

A better way of working for a safe more sustainable environment

Produced in the EU



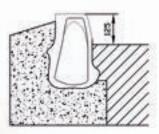
Sustainable surface water drainage solutions

REDUCING CARBON +
REPURPOSING WASTE +
REDUCING RISK +
ENVIRONMENTAL IMPACTS

A better way of working for a safer more sustainable environment

www.torrentwm.co.uk





Half Batter Kerb - 125mm Upstand



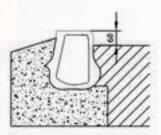
Half Batter Kerb - 100mm Upstand



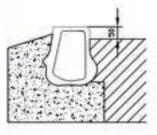
Splay (Full Batter) Kerb 100mm Upstand



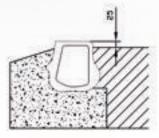
Splay (Full Batter) Kerb 75mm Upstand



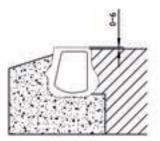
Bullnosed Low Profile Kerb 60mm Upstand



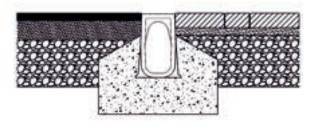
Bullnosed Low Profile Kerb 50mm Upstand



Bullnosed Crossing Kerb 25mm Upstand



Bullnosed Crossing Kerb 0-6mm Upstand



Flush Linear Channel within Varied Surfaces



Cost Effective Performance

All exposed impermeable surfaces and structures require effective drainage to prevent flooding or settlement and to protect surfaces. Dura Products linear surface drainage systems provide a sustainable, safe, efficient and cost-effective solution for the collection and evacuation of surface water run-off.

Using hydraulically efficient material, the shape and large cross-sectional areas provide a surface water drainage system that can deliver large volumes at outlet within a shallow construction.

Linear drainage systems collect run-off quickly and efficiently which helps extend the life of a project, and improve user safety. This is essential for Highways and Infrastructure generally.

Unlike the traditional kerb and gully methods where flows compound on the surface, the collected run-off is contained and driven to outlet hidden within the channel body. Linear drainage is a much more efficient method of drainage where levels across site can be simplified to deliver run off directly to a linear low point.







TORkerb 70000HB

Ahb = Usable Channel Volume (Open-Flow) = 21,197mm² Phb = Wetted Perimeter = 467mm n = Roughness Value = 0.009 S = Slope/Equivalent Head

R = A/P



TORkerb 60000SP

Asplay = Usable Channel Volume

(Open-Flow) = 22,182mm² Psplay = Wetted Perimeter = 486mm

n = Roughness Value = 0.009

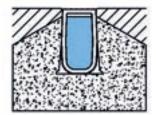
S = Slope/Equivalent Head

R = A/P



TORkerb 70035LP

Alp = Usable Channel Volume (Open-Flow) = 21,197mm² Phb = Wetted Perimeter = 467mm n = Roughness Value = 0.009 S = Slope/Equivalent Head R = A/P



TORchannel 50000LD

A = Usable Channel Volume

(Open-Flow) = 18,246mm² P = Wetted Perimeter = 436mm n = Roughness Value = 0.009

S = Slope/Equivalent Head

R = A/P

 $V = 1/n \times R^2/3 \times S^1/2$ V (Velocity) x A = Q - Flow @ Outlet (Unrestricted)

For a fully proven system, flows should be calculated for each section of CKD to outlet/outlets.

Please see our Design & Installation Guide or contact us for more information.



Optimum Drainage Solutions

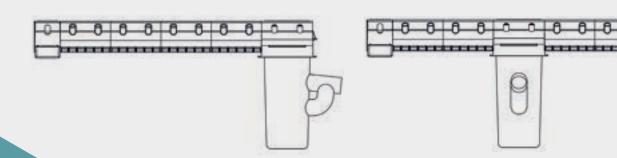
For an optimum solution, linear drainage systems should generally be designed with the fewest number of outlets and therefore offering the shallowest discharge into the serving carrier system.

The simplest solutions start with a sealed end cap and access point. Linear surface drainage solutions provide a more accessible system for maintenance. We recommend access points are positioned at the head of each linear section and at intervals to suit specific site conditions.

Inspection and jetting can be made within the channel from the access points and also through the inlet slots within the standard units.

Linear sections working at or just below capacity will generally be optimum in terms of silt transit. Ensuring sections are designed to their maximum length before outlet will generally prove optimum in terms of installed cost and reduced maintenance.

The choice and position of outlet can have an effect on the outputs within each section. We generally recommend full gully outfalls which provide wider access for maintenance and allow flows to drop-out free without obstruction into standard road gullies or access chambers.



A better way of working for a safer more sustainable environment



Performance Assured

Combined Kerb and Linear Surface Drainage Systems are a universally recognised and efficient method of draining surfaces. TORkerb and TORchannel are manufactured in accordance with EU Harmonised & UK Designated Standards (EN1433-Load Category Group 4-D400). The Standard verifies compliance and defines the requirements and demands for a product and system. The requirements for compliance have been developed and set by CEN/CENILEC within EU Legislation. They are designed to remove barriers to trade, promote entrepreneurship and improve access to markets.

Please visit our website for more information, or ask for our comprehensive Design & Installation Guide.

IAN117/08 Rev 2 and can be approved, used and adopted within highways across the UK, Ireland & Mainland Europe.

Group 3 (min, class C250) - Kerb sides and non trafficked areas of hard shoulders and similar.

Group 4 (min, class D400) - Carriageways of roads (including pedestrian streets), hard shoulders and parking areas, for all types of road vehicles.

Please note – Qualification under EN1433 verifies compliance, defining the requirements for a product based on its intended use/function. Additionally, a hydraulic function check for each section to outlet is necessary.

EN1433 also stipulates installation "must" be carried out as per Manufacturers installation advice.



TORkerb 60000

The 60000 SP Range has a full batter (45 Degree) Splay Profile used primarily on fast moving carriageways, verges and rural infrastructure where there is no rear footway.

The profile is designed to allow accidental overrun but encourage vehicles back towards the carriageway.





REDUCING CARBON +
REPURPOSING WASTE +
REDUCING RISK +
ENVIRONMENTAL IMPACTS



TORkerb SP 60000

Item (Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Useable Flow Area mm²	Kerb Upstand/mm	Load Classification
6000	0	TORkerb 305 Full Batter / Splay Standard Unit	7	500	215	305	22,182	75 / 100	EN1433 : 2002-D400





TORkerb 305 Splay Standard Unit

The recycled & recyclable lightweight standard units are manufactured from a hydraulically efficient material and have a large useable volume. This means large areas can be drained quickly and safely, protecting surfaces by taking run-off at multiple points across the whole length of the kerb-line.

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Kerb Upstand/mm	Load Classification
60050	TORkerb 305 Full Batter / Splay Gully Outfall	68	500	457	353	75 / 100	EN1433 : 2002-D400

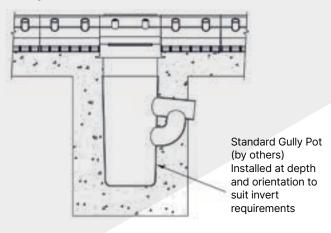


TORkerb 305 Full Batter / Splay Gully Outfall

The TORkerb Full Batter ductile iron top and base units provide a high quality, heavy duty outlet point.

The units allow for single or dual inflows and have a large access area for maintenance.

Gully Installation Detail



A better way of working for a safer more sustainable environment



TORkerb 60000

Item Code	Description	Weight/kg	Width/mm	Depth/mm
70090	TORkerb 305 Universal End Cap / Outlet	0.2	215	305





TORkerb 305 Universal End Cap / Outlet

TORkerb Universal end caps are cut to profile on site and fitted to access / outlets and standard units. Simply apply sealant up to the window / entry height and fix. Caps can be cut to allow for below ground pipe connections.

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Useable Flow Area m ²	Kerb Upstand/mm	Load Classification
60072	TORkerb 305 Splay Rodding Access / Outlet Unit	16	250	218	360	22,182	75 / 100	EN1433 : 2002-D400



TORkerb 305 Splay Rodding Access / Outlet Unit

TORkerb solid ductile iron access points can be installed at the head of each run and at regular intervals subject to site conditions. Units are supplied with a blank plug which can be removed, sealed and refitted. Alternatively they can be used as a robust shallow or intermediate outlet point (EN1401-162 Dia Rear Pipe Outlet).

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Radius/m	Kerb Upstand/mm	Load Classification
60100	TORkerb SP External Radius Unit 7/5	7	480	215	305	7/5	75 / 100	EN1433:2002-D400
60104	TORkerb SP External Radius Unit 12/8	7	480	215	305	12/8	75 / 100	EN1433:2002-D400
60110	TORkerb SP External Radius Unit 27/13	7	480	215	305	27/13	75 / 100	EN1433:2002-D400
60200	TORKerb SP Internal Radius Unit 7/5	7	480	215	305	7/5	75 / 100	EN1433:2002-D400
60204	TORkerb SP Internal Radius Unit 12/8	7	480	215	305	12/7	75 / 100	EN1433:2002-D400
60210	TORkerb SP Internal Radius Unit 27/13	7	480	215	305	27/13	75 / 100	EN1433:2002-D400



TORkerb SP External/Internal Radius Unit

Standard Units can be supplied facetted to suit both external and internal radii.

TORkerb 70000

The 70000 HB Range has a half battered profile used primarily on roads with a rear footway or at surface boundaries to hard standings and car parking areas.

The profile is designed to deter vehicle overrun and deflect traffic back onto the carriageway.





REDUCING CARBON +
REPURPOSING WASTE +
REDUCING RISK +
ENVIRONMENTAL IMPACTS

TORkerb 70000

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Useable Flow Area mm ²	Kerb Upstand/mm	Load Classification
70000	TORkerb 305 Half Batter Standard Unit	8.4	500	215	305	21,197	100 / 125	EN1433 : 2002-D400



TORkerb 305 Half Batter Standard Unit

The recycled & recyclable lightweight standard units are manufactured from a hydraulically efficient material and have a large useable volume. This means large areas can be drained quickly and safely, protecting surfaces by taking run-off at multiple points across the whole length of the kerb-line.

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Kerb Upstand/mm	Load Classification
70050	TORkerb 305 Half Batter Gully Outfall	68	500	457	353	100 / 125	EN1433 : 2002-D400

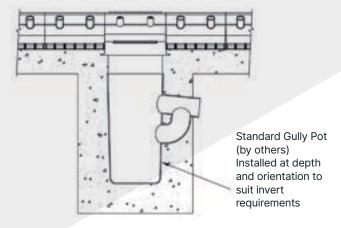


TORkerb 305 Half Batter Gully Outfall

The TORkerb Half Batter ductile iron top and base units provide a high quality, heavy duty outlet point.

The units allow for single or dual inflows and have a large access area for maintenance.

Gully Installation Detail



A better way of working for a safer more sustainable environment



TORkerb 70000

Item Code	Description	Weight/kg	Width/mm	Depth/mm
70090	TORkerb 305 Universal End Cap / Outlet	0.2	215	305





TORkerb 305 HB End Cap / Outlet

TORkerb Universal end caps can be fitted to access/ outlets and standard units. Simply apply sealant up to the window/entry height and fix. Caps can be cut to allow for below ground pipe connections.

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Useable Flow Area m ²	Kerb Upstand/mm	Load Classification
70072	TORkerb 305 HB Rodding Access / Outlet Unit	14	250	218	360	21,197	100 / 125	EN1433 : 2002-D400



TORkerb 305 HB Rodding Access / Outlet Unit

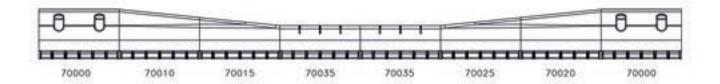
TORkerb solid ductile iron access points can be installed at the head of each run and at regular intervals subject to site conditions. Units are supplied with a blank plug which can be removed, sealed and refitted. Alternatively they can be used as a robust shallow or intermediate outlet point (EN1401-162 Dia Rear Pipe Outlet).





Drop Kerbs & Centre Stones

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Load Classification
70010	TORkerb Left Hand Drop Kerb L305	7	500	215	305 / 255	EN1433:2002-D400
70015	TORkerb Left Hand Drop Kerb L255	5	500	215	255 / 205	EN1433:2002-D400
70020	TORkerb Right Hand Drop Kerb R305	7	500	215	305 / 255	EN1433:2002-D400
70025	TORkerb Right Hand Drop Kerb R255	5	500	215	255 / 205	EN1433:2002-D400
70035	TORkerb Drainable Centre Stone 205	4.8	500	215	205	EN1433:2002-D400



We offer standard drop configurations from 125mm/ 100mm full kerb height. Road surfacing can be rolled to accommodate a 0-6mm or 25mm upstand through the crossing. Duradrain one piece centre stones are supplied with vertical 8mm pedestrian friendly inlets to maintain drainage through each drop section.



A better way of working for a safer more sustainable environment



Radius Units & Corners

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Radius/m	Kerb Upstand/mm	Certification	Load Classification
70100	TORkerb HB External Radius Unit 7/5	7	480	215	305	7/5	75 / 125	EN1433:2002	D400
70104	TORkerb HB External Radius Unit 12/8	7	480	215	305	12/8	75 / 125	EN1433:2002	D400
70110	TORkerb HB External Radius Unit 27/13	7	480	215	305	27/13	75 / 125	EN1433:2002	D400
70200	TORkerb HB Internal Radius Unit 7/5	7	480	215	305	75	75 / 125	EN1433:2002	D400
70201	TORkerb HB Internal Radius Unit 12/8	7	480	215	305	12/8	75 / 125	EN1433:2002	D400
70210	TORkerb HB Internal Radius Unit 27/13	7	480	215	305	27/13	75 / 125	EN1433:2002	D400



TORkerb Internal/External 90 Deg Corner

Standard full height and dropped units can be supplied cut and fixed to provide precise external or internal angles.

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Kerb Upstand/mm	Certification	Load Classification
70005	TORkerb External HB 90 Deg Corner	7	300	300	305	75 / 100	EN1433:2002	D400
70006	TORkerb Internal HB 90 Deg Corner	7	300	300	305	75 / 100	EN1433:2002	D400
70031	TORkerb External CS 90 Deg Corner	7	300	300	205	0 / 25	EN1433:2002	D400
70032	TORkerb Inetrnal CS 90 Deg Corner	7	300	300	205	0 / 25	EN1433:2002	D400



DURADRAIN SHALLOW PROFILE

Modern infrastructure design for our towns and cities is changing to meet the new net carbon zero targets set by governments to reduce environmental impacts. Designers are creating roads and pavements to encourage increased use for pedestrians, cyclists, wheelchair users and public transport.

CKD (Combined Kerb & Drainage) is already an accepted and adoptable method of highway drainage. Our shallow profile drainable units give designers further options to allow for shallower kerb upstands, ideal for cycleways with designated lane separation.



TORkerb BN Shallow Profile

Item Code	Description Weight/kg Leng		Length/mm	Length/mm Width/mm		Depth/mm Kerb Upstand/mm	
70035	Porkiered ainablas centre Stone 2005	4.8	500	215	205	0-25	EN1433:2002-D400
70038	PorakeinblowProdia@ellnose24011468e2	5.5	500	215	240	35-60	EN1433:2002-D400



Shallow Profile Standard Units

The recycled & recyclable lightweight drainable units are manufactured from a hydraulically efficient material and have a large useable volume. This means large areas can be drained quickly and safely, protecting surfaces by taking runoff at multiple points across the whole length of the kerb-line.

Item Code	Description Weight/k		Weight/kg Length/mm		Width/mm Depth/mm		Load Classification
70055	TORkerb B/N Gully Outfall	58	500	457	253	0 / 60	EN1433 : 2002-D400
70058	TORkerb B/N GO Access only c/w Sealed Base Plate	60	500	457	253	0 / 60	EN1433 : 2002-D400

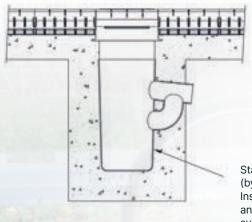


TORkerb Bn Gully Outfall

The TORkerb Bullnose ductile iron top and base units provide a high quality, heavy duty outlet point.

The units allow for single or dual inflows and have a large access area for maintenance.

This unit can be supplied with a sealed baseplate when used as access only.



Standard Gully Pot (by others) Installed at depth and orientation to suit invert requirements



Shallow Profile Transition Unit

We can also supply pre-fabricated handed drop/ transitions to accommodate variable changes in height common with low profile designs where crossing points are shallow.





Durachannel

The 50000 Durachannel Range is a traditional monolithic linear surface water drainage system.

The recycled & recyclable lightweight standard units are manufactured from a hydraulically efficient material and have a large useable volume. This means large areas can be drained quickly and safely, protecting surfaces by taking run-off at multiple points across the whole length of the channel-line.



REDUCING CARBON + REPURPOSING WASTE + REDUCING RISK + ENVIRONMENTAL IMPACTS



Duraproducts

Durachannel

Item Code	Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Useable Flow Area mm²	Slot Type	Colour	Load Classification
50000	Durachannel 160mm Standard Unit	4.5	500	187	160	12,479	8mm Dual-Ped	Black	EN1433:2002-D400
50002	Durachannel 260mm Standard Unit	8	500	187	260	18,246	8mm Dual-Ped	Black	EN1433:2002-D400





Durachannel Standard Unit

The recycled & recyclable lightweight standard units are manufactured from a hydraulically efficient material and have large useable volume. This means large areas can be drained quickly and safely, protecting surfaces by taking run-off at multiple points across the whole length of the channel-line.

Item Code	Description	n Weight/kg		Width/mm	Depth/mm	Load Classification	
50060	Durachannel Universal Outfall	38	360	360	461	EN1433 : 2002-D400	
50064	Durachannel UO Junction/angle c/w Sealed Base Plate	39	360	360	461	EN1433 : 2002-D400	

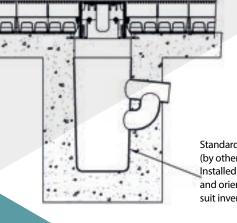


Durachannel Universal 4-Way Inflow Outfall/ Junction/Corner Unit

The Durachannel ductile iron grate and base units provide a high quality, heavy duty outlet point.

The unit allows for four way channel inflows and has a large access area for maintenance. This unit can be supplied with a sealed baseplate to provide a robust, fully supported corner/junction unit.

A better way of working for a safer more sustainable environment



Standard Gully Pot (by others) Installed at depth and orientation to suit invert requirements



Durachannel

Item Co	de Description	Weight/kg	Length/mm	Width/mm	Depth/mm	Useable Flow Area mm²	Slot Type	Colour	Load Classification
50072	Durachannel 260mm Rodding Access	18	250	202	360	18246	8mm Dual-Ped	Black	EN1433 : 2002-D400W



Durachannel 260mm Rodding Access

Durachannel solid ductile iron access points can be installed at the head of each run and at regular intervals subject to site conditions. Units are supplied with a blank plug which can be removed, sealed and refitted. Alternatively they can be used as a robust shallow or intermediate outlet point (EN1401-162 Dia Rear Pipe Outlet).





TORkerb/TORchannel Sealant

Item Code	Description	Weight/kg	Volume	Coverage	Colour	COSHH Data
80000	TORkerb One Part Low Modulus Polyurethane Sealant	0.8	600ml	10 Joints / Tube	Grey	See Website Downloads
80010	Torrent Sealant Applicator	2	N/A	N/A	N/A	N/A
80005	TORchannel One Part Low Modulus Polyurethane Sealant	0.8	600ml	10 Joints / Tube	Black	See Website Downloads







TORkerb/TORchannel sealant should be applied around the channel body up to the road surface / inlet level.

All Units have a flush face to face contact so each unit can be hammered to line and level creating an effective seal across the whole joint width. The bed and brace within the retention elements create a single structure and unlike traditional jointed or laid-in channels, there are no weak points across the joint providing a longer lasting seal in service.

For highways adoption all joints must be sealed. (EN1433-HA-Doc_IAN117/08 Rev 2.)

For more information please see our Design & Installation Guide.

A better way of working for a safer more sustainable environment

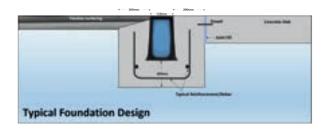


HB & SP Duradrain Hydraulic Flow Chart Duradrain Ensures You Meet Your CDM Obligations

V III III							30,676kg of Carbon saved for every 1000m with a Durakerb installation. (PAS 2050.IS by Sustain Limited).					
	Run Number	Run Intensity Capacity Are		Catchment Area (m²)	Select Kerb Profile	Run Capacity @ Outlet - Flows Driven by Gradient - One Directional (L/sec)	Run Capacity @ Outlet - Flows Driven by Gravity - Restraint to outlet (L/sec)	Run Capacity @ Outlet - Flows Driven by Gravity - Outlet to outlet - Two Directional (L/sec)	ОК	Notes		
	1/1.000	33.1	58.7	8.02	492	НВ	20.84			~	Required run capacities are based on a rainfall intensity of 50mm/hr+ 20% to alow for climate change, falling on 100% of thre catchment areas taken from drawings supplied.	
	1/2.000	22.4	58.7	9.10	558	НВ	30.37			•		
	1/3.000	46.1	58.7	13.22	811	НВ	28.26			V		

Free Design Advice

Dura Products offer the opportunity to design & construct innovatively, with responsibility to the environment and everyone involved in the construction process. We can supply simple run schedules, provide product details in various formats for insertion and full hydraulic calculations with design/installation advice for the complete Dura range.

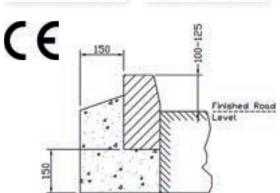


We can provide data files for all our products in PDF, DWG and 3D STP formats.

Please feel free to get in touch or visit our website for more information.

Although Dura Products offer unique benefits, they are specifically design to comply with regular industry and/or harmonised British and European standards.







Design & Installation Information

Every project, large or small, should be fully assessed so a correct installation method can be agreed and therefore full integration achieved. All projects have differing and specific demands so it is important for designers to make a full risk

Please download our comprehensive Design

The position of the kerbs/drainage units, the surrounding structure/landscape, functions, road alignment, levels, specific local design criteria and the type/volume of traffic will determine a best method of installation.





System & Product Maintenance

- 1 Duradrain and Durachannel are designed to be integrated into varied hard-landscapes and perform the function of drainage within the channel body. After initial installation, each section of CKD/Channel should be jetted to ensure the bores are free of silt and debris. It is possible to jet from the surface through the slots/inlets working from an open access point to outlet. Outlets should also be free of silt and any obstruction. Once cleaned the access lids should be re-fitted and the locking bolts fixed securely.
- 2 The frequency and necessity for maintenance is project specific and can be influenced by factors prior to collection and at outlet discharge. If necessary, a maintenance procedure can be agreed as part of the overall drainage strategy with a full risk assessment carried out.
- 3 A visual inspection can be carried out periodically to assess the condition. It is usual to see scuff marks which will not affect the function or longevity of the product. Access lids should be checked to ensure they are locked and secure.
 - View all our case studies at: www.durakerb.co.uk/case-studies/

- 4 Where there has been a serious accident and units require replacing, new units can be cut to size and patched-in. It is important to take the repair across the extent of any damage and ensure the existing bed and brace or haunches are sound. Units can then be re-installed using Durakerb bedding mortar or a strong polymer modified mortar with adhesive properties if considered necessary.
- 5 It is important to assess the drainage function also. A visual inspection of the surrounding surfaces will generally provide evidence of pooling which could be a result of a blockage within the channel body. Any leaves, mud, and rubbish should be swept away from the inlet/slots so run-off entry is clear.
- 6 Each section of CKD/Channel should be jetted to outlet to ensure the bores are free of silt and debris. It is possible to jet from the surface and loosen any stubborn weed growth through the slots/inlets working from an open access point to outlet. Outlets should also be cleared free of silt and any obstruction and ensure the drainage connections are correctly fixed. Once cleaned the access lids should be re-fitted and the locking bolts fixed securely.
- 7 Access Lids and Gully Units are bolted and locked using M8/M16 socket head allen keys.















Other Products In The Dura Range

Recycled Lightweight Kerb System

Durakerb is a recycled & recyclable polymer kerb system.

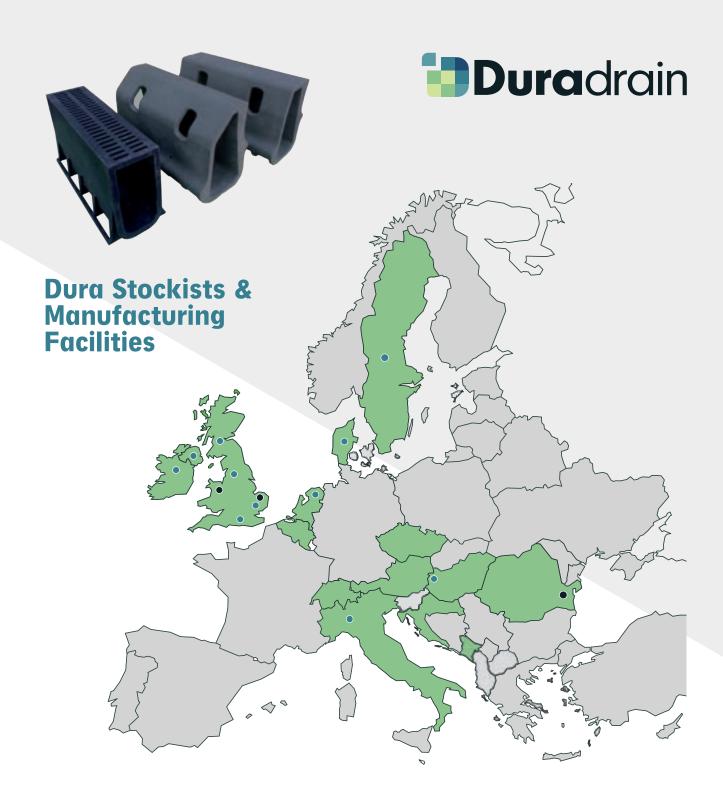
It has been tested and certified by HAPAS/ BBA in accordance with BS EN1340 since 2008. There are now more than 400,000 units installed within highways and infrastructure across the UK and Ireland.



The range comprises of Half Battered, Full Battered (Splay) and Bullnosed profiles with a range of accessories.

Please feel free to get in touch or visit our website for more information.





Head Office:

Dura Products Ltd Unit 13a Deeside Industrial Estate Deeside, Wales CH5 2LR

Tel: +44 01244 289003 Email: info@econpro.co.uk Company Registration No. 05410550 VAT No. 336 8124 00

Production Facility:

Deeside -Wales - UK King's Lynn - England - UK lasi - Romania

• Stockists:

Republic of Ireland Wales - UK Northern Ireland - UK England - UK Scotland - UK Denmark Hungary Italy Netherlands Sweden

Registered Office:

Dura Products Ireland Ltd, 14 Wentworth, Eblana Villas, Dublin, DO2 WK10, Ireland Dura Products Ireland Company Registration No. 687560 - VAT Reg EORI - IE 3742786MH

Duraproducts

Sustainable surface water drainage solutions

Dura Products Ltd Unit 13a Deeside Industrial Estate (Zone 1 Central), Drome Road Deeside, Wales CH5 2LR

T: +44 01244 289003 E: info@econpro.co.uk







