



Water-tech products

for all applications

We protect the environment with innovative products and future-oriented system solutions.

ACO General Product Overview





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ACO creates solutions for tomorrow's environmental conditions

Increasingly extreme weather must be counteracted by more complex and sophisticated drainage concepts. ACO achieves this with intelligent system solutions which have a dual purpose:

protecting people from water, and water from people.

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The headquarter of the ACO Group in Rendsburg, Germany



Iver and Hans-Julius Ahlmann
Managing partners of the ACO Group in Rendsburg, Germany



ACO Group

The ACO Group is a world market leader in drainage technology. Climate change sets us a challenge to react effectively with innovative solutions to new environmental conditions. With its integrated approach, ACO stands for professional drainage, efficient cleaning, and the controlled discharge or reuse of water. Products include drainage channels and drains, oil and grease separators, backflow stop systems, pumps and pressure-water-tight cellar windows

and light shafts. The family-owned company headquartered in Rendsburg/Büdel-dorf, Germany, was founded in 1946 on the site of the Carlshütte foundry – Schleswig-Holstein's first industrial company. It still has very strong roots in the region. The innovation strength of the ACO Group is built on intense research and development, and its technical expertise in processing polymer concrete, plastic, cast iron, stainless steel and reinforced concrete



The ACO Academy in Rendsburg, Germany

ACO at a glance

- 1946, company founded by Josef-Severin Ahlmann
- 5'200 employees in more than 47 countries (Europe, America, Asia, Australia, Africa)
- 37 production sites in 18 countries
- Sales 2021: Euro 1 billion



The Headquarter of ACO Systems FZE
in Dubai, United Arab Emirates

ACO Systems FZE

Established in 2006, ACO Systems FZE provides the highest levels of support and service to over 15 countries throughout the GCC countries, the Middle East Region and parts of South Asia.

As part of ACO Group, we are world leaders in the manufacturing and supply of various building drainage systems and external drainage systems since 1946. With a 10,000 sqm manufacturing facility and a team of 40+ employees, we specialise in stainless steel drainage products with an emphasis on customised and hygienic solutions.



ACO Systems FZE - Manufacture facility for ACO stainless steel products, located in the Jebel Ali Free Zone in Dubai

ACO Systems FZE
ACO Service for all GCC countries,
the Middle East Region and
parts of South Asia



ACO Systems FZE at a glance

- 2006, company established by ACO International in Jebel Ali Free Zone Dubai
- 40+ employees in the United Arab Emirates and distribution companies in the GCC countries
- office and warehouse with 10.000 sqm production facility for stainless steel products



Four guiding questions in surface water management



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III

How do surface water management and water protection begin?

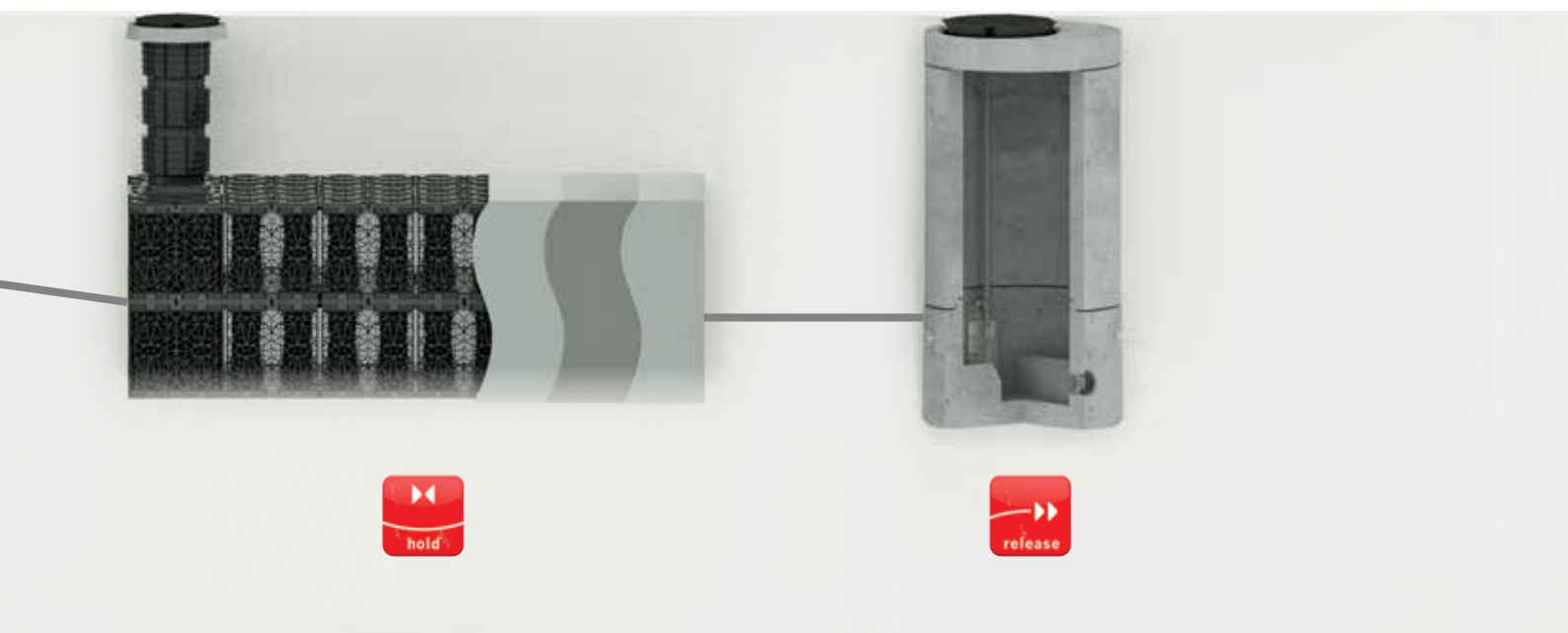
ACO surface water drainage

- Drainage channels
- Road and yard drains
- Gully tops
- Manhole covers

How to achieve the right water quality?

ACO cleaning systems

- Separators
- Sedimentation and filtration systems



How to reduce surface runoff to a natural level?

ACO infiltration/attenuation systems

- Control valve shafts
- Infiltration and attenuation systems
- Retention basins made of concrete

How to control the discharge rate to the required level?

ACO control systems

- Flow control systems
- Pump shafts

ACO materials

In the design of components and structural elements, the choice of suitable material determines the aesthetic and functional qualities of the product. The materials used by ACO are characterised by their strength, ageing resistance and their resistance to aggressive media, frost, heat and sunlight. Thanks to their long life and recyclability, they are equally sustainable and environmentally compatible and are used in an application-orientated way.

Polymer concrete

With 30 production locations worldwide, we consistently implement our ideas of product quality, economic efficiency and on-time delivery to our customers. Each of our factories has special materials expertise, from which the entire ACO Group profits. Keeping our production technology and ecological performance up-to-date and in line with the latest standards is part of our standard of acting responsibly as a company and to be a worldwide leader.



ACO polymer concrete – a better idea

The special material composition and state-of-the-art production technology give polymer concrete its outstanding properties profile. ACO polymer concrete products have high strength values and a low weight. ACO polymer concrete is waterproof. Water dries quickly. Frost damage is excluded. The smooth surface of ACO polymer concrete allows water and dirt particles to run off quickly and is easy to clean. Polymer concrete is also resistant to aggressive media without requiring additional coatings and can be used versatilely and durably even under extreme conditions.

Cast iron



ACO cast iron – quality for all standards

The types of cast iron used by ACO Guss in Kaiserslautern and Aarbergen are adapted to the continuously increasing requirements through intensive innovation and development processes: Both cast iron with lamellar graphite (grey cast iron GJL) and cast iron with nodular graphite (spheroidal cast iron GJS) have proven their worth as materials for use in cast iron sewers due to their high corrosion resistance. ACO Guss offers the optimum solution for the respective application, independent of the material.

Plastic



ACO plastic – innovative and flexible

Components made of plastic offer the greatest possible design freedom with regard to form and function. We use this potential to avoid expensive material combinations and time-consuming jointing processes and to develop intelligent solutions “cast in one piece” to take their place. The plastics used by ACO are characterised not only by their high breaking stress (crushing strength) but also by their outstanding resistance to environmental influences. Simple machining options and low weight are the reasons for the outstanding user-friendliness of our plastic solutions.

Steel/stainless



ACO steel/stainless steel – sophisticated components

The processing of both steel and stainless steel is a core expertise of ACO in the different production facilities of the ACO Group worldwide. Large investment sums ensure that our production facilities are always state-of-the-art. The high qualification of our skilled workers ensure high-quality products. Our own in-house plants for surface protection and finishing are used, among other things, in the production of ACO Drainlock gratings.

Concrete



ACO concrete – durable and reliable

Concrete is a material that plays a decisive role in tank construction for separator and drainage technology. ACO tanks for drainage technology are made from a highly waterproof concrete, have a very high resistance and stability. The tanks can be used as separators, pumping stations, accident (spillage) systems or special chambers and can also be equipped with a plastic coating or lining. ACO tanks made of concrete are a durable solution for the drainage and treatment of water.

External Drainage

ACO DRAIN® line drainage channel Multiline Seal in

The drainage channel ACO DRAIN® Multiline Seal in collects the rainwater and leads it without loss to stormwater treatment and ultimately to natural rain water cycle. Thus it plays a crucial role to catch and discharge polluted surface water safe. Damage in buildings, weakening of concrete foundations and pollution of ground-water be prevented.

Contamination by traces of ...

Heavy metals

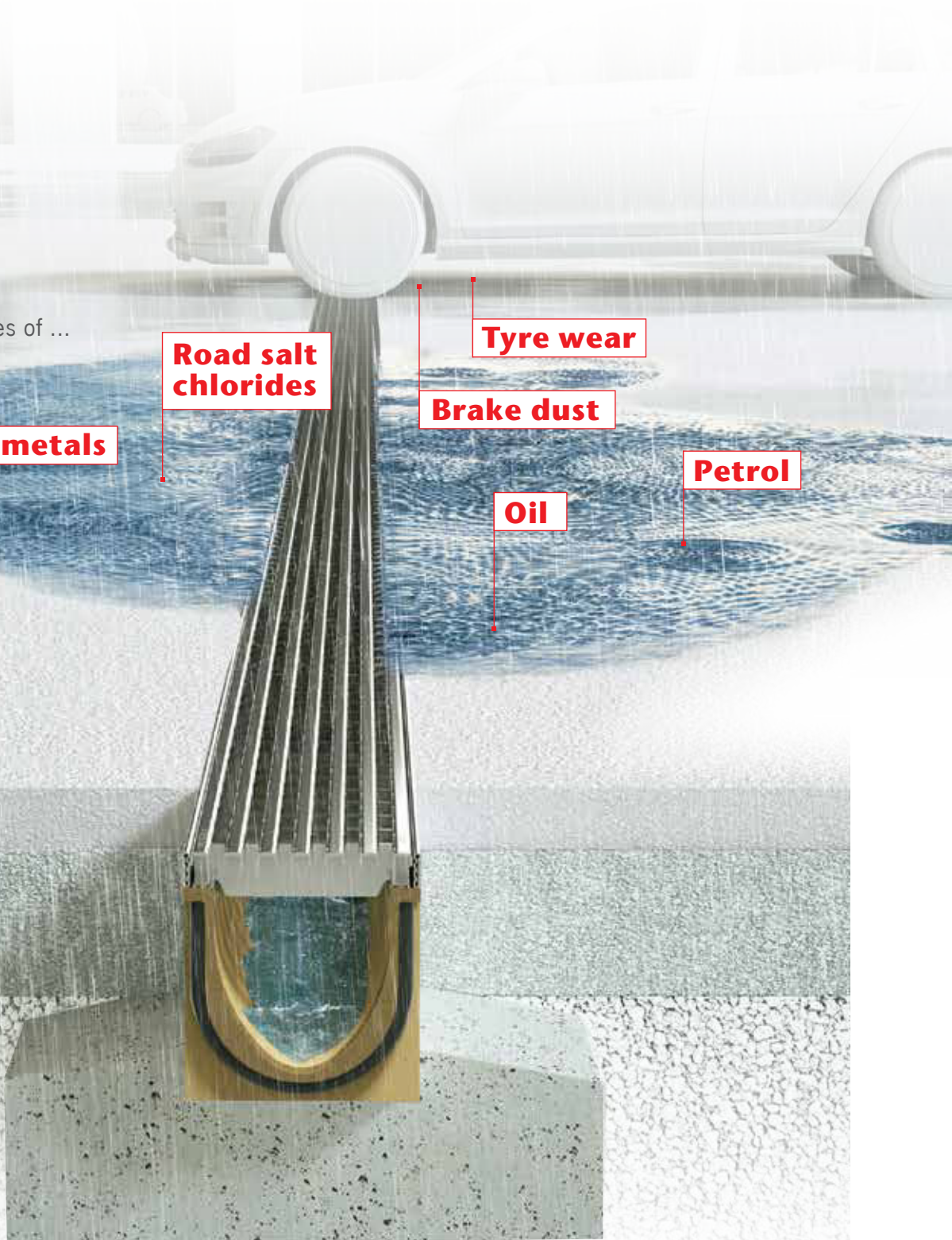
Road salt chlorides

Tyre wear

Brake dust

Oil

Petrol





Seal in

TECHNOLOGY

- Integrated seal as standard
- Made of ACO polymer concrete
- Tried-and-trusted, simple installation
- Robust channel body
- Improved self-cleaning

Structural Protection

Most structures are built on solid concrete foundations; these should be protected against the effect of chlorides in order to prevent corrosion and an associated weakening of the foundations.

Groundwater Protection

Recommended actions stipulate how to deal with rainwater on both public and private surfaces. The tightness of drainage is becoming more and more important in this regard.

Preventing irreversible damage early on

Rainwater that runs off from traffic areas often contains lots more impurities than one would expect: heavily frequented roads are exposed to harmful substances from tyres (wear), brake dust and exhaust emissions, as well as traces

of petrol and oil. That's not to mention deicing products used during the winter months. When it rains, all these impurities are inevitably washed into structures and groundwater, where they can cause considerable damage. For example, the chlorides present in road salt can lead to corrosion and a weakening of a building's foundations. The ACO DRAIN® Multiline Seal in drainage channel, which is equipped with integrated seal as standard, collects the water and feeds it to the rainwater treatment system, then finally into the natural rainwater cycle, without any avoidable loss. As such, it plays a crucial part in reliably collecting and diverting impure surface water. It is therefore possible to minimise irreversible damage caused to structures, the weakening of concrete foundations and the load to which groundwater is subjected from the very start.

Soot

Sediments

Sustainable surface water management



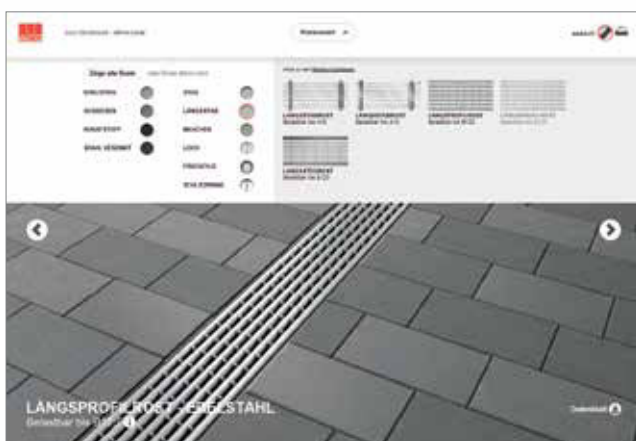
Versatile gratings for good-looking projects

ACO Multiline Seal in can be combined with all Drainlock gratings, so there is a huge range of gratings available in lots of different shapes, colours and materials – cast iron or stainless steel, hot-dip galvanised steel or plastic.

These options are able to meet any and all demands in terms of aesthetics, functionality and load.



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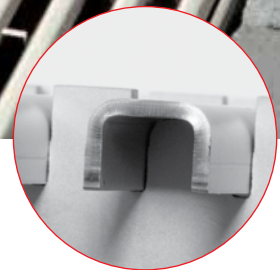


The complete grating range in the Grating Configurator

You will find all the technical details relating to the new ACO DRAIN® Multiline Seal in channel system, as well as the full range of gratings, in the supplementary price list and the Grating Configurator. The Configurator enables you to choose gratings by viewing them in different scenarios. You can download technical information or save it to the property file.

Longitudinal profile grating

Galvanised steel
Stainless steel



Awards for the longitudinal profile grating

Highlights from the A15 – E600 range of gratings

Longitudinal bar grating

Stainless steel



Mesh grating Q+

Galvanised steel
Stainless steel



Composite grating with microgrip

Anti-slip plastic



Slotted grating

Galvanised steel
Stainless steel
Ductile iron



Cross bar grating

Stainless steel



Perforated grating

Galvanised steel
Stainless steel



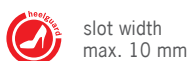
Composite grating Heelguard

Ductile iron



Composite grating

Ductile iron



Heavy duty ACO DRAIN® S 100 K to S 300 K

ACO DRAIN® S 100 K to S 300 K systems are ACO's heavy duty solution – suitable for all load classes from A 15 to F 900 to EN 1433.



Typical applications

- Line drainage on motorways
- Storage and filling yards
- Industrial surfaces
- Airports
- Container transshipment surfaces
- Petrol stations

ACO DRAIN® heavy duty channels are also available with bolted grates



Stability under the highest loads

Load resistance

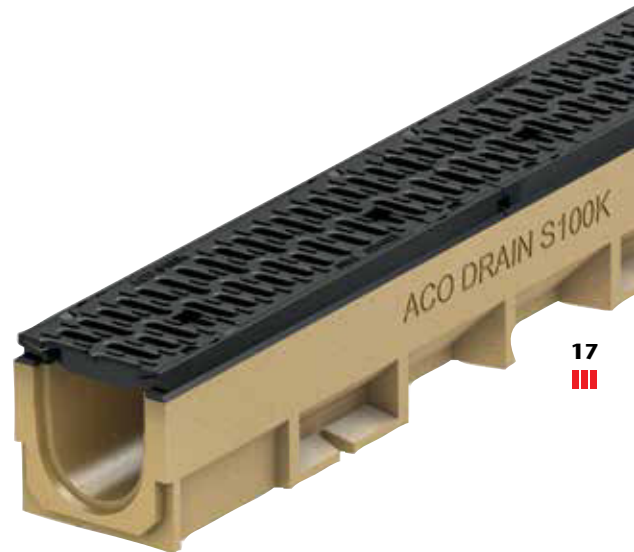
The high strength of this heavy duty channel system is based on many details:

- Reinforcing ribs increase side wall strength and optimise load distribution
- Special anchoring feet provide perfect stability in the concrete surround
- Integrated anti-shunt lugs to prevent longitudinal grating movement, and low centre of gravity provides safety even during installation
- An abutting edge rail for paviers of 10 cm height avoids unnecessary seams
- Smooth lateral walls are free of any protrusions, permitting easy abutment of surface coverings such as paviers, asphalt or concrete
- powerlock boltless locking replaces bolts for easier assembly and maintenance

Award winning design

This product was awarded a German product design (recognition) award for its excellent combination of form and function. A great design with many beneficial features:

- High load resistance
- High inflow profile
- Longitudinal bars preventing water by-pass
- Powerlock boltless locking
- Anti-shunt lugs to prevent longitudinal grate movement
- High quality coating to prevent corrosion
- Grate installation independent of channel direction



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S 100 K channel.

Appearance and functionality optimised by a new grating design



ACO DRAIN® Powerdrain – the allrounder

The ACO DRAIN® Powerdrain system is a real allrounder. The product line boasts a convincing new scale of nominal widths, universal stability, functionality and design freedom, not to mention innovative noise damping.





Slim, quiet and extremely efficient

Slim solutions are not just good looking: the combination of crucial product properties make the ACO Powerdrain a real professional all-round solution in polymer concrete. Its compelling features include unusually good hydraulic specifications, extremely high safety, and outstanding stability right up to the toughest heavy duty class F. All of these product benefits are founded on four main properties:

- reduced nominal widths
- innovative V-channel profile
- rugged sidewall construction
- integrated damping

The nominal widths differ from traditional widths: the Powerdrain was developed with internal widths of 75, 125, 175 and 275 mm. The design retains the hydraulically highly effective V-profile – an innovation launched by ACO for line drainage solutions – and is made of high-strength polymer concrete. This not only makes the new slim Powerdrain systems extremely tough, they also have efficiencies

comparable to the previously standard 100, 150, 200 and 300 channels. The special elastomer damping between the grating and the channel, combined with the safely locked but still flexibly bedded grating, means permanent noise damping when vehicles drive over the channel.



ACO DRAIN® PowerDrain
V 75/100 P to V 275/300 P



quiet: the special elastomer damping means permanent noise damping

efficient: the boltless lock and tried-and-tested installation aids boost safety and efficiency at the construction site

◀ **slim:** V-profile for high hydraulic performance

Monocast ACO DRAIN® Monoblock

The system can hardly be compared with other channels: ACO DRAIN® PD 100 V and PD 200 V Monoblock are an innovation in gardening and landscaping. The monoblock is cast from polymer concrete in a special process: it is a single component without any loose parts.



The channel is designed as an architectural element

The demands being made on drainage components are increasing constantly; especially with reference to design and aesthetics. The entire block is solidly coloured in anthracite black in the case of the PD 100 V Monoblock channel. The monoblock becomes an attractive element of design in this way.

The simple modular concept has only six components in the system, which makes it suitable for solving the most diverse applications easily and neatly; thereby giving the greatest possible scope to the partner.

Polymer concrete makes Monoblock:

- light
- age-resistant
- high-strength
- rust-free
- frost, de-icing salt and chemical resistant

Installation and maintenance without any problems

The ACO DRAIN® PD 100 V and PD 200 V Monoblock are convincing because the system's parts are easy and economical to use. The monoblock can be installed like a kerb – with C12/15 grade concrete for the B 125 loading class – and it can be handled without slipping. No stiffeners are required. It can also be maintained without excessive cost. The monoblock is cleaned by rinsing it with a high-pressure or low-pressure jet of water; the half-metre long block has a removable grating that allows free access to the channel and the underlying inlet box.

Characteristic features of the product

- The innovative tongue-and-groove system enables the monoblocks to be universally laid together in any direction with the aid of a long crowbar
- Peripheral groove for the gasket
- 'V' cross-section

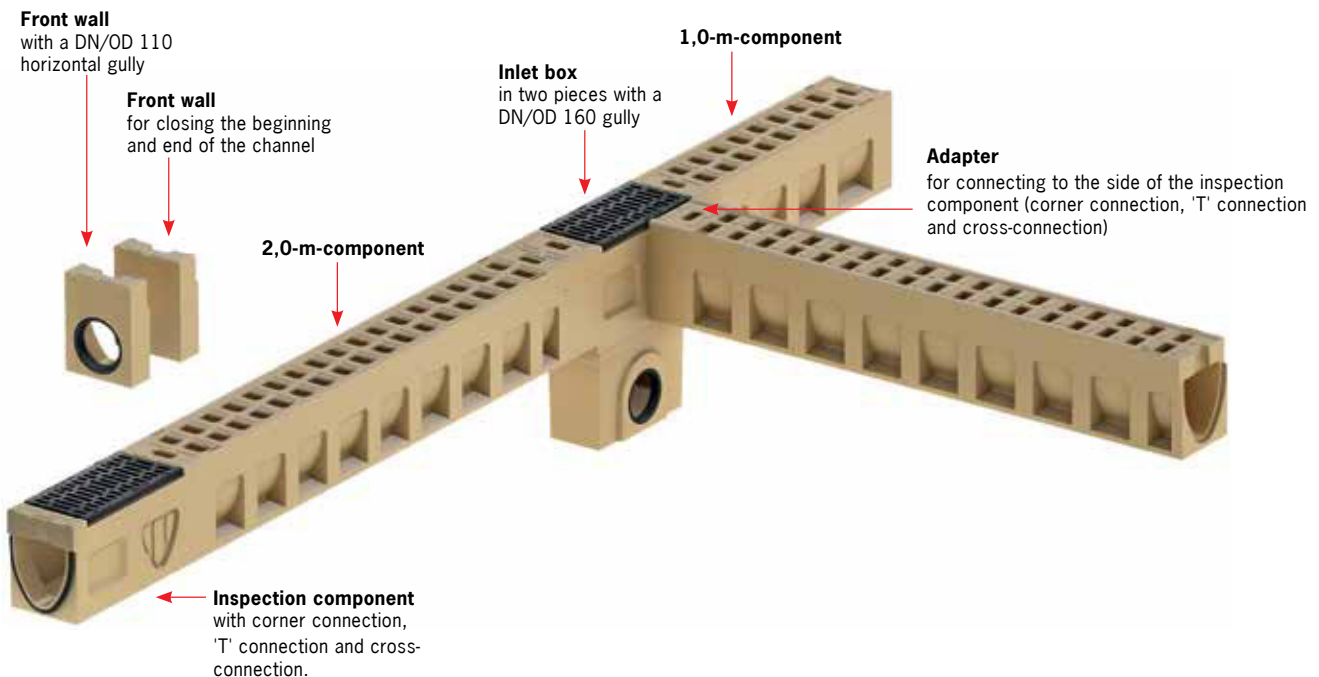


ACO DRAIN® Monoblock PD 200 V: polymer concrete in a natural colour.

ACO DRAIN® Monoblock PD 100 V: solidly coloured polymer concrete.

Review of the RD 100 V/200 V system

Illustration shows the RD 200 V 0.0 (tight) version of ACO DRAIN® Monoblock



Large capacity ACO Qmax – an advanced drainage system

The ACO Qmax line drainage system was developed to satisfy demands for economical high-capacity drainage systems for large catchment areas. ACO Qmax has passed independent load tests to class F 900 in accordance with EN 1433.



Qmax features

ACO Qmax was designed to handle high hydraulic capacities, enable minimum installation times, and be lightweight and yet rigid enough to withstand the rigours of typical construction site handling practice. Manufactured from tough, chemically resistant medium density polyethylene (MDPE), ACO Qmax is light, easy to handle and quick to install. Connecting to pipes is also made easy with the availability of a special side inlet unit.

The ACO Qmax system is a patented design currently available in four sizes for effective and economical drainage of a range of catchment sizes: ACO Qmax 225 can carry flows of around 25 l/s even when laid level (depending on channel length etc.). The largest ACO Qmax 900 can carry flows of around 300 l/s when laid level and considerably more when laid with a gradient.



Typical applications

- Airport surfaces
- Distribution centres
- Highways
- Car parks



ACO Qmax is available in different sizes and lengths providing an effective and economical drainage solution for the application requirement

Roadside drainage with ACO DRAIN® KerbDrain

A new generation: kerbs with integrated line drainage. KerbDrain stands for the brilliant concept of combining kerbstones with drains, to create one compact unit.



Two functions and one solution

ACO DRAIN® KerbDrain is made from one piece of polymer concrete kerbstone and it functions simultaneously as a drainage channel. The system's excellent hydraulic discharge rate throughout the kerbstone's length is convincing and therefore it offers an ideal solution for draining areas like roads, roundabouts and car parks. The Kerb Drain's standardized coloured concrete kerbstones make it suitable to use whenever a uniform aesthetic appearance is desired. Its advantageous cost results from low weight, a drainage channel that is integrated into the kerbstone and easy cleaning: starting from the installation to the final usage.

A versatile system

This intelligent modular system has channels for radii as well as inlet boxes with mud traps, chamfered kerbs and flat kerbs, which makes the ACO DRAIN® KerbDrain versatile to use. The openings of the inlets on the side have a cross-section of 147 cm²/m, which achieves a high and rapid draining performance: it is very effective not only in sensitive areas like for example bus stops – where great demands are made on effective drainage – but also in spacious areas where conventional construction requires a large number of gullies.



ACO DRAIN® KerbDrain
(available in heights 305 und 480 mm)



Kerbstone and drain in one, ACO DRAIN® KerbDrain

Roundabout application

ACO DRAIN® KerbDrain is ideal for draining roundabouts. It makes it possible to optimally drain the traffic lanes in roundabouts towards the inside or the outside, up to load class D 400.

In addition, KerbDrain can be extended to optimally connect up to existing drainage systems.



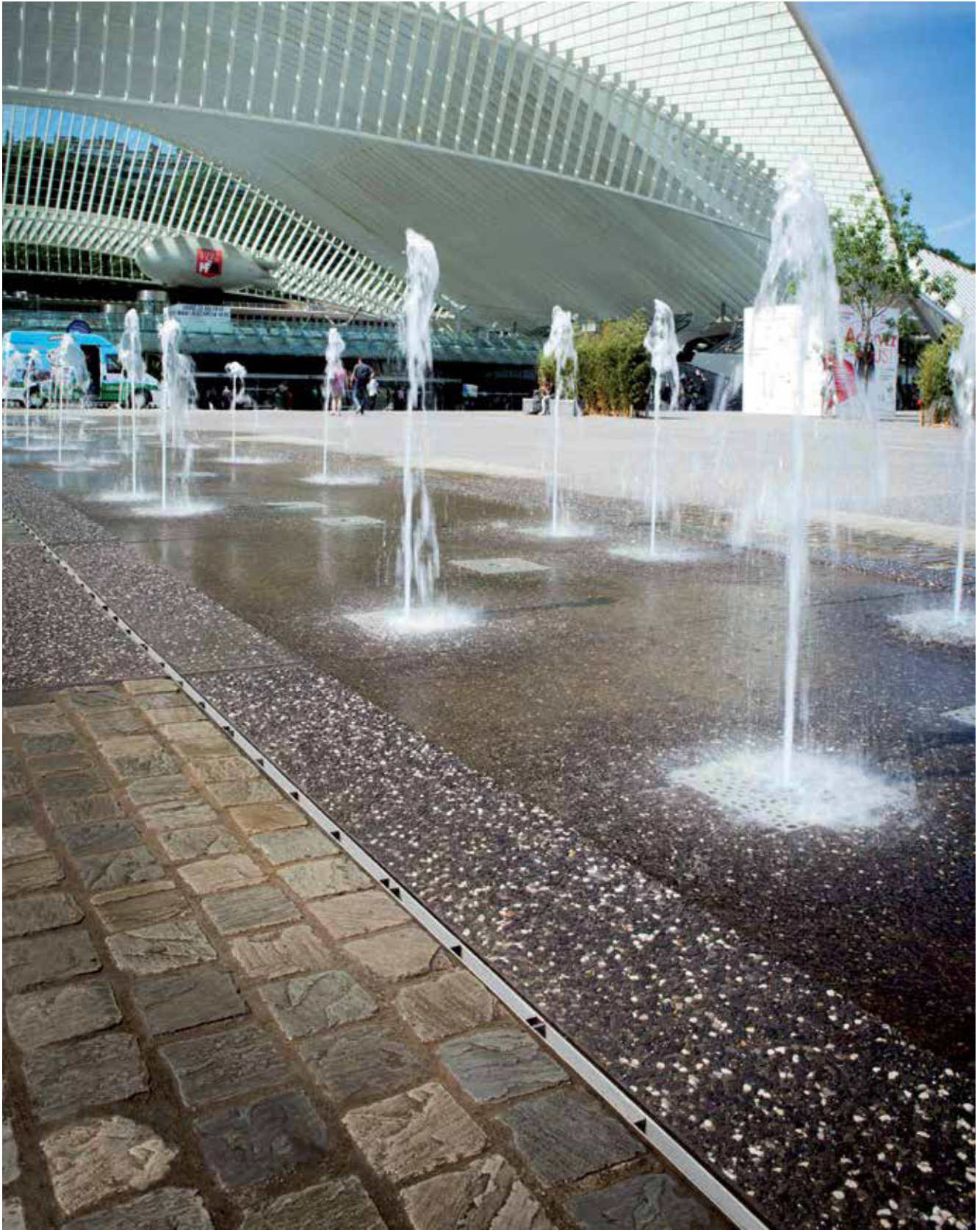
ACO DRAIN® KerbDrain system is used at a bus stop:
the passengers enter the bus unobstructedly with the aid of the 18 cm high kerb

Versatile

ACO DRAIN® KerbDrain is an extremely versatile system that can be used wherever drainage is required for paved surfaces, such as car parks, bus stops and traffic calming zones.

Architecturally attractive solutions – slotted channel systems

Discreet and inconspicuous, the V 100 S and V 150 S ACO DRAIN® slotted channel systems open up a new approach to designing open spaces. A narrow slot replaces the grating and forms a clean, unobtrusive line in the paving.





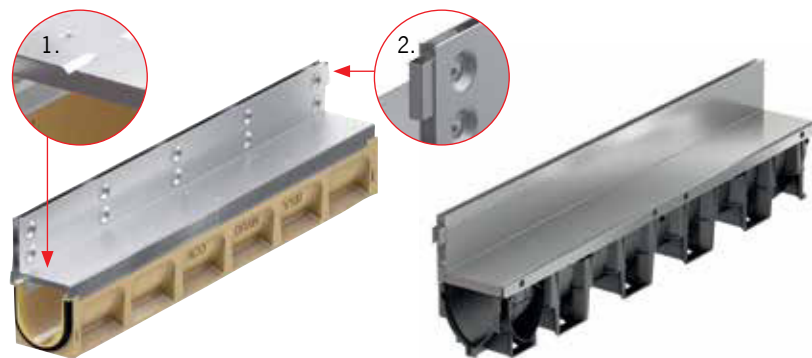
ACO DRAIN® slotted channel system

Designing with clear lines

The system is also ideal for transitions between two different surfaces. The slotted frame consisting of galvanised steel or stainless steel is compatible with all standard paviers or stone slabs and joins the two surfaces almost seamlessly. This system is superb for the drainage of façades and optically sophisticated surfaces.

Functionality and maintenance

Simple cleaning and maintenance with low or high pressure washers. Access openings simplify maintenance of the subsurface polymer concrete or plastic channels with their excellent hydraulic performance.



ACO Multiline Seal in with slotted frame made from polymer concrete

The plastic body of the ACO XtraDrain channel with a slotted frame

Typical applications

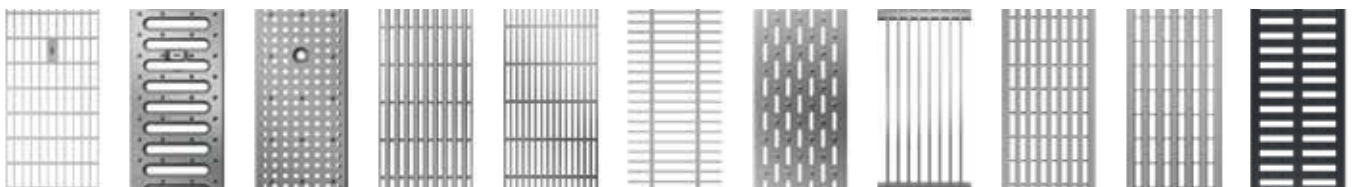
- Piazzas
- Paths
- Facades

The slotted frame of the ACO Multiline Seal in drainage channel – which was introduced in January 2017 – is technologically innovative and it has an improved design. The draining angle (1) underneath the frame prevents the mo-

lecules of water adhering to the surface and therefore it improves the discharge of water directly into the channel. The new type of connector (2) optimizes aligning the slots when laying them on top of the channel.

Facade and Roof Drainage – ACO Profiline

ACO Profiline is a complete channel drainage system for draining vertical façades, as well as terraces, balconies, flat roofs, green roofs and roof gardens – the perfect solution for sophisticated function and design projects.





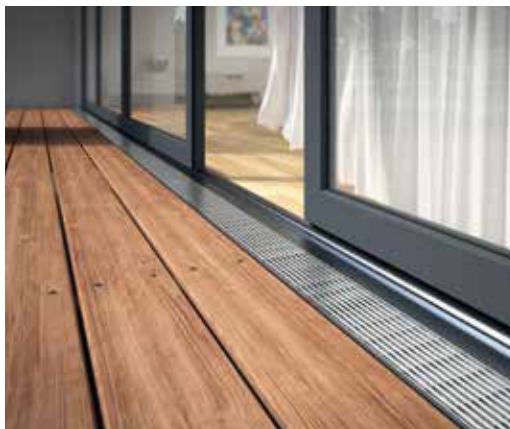
Planning and design with no limitations

The ACO Profiline channel system is a reliable professional solution for the drainage of façades, terraces and balconies. It is available in fixed heights of 5.0 and 7.5 cm, as well as in continuously adjustable versions between 6 to 16.5 cm. Customised versions can also be supplied upon request.

The advantages for planners and designers: ACO Profiline enables the connection height to building seals to be reduced from 15 cm to 5 cm.

The channel system works on two levels: it drains the water from the surface as well as water from the underlying drainage layer. Water flowing down façades is also reliably collected and removed. Backflow reservoirs prevent the build-up of water puddles during sudden downpours.

ACO Profiline is available in galvanised steel and stainless steel versions and therefore perfectly harmonises with visually sophisticated settings.



Typical applications

- Facades
- Terraces
- Balconies
- Flat roofs
- Green roofs
- Roof gardens

ACO Freestyle cast iron gratings

The desire for individual solutions in landscape architecture can be met so easily when it comes to line drainage: with its Freestyle cast iron gratings, ACO provides unique design options for cast iron gratings.





ACO cast iron gratings with LED lighting

A very special effect is achieved by the optional addition of ACO Eyeleds: the round LED lights, 20 mm in diameter, are supplied at the same time, securely fixed into the cast iron grating. This allows the individual design to be emphasised by lights that serve as a focal point.

ACO Freestyle cast iron gratings – creativity in landscape architecture

An important and unique feature of ACO Freestyle cast iron gratings is the freedom given to the customer in designing the visible surface of the grating. Variable production tools enable imaginative and individual designs to be realised, which provide every planner with the opportunity to shape the appearance of the grating surface and, consequently, the open area to be drained. In this way, distinctive grating designs can be created and produced for special open areas in a very simple way.

- ACO Freestyle cast iron gratings are available with a nominal width of 100, 150, 200 and 300, each with a length of 500 mm
- Made of spheroidal graphite iron EN-GJS-500-7, coated or uncoated
- Load class D 400 as per EN 1433
- The screwless ACO Drainlock grating locking guarantees the gratings are securely locked into the drainage channel
- Customisable grating design

A new freedom in line drainage: ACO Freestyle cast iron gratings can be easily shaped according to the design specifications of the customer:



ACO Freestyle „Flag“



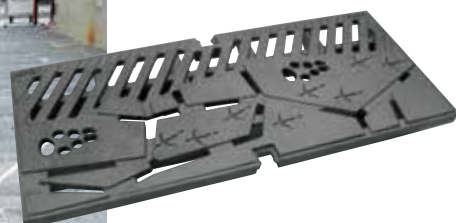
ACO Freestyle „Leaf“



ACO Freestyle „Flensburger Wave“



ACO Freestyle "Sturgeon"



ACO Freestyle "Animal Tracks" cast iron grating installed in Geilo, Norwegen

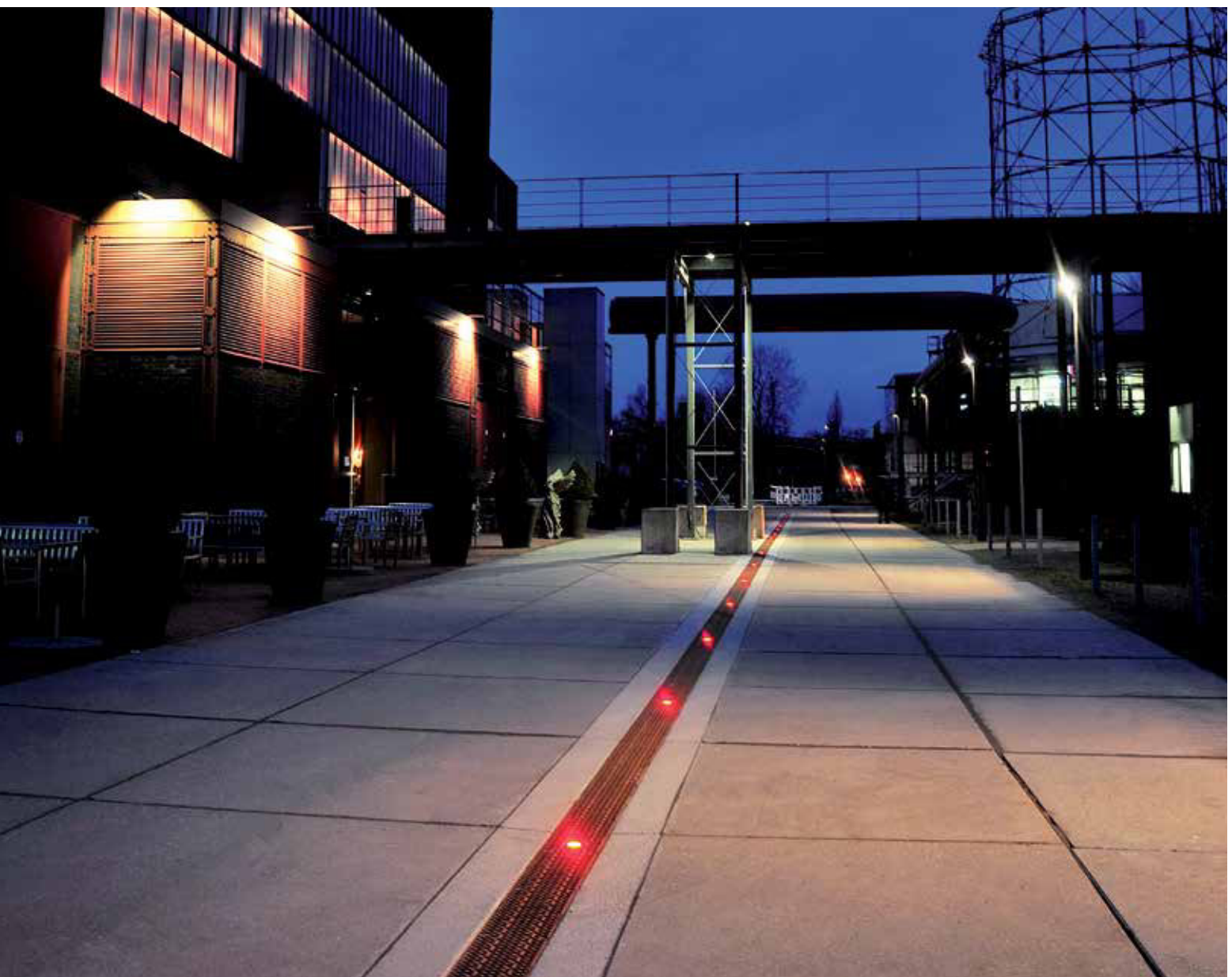
Grating Configurator

The new Multiline Grating Configurator enables all Multiline gratings to be combined with various surface coatings. Different materials, shapes and colours are available for both components and can be teamed up at

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Architecturally attractive solutions – ACO DRAIN® Lightline, Sideline, Lightpoint and ACO Eyeleds

ACO DRAIN® Lightline, ACO DRAIN® Sideline, ACO DRAIN® Lightpoint and ACO Eyeleds provide highlights in architectural and open space designs. Public areas, entrance halls and paths become more attractive and more functionally designed. Technical perfection and individual design flexibility provide planners and builders with a wealth of versatile applications.



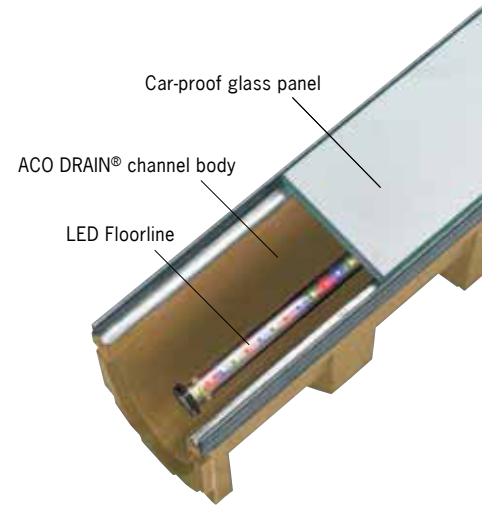
Typical applications

- Piazzas
- Paths
- Entrance halls

Lighting instead of drainage – ACO DRAIN® Lightline

The new ACO DRAIN® Lightline with its variable colour effects provides planners with numerous application possibilities in the colour design of open spaces. ACO DRAIN® Multiline channels in combination with LED Floorline and car-proof non-slip glass technology merge perfectly to create an architectural lighting design element.

LED Floorline is available in the standard colours white, blue and green. Other technologies are available for lighting with customised colours and for creating colour effects and sequences. The ACO DRAIN® Lightline cover panel consists of a safety-glass cover which is non-slip and car-proof, and securely enclosed in a stainless steel frame.



ACO DRAIN® Sideline

For some years now, drainage channels disguised as narrow slots have been upgrading squares and paths, as well as gardens and parks, with their clean lines. Slotted drainage channels have now become even more attractive with the addition of another design dimension: the new ACO Sideline stands out with its sophisticated symbiosis of drainage and LED technology. The enhanced feeling of safety is an important plus point in addition to the highly effective design character.



ACO DRAIN® Lightpoint

The LED Lightpoint is available in various colours (e.g. white, blue). 18 lightpoints can be run from a modular plug-in power supply unit. The lightpoints are interconnected by a simple plug arrangement.

The LED Lightpoint is simply inserted into the special opening in the ductile iron grate and fixed into place to retain the drainage function of the grate and the channel.



ACO Eyeleds

Light and expressive – the LED points are installed in a high-strength composite grating. The LED technology creates a powerful lighting effect even though the lights are only 2 cm in diameter. Garage drives, squares, footpaths, pedestrian zones, access routes, boulevards and railway platforms can all be attractively highlighted by ACO Eyeleds. In addition to decorative effects ACO Eyeleds can also improve overall safety in busy areas.



Trend-setting lighting and aesthetics in perfect harmony: ACO DRAIN® Lightline, Sideline, Lightpoint and Eyeleds for customised use.

ACO XtraDrain composite channels for professional solutions

The new ACO composite drainage channel XtraDrain: A great new drainage channel, especially for applications involving the design of open spaces, and gardening and landscaping – which all benefit from this technically perfect and aesthetic solution for line drainage.



ACO XtraDrain

Easy handling right down to the last detail, combined with the highest quality. Technical details like for example the proven 'V' profile or the hexagonal shape of the side walls satisfy all of the demands that are made on a contemporary drainage channel. The high-speed flow and the good self-cleaning property minimize the cost of conserving and maintaining the channel system. The tongue-and-groove connection where the channel begins and ends enables this system to be installed simply and conveniently.

Typical applications

- Footpaths, pedestrian areas
- pedestrian precincts
- public and private car parking spaces
- open spaces around business premises such as banks, insurance companies, hospitals
- housing areas/estates
- schools
- railway station entrances
- façade drainage
- railway platforms



The ACO XtraDrain provides a permanently attractive effect and functionality. Above: The photo shows the facade channel on the stadium of St. Pauli Football Club in Hamburg



Cover gratings with the Drainlock screwless locking device are available for various models of the ACO XtraDrain drainage channel in the A 15 to C 250 loading classes.



The ACO XtraDrain drainage channel has a plastic composite grating. It is permanently resistant to corrosion and it is a visually attractive unit in the B 125 loading class.

ACO individual solutions in stainless steel – accents for good architecture

In addition to perfect function, another key feature of ACO brand policy is the high aesthetic quality of its products. This gives rise to added value which is appreciated just as much by our customers as the professionals because many ACO products have already won awards for their innovative design.



Typical applications

- Piazzas
- Facades
- Pedestrian areas
- Arcades and passages



Customised for sophisticated planning

Form and function

Chrome-nickel steel combines durability and beauty: form and function in perfect harmony. All of the components are durable, tough, non-deformable, corrosion-resistant and long-lived.

Design

The broad spectrum of finishes and shapes gives you complete freedom with your designs. Even unusual concepts can be easily realised using stainless steel. Customers individual project designs can be supported by our expert team with tailor-made services for your specific project with full proposal information, CAD layout drawings and assembly instructions.

External Drainage

ACO DRAIN® point drains

ACO point drainage systems are ideal for surfaces which require point drainage for structural or topographical reasons.



Drainage precisely where it is needed

The yard drain is made from polymer concrete. The top top has a ductile iron frame, an inset ductile iron grating and a Pointlock screwless locking system for loading classes up to B 125. This system can be advantageously used in many areas:

- It can be installed with little handling.
- Versions of the system are available for all surfaces and loading classes up to B 125.
- It is supplied with a filtering bag for connecting to soakaway systems. The water will be cleaned in this way before it is conducted to the soakaway

ACO DRAIN® point gully

The ACO DRAIN® point Gully E 600 – F 900 is designed for all heavily loaded surfaces in industrial areas, airports and road gutters where it is required to utilize point drainage systems on the terrain because of technical reasons. This point gully has been developed especially for point drainage up to Class F 900 and it excels at high flexibility. The proven Powerlock screwless locking device ensures that it permanently opens and closes without any screws at all.



The yard gully is made from polymer concrete. It has a superimposed cast frame, an internally located cast frame or a grating made from galvanized steel mesh and it is fixed with the Pointlock system of screwless locking devices.

The levelling component for adjusting the installed height to match the paved surface, as well as the gully frames that can be stacked to raise the installed height, have a side connection, e.g., for downpipes.

Typical applications

- roads, paths, piazzas
- car parks
- railway platforms
- school yards
- industrial areas
- airports



ACO road gully Combipoint PP

The innovative road gully ACO Combipoint has been specially developed to satisfy today's technological demands in the area of road drainage.





short body

long body

wet sludge

A flexible modular system

The flexibility is new, but the material is as light and robust as ever. For the first time, the ACO Combipoint PP includes a plastic road gullies which can be twisted, telescoped, shortened and set at an angle. Thanks to their innovative modular construction, the gully bodies can be made a perfect fit to the local topography. The drainage modules, made out of highly resistant PP, only weigh 2.5 to 2.8 kg. The system is completed with gully tops in class C 250/ D 400. You can remove the need for mortar joints, which bring expensive renovation work in their wake. The load separation is taken care of by the telescopic principle within the drain components.

- rotatable – for optimal pipe-connection
- telescopic – for flexible height adjustment
- load decoupled – to avoid settling
- no mortar joints, therefore without weakness
- light units – easy handling during installation

Typical applications

- kerbs
- traffic lanes
- car parks and industrial surfaces
- school yards
- pedestrian zones



The ACO Combipoint PP system is the first system made of plastic that can be rotated, stretched or shortened telescopically

ACO riser units Multitop

The new riser unit designs for class C 250 to D 400 Multitop storm water discharges feature long service lives, easy handling and simple maintenance. The frames and grates are made of ductile iron. The most important detail is the unbreakable maintenance-free double hinge which allows the grid to be folded out to around 115 degrees on either side or completely removed. 4-point vibration absorption integrated within the frame reduces rattling noises. Other features include the low weight of the grate and the grate securing system using a boltless non-corroding spring lock.



The riser units Multitop are available with a channel or flat profile (300 x 500 and 500 x 500)

Manhole covers – ductile iron

The brand new concept for manhole covers: MultiTop class D 400 in accordance with EN 124.

The focus of the new technical concept is safety, weight and maintenance-friendliness.

All are incorporated in the new manhole covers developed by ACO.



The ACO manhole top program with ACO CityTop, ClassicTop and MultiTop



For tomorrow's infrastructure –

ACO manhole covers: CityTop, ClassicTop and MultiTop

Operational safety, durability and cost efficiency are the main criteria defined for high traffic infrastructure. With the ACO range of manhole covers, top sections and inlet gratings, ACO satisfies all specifications pursuant to DIN EN 124/E DIN 1229. Intelligent product features such as lightweight covers and gratings, boltless locks, damping frame inserts, and hydraulic, optically attractive and technically sophisticated surface designs, underpin the ACO Manhole product line's high engineering standards.

Typical applications

- roads, paths, piazzas
- airports and ports
- control shafts

Benefits

- durability and reliability
- high securing level and long lifetime
- user-friendly and safe in operation

Cover features

- ClassicTop is secured by highest mass per unit area
- CityTop and MultiTop are secured by screwless and maintenance free locking devices
- two anti-theft devices can be installed to prevent theft of CityTop

Frame features

- a cushioning insert is placed in the frame of all ACO manhole tops
- Bituplan frames offer highest load transfer to protect mortar bedding and shaft top
- a mobile entry-facility tool is firmly fixed in Multitop Lift or Bituplan frames



Maintenance-free, boltless, traffic-proof lock made of heavy-duty wear-and-tear resistant plastic in accordance with EN 124

A Plus for tomorrow's infrastructure –

ACO manhole cover Multitop Plus

A dramatic increase in goods traffic is expected in the next few years. Roads remain the number one mode of transport. ACO has adapted the Multitop Plus manhole cover to the increasing market requirements. We have retained the tried and tested weight, handling, wear and mortar joint solutions and focussed on the new product advantages: Quiet. Air permeable. Slip resistant.

- **Quiet** by means of safe, damping inserts and by mechanically machined, extremely flat bearing surfaces on the cover and frame.
- **Permeable** through 323 cm² ventilation cross sections for better ventilation of the sewer.
- **Slip resistant** through a special surface profile on the cover and frame – at least R11 according to DIN 51130.



ACO access and manhole covers – multiple and recessed covers for shafts and supply ducts

ACO has a wide spectrum of high-precision access covers and riser units for all load classes and for the complete range of shaft and sewage structures. The single and series covers use high quality technology to lengthen service lives and reduce operating costs.



Typical applications

- Telecommunication installations
- Airports and ports
- Railway stations
- Tunnels
- Bridges
- Emergency exits
- Water and gas supplies
- Control shafts
- Water treatment and sewage works

The ACO Secant range of shaft covers

The ACO Secant range of shaft covers is a very flexibly used system and it is available in various lengths. The covers can span shafts that have clear widths of up to 1,050 mm and they are offered for practically any preferred length of shaft. They are ideal for covering inspection shafts, maintenance shafts,

supply shafts and disposal shafts, as well as cable conduits or cable drawshafts in industrial, public or private areas. The high-quality mechanical processing and the cover's sound seating ensure that this covering system is free of rattle and wear, which prolongs the service life and reduces the ongoing

operating costs. No cross-beams are required underneath the butt joints between the individual covers. The covered openings always remain entirely accessible. The clear width is unobstructed, e.g., for assembly work.



- Selectable surface
- Filled with concrete in the factory (BEGU cover)
- Supplied with a cast-iron frame
- Foldable and free of wear
- Optionally available with a screwed connection to prevent it from being lifted without permission
- The covers can be opened independently of each other, subject to considering the opening direction
- One version has a device that prevents backflow from lifting it
- One version is sealed against surface water
- Covers are available in the B 125 und D 400 loading classes

The ACO Servokat GD shaft covers

The ACO Servokat GD shaft covers resist gas pressure and they are the right solution whenever the covers must be frequently handled for the purposes of maintenance or inspection. The covers have integrated opening devices that can be released by one person without any problem and without additional lifting aids. The covers are suitable for climbing out of the shaft in an emergency: they are equipped with special locks and reinforced opening devices according to the intended use: this means that the covers are particularly easy to open from underneath. The locks of these versions can be operated from above or below. The customer or his building contractor should take suitable measures during the design to protect the cover from freezing solid if it will be exposed to the weather, e.g., installing self-regulating heating strips.

- The screwed connection with an operating key can be opened and closed from above
- The cover is optionally available with a lock that can be rapidly released from underneath for climbing out of the shaft in an emergency
- A gasket seals the cover against surface water
- The surface has a diagonally ribbed, corrugated texture
- A gas-filled pneumatic spring enables the cover to be opened easily.
- The cover is automatically secured against slamming shut after it has been opened
- The opening angle of 88° ensures that one can climb into the shaft and out of it quickly and safely
- The material is galvanized steel or 1.4301 grade stainless steel



ACO access covers – Access covers with built-in flooring

ACO Access covers are a critical point in the urban environment. Very often they are the weakest place in the pavement, which breaks down and causes unevenness, areas of risk and poor aesthetic appearance.

The structure of the ACO access covers allows the floor to be embedded in the lid frame. This gives freedom in the design of areas with natural stone, pavement, asphalt or other architectural solutions without visual surface discontinuity with a guaranteed flat surface and bonnet resistance, as required by European standards. Made of stainless steel, galvanised steel, cast iron or aluminum.



Typical applications

- Sidewalks
- Squares
- Parking
- Walking and cycling paths
- Shopping Malls and Entertainment Parks
- Residential areas and private villas
- Terminals in airports and seaports
- Food & Beverage Industry

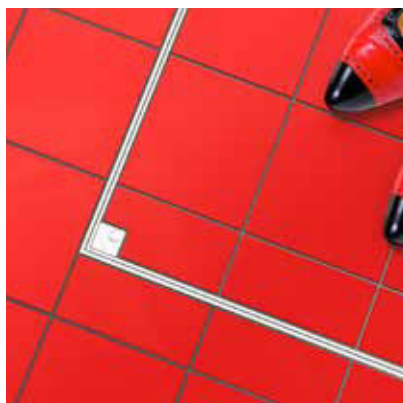
ACO Access Cover PAVING

- Typically specified for use outside buildings, for pedestrian areas, driveways and car parks.
- Recessed access covers for a pavement, natural stone or bitumen infill in height up to 110 mm
- Load capacity up to load class C250 for all clear openings up to 1 m
- No concrete or any other additional structural infill necessary
- Type tested and certified according to EN 124 – Product certificate No.204/5Ca/2011/060-035130.
- Sealed for water and odour tightness
- Corrosion resistant – hot dip galvanized mild steel ($\geq 60 \mu\text{m}$ of zinc)
- Secure and time saving installation
- No risk – load capacity always guaranteed
- different or customized tray depth available
- Secured in the frame by its own weight - child safety
- Stainless steel version available on request
- MULTI – multipart version available, removable beams, not watertight solution
- ASSIST – version with opening assistance available
 - One man operation
 - Gas spring installed afterwards from safety reasons
 - Locked by two bolts
 - Water and odourtight



ACO Access Cover UNIFACE

- Typical applications are inside buildings or in building surroundings, where high level of design is required
- Recessed access covers are suitable for a thin floor surfaces in thickness up to 15 mm
- The cover must be filled-up with concrete of required quality in order to achieve declared load capacity
- Type tested and certified according to EN 1253-4 – Product certificate No. 060-035234
- Type tested and certified according to EN 124 – Product certificate No.204/5Ca/2011/060-035130.
- Tested with space for tiles 15 mm (competitors covers tested completely filled with concrete)
- Sealed for excellent water and odour tightness.
- Bolt locked – child safety
- Corrosion resistant
- Small corner parts
- Secure installation – good connection with concrete (profiled frame or anchors)
- Discreet product after installation
- Easy tool for opening and manipulation



ACO Access Cover SOLID

- Suitable for light industrial applications, where simple and lightweight covers are required
- Surface of the cover is formed by anti slip tread “checker” plate
- Optimized supports are welded underneath of the cover which guarantee declared load capacity
- No concrete or any other additional structural infill necessary
- Type tested and certified according to EN 124 – Product certificate No.204/5Ca/2011/060-035130.
- Sealed for water and odour tightness
- Bolt locked – child safety
- Corrosion resistant
- Secure and time saving installation
- No risk – load capacity always guaranteed
- Durable



ACO Self® – domestic and economical solutions

ACO Self® drainage systems keep entrances, pathways and terraces free of rain and waste water, thus protecting the building fabric.



Typical applications

- Garages
- Patios
- Drives
- Pedestrian areas



Modular system – a channel for every application

ACO Self® drainage was developed especially for private usage and combines optimum standard with high-quality design. The covers can be produced from a range of different materials from galvanised powder painted steel through high-grade steel and cast to plastic. This allows for a wide array of design possibilities. The channel bodies are either made from plastic, polymer concrete or steel. You can create individual solutions for every construction situation using the modular principle.

Slotted top for ACO Self – More stylish looks for your outdoor areas

The ACO Self slotted top replaces the 12 cm wide drainage channel grating with a less than 2 cm wide slot which fits elegantly into the overall look – at the end of your drive, on your patio, or alongside a garage.



ACO Self® point drainage system

Point gullies are often used under the tap of a standpipe in the garden or yard, or as point drainage in suitable terrain. They work just like drainage channels while doing so. In other words, the gullies always drain the waste water and rainwater reliably, so that puddles and sludge do not have any chance to form.



Cobblestones, flagstones or asphalt are the customary coverings that are used nowadays for paving the areas around the house, as well as the large areas around public buildings and commercial buildings. Rainwater and waste water cannot soak away naturally because these pavings usually seal the ground. The pavings must not only be laid skilfully but they must also ensure that the surface water will be collected and drained in order to prevent puddles from forming. The ACO Self® Point gullies are a simple and practical solution for draining the surfaces of yards, driveways and large areas. The frostproof gullies for waste water and rainwater, which are passable by vehicles and resistant to thawing salt, reliably ensure that the surface water is collected quickly and drained via the point gullies from these areas or underneath the tap of a standpipe in the garden or yard.



The XtraPoint gullies made from plastic

- Passable by motor car (Class B125)
- Shallow installing height
- Large mud trap with a handle
- Permanently colourfast
- It is possible to pave directly up to the gully
- The gullies comply with DN 100
- The draining performance is at least 4.5 l/s

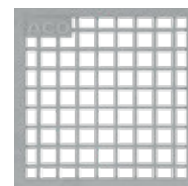


Typical applications

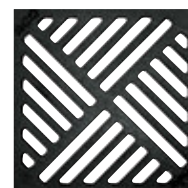
- car parks
- domestic water tap
- school yards

The yard gully made from polymer concrete

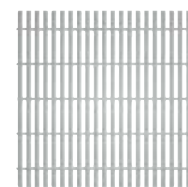
- Removable odour seal
- Removable mud trap
- Frostproof
- The depth of penetration by water into the polymer concrete is 0 mm
- The drainage capacity is up to 4.0 l/s
- Surface-draining performance: 150 m²



Mesh grating, galvanized steel



Ductile iron grating



Longitudinal profile grating, stainless steel



Slotted grating, galvanized steel

ACO SPORT drainage systems – for running tracks and sport facilities

ACO SPORT includes drainage systems and construction elements for sports and recreational facilities, helping them to remain in good playing condition throughout the year.



The successful partnership between ACO and the Olympic Games first began in 1972. This was the year that ACO kitted out the award-winning “Olympiastadion” in Munich with ACO SPORT® products! Since then ACO has firmly established itself as a key partner to the largest sporting event in the world.



The hockey facility of the Olympic Games 2016 in Rio is equipped with ACO drainage channels



Photo London used under Creative Commons from interbeat

ACO SPORT® Drainage systems for athletics facilities Type A, B, C

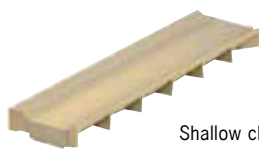
Football grounds

Pitches in football stadiums are generally covered with real grass. However, many football pitches are covered with infilled artificial turf, to allow them to be used more intensively, for longer, without any deterioration in playability. The infill used in the artificial turf is a mixture of sand and rubber granules. This makes the surface very water-permeable, just like real grass.

The ACO SPORT® shallow channel drainage system has proven ideal for removing surface water from this kind of surface, and from adjacent auxiliary areas. Because of the low (15 mm) depth of these channels, which conforms to DIN 18035, they are safe, drain the water away reliably, and are easy to clean of granules. Because the sides of the symmetrical channel are only slightly off-vertical, it is easy to lay paving stones against it.



Catch basin



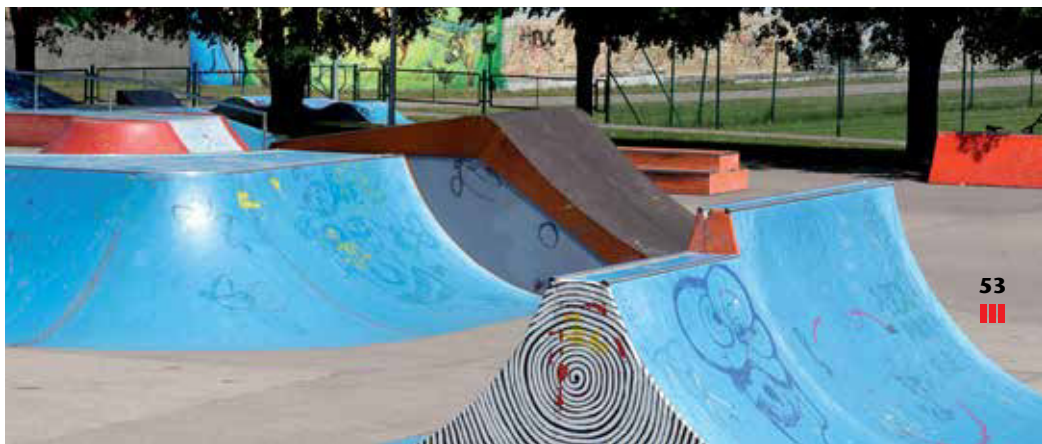
Shallow channel for rectangular sports fields

Sports pitches, games areas and recreation grounds

All-weather pitches, small sports surfaces, tennis and volleyball courts and leisure installations also all need to be quickly drained of surface water.

The components used for drainage must also be extremely low-maintenance and sturdy, and must not pose a risk of injury.

ACO SPORT® shallow channels are the ideal solution, as demonstrated by many decades of use on numerous facilities of this kind. The channel is wide, compact, and securely anchored to the bedding material, meaning it is safe, sturdy, self-cleaning, and presents vandals with no point of attack. For point drainage of the sports surface, a robust stainless steel catch basin, covered with a grating with a small mesh to prevent injuries, is recommended. Concrete edging panels can additionally be used to form a wide border with adjacent areas of vegetation, providing long-term protection to sports surfaces with synthetic coverings. By surrounding these games surfaces with ACO SPORT® elastic perimeter kerbs, additional safety can be provided for users.



Shallow channel



Shallow channel with anchorage groove



Catch basin



Elastic perimeter kerbs



Grass edging panel



Stainless steel point drain

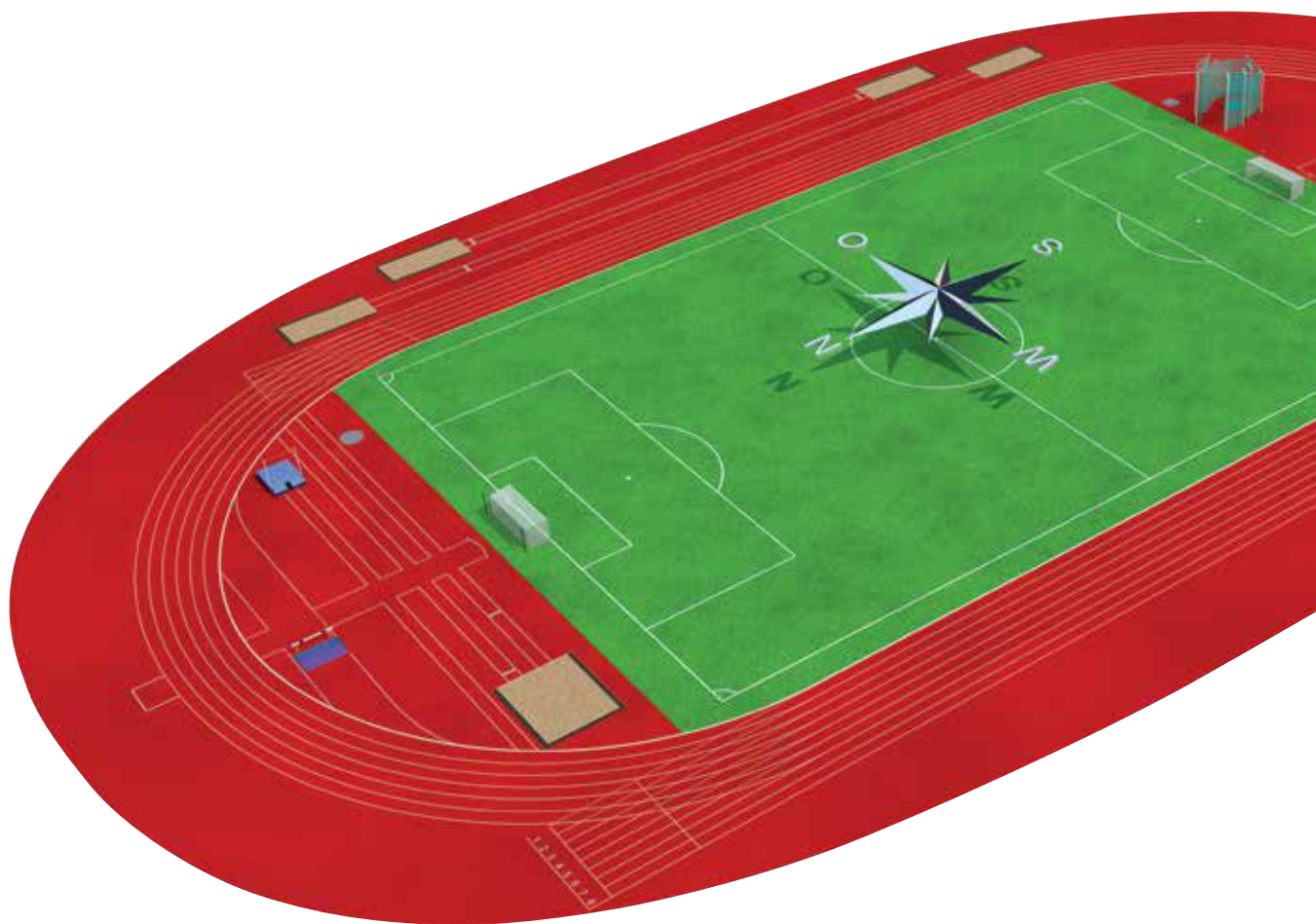
Example Type B arena

Type B sports facilities are not only used for athletics, but primarily for football or other ball games. To make sure the playing conditions are safe for all users, particularly due to the 5 cm high border required around the running track, the large playing area is also built 5 cm above the level of the running track. This means the border edge can be permanently installed on the raised edge of the playing field directly, by means of a hidden channel construction, thus

presenting no obstacle to step over. The sectors designed as artificial surfaces for athletics competitions run flush with the level of the running track at the prescribed surface gradient.

The ACO SPORT® NW 125 drainage system is a combination of hidden channels and hollow-profile channels. The system intelligently unites fast surface drainage of the sporting surfaces and the particular requirements of all users of modern

sports facilities. For example, if there is a raised playing field, the drainage is routed through hidden channels designed as box channels with a stationary stable cover, which also serves as the 5 cm high border around the running track. The channels are raised above the side of the playing field via a 4 cm high cast-on turf support. Water enters from the running track at the side, through the supported plastic cover with its inlet slots that conform to standard.



Hidden box channel



Inlet shaft for box channel



The sectors are drained via integrated hollow-profile channels, which are layered over with a synthetic surface in situ. The plastic cover and its mobile elements are plugged into the slots arranged above the running track in order to create the required border around it. This border can be dismantled quickly, which means the sectors can be accessed easily from the running track, thus ensuring technical discipline as regards athletics.



Sport surrounding kerb



Cable distribution shaft



Sand capture channel



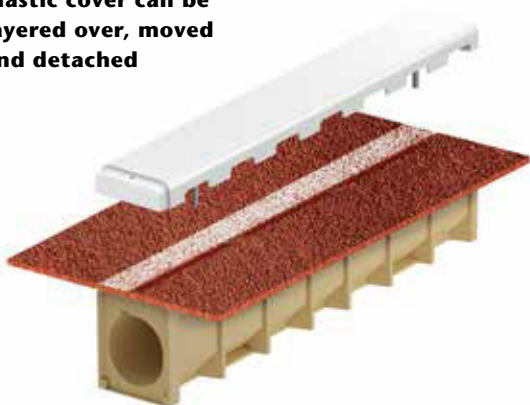
Elastic kerbstones



Inlet shaft for slot channel and inspection box



Slot channel clear width 125 plastic cover can be layered over, moved and detached



ACO gravity and siphonic roof drainage

Flat roofs are sensitive architectural areas. That is why it is especially critical to plan their drainage systems professionally. When rain falls onto a flat roof, large volumes of water can collect rapidly. Unless there is an effective way of draining off precipitation, this can lead to excess loads being placed on the building's structure. ACO Haustechnik offers functional solutions which are specially designed for flat roof areas and which ensure the water is drained effectively. For smaller surfaces, gravity drainage systems are the solution. For larger roofs of 150 m² or more, siphonic systems can be installed.





Gravity roof drainage

Flat roof gullies for gravity drainage are always used for draining small flat roofs with a surface area of less than 150 m² per gully. But this kind of drainage can also be used for larger roofs too. Whether the roof covering is a membrane, concrete or gravel: ACO Spin flat roof gullies can be flexibly adapted to the different requirements. The individual components of the gullies such as gratings, top sections and gully bodies can be combined as needed using our building block system.

With the correct accessory components the ACO Spin flat roof gullies can also be used to drain green roofs. Given increasingly dense construction in towns, more and more ecological surfaces are being sealed over. With an intensive or extensive green flat roof it is a relatively simple matter to compensate for this.

Syphonic roof drainage

Roof areas without traffic larger than 150 m², such as for example production buildings, hangars or sports stadiums, are suitable for syphonic drainage. When the rainfall is heavy enough, the gullies create reduced pressure in the pipe system. This means that increased drainage performance level can be achieved compared to simple gravity drainage. Syphonic drainage can be used on membrane, concrete and gravel roofs, as well as on green roofs with extensive planting. Syphonic drainage systems operate with specially designed flat roof drains which, unlike gravity drainage systems, are configured to work with completely full pipes (degree of fill h/d 1.0).

This can only be achieved by assuring amongst other things that no air is sucked in with the rain water to form bubble vortexes in the pipe systems.

Special components are used in the ACO Jet flat roof drains to prevent these vortexes from forming. Once the dimensioning rainfall volumes are reached which get the syphonic system operational, the system works with completely filled pipes which rapidly and safely drain the roof.



ACO pipe work systems and balcony drains of stainless steel and galvanised steel

The functional strength and service lives of rainwater and sewage pipes are being increasingly challenged by the rising level of technology in homes, the growing demands for more housing and sanitation comfort, and the presence of aggressive media in domestic wastewater. ACO rises to this challenge with a complete programme of pipes, fittings and gullies in stainless steel and galvanised steel.





Stainless steel pipe system

ACO PIPE is reliable, lightweight and durable push-fit pipe work system, designed, produced and tested for soil, waste, rainwater and industrial wastewater drainage applications. Together with the other products of ACO Group it creates a perfect system and offers a sustainable drainage solution with unique advantages to the customers. Especially with the ACO gully and ACO stainless steel channel systems provide a unique system for building drainage. The push-fit system ensures quick and easy assembly for a reliable installation for gravity and vacuum drainage.

Typical applications

- ACO PIPE stainless steel pipe is the fast alternative to ductile iron or PVC pipe systems, and is available in standard pipe sizes with easy to assemble push-on fittings.

Benefits

ACO PIPE stainless steel pipes save on installation costs and long-term care and maintenance

- highly corrosion resistant
- light and easy to handle
- very reliable double-seal joining system
- simple push-fit assembly
- low expansion co-efficient
- fire resistance



Balcony and terrace gullies

Different solutions are required depending on the installation situation when planning modern balcony and terrace drainage systems. ACO's balcony and terrace product line is therefore intelligently designed around a modular system.

Everything starts with the drain bodies: depending on the model, drains with vertical or horizontal outlet sockets can be supplied. And depending on the model, the drain body can be combined with intermediate sections and a range of top section systems which allows the right drainage solution to be created for each application and floor structure.



ACO Floor gullies – a wide range of multi-application and high performance products

ACO's product line includes a broad range of height-adjustable floor gullies suitable for any type of floor.

Drainage is vertical or horizontal. The ACO modular system has a large number of flexible combination options for every installation situation.



Floor gullies

A floor gully and drainage channel guide wastewater from floors into the drainage pipe, safely for people and without damage to structures. It is the installation location, for example, a large catering kitchen, which primarily determines which variant of a gully or chan-

nel for the drainage has to be selected. Depending on their type, they can be combined with extensions. ACO offers gullies made of cast iron, stainless steel and plastic. The most important factors in the design include:

- Wastewater quantity
- Traffic load and load capacity of the grating
- Slip resistance
- Waterproofing/seals
- Fire protection requirements
- Hygienic properties



Fire protection floor gullies

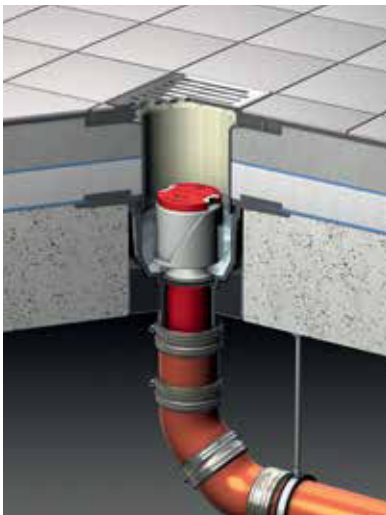
ACO Passavant fire protection floor drains R 30 to R 120 with odour seals and vertical outlet sockets

The ACO passavant fire protection floor drain series is made of inflammable ductile iron.

A replaceable and retrofittable fire protection kit is fitted into the floor drains. The fire protection kit varies according to the floor drain and consists of a fire

protection odour seal with intumescent material in the head. This ensures safe sealing of the floor drain during a fire to prevent fires spreading from above the ceiling to below the ceiling. There is also a fire protection cartridge containing intumescent material which securely blocks off the floor drain and prevents fire spreading from beneath the ceiling to the floor above.

"Preventative fire protection for all floor gullies" has attracted an increasing amount of interest in recent years – particularly for installation in buildings for special uses, e.g. hotels, hospitals, care homes or schools – where fire-resistance specifications already exist for ceilings and floors.



Function of the ACO Haustechnik fire protection floor drains before a fire



If a fire is present beneath the ceiling, the intumescent mass in the cartridge safely blocks the socket in the drain



A fire on top of the ceiling expands. The intumescent mass in the odour seal to completely block the drain

ACO shower channels – architecturally attractive solutions

Function and design are combined perfectly in the ACO Showerdrain and the ACO designer gratings.

The high-quality stainless steel look of the channel and the gully satisfy sophisticated demands for continuous level floors.



Shower channels as design elements

The Showerdrain is a channel built into the shower floor which beautifully combines form with function.

The Showerdrain is the perfect high quality solution for high-class bathrooms featuring glass fixtures and natural stone floors, as well as public applica-

tions where the absence of barriers is an important consideration.

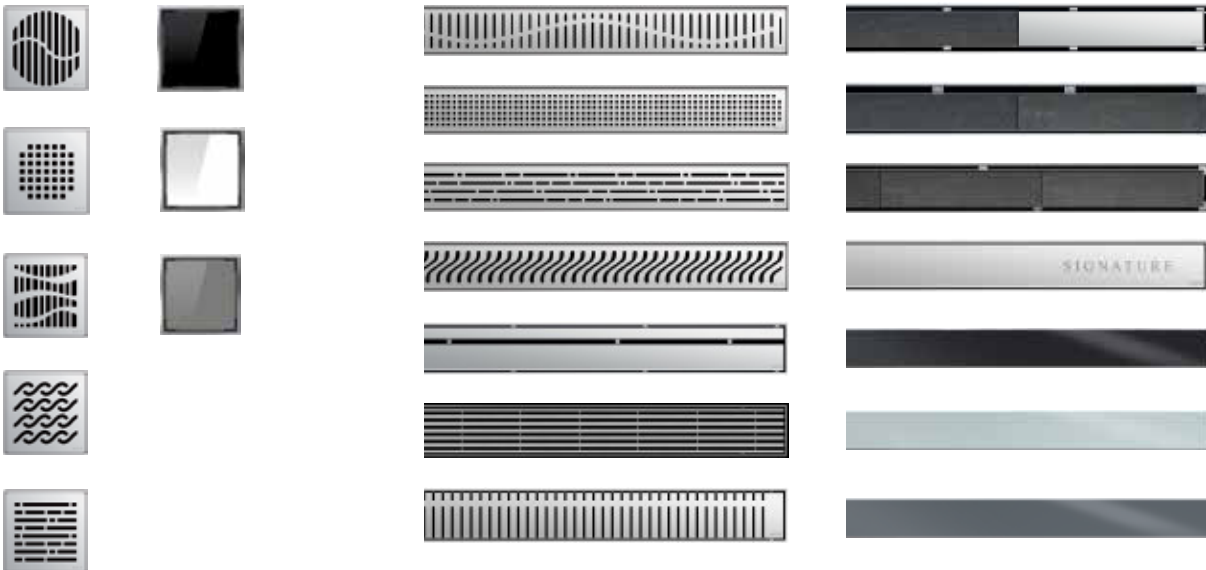
The rigid channel body manufactured from stainless steel has a lateral channel gradient to ensure positive drainage of the water.

ACO designer gratings

The ACO stainless steel designer gratings are laser-cut and have an electro-polish finish. They are elegant, individual and superbly functional.

The gratings fit the 150 x 150 mm and Ø 136 mm frames and are therefore used as standard with the MEKU or AV-SELECTA PP risers from ACO for the thin mortar bed sealing method. The risers can be combined with all ACO ductile iron and stainless steel gullies in sizes DN 50 and DN 70 and the plastic floor gullies DN 50-100.

ACO designer gratings can also be individually made to customer specifications. In addition to the patterns shown here, any other pattern can be cut out and customised from stainless steel plate. ACO Showerdrains are available in standard lengths from 700 to 1000 mm. The Showerdrain is an attractive alternative to a conventional shower tray in high-class bathrooms as well as in public areas.



ACO Lightline Pro

ACO Lightline Pro allows you to create exclusive lighting designs in the bathroom. The floor lighting system produces impressive light effects, is easy to install, offers huge scope for design, and is extremely safe and durable. The idea behind ACO Lightline Pro is as simple as it is clever: A stainless steel U-profile filled with transparent resin to make it

utterly leak tight houses a strip of LED lights (protection class IP68) that is connected to the electric circuit and is therefore switchable. In addition to enhancing individual lighting design in modern private bathrooms, ACO Lightline Pro is also ideal for designing and implementing floor guidance systems in large spa and wellness facilities.



ACO stainless steel drainage

Stainless steel is the ideal material for applications where cleanliness and hygiene are the highest priority.



Because of its high strength, good metal-forming properties, corrosion resistance, and its smooth permanently attractive surface, stainless steel is highly prized as an extremely high qua-

lity, durable and hygienic material. It is virtually completely resistant to dirt, preservatives, micro-organisms and the proteins found in meat, blood, fat and drinks, etc. Proteins and bacteria do not

readily adhere to the smooth surface and can be easily removed with suitable cleaning products and disinfectants.



Product benefits

- different standard channel widths
- standard edges
- incl. leveling legs
- range of gratings and covers for classes L 15 and M 125
- all stainless steel parts pickle passivated to ensure full corrosion protection

Customised solutions upon request

- customised channel widths & lengths
- material grade 304 or 316
- with customised gratings

Stainless steel drainage channels



ACO Box drainage channels

- ACO hygienic box channel with standard edge
- ACO hygienic box channel with extended edge
- ACO vinyl box channel with vinyl edge
- Optional fixed height solution available
- Different grating types (ladder bar, mesh, hygienic)
- Accessories



ACO Modular box channel

- ACO modular box channel
- Different grating types (ladder bar, mesh, hygienic)
- Accessories



ACO Modular slot channel

- ACO modular slot channel
- Different grating types (ladder bar, mesh, hygienic)
- Accessories

Stainless steel floor gullies



Floor gullies

The ACO hygienic gully range incorporates the hygienic design principles to ensure the top hygienic performance. Available in three body sizes, this range caters for various flow rates and construction requirements including shallow construction depths. Fire protective solution is also available for applications where preventative measures are required.

Product benefits

- Protection from building material debris
- Eliminates cleaning of drainage after installation
- Prevents injuries on worksite
- Certified according to EN 12811-1 for scaffolding load class 3
- Eco friendly and easily disposable

ACO hygienic gully is certified according to EN 1253-1.

Available with fire protection sets for fire resistance classes R 30 – R 120

Typical applications

- industrial kitchens in canteens, hospitals, care homes, businesses, catering companies
- pubs, restaurants, fast food outlets, cafeterias
- abattoirs and meat-processing industry, butchers
- food and drink industry, dairy facilities
- pharmaceutical industry, cosmetics industry, laundry facilities

ACO Passavant grease separators – Fully developed products compliant with international standards

Grease separators need to be adapt-able and versatile, and be available in various sizes and materials to meet the enormous range of differ-ent industrial and commercial needs. ACO has many years of experience in the production of grease separators. Its comprehensive product line includes free-standing and underground grease separators. Precise engineering and in-depth expertise guarantee fully developed, quality-assured and completely tested products that satisfy all international standards.



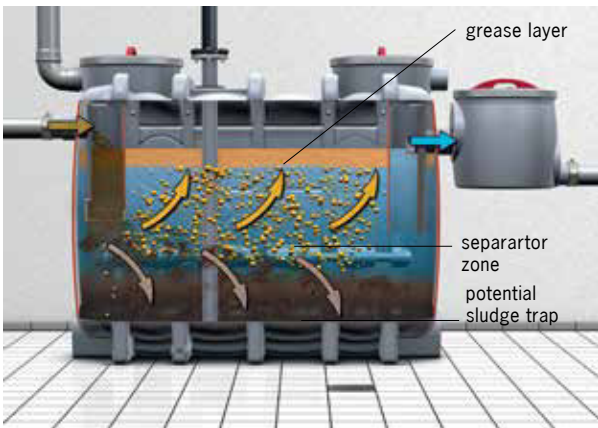
The ACO product line has an optimum solution for every application. Free-standing grease separators are manufactured from stainless steel or polyethylene. In addition to the two materials, there are also two disposal systems: partial and full disposal. Partial disposal only involves disposal of the grease and solids – this is carried out by ACO's manually operated LIPATOR or the fully-automatic LIPATOMAT.

Partial disposal saves water and disposal costs. Full disposal grease separators remove all of the contents. Grease separator for below ground installation are made of reinforced concrete or polyethylene. The Lipumax P grease separator series offers economic solutions and product variations as well enabling both easy disposal and tank cleaning.

Typical applications

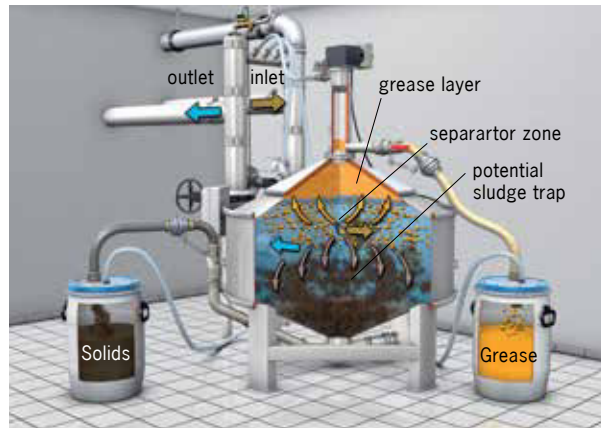
- meat processing
- kitchens
- restaurants
- grilling, roasting and frying kitchens
- motorway services
- catering facilities

Full disposal



EN 1825 function diagram Grease separator with both integrated sludge trap and grease storage area

Partial disposal



The main applications of this type of grease separator are restaurants, canteens and catering operation kitchens.

The grease collects in the upper cone. The sludge sinks to the bottom of the lower cone. The grease is kept fluid by heating the upper cone

ACO Grease Separators - for free standing installation

Grease separators operate on the basis of gravity. The different densities are used to separate grease / oil from the waste water. Animal and vegetable fats and oils have a lower specific gravity than water and thus rise to the surface. Depending on the grease separator system, the separated substances can be disposed of separately or together with the entire grease trap contents in a manner appropriate to the particular requirements. ACO offers the customers grease separators for free-standing or below-ground installation. In addition, a distinction is made between full-time and part-time workers. During full disposal, the contents of the separator are emptied, cleaned and filled at regular intervals by a disposal company. In the case of partial disposal, the separated fats / oils as well as the sludge are collected in separate containers and disposed of separately.



ACO Grease Capture for under-sink installation



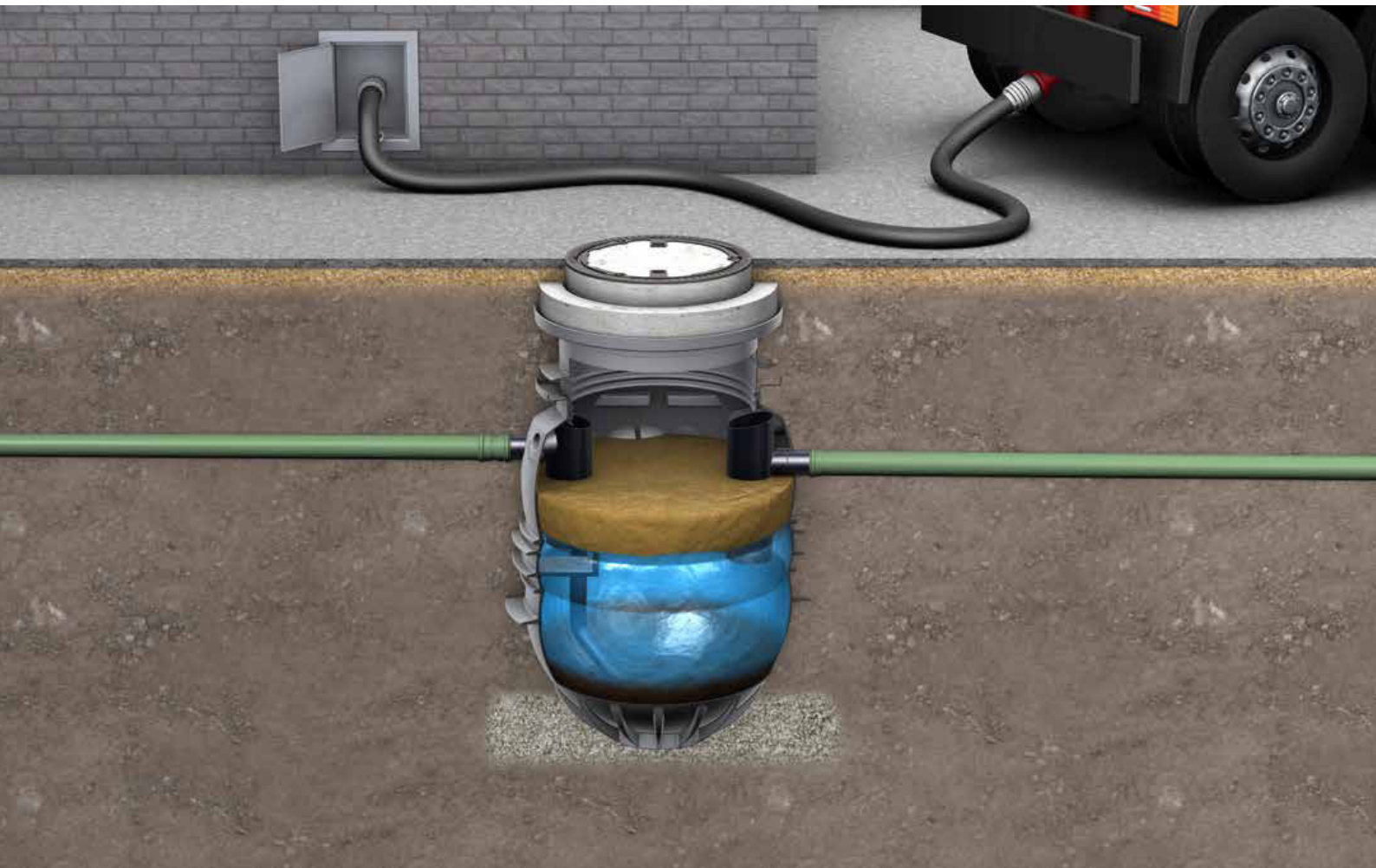
ACO LipuSmart - 4 in 1 grease separator



ACO Lipumax Grease Separator

ACO Passavant grease separators – for below-ground installation with international standards

ACO grease separators Lipumax P for ground installation are made from polyethylene. The shaft has a buoyancy safety up to the upper side of the shaft and the manhole cover depending on the installation depth and the load class. The covers are designed up to load class D 400. Different levels and a wide range of accessories and components permit subsequent upgrade, extension or automation. Guarantee fully developed, quality-assured and completely tested products that satisfy all international standards.



The ACO product line has an optimum solution for every application. The waste water contents of grease separators for below ground installation must be disposed of at regular intervals. They can be used with corresponding manhole covers for load classes A, B and D according to EN 124. Just like the grease separators for free-standing installation and full disposal, the alter-

natives for below-ground installation are also available in various extension stages.

Grease separator for below ground installation are made of reinforced concrete or polyethylene. The Lipumax P grease separator series offers economic solutions and product variations as well enabling both easy disposal and tank cleaning.

Typical applications

- kitchens
- restaurants
- grilling, roasting and frying kitchens
- motorway services
- catering facilities



ACO Lipumax - P-B



ACO Lipumax - P-D



ACO Lipumax - P-DM

ACO Lipulift-C – grease separator, sampling and pumping station in one shaft

With the Lipulift-C, ACO offers a 3-in-1 standard-compliant solution for confined spaces, which takes into account all legal requirements and provides additional benefits for building contractors, operators and planners. Instead of having the grease separator, sampling shaft and pumping station in separate structures as is usual on the market, ACO's compact and unique approach combines the 3 functions in one structure. This results in huge time and cost savings during installation, significantly reduces the space required and ensures reliable performance and lower risks.



3-in-1
the innovative combination

Light liquid separators – Pre-cleaning water-endangering substances

ACO has completely upgraded its light-oil separators in response to the new European standard EN 858.

This product line now sets new benchmarks for separator technology.



In an individual case, it can be useful to use a light liquid separator to EN 858 in conjunction with surface water infiltration or retention. Surface water can become contaminated, e.g. when it occurs on hardened surfaces. Surface water that has become mixed with light liquids of mineral origin in specific applications, must be treated via suitable separator systems or retention devices must be provided. The treated surface water must then be fed into the wastewater sewer (DIN 1999-100).

Laws, for example the law on prevention and remediation of environmental damage, require maximum operating safety of plants that handle water polluting liquids. ACO offers practical solutions with new and innovative technology. If the contaminated surface water is to be discharged into a body of water, the respective authority must decide what treatment plant must be used depending on the degree of contamination and the sensitivity of the receiving water.

Typical applications

- Petrol stations, car parks
- Car washes, vehicle washes
- Automotive workshops, automotive trade
- Filling areas, unloading zones
- Petroleum storages, maintenance operations
- Transformer stations, power plants
- Industry and commerce

Low-maintenance due to filterless

multi-channel technology

In addition to the light liquids in wastewater, coalescence separators also filter out suspended substances and fine sludge fractions. As these substances attach themselves to the light liquid droplets, they adhere to the surface of the coalescence filter. As a consequence the element must be cleaned at regular intervals to prevent blockaging and thus malfunctioning of the separator. Not the case with the Oleosmart Pro: Thanks to the filterless multi-channel technology it is almost maintenance free. Interruptions in operation to clean the coalescence unit are therefore completely unnecessary (self-cleaning by flow energy), follow-up costs are reduced substantially due to the lack of wear in the element.



National technical approval issued by the DIBt Berlin



ACO Oleosmart Pro



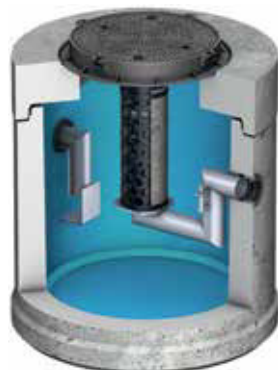
ACO Oleosmart Pro – made of polymer concrete

Effective coalescence separator

The Oleopator-C light liquid separator works effectively and is nonetheless space-saving. The nominal performance and volume of the sludge trap are determined for each specific project based on the actual requirements. Another advantage for the operating costs: All separators in this series are tested as petrol and coalescence separators. This means that when the coalescence element is replaced, the wastewater flow does not have to be interrupted, as the petrol separation continues to run. The petrol separator ensures safe, reliable, simple and cost-effective operation, provided it is inspected regularly according to the self-monitoring regulations. The light liquid separator with coalescence separator is also available as an ACO Oleopator Pro polymer concrete separator.



National technical approval issued by the DIBt Berlin



ACO Oleopator-C



ACO Oleopator Pro – made of polymer concrete

Environmentally-friendly solutions for water protection – ACO catch pits, separators and pumping stations

The drainage pipe network beneath large aprons can often not accommodate the volumes of water quick enough after episodes of very heavy rain – ACO rainwater catch pits act as buffer tanks to throttle the outfall. Residues from airport operations such as petroleum products

must not pollute sewer networks. This can be prevented by low-maintenance and reliable ACO light-oil separators which collect the separated-out materials. The ACO big tank system is used when large volumes of rain or groundwater need to be treated or contained. ACO pump stations guarantee 100 % protection against backflow – even from flooded sewers.



ACO Grease and Light Oil Separators – with GRP bodies

ACO has completely upgraded its grease and light-oil separators in response to the new European standard EN 858.

This product line now sets new benchmarks for separator technology.



Typical applications

- Petrol stations, car parks
- Car washes, vehicle washes
- Automotive workshops, automotive trade
- Filling areas, unloading zones
- Petroleum storages, maintenance operations
- Transformer stations, power plants
- Industry and commerce

Product range of GRP (glass fibre reinforced plastics) - grease & light oil separators



Lipumax G - Grease Separator

- Integrated sludge trap
- Inner parts made of PEHD
- Complies all required norms EN 1825



Oleopator G - Light Oil Separator

- Inner parts made of PEHD
- Complies all required norms EN 858



Oleopass G

- Inner parts made of PEHD
- With integrated bypass channel
- Complies all required norms EN 858

Definitions

- **GRP**
composite material made of a polymer matrix reinforced with glass fibres
- **Composite material**
two or more different materials are combined together to create a superior and unique material.



GRP material consists of:

- **Matrix - Resin**
Orthophthalic polyester resin - Polylite 480-M850 (low styrene)
- **Reinforcement**
glass fibers



Main advantages

- Light weight => low transportation costs (density 1500 – 2000 kg/m³)
- High resistance against static and dynamic fatigue => long product life
- High creep resistance => shape and deformation consistency
- High resistance to external conditions (weather, corrosion, UV radiation) => material stability
- No need of surface painting => low maintenance costs
- Easy customization (shape, chemical, temperature, surface ect.) => bigger chance to meet customer requirements



ACO lifting systems – a complete range for professionals

Professional lift systems are one of the main areas of ACO product excellence in its building drainage product line. ACO has a complete range of intelligent solutions suitable for several application areas, as well as a flexible tank system enabling customization for specific requirements.



ACO wastewater lift plants

Muli-Star lifting plants are designed to raise wastewater from deeper lying rooms such as conveniences, cloak-rooms, showers or complete bathrooms. Also available with a redundant unit for higher operating reliability in housing blocks or small offices.

Product benefits

- optimum tank volume utilisation – less hysteresis and pump wear
- microprocessor-controlled switchbox for simple operation
- Low-noise pumps
- Special connection piece for rapid assembly to pressure pipe



The **Muli-Pro** lift plants are mainly used in public and commercial buildings e.g. office buildings, schools, hotels and factories. These lift plants can be equipped with several lifting heights and flow rates.

Product benefits

- high-quality tank in polyethylene
- designed for wastewater containing grey and black water
- free diameter up to 100 mm
- variable by up to four inflow connection options
- wide scope for positioning in the installation space



Muli-Max F/ Powerlift P- pumping stations

for non-soil wastewater and soil

Muli-Max F and Powerlift-P pump stations are suitable for below ground installation outside buildings.

These fully-fledged pumping stations are mainly used for draining surfaces and deeper lying areas in private and commercial buildings.

The complete pumping stations ensure optimal pressure pump drainage of domestic wastewater.

Product benefits

- float-resistant PE tanks
- encrustation-resistant collecting tank
- low maintenance and flexible over-fill pressure switch
- flexible inlet invert with raising tubes and covers for load class A, B or D



Powerlift- P



Muli-Max F

Pumping stations

Pumping stations are installed in already existing tank systems which are designated to serve a collecting for tanks for pump stations with submersible pumps. They are used for drainage of single or multiple family houses and larger courtyards and similar surfaces.

The pumps are available with several performance power for different lifting heights and flow rates.

Product benefits

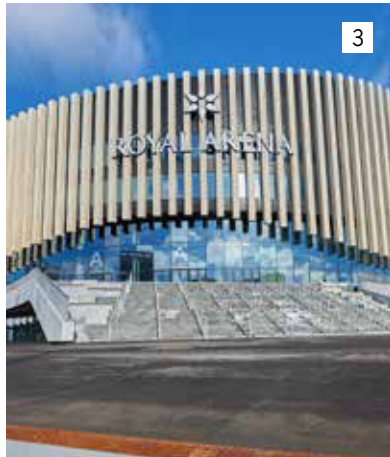
- selected combination of several materials for prolonged downtimes
- pre-assembled pressure piping
- construction height and interior customizable according to modular system
- submersible coupling system with sliding tube



ACO International References

ACO products provide you with reliable drainage wherever they are used. Versatility and quality of ACO products will solve the most mundane problems of every day life, as well as the challenges of major projects.





- 1 Maracanã Stadium, Brazil
- 2 Viracopos Airport, Brazil
- 3 Royal Arena, Danmark
- 4 Harbour Bridge, Australia
- 5 Gare Des Guillemins, Belgium
- 6 Eye Filmuseum, Netherlands
- 7 The Garden Offices, Netherlands
- 8 Formula 1 circuit, China
- 9 Zeche Zollverein, Germany
- 10 One World Trade Center, USA
- 11 Le Jardin D'acclimatation, France
- 12 Airport Frankfurt, Germany
- 13 De Blob, Netherlands
- 14 Formula 1 circuit, Russia
- 15 Elbphilharmonie, Germany
- 16 Central Railway Station, Austria

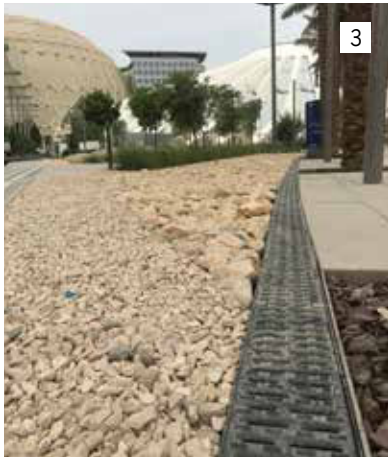


ACO Middle East References

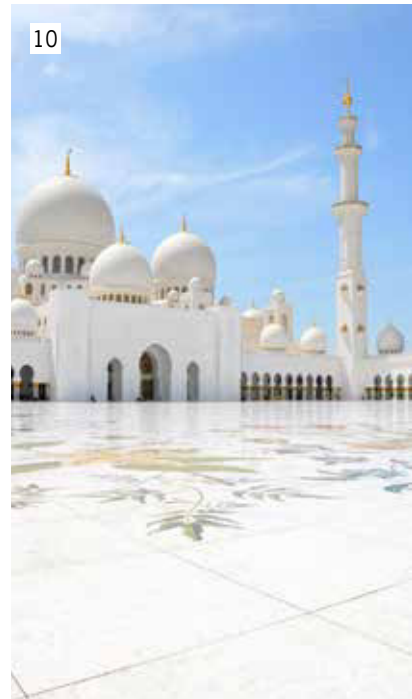
ACO products provided in the GCC Countries.

In a lot of major projects are ACO products installed and used already for many years.





- 1 Holy Mosque in Makkah, Saudi Arabia
- 2 Royal Atlantis Hotel at Palm, Dubai
- 3 EXPO2020, Dubai
- 4 Yas Island & Ferrari World, Abu Dhabi
- 5 Metro Stations, Dubai
- 6 Midfield Terminal Project, Abu Dhabi
- 7 Dubai Mall and Burj Khalifa, Dubai
- 8 Masdar City, Abu Dhabi
- 9 Emirates Flight Catering, Dubai
- 10 Sheikh Zayed Mosque, Abu Dhabi
- 11 Jebel Ali Port, Dubai
- 12 Conrad Hotel, Dubai
- 13 Burj Al Arab Hotel, Dubai
- 14 King Abdullah Financial District, Saudi Arabia
- 15 Etihad Museum, Dubai
- 16 Grand Mosque, Oman



The ACO Group worldwide

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ACO Stavební prvky spol. s.r.o.

Jihlava
www.aco.cz

ACO Industries Tabor s.r.o.

Sezimovo Ústí
www.aco.cz

ACO Marine s.r.o.

Prague
www.acomarine.com

Denmark

ACO Nordic A/S
Ringsted
www.aco.dk

Plastmo A/S
Ringsted
www.plastmo.dk

ACO Funki A/S
Herning
www.aco-funki.com

Hvidbjerg Vinduet A/S
Hvidbjerg/Thyholm
www.hvidbjergvinduet.dk

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www.aco.ee

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ACO Hochbau Vertrieb GmbH
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ACO Selbstbau Vertrieb GmbH
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HAVO Strangguss GmbH
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Norway

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Plastmo A/S
Slemmestad
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United Kingdom

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Shefford
www.aco.co.uk

ACO Building Drainage

Bedford
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