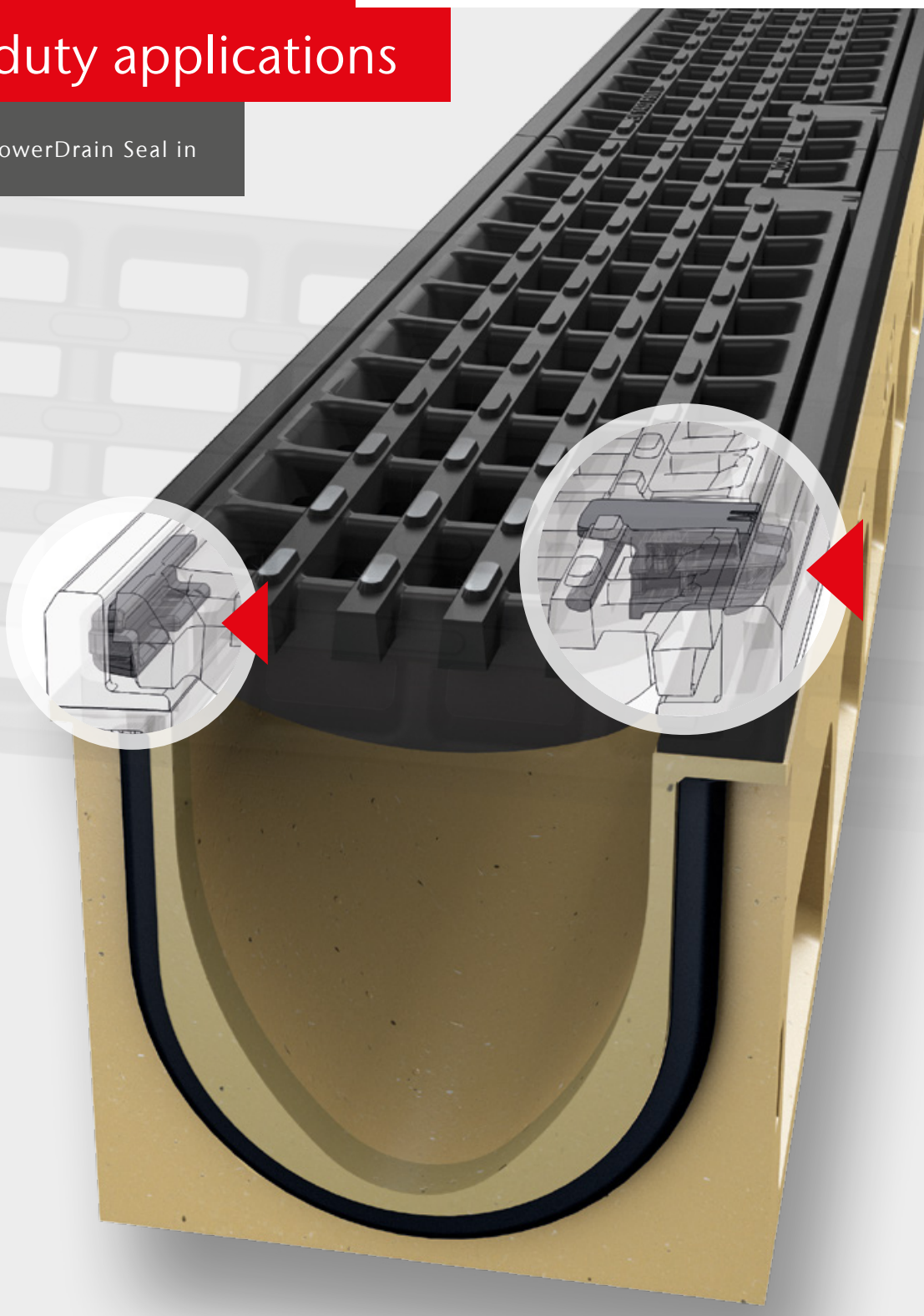
The channel system for heavy-duty applications

ACO DRAIN® PowerDrain Seal in



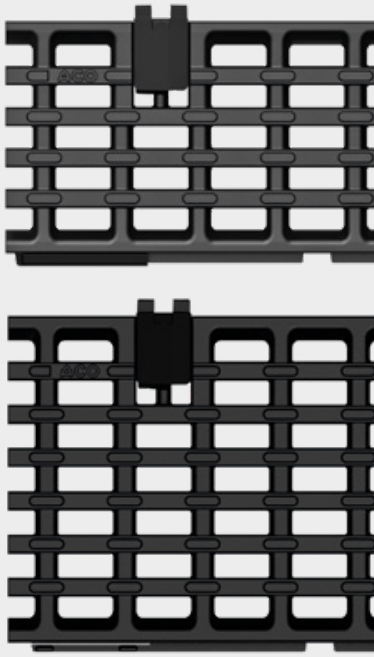
ACO DRAIN® PowerDrain with Seal in Technology

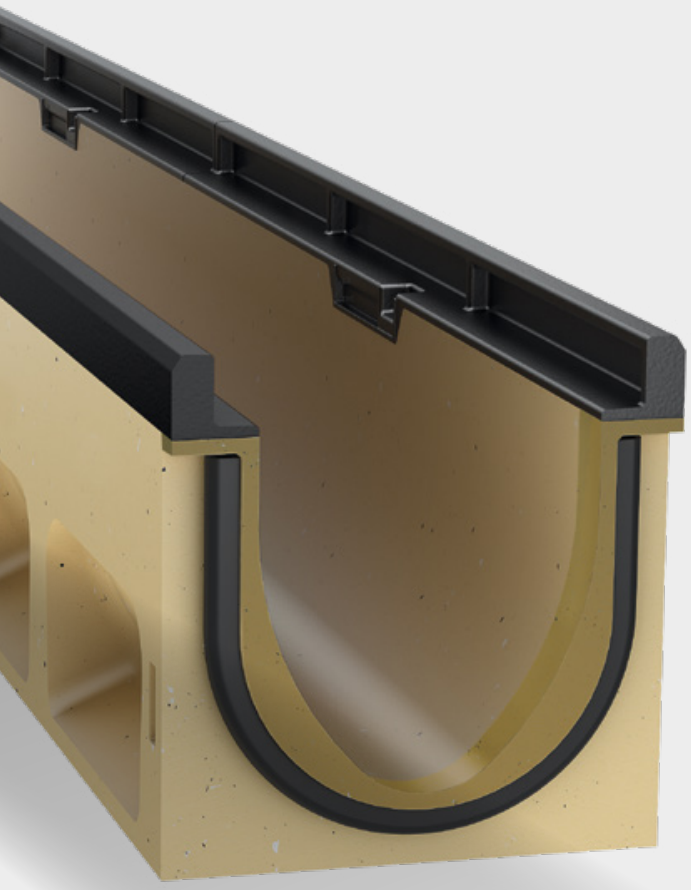
ACO has thought ahead when it comes to heavy loads: In addition to the standard seal at the channel joint, the new ACO DRAIN® PowerDrain channel system is also equipped with a CDC-coated cast iron edge rail and a reinforced channel body.
The program is supplemented by innovations – including the grate design.

safe

Safety thought ahead - the new Powerlock Performance grating locks into place and locks securely under pressure

Page 10





tight

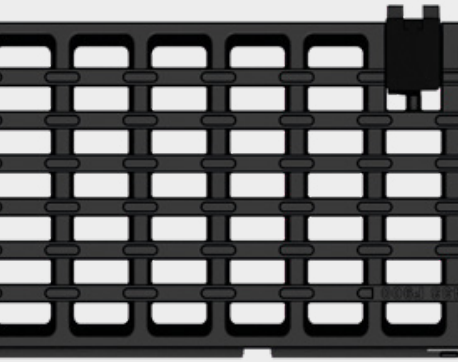
Seal in Technology – the EPDM seal for active environment protection

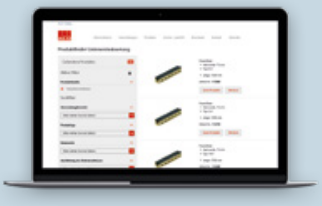
Page 12

strong

Reinforced channel body for direct work without cast-in-situ concrete runners up to class E 600

Page 14





Online-Planning

Makes project planning easier for every application area: **www.aco.de/produktfinder-rinne**

ACO. we care for water

ACO is a Water-Tech company that protects water. Building on our global drainage expertise that protects people from water, we increasingly see our mission as also protecting water from people.

With the ACO WaterCycle, ACO provides systems that collect and channel, clean, retain and ultimately reuse water. In this way, ACO contributes to the preservation of clean groundwater as a vital resource, and makes a contribution to tomorrow's world. In its Agenda 2030, the UN global community set the improvement of water quality as one of 17 sustainable development goals.

Intelligent drainage systems from ACO increasingly use smart technology to ensure that rainwater and wastewater are drained, or temporarily stored. With innovative separation and filter technology, we prevent water contamination by pollutants such as fat and grease, fuels, heavy metals and microplastics.

Today, ACO goes one step further: we accept the challenge of reusing water, and thus establishing a resource-saving cycle. For all products and systems, ACO attaches great importance to durability, reusability and a low carbon footprint. The pursuit of sustainability is an ongoing process that we strive to meet every day.

The ACO Group is a global family business that is one of the world market leaders in the Water-Tech segment. Founded in Schleswig-Holstein in 1946, it operates as a transnational network in over 50 countries. Worldwide, ACO is characterised by a high level of decentralised ownership, and explicit regional market proximity.

www.aco.com

Holder
Iver and Hans-Julius Ahlmann

Headquarters of the ACO Group
in Rendsburg/Büdelsdorf

5,200

employees in more than 47 countries (Europe, North and South America, Asia, Australia, Africa)

1.2 Billion

Euro Sales in 2022

37

production sites in 18 countries

ACO Academy
for practical training

1

The modular system with a variety of grating

CDC coated
cast iron edge

Channel with Powerlock Performance grating

Powerlock Performance
grating F 900,
CDC coated

The product range
with one click:
www.aco.de/powerdrain

The PowerDrain Product Range

The new ACO DRAIN® PowerDrain channel system not only offers standard tightness through the seal at the channel joint, but is also equipped with a standard 12 mm CDC-coated cast iron edge rail and extra reinforced channel body.

This program is supplemented by innovations that provide you with a strong and safe system - individually and economically tailored to your needs using the modular principle.

System overview

- Standard lengths 1 m and 0.5 m
- Nominal widths 100, 150 and 200 mm, more to follow
- Channel body with liquid-tight pipe connection
- Sloped channels
- Inlet chambers

Typical fields of application

Application	PowerDrain Seal in
Type of seal at the channel joint	Seal in
Bus station	■
Container handling points	■
Design and light	■
Airports	■
Pedestrian zones and streets	■
Hall gates	■
Industrial areas	■
Truck parking hall	with AWT*
Truck parking spaces	■
Logistics areas and roads	■
Public paths and squares	■
Fuel stations and rest areas	■
Underground car parks	Ramp**
Washing bays and aprons	with AWT*
WHG areas: LAU systems	with AWT*

* Please use our application technology service
E-mail: aco_awt@aco.com

**Use with Powerlock Performance grating

ACO DRAIN® PowerDrain
the modular system with a variety of gratings

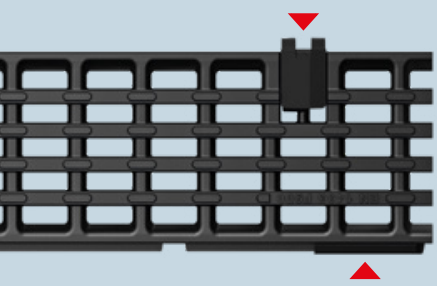
The ACO DRAIN® PowerDrain is now equipped with a CDC-coated cast iron edge as standard. This means that the edge rail remains absolutely corrosion resistant to aggressive media. High-quality functions such as the tightness of the channel system thanks to Seal in technology, the strong side wall structure for high loads, as well as the large selection of Drainlock and CDC-coated Powerlock gratings, round off the heavy duty channel system.

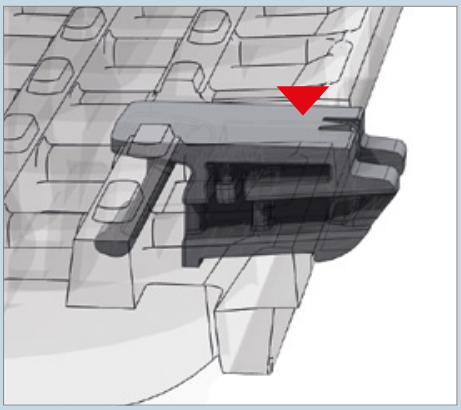
ACO Product Benefits

- integrated seal
- reinforced channel body
- 12 mm CDC-coated cast iron edge
- damping insert
- Powerlock Performance gratings
- Drainlock gratings

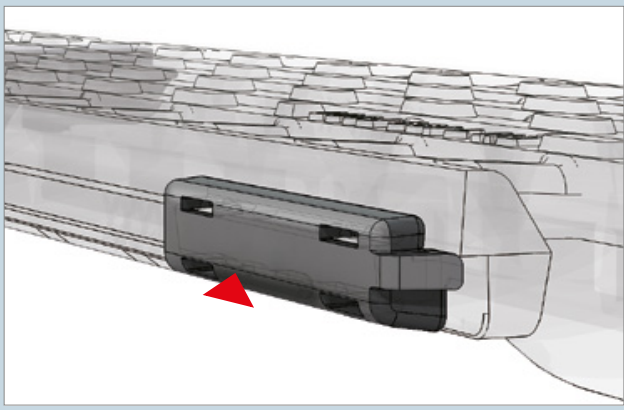
Safety thought ahead -
the new Powerlock Performance grating locks into place and locks securely under pressure

The newly designed grating made of cast iron offers maximum security against cross flow.
The longitudinal bar design features a large inlet cross section with amodern look and optimal hydraulic properties.





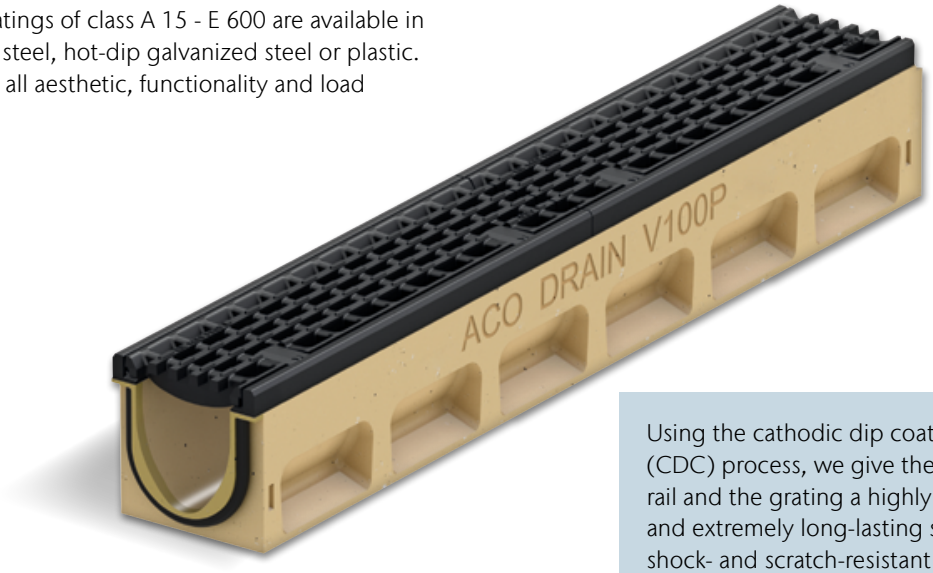
Safety lock
The new ACO Powerlock safety lock ensures safe and user friendly locking of the gratings on the channel. The high-strength plastic locking elements ensure long-lasting functionality.



Damping inserts
Due to its design, the damping makes an active contribution to noise protection in road traffic. This makes the heavy-duty channel usable in all application areas.

Choose your grating design

A variety of covers in many shapes and materials are available for the heavy-duty channel system. The Powerlock Performance cast iron gratings are used in classes D 400 and F 900.
ACO Drainlock gratings of class A 15 - E 600 are available in cast iron, stainless steel, hot-dip galvanized steel or plastic. The gratings meet all aesthetic, functionality and load requirements.

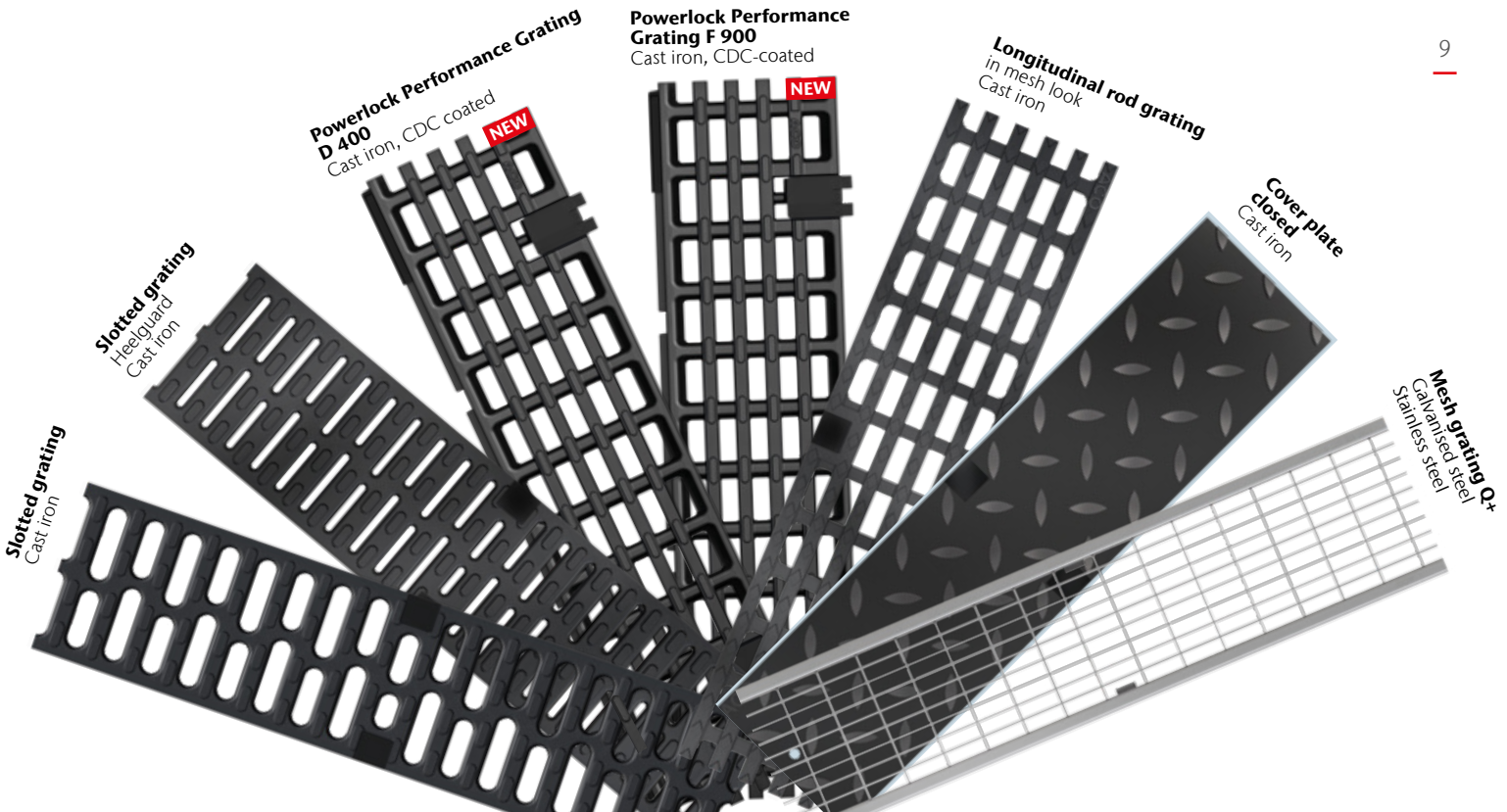


PowerDrain Seal in with CDC-coated Powerlock Performance grating F 900

Using the cathodic dip coating (CDC) process, we give the edge rail and the grating a highly effective and extremely long-lasting smooth, shock- and scratch-resistant black coating. This guarantees very high corrosion resistance even in heavy-duty applications.

Powerlock Performance Gratings (D 400, F 900) Drainlock Gratings (A 15 – E 600)

More gratings:
www.aco.de/powerdrain

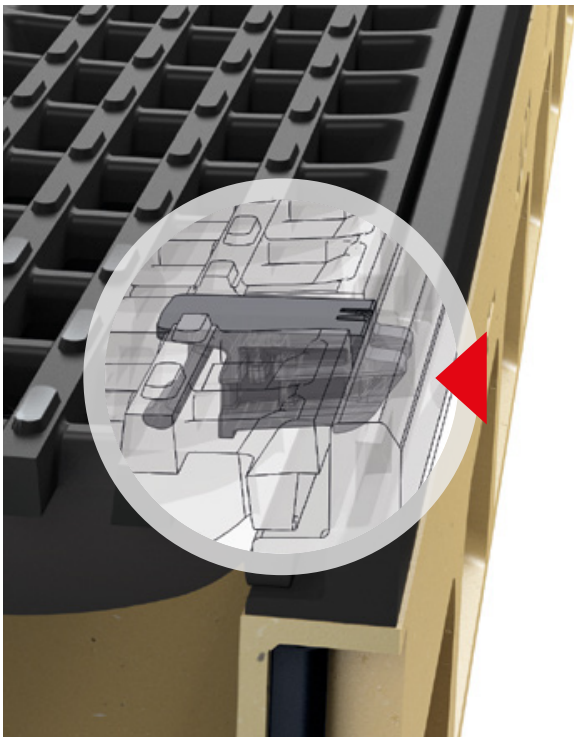


safe

Safe under pressure – the CDC-coated Powerlock Performance grating snaps into place in a self-locking manner

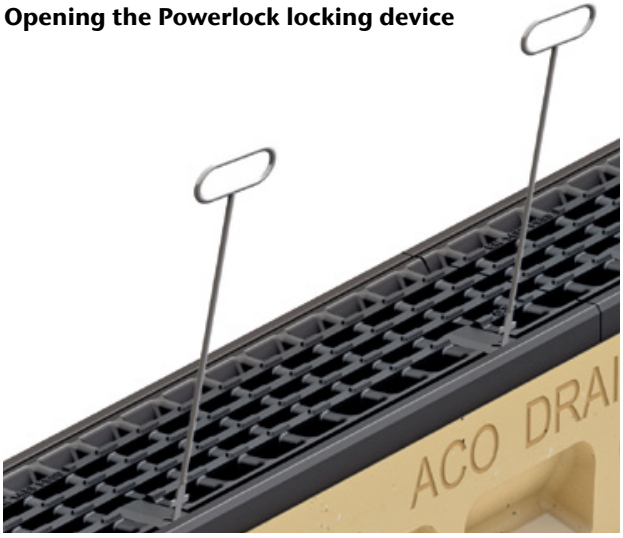
ACO has developed a completely new locking device for the PowerDrain, which gives you audible security with a latching click - the Powerlock locking device.

When the grating is removed, the locking cams protrude laterally beyond the grating. If the grating is inserted into the channel, all it takes is a strong kick and the locking device slides back over the edge of the edge rail and then snaps securely into place underneath the edge rail.
The grating is now locked in a traffic-safe manner and can no longer be unlocked without the use of tools.
Maximum safety!



How does the safety lock work?

Opening the Powerlock locking device



The grating can only be removed from the channel by manually unlocking it using two grating hooks.

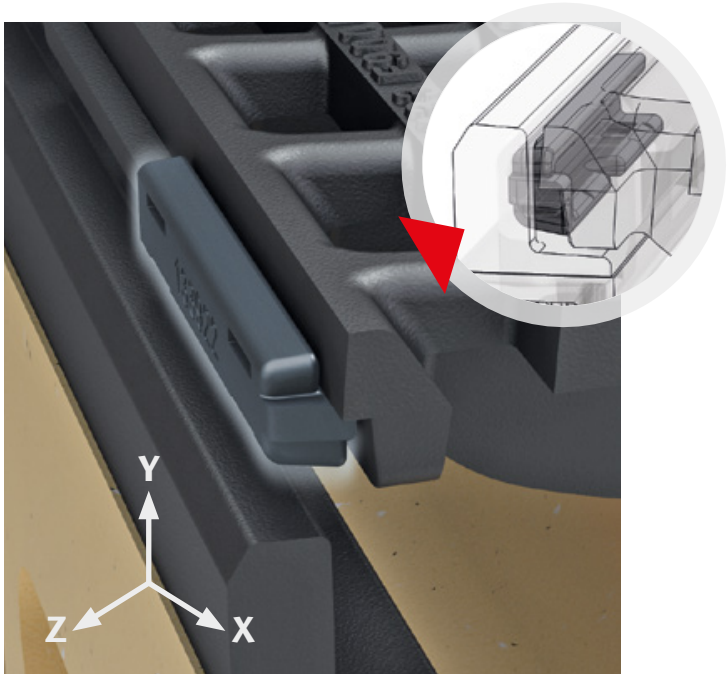
Closing the Powerlock locking device

After placing the grating on the channel body, the grating is securely locked with a kick without the use of tools.

Safe and silent – there is now peace and quiet when driving over it

Because ACO has taken the grating damping further.

New damping inserts now work even better in conjunction with the new safety lock. The damping ensures noise-free driving. This is important in residential areas, especially at garage entrances and access ramps. The special elastomer damping – two pieces per grating on one side of the grating, opposite the new lock - ensures long-lasting and safe noise reducing.



The damping works in three directions
The intelligent damping insert in combination with the grating, safety lock, edge rail and channel body

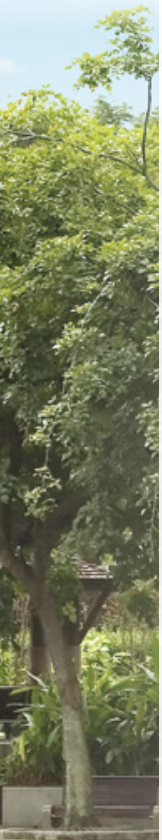
Grating design – reliable in challenging installation situations

When used at hall entrances, ramps and parking garage accesses, it is particularly important that surface water flowing to the channel cannot flow past it.

The longitudinal rod design of the grating effectively prevents this - so halls and garages stay dry, even in heavy rain.

On ramps, the gradient also increases the flow velocity of surface water. No problem for the ACO PowerDrain.

tight



Surface water management expert!

That's the motto of Michael Müller, Business unit manager ACO DRAIN® Drainage channels. Even during product development, the aim is to prevent irreversible damage to *nature, the environment and structures.*

Precipitation that flows from traffic areas contains more contamination than usual. Busy roads are heavily contaminated with pollutants. When it rains, this contamination is washed into structures and *groundwater* and can cause significant damage. Road salt can cause corrosion and weaken foundations.

ACO DRAIN® drainage channels equipped with a seal as standard absorb the water and feed it to the *rainwater treatment facility* and the natural *rainwater cycle* without loss. In this way, they make a crucial contribution to safely collecting and draining contaminated surface water. Damage to structures, weakening of concrete foundations and groundwater pollution can be minimized from the outset.

ACO makes the channel run tight*

The channel joint with seal and the dense material make this possible: The unique combination of the Integrated EPDM seal and waterproof ACO polymer concrete ensures a consistently tightly sealed channel run in accordance with the requirements of DIN EN 1433 / DIN 19580. In addition to the ACO polymer concrete, the captive two-component seal is an essential part of **Seal in Technology.**

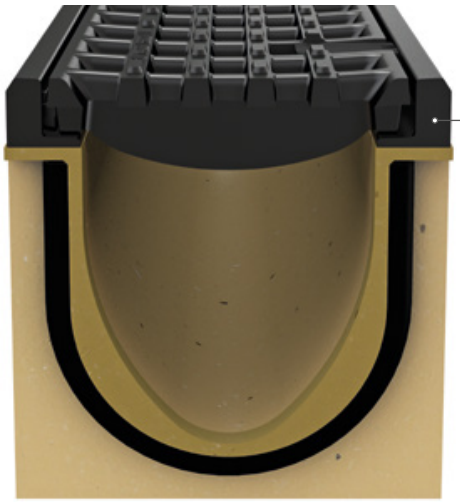
The channel body is also produced using a special 2K process. This creates a tight channel run and the absorbed surface water is completely passed on into the ACO system chain. Through targeted rainwater management, structures and groundwater are permanently protected.

IKT – Institute for Underground Infrastructure, Gelsenkirchen

*tight – certified thanks to long-term simulation

The PowerDrain with standard Seal in Technology exceeds the water tightness requirements according to DIN EN 1433 / DIN 19580, Section 9.3.6 (duration of tightness at least 30 minutes +/- 0.5 minutes) many times over. During the leak test in accordance with the IKT test seal D01185, a permanent seal was demonstrated for 72 hours after cyclic loading. The load cycles used simulate years of driving over the channel connection area.

strong

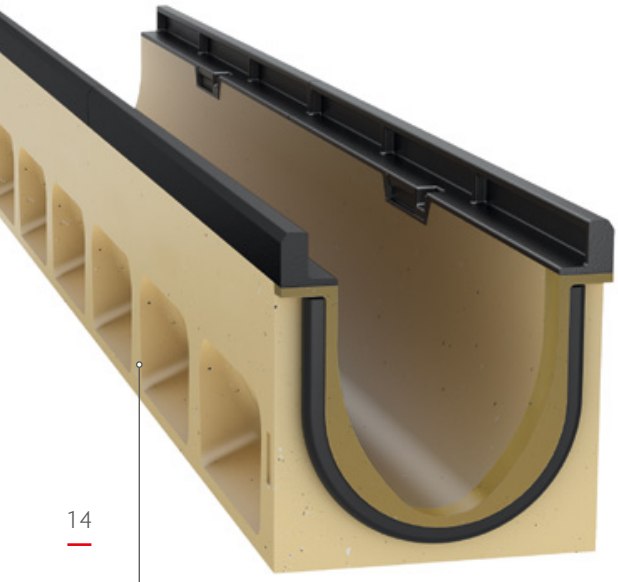


Strong CDC-coated cast iron edge

Heavy load needs a strong solution

Our developers have trimmed the design of the channel body for maximum efficiency. This is how we get the most out of our polymer concrete material. Designed for all classes and equipped with enormous sidewall stability.

The 12 mm wide CDC-coated cast iron edge rail contributes to the stability of the channel and makes it particularly strong. Our gratings in the variants Drainlock or Powerlock Performance, CDC-coated in classes A 15 to F 900, can be used individually.



The improved geometry makes the channel body more robust

High sidewall stability for that extra load

ACO takes the behaviour of surface coverings under shear loads into account right from the development stage: When installed, various forces act on the channel. It is particularly important to take into account the horizontal shear loads from the connected surfaces. These are loads from thermal expansion, braking loads from vehicles and the interaction of both loads. If the surfaces transfer these loads to the channel body, in addition to correct installation, taking into account spatial joints, a high degree of stability of the sidewalls of the channel body is also required. This is where the ACO PowerDrain scores.

For intensive traffic areas in all fields of application

The strong channel body allows asphalt and block pavements to be worked on directly in combination with a row of runner stones in accordance with our installation instructions up to class E 600.

The ACO PowerDrain is now even easier to install in applications with forklift traffic in asphalt and paved areas.

Tip:

References with images and description of the drainage
www.aco.de/referenzen

PowerDrain for all application areas

When choosing the appropriate standardized class, the planner or processor depends on the installation point of the drainage channels. If in doubt, you should always choose the higher class. The PowerDrain channel system can handle any load, no matter how extreme, and serves all fields of application.

Application examples

The ACO PowerDrain drainage system also offers corresponding solutions for LAU systems.

The ACO application technology supports you in your construction project

Email your request to:
kundencenter@aco.com
or find your contact person at
www.aco.de/kontakt

System elements and their handling

Installing the channel

When installing the channel, apply silicone grease that is specifically tailored to the sealing material to the standard integrated EPDM seal.

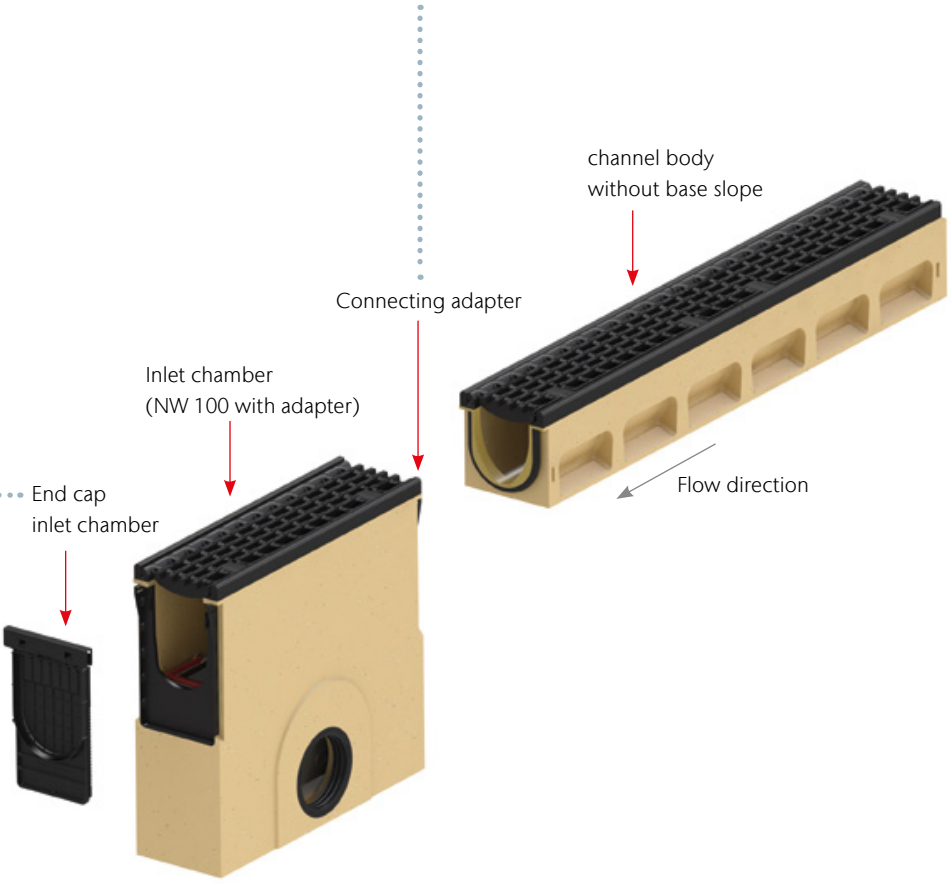
- ACO silicone grease for the seal

Connecting a channel to the inlet chamber (NW 100)

A connection adapter is included in the scope of supply of the inlet chamber. NW 150/200 use inlet chambers without adapters.

- Shorten the connecting adapter according to the type of channel to be connected

- push all the way up
- press on and let it click into place



Installing the closing end cap at the inlet box (NW 100)

The closing end cap for the inlet chamber is included in the scope of supply of the inlet chamber.
If no channel is connected to one side of the inlet chamber, the respective side must be closed with a closing end cap.

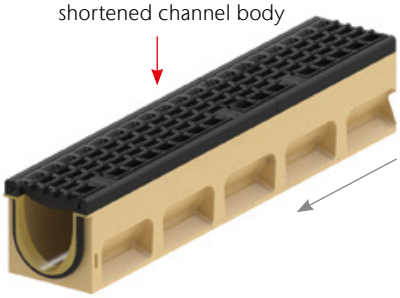
- push to the limit
- press on and let it click into place

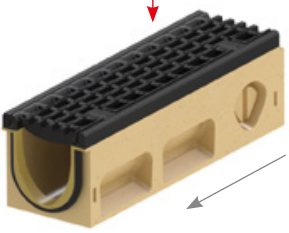
End cap for channel end
with lip labyrinth seal (LLD)
for the horizontal waterproof
pipe connection

Adapter for changing
flow direction

shortened channel body

Channel body
Half meter
without base slope





Adapter for corner, T and
cross connections

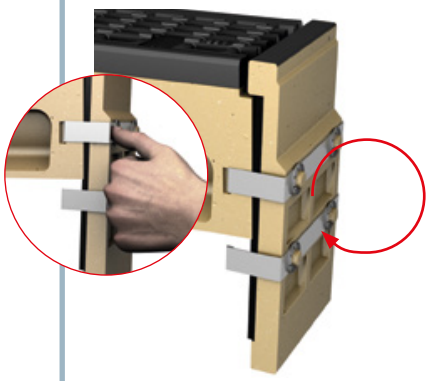
Universal closing
end cap made of
polymer concrete

Make connections

Pre-drill the side opening on the half-meter element and knock it out with a hammer and chisel. Then glue the channel and adapter together.

Universal closing end cap for the channel start and end

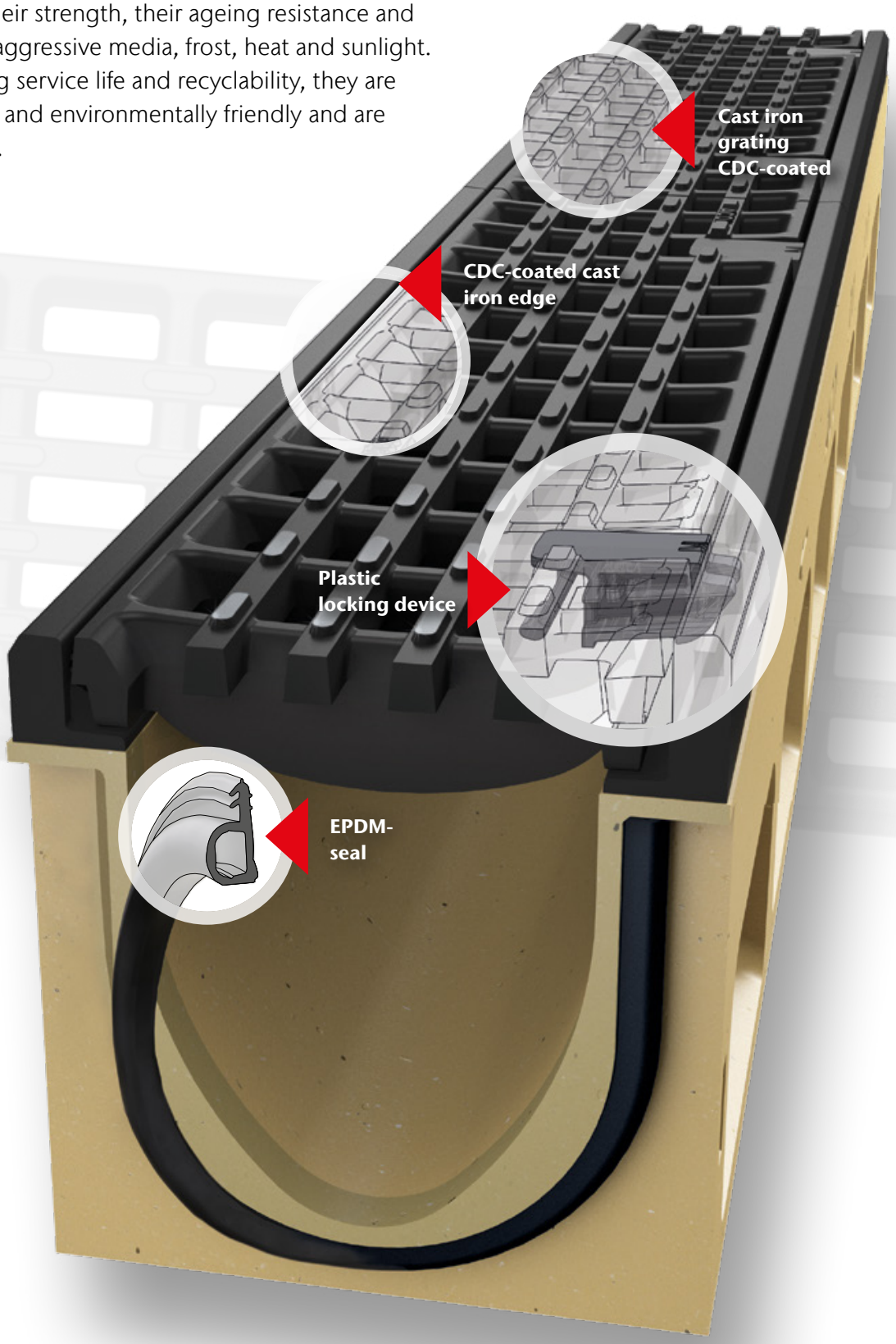
For a precise connection to the inlet and outlet sides, turn the end cap by 180 degrees.



- lock into the recess
- for all overall heights

Quality starts with the material

When designing construction elements and technical details, the choice of the right material determines the aesthetics and functionality. The materials used by ACO are characterized by their strength, their ageing resistance and their resistance to aggressive media, frost, heat and sunlight. Thanks to their long service life and recyclability, they are equally sustainable and environmentally friendly and are used appropriately.



Polymer concrete

One idea better

The special material composition and state-of-the-art manufacturing technologies give ACO polymer concrete its outstanding property profile. ACO polymer concrete products have high strength values and lower weight. ACO polymer concrete is impermeable to water. Water dries quickly. Frost damage is prevented. The smooth surface of ACO polymer concrete allows water and dirt particles to drain away quickly and is easy to clean. In addition, polymer concrete is resistant to aggressive media even without additional coatings and can be used in a versatile and long-lasting manner even under extreme conditions.

Cast iron

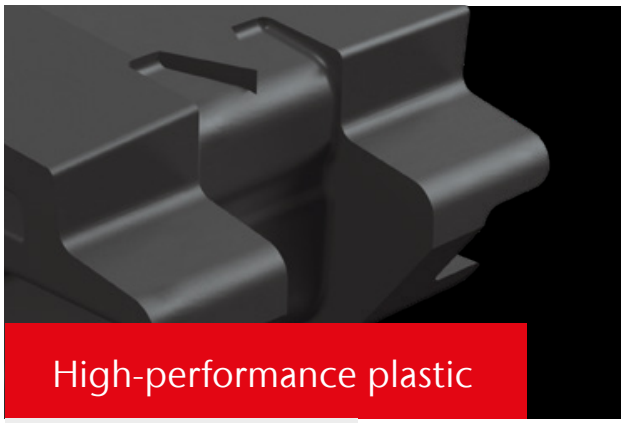
Quality for all requirements

The types of casting used in the ACO Guss plants in Kaiserslautern and Aarbergen are adapted to ever-increasing requirements through intensive innovation and development processes: Both cast iron with lamellar graphite (grey cast iron GJL) and cast iron with spheroidal graphite (spheroidal graphite cast iron GJS) have proven themselves as materials for use in sewer casting due to their high corrosion resistance. ACO Guss offers the optimal solution for the respective application, regardless of the material. For example, ACO products receive additional corrosion protection with cathodic dip painting (CDC).

EPDM – for the seal

Long lasting and safe

A wide variety of weather conditions such as thermal effects cause conventional materials and systems to age quickly. This is where synthetic ethylene propylene diene monomer rubber, or EPDM, shows its strength. Due to the molecular network structure, the material combines flexibility and durability. It is not without reason that the process for producing EPDM was awarded a Nobel Prize in 1963.



High-performance plastic

Innovative and flexible down to the last detail

Components and technical details made of plastic offer the greatest possible freedom of design in terms of form and function. We exploit this potential to avoid complex material combinations and joining processes and, in their place, to develop intelligent solutions “from a single source” or in very detail – such as the Powerlock locking device. The plastics used at ACO are characterized by their high breaking strength as well as their excellent resistance to environmental influences.

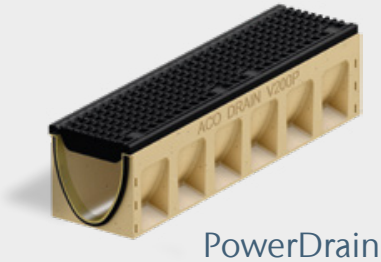
Competence in the heavy-duty sector

What drainage options are there?
What should you pay attention to in areas with heavy traffic?
ACO Application Technology will be happy to advise you on the planning, development and calculation of your project.

Send your request to:

kundencenter@aco.com

1



PowerDrain
Heavy duty

2

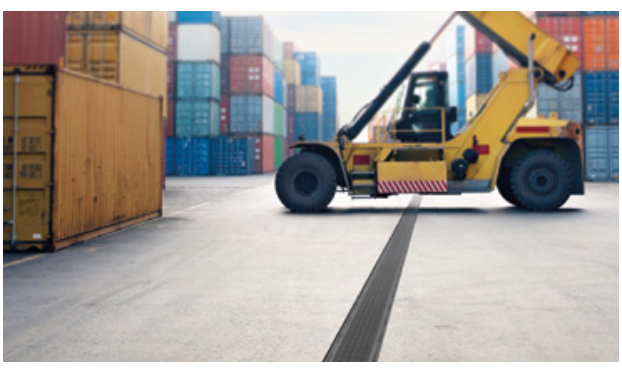
Monoblock
Heavy goods and highways

3

Qmax
Heavy duty and retention

4

Powerblock
Heavy duty

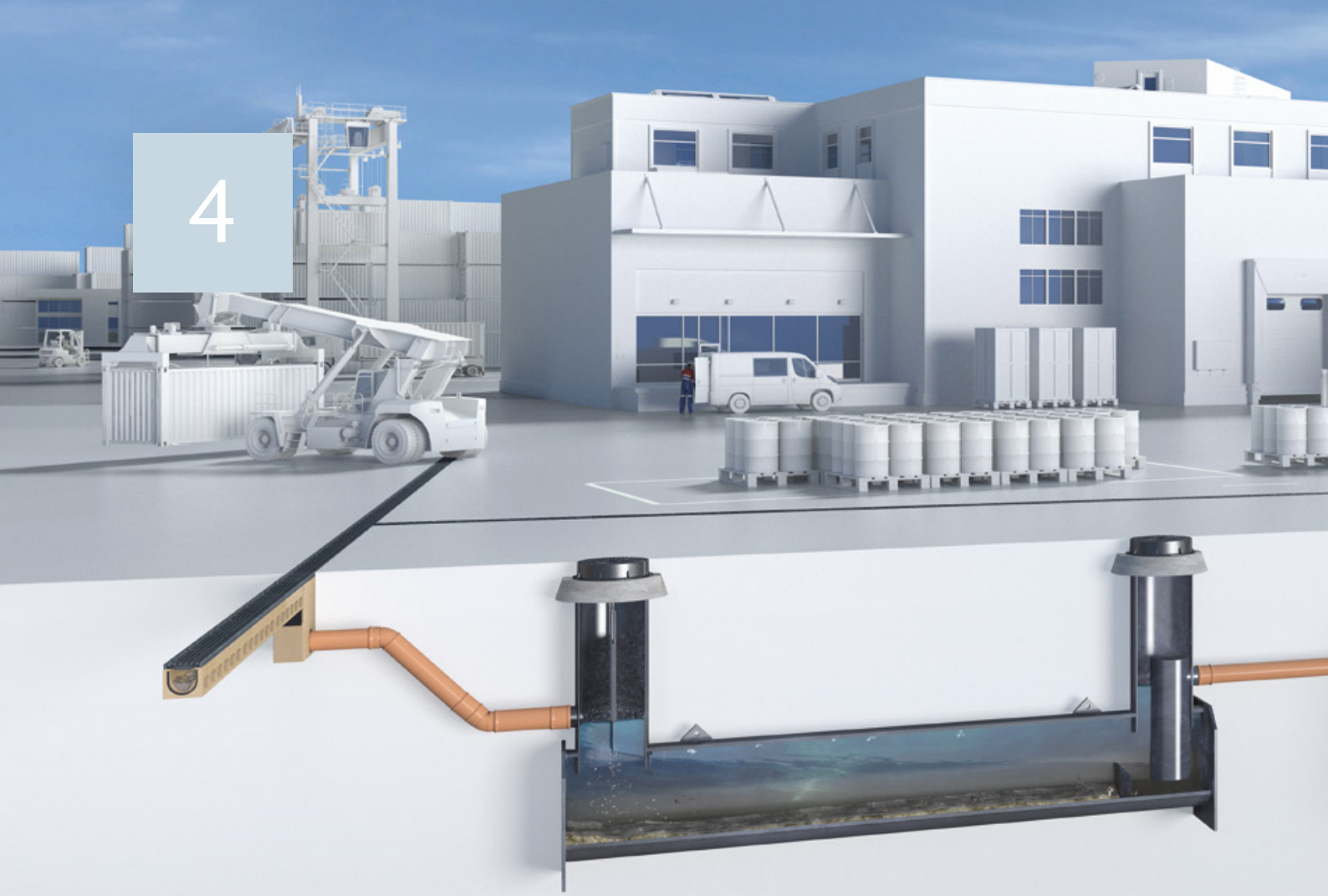


When under heavy load

what counts is the greatest **safety**

ACO offers you numerous services to provide you with individual support in planning your drainage:

www.aco.de/kontakt



4

Where surface water management and water protection begins

Achieving the right water quality

COLLECT

ACO surface water drainage
- Drainage channels
- Road and yard drains
- Gully tops
- Manhole covers

CLEAN

ACO cleaning systems
- Separators
- Sedimentation and filtration systems

Your question – our answer: ACO WaterCycle

The ACO WaterCycle supports you at every stage of drainage planning. This is rainwater management for the environmental conditions of tomorrow.

Reducing surface runoff to a natural level

Control the discharge rate to the required level

HOLD

ACO retention and storage systems

- Emergency systems
- Infiltration and attenuation systems
- Surface water retention basin

REUSE

ACO control systems

- Flow control systems
- Pump shafts

COLLECT CLEAN HOLD REUSE

The **ACO WaterCycle** achieves the drainage solutions for the environmental conditions of tomorrow.

Our service offer

Each project is different and has its own specifications and challenges. Aside from our products, we can also offer you our know-how and services, so we can develop tailor-made solutions together – from planning to support after completion. ACO is your first point of contact in all project phases.

askACO

train | design | **support** | care

train:
Information and Further Education
At the ACO Academy we share the know-how of the worldwide ACO Group with architects, planners, processors and traders, for whom quality is important. You are invited to share these benefits.

design:
Planning and Optimisation
The specification and design in rainwater management allows many variations. We help you to find the right answer.

Our invitation for you: askACO
ACO is one of the global market leaders in the Water-Tech segment and has taken on the challenge of developing products that precisely meet the respective requirements. The diverse climatic conditions and specific local differences require solutions that are both ecological and economical in each individual case. Together we will find the right answer to your specific drainage question.

support:
Construction Consultation and Support
To ensure that no unpleasant surprises occur between the planning and implementation of a solution for rainwater management, we advise and assist you for a specific project on your construction site.

care:
Inspection and Maintenance
ACO products are designed and produced for a long life. With our after-sales offers we ensure that ACO fulfils your high quality standards for many years.

ACO Ahlmann SE & Co. KG

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24755 Rendsburg
Am Ahlmannkai
24782 Büdelsdorf
Germany
info@aco-international.com
www.aco.com

Intelligent drainage systems from ACO increasingly use smart technology to ensure that rainwater and wastewater are drained, or temporarily stored. With innovative separation and filter technology, we prevent water contamination. We accept the challenge of reusing water, and thus establishing a resource-saving cycle.

3000470 engl. – 02/2024 – Subject to change

ACO. we care for water