Material inserted in a recessed cover whether by the cover manufacturer or others which contributes to structural strength of the cover relies in order to achieve its rated performance.

### Structural Infill

A material inserted in a recessed cover whether by the cover manufacturer or others which contributes to structural strength of the cover and upon which the cover relies in order to achieve the rated performance.

### Acceptance test load

Test load comprising the static wheel load and the relevant allowances for overload & dynamic effects.

### Strength test load

Test load comprising the static wheel load and the relevant allowances for overload and dynamic effects.

### Test load (kN)

Load applied to access cover when tested.

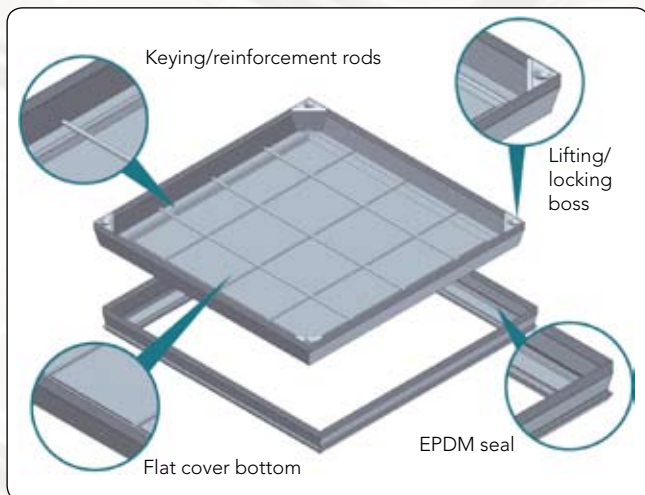
## ACO Eurocover

ACO Eurocover combines austenitic stainless steel and polyester resin concrete to produce a rigid, reliable air and watertight installation. Typical installations include kitchens, food and drink processing plants, abattoirs, hospitals, chemical and pharmaceutical plants, commercial premises & leisure centres.



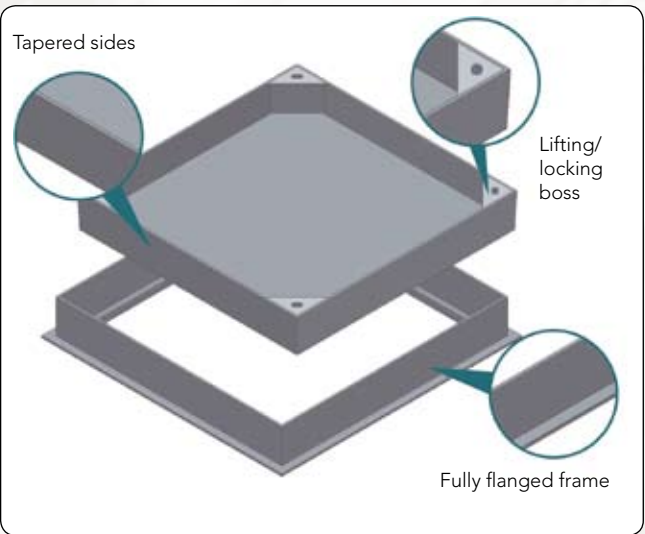
## Internal Recessed

- ✓ Recessed for filling on site enabling surrounding floor finish to be maintained
- ✓ Slide-out design to assist in cover removal
- ✓ Spacer clips keep cover/frame gap to a minimum during back filling
- ✓ Brass trim or stainless steel edge are available for aesthetic finishes
- ✓ Non-standard multiple
- ✓ Can be supplied with EPDM seal & locking bolts to provide resistance to escape of gas at atmospheric pressure



## External Recessed

- ✓ Heavy duty 6mm thick steel to resist flexing under load
- ✓ Tapered sides to prevent cover jamming
- ✓ Suitable for all types of concrete and clay blocks (up to maximum 100mm block depth) to maintain the attractive appearance of architecturally designed paved areas
- ✓ Non-standard sizes can be manufactured

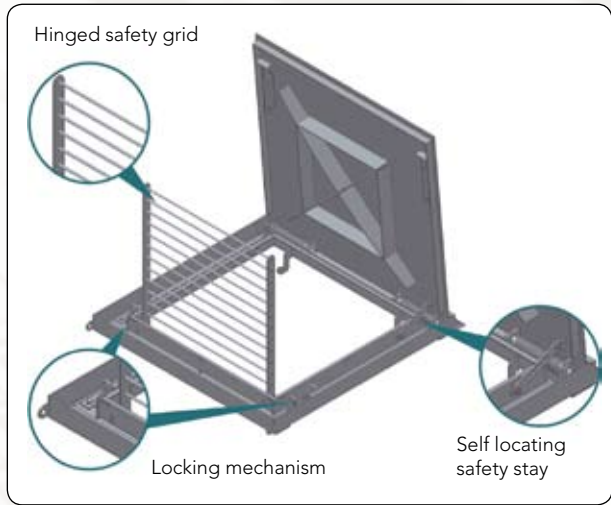


## Square to Round Recessed Covers

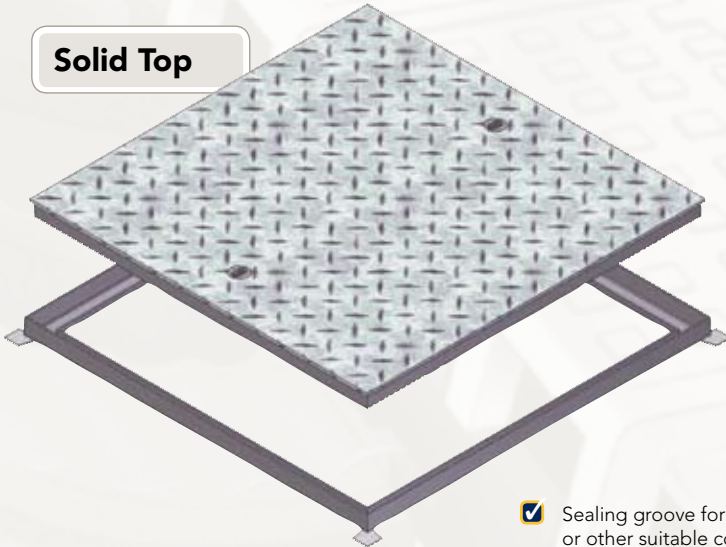
- ✓ Quick & easy to install
- ✓ Cover can be turned to fit direction of paving
- ✓ Circular opening in frame to fit majority of inspection chambers
- ✓ Guaranteed inter-changability

## PAM Defender

- ✓ Raised tread pattern cover reinforced on the underside, designed to meet FACTA requirements up to and including Class D
- ✓ Self-locating safety stay retains the cover in open position
- ✓ Nitrile seal
- ✓ Hinged safety grid
- ✓ Can be manufactured in stainless steel to accommodate aggressive environments



## Solid Top



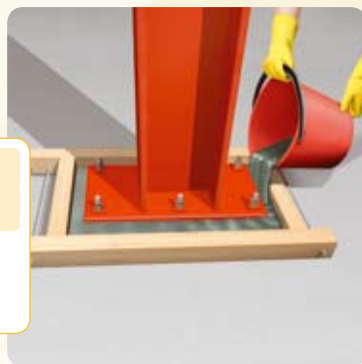
- ✓ Sealing groove for filling with grease or other suitable compound
- ✓ Self locating safety stay retains the cover in open position
- ✓ Lokanlift device fitted as standard
- ✓ Non-standard sizes can be manufactured

# CONSTRUCTION CHEMICALS

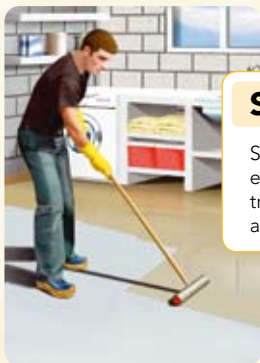
## SPECIALIST GROUTS

### **Sika® Flowable, shrinkage compensated cementitious grout**

One part, flowable, general, cementitious grout. For precision grouting underneath machine bases, structural steelwork, racking rails, crane rails etc.



## FLOORING



### **Sika® Epoxy Resin Floor Coating**

Solvent free, two component water dispersed coloured epoxy coating. It provides a protective surface treatment for concrete floors and walls exposed to light and medium use.

### **Sika® Concrete Sealing & Curing Compound**

A clear acrylic resin polymer solution, which impregnates concrete surfaces to cure, harden and seal fresh or hardened concrete.



# SEALING & BONDING

## Sika® Adhesive & Joint Sealant

One part, gun grade dual purpose adhesive and movement joint sealant compound of permanent elasticity. It is based on a moisture cured polyurethane with an accelerated curing time.

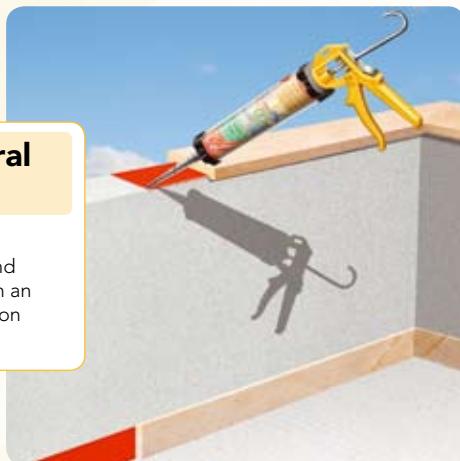


## Sika® Structural Epoxy Adhesive

A two component solvent free, cold cure, thixotropic epoxy adhesive suitable for damp and dry substrates. Available in two grades – Normal & Rapid.

## Sika® Gun applied Structural Epoxy Adhesive

A two component, solvent free, cold cure, thixotropic epoxy resin structural adhesive and repair mortar. It is supplied in a cartridge with an in-line mixer tip and is designed for application using a standard sealant gun.



## Sika® Waterproofing

Specialist mortars that are pre-batched kiln dried blends of specially graded aggregates and cements packaged in 4 grades at the appropriate mix ratios for optimum application performance and durability. When mixed with diluted Waterproof liquid they provide the multi-coat components for the structural waterproofing and waterproof render systems.



## Sika® Waterproofing Liquid Admixture

Waterproofer is an aqueous solution containing complex colloidal silicates. In the presence of water these swell and block the capillaries and pores in the applied sand/cement renders, screeds and mortar to provide an effective barrier against the transmission of liquid water.

## Sika® Waterstop

A ready to use quick setting leak stopping liquid which is mixed with water and standard Portland cement to produce a paste for leak stopping against high water pressure infiltration.

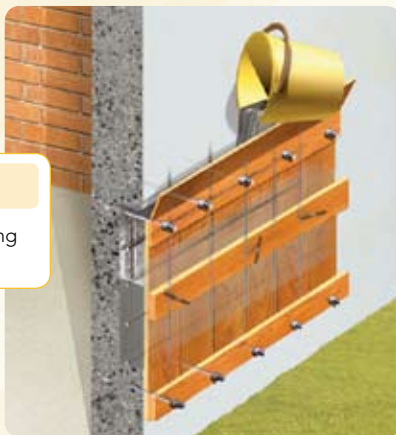


## Sika® Repair/Bedding Mortars

A one component, ready to use (just add water) magnesia phosphate based, rapid hardening and high early strength concrete repair and ironwork bedding mortar.

## Sikacrete® – 16 SCC

Ready to use cement based 0-16 mm self compacting concrete.



## Sika® Block Paving Fix

Sika® Block Paving Fix is a ready to use, moisture curing, jointing compound that gives perfect pointing for paths, patios and driveways. Suitable for both narrow and wide joints.

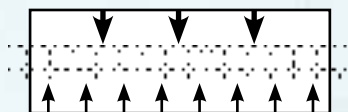
## SikaSet® 45

SikaSet® – 45 is a one component, ready to use [just add water] magnesia phosphate based, rapid hardening and high early strength concrete repair and ironwork bedding mortar.



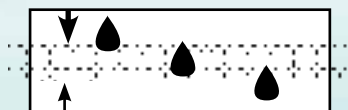
# GEOTEXTILES

Geosynthetic products play an integral role in the majority of building, civil & marine engineering projects. The range of applications & uses is vast, but the function of geosynthetics can be broken down into 6 broad categories. The following function symbols have been developed to provide a quick reference guide to the relative function of each geosynthetic product group.



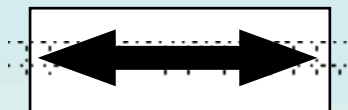
## 1. Separation

The use of a geotextile to prevent the intermixing of dissimilar soil layers.



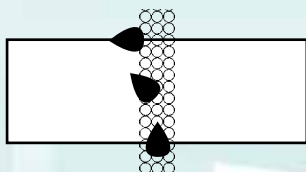
## 2. Filtration

The use of a geotextile to allow the passage of fluids (most commonly water) while preventing the uncontrolled passage of soil particles.



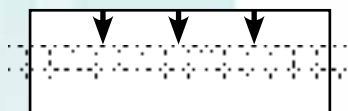
## 3. Reinforcement

The use of the tensile properties of a geosynthetic material to resist stresses or contain deformations in soil structure.



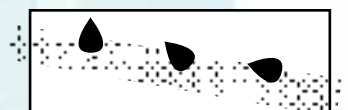
## 4. Drainage

The use of a geosynthetic layer to collect & transport fluids within its thickness.



## 5. Protection

The use of geosynthetic material as a stress reduction layer to prevent or reduce damage to an adjacent surface or layer.



## 6. Erosion Control

The use of a geosynthetic material to prevent the loss of soil particles from water erosion.

## Thermally Bonded Non-Woven Geotextiles

Thermally bonded non-woven Geotextiles have been developed for the lightweight separation & filtration applications, such as trench drains, wrapping of attenuation units, wrapping off perforated drainage pipes & encapsulation of granular drainage blankets.

### Applications

- ✓ Separating / strengthening layer under access roads & areas of hard standing
- ✓ Filter surround for trench drains
- ✓ Separation to stop the intermixing of dissimilar soil layers
- ✓ Filtration, allowing the flow of water whilst preventing the passage of soil



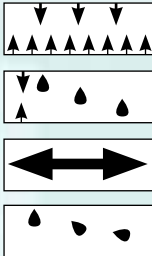
## Woven Geotextiles

Woven Geotextiles provide a cost effective solution for the separation of granular fill materials and for the provisions of sub structure support. The most common application is for separation and reinforcement of soil & aggregate layers beneath roads, helping to prevent rutting through separation & tensile support.



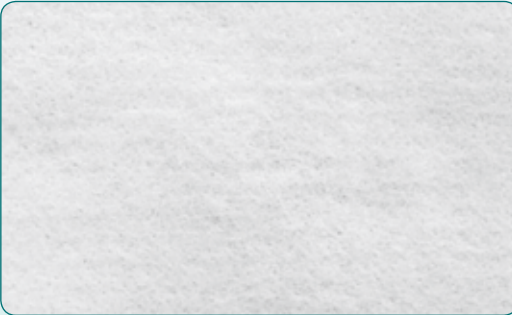
### Applications

- ✓ Separating for access roads & areas of hard standing
- ✓ Separating granular fill from sub soils & other fill layers
- ✓ Separating & reinforcing layers under new roads, car parks & industrial areas
- ✓ Separating & reinforcing layers under store foundation for new buildings
- ✓ Erosion control for coastal defences



## Needle Punched Non-Woven Geotextiles

These ranges of Geotextiles are manufactured by needle punching a web of high tenacity fibres to produce a consistent & uniform product of highest performance. They are ideal materials for use as pipeline protection fleeces, erosion control layers under rock armor, in coastal defense projects or as protection fleece for impermeable liners as landfill sites / SUDS related projects.



### Applications

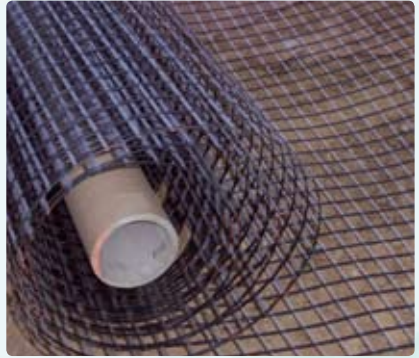
- ✓ Protection fleece for impermeable liners
- ✓ Land fill sites
- ✓ Protecting coastal defences from erosion
- ✓ Pipeline protection fleece
- ✓ River bank erosion control



## Multigrid Flexible Biaxial

Multigrid is a precision laser bonded biaxial geogrid. Multigrid has been designed to maximize bearing capacity and shear resistance in basal reinforcement applications, providing engineers with a cost-effective solution for sub-base stabilization.

Multigrid is most commonly used under permanent & temporary access roads and in general groundworks to provide a stable foundation over unstable/soft soils.



## E-Grid (Biaxial)

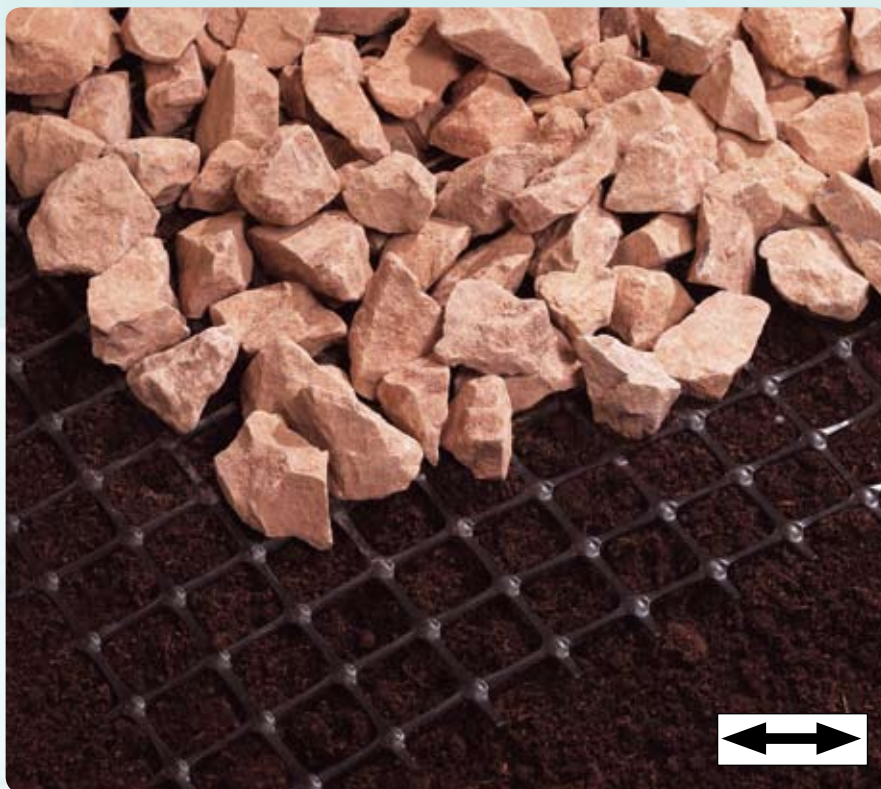
E-grid Biaxial geogrids can solve pavement problems by providing omni-axial reinforcement to granular sub-bases, capping layers & railway ballasts in areas of weak or variable soils. When granular particles are compacted over these grids, they partially penetrate & project through the apertures to create a strong & positive interlock. The load dispersal effect from the interlocking mechanism increases shearing resistance within the soil improving compaction and allowing the sub-base thickness to be decreased, ultimately reducing construction time & costs.

E-grid Biaxial geogrids can be employed in single or multi layers. The tough platform created provides tremendous load dispersal, allowing previously weak soils to be reclaimed for development e.g. Foundations, Motorways, Railways & Airport Runways.

Biaxial Geogrids are available in standard & large aperture sizes, to suit any fill material.

### Applications

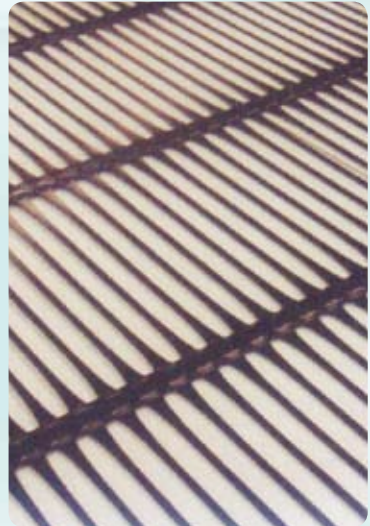
- ☒ Under roads
- ☒ Railways
- ☒ Ports & paved areas



## E-Grid (Uniaxial)

E-Grid Uniaxial geogrids are manufactured from high density polyethylene (HDPE), which is punched & drawn to create long apertures in the principle load carrying direction. Used in the reinforcement of walls & slopes, its principle characteristic is good creep performance with low strain & high strength under constant load.

Soil banks are constructed by wrapping E-grid Uniaxial geogrid around the soil face to the required slope angle, this process is repeated in layers to create a stable/steep embankment. Reinforced soil retaining walls can be constructed with a variety of faces, these structures can accommodate base deformation and have particularly good resistance to vibration. E-grid reinforcement can improve the bearing capacity & safety of a structure whilst helping to reduce construction cost.



### Applications

- ☒ Reinforcement of soil walls & abutments
- ☒ Soil slopes along side roads & railways



## Cellular Confinement System

Cellular confinement systems have been designed to prevent shear failure & lateral movement of aggregate materials. Cellular confinement systems stabilize the infill, providing load distribution over weak soils & base stabilisation for paved & unpaved roads. Cellular confinement systems can be installed & built up in layers to create steep & structurally sound embankments, often in support of roads & railways. This method of construction provides engineers with a cost effective & reliable method for embankment creation and helps to promote the growth of natural vegetation cover.

### Applications

- ✓ Road & pavement reinforcement
- ✓ Rail base stabilization
- ✓ Slope & channel protection & stability
- ✓ Earth retention for banks & slopes
- ✓ Earth walls
- ✓ Reservoir & landfill protection
- ✓ Vegetative slope confinement / erosion control



## Visqueen Gas Barrier

Visqueen Gas Barrier offers a safe solution for the protection of buildings against methane, radon and carbon dioxide, when installed in accordance with BRE Report: Construction of buildings on Gas Contaminated land.

Visqueen Gas Barrier is a multi layer reinforced polyethylene membrane with an integral aluminium foil. For ease of identification on site Visqueen Gas Barrier is coloured blue tint on one side and silver on the reverse. The Barrier is flexible and is easy to install. Visqueen Gas Barrier is also suitable for use as a damp proof membrane.

### Applications

- ✓ High quality Multi Layer Reinforced LDPE Polyethylene Membrane with Aluminium core
- ✓ High resistance to puncture
- ✓ Low permeability to methane, radon and carbon dioxide
- ✓ Also acts as a damp proof membrane
- ✓ High levels of tear and impact resistance



# HARD LANDSCAPING

## Hard Landscaping

MB Civils range of hard landscaping products includes kerbs, edgings and paving in a variety of finishes, colours, materials and styles. With extensive stocks and specials available on request we are sure to be able to supply a product that meets your requirements



# STREET FURNITURE

## Telescopic Bollards

The Marshalls Range of Telescopic Security Posts provide a simple, secure and cost effective method of protecting premises and vehicles. The range is manufactured in steel, stainless steel and Rhinocast polymer and is available in a wide range of colours and finishes.



## Static Bollards

The Marshalls Static Bollard Range is offered in steel and stainless steel, cast iron and polymer, concrete, plastic and timber. All products have been treated to reduce the time effects of weathering and are supplied colour finished. A range of options permits customisation to meet any requirement. All products can be adapted to include motifs and can be coloured to match most British Standard or RAL numbers.





## Seating



- ✓ Seats and benches available which can also be supplied in various modular configurations
- ✓ Steel & Stainless Steel seats and benches are supplied with a standard length of 1800m. Various other lengths & configurations are available on request
- ✓ Arm supports available for seats or benches

## Litter Bins



## Cycle Parking



## Barriers



## Tree Grills



## Planters



## Street Signage



# SITE SAFETY EQUIPMENT

Each branch in the Macnaughton Blair network stocks an extensive range of Personal Protection Equipment (PPE) including; safety helmets, gloves, eye protection, high visibility clothing, safety footwear, hearing protection, respiratory protective equipment & safety harnesses.



*We are happy to quote for bulk supply of safety equipment for site use.*

# ROAD TRAFFIC MANAGEMENT

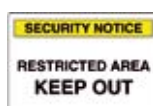
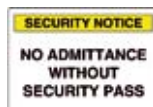
## Road Traffic Management

MB Civils can supply barrier systems road traffic cones and road traffic signs, both temporary and permanent, in either plastic, metal or aluminum.



## Signs

MB Civils can supply barrier systems road traffic cones and road traffic signs, both temporary and permanent, in either plastic, metal or aluminum.



MB Hire is a specialist plant, tool, equipment and scaffolding hire division operating from 7 branches operating across Northern Ireland & Isle of Man. MB Hire offer a professional hire service to all their customers, with a consistently high standard of advice, quality equipment & customer service. MB Hire achieves this through:

### **QUALITY EQUIPMENT**

MB Hire invests heavily in plant, tool & equipment and only stock branded products. All equipment undergoes full servicing after each hire and our servicing procedures are consistently checked, ensuring that as a minimum the Hire Association of Europe standards are met.

### **COMPETITIVE PRICING**

MB Hire operates a standard pricing policy and operate local flexibility to ensure we maintain our renowned competitive position.

### **FAST SERVICE**

MB Hire customer requests are dealt with promptly, efficiently and courteously. Should you require delivery our fleet of dedicated delivery vehicles will ensure that the equipment arrives on site on time.

### **PROFESSIONAL, KNOWLEDGABLE STAFF**

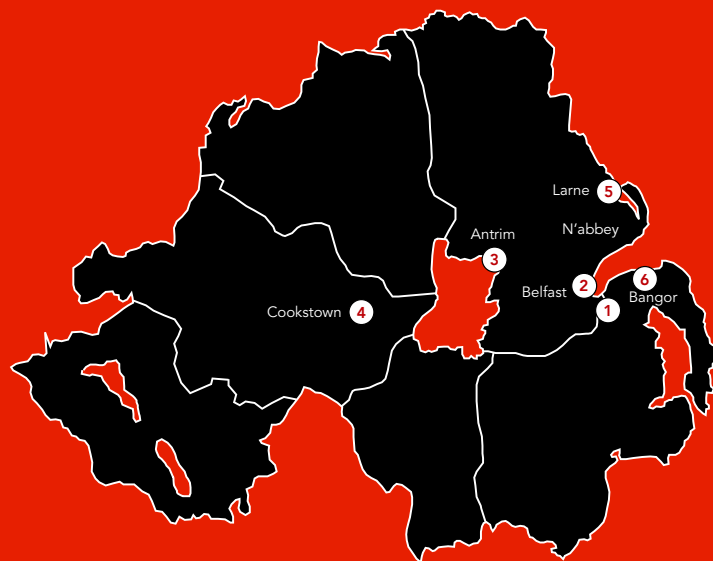
MB Hire staff attend regular training courses designed to ensure they all possess comprehensive knowledge of the equipment we hire and its applications, thereby ensuring that quality advice is provided for our customers.

### **CONVENIENCE**

Because MB Hire is situated within a number of our Builder Centres, we are effectively providing you with a one-stop for all your building materials and hire requirements.

To receive your own copy of the MB HIRE Guide call into any MB HIRE centre or visit our website [www.mbhire.com](http://www.mbhire.com)





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 **HOUTMAN**  
SCAFFOLDING

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# MacBlair Civils

Civil & Environmental Protection



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