



CIVILS

LANDSCAPING

AQUA

SPORT

ENVIROKERB

KERB DRAINAGE MADE FROM 100% RECYCLED MATERIAL
FULLY INTEGRATES WITH OTHER HAURATON SURFACE WATER DRAINAGE SYSTEMS

 **hauraton**
IT'S RUNNING WELL



ENVIROKERB

ENVIROKERB is made entirely from recycled materials that would otherwise be destined for landfill within the UK or China. If sent to landfill the material used to manufacture ENVIROKERB components would take between 750 to 1000 years to degrade. It is widely acknowledged that the construction industry has a major impact on the earth's already dwindling resources. Although it is 100% waste material that is used to make the components, the methods of manufacture ensures every component is very strong and lightweight yet has an aesthetically acceptable finish.





HAURATON SUPPORT FOR YOUR DESIGNS

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HAURATON SUPPORT FOR YOUR DESIGNS

A SUPERIOR KERB DRAINAGE SYSTEM STARTS AT THE DESIGN PHASE. WE PROVIDE PROJECT SUPPORT, INCLUDING CALCULATIONS FOR THE HYDRAULIC SPECIFICATION AND LAY OUT PLANS. ENVIROKERB COMPONENTS CAN BE FULLY INTERGRADED WITH HAURATON SURFACE WATER DRAINAGE CHANNELS SYSTEMS - SEE CASE STUDIES ON PAGE 18 AND 19.

USE OUR EXPERTISE TO YOUR BEST ADVANTAGE

Our internal and external sales staff are experts in the design of all types of surface water drainage systems. Their extensive technical and product knowledge is your guarantee for expert consultation - and hence the best possible solution for all requirements. We will support your individual building project from project-related tender documents through to production and in-time delivery on site - even where the brief calls for unusual duties and design.

NON-STANDARD PARTS - CUSTOM-DESIGNED TO YOUR REQUIREMENTS

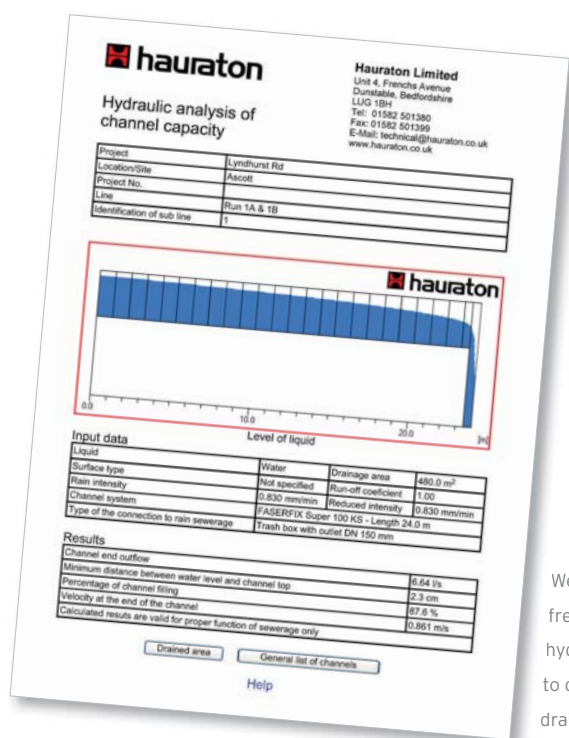
Not all drainage situations can be resolved with the standard production range of products. For this reason we produce non-standard parts in accordance with customers' specifications. In that way a perfect solution can be found for all situations.

RELIABLE DESIGN DATA BASED ON HYDRAULIC CALCULATIONS

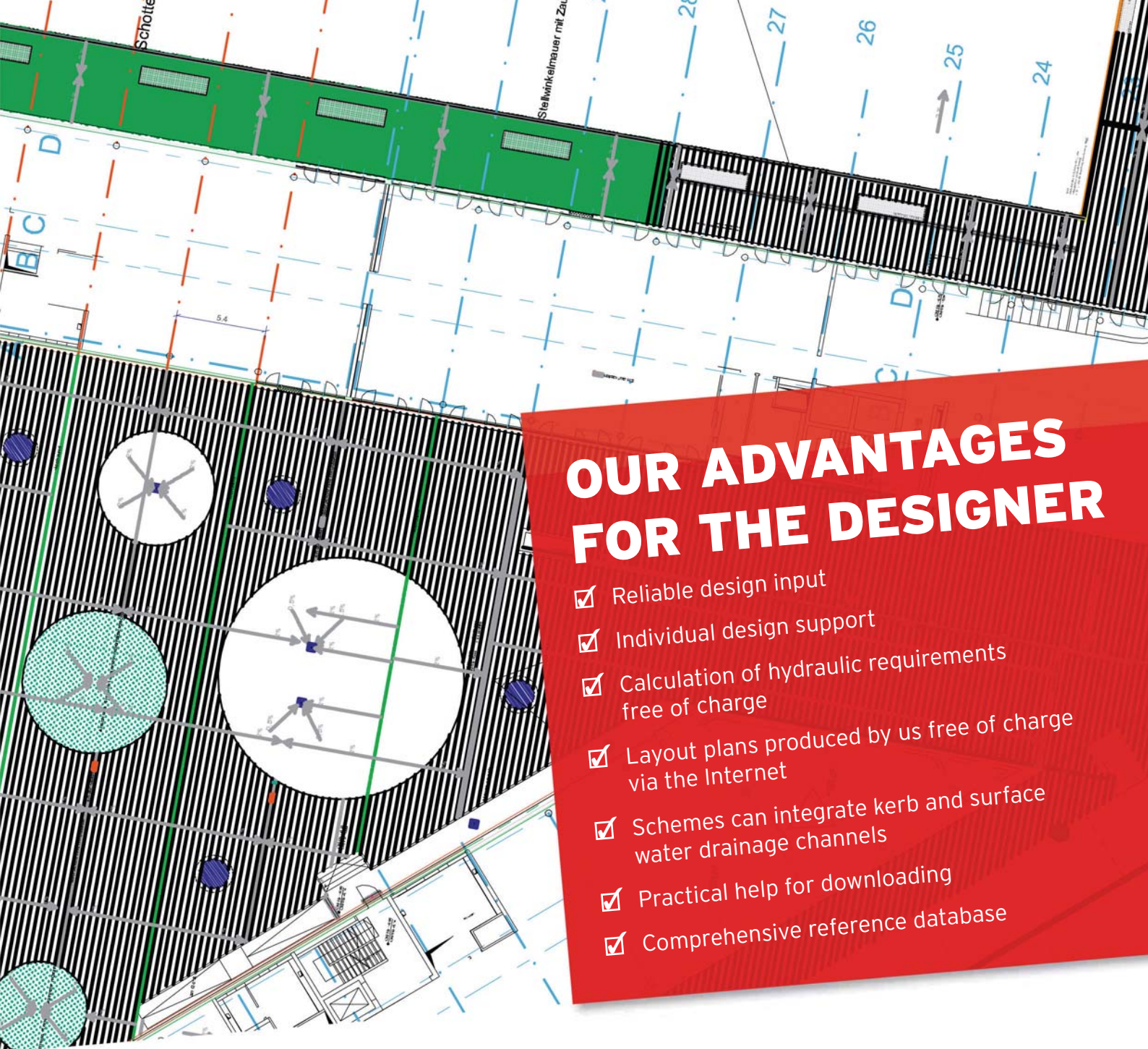
All projects have their own specific requirements which need to be matched by individual drainage systems. In order to be able to assess your project professionally regarding type and scope, we will calculate the hydraulic requirements for you FREE OF CHARGE. The staff at our CAD department just need a few data such as the size of the area to be drained, surface covering, intensity of rainfall, type of channels, etc. - just talk to one of our internal or field sales staff!

DETAILED INSTALLATION PLANS WITH COMPLETE PARTS LIST

In addition, we will produce a detailed installation plan for your project. The CAD-produced drawings show the exact location of kerb and other drainage channels, including the positions of end caps, trash boxes and other fittings. They will also include a complete parts list including the quantity and designation of the required products. These installation plans are provided by us also free of charge.



We will produce
free-of-charge
hydraulic calculations
to determine
drainage capacities



OUR ADVANTAGES FOR THE DESIGNER

- ✓ Reliable design input
- ✓ Individual design support
- ✓ Calculation of hydraulic requirements free of charge
- ✓ Layout plans produced by us free of charge via the Internet
- ✓ Schemes can integrate kerb and surface water drainage channels
- ✓ Practical help for downloading
- ✓ Comprehensive reference database

HAURATON ON THE INTERNET

Visit www.hauraton.co.uk where you can find all required information: product information with picture documentation, always up to date, tender proposals for downloading, a comprehensive reference database with numerous projects throughout Europe and a tool for you to compile and print out or save your individual catalogue. There is a fast and competent online service to respond to your enquiries at any time.



RELIABLE PRODUCTS FOR YOUR DESIGNS

ALL HAURATON PROCESSES AND PRODUCTS ARE STRICTLY MONITORED. THAT IS HAURATON'S GUARANTEE TO ITS CUSTOMERS TO ENSURE A HIGHLY RELIABLE PRODUCT.

DIN EN 1433 / CE-MARK HAURATON ENVIROKERB COMPLIES WITH DIN EN 1433

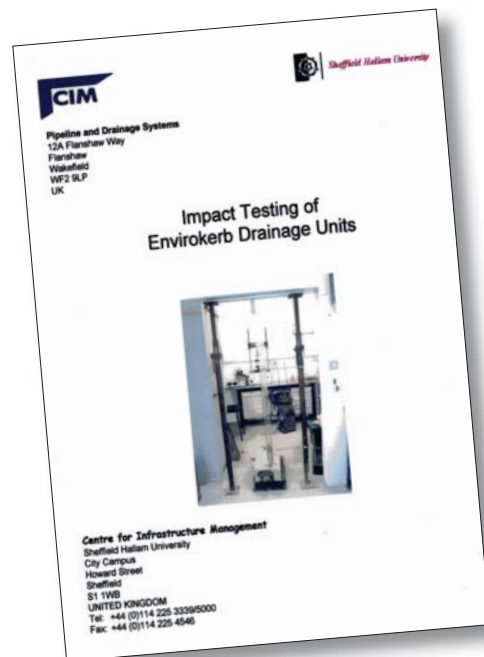
- ☐ U-profiles for highly efficient drainage with self-cleaning effect
- ☐ optional Envirokerb mastic sealing system
- ☐ maximum resistance to the effects of salt and weather, including frost
- ☐ different depths to cope with all hydraulic requirements

HAURATON one of the largest ranges of DIN-compliant drainage systems.

QUALITY CERTIFICATION IN ACCORDANCE WITH DIN EN ISO 9001:2000

HAURATON achieved quality certification in accordance with DIN EN ISO 9001 back in 1993. Since then, quality standards have been driven up continuously, including regular certification.

The quality requirements of DIN EN ISO 9001:2000 cover not only the products but the whole company, including development, design, production, assembly and customer service. HAURATON's quality management in accordance with DIN EN ISO 9001:2000 provides the highest degree of reliability and safety to our customers.



ENVIROKERB AT A GLANCE

- ✓ Lightweight - the lightest product on the market by up to 70% allowing easy installation
- ✓ Durable - high impact resistance greater than traditional materials
- ✓ Manufactured from recycled materials and complies to ISO14001
- ✓ Available in 305mm, 385mm and 480mm depths
- ✓ For use on motorways, trunk roads, car parks and most other urban areas
- ✓ Conforms to EN1433 linear drainage systems

FEATURES AND BENEFITS

LIGHTWEIGHT

Each ENVIROKERB component has been designed to be under the 25kg one-man lift. The standard 305mm depth weighs only 16.5kgs, the 385mm weighs 17.5kg and the 480mm weighs 24kg.

STRONG AND ROBUST

The material used in manufacture is exceptionally strong and complies with BSEN1433 Group 3 kerb side installations load class D400kN.

IMPACT RESISTANT

The product has the added advantage over traditional materials in being almost unbreakable from on-site handling and installation. The units are impact resistant, and do not suffer breakages when left exposed prior to pavement and road completion. Envirokerb components are guarantee against breakage - please call for details.

ONE - PIECE

Standard ENVIROKERB units are supplied in 500mm long (drop kerbs and centre stones are 457.5mm long) one-piece units. This eliminates the secondary operation of jointing two components, as required with some existing systems that are vulnerable to on-site breakage if left exposed.

POSTITIVE INTERLOCK IS AVAILABLE

The units are supplied plain ended as a standard which is "butt" jointed, but they are also available with a positive interlock between each module with the use of preformed male/female joints providing a method of installing to line and level. A watertight seal can be achieved by applying Envirokerb mastic sealant.

ASPHALIC ADHESION

It is common practice to pre-pitch the face of kerbs to form a seal with the asphalt construction. ENVIROKERB allows for self-adhesion with hot poured asphalt offering both time and cost saving during installation.

AESHETIC APPEARANCE

Once installed ENVIROKERB has a finish almost identical to a standard concrete kerb.

CHEMICAL RESISTANCE

The product is resistant to all forms of effluents found in highway situations such as road-salts, petrol, diesel etc.

QUALITY ASSURANCE

The system is fully compliant with BSEN1433 (Drainage channels for vehicular and pedestrian areas).

IMPROVED HYDRAULIC PERFORMANCE

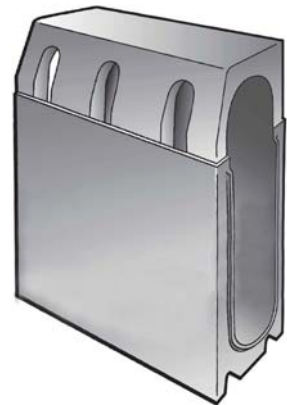
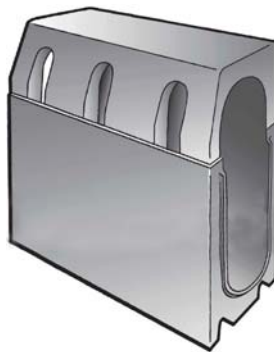
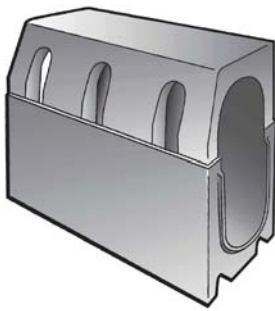
Due to the composite material used in the manufacture, ENVIROKERB gives excellent co-efficiency values with the hydraulic performance improved over traditional materials. Units incorporated three surface water inlet points offering a higher waterway area, and so designed to restrict the ingress of large debris.

MATCHING SYSTEM COMPONENTS

The ENVIROKERB system is complemented by a full range of additional components including drop kerbs, numerous centre stones, lightweight gully chamber, rodding access units, radius units and numerous outlet possibilities.

ENVIROKERB - Standard

ENVIROKERB - 305SU, 385SU and 480SU Standard

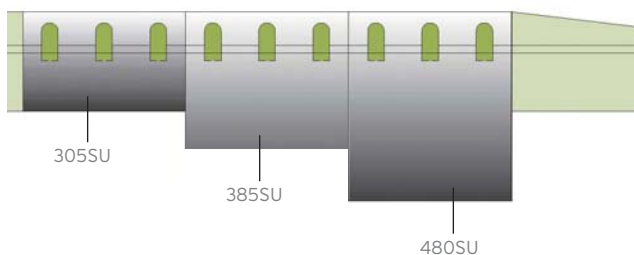


One-piece units are designed for ease of installation. At least 34% lighter than conventional combined kerb drainage systems, they fully meet the EN1433 load requirements. They also have exceptional impact resistance. Applications include trunk roads, car parks, access roads, traffic calming areas and industrial areas.

Type	Total depth mm	invert mm	bore mm	length mm	weight kg
305SU Standard	305	275	100*	500	16.5
385SU Standard	385	355	100*	500	17.5
480SU Standard	480	450	100*	500	24.0

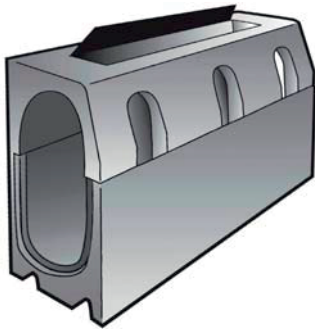
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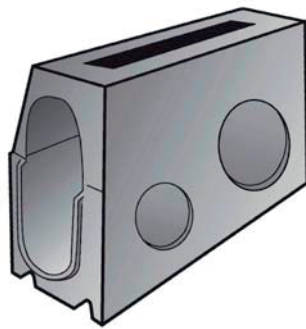


ENVIROKERB - Rodding access

ENVIROKERB - 305RA, 385RA and 480RA Rodding Access Unit 250mm & 500mm



Front view 500mm Unit



Rear view 500mm unit showing outlets



Front view 250mm unit

Combined outlet units with rodding access, 500mm long complete with a locking cover. The cover has been designed to increase accessibility to the system to ease maintenance. The units are supplied with pre-formed 110mm & 160mm rear outlets, supplied with closing caps. Other outlet configurations are available upon request.

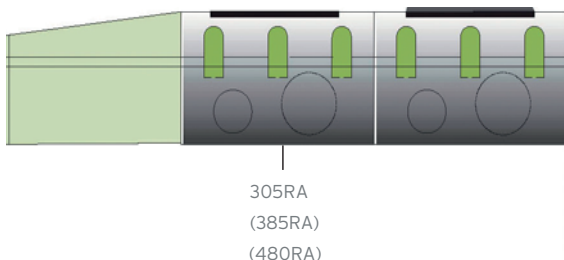
Solid head ductile iron rodding access 250mm long.

Outlets suit standard BS4660 pipe, but a number of outlet connections are offered to suit site pipework.

Type	Total depth mm	invert mm	bore mm	length mm	weight kg
305RA Rodding access	305	275	100*	500	15.0
385RA Rodding access	385	355	100*	500	17.5
480RA Rodding access	480	450	100*	500	24.0
305RADI Rodding access	305	275	100*	250	16.8
385RADI Rodding access	385	355	100*	250	19.5
480RADI Rodding access	480	450	100*	250	23.0

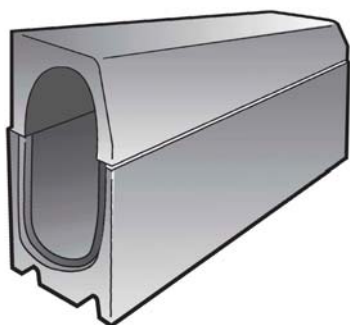
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*Nominal width



ENVIROKERB - Drop kerbs

ENVIROKERB - 305DO, 385DO & 480DO Drop kerb outer units

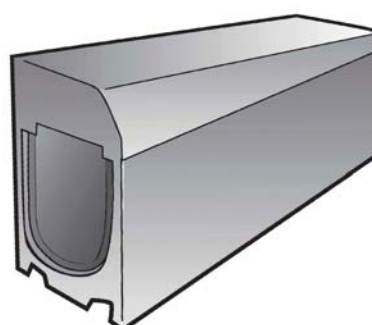


A 457.5mm long outer drop unit is installed alongside a 457.5mm inner drop kerb. These will form a 915mm total length to suit existing openings in footpaths within maintenance contracts. The units have been developed at half the length of existing systems to reduce the weight, and ease general handling to speed the installation process. Units are at least 70% lighter than alternative systems.

	Total depth mm	invert mm	bore mm	length mm	weight kg
305DO	305-255	-	100*	457.5	16.0
385DO	385-335	-	100*	457.5	17.5
480DO	480-425	-	100*	457.5	22.0

*Nominal width

ENVIROKERB - 305DI, 385DI & 480DI Drop kerb inner units

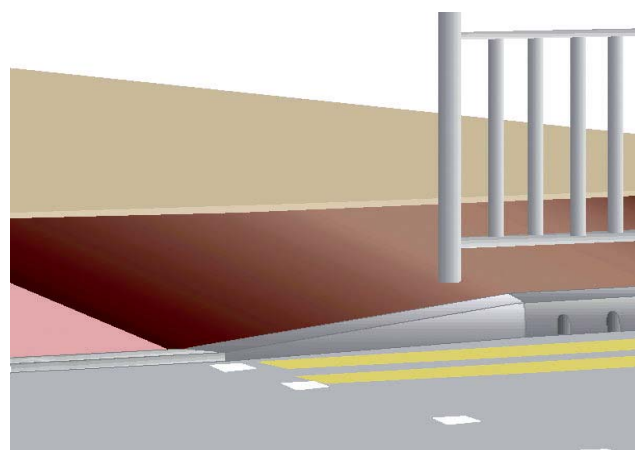
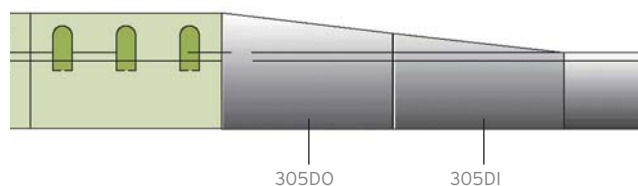


A 457.5mm long inner drop unit is installed alongside a 457.5mm outer drop kerb. These will form a 915mm total length to suit existing openings in footpaths within maintenance contracts. The units have been developed at half the length of existing systems to reduce the weight, and ease general handling to speed the installation process. Units are at least 70% lighter than alternative systems.

	Total depth mm	invert mm	bore mm	length mm	weight kg
305DI	255-205	-	100*	457.5	13.0
385DI	335-285	-	100*	457.5	16.0
480DI	425-375	-	100*	457.5	20.0

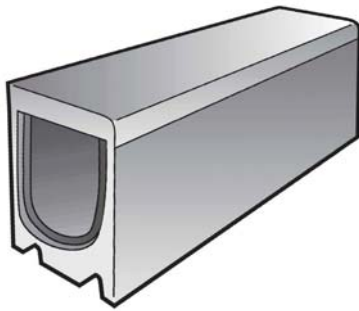
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ENVIROKERB - Centre stone, Gun and sealant

ENVIROKERB - 305CS, 385CS and 480CS Centre stone

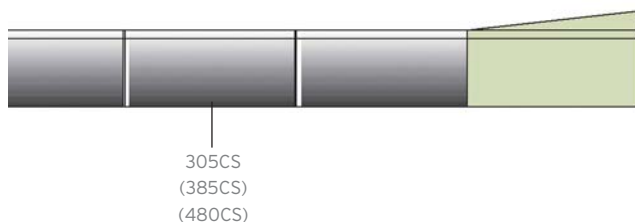


Envirokerb centre stones are made at 457.5mm long to reduce size and weight. This greatly increases installation time. The units when placed together form a 915mm length to suit traditional footpath openings. The units are installed with a positive interlock, with the drainage area mirroring the standard units, so that flows are not reduced or restricted. Weights are at least 65% lighter than existing systems. Units are available with drainage holes if required.

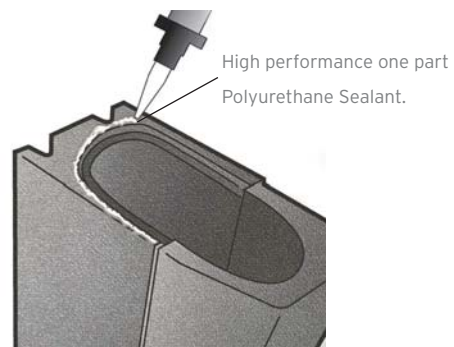
	Total depth mm	invert mm	bore mm	length mm	weight kg
305CS	205	-	100*	457.5	11.5
385CS	385	-	100*	457.5	17.5
480CS	380	-	100*	457.5	18.5

*Nominal width

APPLICATION



ENVIROKERB - Gun and sealant



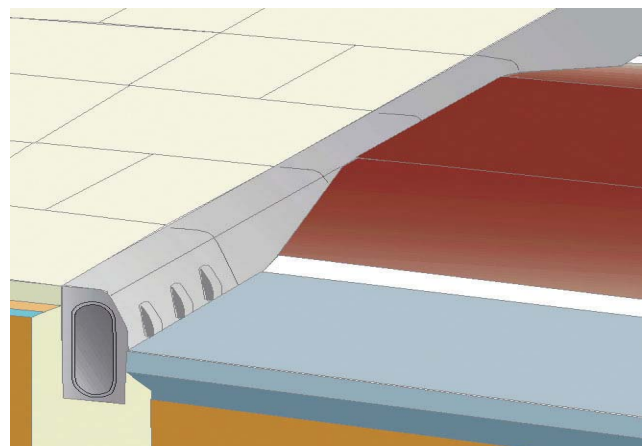
EN1433 states that combined kerb drainage should be durably sealed. Even though the Envirokerb has a positive interlock that provides the most effective seal available on combined kerb drainage systems, we also supply the 'Envirokerb Sealant' for a 100% watertight seal.

Order reference codes:

ENVSEALANT - Sealant 600ml tube
ENVGUN- Applicator gun

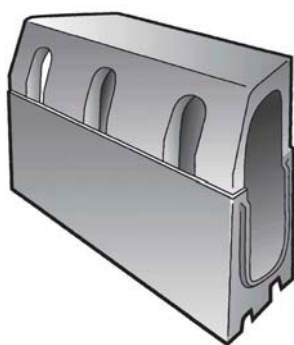
Usage

Size	sealant/unit ml	units per tube
305	40	15
385	60	10
480	75	8



ENVIROKERB - External & Internal radius units

ENVIROKERB - 305ER, 385ER & 480ER External radius



The units are available in three separate external radius. Sizes are suitable for roundabouts, access roads and car parks. The units are lightweight, one-piece and supplied with a positive interlock to allow manipulation of the radius when the standard units will not suffice. Up to 34% lighter in weight than alternatives.

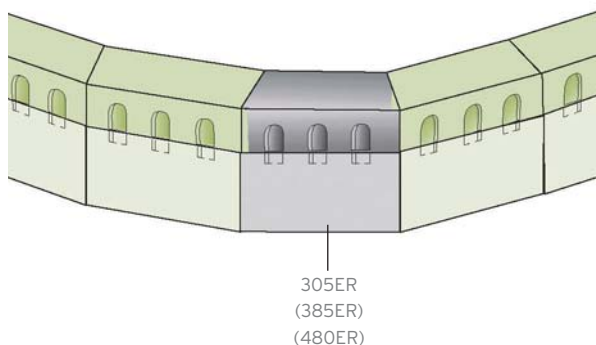
Radius available 6-7m, 8-10m and 11-25m.

	Total depth mm	invert mm	bore mm	length mm	weight kg
305ER	305	275	100*	500**	16.5
385ER	385	355	100*	500**	17.5
480ER	480	450	100*	500**	24.0

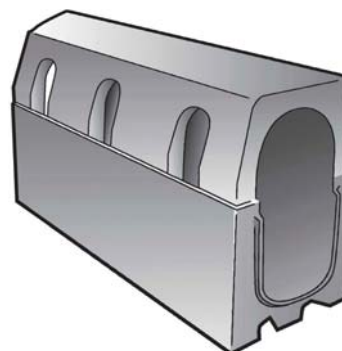
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**effective length along centre line.

APPLICATION



ENVIROKERB - 305IR, 385IR & 480IR Internal radius



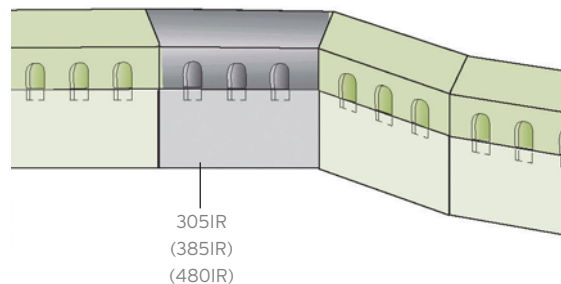
The units are available in one internal radius. The units are lightweight, one-piece and supplied with a positive interlock to allow manipulation of the radius when the standard units will not suffice. Up to 34% lighter in weight than alternatives.

Radius available 6-7m, 8-10m and 11-25m.

	Total depth mm	invert mm	bore mm	length mm	weight kg
305IR	305	275	100*	500**	16.5
385IR	385	355	100*	500**	17.5
480IR	480	450	100*	500**	24.0

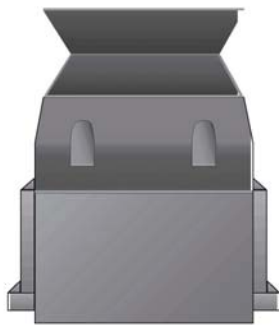
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**effective length along centre line.



ENVIROKERB - Gully top cover and base

ENVIROKERB - 305GMT, 385GMT & 480GMT Gully top cover and base

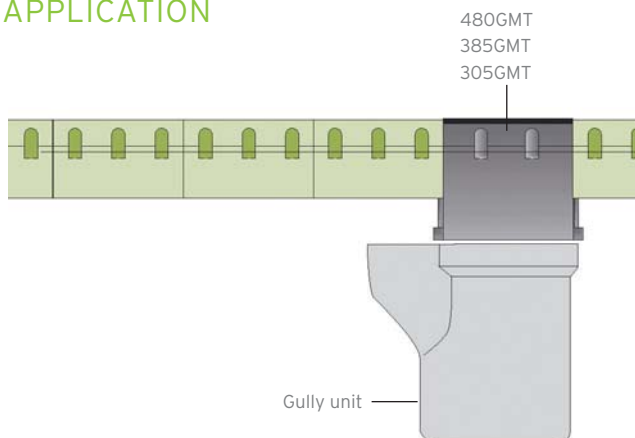


The Gully top section is manufactured in Ductile Iron to comply with the EN124 loading of C250KN for kerb side covers and frames. The cover is hinged and locking to ease maintenance, and gully cleaning. The base section is rotationally moulded lightweight yet strong and robust recycled product. The gully will accept the standard Envirokerb, access units and radius units. The weight of the Gully is 40kg, and the gully top section weighs 7kg. The weight saving over existing systems is approx 40%.

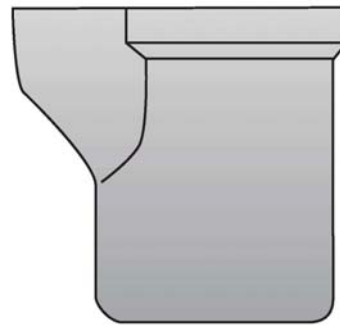
	Total depth mm	invert mm	width* mm	length mm	weight kg
305GMT	520	275	390	500	47.0
385GMT	520	355	390	500	47.0
480GMT	520	450	390	500	47.0

*Overall width

APPLICATION

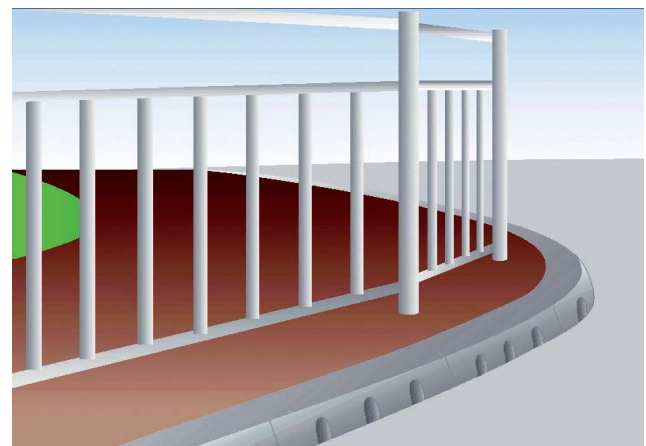


ENVIROKERB - Gully unit (Concrete or plastic)



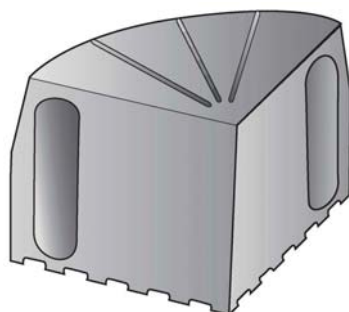
Envirokerb is supplied with the adaptability of either a concrete, plastic or existing gully pot. Site feedback would suggest that this is the preferred gully detail as it allows the use of existing gullies when maintenance or upgrade contracts allow. It also enables the outlet from the gully to be placed in the most efficient position to suit existing, or new pipework. The gully top cover and base will sit directly onto the gully.

A range of gullies are available ex-stock. Sizes are subject to hydraulic requirements. Please contact Hauraton sales office for more information.



ENVIROKERB - 305 Quadrant & Internal angle

ENVIROKERB - 305QUAD 90° Quadrant



305mm 90° Quadrant - external angles rounded for safety reasons.

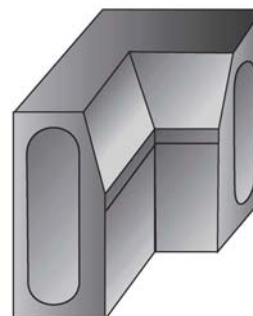
Enables continuation of hydraulic flow around 90° external angles - we suggest that a rodding access unit (305RA) is installed alongside this product. The top surface has been designed to be slip resistant, and the base has an in-built 'key' for the concrete bed.

Please note a 90° quadrant or 90° Internal angle is not available in sizes 385mm or 480mm

Type	Total depth mm	invert mm	bore mm	length mm	weight kg
305QUAD	305	275	100*	500	16.5

*Nominal width

ENVIROKERB - 305ANG 90° Internal Angle

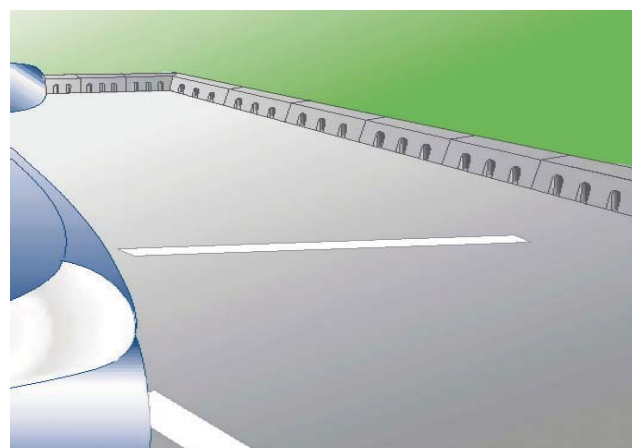
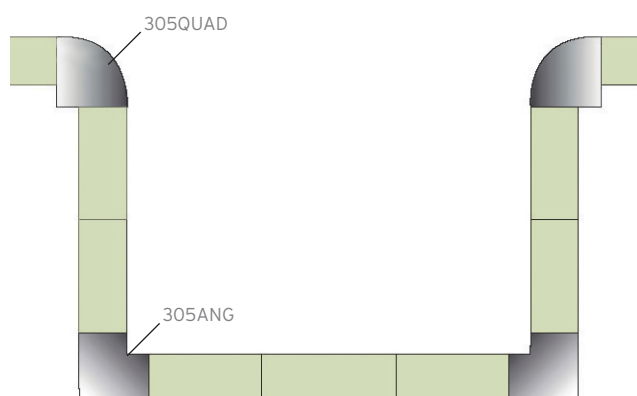


Enables continuation of hydraulic flow around 90° internal angles - we suggest that a rodding access unit (305RA) is installed alongside this product.

Type	Total depth mm	invert mm	bore mm	length mm	weight kg
305ANG	305	275	100*	305	19.0

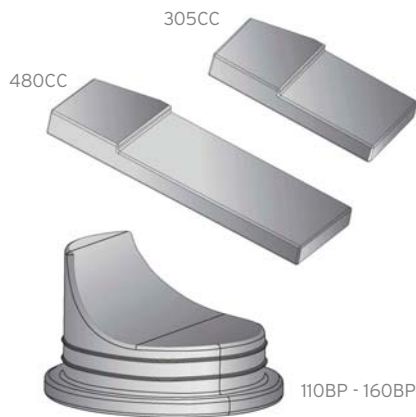
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APPLICATION



ENVIROKERB - End caps and back outlet plugs

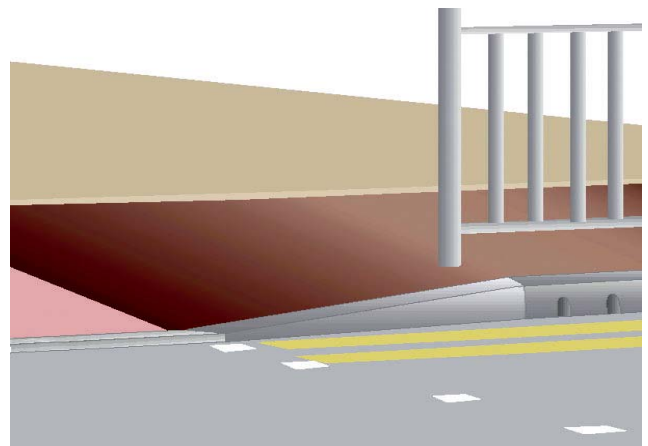
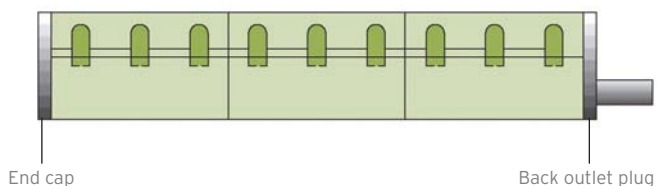
ENVIROKERB - Caps and rear outlet plugs



A series of end caps, and rear outlet plugs. End caps are to suit both the male and female ends. They are reversible to cap both ends of runs. The back outlet plugs are supplied with the rodding access units (305/480RA) but additional ones can be ordered.

Type	Description
305CC	305 End cap
385CC	385 End cap
480CC	480 End cap
110BP	100 Back outlet plug
160BP	160 Back outlet plug

APPLICATION



ENVIROKERB - Specification clauses

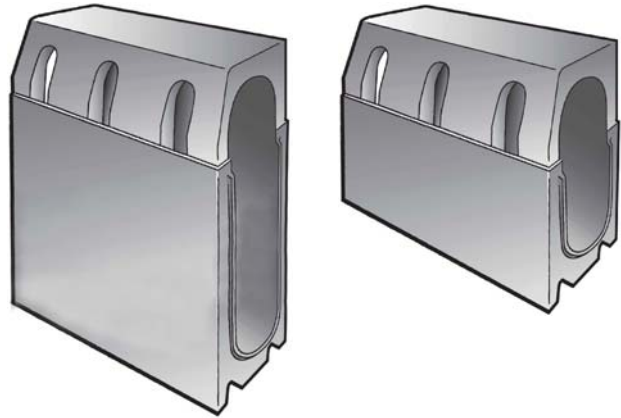
The combined kerb drainage system shall be as 'Envirokerb' 305/385/480 one-piece monolithic unit. All system components will also be from the Envirokerb system.

The system shall be manufactured to DIN 19580 class D400kn and EN1433 class 3 for combined kerb drainage systems. The product will also be compliant with ISO 14001.

The combined kerb drain will be manufactured from recycled material, and the standard 305/385/480 units will have safe one-man handling weights not exceeding 25kg to comply with health and safety regulations.

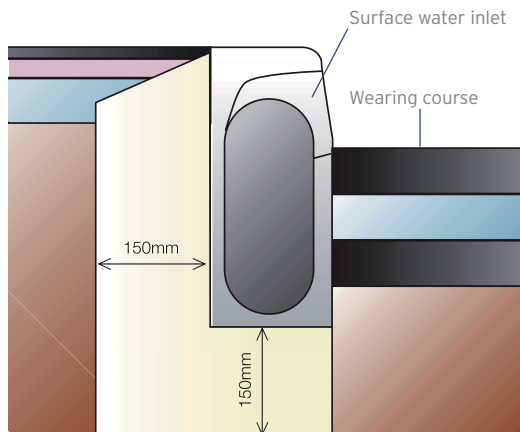
The system shall be of units 100mm nominal internal width, and 150mm external width, to match the standard HB1 kerb profile.

If a fully watertight seal is required then 'Envirokerb' sealing compound shall be applied to the full invert depth. It shall be applied along the female joint, and the male joint butted to it.



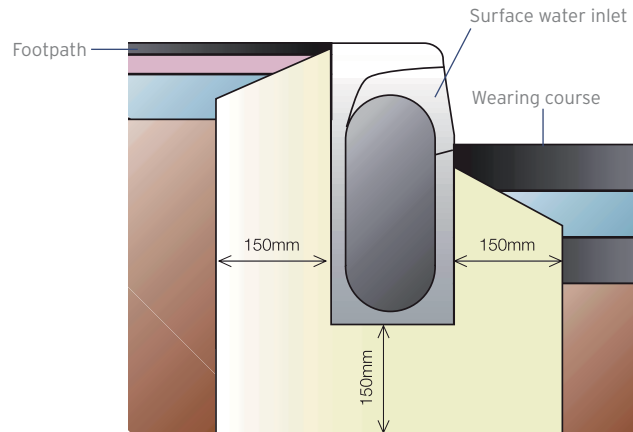
ENVIROKERB - Typical installation details

C250kn



This detail is the most applicable installation. Due to the high impact resistance of Envirokerb - side loadings will have less of an effect than on more established kerb drainage.

D400kn



The above detail is rarely required with Envirokerb. The haunch of the front elevation is sometimes advisable where fast-moving traffic is present.

INSTALLATION GUIDE

- 1) Excavate through to line and level.
- 2) Lay out units prior to installation to ensure all rodding access units and outlets are positioned correctly.
- 3) Start at outfall and work away, finished line and level should be pre-determined.
- 4) If sealant is to be applied please apply to unit not yet laid then butt together - keep joints clean of concrete bedding material.
- 5) A 2mm gap should be left between units (Trowel thickness) to allow for contraction and expansion.
- 6) The male/female joint will ease installation procedure as line will be easier to achieve.
- 7) Asphalt can be laid to the pre-marked line shown on units to offer a 125mm kerb face, or to the watermark for 100mm kerb face. Asphalt will adhere to the faces so pre-pitching is not required.
- 8) Units should be cleaned prior to hand over.

PLEASE NOTE

Traditionally, Combined Kerb Drainage System failures are due to side wheel loads, irrespective of the compressive loading capabilities of the product, but EN1433 and DIN19580 do not specify a test for side impact loads. However, the Envirokerb components supplied by Hauraton have a high impact resistance to side wheel loads therefore we recommend the C250KN installation detail with a well compacted road construction.

ENVIROKERB - Case studies

HAURATON ENVIROKERB INSTALLED AT MAJOR PROJECT IN CARDIFF

Easily the largest, new infrastructure project in the Cardiff area for some years, the development at Leckwith, West of the city, includes the 43,964 m² (472,730 ft²) Capital Retail Park, 26,500 seat Cardiff City Stadium, a 5000 capacity IAAF approved International Athletics and community sports venue and a 70 room hotel. According to First Minister for Wales, Rhodri Morgan, the multi million pound Leckwith project, including the new sports facilities, is poised to rejuvenate employment and business activity in the Welsh Capital.

To cope with the massive increased in traffic; the local road network was completely re-engineered. Much of the "Brown-field" land within the development has been paved over with access roads and parking areas, so efficient, sustainable urban drainage was a major consideration in the overall planning for the project - see aerial photograph. Various drainage systems have been incorporated into the scheme, all complying with SUDS legislation and local requirements.

Landscaped roads into the complex incorporated over 600 metres of Hauraton ENVIROKERB kerb drainage which complemented the other Hauraton surface water channel systems installed in the main car parks and commercial access areas.

Tim Connolly Sales Director at Hauraton was pleased that drainage contractor, Churngold Construction, found the ENVIROKERB drainage components easy to install. "Having the appearance of standard concrete kerb, the ENVIROKERB components are in fact made from 100% recycled material that weighs far less than concrete, allowing units to comply with the maximum 25kg "one-man-lift" legislation. In addition, the recycled material is impact resistant making the components almost unbreakable and much less vulnerable to the usual on-site damage prior to pavement and roadway completion".

Steve Wiseman, Hauraton's Project Manager, provided support for the consulting engineers and contractors involved with the drainage schemes ensuring the Hauraton surface water drainage channels fully integrated with ENVIROKERB.



HAURATON ENVIROKERB INSTALLED AT WHITE ROCK, PAIGNTON

The White Rock Business Park, Paignton, Devon, provides more than 40,000 m² of much needed office space in the Torbay area. It is expected to create upwards of 2000 new jobs. The work on the scheme started in 2007 after an announcement by the South West of England Regional Development Agency. The Agency invested £2.3 million to buy the land and progress the project in partnership with Torbay Council.

Land owner McAlpine and developer Abacus also committed £3.5 million to this major infrastructure project. A further £3.5 million was received from the EU Objective 2 Funding. Landscaped roads into the business complex incorporated over 450 metres of Hauraton 385mm ENVIROKERB.

Tim Connolly Sales Director at Hauraton was pleased that the Specification Engineers, and contractor, South West Highways, found the ENVIROKERB drainage components easy to specify and install.



HAURATON ENVIROKERB AND RECYFIX® HICAP® INTEGRATED DRAINAGE SCHEME

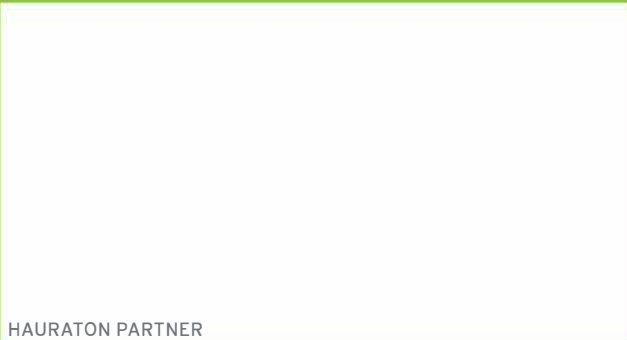
In the middle of 2009, freezer store chain, Heron Frozen Foods moved into their new, purpose built 20,000m² distribution centre and two storey head office building. Located adjacent to the A63 in the Melton West Business Park, East Yorkshire, the site includes a 6,650 m² cold store, a 3500 m² chill store, a 9,590 m² ambient temperature warehouse and a recycling facility.

138 metres of Hauraton ENVIROKERB 385mm was installed along the perimeter of the staff car park with a further 118 metres along the HGV bays. 70 metres of Hauraton RECYFIX® HICAP® High Capacity drainage channels were integrated with the ENVIROKERB to drainage the lorry access areas.

The ENVIROKERB components and the RECYFIX® HICAP® channels were installed by contractor Volker Stevin around the distribution centre.

Colin Taff, Hauraton's Project Manager, provided technical support for the consulting engineers and the contractor involved, ensuring the RECYFIX® HICAP® surface water drainage channels fully integrated with ENVIROKERB and other SUDS components installed on site.





HAURATON PARTNER

HAURATON LIMITED

UNIT 4, FRENCHS AVENUE
DUNSTABLE, BEDFORDSHIRE
LU6 1BH

TEL: 01582 501380

FAX: 01582 501399

E-MAIL: TS-UK@hauraton.com

WEB: WWW.HAURATON.CO.UK

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