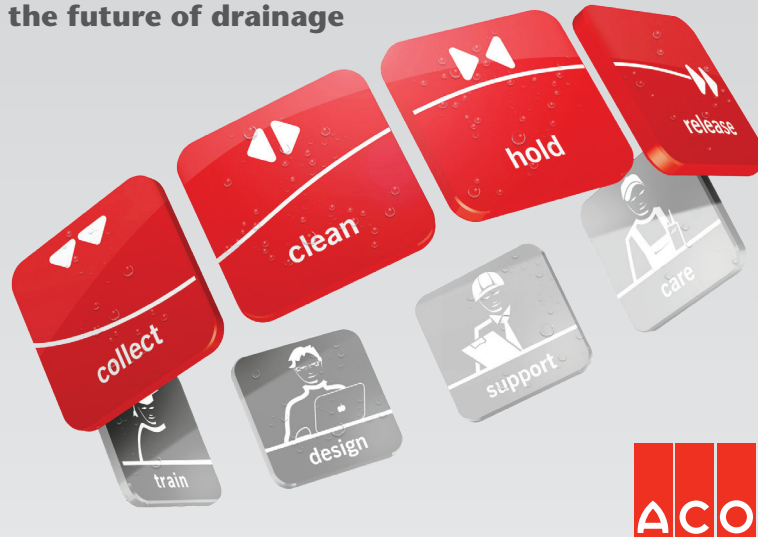




**Drainage Management  
for the Food & Beverage Industry**



## ACO. creating the future of drainage



Today, when food can be produced in any corner of the world and land on your table, it is important that food is processed in an environment which is 100% safe. No detail can be missed, so it is absolutely essential that every facility where food is processed is equipped with more complex and sophisticated drainage. ACO achieves this with intelligent system solutions which address food safety, water protection and people safety. Every ACO product within the ACO system chain safely controls the water as it passes along the chain to ensure that it can be hygienically, economically and ecologically handled in a viable way.

As the leading manufacturer of drainage solutions, we pride ourselves on being experts in all aspects concerning drainage. ACO's comprehensive expertise is available for our sales partners, as well as architects, engineers and the trades. This not only helps us simplify your work, but also enables us to safeguard the quality and market leadership of ACO's solutions.



### Collect

The surface water or liquids being treated are collected from the surface as quickly and completely as possible by the drainage system. This part of the ACO system chain guarantees protection, safety and comfort for the people, buildings and traffic routes in the immediate vicinity.



### Clean

The collected liquids are treated using integrated physical, chemical or biological processes that ensure they can be discharged into the public sewers. This part of the ACO system chain creates the conditions for recycling and sustainable use.



### Hold

Containers, barriers and valves ensure that liquids stay within the drainage system where they can be properly controlled. This part of the ACO system chain enhances the protection and safety of food, building and the environment.



### Release

Pumps, lifting plant and pipe systems transfer the collected, treated and controlled water into the downstream systems and processes. This part of the ACO system chain brings the collected, treated and controlled water for further treatment, re-use or release.



### Train

We share the expertise of the global ACO Group with dealers, engineers, architects and installers, who place a big priority on quality. We invite our customers to take advantage of our expertise and attend ACO educational trainings.



### Design

The design and planning of drainage solutions is associated with many alternatives. We will help customers find which concept produces the most economical, hygienic and safest technical solution.



### Support

We provide the customer with project-related advice and support to ensure that no surprises occur between the planning and implementation of a drainage solution.



### Care

ACO products are designed and built for long service lives. Our customer care services ensure that ACO continues to satisfy your high quality requirements year after year.

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## About ACO

### About ACO USA

ACO in the USA is a sales and marketing company with strong manufacturing bases and introduced the concept of modular trench drains to North America over 30 years ago. ACO offers field support for all aspects of the business - from specification advice to installation expertise. As the market leader, ACO is constantly innovating to bring new products to the market. ACO has a fully established R&D department responsible for continuous development, quality and testing to ensure ACO products continue to lead the market.

### Who we are

ACO is the established leader in providing drainage systems for the food service industry. Each drainage system is designed to provide maximum reliability, longevity and durability while preventing hygienic issues that can put your facility at risk. More than 60 years of drainage experience make ACO the world-class supplier of drainage systems.

### What we do

ACO drainage and grease separation systems are designed around the three most important topics for the food service industry: food safety, cost management and health & safety. We design our products to drain processed wastewater hygienically and economically, exceeding the highest worldwide standards such as those laid out in the European Hygienic Engineering and Design Group (EHEDG).

### Where we are

With sales offices throughout the world and 29 modern production sites situated throughout all continents, we are fully conversant with international standards and also work extensively with key industry entities to stay ahead when it comes to creating the most modern systems available.

### Why choose us

We work hand-in-hand with commercial kitchen specialists and designers to create systems suited specifically to their needs. When using ACO's drainage systems, you can expect design with emphasis on hygienic performance, and the highest level of confidence that you are using the best drainage system on the market.

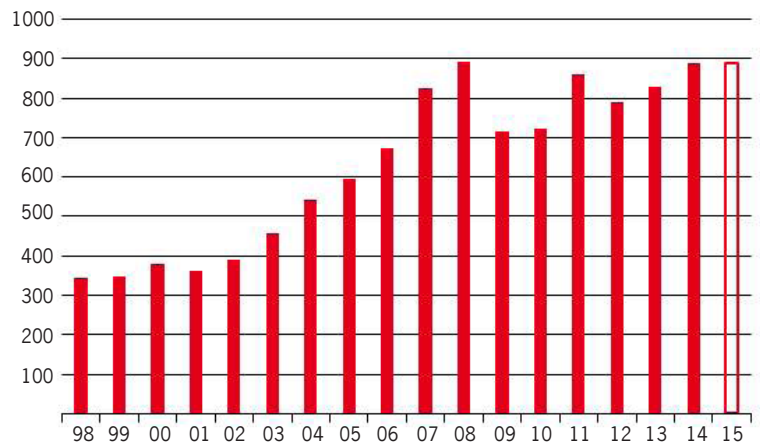




## ACO at a glance

- ACO - The Ahlmann Company
- Founded in 1946
- A family owned business
- Manufactures products for the building and construction industries
- Employs over 4,000 people world-wide
- Sales and manufacturing operations in more than 45 countries
- The world leader and pioneer of modular trench drain systems
- ACO products have been used at many prestigious locations, including nearly every Olympic venue since 1972
- The ACO Group is split into regional sub-groups; the USA is head of, and part of the Pan Pacific Group - along with Canada, Mexico, Central America, Australia, New Zealand, Pacific Islands, and Southeast Asia

Global development in sales in million US \$



## The ACO Group

"A strong family you can build on"



## Hygiene**First**

As one of the world's leading commercial drainage specialists, the ACO Group understands the critical role that drainage plays in a successful commercial food preparation business. We appreciate that food safety, hygiene and cost control are all vital factors, yet we also understand that for many, drainage is out of sight and out of mind.

As a result, many drainage systems are not designed well, which leads to inefficiencies and a higher lifetime cost. In a worst case scenario, this can also result in food contamination, closure of a facility and the loss – or even closure – of a business. As the company that is driving the future of drainage, we are determined to change this by raising the profile of hygienic drainage and improving standards across every part of the process.

Our HygieneFirst philosophy represents our commitment to delivering products that provide ultimate hygienic performance. We design intelligent drainage solutions that minimize operational costs without compromising food safety.





## Drainage Management

Hygienic standards in the food and beverage industry are rising. ACO is meeting these changing demands by designing to the most stringent European standards that are gradually being adopted in the USA.

Operational costs are a major factor in business today. Every product and system needs to fulfill its function efficiently throughout its entire lifespan. ACO provides the expertise and quality necessary to provide the perfect balance between high levels of food safety and operational cost.

ACO drainage systems are specifically designed to reduce the build-up of liquids by disposing of water and grease effectively and immediately.

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Many products in the ACO Building Drainage portfolio have been tested and Certified by NSF International.

## Drainage Management for the Food & Beverage Industry

Food processing facilities are extremely sensitive environments with regards to food safety. As a result, our commitment to hygiene in this environment encompasses every aspect of the drainage process from initial design and installation, through to cleaning and maintenance.

### Food safety benefits

Our products not only incorporate hygienic design principles; they are also the first to apply European standards that are normally reserved for food contact equipment.

They are designed not to harbor bacteria and to minimize the buildup of food particles and debris. Key design features include a sleek slope function, rounded corners with a minimum radius of 3 mm and hygienically designed foul air traps (FATs), which mean that the end users benefit from a fully drainable system that has no stagnant odors caused by waste water.

Our products are also designed to connect hygienically with the surrounding floors to minimize the risk of bacteria growth throughout the drainage system.

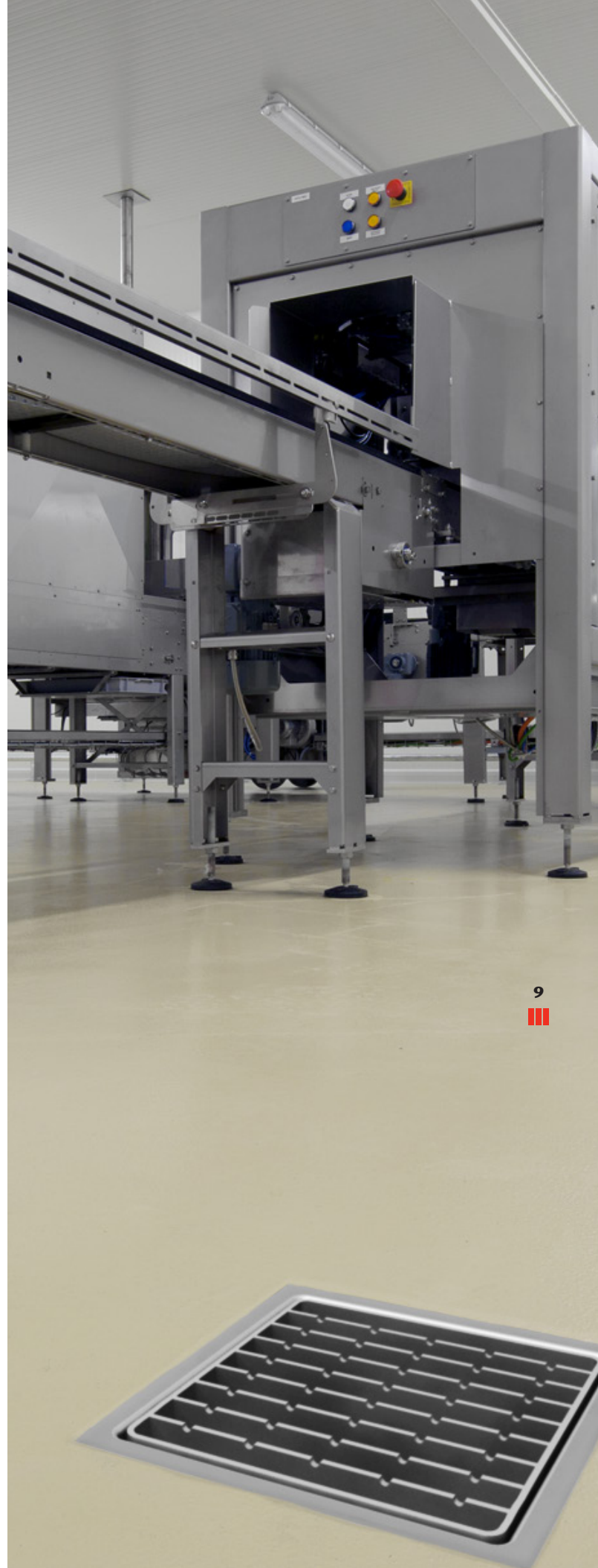
### Cost control benefits

Our systems are designed to be maintained easily. They minimize time spent on cleaning and associated costs thanks to their functional design and cleaning recommendations that have been developed in partnership with premium cleaning agent suppliers.

Business disruption is kept to a minimum as systems perform effectively at all times and ACO's advanced manufacturing technologies combined with special surface treatment, ensure optimum durability and guarantee corrosion resistance. Our expertise in drainage system design and planning, installation and the creation of hygienic connections to surrounding floor areas also avoids any unnecessary costs.

### Health & safety benefits

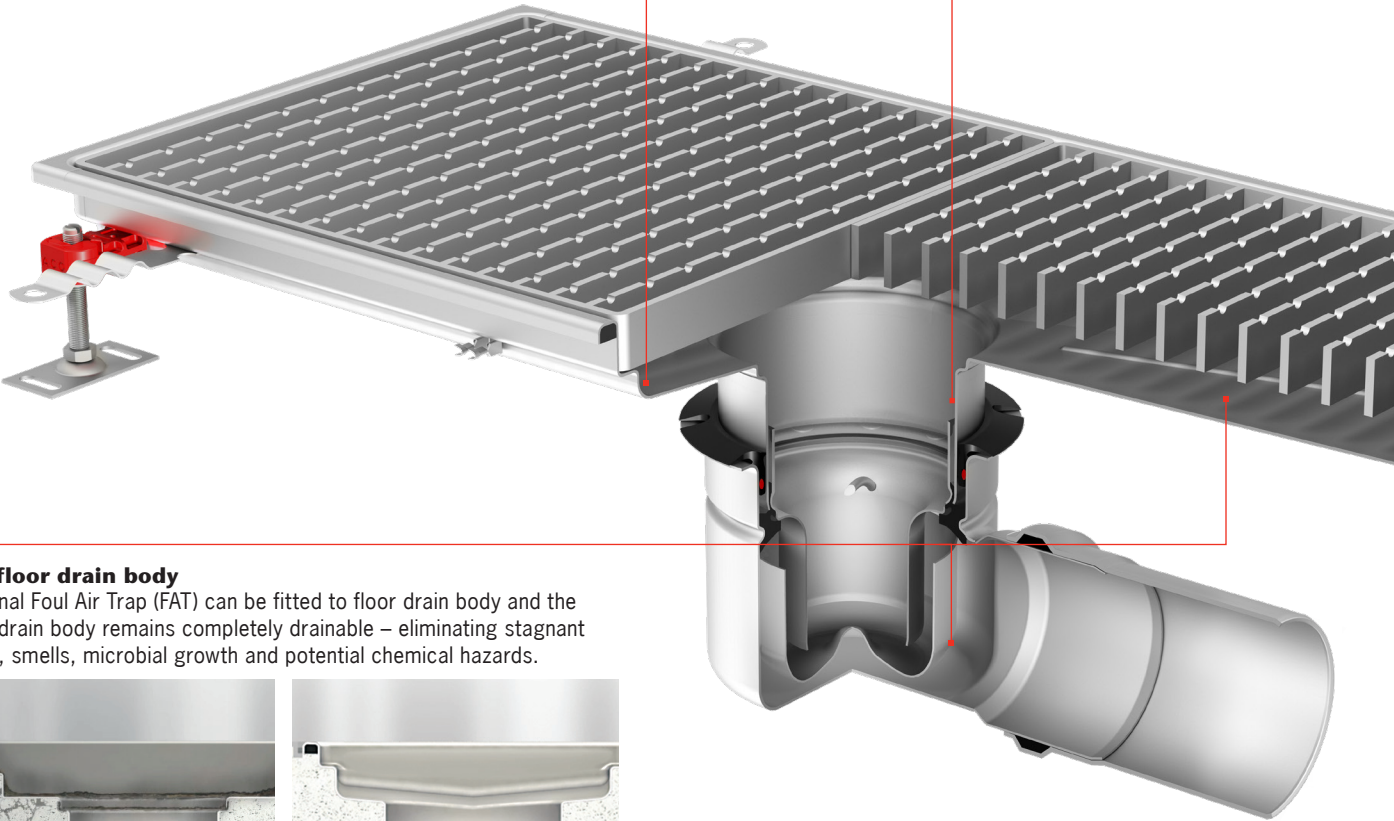
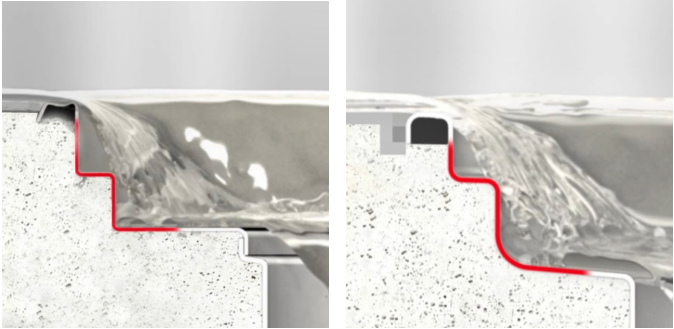
ACO drainage systems deliver a number of important health and safety benefits. Many grates are slip resistant, improving safety in high risk areas such as food preparation stations and processing sectors which have heavy water usage. Each component of our drainage systems are easy to remove and clean, and there are no sharp edges optimizing employee safety.



# Hygienic design

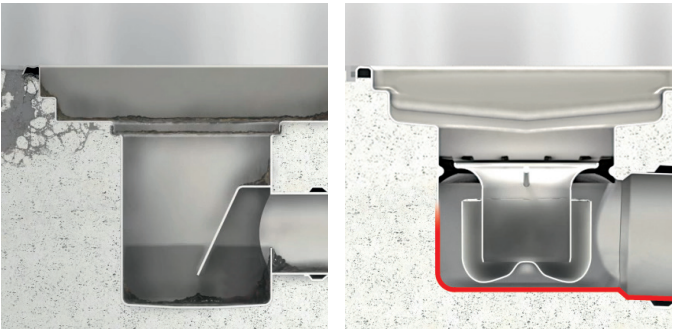
## Internal radii

All internal radii equal or larger than 3 mm which greatly increases cleaning effectiveness.



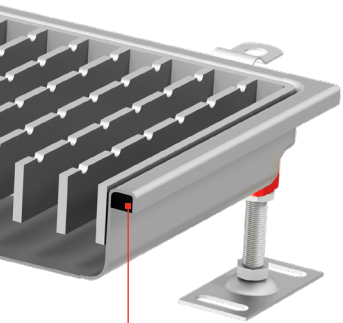
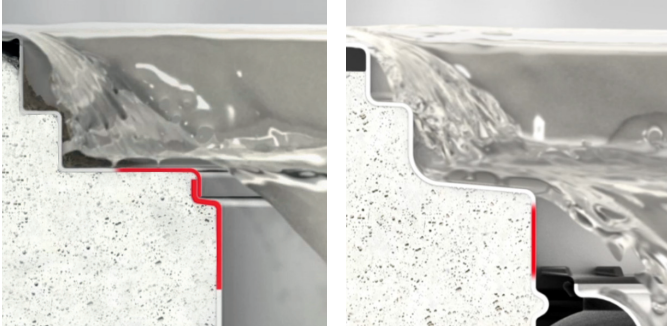
## Dry floor drain body

Optional Foul Air Trap (FAT) can be fitted to floor drain body and the floor drain body remains completely drainable – eliminating stagnant water, smells, microbial growth and potential chemical hazards.



### Hygienic joints

Deep-drawn body ensures smooth contours eliminating crevices that can harbor dangerous bacteria.



### Edge in-fill

Edge design ensures a stable and durable connection between the drainage and surrounding floor and helps to minimize the risk of floor cracks that spur bacteria growth.



## Drainage is a critical component affecting the hygienic performance of food production facilities.

Effective drainage helps mitigate hazards from the external environment and is central to the safe and hygienic operation internally.

Within the food production facility, surface liquids create a potential hazard of microbiological contamination. Liquids may be part of the cleaning process, or may originate from specific equipment discharge points, or be simply the result of accidental spillage.

Proper cleaning of systems in food processing plants reduces the risk of contamination and spoilage of food during preparation, processing, and storage. ACO drainage systems are designed with all of these requirements in mind. Every detail of our fully hygienic products fulfill and surpass all of the European standard recommendations. Our channels and drains not only support maximum efforts for a hygienic environment in food processing facilities, but also help to reduce costs due to staff expense, detergents and extremely expensive downtime caused by cleaning or repairs.

Our hygienic drainage is also safe to clean and therefore helps to protect your employees from possible injuries during the cleaning process.

## Risk zone solutions

Just as any effective operation needs excellent workers, effective tools and reliable machinery, a high quality drainage system is essential for maintaining a successful commercial food production facility.

We follow the recommendations of all main European auditing agencies and offer premium drainage systems made specifically for the risk zones within commercial food production.

Whatever your needs, ACO will provide the perfect solution tailored specifically for your facility.



### Zones with high risk for food safety

#### Wet production process / Wet cleaning process

- Full hygienic design – one piece solution without connections, ladder or cast grates
- High retention / High flow rate
- Slip resistance - high requirement

#### Dry production process / Wet cleaning process

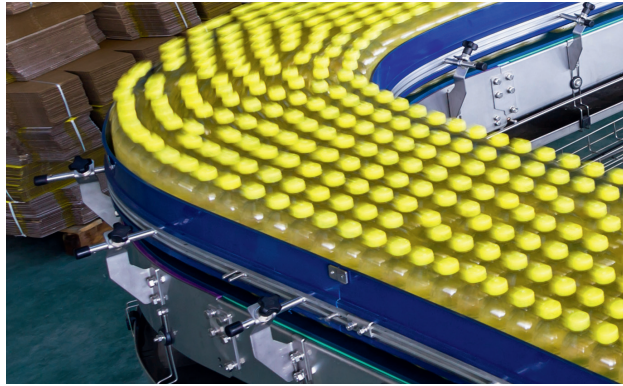
- Full hygienic design – one piece solution without connections, ladder or cast grates
- High flow rate
- Slip resistance - medium requirement

#### Dry production process / Controlled wet cleaning process

- Full hygienic design – one piece solution without connections, ladder or cast grates
- Medium to low flow rate
- Odor proof cover

#### ACO solution

- ACO Hygienic Floor Drain
- ACO Hygienic Floor Trough



**Zones with medium or low risk for food safety**

**Zones without direct risk for food safety**

- Hygienic design – connections and mesh grates could be considered if cleaning and sanitation procedures allow
- High retention / High flow rate
- Slip resistance - high requirement
- Hygienic design – connections and mesh grates could be considered if cleaning and sanitation procedures allow
- High flow rate
- Slip resistance - medium requirement
- Hygienic design – connections and mesh grates could be considered if cleaning and sanitation procedures allow
- Medium to low flow rate
- Odor proof cover
- ACO Hygienic Floor Drain
- ACO Hygienic Floor Trough
- ACO Modular and Slot Drains

- Hygienic design is recommended for easy cleaning and maintenance. A combination of products could be considered for easy layout design
- High retention / High flow rate
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- Slip resistance - medium requirement
- Hygienic design is recommended for easy cleaning and maintenance. A combination of products could be considered for easy layout design
- Medium to low flow rate
- Odor proof cover
- ACO Hygienic Floor Drain
- ACO Hygienic Floor Trough
- ACO Modular and Slot Trench Drains

## Product overview

**ACO offers sustainable, integrated drainage systems designed to protect your business and the environment.**

Our aim is to constantly improve every aspect of safety, hygiene and functional performance. We believe our systems and services are truly unique, delivering unparalleled benefits to everyone involved in project delivery or subsequent operation.



### ACO Hygienic Floor Drain

The ACO hygienic floor drain range incorporates hygienic design principles to ensure optimum hygienic performance. ACO hygienic floor drains are available in three body sizes for different flow rates and construction requirements, including shallow construction depths and applications where preventative fire measures are required. ACO hygienic floor drains are certified according to European standards.



### ACO Hygienic Floor Trough

The ACO hygienic trough range incorporates hygienic principles to ensure optimum performance. The hygienic trough range is ideal for applications where high standards of hygiene are required as they are capable of handling large volumes of fluid. ACO hygienic troughs are certified according to European standards.



### ACO Modular and Slot Drain

Our modular range with standardized 20, 125 and 200 mm widths provide a most versatile system with off-the-shelf availability. Accessories, such as corner units and a choice of gratings, make this system perfect for a wide range of applications. Certified to European standards.



### ACO Pipe

A stainless steel push-fit pipe system designed for grey or black water. ACO pipe offers a product life in excess of 40 years, thanks to the use of stainless steel. Easy installation and handling on site is ensured by the push-fit assembly. ACO pipe is more hygienic, robust and durable when compared to plastic pipe systems for gravity and vacuum drainage.



### ACO Grease Separators

A comprehensive range that addresses all size requirements specified by European standards, with performance at or beyond the standard's requirement. Separators are tested and certified according to European standards.



### ACO Lifting Station

Lifting plants are used when the grease separator is installed below the backflow level. European standards require a twin pump system to improve overall system reliability.

## Factory site

Modern food production facilities are designed to protect food from the risk of environmental hazards. Serious problems are related to the potential ingress of surface water into the production facility and/or back up in the sewage system.

### ACO solution

ACO waste water management offers the complete portfolio of external polymer concrete drainage, grease separation, backflow devices and attenuation systems.

## Factory site products



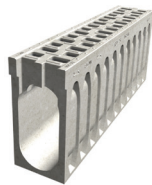
### ACO StormBrixx

StormBrixx is a unique and patented plastic geocellular storm water management system. Designed for surface water infiltration and storage, its versatility allows it to be used in applications across all construction environments as a standalone solution or as part of an integrated sustainable drainage (SUDS) scheme.



### ACO Qmax

Qmax has been developed to satisfy the demand for a versatile, high capacity, slot drainage system for a wide range of applications involving small to large catchment areas to any load class. The system is specifically designed to form an integral part of any modern, sustainable surface water management solution requiring effective storage and attenuation while eliminating carry over in storm water conditions.



### ACO HighwayDrain

HighwayDrain is a monolithic 8" (200mm) wide sloped system designed to address the drainage demands of areas with fast moving traffic. The single piece construction removes the concern of components vibrating loose when frequently trafficked by high speed vehicles. The large, high capacity inlet slots provide 30% open area which equates to 36.2 sq. in. per linear foot. Openings are tapered to allow large debris items to fall through and prevent blockages. The profiled side-wall pockets increase strength, reduce weight and hold the unit securely.



### ACO Drain

ACO Drain is North America's market leading, modular trench drain system and is produced at the company's modern manufacturing facilities in Ohio and Arizona. ACO Drain offers the most comprehensive range of trench drain solutions for every application. Products come in a variety of widths, depths, lengths and load ratings with grates to suit.



### ACO Oleopator P

The ACO Oleopator P is a range of oil/water separators that allow sediments and light liquids to be separated out simultaneously in one tank and are designed to achieve high performance at large flows in a compact tank. ACO produces a range of light liquids and solids separators and spill containment systems manufactured from corrosion resistant polymer concrete, polyethylene and other materials.

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Re-order Part # BD001 v1.0

