

Car Parks

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The Intesio AquaCell unit is modular (1.0m x 0.5m x 0.4m), has a capacity of 190 litres and weighs 9kg. It is 95% void and has a surface area that is 43% perforated. Conical columns within the unit ensure high strength and rigidity.

AquaCell units are clipped together in single layers and pegged together in multiple layers. Conventional pipework is connected to the units by means of a number of adaptors.



AquaCell Stormwater

Supplier Code	Description	Keyline Code
6LB100	AquaCell Unit	992674
6LB050	AquaCell Lite Infiltration Unit	222571

Ancillary Items

6UR141	S/S Adaptor - 6UR Socket x 160mm BS EN 1401 Spigot for connection to Osma UltraRib in Infiltration Unit	800828
6UR099	S/S Level Invert Reducer - to 110mm OsmaDrain Pipe	800831
6TW141	S/S Adaptor - 6TW Socket x 160mm BS EN 1401 Spigot	924181
6D099	S/S Level Invert Reducer - to 110mm OsmaDrain	711893
4D916	PE Adaptor - 160mm Spigot Connection to OsmaDrain	860966
6LB104	Flange Adaptor - 6UR Socket for Connection of Osma UltraRib to Infiltration Unit Positions other than Preformed Opening	514347
6LB105	AquaCell Clip (spare) - for Joining Infiltration Units	992675
6LB102	AquaCell Shear Connector (spare) - for Joining Infiltration Units in Multi Layer Installations	514350
6LB600	500mm Silt Trap - 1.25m depth	536805
6LB106	225mm Flange Adaptor	700101

AquaCell

Eco

Intesio AquaCell Eco has been designed and developed for landscaped and other traffic-free areas where heavy loading capability is not required. This now enables specifiers, developers and contractors to choose the right product to suit each situation.

The new AquaCell Eco (green unit) offers all the proven installation versatility and functional performance advantages of the original AquaCell blue unit, but it has been specifically engineered to provide a cost-effective option for low-loaded locations.

In addition to features and benefits applicable to BOTH systems those specifically applicable to AquaCell Eco (black unit) include:

Key Benefits:

- Proven vertical loading capacity: 17.5T/m²
- Proven lateral loading capacity: 4T/m²
- For installation depth (to base of units) of up to 1.5m maximum
- Built in 'hand holes' for easy carrying/handling
- Distinctive BLACK colour - easy to identify & 100% recycled for improved sustainability
- Specifically designed for restricted depth, low loaded, landscaped sites: - ideal for smaller projects.

Note:

NOT suitable for locations subject to a high water table.

Typical applications:
Domestic gardens,
grassed and leisure
areas, roundabouts.

See above
for AquaCell technical
information.



ACO StormBrixx is a unique and patented plastic geocellular stormwater management system design for surface water attenuation and infiltration.

Applications:

- /// Can be assembled in a variety of different tank configurations to satisfy installation and site requirements
- /// Patented brick bonded and cross bonding feature provides strong long term installation for optimum stability
- /// Open cell structure permits 3D inspection access addressing fundamental access and maintenance requirements
- /// Low flow, draindown and silt management facility
- /// ACO StormBrixx simplifies delivery, site logistics and installation as a result of its stackable design
- /// High void ratio minimises excavation volume.



Polystorm

Modular Cell System



Polypipe's extensive range of modular cell products provides an efficient and sustainable method of storing large volumes of run-off for water attenuation or soakaway applications.

Because they share the same interlocking mechanism, Polystorm, Polystorm-R, Polystorm Lite and Polystorm Xtra can be combined to form a value-engineered hybrid solution to accommodate a broad range of surface loadings and run-off volumes.

Key Benefits:

- /// Range: spans from 20 tonnes per square metre to 80 tonnes per square metre load bearing capacity
- /// 95% void ratio - providing greater water storage capacity and reduced excavation and disposal costs
- /// Modular units - allows flexibility of shape
- /// Light weight yet robust - excellent Health and Safety and installation benefits
- /// Easy to handle - unique rounded corners for ease of handling and reduces likelihood of punctures to membranes
- /// Cost effective - especially when used as a hybrid, value engineered system
- /// Recyclable - 100% recyclable at the end of its useful life
- /// Suitable for both attenuation and soakaway systems
- /// Manages water at source
- /// 50 year design life
- /// BBA Approved
- /// Hybrid solutions available.



Ridgistorm-XL is Polypipe's large diameter pipe range for Civils and Infrastructure projects.

Available in a range of sizes from 750mm right up to 2100mm, it is a sustainable, cost effective and durable alternative to clay or concrete systems, offering rapid installation, improved leak tightness and resistance to settlement and ground loads.

Ridgistorm-XL can be value engineered to suit any application. By analysing the site conditions and installation parameters, Polypipe's design engineers can create a solution with the appropriate profile strength and stiffness that is neither over nor under engineered.



Polypipe

Ridgidrain

	100mm	150mm	225mm	300mm	375mm	450mm	600mm
Solid (Unperforated) 6m Pipe Plain Ended	○	●	●	●	●	●	●
Half Perforated 6m Pipe Plain Ended	○	●	●	●	●	●	●
Fully Perforated 6m Pipe Plain Ended	○	●	●	●	●	●	●
Solid (Unperforated) 6m Pipe Socketed	n/a	●	●	●	n/a	●	●
Half Perforated 6m Pipe Socketed	n/a	●	●	●	n/a	●	●
Fully Perforated 6m Pipe Socketed	n/a	●	●	●	n/a	●	●
Bends	□	Δ	Δ	Δ	Δ	Δ	Δ
Junctions	□	Δ	Δ	Δ	Δ	Δ	Δ
Double Sockets	○	●	●	●	●	●	●
Sealing Rings	○	●	●	●	●	●	●
Reducers	□	□	□	□	□	□	□
End Caps	□	Δ	Δ	Δ	□	□	□

● BBA & HAPAS Approved ○ BBA Approved Δ HAPAS Approved □ Not approved but manufactured

Key Benefits:

- Full range of pipes and fittings from 100 to 600mm
- Incorporates recycled plastic
- BBA Approved
- Longer lengths so fewer joints for improved resilience to leakage
- Structured wall design for high ring stiffness and strength
- Lower weight for reduced transport/installation costs and improved Health & Safety Benefits

- Reduced CO₂ consumption in production, transportation and on-site handling up to 94% lighter than concrete means fewer delivered to site
- Withstands ground movement and differential settlement
- Extremely smooth bore so less likely to block and more easily maintained
- Integral sockets in diameters 150-600mm for ease of installation - greater joint integrity.

Flow Control Units

The vortex flow control is a self-activating flow control device which induces a vortex motion in the flow to control the rate at which water is allowed to enter downstream drainage systems. The energy inherent in the water flow is harnessed to generate the vortex and hence has no need of external energy requirements. The flow control itself has no moving parts.

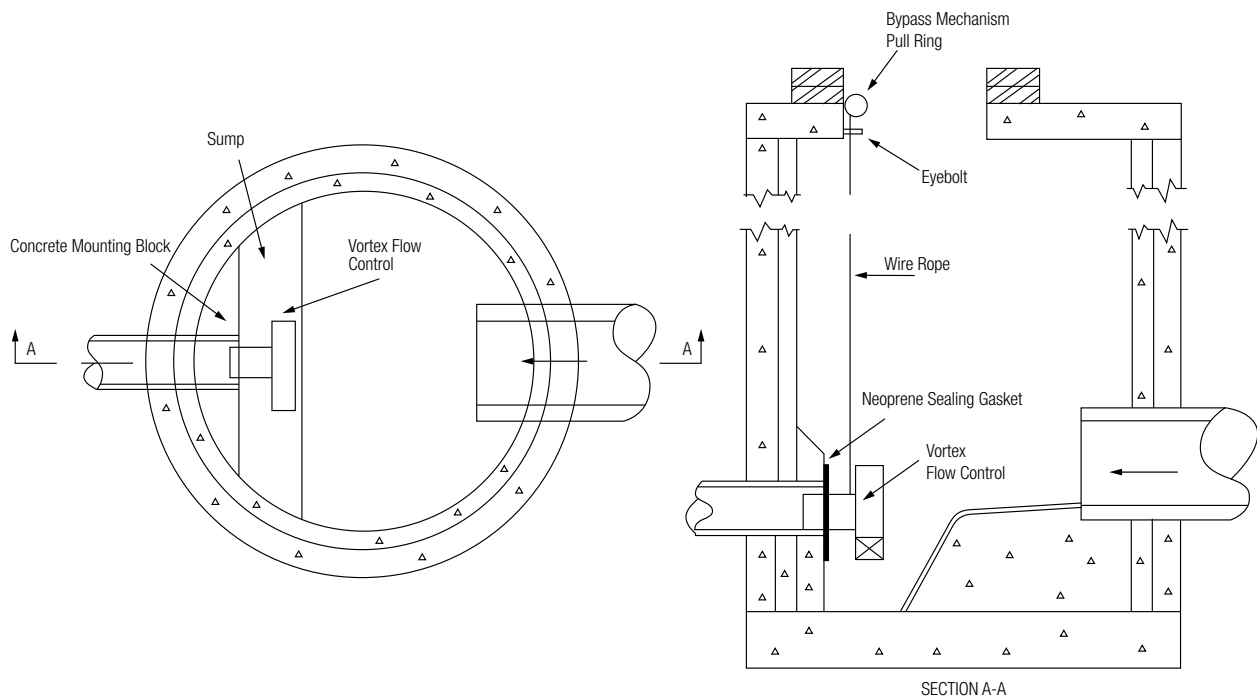
The VFC has a superior hydraulic performance when compared to conventional flow controls such as orifice plates, throttle pipes and penstocks. With outlet diameters up to 400% larger than conventional flow control devices, the risk of blockage is minimised. VFCs have a unique head/flow characteristic with a distinctive "S" shaped curve with high flush and kick-back flow points. This characteristic can reduce storage volume requirements thereby lowering project costs.



Applications:

- ▀ Control of surface water run-off from
 - Housing
 - Industrial developments
 - Infrastructure developments
 - Land drainage
- ▀ Flow balancing in new and existing sewerage systems
 - Sewage treatment works
 - Potable water treatment plants
- ▀ Control of pass-on flows from
 - Combined sewer overflows
 - Storage tanks
 - Reservoirs
 - Swales.
- ▀ As part of flood and pollution alleviation schemes within
 - Existing sewerage systems
 - River networks

Model SW/TW Vortex Flow Control Installation Drawing



A prefabricated manhole base unit with integral benching, channels and connectors that provides an immediate and long lasting watertight solution in the management of waste water.



- /// Cost savings achieved as a result of speed of installation and reduced resource requirements
- /// A watertight homogenous base section is achieved once the base is lifted into position and when utilised with our new "no lifting holes" chamber rings, the complete structure is watertight
- /// The base unit requires no further wet-trades once it is fixed into position
- /// Follow up operations can commence immediately
- /// Quality of the channel and benches are far superior because the unit is precast in a factory environment
- /// It provides a solution that offers increased confidence in ability to meet industry standards than current practice
- /// Reduced site skill requirement due to factory pre-fabrication
- /// Improved construction safety as ground workers spend less time in trenches and inside the manhole
- /// It yields environmental advantages as less concrete is used and less excavated material being disposed in landfill
- /// Maintenance of the channel and benches are reduced due to the quality of the factory produced product
- /// Should entry be required by maintenance personnel, the quality and disposition of the benches enhances the Health and Safety of maintenance crews
- /// Approved for use in manhole construction in accordance with Sewers for Adoption 7 (2012).

A 130mm thick Wide Wall Manhole Chamber in combination with the Easi Base unit, provides a sealed watertight manhole system. No concrete back fill required in accordance with Sewers for Adoption 7 (2012).

- /// Watertight on construction
- /// Lifting loops built into wall
- /// Safer lifting system (spherical head lifting system)
- /// Cost saving - no back fill with concrete.

FP McCann wide wall manholes have been designed with a tongue and groove dimension to accommodate the use of bituminous sealant. An FP McCann approved sealant should be used at all times. The sealant requirement for wide wall manholes is 12mm x 120mm x 6mm. When placing sealing strip into position during installation, the ends of the strips must be overlapped by a minimum of 30mm and cut at an angle of 60 degrees. The cut ends must then be pressed together.





After an extensive research programme, CPM introduced the 1200mm Perfect Manhole system in October 2009 to meet the challenges of modern day construction. Today it is available in 1200mm, 1500mm and 1800mm diameters and comprises of a monolithic precast concrete base (available pre-benched in any configuration within just days of requisition), a sealed chamber ring (with thicker walls than a standard CPM chamber ring), a rubber joint and a sealed cover slab which is supplied with your required access. Other diameters are available upon request.

The Perfect Manhole complies with BS EN 1917:2002 and BS5911-3 and meets with WRc Approval and is accepted for use by all major UK companies.

- /// Build Greener - up to 40% lower greenhouse gas emissions
- /// Build Leaner - saves material and labour/less waste
- /// Build Faster - speedy installation
- /// Build Safer - no confined space working, open manhole closed quicker
- /// Build Quality - Watertight system made in factory conditions and kitemarked.

Stanton Bonna

Perfect Manhole Systems & Bases



The Perfect Manhole System is a precast off-site solution which enables contractors to install a modular watertight manhole in a fraction of the time of a traditional build, without the need for a concrete surround.

The unique system comprises a monolithic precast watertight concrete base prebenched to any inlet/outlet configuration together with thick walled chamber rings with watertight joints incorporating an elastometric gasket and a sealed cover slab. The system also incorporates push fit elastometric seals for inlet and outlet pipes.

Specifiers, designers and contractors can be assured that the Perfect Manhole System offers a safer, faster, sustainable, precast off-site and bespoke manhole solution.

- /// Available in DN1200 and DN1500
- /// Available in section depths of 250, 500, 750 and 1000mm
- /// Reducing slab available
- /// Varying section depths for efficient construction
- /// Available with or without steps
- /// Available with or without benching
- /// Installation guide provided
- /// Base unit available to suit standard joint chamber rings
- /// Base weights are max 1.8t for DN1200 and 4t for DN1500
- /// Fully complies with Sewers for Adoption 7 (2012).

Concrete Pipe



Keyline offers an extensive range of precast flexible joint pipes from DN 300 to DN 2400, including bends, junctions and shorter lengths for rocker and butt pipes.

Pipes are supplied with various jointing options, dependent upon contractors' needs and manufacturers' production processes. Contractors should refer to our manufacturers' installation recommendations, in addition to relevant regulations, as there are lifting and handling systems and specific jointing procedures available.

All products are available to meet classes of exposure to sulphate attack.

Concrete pipes are vertically cast using vibration to compact a semi-dry concrete mix into the mould. Pipes are manufactured to BS EN 1916 and Kitemarked accordingly.

Nominal Size	Pipe Dimensions				Delivery Details			Minimum Crushing Load Class 120
	Effective Length	External Diameter		Wall Thickness	Approx. Weight of Pipe		Max Products Per Load*	
		Socket	Barrel		Full Length	Rocker		
DN	'A' mm	'B' mm	'C' mm	'D' mm	kg	kg	No.	kN/m
300	2500	487	410	55	425	135	65	36
375	2500	562	485	55	505	155	54	45
450	2500	670	578	64	710	225	37	54
525	2500	792	669	72	950	300	28	63
600	2500	876	768	84	1215	375	22	72
675	2500	968	825	75	1275	650	21	81
750	2500	1056	910	80	1500	750	18	90
800	2500	1130	975	85	1650	775	16	96
900	2500	1248	1080	90	2025	925	13	108
1050	2500	1436	1260	105	2700	1250	10	126
1200	2500	1616	1440	120	3500	1550	8	144
1400	2500	1740	1680	150	4550	2275	6	168
1500	2500	1950	1800	150	5300	2700	5	180
1600	2500	1980	1920	160	5580	2830	4	192
1800	2500	2220	2160	180	7100	3600	3	216
2000	2400	2460	2400	200	8700	-	2	240
2200	2320	2640	2640	220	10400	-	2	264
2400	2500	2840	2840	220	11200	-	2	288

All dimensions and weights are approximate. Customers should ensure that lifting equipment has sufficient capacity to allow for variations. Products may vary by manufacturer.

* Based on 28T load, exact quantity per load to be confirmed when ordered.





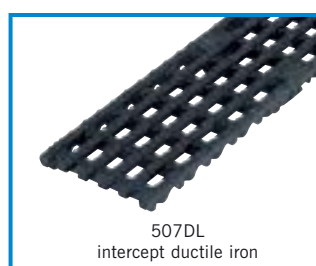
ACO's most popular general purpose drainage system suitable for a wide range of civil applications. Certified to BS EN 1433:2002 D 400*.

- Available in 100, 150 and 200mm channel widths and a range of depths to suit many different catchment areas
- Manufactured from Vienite® recycled polymer concrete with UltraSTEEL™ protective edge rails
- Wide choice of grating styles available to cater for many different pedestrian and vehicular trafficked applications
- Gratings fitted with ACO Drainlock™ – a bar-less locking device which reduces the risk of blockages
- Corrosion resistant stainless steel channel and grating options available
- Off-set brickslot galvanised & stainless steel grating available for discreet slot drainage applications
- Suitable for commercial and residential developments, pedestrian precincts, landscaping and parking areas for all vehicle types*

* This system is not suitable for carriageways of public roads or motorways.

Product code	Description	Length (mm)	Width overall (mm)	Depth overall (mm)	Invert depth (mm)	Invert Type	Weight (kg)
23000	M100D No. 0.0*	1000	135	150	130	1/3	13.2
23050	M100D No. 0.1J*	500	135	150	130	1/3	7.6
23001	M100D No. 1	1000	135	150/155	130/135	2	13.5
23002	M100D No. 2	1000	135	155/160	135/140	2	13.8
23003	M100D No. 3	1000	135	160/165	140/145	2	14.1
23004	M100D No. 4	1000	135	165/170	145/150	2	14.4
23005	M100D No. 5	1000	135	170/175	150/155	2	14.7
23006	M100D No. 6	1000	135	175/180	155/160	2	15.0
23007	M100D No. 7	1000	135	180/185	160/165	2	15.3
23008	M100D No. 8	1000	135	185/190	165/170	2	15.6
23009	M100D No. 9	1000	135	190/195	170/175	2	15.9
23010	M100D No.10	1000	135	195/200	175/180	2	16.2
23100	M100D No.10.0*	1000	135	200	180	1/3	16.2
23101	M100D No.10.1J*	500	135	200	180	1/3	9.2
23011	M100D No.11	1000	135	200/205	180/185	2	16.5
23012	M100D No.12	1000	135	205/210	185/190	2	16.8
23013	M100D No.13	1000	135	210/215	190/195	2	17.1
23014	M100D No.14	1000	135	215/220	195/200	2	17.4
23015	M100D No.15	1000	135	220/225	200/205	2	17.7
23016	M100D No.16	1000	135	225/230	205/210	2	18.0
23017	M100D No.17	1000	135	230/235	210/215	2	18.3
23018	M100D No.18	1000	135	235/240	215/220	2	18.6
23019	M100D No.19	1000	135	240/245	220/225	2	18.9
23020	M100D No.20	1000	135	245/250	225/230	2	19.2
23200	M100D No.20.0*	1000	135	250	230	1/3	19.3
23201	M100D No.20.1J*	500	135	250	230	1/3	10.8
23300	M100D No.30.0*	1000	135	300	280	1/3	22.4
23301	M100D No.30.1J*	500	135	300	280	1/3	12.5

Product code	Description	Length (mm)	Width overall (mm)	Depth overall (mm)	Slot width / hole dia (mm)	Intake area mm ² /m	Anti-shunt feature	Weight (kg)
12680	Heelguard™ composite - black 522DL	500	123	21	8	14250	Yes	1.2
12673	Intercept ductile iron 507DL	500	123	21	31 x 12	43000	Yes	3.5
12614	Slotted galvanised steel 423DL	1000	123	21	10	31200	n/a	4.3
12615	Slotted galvanised steel 424DL	500	123	21	10	31200	n/a	2.2
12656	Perforated galvanised steel 12656DL	1000	123	21	6	17800	n/a	2.2
12657	Perforated galvanised steel 12657DL	500	123	21	6	17800	n/a	1
12618	Mesh galvanised steel 410DL	1000	123	21	25 x 12	88000	Yes	3.1
12619	Mesh galvanised steel 412DL	500	123	21	25 x 12	88000	Yes	1.5



Product code	Description	Length (mm)	Width overall (mm)	Depth overall (mm)	Slot width / hole dia (mm)	Intake area mm ² /m	Anti-shunt feature	Weight (kg)
23405	Heelguard™ ductile iron 23405DL	500	123	21	8	25400	Yes	4.2
23406	Ductile iron solid cover 23406DL	500	123	21	n/a	n/a	Yes	4.5
23408	Slotted ductile iron 23408DL	500	123	21	12	36200	Yes	3.8



Product Name	Channel Type	Overall Channel Height mm	Run of 20m	Max Area/m ² Run of 30m	Run of 50m
S100	S01	137	270	250	-
	S05	161	375	350	313
	S010	191	525	490	440
	S020	251	870	815	735
	S030	311	1265*	1185	1075
S150	1501	220	1010*	970*	895*
	1502	270	1480*	1415*	1305*
	1503	320	2015*	1900*	1770*
S200	2300	309	2465*	2375*	2230*
S300	2400	390	-	5725†	5455†

* Flows will require a 160mm outlet or universal gully † Flows will require at least a 200mm outlet, or possibly two gully units



ACO S Range is a tough channel drainage system designed to provide efficient removal of surface water in heavy duty parking applications. Certified to BS EN 1433:2002 up to Load Class F 900.

- Available in 100, 150, 200 and 300mm channel widths with level or stepped invert depths for efficient scheme design
- Manufactured from Vienite® recycled polymer concrete with cast iron protective edge rails
- Choice of grating styles available to cater for pedestrian and vehicular trafficked applications
- Gratings are securely fastened with locking bolts to prevent grating displacement
- Tough, robust design for demanding heavy duty applications such as distribution yards, parking, aircraft pavements, ports and docks.

Site Start Up	Geotechnics	Manhole Solutions	Concrete Pipe and Culvert	Clay Drainage
Plastic Drainage	Surface Water Drainage	Flexible Couplings	Stormwater Management	Rainwater Harvesting
Off Mains Drainage and Separators	PE and Barrier Pipe Systems	Cable Protection and Access Boxes	Reinforcement and Ground Movement	Damp Proof and Barrier Membranes
Specialist Chemicals	Hard Landscaping - Flag and Kerb	Linear Channel Drainage	Access Covers and Gully Gratings	Street Furniture

Download a copy of our Civils and Drainage Guide at www.keyline.co.uk



The ACO Qmax® system provides optimum surface water drainage and attenuation for a wide range of infrastructure, industrial, hard landscaped and SUDS applications

- Available in 225, 350, 550, 700 and 900 channel sizes for greater flexibility and economical system design and installation
- Manufactured from tough lightweight recycled medium density polyethylene with either ductile iron or hot dipped galvanized steel protective edge rails
- Choice of inlet slot designs available to cater for pedestrian and vehicular trafficked applications
- Unique patented inlet design strengthens the pavement installation and provides unobtrusive continuous slot drainage
- 2m channels manufactured from lightweight MDPE are easy to handle and quick to install improving onsite handling and installation rates
- Suitable for a wide range of applications including landscaping, parking, distribution yards, aircraft pavements, ports and docks.



ACO ParkDrain®

ACO ParkDrain® is a one-piece channel drainage system suitable for a wide range of general purpose civils applications. Certified to BS EN 1433:2002 up to Load Class C 250.

- Available in 100mm channel width and a range of depths to suit many different catchment areas
- Manufactured from Vienite® recycled polymer concrete
- One piece design improves the inherent strength of the system and eliminates the risk of grating loss or vandalism
- Heelguard™ grating suitable for pedestrian traffic
- Lightweight design for simple and quick installation
- Suitable for a wide range of applications including pedestrian areas, car parks and hard landscaped areas.



ACO RoadDrain® is a tough one-piece channel drainage system suitable for heavy duty parking and highway applications. Certified to BS EN 1433:2002 up to Load Class F 900.

- Available in 100 and 200mm channel widths and a range of depths to suit many different catchment areas
- Manufactured from Vienite® recycled polymer concrete
- One piece design improves the inherent strength of the system and eliminates the risk of grating loss or vandalism
- Fully compliant to the Specification for Highway Works and BSI Kitemarked
- Suitable for use in highway, heavy duty parking areas and distribution centres.



Product Name	Channel Type	Overall Channel Height mm	Run of 20m	Max Area/m² Run of 50m	Run of 100m
RoadDrain 100	10.1	250	370	305	-
	20.1	300	620	525	-
	30.1	350	915	775	-
	40.1	400	1250*	1065	880
	50.1	450	1630*	1380*	1150
RoadDrain 200	10.1	400	1765†	1585†	1390†
	20.1	450	2460†	2215†	1950†
	30.1	500	3230†	2915†	2580†

* Flows will require a 160mm outlet or universal gully † Flows will require at least a 200mm outlet, or possibly two gully units

ACO

KerbDrain®

ACO KerbDrain® is an award-winning combined kerb and drainage system designed to form an integral part of any modern, sustainable surface water management system. Certified to BS EN 1433:2002 up to Load Class D 400.



- Available in 255, 280, 305, 380, 405, 480 channel depths to optimise hydraulic performance
- Manufactured from Vienite® recycled polymer concrete
- HB (Half battered) and SP (Splayed) profiles available with a full range of problem solving components to suit many different applications
- ACO KerbDrain® provides many versatile solutions for both SUDS schemes and traditional drainage systems
- Fully compliant to the Specification for Highway Works and BSI Kitemarked
- Suitable for a wide range of applications including major and minor highways, car parks, and commercial and urban landscaping.



ACO MultiDrain™ PPD is the latest generation of high quality, high strength general purpose drainage systems. Certified to BS EN 1433:2002 D 400*.

- Available in 100, 150 and 200mm channel widths and a range of depths to suit many different catchment areas
- Manufactured from lightweight recycled polypropylene
- Wide choice of grating styles available to cater for many different pedestrian and vehicular trafficked applications
- Gratings fitted with ACO Drainlock™ – a bar-less locking device which reduces the risk of blockages
- Off-set brickslot galvanised steel grating available for discreet slot drainage applications
- Can be used to provide drainage for commercial and residential developments, pedestrian precincts, landscaping and parking areas for all vehicle types*

* This system is not suitable for carriageways of public roads or motorways.

ACO

Duct Access Units



Pole Boxes

Description	Width mm	Length mm	Height mm	Keyline Code
PAC POLE 6	275	285	295	537040
PAC POLE 1	450	450	500	537042

- Protect cables
- Easy access
- Clamp holds pole securely.

Access Box Cover and Frames

Ref.	Width mm	Length mm	Keyline Code
B125	290	275	877927 + 877938
B125	300	450	877928 + 877939
B125	450	450	877929 + 877940
B125	450	600	877930 + 877941
B125	600	600	877931 + 877942

Ducting

HDPE duct is available in solid wall, twin-wall smooth bore and single wall corrugated profiles. The lightweight, flexible duct copes with trench undulations and high impact resistance minimises special preparation of beds and eliminates the need for special surrounds in most instances. The duct has push fit joints for ease of installation and HDPE flexibility minimises the need for special bends. Duct is colour coded to end user requirements and can be printed to individual requirements.



NJUG Colour Coding (National Joint Utilities Group)

Black/Red	Electricity
Orange	Street Lighting/Traffic Signal
Purple	Motorway Communications/Street Lighting (Scotland)
Yellow	Gas (Perforated & Solid)
Blue	Water
Green	CCTV
Grey	Telecommunications

Note: Colours may vary by region or council



General Purpose Duct PVC-u

Diameter inches	Diameter mm	Wall Thickness	Keyline Code
2	54	1.5 - 1.7	528272
4	114	1.9 - 2.4	528274
6	168	2.2 - 2.9	528275

- 6m lengths
- Only recommended for light duty applications
- Check suitability before installation
- Range of fittings available.

Rail Landscapes



Home Landscapes



Retail Landscapes



Educational Landscapes



Download a copy of our Commercial Landscapes Guide at www.keyline.co.uk



Saint Gobain™

Opt-Emax D400 Hinged Access Cover



Suited for use in applications that are subject to vehicle access and applications requiring regular access to buried assets

Opt-Emax is engineered to offer faster, simpler and more efficient access to underground networks. Featuring an advanced hinged design it reduces the amount of effort required to lift the cover sections reducing the risk of injury caused by static loads.



- Easy access and installation
- Highest standards of safety and performance
- Maximum durability in adverse conditions
- Anti-theft, anti-vandal design through provision of optional locking kits
- Available as GripTop high friction solution
- Badging options available.

Ult-Emax

Product Code	BS EN124 Class	Clear Opening (mm)	Overbase (mm)	Frame Depth (mm)	Total Mass (kg)
205763	D400	600x600	806x806	100	84
205765	D400	600x600	806x806	150	94
211605	D400	675x675	880x830	100	97
211606	D400	675x675	880x830	150	107

Saint Gobain™

ULT-Emax D400 Hinged and Locked Access Cover



Suited for use in applications that are subject to vehicle access and applications requiring regular access to buried assets

Opt-Emax

Product Code	BS EN124 Class	Clear Opening (mm)	Overbase (mm)	Frame Depth (mm)	Total Mass (kg)
185719	D400	600x450	806x650	100	84
172472	D400	600x600	800x800	100	96
211029	D400	600x600	800x800	150	106
CDOP67MK	D400	675x675	875x875	100	122
211563	D400	675x675	875x875	150	143
186787	D400	750x600	940x745	100	118
186785	D400	750x750	905x940	100	131
185735	D400	900x600	1100x800	100	137
211032	D400	900x600	1100x800	150	148
228735	D400	900x910	1163x1155	125	214
186789	D400	1060x700	1210x850	100	172
185744	D400	1220x685	1380x885	100	217
211562	D400	1220x685	1380x885	150	252
205457	D400	1200x750	1350x945	100	218
230384	D400	1340x900	1500x1060	100	272
CDOP19GK	D400	1500x750	1660x940	100	242
186795	D400	1800x750	1955x940	100	317
215590	D400	1830x685	2000x885	150	367
230385	D400	2010x900	2170x1060	100	397
230108	D400	2250x750	2420x940	100	355

Ult-Emax has been specifically designed to combine ease of use, durability with additional security and value for money.

It features a semi-ergonomic hinging system on the master cover section making it ideally suited for one person inspection and maintenance activities with the added benefit of helping maintain and safeguard the health, safety and well being of operatives. Developed jointly with a major UK Water Company, Ult-Emax has now been adopted as the preferred solution across their entire waste water network and since its launch there have been no reported thefts.

- Fast, efficient, safe access and inspection capabilities
- Ergonomic cover operation and handling
- Includes cost-effective security feature as standard
- Available as GripTop high friction solution
- Badging options available.



GripTop is a permanent high friction solution for access cover installations that due to their location pose a slip or skid risk to pedestrians or vehicles

GripTop features a patented factory applied high friction treatment which combines high performance bonding agents with a bauxite aggregate applied to a recessed ductile iron cover section.

- Proven in service durability
- Demonstrates an industry leading PSRV of > 75
- Available in Ult-Emax and Opt-Emax variants.



GripTop						
Product Code	BS EN124 Class	Design	Clear Opening (mm)	Overbase (mm)	Frame Depth (mm)	Total Mass (kg)
TBC	E600	Briton	610x610	815x815	150	126
212937	D400	Inter-Ax 2	600x600	800x800	100	74
212939	D400	Inter-Ax 2	600x600	800x800	150	83
212938	D400	Inter-Ax 2	675x675	880x830	100	94
212940	D400	Inter-Ax 2	675x675	880x830	150	104
212933	D400	Ult-Emax	600x600	806x806	100	96
212935	D400	Ult-Emax	600x600	806x806	150	119
212034	D400	Ult-Emax	675x675	880x830	100	109
212936	D400	Ult-Emax	675x675	880x830	150	130
212925	D400	Opt-Emax	600x600	800x800	100	95
212929	D400	Opt-Emax	600x600	800x800	150	106
212926	D400	Opt-Emax	675x675	875x875	100	120
212930	D400	Opt-Emax	675x575	875x875	150	142
212927	D400	Opt-Emax	900x600	1100x800	100	135
212931	D400	Opt-Emax	900x600	1100x800	150	144
212928	D400	Opt-Emax	1220x685	1380x885	100	214
212932	D400	Opt-Emax	1220x685	1380x885	150	249
222259	D400	Opt-Emax	1830x685	2000x885	150	354

Rapide B125 Slide Out Access Cover

Suited for use in pedestrian areas, walkways, footpaths, platforms and stations

Rapide						
Product Code	BS EN124 Class	Design	Clear Opening (mm)	Overbase (mm)	Frame Depth (mm)	Total Mass (kg)
186464	B125	Rapide	380x230	480x330	40	14
186466	B125	Rapide	550x325	650x425	40	25
186535	B125	Rapide	450x450	550x550	40	24
CBRA75GK	B125	Rapide	600x450	700x550	40	31
CBRA70CK	B125	Rapide	600x600	700x700	40	39
186551	B125	Rapide	750x600	850x700	40	49
CBRA17GK	B125	Rapide	900x600	1000x700	50	69
CBRA18GK	B125	Rapide	1000x675	1100x775	50	80
186557	B125	Rapide	1310x610	1410x710	50	90



- Ergonomic cover operation
- Locking options available
- Badging options available.

Available in a large range of clear opening sizes, Rapide offers ease and speed of use while promoting operator safety through a cover slide out feature reducing the risk of injury while lifting even for light duty applications

Suited for use in pedestrian areas, walkways, footpaths, platforms and stations

Valiant						
Product Code	BS EN124 Class	Design	Clear Opening (mm)	Overbase (mm)	Frame Depth (mm)	Total Mass (kg)
185949	B125	Valiant	600x450	750x605	75	53
185909	B125	Valiant	600x600	750x750	75	63
185964	B125	Valiant	900x600	1070x770	75	89

Sharing the ergonomic slide out feature of the Rapide, the Valiant also offers the additional feature of being single seal capable which is of benefit if wanting to restrict the ingress of surface water or the egress of sewer gases.



- Ergonomic cover operation
- Locking options available
- Badging options available.

Clark-Drain

Standard Galvanised Steel Solid Top Access Covers

CLARK - DRAIN
THE DRAINAGE COMPANY

Suited for use in pedestrian areas, walkways, footpaths, platforms and stations



Please contact Keyline for advice should you require units slightly over the specifications shown. Gross vehicle plated weight expressed as the gross weight of road vehicles with pneumatic tyres and four points of road contact.

Loads to facta classes can be supplied on request.

	Supplier Code	Clear Opening	Overall Size	Keyline Code
5T GPW ref B	PC2BG	300 x 300	363 x 363	559788
	PC5BG	450 x 450	513 x 513	559789
	PC6BG	600 x 450	663 x 513	770235
	PC7BG	600 x 600	663 x 663	770237
17T GPW ref D	PC6DG	600 x 450	663 x 513	770236
	PC7DG	600 x 600	663 x 663	770238



Travis Perkins operates some of the leading brands in the industry, 16 businesses from more than 1,800 sites across the UK.



- Benchmarkx** - Benchmarkx Kitchens & Joinery is a strictly trade only company supplying high quality kitchens, joinery and flooring and everything else to complete the job.
- Birchwood Price Tools** - Birchwood Price Tools (BPT) is a leading wholesaler of power tools, hand tools and site equipment, carrying a distinguished line-up of global brands.
- City Plumbing Supplies** - One of the UK's largest plumbers' merchants and bathroom retailers, with a dedicated national network of branches and bathroom showrooms.
- CCF** - leading specialist distributors of ceilings, drywall, screeding, insulation, partitioning and fire protection to the construction industry.
- City Heating Spares** - City Heating Spares is the new super-fast heating spares brand trading at selected City Plumbing Supplies branches.

- Direct Heating Spares** - Direct Heating Spares Limited ('DHS') is a leading independent distributor of domestic heating spares in the UK with national coverage.
- F&P Wholesale** - The independent merchants' choice for heating, plumbing and bathroom products.
- BSS Industrial - Pipeline & Heating Solutions** - A specialist distributor of pipeline, heating and mechanical services equipment serving customers across all industrial sectors within the UK and Ireland.
- Plumbing Trade Supplies** - PTS is a leading distributor of plumbing, heating, sanitaryware and renewable energy products to a wide range of customers, both public and private sector, from national house builders to the sole trading plumber.

- Travis Perkins** - One of the UK's leading builders' merchants supplying more than 100,000 product lines to trade professionals and self-builders.
- Tile Giant** - Tile Giant is the fastest growing ceramics merchant in the UK.
- Toolstation** - Toolstation is a rapidly growing direct retailer of tools and hardware.
- Wickes** - One of the UK's leading DIY and Home Improvement retailers, operating over 200 stores across the country.
- Connections** - A leading distributor of plumbing fittings from leading brands and manufacturers.
- Solfex** - One of the largest specialist distributors in the UK of high quality renewable energy systems.

Titan is a high containment kerb system designed to redirect vehicles onto their intended path and prevent overrun of vulnerable areas adjacent to the carriageway.

The size and shape of the Titan Kerb provides a visual warning to the driver as well as a two stage physical deterrent to over-riding by vehicles.

The splayed lower profile allows tyres to ride up the kerb compressing the suspension, guiding the vehicle back on to the carriageway.

The bulbous outer profile deflects low speed impact with minimum damage to vehicle tyres and wheels and without excessive shock.

As the vehicle is kept moving, the risk of collision by following vehicles is also reduced. Alternative HGV kerb also available.

Comprehensive Flexible System

The Titan Kerb System is simple but comprehensive, comprising of a range of straight kerbs, splay-cut radius kerbs (internal and external), drop kerbs and quadrants.

Installation

Titan Kerb is laid in a similar manner to conventional road kerb. It should be bedded onto a suitably prepared foundation of ST4 concrete 150mm thick x 690mm wide and haunched at the back for stability. Haunching should extend to within 75mm of the top of the unit.

Straight and radius Titan Kerbs have been designed with a 3° slope to the back face to aid stability and provide an improved key for haunching.

Titan Kerb can be laid with an upstand of between 0 and 25mm on the carriage face.

This allows for continuity of kerb upstand when used in conjunction with half battered kerbs.

Applications:

- Titan Kerb is intended for use on a variety of traffic management and road safety applications:
- In highway applications, Titan offers improved traffic containment capability over conventional road kerb. It is therefore ideal for situations where additional protection is required for footways and adjacent properties
- Can be used to create direction control systems in car and lorry parks, service areas, retail and warehouse complexes, industrial access, urban highways, etc
- Provides protection to petrol pump islands, car park toll booths, weighbridges, lighting/signage columns, etc
- Allows the creation of traffic calming 'pinch points'.



Charcon Durakerb® is the revolutionary, lightweight and environmentally friendly kerbstone that complies with health and safety guidelines on the manual handling of kerbstones.

Features and benefits:

- 20% reduction in carbon emissions compared with precast concrete units in manufacture
- Manufactured using a polymer blend of which 88% is recycled material, made up from kerbside waste, reducing landfill
- Lightweight design reduces laying times by up to four times that of a concrete equivalent
- At just under 6kg, Charcon Durakerb is less than one third of the manual handling limit of 20kg and mitigates repetitive strain injury
- Extremely durable offering a substantial reduction in spalling compared with concrete kerbstones minimising remedial and maintenance costs
- Extremely easy to store and transport
- Removes the need for mechanical handling equipment, speeding up lay rates
- Can be cut with hand tools and does not create any crystalline silica dust
- Resistance to typical chemicals and road salts used in highway construction and maintenance
- Simple interlocking feature ensures 100% alignment
- BBA and HAPAS approved.



 88% recycled

Performance

Tests for slip/skid (BS/EN 1340) and compressive strengths (BS/EN 6072) have been conducted as well as in-situ dynamic impact testing. Charcon Durakerb was installed at a test site where HGV's and fork lift trucks could be driven at speed at the Charcon Durakerb, simulating the greatest real impact conditions. The HGV tests were monitored by the BBA and despite repeated impacts the Charcon Durakerb remained completely intact. No cracks or chips were experienced. Additionally, finite mechanical element analysis undertaken separately achieved the bending strength requirements of BS/EN 1340. Other testing was performed appraising the Charcon Durakerb's freeze thaw, abrasion, fire and water absorption properties, all testing produced satisfactory results.

Dimensions	Straight (HB2)	Straight (BN3)	Straight (SP1)	Dropkerb LH	Dropkerb RH	External radius#	Internal radius#	External 90 angle	External 90 angle	Internal 90 angle	Internal 90 angle
Length	914	914	914	914	914	780	780	305	305	305	305
Width	125	125	125*	125	125	125	125	125	125	125	125
Depth	255	150	255	255/150	255/150	255	255	255	150	255	150
Weight kg**	5.6	3.5	5.2	4.6	4.6	4.7	4.7	4.6	2.5	4.6	2.5
Units/pack	48	90	42	56	56	48	48	40	40	40	40
Keyline Code	609328	609329	609330	609331	609332	Various	Various	609345	609346	609347	609348

* x 45 degree splayed angle **Weights kg approximate # Available in 3m, 4m, 5m, 6m, 8m and 10m internal and external radius options

Sustainable Urban Drainage systems (SUDs) are now key considerations in the design of new developments, to counter the growing issues of flooding, drought and water pollution. Marshall's Priora marries an innovative block paving system with specific design methodology and sub-base specification to deal with surface water runoff at source. This eliminates the requirement for additional drainage systems whilst at the same time recharging the natural groundwater, creating a cost-effective and environmentally friendly solution to the management of surface water runoff.

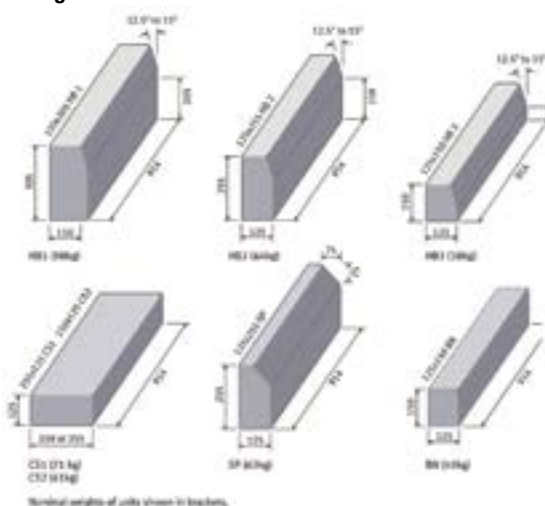
The Priora range is now extended to include Tegula, Mistral and the rustic Olde options, combining the unique engineering benefits of the patented Priora nib with the aesthetics of those popular products. The products are supported by Marshall's' comprehensive design and technical advisory service.

- 4 finishes
- Up to 9 colours
- Up to 3 plan sizes
- Suitable for a wide range of laying patterns.



Kerbs and Edging

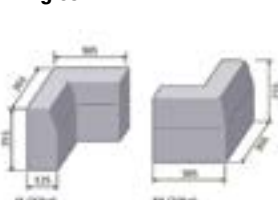
Straights



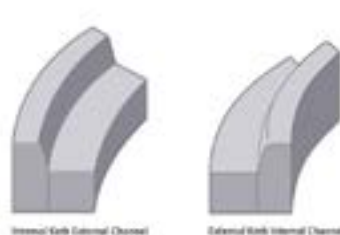
Quadrants



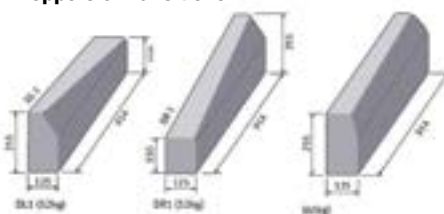
Angles



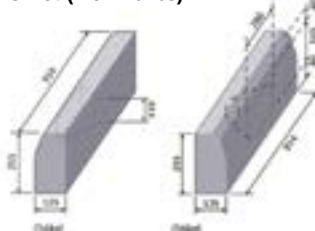
Radius



Droppers & Transitions



Offset (Weir Kurbs)



Standard Kerbs:

All straight kerbs listed are 914mm (3ft) standard lengths. The 125 x 255 HB2 is also available in 609mm (2ft) lengths.

Abbreviation Guide:

HB Half Battered, **BN** Bullnosed, **SP** 45° Splayed, **DC** Dished Channel, **SC** Square Channel, **TC** Tilted Channel, **GC** Grooved Channel, **FT** Flat Top, **RT** Round Top, **RH** Right hand, **LH** Left hand, **ER** Round Top Edging, **EF** Flat Top Edging, **EBN** Bullnosed Edging, **CH** Chamfered, **TL** Transition Left, **TR** Transition Right.