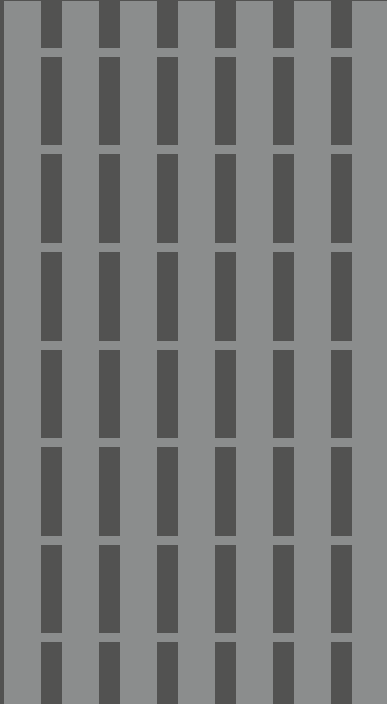




Freestyle

*Integrating external surface drainage design
into architecture*





Introducing Freestyle

The ACO Freestyle offering is a unique customer-led grating design solution, which gives Architects and commercial property owners the freedom to create fully-bespoke drainage grating designs for the external environment.

ACO are world leaders in the field of Surface Water Management and our knowledge in designing and manufacturing a wide range of grates for our drainage channels, has allowed us to offer our customers a chance to utilise this expertise.

With the option to access a number of pre-moulded designs, as well as create something completely unique, which ACO will manufacture for you, Freestyle allows greater creative control of the external landscape.

Introduction to the ACO Group

Throughout the world ACO branded drainage and surface water management systems are recognised for their innovative design, high quality manufacture, environmental excellence and industry leading performance.

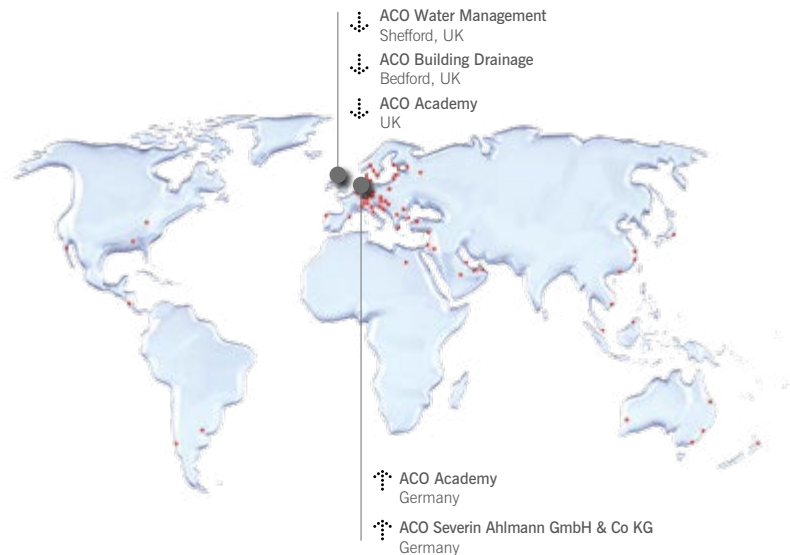
Today the ACO Group has a research and production base that reaches across four continents. This unmatched resource pioneers the development of solutions that are tailored to individual applications, meeting the need for high performance, sustainable products that deliver optimum value throughout their operational life.

ACO operates as ACO Technologies plc in the United Kingdom. Founded over 30 years ago, the company has grown quickly on a reputation for design innovation and customer service. There are now two core divisions, ACO Water Management and ACO Building Drainage, that serve every sector of the construction industry, providing

solutions for applications as diverse as rail, highways, airports, landscaping, retail, distribution centres and environmentally sensitive projects.



To help architects, designers and contractors meet the legal requirements that now tightly control the way surface water is managed, ACO has created its unique 'Surface Water Management Cycle' – *Collect, Clean, Hold, Release* – the four core processes required for the complete and sustainable management of surface water drainage.



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The outsider

Think of the neglected drainage sitting outside your lovely building design, a mere functional afterthought left to the Engineers and installers. But it does not have to be so.



With ACO Freestyle you have the freedom to create your own drainage designs that integrate into the architecture and materials of the building envelope. To extend and emphasise different aspects of the building, compliment the paving and landscape choices, all while keeping the ground free from surface water.

Whilst drainage is an outside product, ACO Freestyle means that channel drainage is no longer an outsider to the world of design.



Initial brief - Who is Freestyle for?

Working with your clients on the Project objectives and brief, Freestyle can be relevant for clients who value first impressions – which starts with the approach to the building.

It is for clients who value something new being brought to the table and bespoke drainage gratings are something most clients have not considered. When you are looking at large pedestrian areas with quality paving solutions, Freestyle is a complimentary and functional aesthetic.

Clients, who value branding opportunities, will appreciate the possibilities of incorporating their logo into the grating design.

Freestyle also works for those clients who are aiming for a traditional standing or wish to integrate into a historic setting, as the flowing forms of metal translate well when recreating Victorian grandeur.



Developed designs

Drainage designs can be submitted with a hand drawing or a digital model, to ACO Enquiries.

The Freestyle grating is overlaid on a grid design that has been tested for a Load class up to D400. Freestyle grates can be used on ACO's popular MultiDrain D/PPD channels.

ACO's design services can help and advise you on the best hydrological solution and design a channel system suitable for your site.

ACO are leaders in the implementation of BIM modelling, and the files for MultiDrain channels can easily be incorporated into your design.

The BIM files show the value ACO places on building life cycle planning into designs. Freestyle grates offer the same performance and maintenance benefits as standard MultiDrain grates.

For more information and design tips, please refer to the Design Guide, which can be downloaded from www.aco.co.uk

For more on this go to pages 28-29.



Embracing the grating at Meubelplein Ekkersrijt

The Meubelplein Ekkersrijt, in Son en Breugel, near Eindhoven, Netherlands, is a shopping centre that embraces the grating as a compliment to the Building's eye-catching panel design. The building is popularly known as the "Bird's Nest" due to the criss-crossed laser cut pattern of the panels and the drainage grating has the exact same design around the large open floor space giving unity to the project.

The building has 24,000m² of floor space, 24 stores across open and covered malls and a parking area for 500 cars. The large open walkways within Meubelplein Ekkersrijt needed

a functional drainage solution and the opportunity to mirror the buildings unique patterns, was taken with ACO Freestyle.

W. Ketelaars, the landscapers, added to the visual affect by placing pale Chinese stone tiles along the straight lines of the drainage. The colour complemented the oxidised surface the client chose, and gave good contrast to the steel on the main building.



The auburn of Verden on the Aller

The historic town of Verden on the Aller is a celebrated center of Hanoverian horse breeding in Germany as well as being situated on the picturesque river Aller. As a part of the development of the town square the Planners and Developers approached ACO to find a drainage solution which would be in keeping with the historic setting, whilst also meeting technical drainage requirements.

Many of the buildings of Verden are made of red brick or are of an historic

nature, so a modern stainless steel grating would look out of place.

ACO Freestyle grates come with a black coating or can be left uncoated, and it was this latter option that Verden's planners chose.

Left uncoated the gratings gradually oxidize to a deep auburn, blending into Verden's historic landscape perfectly.



Lighting - Heide and the end of darkness

In the town of Heide the pedestrian zone in the town centre has undergone a complete refurbishment. The Landscape Architect in charge created a design using LED lights integrated into a Freestyle grating along the 200m long main shopping area

A celestial moon and stars design was created by the Landscape Architect and combined with LEDs, they created a sophisticated effect which enhanced the public space.

ACO Eyeleds and LightPoint systems are regularly used in drainage applications, and this same technology can be incorporated into your freestyle design. The ACO LED systems offer the highest water impermeability and durability. The installation of

the system uses multiple cable connectors so an electrician does not have to be consulted.

ACO Eyeleds not only provide a decorative effect, they also contribute to general safety in busy city centers. ACO Freestyle grates are designed to achieve D 400 load class rating, making it the perfect product for parking areas for all vehicle types. Pedestrian areas like this area in Heide are still accessed by occasional traffic and service vehicles, and hence ACO's robust channels and grates are the trusted solution.



Grating and paving – planning for the look over time

How the grating fits with the surrounding landscape is vital to the final look. ACO Freestyle is designed to be a feature so it is important to match the material with the surrounding paving.

ACO Freestyle grates come with a black coating or can be left uncoated. The latter example we can see with the Meubelplein Ekkersrijt example on page 13 where the Architect factored in the colouration changes when choosing their pale paving solutions.

Ductile iron is a flexible material, which can be used to create flowing or sharp designs. ACO offer painted ductile iron versions and ATec coating (as an additional option), both will complement a wide range of surfaces.

Clay paving from companies such as Wienerberger are a good combination when used with Freestyle, as the clay keeps its colour better over time compared to other materials. There is a long-term match between the grating and its surroundings.



Branding – Companies and tourism

ACO Freestyle is about your Client's brand. Approaching the company threshold and seeing their logo wrought in Iron is impressive.

The branding design can also be very playful. The international company ECCO, when they were looking for drainage for the entrance to their largest store, in their homeland of Denmark, came to ACO.

ECCO wanted a grate that emphasised their brand and approached ACO to make this a reality. The footprint design envisaged, shown right, warmly walks you into the shoe dedicated store and reflects ECCO's respect for their heritage and focus on innovation.



Design inspiration – nature and water

Nature is a wonderful source of inspiration, and can help soften the look of modern landscaped environments. Inspiration could come from local plants, trees, water features or even the local wildlife.

This design study was inspired by leaves, in a layered effect. The modelled design incorporates the flowing leaf pattern, and utilises Freestyle's ability to cast the grate over several depths, hence giving added interest and appeal.

Intricate designs, incorporating differing levels are best digitally modelled before



submitting, as this will significantly decrease the modelling time. ACO has created an easy to understand Design Guide, to give further details of design considerations.

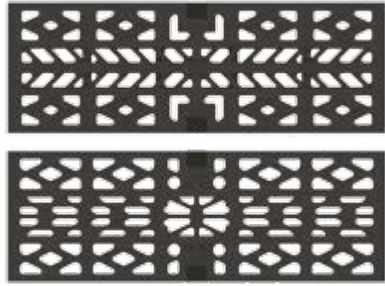


Design study

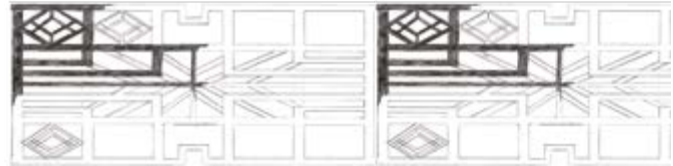


Design inspiration – architectural features

Architectural features such as window frames, arches, and original tiles may provide inspiration and ideas for your Freestyle grate. In this example, window detailing has been extracted and an initial drawing created.



The grates featured below incorporate the features of the design, and also provides the functionality required from the grate.



■ Inspiration for a grating design from a tudor building.



Design study



Design inspiration – abstract

Inspiration can come from many different sources. Your building or landscape may naturally inspire or suggest particular designs. Alternatively you could look towards abstract shapes and patterns to inspire you.

An abstract design may be inspired by a corporate pattern, or product related shapes; or alternatively the abstract pattern could reflect the surrounding area, or pattern of buildings.

In this design study, an abstract pattern has been chosen which incorporates an



organic yet modern repeating pattern. Inlets are incorporated into the design where the pattern naturally recedes.



Design study



The design process

► DESIGN

Designs can be submitted, with a hand drawing or a digital model. Please refer to our Design Guide.



► 3D MODEL

ACO will take your design and create a 3D model, they will optimise the design for production and performance.



► DESIGN CREATED

ACO works closely with the designer to create the design. Behind the scenes strength calculations and casting simulation are completed.



► TOOL ORDERING

When you are completely satisfied with your design, your order can be placed and the tooling made.



► CASTING AND SURFACE PROTECTION

The grates are then manufactured in our high-tech foundry located in Germany, from ductile iron.



► DESIGN RELEASE

Your grating will be tested in accordance with EN 1433 (annex ZA) to load class D 400. You will be provided with a Declaration of Performance for your grate.



Feature bricks – the pavement is your palette

Feature bricks are solid ductile iron plaques embedded in concrete, creating an easy to install product that can also be designed to incorporate any message or branding.

Feature bricks are not a drainage solution, but the bricks offer an effective way to introduce texture or branding into your landscaped area. Feature bricks will integrate alongside other conventional Freestyle or



standard drainage solutions, and the flexibility in design means the pavement is your palette.

Dimensions:
 Length: 500 mm
 Width: 200 mm
 Height: 80 mm
 Weight: 21.5 kg

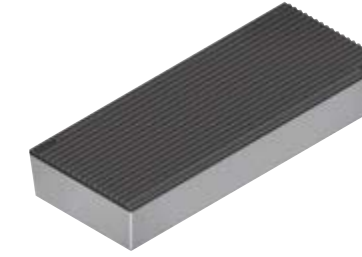
Materials:
 1. Cast iron
 2. Concrete

Planning Aid
 Create your own design on a plate with the dimensions: 500 mm x 200mm

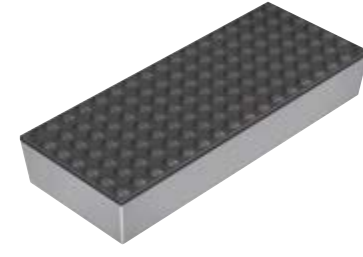
PLEASE NOTE: Customers surface engraving 3 - 5 mm height



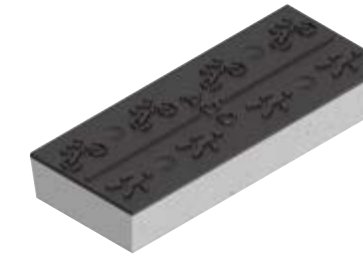
Design: Attention
 Weight: 21.3 kg



Design: Longitudinal Guide
 Weight: 21.5 kg



Design: Dots
 Weight: 21.2 kg



Design: Pavement Divider
 Weight: 20.6 kg



Design: Monument
 Weight: 20.8 kg

Freestyle pre-moulded range – specialised designs with ‘grater’ value

ACO Freestyle pre-moulded range are specialised designs that have been created in advance and so have moulds readily available. They are unique enough in that only a few customers may have used them, most likely in

mainland Europe, but have the value and time savings benefit. On the next few pages you can choose from a large range of pre-moulded gratings that will give you distinctive options with ‘grater’ value.



Design: Nest
Type: M100D
Load Class: D 400
Weight: 4.8 kg
Art-No.: 132060



Design: Seurat
Type: M100D
Load Class: D 400
Weight: 5.8 kg
Art-No.: 132068



Design: Band
Type: M100D
Load Class: D 400
Weight: 5.7 kg
Art-No.: 132079



Design: Bold Bar
Type: M100D
Load Class: D 400
Weight: 5.7 kg
Art-No.: 132088



Design: Square
Type: M100D
Load Class: D 400
Weight: 4.7 kg
Art-No.: 132082



Design: Running Dog
Type: M100D
Load Class: D 400
Weight: 4.32 kg
Art-No.: 132084



Design: Pearl
 Type: M100D
 Load Class: D 400
 Weight: 4.9 kg
 Art-No.: 132092



Design: Flag
 Type: M150D
 Load Class: D 400
 Weight: 9.0 kg
 Art-No.: 132045



Design: Wisp
 Design by Kessler.Krämer, Flensburg
 Type: M150D
 Load Class: D 400
 Weight: 9.5 kg
 Art-No.: 132047



Design: Nest
 Type: M150D
 Load Class: D 400
 Weight: 8.9 kg
 Art-No.: 132106



Design: Leaf
 Type: M150D
 Load Class: D 400
 Weight: 8.9 kg
 Art-No.: 132066



Design: Dot
 Type: M150D
 Load Class: D 400
 Weight: 6.14 kg
 Art-No.: 132069



Design: Running Dog
 Type: M150D
 Load Class: D 400
 Weight: 6.8 kg
 Art-No.: 132048



Design: Running Dog Edge 1
 Three other corner designs are available.
 Type: M150D
 Load Class: D 400
 Weight: 7.0 kg
 Art-No.: 132049



Design: Braid
 Type: M150D
 Load Class: D 400
 Weight: 9.1 kg
 Art-No.: 132086



Design: Square
 Type: M150D
 Load Class: D 400
 Weight: 8.9 kg
 Art-No.: 132077



Design: Roadster
 Type: M150D
 Load Class: D 400
 Weight: 8.8 kg
 Art-No.: 132078



Design: Band
 Type: M150D
 Load Class: D 400
 Weight: 10.2 kg
 Art-No.: 132080



Design: Wisp
Design by Kessler.Krämer, Flensburg
Type: M200D
Load Class: D 400
Weight: 13.0 kg
Art-No.: 132044



Design: Flag
Type: M200D
Load Class: D 400
Weight: 13.5 kg
Art-No.: 132041



Design: Sturgeon
Type: M200D
Load Class: D 400
Weight: 12.3 kg
Art-No.: 132053



Design: Tracker 04
Type: M200D
Load Class: D 400
Weight: 12.25 kg
Art-No.: 132057



Design: Tracker 05
Type: M200D
Load Class: D 400
Weight: 12.25 kg
Art-No.: 132058



Design: Square
Type: M200D
Load Class: D 400
Weight: 13.1 kg
Art-No.: 132064



Design: Tracker 01
Type: M200D
Load Class: D 400
Weight: 12.25 kg
Art-No.: 132054



Design: Tracker 02
Type: M200D
Load Class: D 400
Weight: 12.25 kg
Art-No.: 132055



Design: Tracker 03
Type: M200D
Load Class: D 400
Weight: 12.25 kg
Art-No.: 132056



Design: Square with hearts
Type: M200D
Load Class: D 400
Weight: 13.3 kg
Art-No.: 132065



Design: Lunette
Type: M200D
Load Class: D 400
Weight: 12.32 kg
Art-No.: 132085



Design: Bold Bar
Type: M200D
Load Class: D 400
Weight: 12 kg
Art-No.: 132091

New designs gratings process

ACO Freestyle pre-moulded range can be simply ordered using its part number. New designs will follow the design process shown below.



Your input comes in during the first two stages, where you tell us what you would like and approve the final design. From then on ACO will do the hardest bit, manufacturing the tooling and grates, testing and approving. Your high quality unique grate will then be delivered to site. It couldn't be simpler.

Freestyle grates are designed over the top of a base template, thus ensuring sufficient strength to meet a D 400 load class under BS EN 1433. This load class makes the grates suitable for public areas and parking areas

for all types of vehicles, but as it is a grated system it is not suitable for carriageways of public roads or motorways. The grates are compatible with MultiDrain MD or PPD channels in the three available widths M100, M150 and M200.

ACO has created a Design guide for Freestyle, with handy hints and tips for creating your design. This and the templates for the base can be downloaded from our website www.aco.co.uk

TYPE	MINIMUM QUANTITY	TIME TO DELIVERY
Existing Design <i>(already has part number)</i>	50 pcs	7-9 weeks
New Design	200 pcs	12-13 weeks, from when design is finalised. <i>(before this modelling takes approx. 1-2 weeks or 4-6 weeks if only rough sketch provided)</i>

For quotes or to submit a design please contact our enquiries team at awmenquiries@aco.co.uk Please note that tooling costs apply for new designs. Pricing for ACO Freestyle does not include the channel, or lighting components mentioned page 16.

