



AquaDeck™

CONTINUOUS COMBINED KERB BRIDGE & CHANNEL DRAINAGE SYSTEMS
Plus AQUADECK SUB-DRAIN for sub surface water collection



UK
CA

BSEN1433 MIN D400 LOADING - HIGH STRENGTH DUCTILE IRON

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Intelligent Access & Drainage Solutions™

For over 30 years the importance of positive and effective drainage on bridges has long being recognised. As critical to the many design aspects of the structure, effective drainage is essential to the longevity of the bridge.

By providing effective drainage, bridges are safer for road users removing dangerous surface water from the carriageway. Positive drainage also protects both expansion joint and waterproofing installations.



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Eccles (UK Foundries FE) Ltd established in 1955 has over 30 years of experience in assisting in the design and manufacture of combined bridge drainage systems.

Our new **AquaDeck** Bridge Drainage System has been developed to compliment our existing range of civil engineering products.

EST.
1955



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CCA

HYDRAULIC FLOW TABLES

CONTACT

sales@aquadeck.co.uk

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AquaDeck is fully compliant to the Harmonised European Standard **BSEN1433**.

AquaDeck is CE marked and also carries the new UKCA mark (which is required from 1st January 2023).

The UKCA mark will become mandatory for all previously CE marked products being placed on UK projects from 1st January 2023.

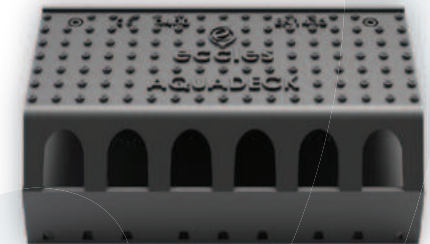
***BSEN1433 CE marked products can still be used on UK projects from the 1st January 2021, providing that the CE certification is still current and has been issued by a Notified Body who still holds Notified Body status for BSEN1443.**

(System 3 Attestation of Conformity level 3)

***Engineers and end users should check this carefully, as the UK left the European Union many Notified Bodies reduced the number of harmonised standards for which they had previously offered CE marking, products in this situation must be re-certified/tested by a new NB.**

For additional quality and assurance **AquaDeck** has also been certified and awarded the prestigious BSI Kitemark, meaning the product has been checked against all aspects of the standard, not just the minimum requirements for **CE/UKCA** certification and is subject to on-going surveillance and checks (Product Certification) – Equivalent to AoC system 1 throughout manufacture and supply.

Clients are welcome to visit our purpose built test facility at Walsall where they can witness load testing of **AquaDeck** units from our stock products or their own site specific production runs.

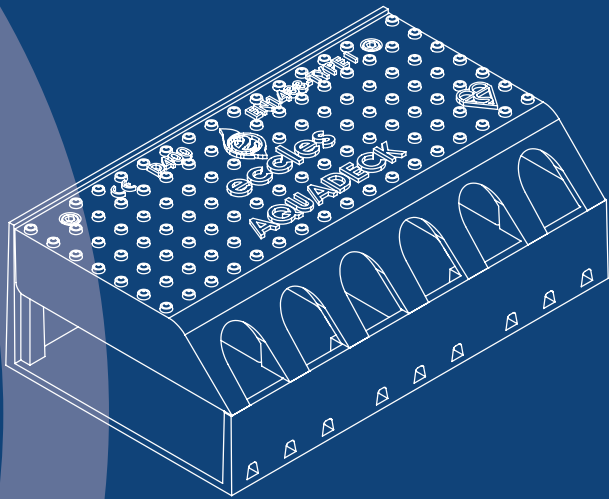


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Eccles **AquaDeck** is a high strength Ductile Iron Combined Kerb Drainage System, specifically designed for use on Bridges and elevated Highways or where construction depths are limited.



AquaDeck™

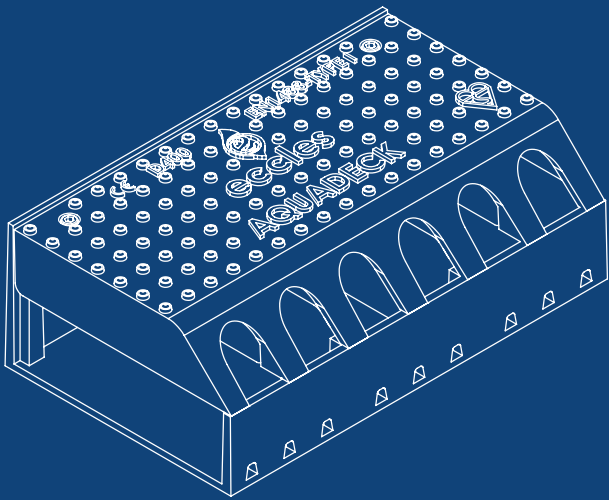
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Available in both Half Battered and 45 Degree Splay Design. AquaDeck is manufactured in a wide range of width and depth combinations to suit the specific hydraulic design of your project.

Please contact our technical design team for help and assistance.



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TESTING - D400 SPECIFICATION +10%

AquaDeck is designed and FPC tested to a Min design load of **D440kN**
(Group 4) **BSEN1433**.

Tested free standing as a Type 1 unit.
(BSEN1433 Clause 6.1.1) AquaDeck requires no additional on-site support to withstand compressive loads.

INSTALLATION

AquaDeck installation is simple and the units are fast to install, the whole process can be carried out by experienced kerb layers. The system is laid on AquaDeck Bedding Compound and adjusted to line and level. AquaDeck sealant is gun applied to the ends of the unit to form a watertight seal.

PLEASE REFER TO OUR AQUADECK INSTALLATION GUIDE FOR MORE INFORMATION.

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* Plus 10% follows Kitemark protocol for Manhole Cover testing to BSEN124 for Kitemark accreditation.

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AquaDeck D400

REAR OR END OUTLETS
100mm

BASE OUTLETS*
150mm/200mm/225mm/300mm

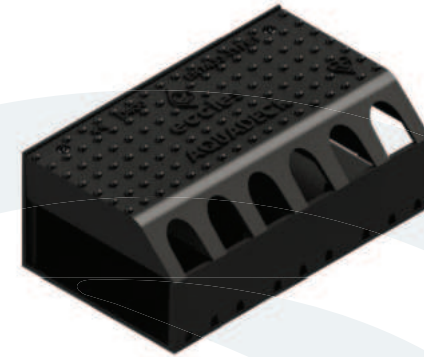
* Subject to unit width.

Alternatively simple square or rectangular base openings can be specified.

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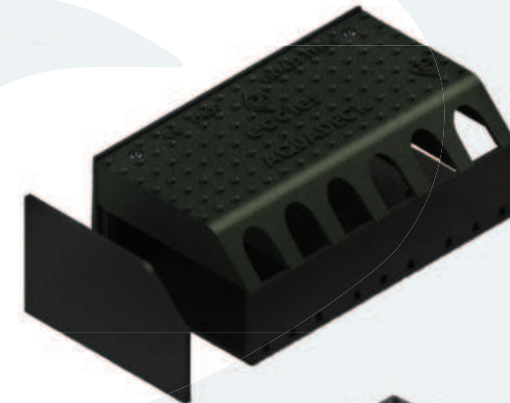
STANDARD UNITS

2-PIECE SO ACT AS
RODDING/INSP UNITS



END UNITS IN RH/LH

LEFT HAND FORMAT SHOWN



OUTLET UNITS

BASE POSITION
AS SHOWN VARIOUS DIA AVAILABLE



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AquaDeck E600

AquaDeck can be specified with an upgraded cover.

E600 Option available.

Tested free standing as a Type I unit.

(BSEN1433 Clause 6.1.1).

AquaDeck E600 requires no additional on-site support to withstand compressive loads, awarded the prestigious BSI Kitemark (Product Certification).

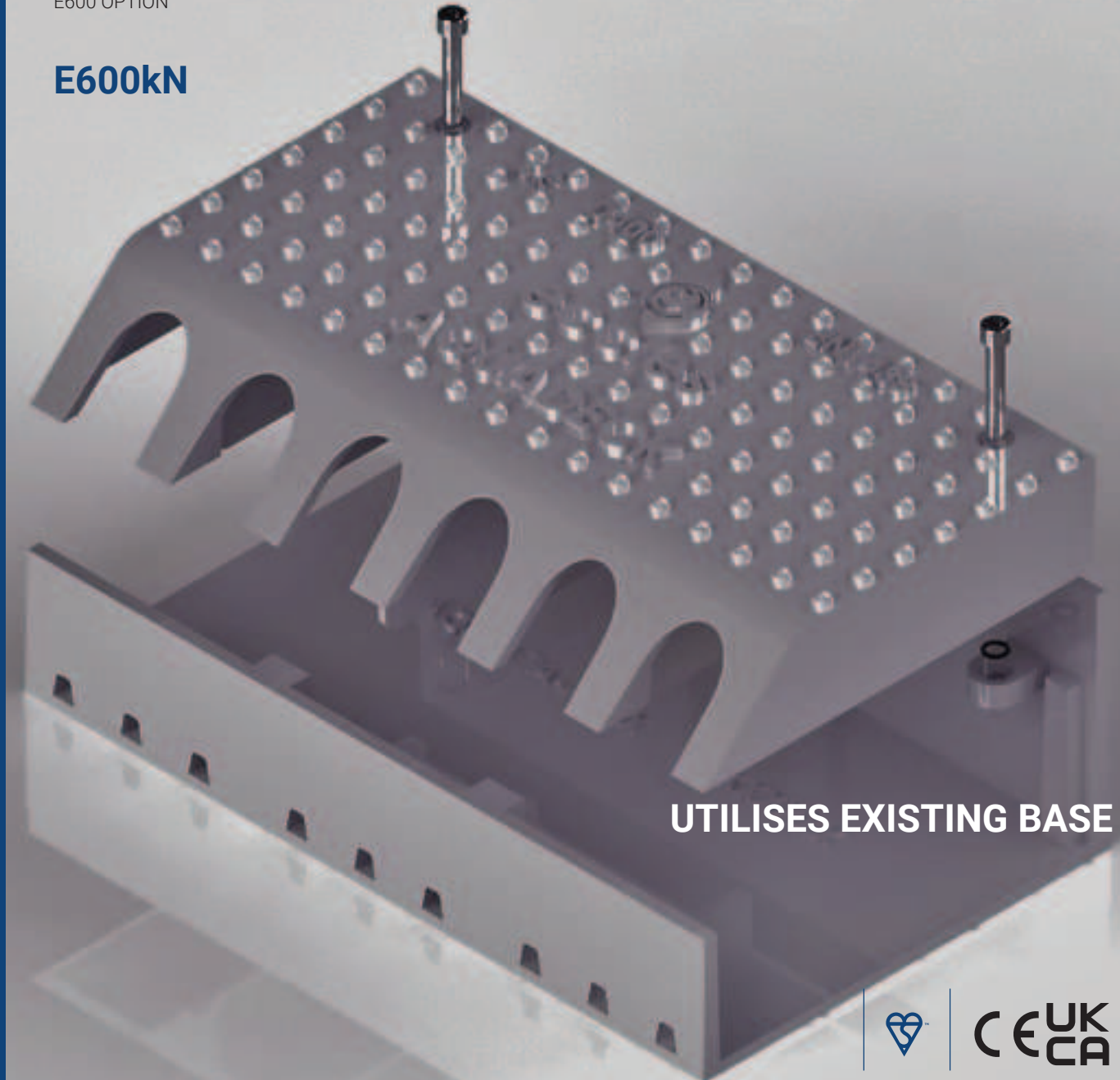
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UPGRADED

E600 OPTION

E600kN

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UTILISES EXISTING BASE



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DESIGN FEATURES

Surface & Sub surface drainage in one unit.

Type I Tested in excess of 400kN.

We apply an additional 10% safety factor in both our structural design and FPC testing of the AquaDeck product following the kitemark protocol for BSEN124 (manhole covers and gully gratings).

SmartGrip Technology™ with a PSRV Value in excess of 0.83kN (WRc) High Risk Areas (National Highways CD534 Refers).

2-Part Design allowing access for cleaning at any point along the entire drainage run.

45 Degree Splay or HB Kerb Shape.

Unique 2-part design means special depths can be manufactured with minimal tool costs.

In early 2020 National Highways as part of their updates and revisions of the DMRB and MCHW introduced skid resistance values within CD534. Whilst aimed at manhole covers & frames installed on NH projects, kerb drainage systems on SMART Motorways are now often installed directly adjacent to live running lanes. With a splay kerb face and a low 75mm kerb height its is easy for traffic to mount the kerbline and run for several metres on top of kerb installations. For this reason anti-skid properties should be considered when specifying kerb drainage systems.

See Eccles WRC skid resistance report UC14298.

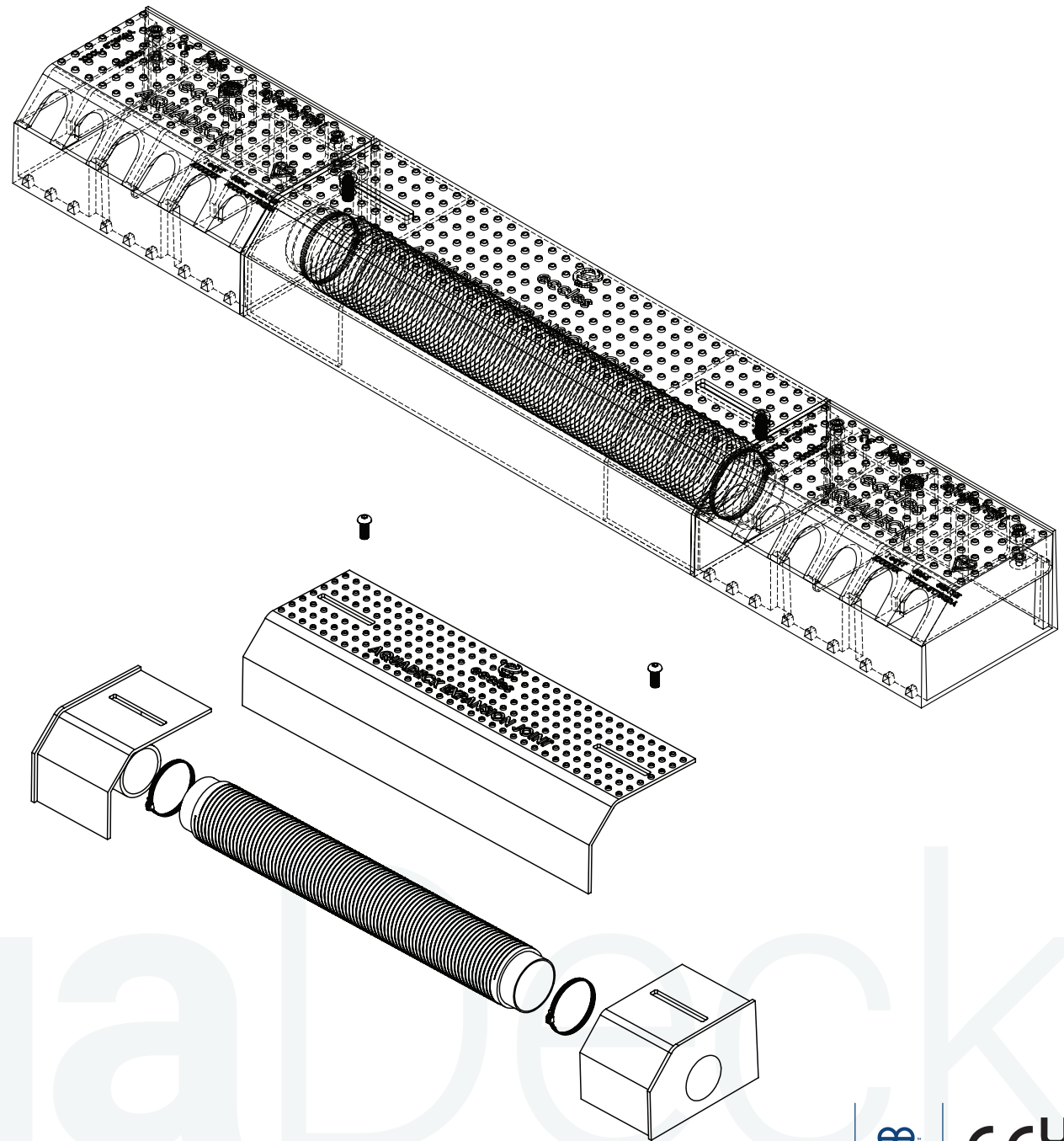
EXPANSION JOINTS

AquaDeck **EXPANSION JOINTS** accommodate longitudinal and transverse movements and work in conjunction with metal runner type joints/asphaltic plugs, buried joints and other mechanical installations.

As most joints are often bespoke and/or have specific details for each structure or installation please contact our technical sales team for help and advice with your chosen joint system.

We can use basic flexible pipe systems, expansion bellows or designs incorporating rectangular box sections to maintain higher flows through the expansion joint location.

Please contact our technical sales teams for advice with your chosen joint system.



AquaDeck CHANNEL

Establish the drainage run length

Calculate the catchment width from the cross section

(Taking into account single or dual crossfall to kerblines)

Apply Rainfall criteria (Refer to Highways England DMRB HA37-97 as a guide) (UK Projects)

Please contact our technical sales team for help & assistance with Hydraulic Data, Rainfall Levels inc Time of Entry etc which can differ depending on your project location.

Decide upon Kerb Shape

- HB (13.5 Degree kerb slope)
- SP (45 Degree kerb slope)

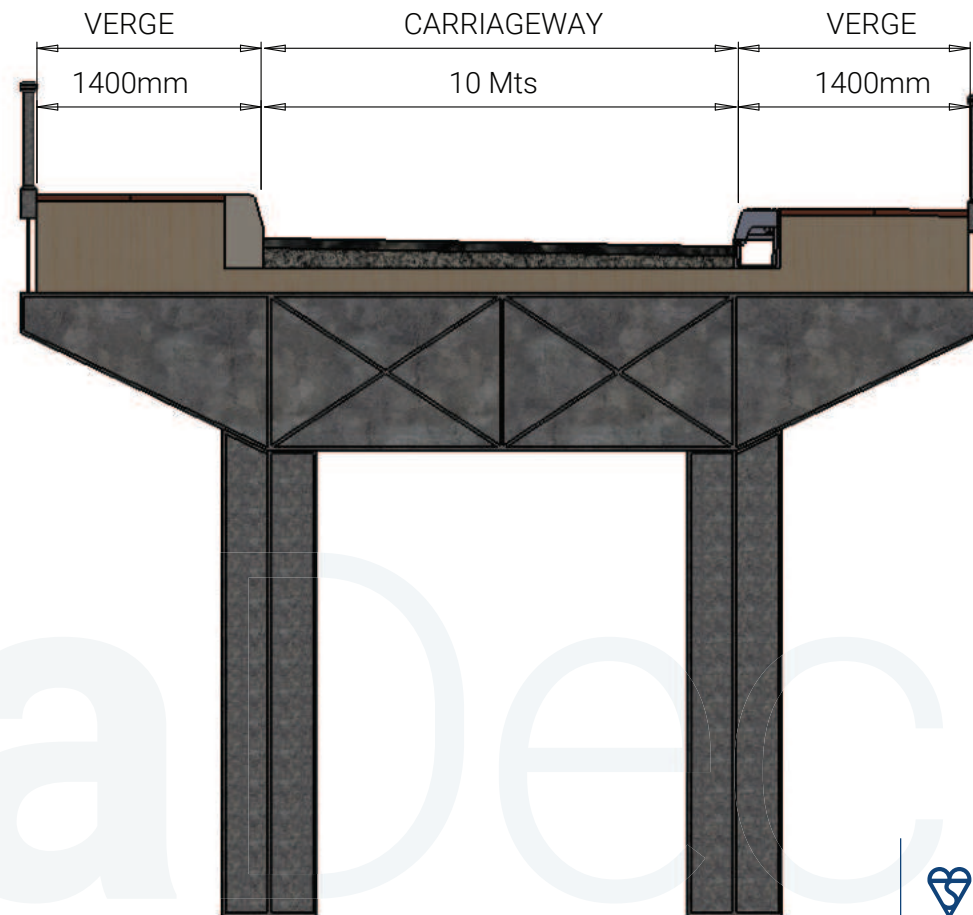
Specify Kerb upstand Dimension

- Top of Kerb to finished road level

*Usually HB are used where pedestrian access is permitted
SP are used where pedestrian access is prohibited (M-Ways).

BRIDGE HYDRAULIC DESIGN PRINCIPALS

SINGLE CROSSFALL EXAMPLE

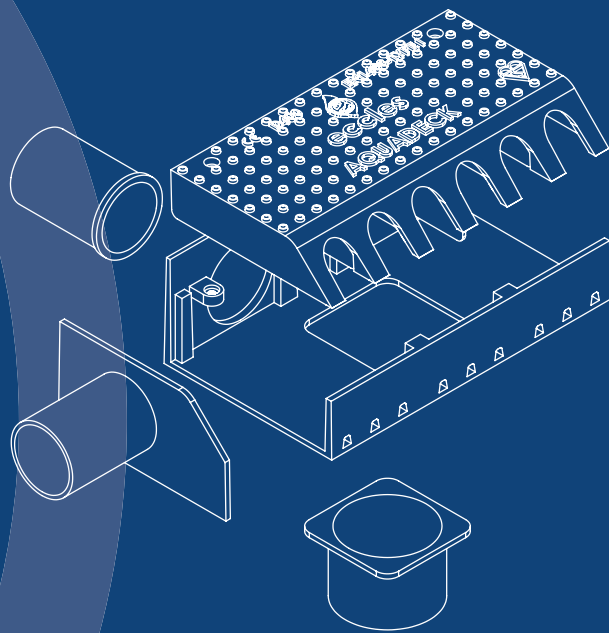
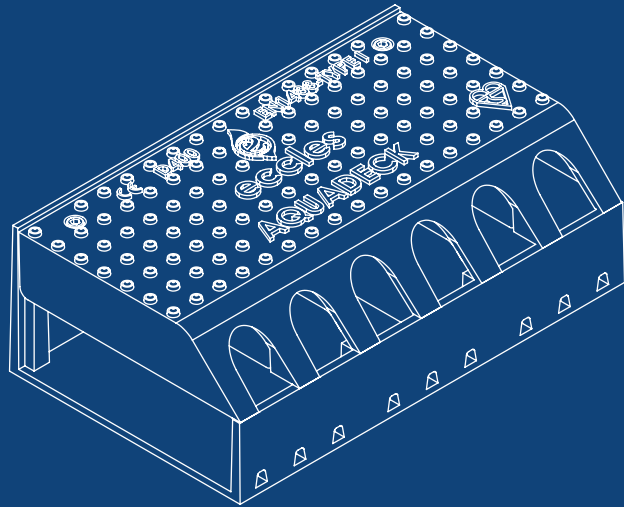


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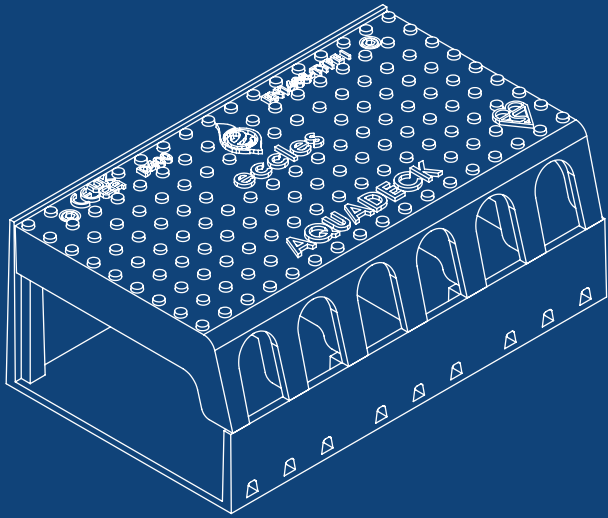
UNIT SIZE CHART

SPLAY PROFILE

AquaDeck™

LENGTH	WIDTH	DEPTH	KERB SHAPE	KERB HEIGHT
500MM	150MM	165MM	45 DEGREE SPLAY	75MM 100MM
500MM	150MM	190MM	45 DEGREE SPLAY	75MM 100MM
500MM	165MM	165MM	45 DEGREE SPLAY	75MM 100MM
500MM	165MM	190MM	45 DEGREE SPLAY	75MM 100MM
500MM	240MM	165MM	45 DEGREE SPLAY	75MM 100MM
500MM	240MM	190MM	45 DEGREE SPLAY	75MM 100MM
500MM	300MM	165MM	45 DEGREE SPLAY	75MM 100MM
500MM	300MM	190MM	45 DEGREE SPLAY	75MM 100MM
500MM	350MM	165MM	45 DEGREE SPLAY	75MM 100MM
500MM	400MM	165MM	45 DEGREE SPLAY	75MM 100MM
500MM	400MM	190MM	45 DEGREE SPLAY	75MM 100MM
500MM	450MM	165MM	45 DEGREE SPLAY	75MM 100MM
500MM	450MM	190MM	45 DEGREE SPLAY	75MM 100MM
500MM	500MM	165MM	45 DEGREE SPLAY	75MM 100MM
500MM	500MM	190MM	45 DEGREE SPLAY	75MM 100MM

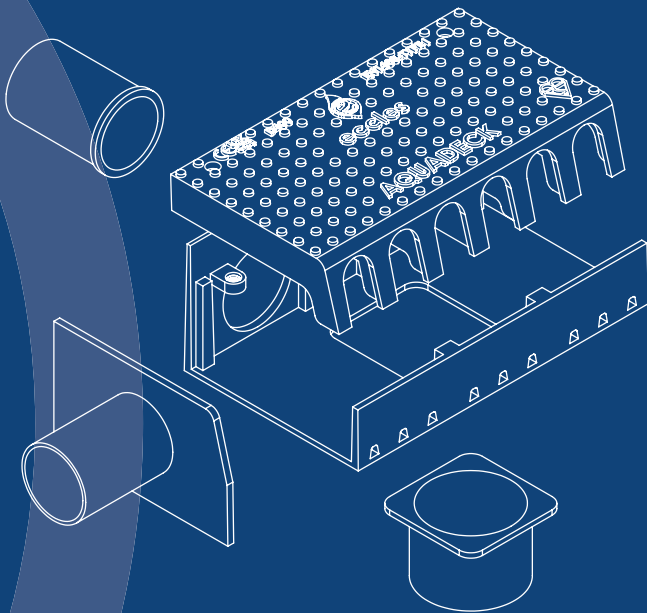
*Please contact our sales office for non standard sizes or bespoke requirements



UNIT SIZE CHART

HB PROFILE

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LENGTH	WIDTH	DEPTH	KERB SHAPE	KERB HEIGHT
500MM	150MM	165MM	HALF BATTERED	75MM 100MM 125MM
500MM	150MM	190MM	HALF BATTERED	75MM 100MM 125MM
500MM	150MM	210MM	HALF BATTERED	75MM 100MM 125MM
500MM	165MM	165MM	HALF BATTERED	75MM 100MM 125MM
500MM	165MM	190MM	HALF BATTERED	75MM 100MM 125MM
500MM	165MM	210MM	HALF BATTERED	75MM 100MM 125MM
500MM	240MM	165MM	HALF BATTERED	75MM 100MM 125MM
500MM	240MM	190MM	HALF BATTERED	75MM 100MM 125MM
500MM	240MM	210MM	HALF BATTERED	75MM 100MM 125MM
500MM	300MM	165MM	HALF BATTERED	75MM 100MM 125MM
500MM	300MM	190MM	HALF BATTERED	75MM 100MM 125MM
500MM	300MM	210MM	HALF BATTERED	75MM 100MM 125MM
500MM	450MM	190MM	HALF BATTERED	75MM 100MM 125MM
500MM	450MM	210MM	HALF BATTERED	75MM 100MM 125MM

*Please contact our sales office for non standard sizes or bespoke requirements

AquaDeck CHANNEL

Shallow construction depth

Can be used in conjunction with AquaDeck kerb units for additional system capacity.

Locations

In front of Extruded concrete barriers.

Central reservations.

Ideal where road construction depths are limited.

Min D400 Load Class BSEN1433.

UKCA Marked*

Kitemarked*

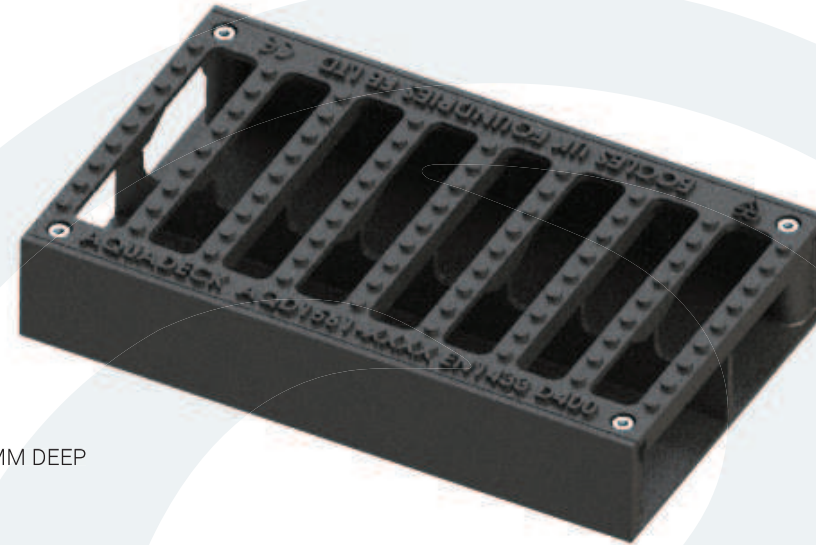
CE Marked*

Optional E600 upgrade cover.

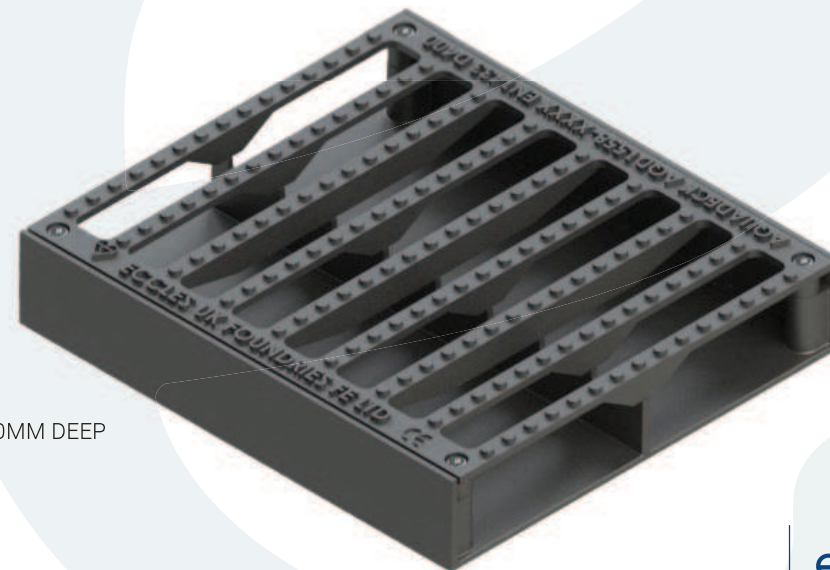
Unique Anti-skid Top Pattern.

PSRV Values in excess of high risk areas (CD534).

End Units c/w Base Outfall Pipes complete the systems.



300MM WIDE x 90MM DEEP



450MM WIDE x 90MM DEEP

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“SUB DRAIN”

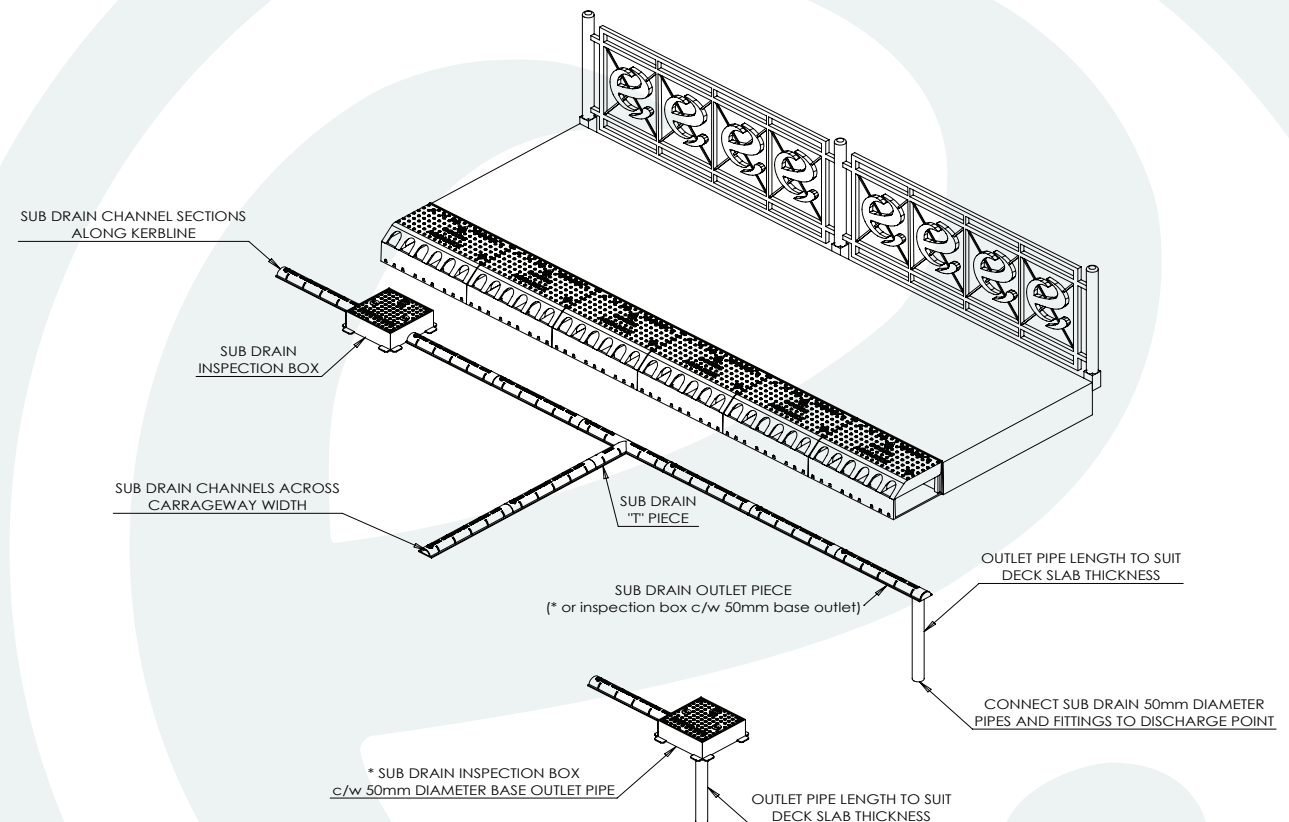
AquaDeck **“SUB DRAIN”** is a secondary sub surface drainage system for use on bridges or any elevated road structure.

Manufactured from high strength Ductile Iron to withstand heavy loadings from asphalt laying plant and machinery, the channels can also be cut to length or mitred on site without compromising the corrosion resistance of the system.

SUB DRAIN can be used in conjunction with AquaDeck kerb drainage units or as a stand alone positive sub surface drainage system.

Supplied in 500mm lengths so the channels can follow closely any curvature on the deck slab.

This ensures the system can be laid flat and as close to the deck as possible preventing deep bedding **“hot spots”** which can result in isolated ponding at waterproofing level and rocking of the channels, leading to premature bedding failure under heavy trafficking.



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“SUB DRAIN”

SYSTEM COMPONENTS

As well as standard 500mm long channels, a range of fittings/shapes are available (Tees/Bends/Angles etc etc) enabling a wide range of drainage layouts to maximise sub surface water collection.

SUB DRAIN can be discharged through the bridge deck via 50mm dia vertical outlets into a 50mm dia carrier pipe system under the structure, or by using **SUB DRAIN** expansion joints, water can be carried across bridge expansion joints and discharged off deck into a soakaway or manhole chamber.

Inspection and cleaning of the system is possible via surface mounted **SUB DRAIN D400** inspection points which are manufactured to match the exact road construction.

INSTALLATION

Installation of the **SUB DRAIN** channels and components is a simple process, the channels are fixed to the surface of the deck using **Eccles SUB DRAIN** fixing compound.

STANDARD CHANNEL

PRODUCT CODE SDC
BASE OUTLET OPTION –
PRODUCT CODE SDC0



90 DEG BEND

PRODUCT CODE SDC90B



45 DEG BEND

PRODUCT CODE SDC45B



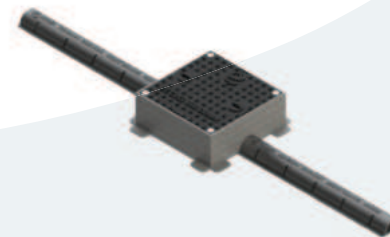
T-PIECE

PRODUCT CODE SDC



INSPECTION BOX

PRODUCT CODE SDCIB
BASE OUTLET OPTION –
PRODUCT CODE SDICBO



EXPANSION JOINT

PRODUCT CODE SDCEJ



50MM DIA NOM BORE CARRIER PIPE SYSTEM BELOW DECK

RANGE OF FITTINGS AVAILABLE



CERTIFICATION

ECCLES HOLD **BSEN1433** KITEMARK CERTIFICATION



BSEN1433:2002
Incorporating Amendment A1:2005

bsi. Kitemark™ Certificate

This is to certify that: **Eccles UK Foundries FE Ltd**
Portland Street
Walsall
WS2 8AA
United Kingdom

Holds Certificate Number: **KM 734342**

In respect of:
BS EN 1433
Linear Drainage Channels

This issues the right and licence to use the Kitemark in accordance with the Kitemark Terms and Conditions governing the use of the Kitemark, as may be updated from time to time by BSI Assurance UK Ltd (the "Conditions"). All defined terms in this Certificate shall have the same meaning as in the Conditions.

The use of the Kitemark is authorized in respect of the Product(s) detailed on this Certificate provided at or from the above address.

For and on behalf of BSI: **Frank Lee, Product Certification Technical and Compliance Director**

First Issued: [blank] Effective Date: [blank]
Latest Issue: [blank] Expiry Date: [blank]

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making excellence a habit™

This certificate has been issued by and remains the property of BSI Assurance UK Ltd, Kitemark Court, Davy Avenue, Knowlton, Milton Keynes MK9 6PL, United Kingdom and should be returned immediately upon request.
To check its validity telephone +44 (0) 345 080 9000. An electronic certificate can be authenticated online.
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A member of BSI Group of Companies.

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CE declaration of conformity
STANDARD BS/EN1433 REGULATIONS (EU) 305/2011 CONSTRUCTION PRODUCTS

Bridge kerb drainage channel Type I for the collection/drainage of surface water from Bridges/Structures and elevated roadways for all types of road vehicles. www.eccles-uk.co.uk

PRODUCT:	AquaDeck Combined Kerb Drainage for Bridges & Elevated Highways
STRENGTH CLASS:	Type I Min D400 in accordance with the manufacturer's installation instructions (Refer to AquaDeck Installation details)
COMPLIANT WITH:	BSEN1433, Annex ZA, Annex A, Annex B, Annex C
MATERIAL AND DURABILITY:	Spheroidal Graphite Iron (Ductile) to BS/EN1561 Grade 500/7
WEATHERING RESISTANCE	+R* (Clause 6.3.3.3 Table 1)
DIMENSIONS:	L=500mm; W=150mm/240mm/300mm/400mm/450mm/500mm
WATER TIGHTNESS:	No Leakage in accordance with 9.3.6 of the standard (Refer to AquaDeck Installation details)
ITT NOTIFIED BODY:	BSI Group Notified Body No 0086

ACCOMPANYING DOCUMENTS:
Available upon request

- Product literature
- Installation Details
- BSI Initial Testing Report

Signed: *Chris Rothery*
Position: Chris Rothery
Sales & Project Director
AquaDeck

PORTLAND STREET, WALSALL, WEST MIDLANDS, WS2 8AA, UK **Test Report No BSI – 2371/3273048** **CE**

AquaDeck™ **eccles™**
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UKCA declaration of conformity
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PORTLAND STREET, WALSALL, WEST MIDLANDS, WS2 8AA, UK **Test Report No BSI – 2371/3273048** **UKCA**



*UKCA/CE DoCs also available for AQUADECCK Channel units

Testing Report No BSI – 2371/3273048

CASE STUDY

AquaDeck

M56 Smart Motorway Project

National Highway's program to add capacity to the UK's existing road network, in order to support economic growth and maintain mobility, unearthed a requirement for smarter drainage solutions on parts of the M56 motorway.

Junctions 6-8 on the M56 carry in excess of 100,000 vehicles per day. Such a vast impermeable area has the potential for surface ponding and water runoff, which must be managed properly to prevent unsafe driving conditions for road vehicles, as well reducing the impact of flooding due to overloaded watercourse systems.

Specifically, nine bridge locations required combined kerb drainage with an accurate splay profile, **D400** loading and **BSEN1433** compliancy.

We advised AquaDeck - a high strength combined kerb drainage system - as the ideal solution to drain the structures on this section of the M56 as it provides superior surface and sub-surface drainage all in one unit.

The system is very quick and easy to install; the whole process can be carried out by experienced kerb layers.

Armed with the contract drawings and site details showing the extent of works, we prepared detailed take offs and hydraulic design checks, as well as identifying the best sized units and bridge expansion joints for each location.

We were also able to confirm compliance to the contract specification, including being able to offer a system carrying the new UKCA mark.

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CASE STUDY

PROJECT
M56 Smart Motorway

AquaDeck™



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CASE STUDY

AquaDeck

Staffordshire Western Access Road Improvement Scheme

In the spring of last year we were approached by Amey, working alongside Staffordshire County Council, to take a look at the drainage requirements on a 130m stretch of viaduct, which forms part of the Staffordshire Western Access Road improvement scheme.

Our customers and partners often turn to us for expert consultation and advice, and so the team went down to the site to carry out a full hydraulic design based on DMRB guidelines.

Eccles' AquaDeck Division carried out a full hydraulic design based on DMRB guidelines enabling us to propose our **AquaDeck** 450mm wide system as the most cost-effective solution for the project.

In addition, we designed and manufactured a unique expansion joint assembly to transfer the surface water run-off through the expansion joint at the low end of the deck where the flows would be at their highest.

Our new expansion joint ensured maximum drainage capacity through the joint with minimal restriction of flow, an issue which is often faced with these types of installations.

AquaDeck Project Director, Chris Rothery said:

'The design flows on this structure were quite high so we needed to move away from our traditional flexible pipe design expansion joint to maximize drainage flows across the bridge joint.'

'Our new expansion joint design ensured maximum drainage capacity through the joint with minimal restriction of flow, an issue often faced with these types of installations.'



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CASE STUDY

PROJECT

**Staffordshire Western Access
Road Improvement Scheme**

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CASE STUDY

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Maillart Bridge, Switzerland

Eccles secures its first overseas AquaDeck project with a bespoke steel version of the popular bridge drainage system.

In May 2022 we were approached by our European distributor to take a look at a stunning bridge in the beautiful town of Aarburg in Switzerland.

The Maillart Bridge crosses the Aare below the castle rock of Aarburg, where the river is forced through a narrow passage to the north by a ridge.

The concrete bridge has a single arch with a span of 72 meters and a width of 9.5 meters. A roadway lies on top of the arch.

This bridge was created in 1911/12 by the well-known concrete bridge pioneer Robert Maillart (1872-1940). His designs have influenced architects and engineers around the world for decades.

The bridge in Aarburg had been extensively renovated in 1968 and 1996. And now, in 2022, further works were commissioned by the two cantons responsible for the structure – Solothurn and Aargau, and this time drainage was a key consideration for the project.

Faced with different construction depths, kerb heights and general layouts, as well as a very specific remit regarding aesthetics, we came up with a bespoke design for our AquaDeck units – manufacturing them from stainless steel rather than ductile iron.

This new steel design was proposed in June 2022; it was well received and soon after approved for use by the engineers.

The first steel AquaDeck prototypes were manufactured in just under three weeks. The technical team oversaw load testing and carried out quality assurance checks before the samples were approved and the order received from our distributor.

In total, 80 metres of drainage length were manufactured and installed; the layout incorporated outlet units and a bespoke cycle crossing, buried between the pavement and carriageway.

As part of our submission we proposed that the logos of the two cantons who were financing and maintaining the structure should also be incorporated into the design of the units. Laser etching was used to achieve this, working from actual logos which were replicated onto etching plates.

With AquaDeck now fully installed and the renovation works complete, the stunning Maillart Bridge looks resplendent as a beautiful and eye-catching piece of architecture in the historic town of Aarburg. The client was delighted with the bespoke drainage solution that we were able to design and manufacture for them.


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A photograph of the Maillart Bridge in Switzerland, a concrete arch bridge with a metal railing. Several cyclists are riding across the bridge. The background is a lush green forest. The bridge is supported by a large stone pier on the right side.

CASE STUDY

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Maillart Bridge, Switzerland

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CASE STUDY

AquaDeck

Dyfi Bridge Viaduct, Wales

Eccles' AquaDeck Bridge Drainage System drains the new 725m Dyfi Bridge Viaduct

A new £46m bridge project on the A487, north of Machynlleth, Wales, has been completed with Eccles' AquaDeck chosen as the preferred system to improve drainage and ease flooding in the area.

The historic 200-year-old Dyfi Bridge has been upgraded with the construction of a spectacular new 725m viaduct across a wider floodplain as well as a new river bridge.

The project will calm traffic congestion in the area, improve transport links for Gwynedd, Powys, Ceredigion and Pembrokeshire and protect local houses from flooding concerns.

The works also included a new pathway for cyclists and walkers.

The new 725m viaduct along the Afon Dyfi, stretching across the associated floodplain north of Machynlleth, is the longest single new road bridge currently under construction in the UK.

It uses over 1500 AquaDeck units to drain the bridge of surface and sub-surface water.

Approval to use the AquaDeck system was granted towards the end of 2022 after Eccles submitted layout drawings along with hydraulic data to contractors Alun Griffiths and designers Arup.

Chris Rothery, AquaDeck Project Director at Eccles, said:

"We continue to secure some high profile projects for AquaDeck."

"Dyfi Bridge was a highly prized contract for us and we are thoroughly delighted that AquaDeck will be installed on this impressive new structure."

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CASE STUDY

PROJECT

Dyfi Bridge Viaduct, Wales

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CASE STUDY

AquaDeck

Great Yarmouth's Third Crossing Bridge

AquaDeck selected to drain Great Yarmouth's new third crossing bridge in Norfolk

Following ongoing consultation between the Eccles' AquaDeck Division and the BAM/Farran JV Design and Construction team on site, AquaDeck was chosen to drain Great Yarmouth's new third crossing bridge in Norfolk.

The iconic new structure is a twin leaf bascule bridge that will open in the middle to allow taller river traffic through.

It will link traffic From the A47 (formerly A12) at the Harfrey's Roundabout in the Southtown area of Yarmouth to the port and enterprise zone on the other side of the river, thereby easing traffic congestion on the town's road whilst improving the commuting experience.

AquaDeck, made from high strength ductile iron, has been specially designed for use on large bridge projects like this one.

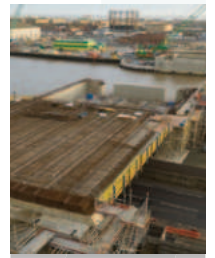
The combined kerb drainage system serviced the new crossing by providing efficient surface and sub surface drainage, all in one unit; the two-part design giving easy access for cleaning at any part along the entire drainage run.

Great Yarmouth's new third bridge includes two impressive bascule bridge leaves, each one 62 metres long and 20 metres wide and weighing 700 tons, which will be installed at the crossing.

These were moored up in the river while final preparation works begin, to be later installed via a floating crane which lifted the gigantic leaves off the barges, holding them above the bascule chambers whilst they were attached.

Following an online competition the new bridge has been named Herring Bridge and was opened in summer 2023.

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PROJECT

**Great Yarmouth's Third Crossing
Bridge**

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Gull Wing Bridge, Lowestoft

Eccles supplies Lowestoft's exciting new Gull Wing Bridge Scheme with its AquaDeck Bridge Drainage System

Eccles' AquaDeck ductile iron combined kerb bridge drainage system has been chosen as the preferred drainage solution for the iconic new Gull Wing Bridge in Lowestoft.

Over 1400 AquaDeck units were installed on this prestigious new structure, built by Farrans.

Delivered by Suffolk County Council and built by Farrans Construction, the Gull Wing Bridge opened in 2023 providing a much-needed third crossing over Lake Lothing to link Waveney Drive to Denmark Road and Peto Way.

As well as attracting new investment opportunities and helping regenerate the area, the project was designed to reduce traffic congestion in the town also.

AquaDeck Project Director Chris Rothery said:

"Projects like this don't come along that often and we are thrilled to be associated with such an iconic new landmark."

The AquaDeck system drains both sides of the carriageway; Eccles are currently busy designing bespoke AquaDeck Expansion Joint Drainage components which will cross the multi element movement joints at four locations at both North and South abutments.

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Gull Wing Bridge, Lowestoft

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Llandudno Flyover, North Wales

Fast, bespoke drainage solution for prestigious Welsh bridge

Eccles enjoyed working closely with MWT Civil Engineering recently after being awarded a refurbishment project on the prestigious Llandudno Flyover in North Wales.

As the refurbishment work commenced the flyover had to be closed to allow safe working for reconstructing the road and replacing the bridge expansion joints.

This meant that design solutions had to be conceived, manufactured and supplied quickly to avoid delays and minimise public disruption.

Our **AquaDeck** team undertook drainage design work for both kerb drainage units for surface water removal and we proposed our new **SubDrain** sub surface drainage system to provide secondary sub surface drainage on the structure.

Chris Rothery, AquaDeck Project Director, met with the MWT construction team at their offices before the drainage works began:

*“The design for our **AquaDeck** kerb drainage units was relatively straightforward, however the sub surface drainage layout proved to be more complicated because MWT were unsure exactly what they would find once the existing surfacing was removed.*

*“We agreed a couple of options on the **SubDrain** layout, fabricating a number of bespoke pieces so that MWT had flexibility on site once they began installation.*

*“We were conscious that the **SubDrain** channels were a critical path of works. Continuity and the avoidance of delays were key factors in this project; we were determined that MWT would not be delayed with the associated waterproofing and resurfacing works.”*

Chris drove to site on a couple of occasions, including a Saturday morning visit to drop off additional special fabrications which MWT needed urgently – all part of the quality service and attention to detail that **Eccles** provide.

Thanks to this fast turnaround the drainage installation and final project was a resounding success, with the works even finishing earlier than had been anticipated.

The flyover and bridge is now fully waterproofed and ready to continue carrying traffic for years to come.

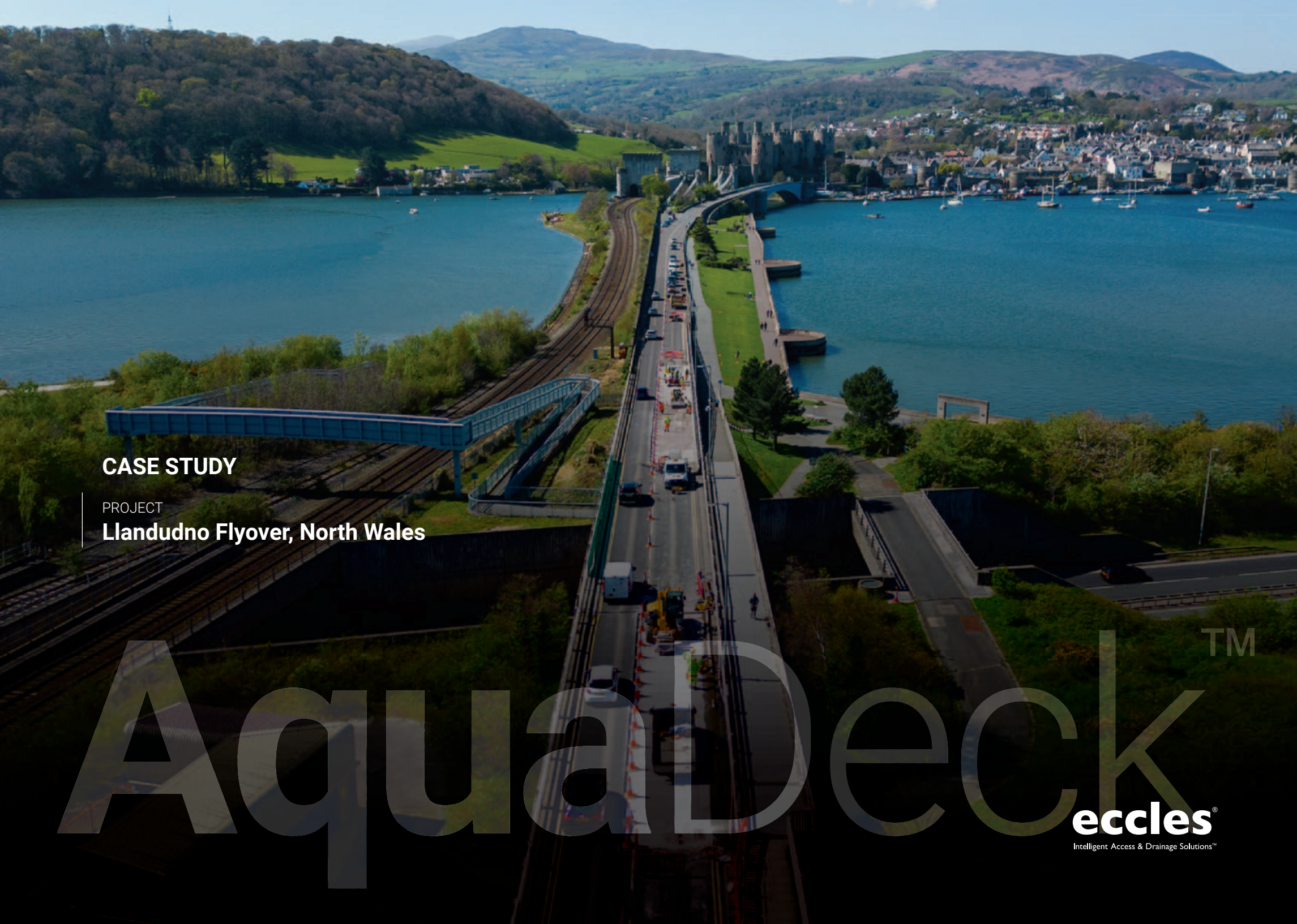
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Llandudno Flyover, North Wales

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