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ACO Building Drainage

Hygiene First



ACO product catalogue

Hygiene**First**

**Hygienic Drainage for Food Processing
& Commercial Kitchen Applications**



ACO Building Drainage

Our built environment is becoming ever more complex. Applications are becoming more sophisticated and the increasing pressure of regulations and standards makes achieving design, performance and financial goals ever tougher.

Our mission: to eliminate design risk, to reduce installed and life cost and to deliver exceptional finish and performance in every product application.

Our global resources and manufacturing capacity make it possible for us to deliver best value, both with our standard products and with our bespoke designs. Confidence is further assured with quality systems that are in accordance with ISO 9001-2008.

ACO Building Drainage is a division of ACO Technologies plc and part of the worldwide ACO Group. The Group has sales in excess of £600 million worldwide with production facilities in the UK, Germany, France, Switzerland, Denmark, Spain, Poland, Czech Republic, Australia and the USA. In total more than 3900 people are employed in over 40 countries throughout the world.

ACO Building Drainage

Enquiries Team:

Tel: +44(0)1462 810421

Fax: +44(0)1462 851490

Email: abdestimating@aco.co.uk

- A complete pricing service to stockists, contractors and clients.

ACO Building Drainage

Customer Services Team:

Tel: +44(0)1462 810411

Fax: +44(0)1462 851490

Email: abdcommercial@aco.co.uk

- Product availability, delivery lead times, and all other queries including collections, returns and product / service issues.

ACO Building Drainage

Design Services Team:

Tel: +44(0)1462 810431

Fax: +44(0)1462 851490

Email: abdtechnical@aco.co.uk

- Technical and installation advice.
- Detailed design and 'Value Engineering' advice.
- Hydraulic calculations and AutoCAD drawings.
- Advice on the suitability of ACO equivalent products.

ACO Building Drainage

Marketing and Media Support

Tel: +44(0)1462 810400

Fax: +44(0)1462 851490

Email: abdmarketing@aco.co.uk

- For all product brochures, imagery or merchandising material requests.



collect:

- Stainless Steel and Galvanised Steel Channels
- Stainless Steel Gullies
- Pipe Systems
- Roof / Balcony Drainage
- Wetroom & Shower Drainage



clean:

- Grease Management Systems



hold:

- Anti-flood Backflow Protection Systems



release:

- Lifting Stations

Office address and contact details:

ACO Building Drainage
ACO Business Centre
Caxton Road
Bedford
Bedfordshire
MK41 0LF

Tel: +44(0)1462 810400
Fax: +44(0)1462 851490
Email: abdinfo@aco.co.uk

Company Registration No: 1854115
VAT No: GB 650 7977 05

www.acobd.co.uk

For quick access to
our website, scan:



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General Introduction / Food Sector

ACO is one of the World's leading drainage specialists with 60 years' experience gained across a wide range of sectors. Our passion for producing high performance products has led us to make major investments in research and development.

We are working in partnership with commercial facility owners, managers and operators. We are continuously developing our products and enhancing our expertise. We understand the critical role that drainage plays in a successful business.

Our product portfolio includes items which are fully compliant with the highest hygienic requirements. We also have a full understanding of the food industry's own standards such as HACCP (Hazard Analysis and Critical Control Point) and we work with bodies including the European Hygienic Engineering and Design Group (EHEDG).

ACO drainage is used in applications anywhere where hygienic, corrosion resistant and durable drainage performance is essential:

- Professional kitchens
- Food processing facilities
- Brewing, bottling and canning plants
- Chilled warehouses
- Laboratories
- Chemical and pharmaceutical industries
- Restaurants
- Schools
- Hospitals
- Hotels
- and others



Hygiene**First**

As one of the World's leading commercial drainage specialists, 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 therefore out of mind.

As a result, many drainage systems are not designed well. At best this leads to costly on going cleaning and maintenance, and at worst it can result in food contamination, closure of a facility and the loss – or even closure – of 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.

Full Hygienic Design Principles (FHD)

Products designed with hygiene in mind

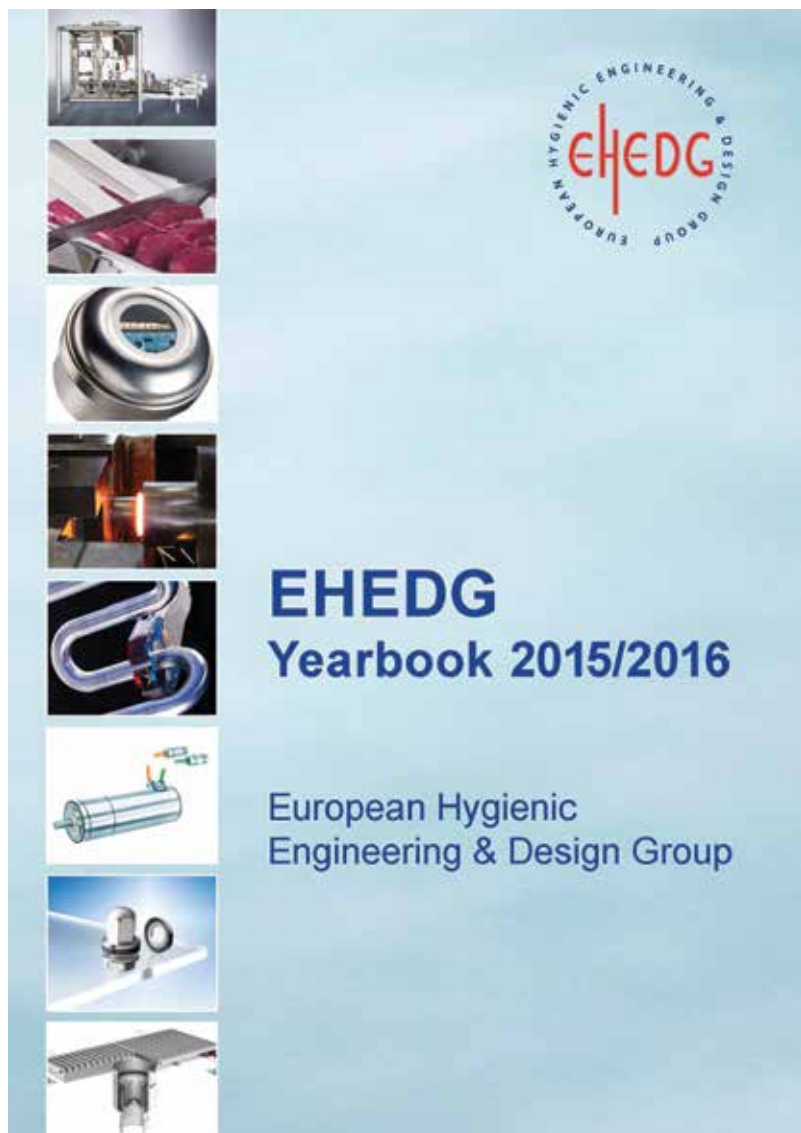
ACO offers sustainable and integrated drainage systems designed to protect your business and environment. Our aim is to constantly improve every aspect of operational safety, hygiene and functional performance to meet the applicable standards for food processing application.

We are committed to deliver unparalleled benefits to anyone involved in the project specification, installation and subsequent operation of food processing and production applications.

ACO HygieneFirst drainage systems fulfil the stringent hygienic requirements to minimise harmful bacteria and pathogen contamination of food arising from drainage elements by applying relevant hygiene design principles reserved for food contact surfaces by the implementation of BS EN 1672, BS EN ISO 14159 and EHEDG Document 8 requirements to drainage element design. See below example.

ACO hygienic design features

- All stainless steel construction - minimum Grade 304
- Fully drainable gully sump
- Internal radii features greater than 3mm to allow easy and effective cleaning
- No overlapping metal-to-metal contact surface eliminating crevices for bacteria residence
- Gully upper surface edge infill minimises movement adjacent to surrounding floor
- Precision outlet diameter for easy, quick and reliable connection to adjacent gullies and waste pipes
- Reinforced channel base for Tray Channels >300mm width for enhanced stability
- Contoured outlet feature on all Tray Channel systems encourages positive drainage for all flow rates



Material

Stainless steel

Stainless steel is the name given to a wide range of steels which have the characteristics of greatly enhanced corrosion resistance over conventional mild and low alloy steels. The enhanced corrosion resistance of stainless steel essentially comes from the addition of at least 11% of chromium, however most stainless steels commonly used contain around 18% of chromium. Other significant alloying elements include nickel and for superior corrosion resistant properties, molybdenum.

Stainless steel has the following unique advantages:

- High corrosion resistance
- Non-porous, easy to clean and disinfect
- Aesthetically pleasing
- Resistant to temperature extremes and thermal shock
- Coefficient of linear expansion similar to concrete
- 100% recyclable material

ACO drainage is manufactured from austenitic stainless steel, grades and is ideal for applications including food processing, leisure, dairy, brewing, pharmaceutical, chemical and petrochemical industries.

Surface treatment of stainless steel

The process of cutting, forming and welding stainless steel will introduce impurities into the surface of the material and unless the appropriate action is taken, this material will begin to corrode and ultimately fail in service. Therefore after fabrication, it is vital that stainless steel is treated with the correct surface treatment to ensure it is fully corrosion resistant. By applying pickle passivation as the primary surface treatment, the corrosion resistance of stainless steel can be fully restored to its original state, ensuring long and reliable life performance together with the required aesthetic appearance.

Finishes used by ACO include:

Pickle passivation (acid treatment)

All ACO stainless steel drainage products are pickle passivated by immersing products in a series of acid baths. This is a fundamental requirement for removing iron embedded particulates introduced in the fabrication process and also for restoring the chromium depleted regions generated by the welding process. ACO has one of the largest and most advanced pickle passivation installations in Europe which ensures the optimum corrosion resistance of our products compliance to BSEN 2516.

Electropolishing (electrochemical process)

After pickle passivation, some products are then electro polished. Electro polishing is a reverse-plating procedure that entails the electro chemical removal of metal impurities from a stainless steel surface. During the electrolytic process the metallic surface is dissolved ion by ion, resulting in a smooth surface, devoid of burrs or crevices that attract and trap contaminants.

Standards and Certifications

ACO FHD gully and ACO FHD Tray Channel ranges are designed, manufactured, tested and certified in accordance with BS EN 1253.

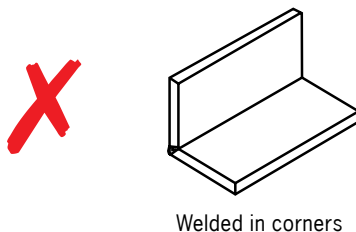
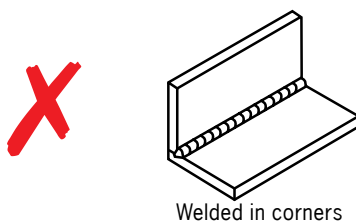
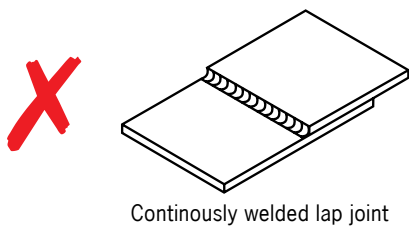
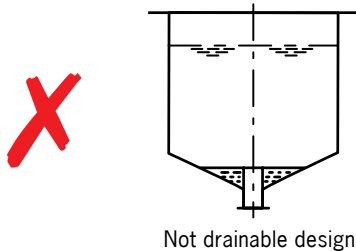
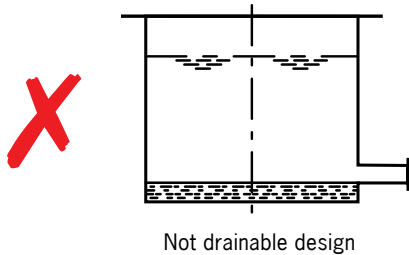
ACO fire protective kit is tested according to BS EN 1366-2 (Fire resistance tests for service installations) and classified according to BS EN 13501 (Fire classification of construction products and building elements).

Standards and Certifications

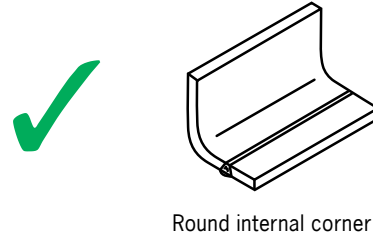
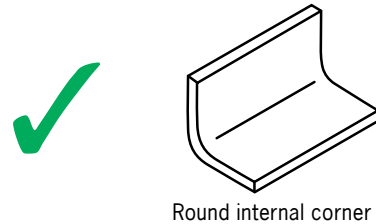
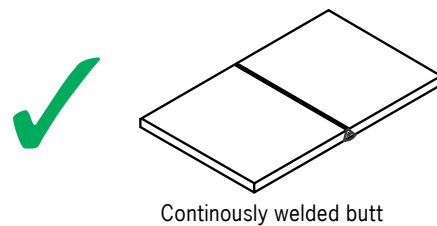
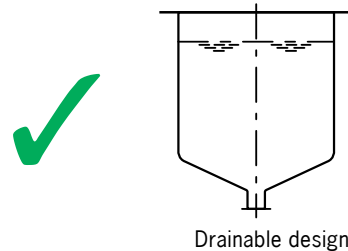
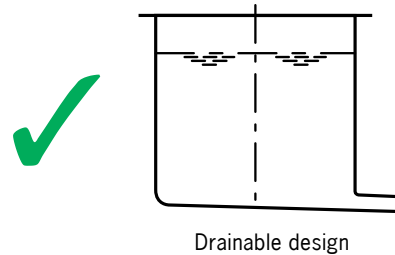
ACO Gully and ACO FHD* Tray Channel

We apply the relevant hygienic design principles reserved for food contact surfaces BS EN 1672, BS EN ISO 14159 and EHEDG documents No. 8, 13 and 44.

Hygiene risk according to BS EN 1672 and BS EN ISO 14159



Acceptable according to BS EN 1672 and BS EN ISO 14159



System Overview



Benefits

ACO provides solutions which optimise food safety, employee's health and safety and water protection. Every ACO product therefore safely controls the water to ensure that it can be hygienically, economically and ecologically managed in a viable way.

Food safety

- ACO hygienic drainage fulfils hygienic requirements to prevent harmful bacteria contamination. We apply relevant hygienic design principles reserved for food contact surfaces as recommended by EHEDG.
- Our product design ensures minimal build-up of food particles and debris as well as a safe connection with the surrounding floor to minimise any opportunity for bacteria to grow throughout the drainage system.
- Positive slope function and hygienically designed products ensure our system is fully drainable eliminating the stagnant odour of waste water.

Cost control

- ACO drainage systems can be easily maintained, reducing associated cleaning costs due to their functional design and cleaning recommendations which have been developed in partnership with premium cleaning agent suppliers.
- ACO's advanced manufacturing technologies ensure durability and our special surface treatment guarantees corrosion resistance. Our systems perform effectively at all times keeping disruption to a minimum.
- We provide expertise in drainage system planning, correct installation and creating a safe connection with the surrounding floor to avoid unnecessary cost.

Health & Safety

- For additional safety in high risk areas that require heavy water usage; slip resistant gratings are available.
- Each component of the drainage system is easy to remove and clean, and there are no sharp edges for optimum users safety.
- ACO also have fire resistant drainage products compliant to BS EN 13501-1.

Hygienic Drainage Selection Guide

Application

The layout of the drainage system and the design of its parts have an impact on operational effectiveness as well as costs. This guide offers a range of basic areas which need to be considered when specifying a drainage system.

To specify an appropriate drainage system for a particular application, the zone of operation, amount and frequency of water used is crucial.

Production process/ Cleaning process	Zones with high risk for food safety	Zones with high care or low risk for food safety	Zones without direct risk for food safety
Wet production process/ Wet cleaning process	Hygienic design - one piece solution without connections; ladder or cast gratings	Hygienic design - connections and mesh gratings could be considered if cleaning and sanitation procedures allow	Hygienic design is recommended for easy cleaning and maintenance; combination of products could be considered for easy layout design
	High retention - high flow rate	High retention - high flow rate	High retention - high flow rate
	Slip resistant - high requirement	Slip resistant - high requirement	Slip resistant - high requirement
Dry production process/ Wet cleaning process	Hygienic design - one piece solution without connections; ladder or cast gratings	Hygienic design - connections and mesh gratings could be considered if cleaning and sanitation procedures allow	Hygienic design is recommended for easy cleaning and maintenance; combination of products could be considered for easy layout design
	High flow rate	High flow rate	High flow rate
	Slip resistant - medium requirement	Slip resistant - medium requirement	Slip resistant - medium requirement
Dry production process/ Controlled wet cleaning process	Hygienic design - one piece solution without connections; ladder or cast gratings	Hygienic design - connections and mesh gratings could be considered if cleaning and sanitation procedures allow	Hygienic design is recommended for easy cleaning and maintenance; combination of products could be considered for easy layout design
	Medium to low flow rate	Medium to low flow rate	Medium to low flow rate
	Odour proof cover	Odour proof cover	Odour proof cover

Drainage Type

The type of drainage is selected according to the layout of the operational space and technology employed.

Point drainage	Linear drainage
	

Material Resistance

The choice of material for the drainage system is influenced by the chemical composition of the waste water from the process, the cleaning and the temperature of the final mixture.

ACO drainage is manufactured from austenitic stainless steel; grades agents and is ideal for applications within food processing, dairy, brewery, commercial kitchen, pharmaceutical, chemical, petrochemical industries and leisure.

ACO Gullies contain elastomeric seals manufactured from NBR (acryl nitrile butadiene rubber).

Sealing Material Information

EPDM (ethylene propylene diene monomer)

Black sealing rubber ring, which is suitable for most applications where there are no oil or petrol residues in the waste water.

NBR (acryl nitrile-butadiene rubber)

Black sealing rubber ring which is suitable for waste water applications where there are petrol or oil residues. NBR is not resistant to solvents and high temperatures.

FPM (fluoroelastomer) – Viton®

Green sealing rubber ring which is suitable for special applications where oil, solvents and strong acids are present in waste water; and for applications with higher temperatures. Viton® seal has limited resistance to chemicals like acetone, methyl alcohol.

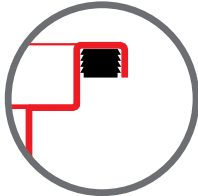
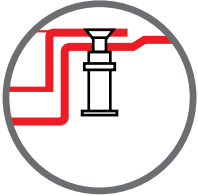
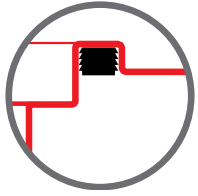
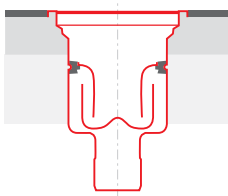
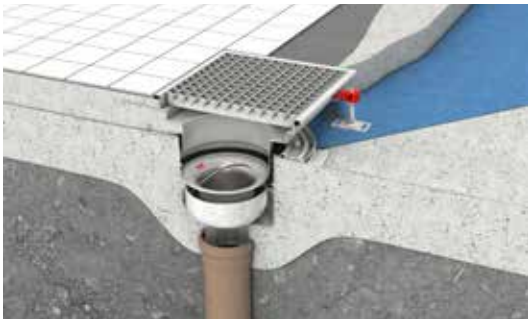
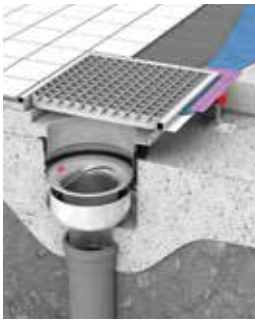
Rubber type	Sealing materials		
	EPDM	NBR	FPM (Viton)
Colour	black	black	green
Temperature range	-50 / +130 / +150 °C	-30 / +80 / +100 °C	-20 / +200 / +300 °C
Resistance			
Water	excellent	good	good
Chemicals			
Acids	good	fair	excellent
Bases	good	fair	excellent
Benzene/Petrol	unsatisfied	excellent	excellent
Oils			
ASTM Oil No. 1	unsatisfied	excellent	excellent
ASTM Oil No. 3	unsatisfied	excellent	excellent
Ozone & weather stresses	good	limited	good

Floor Structure and Finish

Depending on the composition of the floor construction; the appropriate type of gully or channel should be selected.

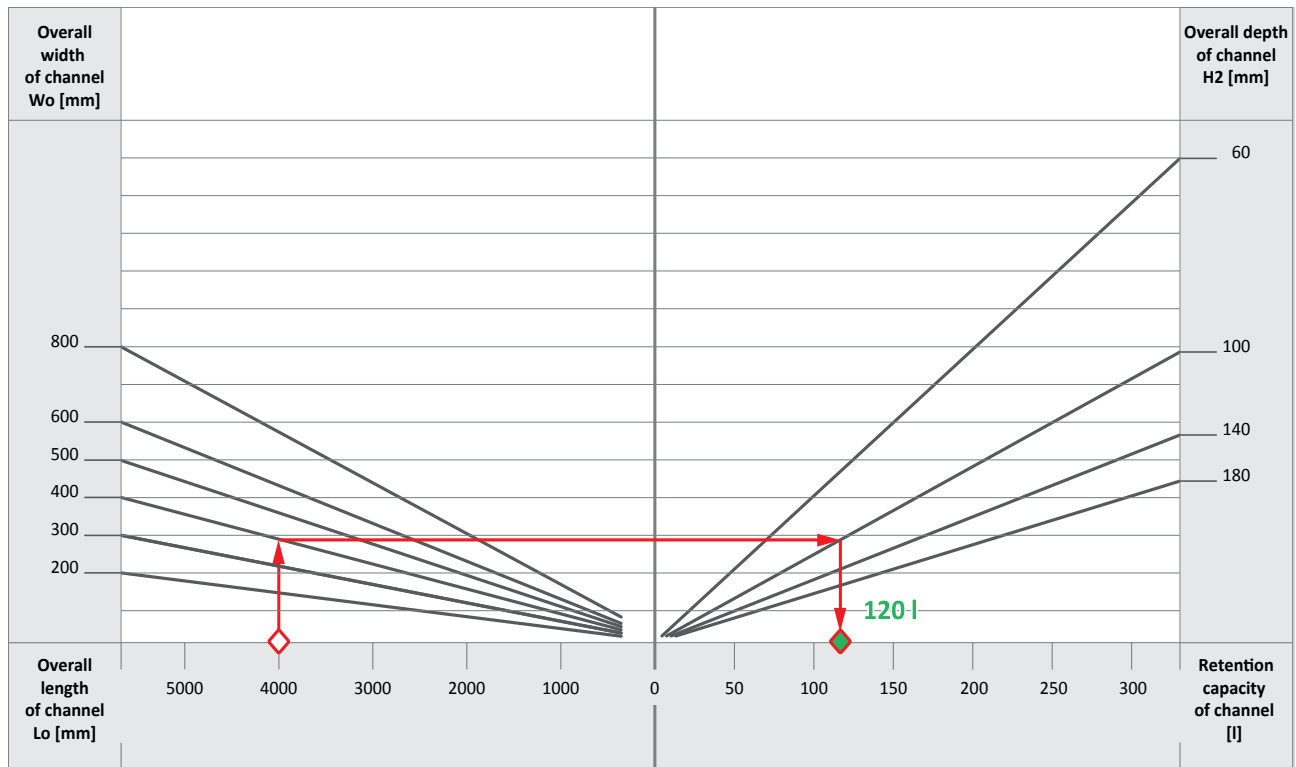
Depending on the floor finish; the appropriate edge of the channel or gully top should be selected.

A friction ring is located in the gully body to hold the adjustable gully top in position. Incorporated in the friction ring is an O-ring to prevent fluid seeping into the drain. If a waterproof membrane is incorporated in the floor system, the O-ring needs to be removed. This will allow any water collected on the membrane to be drained to the gully body.

Floor finish Channel or gully edge	Channels + Telescopic gullies			Fixed height gully
	Tiled, concrete or resin floor Standard edge	Vinyl Vinyl edge	Tiled (thin bed installation) Extended edge	Tiled, concrete or resin floor Standard edge
Channel or gully top drawing				
Waterproof membrane connection	Connected to gully body		Connected to channel / gully top	Independent of the gully
Installation example				
Gully body type	Telescopic adjustable Adhesive bonding flange or mechanical clamping flange		Telescopic adjustable Location flange	Fixed height gully
Gully body picture				

Retention Capacity

Depending on the application, the appropriate retention capacity should be considered.

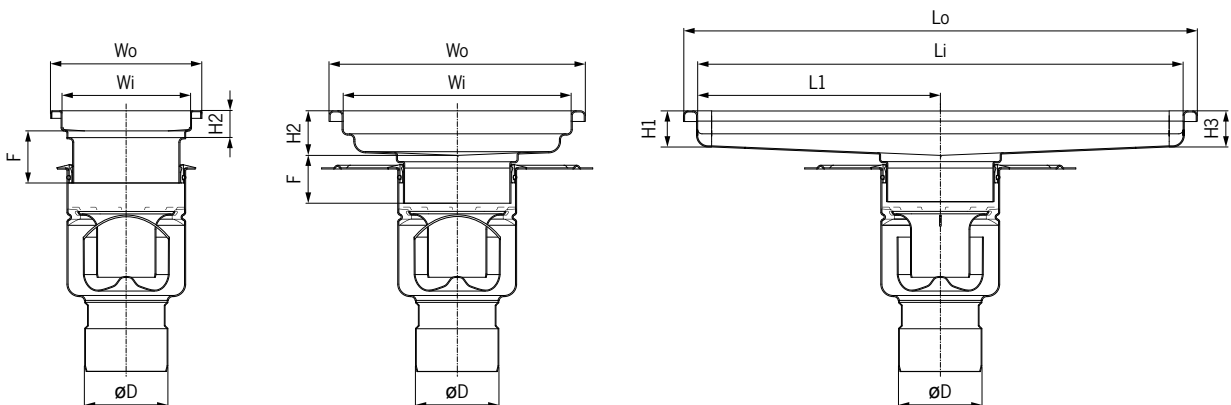


Example: channel length 4000mm, width 400mm, depth 100mm, retention capacity 120l.

Channel Geometry

The dimensions of a channel or gully top (for telescopic solutions) are specified based on the retention capacity and the floor structure.

The height of the channel at the outlet position, the position of the outlet and the height of the end caps have to be defined.



Flow Rates

Flow rates reflect the system's ability to constantly drain a certain amount of water. Flow rate is generally defined by the ACO Gully size.

Flow rates			
Outlet position	Gully type	Outlet diameter [mm]	Minimal flow rate [l/s]
Vertical outlet	157	100/110	3.5
	218	100/110	5.0
		150/160	5.0
Horizontal outlet	157	100/110	2.8
	218	100/110	4.4

Flow rates are measured according to EN 1253. Flow rate performance is without a silt basket (flow rates with empty silt basket are approximately 15% lower than the values stated)

Accessories

For the collection of solid wastes, the gully tray or channel should be fitted with a silt basket.

Telescopic connection with flange for waterproofing	
ACO Hygienic Gully 157	ACO Hygienic Gully 218
Accessories delivered as standard with the gully	
- Friction ring - Foul Air Trap (FAT) - FAT support	- Friction ring - FAT - FAT support
Optional accessories	
- Silt basket for vertical gully 0.6 l - Silt basket for horizontal gully 0.3 l	- Silt basket for vertical gully 1.4 l - Silt basket for horizontal gully 0.7 l

Gratings

For the choice of the appropriate grating, the following properties have to be considered:

- Hygiene (cleanability)
- Load class
- Slip resistance

	Cast grating	Ladder grating		Mesh grating	
	Slip Resistance Properties	Slip Resistance Properties	Plain	Slip Resistance Properties	Plain
Slip potential Pendulum test BS 7976-2	Low	Low	Moderate	Low	Moderate
Slip resistant Ramp test DIN 51130	R13	R11	R9	R11	R9
Load classes to BS EN 1253	M 125	R 50, M 125	R 50, M 125	L 15	L 15

Load class

Though it is recommended to avoid traffic across the drainage items to minimize risk of floor/drainage connection failures by dynamic loading, the correct load class defined by grating must to be considered based on the defined traffic during future operations.

Load class Application	Load class according to EN 1253	Description
	L 15	Areas with light vehicular traffic, such as: ▪ In commercially used premises and public areas
	R 50	Areas with vehicular traffic, such as: ▪ In commercially used premises and factories
	M 125	Areas with vehicular traffic such as: ▪ Workshops, factories & car parks
	N 250	Heavy duty industrial areas subject to forklift traffic, such as: ▪ Food processing areas, chemical or process plants

ACO Channel Full Hygienic Design

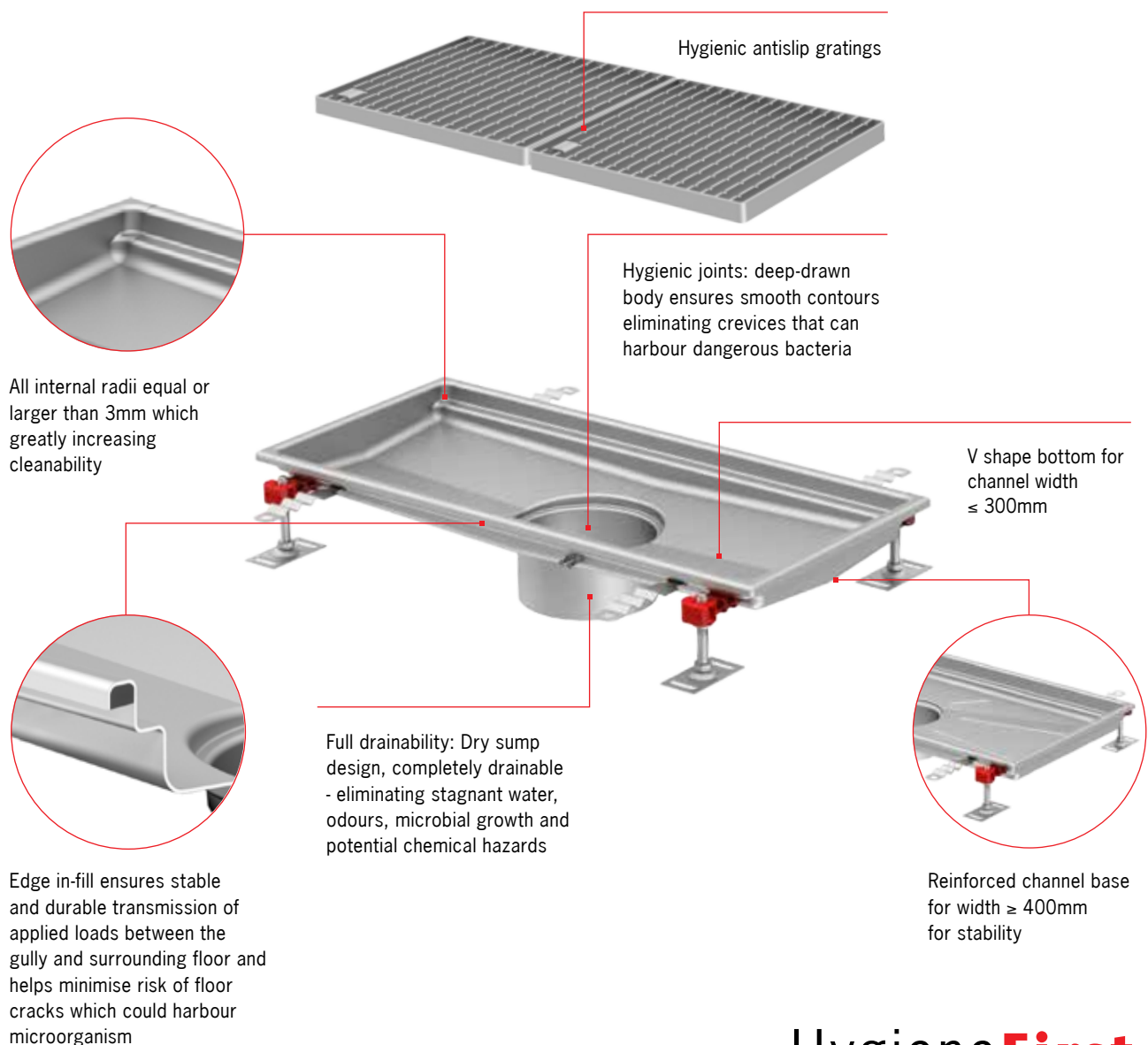
ACO offers sustainable, integrated drainage systems which are designed to protect your business, the environment and ultimately public health. Our aim is to constantly improve every aspect of safety, hygiene and functional performance.

We believe that our systems and services are truly unique, delivering unparalleled benefits to everyone involved in project delivery or subsequent operation.

ACO hygienic drainage fulfills stringent hygienic requirements to prevent harmful bacterial contamination. We develop our channels according to the relevant design principles for food contact surfaces BS EN 1672, BS EN ISO 14159 and EHEDG.

ACO FHD channel hygienic features:

- Fully drainable
- Internal radii equal or larger than 3mm
- Hygienic joints
- Edge in-fill as standard
- Stainless steel grade minimum 304
- Fully pickled and passivated



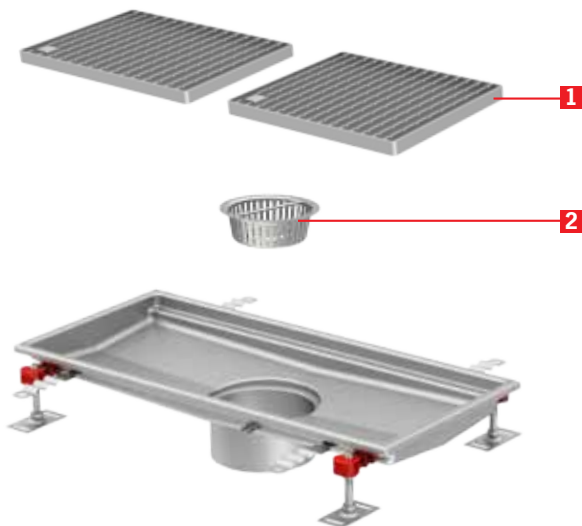
Note: Download Aurasma app and scan HygieneFirst logo for access to Hygiene video

Hygiene**First**

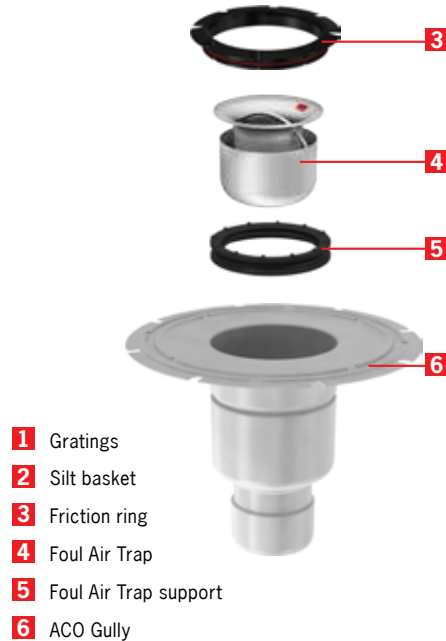
System Overview

ACO Tray Channel

ACO tray channel



ACO Gully with accessories



ACO Tray Channel portfolio

The ACO Tray Channel portfolio consists of standard, semi-standard and customized products.

The ACO Tray Channel range includes channels for most applications and most floor types (concrete, tiles, resin or vinyl). The ACO Tray Channel programme is designed with focus on hygienic requirements. Selecting a channel from the range is easy.

The unique variability of the whole portfolio makes it easy to choose a channel that suits a customer's specific needs. Channel length, depth and outlet position are just a few of the parameters which can be varied.

ACO Tray Channel ordering

ACO have standard Tray Channels with fixed dimensions and are a selection of most frequently sold ACO Tray Channels. Please refer to page 23 for the overview.

The dimensions of the ACO semi-standard Tray Channel can easily be specified in respect of project requirements. Please contact our enquiries team on 01462 810421.

ACO Tray Channel customisation

In addition all ACO Tray Channels can be designed with custom:

- Outlet positions
- Depths
- Built-in falls
- Channel widths
- L-shape and T-shape lay outs
- Side inlets

Please contact our enquiries team for further details on customised ACO Tray Channel, tel 01462 810421 or e-mail abdestimating@aco.co.uk

Please be aware ACO channel customisation can affect the hygienic design features.

System Overview

ACO Tray Channel



**ACO Hygienic Tray Channel
Standard edge**

**ACO Hygienic Tray Channel
Extended edge**

ACO vinyl Tray Channel



**ACO Hygienic Gully
with accessories**

**ACO Hygienic Gully
with accessories**

ACO Hygienic Tray Channel - Standard

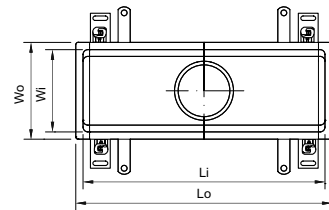
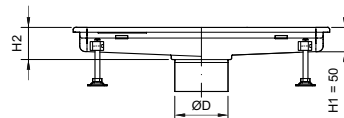
Product information

The dimensions of the ACO Hygienic Tray Channel for concrete, tiles and resin floor can easily be specified in respect of project requirements or easily chosen from predefined fixed dimensions.

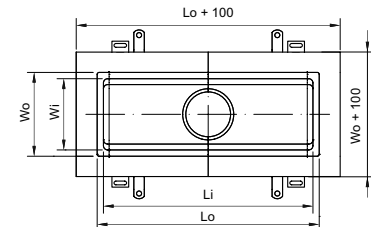
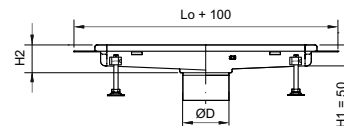
- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Fully pickled and passivated
- Material thickness 1,5mm
- Minimal longitudinal slope 1 %
- Min. sectional slope 5°
- V-shape base for width < 300mm
- Reinforced base for width > 400mm
- Rubber edge infill
- Deep drawn outlet
- Rounded corners equal or larger than 3mm
- Easy and secure telescopic connection with gully
- Hygienic gratings with slip resistance
- Adjustable levelling feet 60-110mm
- Concrete fixing anchors

Order Information

Standard edge



Extended edge



Order Information

Channel dimensions						Gully	Stainless Steel 304		Stainless Steel 316	
Wo [mm]	Wi [mm]	Lo [mm]	Li [mm]	H2 [mm]	ØD [mm]		Standard edge	Extended edge	Standard edge	Extended edge
							Part No.	Part No.	Part No.	Part No.
200	170	530	500	60	142	ACO Hygienic Gully 157	416590*	416686	416608	416704
		830	800				416591*	416687	416609	416705
		1030	1000				416592	416688	416610	416706
		1230	1200				416593*	416689	416611	416707
		1530	1500				416594	416690	416612	416708
		2030	2000				416595	416691	416613	416709
300	270	330	300	142	ACO Hygienic Gully 157	416614	416710	416628	416724	
		630	600			416615*	416711	416629	416725	
		1030	1000			416616	416712	416630	416726	
		1530	1500			416617*	416713	416631	416727	
		2030	2000			416618	416714	416632	416728	
		3030	3000			416619	416715	416633	416729	
		4030	4000			416620	416716	416634	416730	
		330	300			200	ACO Hygienic Gully 218	416621	416717	416635
630	600	416622	416718	416636	416732					
1030	1000	416623	416719	416637	416733					
1530	1500	416624	416720	416638	416734					
2030	2000	416625	416721	416639	416735					
3030	3000	416626	416722	416640	416736					
4030	4000	416627	416723	416641	416737					
400	370	430	400	60	142			ACO Hygienic Gully 157	416642	416738
		630	600			416643	416739		416649	416745
		830	800			416644	416740		416650	416746
400	370	430	400	60	200	ACO Hygienic Gully 218	416645	416741	416651	416747
		630	600				416646	416742	416652	416748
		830	800				416647*	416743	416653	416749
500	470	530	500	65	142	ACO Hygienic Gully 157	416654	416750	416660	416756
		830	800				416655	416751	416661	416757
		1030	1000				416656	416752	416662	416758
500	470	530	500	65	200	ACO Hygienic Gully 218	416657	416753	416663	416759
		830	800				416658	416754	416664	416760
		1030	1000				416659*	416755	416665	416761
600	570	630	600	70	200	ACO Hygienic Gully 218	416666	416762	416669	416765
		930	900				416667	416763	416670	416766
		1230	1200				416668*	416764	416671	416767
800	770	830	800	80	200	ACO Hygienic Gully 218	416672	416768	416673	416769

*Stock items

ACO Vinyl Tray Channel - Standard

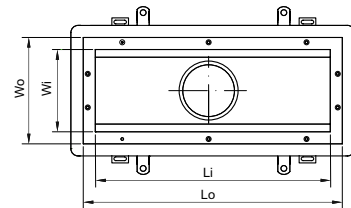
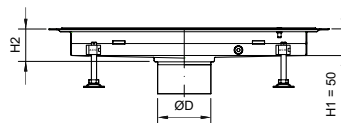
Product Information

The dimensions of the ACO vinyl Tray Channel can be specified in respect of project requirements or easily chosen from predefined fixed dimensions.

- Fully compliant to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel, pickled and passivated
- Material thickness 1,5mm
- Easy and secure telescopic connection with gully
- Adjustable levelling feet 60-110mm
- Concrete fixing anchors

Order Information

Vinyl edge



Channel dimensions						Gully	Stainless Steel 304 Vinyl edge	Stainless Steel 316 Vinyl edge
W ₀ [mm]	W ₁ [mm]	L ₀ [mm]	L ₁ [mm]	H ₂ [mm]	ØD [mm]		Part No.	Part No.
220	170	550	500	60	142	ACO Hygienic Gully 157	413364*	413382
		850	800				413365*	413383
		1050	1000				413366	413384
		1250	1200				413367*	413385
		1550	1500				413368	413386
		2050	2000				413369	413387

*Stock items

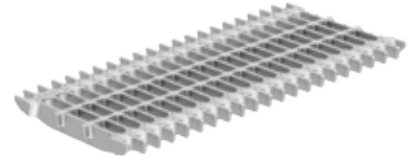
Channel dimensions						Gully	Stainless Steel 304 Vinyl edge	Stainless Steel 316 Vinyl edge
Wo [mm]	Wi [mm]	Lo [mm]	Li [mm]	H2 [mm]	ØD [mm]		Part No.	Part No.
320	270	350	300	60	142	ACO Hygienic Gully 157	413388	413402
		650	600				413389*	413403
		1050	1000				413390	413404
		1550	1500				413391*	413405
		2050	2000				413392	413406
		3050	3000	413393			413407	
		4050	4000	70			413394	413408
320	270			80	200	ACO Hygienic Gully 218	413395	413409
		350	300	60			413396	413410
		650	600				413397	413411
		1050	1000				413398	413412
		1550	1500				413399	413413
		2050	2000				413400	413414
		3050	3000	70			413401	413415
4050	4000	80						
420	370	450	400	60	142	ACO Hygienic Gully 157	413416	413422
		650	600				413417	413423
		850	800				413418*	413424
420	370	450	400	60	200	ACO Hygienic Gully 218	413419	413425
		650	600				413420	413426
		850	800				413421	413427
520	470	550	500	65	142	ACO Hygienic Gully 157	413428	413434
		850	800				413429	413435
		1050	1000				413430	413436
520	470	550	500	65	200	ACO Hygienic Gully 218	413431	413437
		850	800				413432	413438
		1050	1000				413433*	413439
620	570	650	600	70	200	ACO Hygienic Gully 218	413440	413443
		950	900				413441	413444
		1250	1200				413442*	413445
820	770	850	800	80	200	ACO Hygienic Gully 218	413446	413447

*Stock items

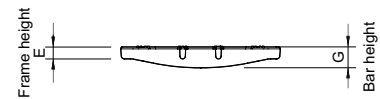
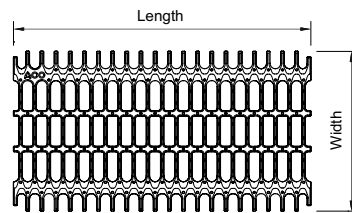
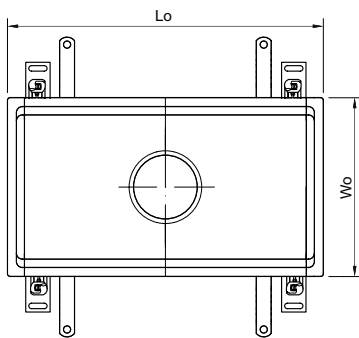
ACO Hygienic Cast Grating FHD

Product information

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- ACO hygienic cast grating with slip resistant finish
- Frameless design for optimum drainability and cleanliness
- Surface electropolished
- Easy to clean grates
- Range of gratings suitable to load class M 125 (BS EN 1253-1)
- Slip resistant
 - Low potential for slip according to BS 7976-2,
 - R13 according to DIN 51130



Order Information - Load Class M 125

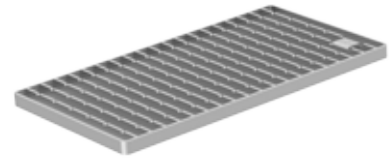


Channel dimension		Grating dimension				Material	Stainless Steel 304 Part No.	Quantity to fill channel
Wo [mm]	Lo [mm]	Frame height E [mm]	Bar height G [mm]	Width [mm]	Length [mm]			
200	530	20	30	168	499	304	416947	1
	830	20	30	168	398	304	416948	2
	1030	20	30	168	499	304	416947	2
	1230	20	30	168	398	304	416948	3
	1530	20	30	168	499	304	416947	3
	2030	20	30	168	499	304	416947	4
300	330	20	30	268	298	304	416946	1
	630	20	30	268	298	304	416946	2
	1030	20	30	268	499	304	416945	2
	1530	20	30	268	499	304	416945	3
	2030	20	30	268	499	304	416945	4
	3030	20	30	268	499	304	416945	6
	4030	20	30	268	499	304	416945	8

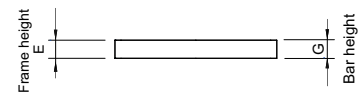
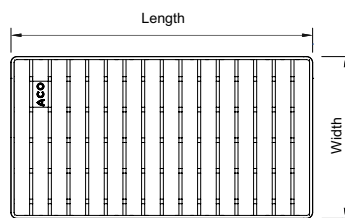
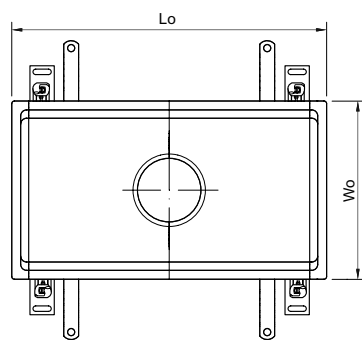
ACO Hygienic Ladder Grating FHD

Product Information

- ACO hygienic ladder grating with slip resistant finish
- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Range of gratings suitable to load class R 50 (version for 5 000 kg) and M 125 (BS EN 1253-1)
 - Surface - electropolished
 - High flow capacity of grates
 - Rounded corners
 - Easy to clean grates = fully welded
 - Slip resistant
 - Low potential for slip according to BS 7976-2,
 - R11 according to DIN 51130

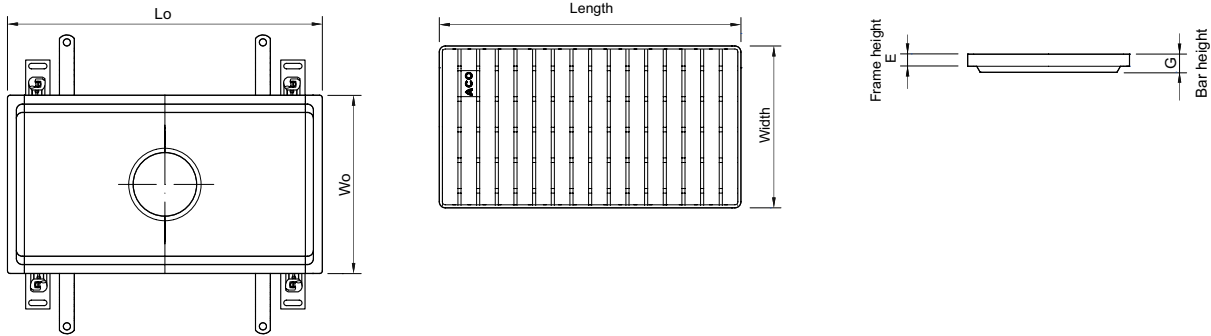


Order Information - Load Class R 50



Channel dimension		Grating dimension				Stainless Steel 304 Part No.	Stainless Steel 316 Part No.	Quantity to fill channel
Wo [mm]	Lo [mm]	Frame height E [mm]	Bar height G [mm]	Width [mm]	Length [mm]			
200	530	20	20	168	499	416802	416803	1
	830	20	20	168	398	416808	416809	2
	1030	20	20	168	499	416802	416803	2
	1230	20	20	168	398	416808	416809	3
	1530	20	20	168	499	416802	416803	3
	2030	20	20	168	499	416802	416803	4
300	330	20	20	268	298	416812	416813	1
	630	20	20	268	298	416812	416813	2
	1030	20	20	268	499	416814	416815	2
	1530	20	20	268	499	416814	416815	3
	2030	20	20	268	499	416814	416815	4
	3030	20	20	268	499	416814	416815	6
	4030	20	20	268	499	416814	416815	8
	430	30	30	368	398	416820	416821	1
400	430	30	30	368	398	416820	416821	1
	630	30	30	368	598	416822	416823	1
	830	30	30	368	398	416820	416821	2
500	530	30	30	468	499	416828	416829	1
	830	30	30	468	398	416830	416831	2
	1030	30	30	468	499	416828	416829	2
600	630	30	30	568	298	416838	416839	2
	930	30	30	568	298	416838	416839	3
	1230	30	30	568	298	416838	416839	4
800	830	30	30	768	398	416842	416843	2

Order Information - Load Class M 125

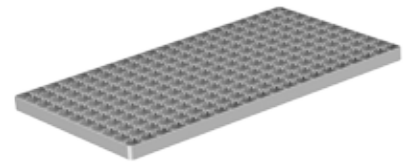


Channel dimension		Grating dimension				Stainless Steel 304 Part No.	Stainless Steel 316 Part No.	Quantity to fill channel
Wo [mm]	Lo [mm]	Frame height E [mm]	Bar height G [mm]	Width [mm]	Length [mm]			
200	530	20	30	168	499	416804	416805	1
	830	20	30	168	398	416810	416811	2
	1030	20	30	168	499	416804	416805	2
	1230	20	30	168	398	416810	416811	3
	1530	20	30	168	499	416804	416805	3
	2030	20	30	168	499	416804	416805	4
300	330	20	30	268	298	416816	416817	1
	630	20	30	268	298	416816	416817	2
	1030	20	30	268	499	416818	416819	2
	1530	20	30	268	499	416818	416819	3
	2030	20	30	268	499	416818	416819	4
	3030	20	30	268	499	416818	416819	6
	4030	20	30	268	499	416818	416819	8
400	430	30	30	368	398	416824	416825	1
	630	30	30	368	598	416826	416827	1
	830	30	30	368	398	416824	416825	2
500	530	30	30	468	499	416832	416833	1
	830	30	30	468	398	416834	416835	2
	1030	30	30	468	499	416832	416833	2

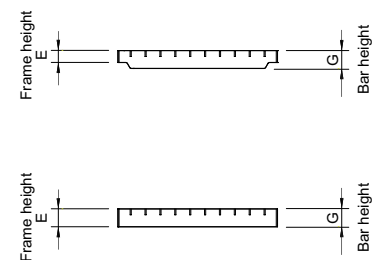
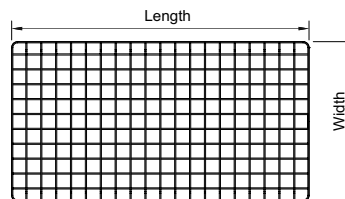
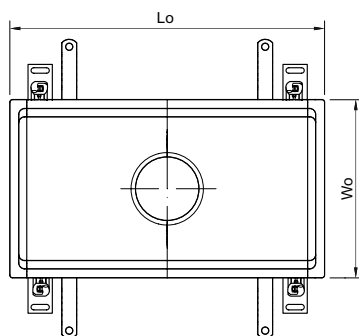
ACO Mesh Grating

Product information

- ACO mesh grating slip resistant finish
- Tested and certified according to BS EN 1253-1
- Range of gratings suitable to load class L 15 (BS EN 1253-1)
- Surface - electropolished
- High flow capacity of grates
- Rounded corners
- Slip resistant
 - Slip resistant low potential for slip according to BS 7976-2,
 - R11 according to DIN 51130



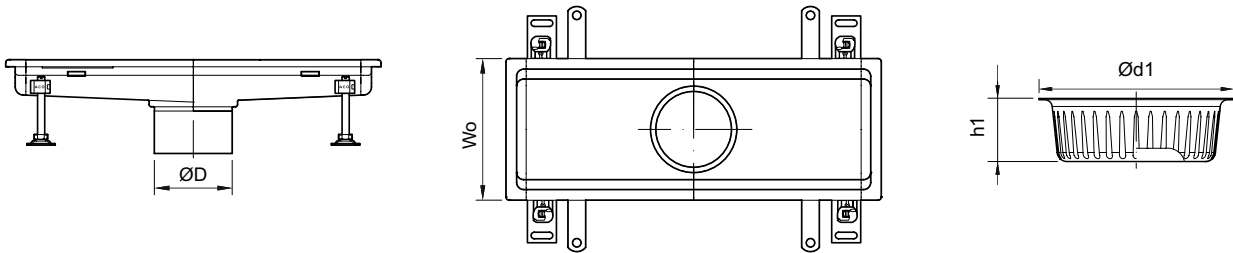
Order Information - Load Class L 15



Channel dimension		Grating dimension				Stainless Steel 304 Part No.	Stainless Steel 316 Part No.	Quantity to fill channel
Wo [mm]	Lo [mm]	Frame height E [mm]	Bar height G [mm]	Width [mm]	Length [mm]			
200	530	20	30	168	499	416860	416861	1
	830	20	30	168	398	416862	416863	2
	1030	20	30	168	499	416860	416861	2
	1230	20	30	168	398	416862	416863	3
	1530	20	30	168	499	416860	416861	3
	2030	20	30	168	499	416860	416861	4
300	330	20	30	268	298	416864	416865	1
	630	20	30	268	298	416864	416865	2
	1030	20	30	268	499	416866	416867	2
	1530	20	30	268	499	416866	416867	3
	2030	20	30	268	499	416866	416867	4
	3030	20	30	268	499	416866	416867	6
	4030	20	30	268	499	416866	416867	8
400	430	30	30	368	398	416868	416869	1
	630	30	30	368	598	416870	416871	1
	830	30	30	368	398	416868	416869	2
500	530	30	30	468	499	416872	416873	1
	830	30	30	468	398	416874	416875	2
	1030	30	30	468	499	416872	416873	2
600	630	30	30	568	298	416876	416877	2
	930	30	30	568	298	416876	416877	3
	1230	30	30	568	298	416876	416877	4
800	830	30	30	768	398	416878	416879	2

Accessories for ACO Hygienic Tray Channel

Silt baskets for ACO Hygienic Tray Channel



Channel dimension		Direction of gully outlet	Silt basket dimension		Capacity [l]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
Width W0 [mm]	Outlet ØD [mm]		Ød1 [mm]	h1 [mm]			
200	142	vertical	142	45	0.4	416900	416901
		horizontal	142	25	0.3	416902	416903
300, 400, 500, 600, 800	142	vertical	159	50	0.6	416904	416905
	or welded with ACO Hygienic Gully 157	horizontal	159	26	0.3	416906	416907
300, 400, 500, 600, 800	200	vertical	222	50	1.4	416908	416909
	or welded with ACO Hygienic Gully 218	horizontal	222	26	0.7	416910	416911

Design Services - Let us help!



The ACO Building Drainage Design Services Team is staffed by engineers who live and breathe engineered drainage system solutions. They can carry out design work on your behalf, work ranging from channel layouts through hydraulic calculations and part scheduling.

Drainage is a critical part of every construction project, both large and small, with this infrastructure providing the vital

arteries through which waste water can drain away from a building quickly and safely. An effective system is crucial to eliminate the risk of flooding and health issues that can present significant risk to people and property.

Each building has its own unique set of drainage needs and it is these critical factors that must be considered when planning drainage systems, to minimise construction costs, while simultaneously

optimising the aesthetics, functionality and long term reliability of drainage units.

Indeed, whether you're involved in designing or building a new project or upgrading an existing building, every aspect of the system must be carefully planned to meet the correct drainage requirements simply, quickly and within budget.

ACO Hygienic Tray Channel - Semi-standard FHD

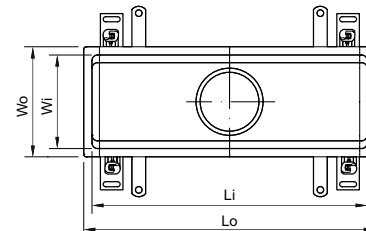
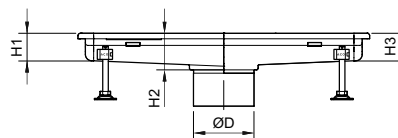
Product information

It is easy to specify the dimensions of the ACO Hygienic Channel for projects using concrete, tiled or resin floor finishes.

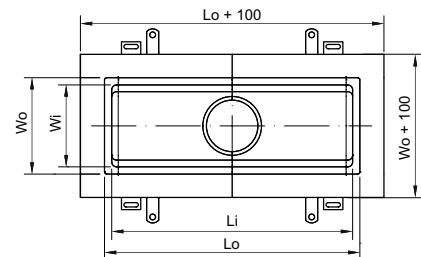
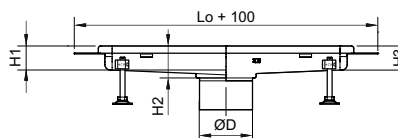
- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Fully pickled and passivated
- Material thickness 1,5mm
- V-shape base for width < 300mm
- Reinforced base for width > 400mm
- Length - up to customer request
- Height - variable 50-200mm
- Outlet position variable in longitudinal axis
- Sectional slope of the channel base 5°
- Longitudinal slope of the channel bottom 1-5 %
- Standardized widths
- Rounded corners 3mm minimum
- Easy and secure telescopic connection with gully
- Hygienic gratings with slip resistance
- Adjustable levelling feet 60-110mm
- Concrete fixing anchors

Order information

Standard edge



Extended edge



External (overall) width Wo [mm]	Internal (grating) width Wi [mm]	Length of channel Lo	Height at outlet of channel H2	Height at end of channel H1 and H3
200	170	Variable *	50-200	50, 80, 110, 140
300	270			
400	370			
500	470			
600	570			
800	770			

* **Note:** it is most cost effective to choose the channel length as multiple of grate dimensions.

ACO Vinyl Tray Channel - Semi-standard

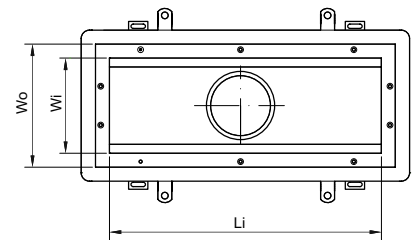
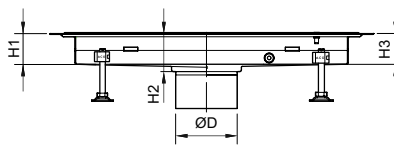
Product information

It is easy to specify the dimensions of the ACO Hygienic Channel for projects using vinyl sheet floor finishes.

- Fully compliant to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel, pickled and passivated
- Material thickness 1,5mm
- Height variable 50-200mm
- Length – up to customer request
- Standardised widths
- Outlet position central or variable in longitudinal axis
- Longitudinal slopes of the channel base 1-5 %
- Adjustable levelling feet 60-110mm
- Concrete fixing anchors

Order Information

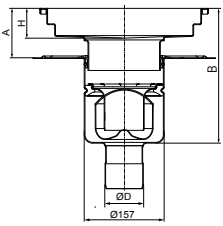
Vinyl Edge

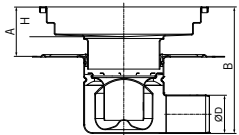


External (overall) width Wo [mm]	Internal (grating) width Wi [mm]	Length of channel Li	Height at outlet of channel H2	Height at end of channel H1 and H3
230	170	Variable *	50-200	50, 80, 110, 140
330	270			
430	370			
530	470			
630	570			
830	870			

* **Note:** it is most cost effective to choose the channel length as multiple of grate dimensions.

Flow Rates and Construction Heights - Gully 157

			
Outlet diameter	Outlet position	Flow rate [l/s]	
ØD		H = 60mm	
		A min. = 85	A max. = 115
		B min. = 232	B max. = 262
110	Vertical	3.9	4.2

			
Outlet diameter	Outlet position	Flow rate [l/s]	
ØD		H = 60mm	
		A min. = 75	A max. = 115
		B min. = 242	B max. = 285
110	Horizontal	3.2	3.9

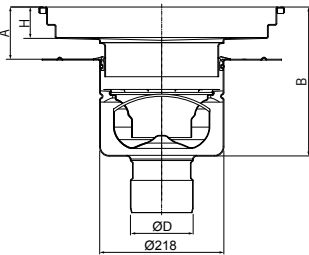
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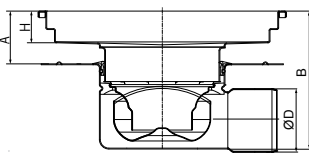
A min. and B min. values can be reduced by 15mm if earth screw is removed and channel outlet spigot shortened. Please be aware that channel outlet pipe shortening affects the A max. and B max. values.

Flow rates measured according to BS EN 1253. Flow rate performance without silt basket (flow rates with empty silt basket are approximately 15% lower than the values stated)

Flow Rates and Construction Heights - Gully 218

ACO Channel ACO Hygienic Gully 218

											
Outlet diameter	Outlet position	Flow rate [l/s]									
ØD		H = 60mm		H = 80mm		H = 100mm		H = 150mm		H = 200mm	
		A min. = 75 [mm]	A max. = 115 [mm]	A min. = 95 [mm]	A max. = 135 [mm]	A min. = 115 [mm]	A max. = 155 [mm]	A min. = 165 [mm]	A max. = 205 [mm]	A min. = 215 [mm]	A max. = 255 [mm]
		B min. = 245 [mm]	B max. = 285 [mm]	B min. = 265 [mm]	B max. = 305 [mm]	B min. = 285 [mm]	B max. = 325 [mm]	B min. = 335 [mm]	B max. = 375 [mm]	B min. = 385 [mm]	B max. = 425 [mm]
110	Vertical	5.4	5.6	5.6	5.8	5.7	6.0	5.9	6.4	6.4	6.4
160		5.4	5.6	5.6	5.8	5.7	6.0	5.9	6.4	6.4	6.4

											
Outlet diameter	Outlet position	Flow rate [l/s]									
ØD		H = 60mm		H = 80mm		H = 100mm		H = 150mm		H = 200mm	
		A min. = 85 [mm]	A max. = 115 [mm]	A min. = 105 [mm]	A max. = 135 [mm]	A min. = 125 [mm]	A max. = 155 [mm]	A min. = 175 [mm]	A max. = 205 [mm]	A min. = 225 [mm]	A max. = 255 [mm]
		B min. = 235 [mm]	B max. = 265 [mm]	B min. = 255 [mm]	B max. = 285 [mm]	B min. = 275 [mm]	B max. = 305 [mm]	B min. = 325 [mm]	B max. = 355 [mm]	B min. = 375 [mm]	B max. = 405 [mm]
110	Horizontal	4.5	4.7	4.8	4.9	4.9	5.1	5.0	5.6	5.6	6.4

Notes:

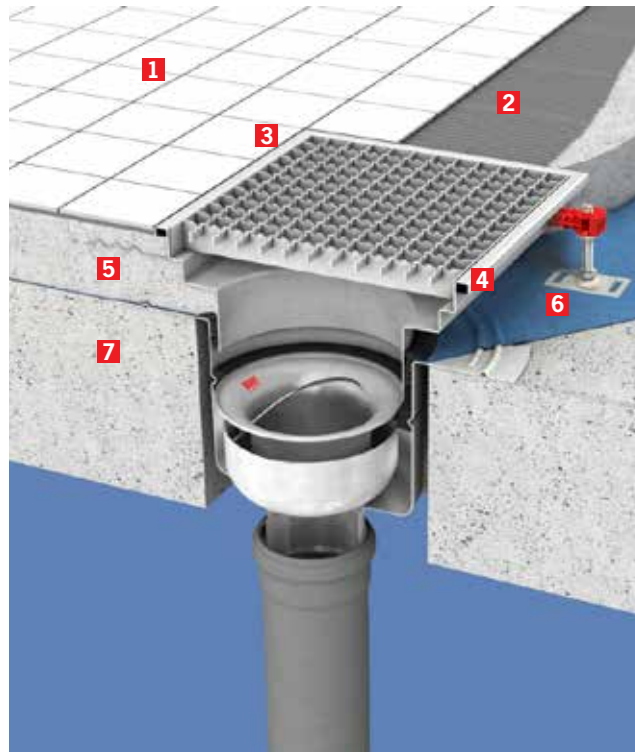
A min. and B min. values can be reduced by 15mm if earth screw is removed and channel outlet spigot shortened. Please be aware that channel outlet pipe shortening affects the A max. and B max. values.

Flow rates measured according to BS EN 1253. Flow rate performance without silt basket (flow rates with empty silt basket are approximately 15% lower than the values stated)

ACO Hygienic Tray Channel

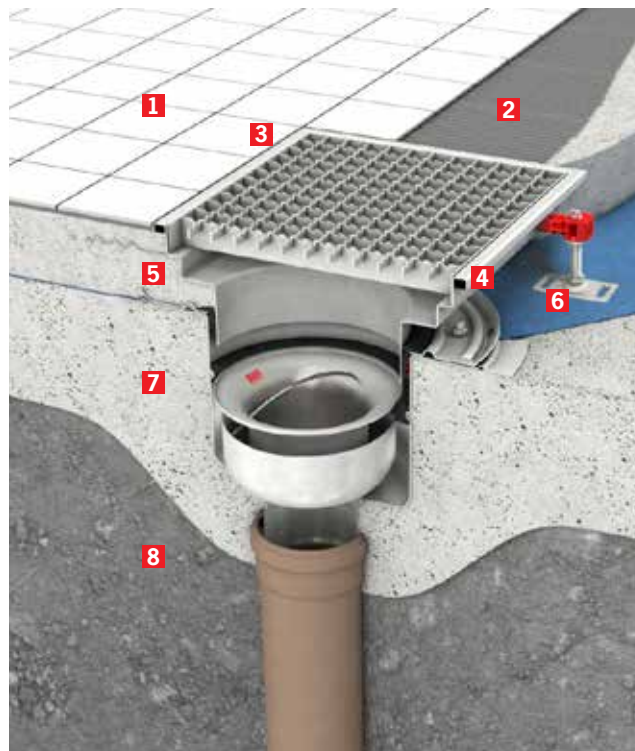
ACO Hygienic Tray Channel Standard Type – ACO Hygienic Gully with Adhesive Bonding Flange (Tiled Floor)

- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Rubber infill
- 5** Floor screed
- 6** Water proof membrane
- 7** Solid concrete floor slab



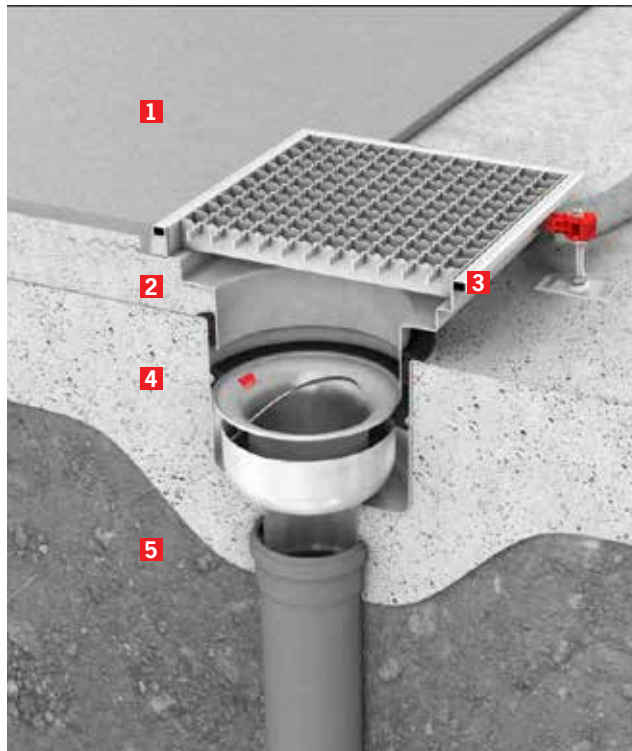
ACO Hygienic Tray Channel Standard Type – ACO Hygienic Gully with Mechanical Clamping Flange (Tiled Floor)

- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Rubber infill
- 5** Floor screed
- 6** Water proof membrane
- 7** Solid concrete floor slab
- 8** Compacted soil



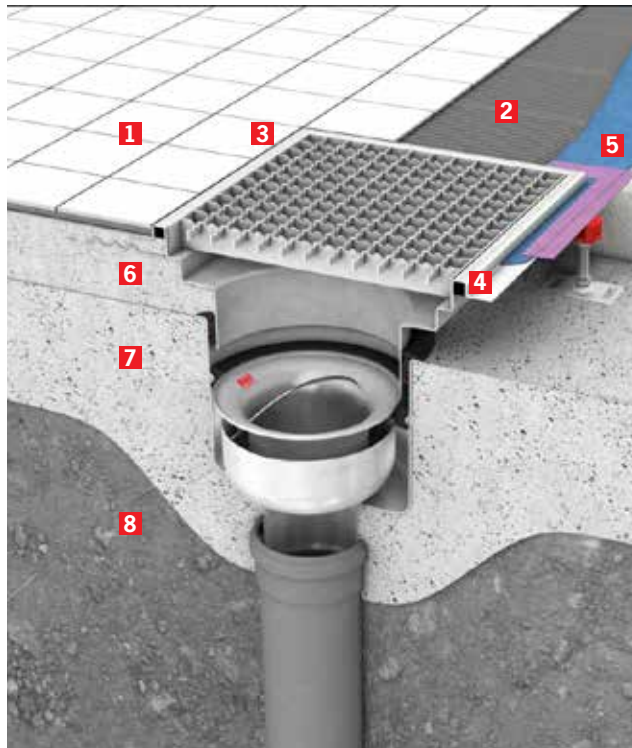
ACO Hygienic Tray Channel Standard Type – ACO Hygienic Gully with Location Flange (Resin Floor)

- 1** Epoxy/resin floor
- 2** Floor screed
- 3** Rubber infill
- 4** Solid concrete floor slab
- 5** Compacted soil



ACO Hygienic Tray Channel Extended Type – ACO Hygienic Gully with Location Flange (Tiled Floor)

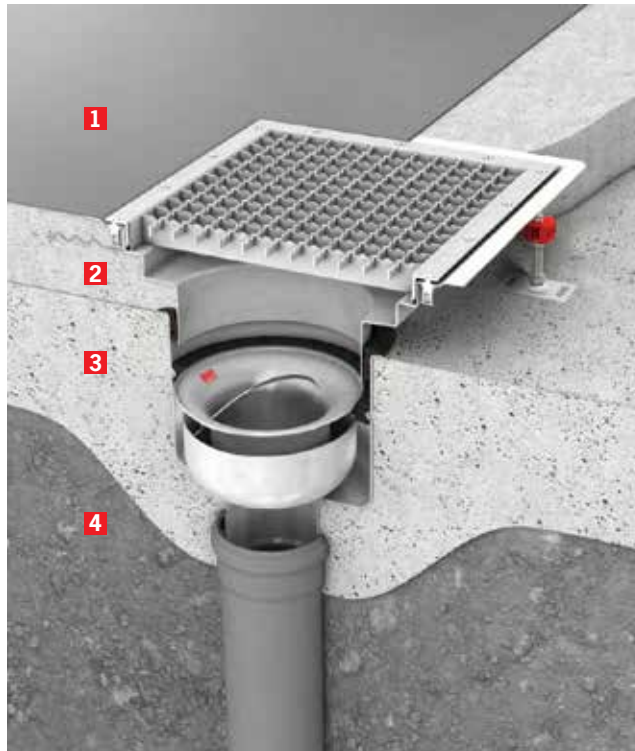
- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Rubber infill
- 5** Water proof membrane
- 6** Floor screed
- 7** Solid concrete floor slab
- 8** Compacted soil



ACO Vinyl Tray Channel

ACO Vinyl Tray Channel – ACO Hygienic Gully with Location Flange (Vinyl Floor)

- 1** Vinyl floor
- 2** Floor screed
- 3** Solid concrete floor slab
- 4** Compacted soil

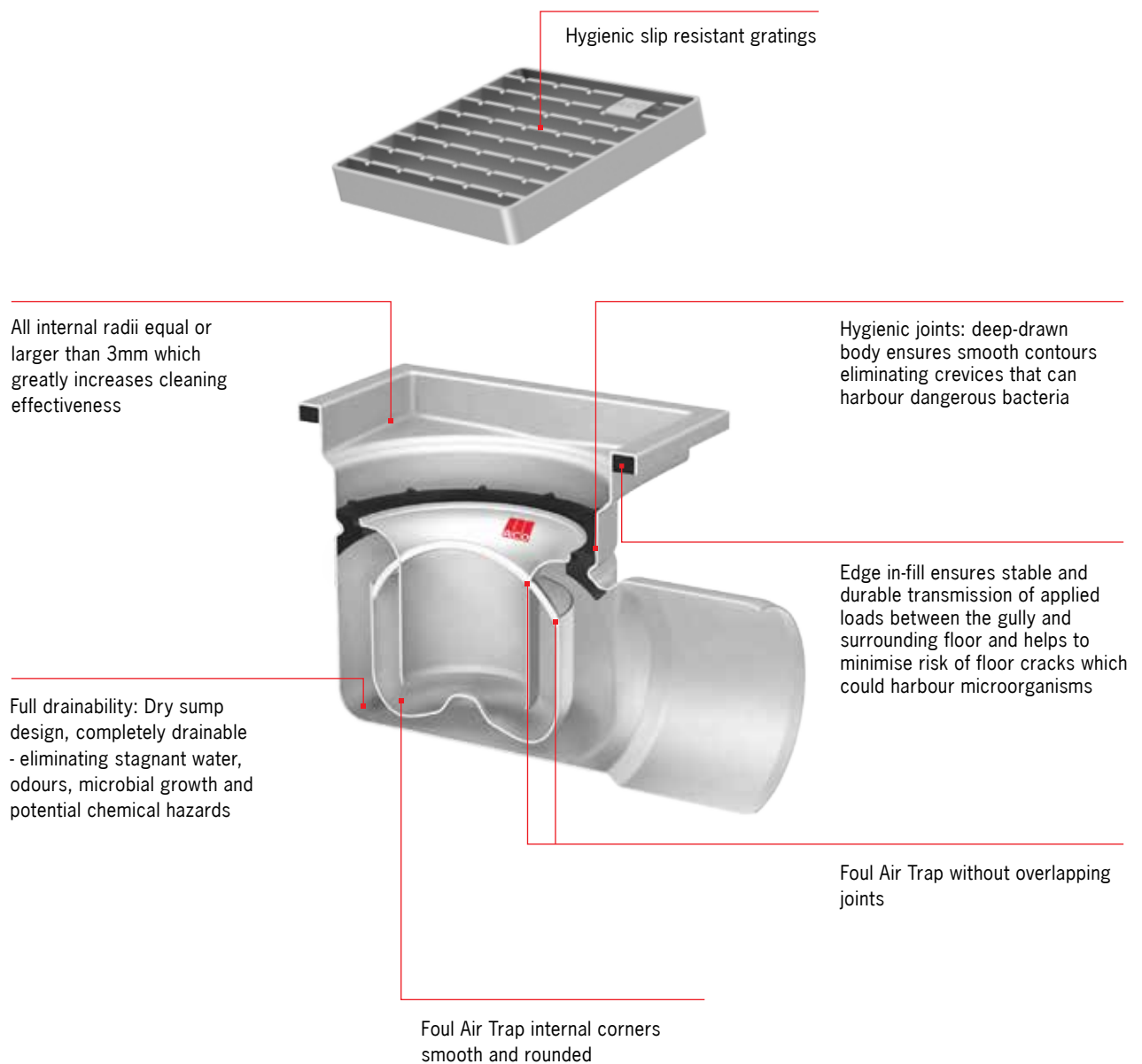


Full Hygienic Design FHD

ACO hygienic drainage fulfils highest hygienic requirements to prevent harmful bacterial contamination. We apply the relevant hygienic design principles for food processing equipment BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44 to the gully design.

ACO Hygienic Gully features:

- Full drainability
- Internal radii equal or larger than 3mm
- Hygienic joints
- Edge infill
- Stainless steel grade minimum 304
- Fully pickled and passivated finish



System Overview

ACO Gully range is available in a number of versions featuring different flow rates, grating designs, sizes and spigot outlet diameters to suit various applications.

The floor construction and depth together with the use of any waterproofing membrane play an important role in the selection of the appropriate type of gully.

The ACO Gully range is available with vertical or horizontal spigot outlets.

Fixed height gullies are convenient and free-standing units which are suitable for cementitious, resin or tiled floors.

Telescopic gullies can be installed either with a gully top or ACO channel in most flooring constructions, including floors with waterproofing membranes.

Fixed height solution



- 1** Gratings
- 2** Silt basket
- 3** Foul Air Trap
- 4** Foul Air Trap support
- 5** ACO Gully body
- 6** Gully top
- 7** Friction ring
- 8** Leveling feet

Telescopic solution



Fixed Height – Vertical Outlet FHD

Product Information

Fixed height gully can be specified as a point drainage solution in areas where waterproofing is independent of the gully body. Those gullies can be combined with different grates depending on required load class.

- Hygienic design following EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1

- Available in 304 or 316 grades of stainless steel
- Fire tested and certified solution available for classes EI 90 – EI 180 (BS EN 13 501-2)
- Fully removable and easily cleanable stainless steel Foul Air Trap (FAT)
- Outlet diameter 110mm O.D.
- Gully top frame size: 200 x 200mm and 250 x 250mm
- Wide range of gratings for load class L 15, R 50, M 125 or N 250 (BS EN 1253-1) including slip resistant solution
- Includes FAT



Order Information

	Top size □ [mm]	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
Standard edge				
	200 x 200	110	408003	408103

	Top size □ [mm]	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	250 x 250	110	408019	408119
Extended edge				
	200 x 200	110	408099	408199

Fixed Height – Horizontal Outlet FHD

Product information

Fixed height gully can be specified as a point drainage in areas where waterproofing is independent of the gully body.

Those gullies can be combined with different grates depending on requested load class.

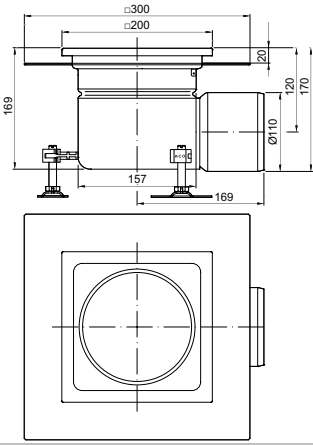
- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44

- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Fully removable and easily cleanable stainless steel Foul Air Trap (FAT)
- Outlet diameter 110mm O.D.
- Gully top frame size: 200 x 200mm and 250 x 250mm
- Wide range of gratings for load class L 15, R 50, M 125 or N 250 (BS EN 1253-1) including slip resistant solution
- With Foul Air Trap



Order Information

	Top size □ [mm]	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
Standard edge				
	200 x 200	110	408011	408111
	250 x 250	110	408027	408127

	Top size □ [mm]	Outlet diameter Ø [mm]	Foul Air Trap	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
Extended edge					
	200 x 200	110	With FAT	408015	408115

Fixed Height for Large Silt Basket

Product Information

- Hygienic design including large radii formed contours, deep drawn components to minimise crevices and bacteria traps according to BS EN 1672 and BS EN ISO 14159.
- Fully compliant to BS EN 1253.
- Optional high capacity silt basket (0.9 litres).
- Dry sump design ensures no standing waste water in gully base.
- Fully removable and easily cleaned Foul Air Trap (FAT).
- Removable hygienic and corrosion resistant Nitrile FAT support.
- High flow rate.
- Outlet spigot Ø110mm for both horizontal and vertical outlet configurations.
- Accepts all ACO Gully 157 200x200 x25mm gratings as shown on Page 60.
- Available in 316 stainless steel to special order.



Order information

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.
	Location flange	110	416529
	Location flange	110	416061

Telescopic – Vertical Outlet FHD

Product Information

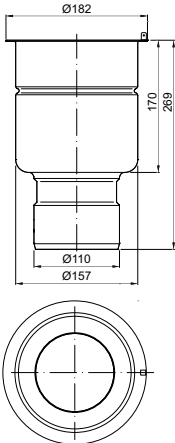
Telescopic gully can be combined either with gully top or ACO channel in most flooring constructions.

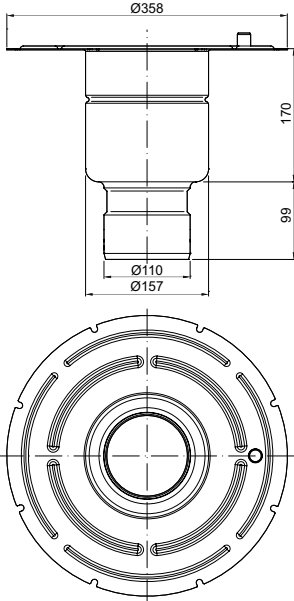
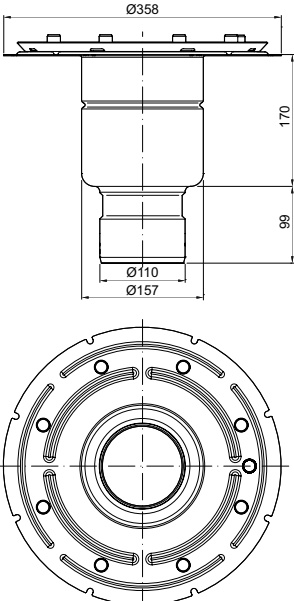
Telescopic solution enables height and rotational adjustment of connected gully top or channel. Gullies are equipped with flanges for connection of waterproof membrane.

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Fire tested and certified solution available for classes EI 90 – EI 180 (BS EN 13 501-2)
- Suitable for all floor types including vinyl flooring
- Fully removable and easily cleanable stainless steel Foul Air Trap (FAT)
- Outlet diameter 110mm O.D
- Gully body with location flange or integrated membrane flange for either adhesive bonding or mechanical clamp
- Telescopic friction ring included



Order information

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Location flange	110	408055	408155

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Adhesive bonding flange	110	408057	408157
	Mechanical clamping flange	110	408059	408159

Telescopic – Horizontal Outlet FHD

Product Information

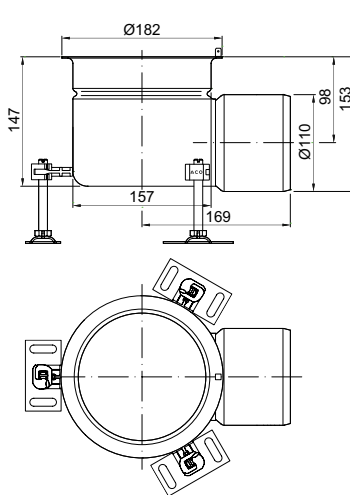
Telescopic gully can be combined either with gully top or ACO channel in most flooring constructions.

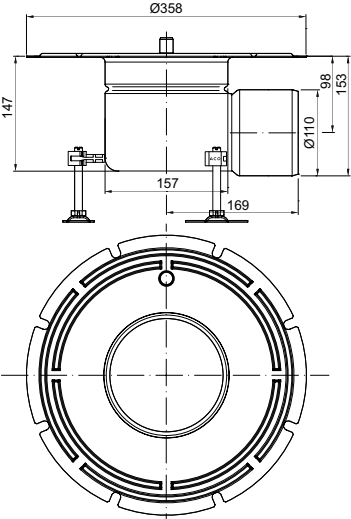
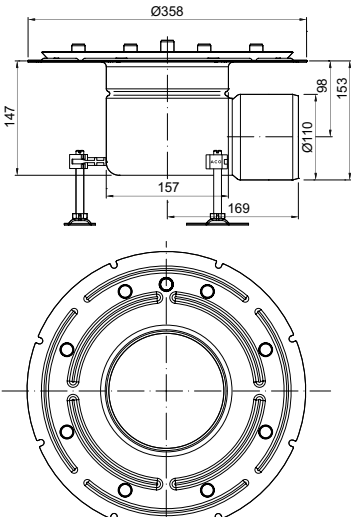
Telescopic solution enables height and rotational adjustment of connected gully top or channel. Gullies are equipped with flanges for connection of waterproof membrane.

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Suitable for all floor types including vinyl flooring
- Fully removable and easily cleanable stainless steel Foul Air Trap (FAT)
- Outlet diameter 110mm O.D.
- Gully body with location flange or integrated membrane flange for either adhesive bonding or mechanical clamp
- Telescopic friction ring included



Order Information

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Location flange	110	408079	408179

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Adhesive bonding flange	110	408081	408181
	Mechanical clamping flange	110	408083	408183

Gully Top – Telescopic FHD

Product Information

Gully top can be combined with telescopic gully. Different gully top type is available depending on floor finish.

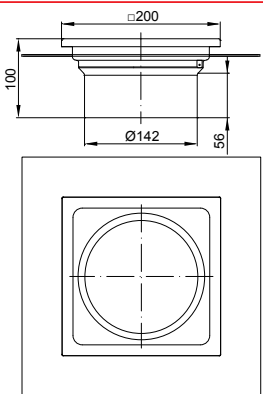
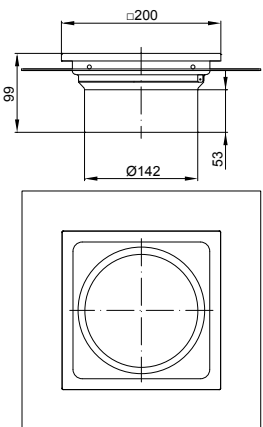
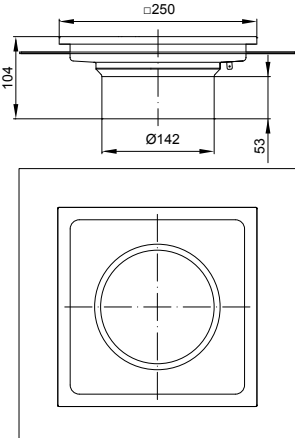
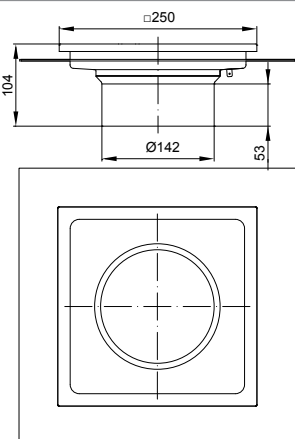
- Hygienic design following EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in grades 304 or 316 grades of stainless steel
- Gully top frame size: 200 x 200mm and 250 x 250mm
- Wide range of gratings for load class L 15, R 50, M 125 or N 250 (BS EN 1253-1) including antislip solution



Order Information

	Gully top type	Gully top size [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Standard edge	□ 200 x 200	408208	408218
	Standard edge	□ 250 x 250	408248	408258
	Vinyl edge	Ø289	408240*	408250*

* Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applied.

	Gully top type	Gully top size [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Extended edge	□ 200 x 200	408241	408251
	Extended edge with drainage holes	□ 200 x 200	408244	408254
	Extended edge	□ 250 x 250	408245	408255
	Extended edge with drainage holes	□ 250 x 250	408246	408256

Raising Piece – Telescopic FHD

Product Information

Raising piece can be used for floor structures where multi waterproofing is needed (heat insulation) or where construction height of the slab needs to be increased.

- Hygienic design following EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Suitable for all floor types including vinyl flooring
- Variety of flanges for membranes
- Telescopic friction ring included



Order Information

	Type of flange	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Location flange	408249	408259
	Adhesive bonding flange	408206	408216
	Mechanical clamping flange	408207	408217

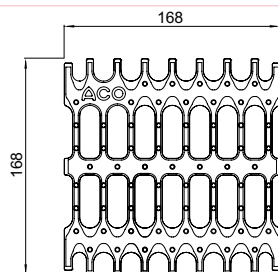
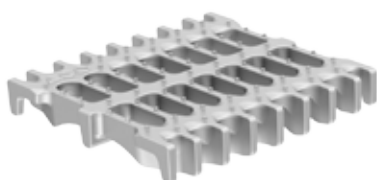
Gratings for Gully Top 200 x 200mm

Product Grating Information

A variety of grate types are available depending on application and required load class. For applications with high hygienic requirements, either ladder or cast grating options should be selected.

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Fits to stainless steel gully, fully compliant to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Gully top frame size: 200 x 200mm
- Range of gratings suitable to load class L 15, R 50, M 125 or N 250 (BS EN 1253-1)
- Slip resistant solution available

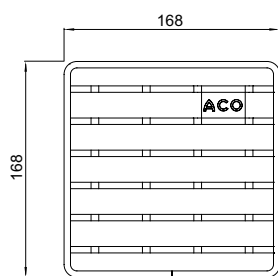
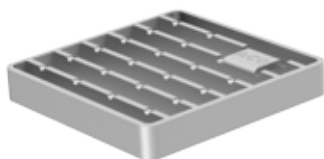
ACO Hygienic Cast Grating **FHD**



Load class	Slip resistant	Stainless Steel 304 Part No.
M 125	Yes	416942

Note: Surface electropolished

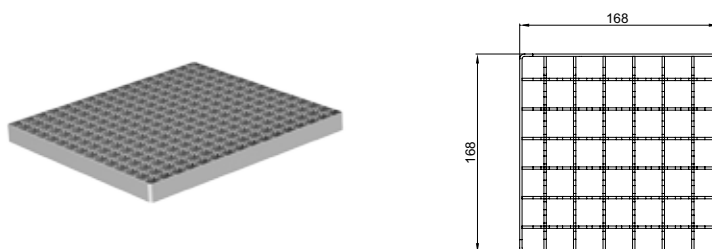
ACO Hygienic Ladder Grating **FHD**



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
R 50	Yes	416912	416913
N 250	No	408043	408143

Note: Surface electropolished

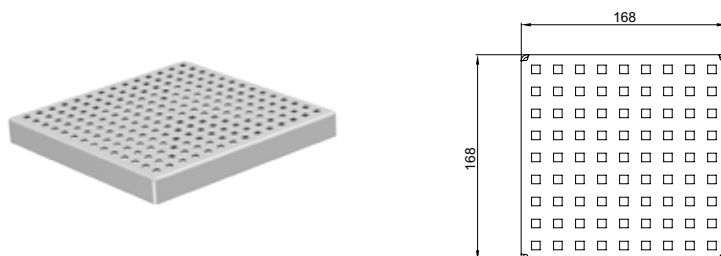
ACO Mesh Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	Yes	408090*	408190*
	No	408091*	408191*

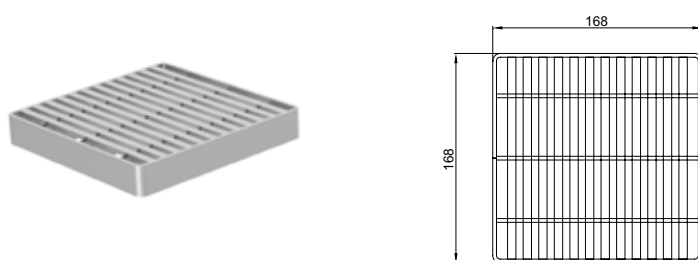
Note: Surface electropolished

ACO Quadrato Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	No	408092*	408192*

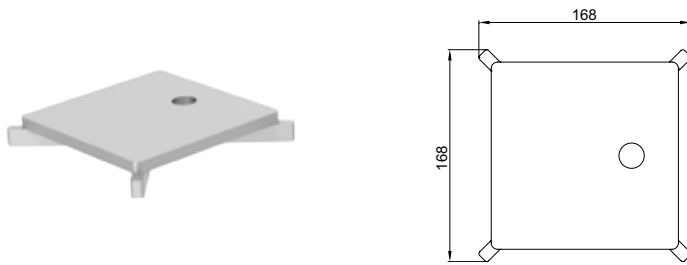
ACO Heelsafe Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	No	408022*	408122*

* Hygienic design following EN 1672, EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applicable.

ACO Slot Cover

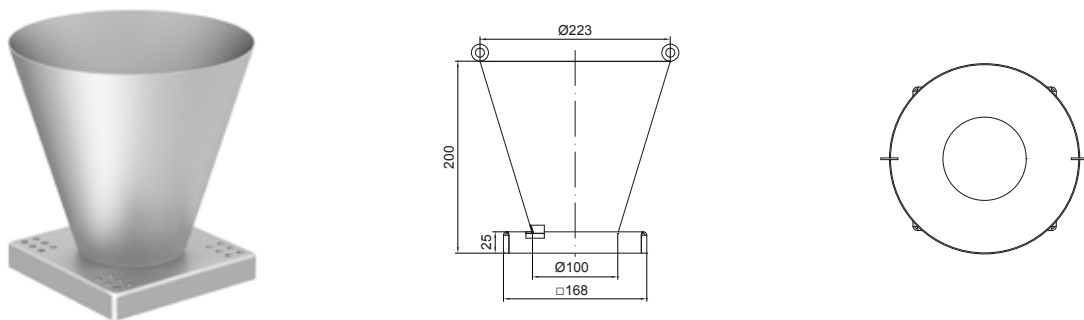


Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
M 125	No	408021 *	408121 *

ACO Odour Proof Cover

For ACO odour proof cover, please contact our Sales/Technical department on 01462 851400 or e-mail abdtechnical@aco.co.uk

ACO Tundish for Gully Top



Description	Stainless Steel 304 Part No.
ACO tundish for gully top 200 x 200	415918

* Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applicable.

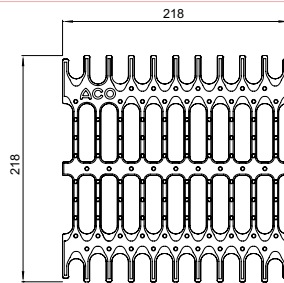
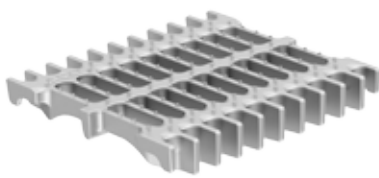
Gratings for Gully Top 250 x 250mm

Product information

A variety of grate types are available depending on application and required load class. For applications with high hygienic requirements, either ladder or cast grating options should be selected.

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Fits to stainless steel gully, fully compliant to EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Gully top frame size: 250 x 250mm
- Range of gratings suitable to load class L 15, R 50, M 125 or N 250 (BS EN 1253-1)
- Slip resistant solution available

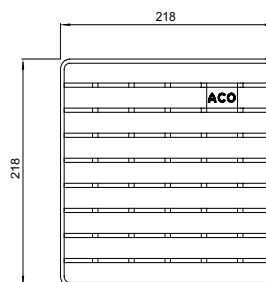
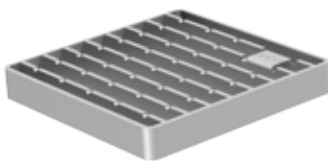
ACO Hygienic Cast Grating **FHD**



Load class	Slip resistant	Stainless Steel 304 Part No.
M 125	Yes	416943

Note: Surface electropolished

ACO Hygienic Ladder Grating **FHD**

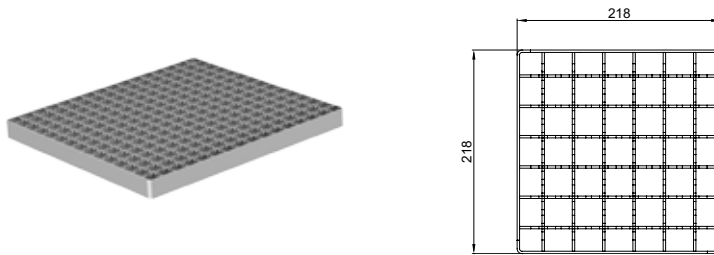


Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
R 50	Yes	416914	416915
N 250	No	408044*	408144*

Note: Surface electropolished

* Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applicable.

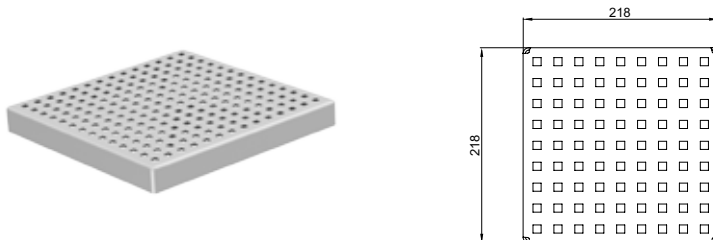
ACO Mesh Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	Yes	408095*	408195*
	No	408096*	408196*

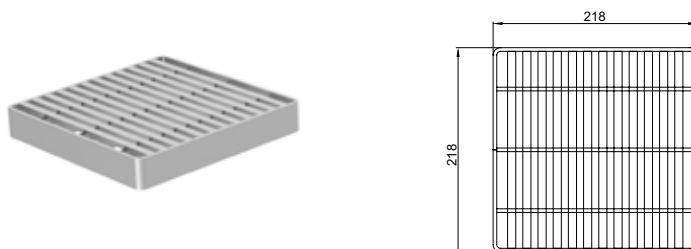
Note: Surface electropolished

ACO Quadrato Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	No	408097*	408197*

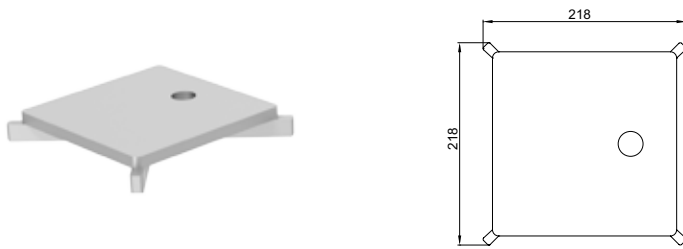
ACO Heelsafe Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	No	408031*	408131*

* Hygienic design following EN 1672, EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applicable.

ACO Slot Cover

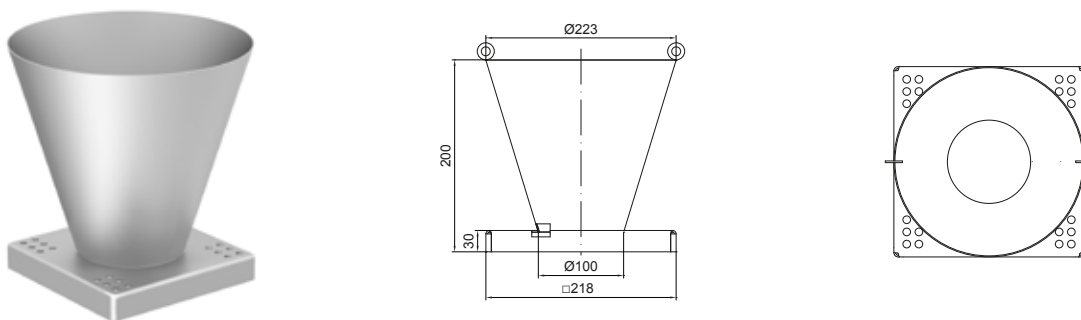


Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
M 125	No	408030*	408130*

ACO Odour Proof Cover

For ACO odour proof cover, please contact our Sales/Technical department on 01462 851400 or e-mail abdtechnical@aco.co.uk

ACO Tundish for Gully Top



Description	Stainless Steel 304 Part No.
ACO tundish for gully top 250 x 250	413546

* Hygienic design following EN 1672, EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applicable.

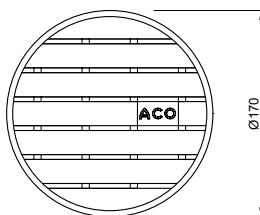
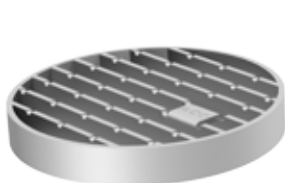
Gratings for Vinyl Top Ø170 FHD

Product information

A variety of grating types are available depending on application and required load class. For applications with high hygienic requirements, either ladder grating options or cast grate should be selected.

- Hygienic design
- Fits to stainless steel gully, fully compliant to BS EN 1253-1
- Stainless steel construction for durability and long life
- Available in 304 or 316 grades of stainless steel
- Range of gratings suitable to load class L 15 (BS EN 1253-1)
- Slip resistant solution available

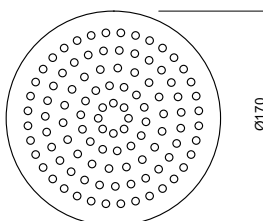
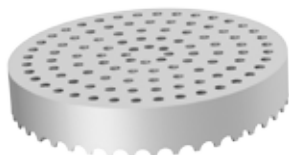
ACO Ladder Grating FHD



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	Yes	97146	97367

Note: Surface electropolished

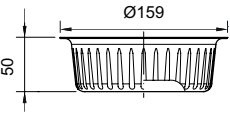
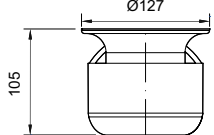
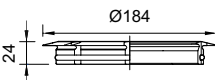
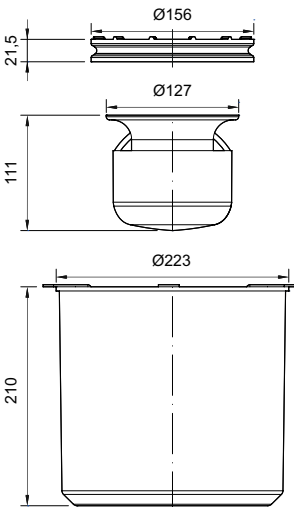
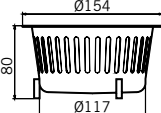
ACO Perforated Grating FHD



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	No	97152*	97369*

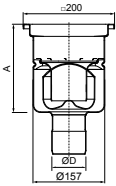
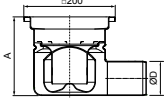
* Hygienic design following EN 1672, EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applicable.

Accessories for ACO Hygienic Gully 157

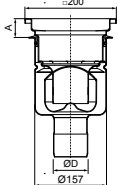
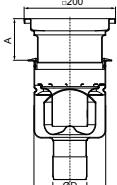
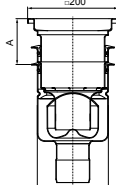
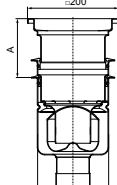
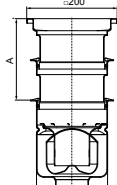
	Description	Used with	Material	Part No.
	Silt basket ■ Stainless steel ■ 0.6 litre capacity	■ ACO Hygienic Gully 157 - Vertical ☐ Fixed height or Telescopic	304	416904
			316	416905
	Silt basket ■ Stainless steel ■ 0.3 litre capacity	■ ACO Hygienic Gully 157 - Horizontal ☐ Fixed height or Telescopic	304	416906
			316	416907
	Hygienic Foul Air Trap ■ Stainless steel ■ Water seal 50mm	■ ACO Hygienic Gully 157 ☐ Telescopic	304	408200
			316	408210
	Friction ring ■ NBR (Acryl nitrile-butadiene)	■ ACO Hygienic Gully 157 ☐ Fixed height ☐ Telescopic	NBR	408205
	Standard Foul Air Trap support ■ NBR (Acryl nitrile-butadiene)	■ ACO Hygienic Gully 157 ☐ Fixed height ☐ Telescopic	NBR	408201
	ACO fire resistant kit for gully 157/110mm ☐ Fixed Height, vertical ☐ Telescopic, vertical	■ ACO Hygienic Gully 157 ☐ Fixed Height, vertical ☐ Telescopic, vertical		416933
	Silk basket ■ Stainless steel ■ 0.9 litre capacity	■ ACO Gully 157 ☐ Fixed height ☐ Large silt basket	304	416416

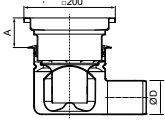
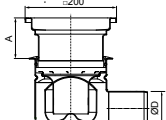
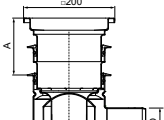
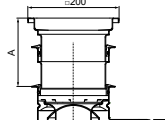
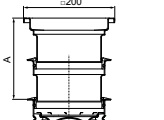
Flow Rates and Construction Heights - Gully 157

ACO Hygienic Gully 157 – Fixed Height

					
Outlet diameter	Outlet position	Flow rate [l/s]	Outlet diameter	Outlet position	Flow rate [l/s]
ØD		A = 193 [mm]	ØD		A = 170 [mm]
110	Vertical	3.5	110	Horizontal	2.8

ACO Hygienic Gully 157 – Telescopic

						
Outlet diameter	Outlet position	Flow rate [l/s]				
ØD		A = 65 [mm]	A = 91 [mm]	A = 125 [mm]	A = 153 [mm]	A = 180 [mm]
110	Vertical	3.5	4.0	4.1	4.2	4.4

							
Outlet diameter	Outlet position	Flow rate [l/s]					
ØD		A = 52 [mm]	A = 82 [mm]	A = 97 [mm]	A = 127 [mm]	A = 157 [mm]	
110	Horizontal	2.8	3.3	3.6	4.0	4.4	

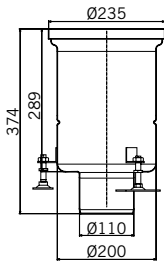
Fixed Height – Vertical Outlet FHD - For Large Silt Basket

Product information

- Hygienic design including large radii formed contours, deep drawn components to minimise crevices and bacteria traps according to BS EN 1672 and BS EN ISO 14159.
- Fully compliant to BS EN 1253.
- Supplied complete with high capacity silt basket (2.7 litres).
- Round top alleviates wall / equipment alignment issues.
- Dry sump design ensures no standing waste water in gully base.
- Fully removable and easily cleaned Foul Air Trap (FAT).
- Removable hygienic and corrosion resistant Nitrile FAT support.
- High flow rate gully 4 l/s.
- Robust 6.5mm thick gully top rim.
- Outlet spigot Ø110mm for both horizontal and vertical outlet configurations.
- Supplied complete with fully welded plain Ladder Grating to load class L15.
- Available in 316 stainless steel to special order.



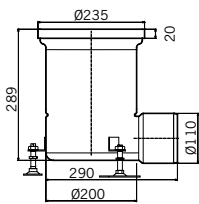
Order information

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.
	Location flange	110	416110

Fixed Height – Horizontal Outlet FHD - For Large Silt Basket



Order information

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.
	Location flange	110	416111

Fixed Height – Vertical Outlet FHD

Product information

Fixed height gully can be specified as a point drainage in areas where waterproofing is independent of the gully body. Those gullies can be combined with different grates depending on required load class.



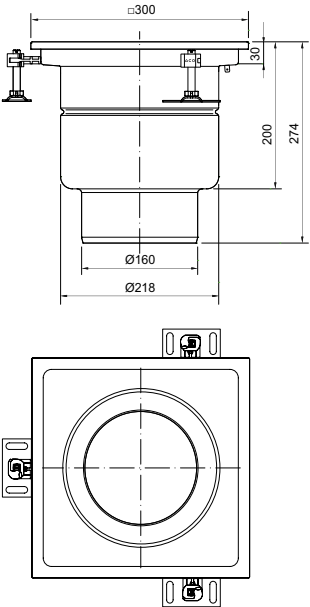
- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Fire tested and certified solution available for classes EI 90 – EI 180 (BS EN 13 501-2)
- Fully removable and easily cleanable

stainless steel Foul Air Trap (FAT)

- Outlet diameter 110mm or 160mm O.D.
- Gully top frame size: 300 x 300mm
- Wide range of gratings for load class L 15, R 50, M 125 or N 250 (BS EN 1253-1) including slip resistant solution

Order information

	Top size □ [mm]	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
Standard edge				
	300 x 300	110	408005	408105

	Top size □ [mm]	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	300 x 300	160	408007	408107

Fixed Height – Horizontal Outlet FHD

Product information

Fixed height gully can be specified as a point drainage in areas where waterproofing is independent of the gully body. Those gullies can be combined with different grates depending on required load class.

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Fully removable and easily cleanable stainless steel Foul Air Trap (FAT)
- Outlet diameter 110mm or 160mm O.D.
- Gully top frame size: 300 x 300mm
- Wide range of gratings for load class L 15, R 50, M 125 or N 250 (BS EN 1253-1) including slip resistant solution



Order information

	Top size □ [mm]	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
Standard edge				
	300 x 300	110	408013	408113

Telescopic – Vertical Outlet FHD

Product information

Telescopic gully can be combined either with ACO Gully top or ACO channel in most flooring constructions.

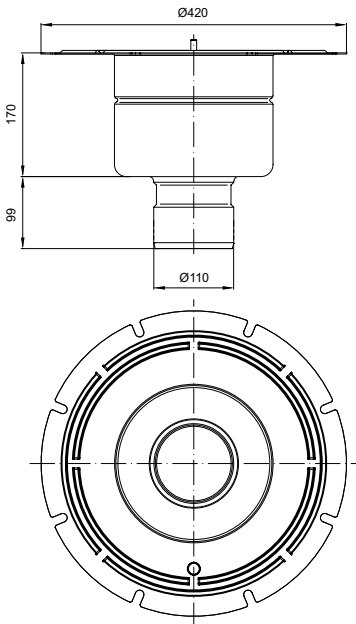
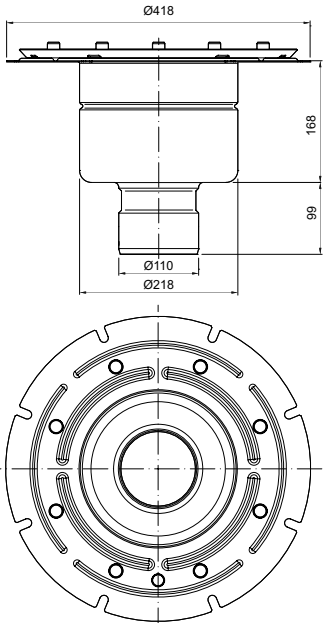
Telescopic solution enables height and rotational adjustment of connected gully top or channel. Gullies are equipped with flanges for connection of waterproof membrane.

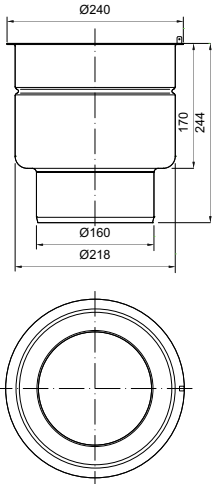
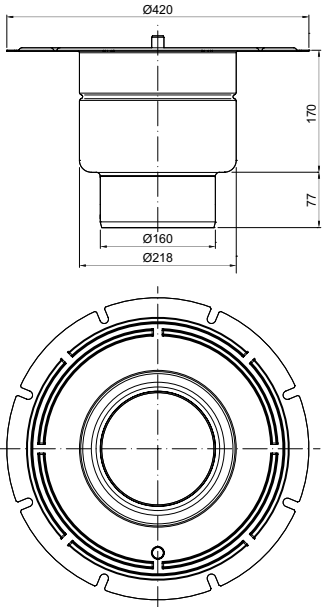
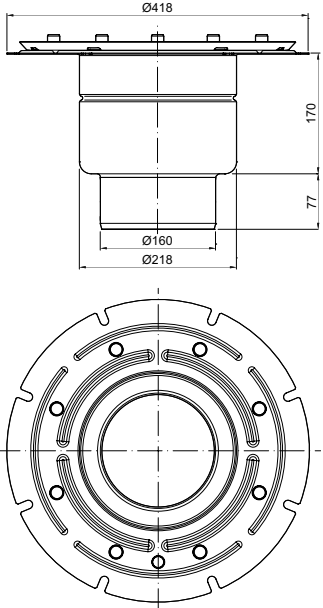
- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Fire tested and certified solution available for classes EI 90 – EI 180 (BS EN 13 501-2)
- Suitable for all floor types including vinyl flooring
- Fully removable and easily cleanable stainless steel Foul Air Trap (FAT)
- Outlet diameter 110mm or 160mm O.D.
- Gully body with location flange or integrated membrane flange for either adhesive bonding or mechanical clamp
- Telescopic friction ring included



Order information

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Location flange	110	408061	408161

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Adhesive bonding flange	110	408063	408163
	Mechanical clamping flange	110	408065	408165

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Location flange	160	408067	408167
	Adhesive bonding flange	160	408069	408169
	Mechanical clamping flange	160	408071	408171

Telescopic – Horizontal Outlet FHD

Product information

Telescopic gully can be combined either with gully top or ACO channel in most flooring constructions.

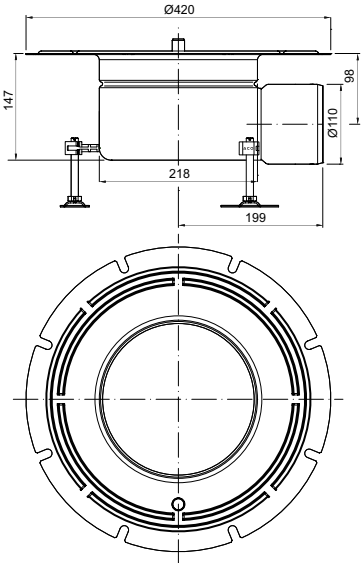
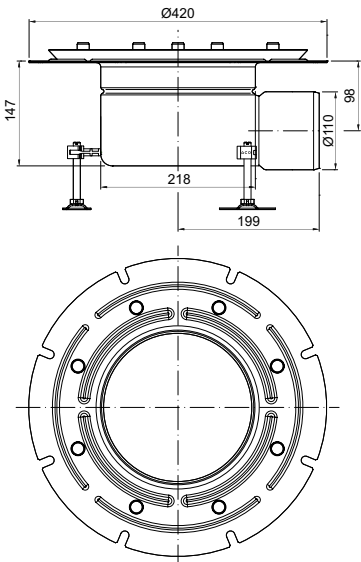
Telescopic solution enables height and rotational adjustment of connected gully top or channel. Gullies are equipped with flanges for connection of waterproof membrane.

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Suitable for all floor types including vinyl flooring
- Fully removable and easily cleanable stainless steel Foul Air Trap (FAT)
- Outlet diameter 110mm or 160mm O.D.
- Gully body with location flange or integrated membrane flange for either adhesive bonding or mechanical clamp
- Telescopic friction ring included



Order information

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Location flange	110	408085	408185

	Type of flange	Outlet diameter Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Adhesive bonding flange	110	408087	408187
	Mechanical clamping flange	110	408089	408189

Gully Top – Telescopic FHD

Product information

Gully top can be combined with telescopic gully. Different gully top type is available depending on floor finish.

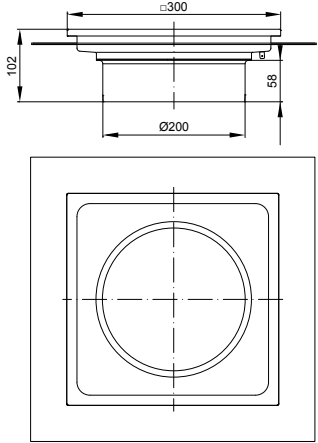
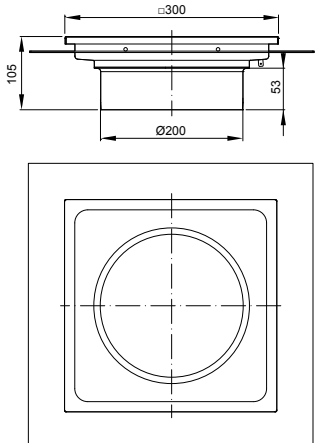
- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Gully top frame size: 300 x 300mm
- Wide range of gratings for load class L 15, R 50, M 125 or N 250 (BS EN 1253-1) including slip resistant solution



Order information

	Gully Top type	Gully Top size Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Standard edge	300 x 300	408228	408238
	Vinyl edge	Ø350	408242*	408252*

* Hygienic design following EN 1672, EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applied.

	Gully Top type	Gully Top size Ø [mm]	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Extended edge	300 x 300	408243	408253
	Extended edge with drainage holes	300 x 300	408247	408257

Raising Piece – Telescopic FHD

Product information

Raising piece can be used for floor structures where multi waterproofing is needed (heat insulation) or where construction height of the slab needs to be increased.

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Tested and certified according to EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Suitable for all floor types including vinyl flooring
- Variety of flanges for membranes
- Telescopic friction ring included



Order information

	Type of flange	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
	Location flange	408209	408219
	Adhesive bonding flange	408226	408236
	Mechanical clamping flange	408227	408237

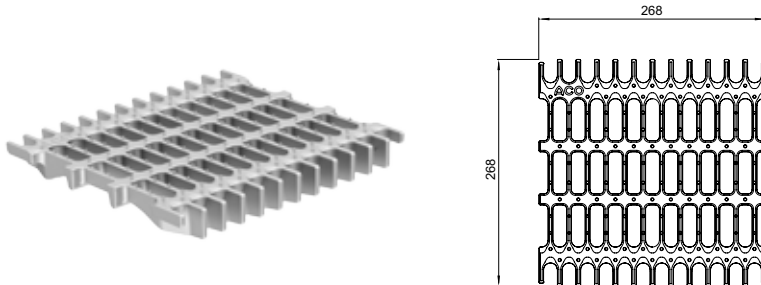
Gratings for Gully Top 300 x 300mm

Product information

A variety of grate types are available depending on application and required load class. For applications with high hygienic requirements, either ladder grating options or cast grate should be selected.

- Hygienic design following BS EN 1672, BS EN ISO 14159 and EHEDG document No. 8, 13 and 44
- Fits to stainless steel gully, fully compliant to BS EN 1253-1
- Available in 304 or 316 grades of stainless steel
- Gully top frame size: 300 x 300mm
- Range of gratings suitable to load class L 15, R 50, M 125 or N 250 (BS EN 1253-1)
- Slip resistant solution available

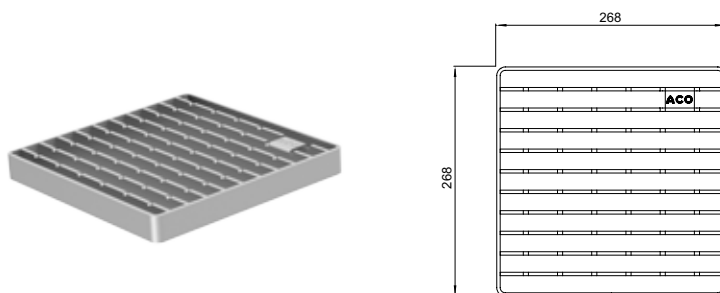
ACO Hygienic Cast Grating **FHD**



Load class	Slip resistant	Stainless Steel 304 Part No.
M 125	Yes	416944

Note: Surface electropolished

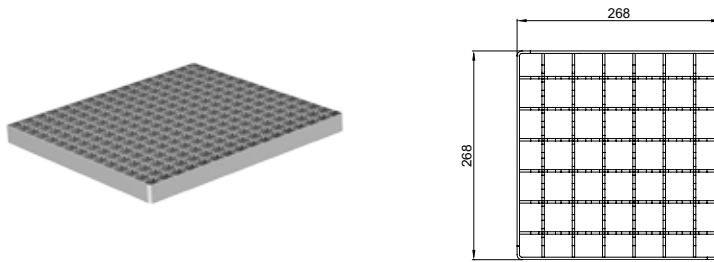
ACO Hygienic Ladder Grating **FHD**



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
R 50	Yes	416916	416917
N 250	No	408045	408145

Note: Surface electropolished

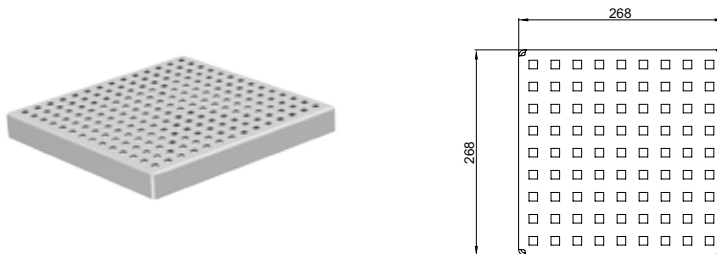
ACO Mesh Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	Yes	408034	408134
	No	408035*	408135*

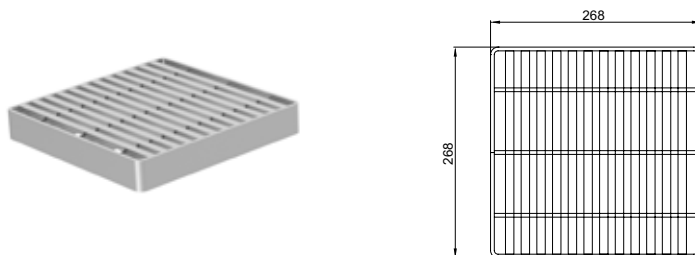
Note: Surface electropolished

ACO Quadrato Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	No	408036*	408136*

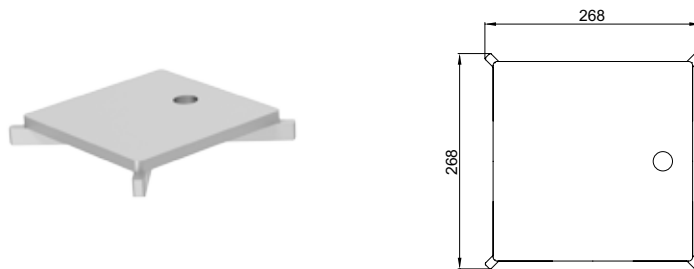
ACO Heelsafe Grating



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	No	408040*	408140*

* Hygienic design following EN 1672, EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applicable.

ACO Slot Cover

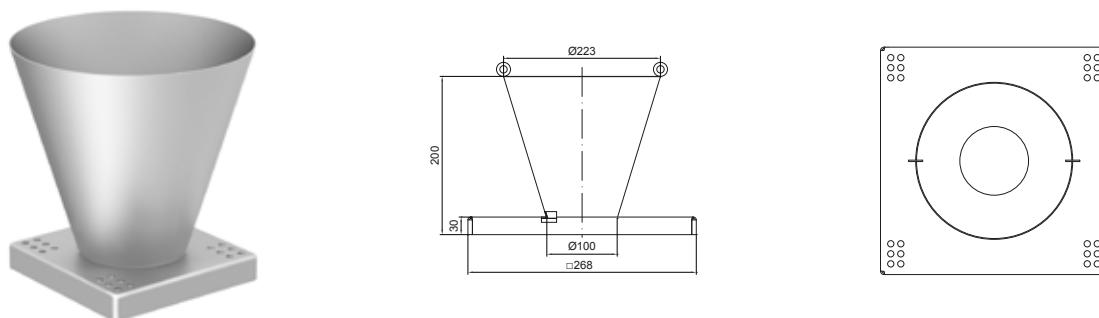


Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
M 125	No	408039*	408139*

ACO Odour Proof Cover

For ACO odour proof cover, please contact our Sales/Technical department on 01462 851400 or e-mail abdtechnical@aco.co.uk

ACO Tundish for Gully Top



Description	Stainless Steel 304 Part No.
ACO tundish for gully top 300 x 300	413547

* Hygienic design following EN 1672, EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applied.

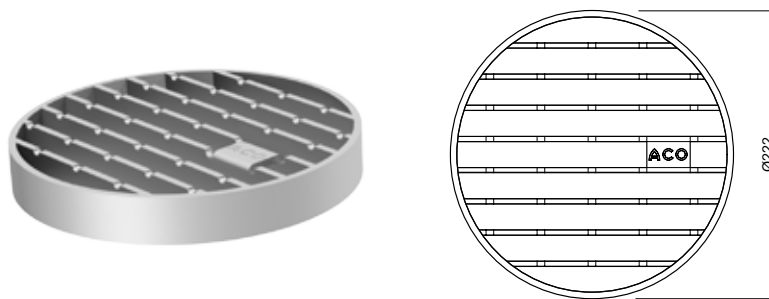
Gratings for Vinyl Top Ø222 FHD

Product information

A variety of grating types are available depending on application and required load class. For applications with high hygienic requirements, either ladder grate or cast grating options should be selected.

- Hygienic design
- Fits to stainless steel gully, fully compliant to BS EN 1253-1
- Stainless steel construction for durability and long life
- Available in 304 or 316 grades of stainless steel
- Range of gratings suitable to load class L 15 (BS EN 1253-1)
- Slip resistant solution available

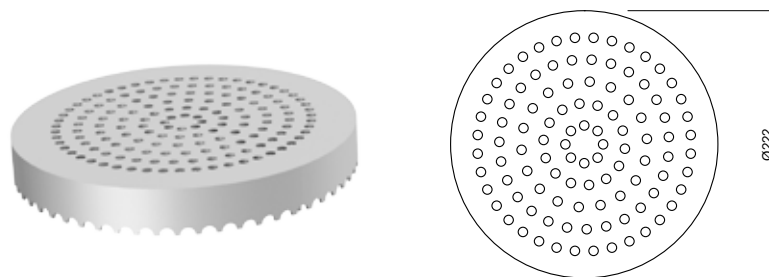
ACO Ladder Grating FHD



Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	Yes	97148	97388

Note: Surface electropolished

ACO Perforated Grating FHD



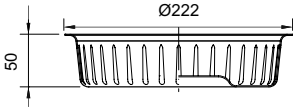
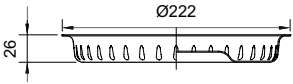
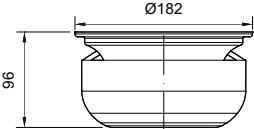
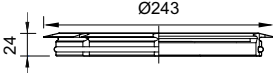
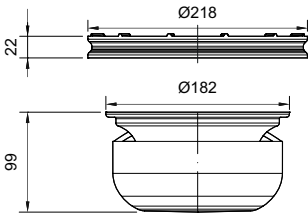
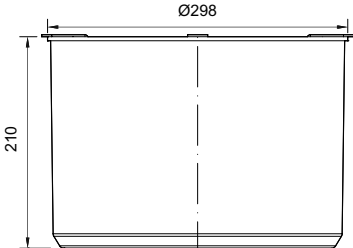
Load class	Slip resistant	Stainless Steel 304 Part No.	Stainless Steel 316 Part No.
L 15	No	97153*	97390*

* Hygienic design following EN 1672, EN ISO 14159 and EHEDG document No. 8, 13 and 44 not applicable.

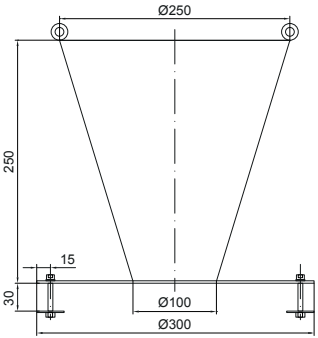
ACO odour proof cover

For ACO odour proof cover, please contact our Sales/Technical department on 01462 851400 or e-mail abdtechnical@aco.co.uk

Accessories for ACO Hygienic Gully 218

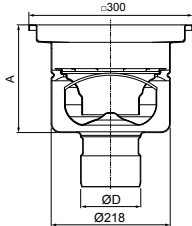
	Description	Used with	Material	Part No.
	Silt basket ■ Stainless steel ■ 1,4 litre capacity	■ ACO Hygienic Gully 218 - Vertical ☐ Fixed height or Telescopic	304	416908
			316	416909
	Silt basket ■ Stainless steel ■ 0,7 litre capacity	■ ACO Hygienic Gully 218 - Horizontal ☐ Fixed height or Telescopic	304	416910
			316	416911
	Hygienic Foul Air Trap ■ Stainless steel ■ Water seal 50mm	■ ACO Hygienic Gully 218 ☐ Fixed height ☐ Telescopic	304	408220
			316	408230
	Friction ring ■ NBR (Acryl nitrile-butadiene)	■ ACO Hygienic Gully 218 ☐ Telescopic	NBR	408225
	Standard Foul Air Trap support ■ NBR (Acryl nitrile-butadiene)	■ ACO Hygienic Gully 218 ☐ Fixed height ☐ Telescopic	NBR	408221
	ACO fire resistant kit for gully 218/110mm ☐ Fixed Height, vertical ☐ Telescopic, vertical	■ ACO Hygienic Gully 218 ☐ Fixed Height, vertical ☐ Telescopic, vertical		416934
		ACO fire resistant kit for gully 218/160mm ☐ Fixed Height, vertical ☐ Telescopic, vertical	■ ACO Hygienic Gully 218 ☐ Fixed Height, vertical ☐ Telescopic, vertical	416935

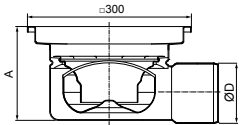
ACO Tundish Removable

		Description	Material	Part No.
		ACO tundish removable ■ Stainless steel	304	415821

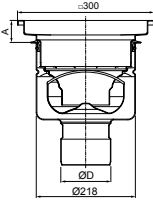
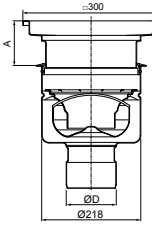
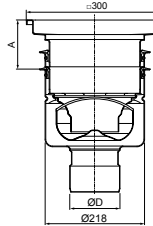
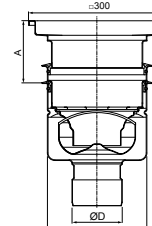
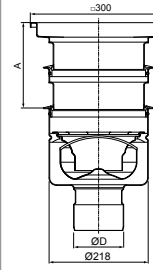
Flow Rates and Construction Heights - Gully 218

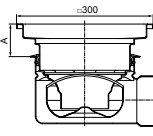
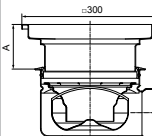
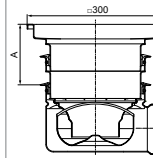
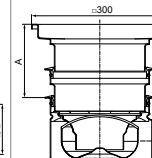
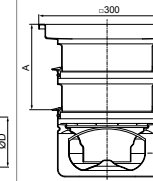
ACO Hygienic Gully 218 – fixed height

		
Outlet diameter	Outlet position	Flow rate [l/s]
ØD	Vertical	A = 200 [mm]
110		5.0
160		5.0

		
Outlet diameter	Outlet position	Flow rate [l/s]
ØD	Horizontal	A = 177 [mm]
110		4.4

ACO Hygienic Gully 218 – telescopic

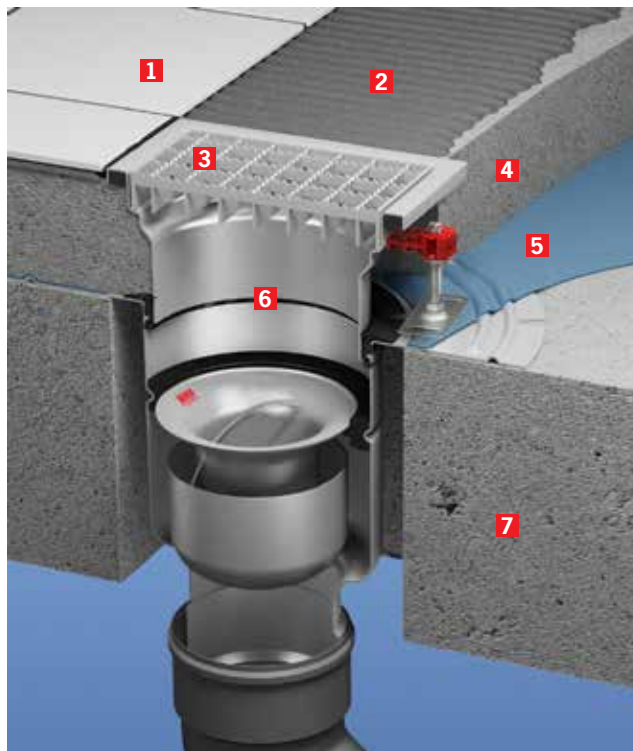
						
Outlet diameter	Outlet position	Flow rate [l/s]				
ØD	Vertical	A = 65 [mm]	A = 91 [mm]	A = 125 [mm]	A = 153 [mm]	A = 180 [mm]
110		5.0	5.5	5.6	5.8	6.2
160		5.0	5.5	5.6	5.8	6.2

						
Outlet diameter	Outlet position	Flow rate [l/s]				
ØD	Horizontal	A = 72 [mm]	A = 98 [mm]	A = 132 [mm]	A = 156 [mm]	A = 187 [mm]
110		4.4	4.6	4.8	4.9	5.4

ACO Hygienic Gully

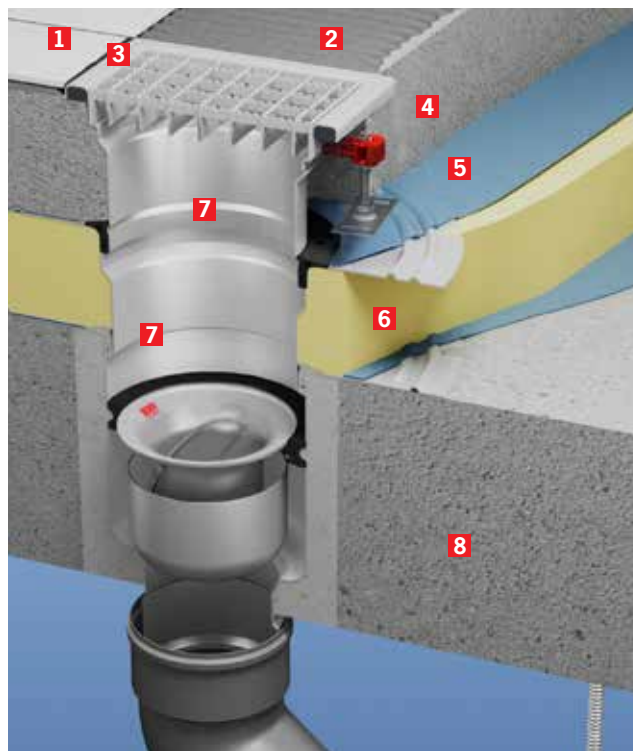
ACO Hygienic Gully – telescopic flanged gully installed in suspended concrete slab construction

- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Floor screed
- 5** Water proof membrane (WPM)
- 6** Gully
- 7** Suspended concrete slab core-boarded to accept gully body



ACO Hygienic Gully – telescopic flanged gully and raising flanged piece installed in suspended concrete slab construction

- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Floor screed
- 5** Water proof membrane (WPM)
- 6** Insulation
- 7** Double flange gully
- 8** Suspended concrete slab core-boarded to accept gully body



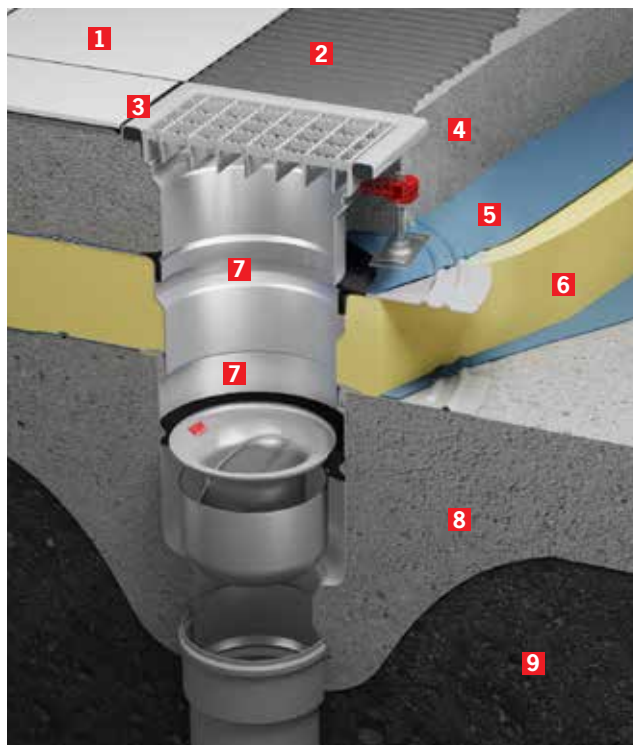
ACO Hygienic Gully – telescopic flanged gully installed in solid concrete floor

- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Floor screed
- 5** Water proof membrane (WPM)
- 6** Flange gully
- 7** Solid concrete floor slab
- 8** Compacted soil



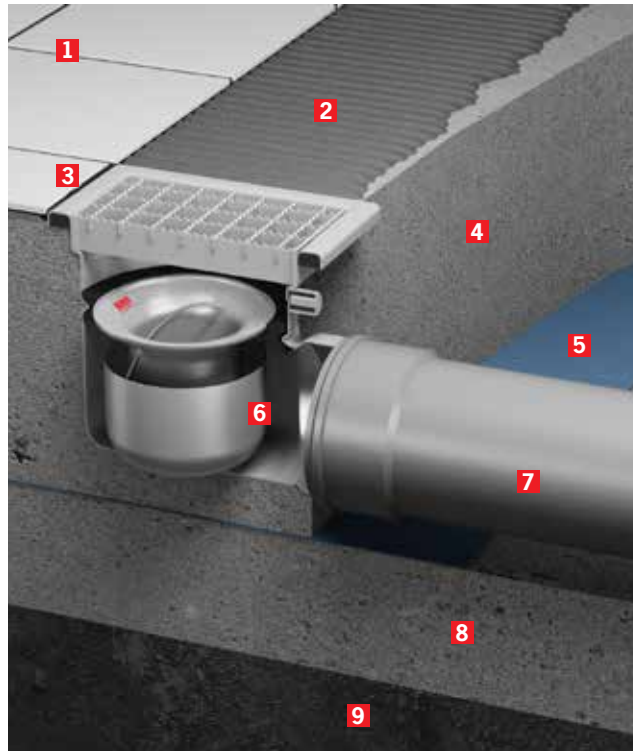
ACO Hygienic Gully – telescopic flanged gully and raising piece installed in solid concrete floor

- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Floor screed
- 5** Water proof membrane (WPM)
- 6** Insulation
- 7** Double flange gully
- 8** Solid concrete floor slab
- 9** Compacted soil



ACO Hygienic Gully – fixed height gully installed in solid concrete floor

- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Floor screed
- 5** Damp proof membrane (DPM)
- 6** Gully
- 7** Outlet pipe
- 8** Floor slab
- 9** Compacted soil



Transport & handling information

ACO Gully

- ACO gullies are packed on framed pallets, protected by cardboard inserts and PE foil. Individual products are packed in protective plastic net.
- Outlet pipes are equipped with protective lids.
- Gully tops and flanges are covered with protective blisters, which also protect the inside areas during installation. Individual products are packed in plastic protective net.
- Handle the gully/ gully parts with care. Any rough handling can cause deformation and potentially cause product malfunctions.
- Contact with carbon steel may cause stainless steel corrosion.

ACO Tray Channel

- Also for Hygienic Channels.
- Products are protected by wooden inserts and frames, in some cases PE foil or bubble foil is used.
- Articles are either wrapped separately in ACO paper box or placed loose within EUR pallet space. It is strongly recommended that channels / components / accessories are transported in their original packaging to avoid damage and / or loss of parts.
- Store preferably on dry and flat surface and ferrous particulate containing.
- Handle the channels / components / accessories with care. Careful truck un/loading procedures are crucial. Any rough handling can cause deformation and potentially cause product malfunction.
- Contact with carbon steel may cause stainless steel corrosion.

ACO grating

- Standard grating length for ACO Hygienic Tray Channel is 500mm.
- ACO gratings are packed on framed pallets protected by cardboard inserts and PE foil.
- Articles are either wrapped separately in ACO paper box or placed loose within EUR pallet space.
- It is strongly recommended to transport gratings in their original packaging to avoid damage. Store preferably on a dry and flat surface.
- Handle the gratings with care.
- Any rough handling can cause deformation and potentially cause product malfunctions.
- Contact with carbon steel may cause stainless steel corrosion.

Introduction

Drainage is a critical component affecting the hygienic performance of commercial food preparation business. Effective drainage helps to mitigate hazards from the external environment and is central to the safe and hygienic operation internally. Within the food production facility, surface liquids represent 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 an accidental spillage. Quite often the liquids contains other components – like organic matter. Floor drainage components cater for these situations through three core functions - interception, conveyance of fluids, and ability to act as a barrier.

Effective cleaning of drainage in commercial food preparation business reduces the risk of contamination and spoiling of food during preparation, processing, and storage. The main objective of cleaning is to remove soil and thereby reducing the number of microorganisms. A further reduction of microorganisms can be obtained by adding a disinfection step in the cleaning process.

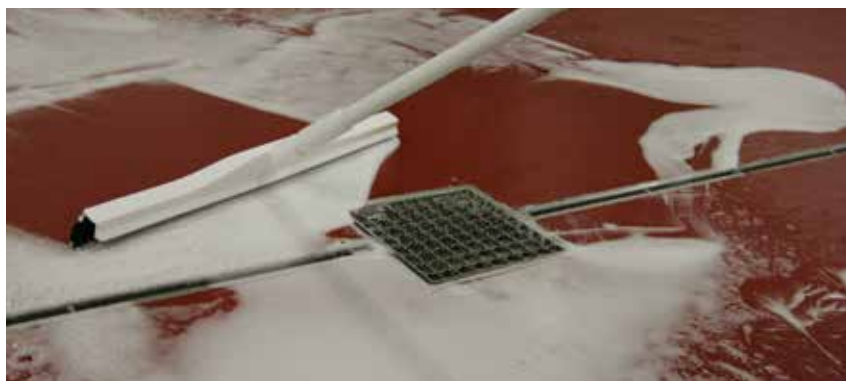
Principles of Cleaning

Drainage is a critical component affecting the hygienic performance of commercial food preparation business. Effective drainage helps to mitigate hazards from the external environment and is central to the safe and hygienic operation internally. Within the food production facility, surface liquids represent 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 an accidental spillage. Quite often the liquids contains other components – like organic matter. Floor drainage components cater for these situations through three core functions - interception, conveyance of fluids, and ability to act as a barrier.

Cleaning methods

There are different levels of cleaning resulting in different levels of hygiene:

- Cleaning
- Sanitising
- Disinfecting
- Sterilising



Cleaning refers to the mechanical removal of visible surface soils either dry (sweeping, brushing, wiping, hovering, etc.) or with soap, water and detergents. Cleaning removes the soil and reduces the microbial population, it will not kill pathogens. Cleaning should be used where the likelihood of pathogens transfer from the surface is low, such as floors, windows, etc. Use the right tools and cleaning method to prevent micro-organisms to become airborne.

Both **sanitising** and disinfecting are cleaning methods using chemicals. Sanitising reduces the number of microorganisms to a safe level without affecting either the food quality of the product or its safety. Sanitisers are meant to remain on the surface for a short period (approx. 30s, but please follow manufacturer's instructions) before being removed. Sanitisers are often combined with detergents.

Disinfection must destroy or irreversibly inactivate all specified organisms within a certain time, usually 10 min (see manufacturer's instructions). Some chemicals may function as both sanitisers and disinfectants; the difference is the concentration of the chemical in the solution.

Many sanitisers and disinfectants don't stand up well against dirt, so cleaning is an important first step.

Sterilising destroys all forms of microbial life and is used mainly in the healthcare and laboratory settings.

In the food industry and commercial kitchens there are 2 types of surfaces:

Product contact surface

All equipment that intentionally or unintentionally (e.g. due to splashing) comes in contact with final food product.

Non product contact surface

All other exposed surfaces, including surfaces associated with equipment, but also surfaces related to the manufacturing environment, such as floors, walls and drain channels.

Cleaning drains

The effective cleaning of drains depends on:

- Soil type and properties
- Material, design and surfaces
- Water quality
- Cleaning chemicals
- Cleaning procedure
- Cleaning parameters, temperature, time, flow velocity and concentration of detergent or chemicals.

Drains in the food industry are mostly made from stainless steel as it is considered a hygienic material, because it is easy to clean. ACO drainage products are designed for easy access and effective cleaning. Drains are primarily a low risk, non-food product contact surface area that is in contact with effluent which can contain microorganisms from the food processing operation. Sanitising is normally enough for a clean and hygienic drain, but when the biofilms are build-up in the drain they need to be disinfected.

Although stainless steels have a high chemical resistance please ensure that chemicals used don't adversely affect its properties. ACO have many years of experience in this area and can advise on any chemical you plan to use for sanitising or disinfecting.

The next pages explain how to sanitise and disinfect the drain, plus a guidance on a cleaning procedure.

Cleaning Chemicals

There are four main classes of cleaning compounds:

- detergents
- alkalies
- acids
- disinfectants/sanitisers

Detergents

This broad group of chemicals is widely used in households and in food industries brings different type of soil from surfaces into cleaning foams and emulsions that could be easily rinsed off.

Alkalies

Alkaline compounds are effective for dissolution of proteins and removal of fats. Examples of alkalies are sodium hydroxide (caustic soda) and potassium hydroxide. These compounds are hazardous to personnel and mostly used in CIP – an automatic dosing system is recommended.

Acids

Acids, both organic and inorganic, are commonly used for removal of mineral deposits such as hard water scale. Acids are potentially corrosive to construction materials and must be used with care.

When chemical cleaning is performed, it is necessary to use low-pressure sprays, foam or gel. Foam and gel are more viscous than sprayed agents and preferred as they are not prone to aerosol formation. Selection of the correct detergent for given application should be always carried out in co-operation with the detergent manufacturer.

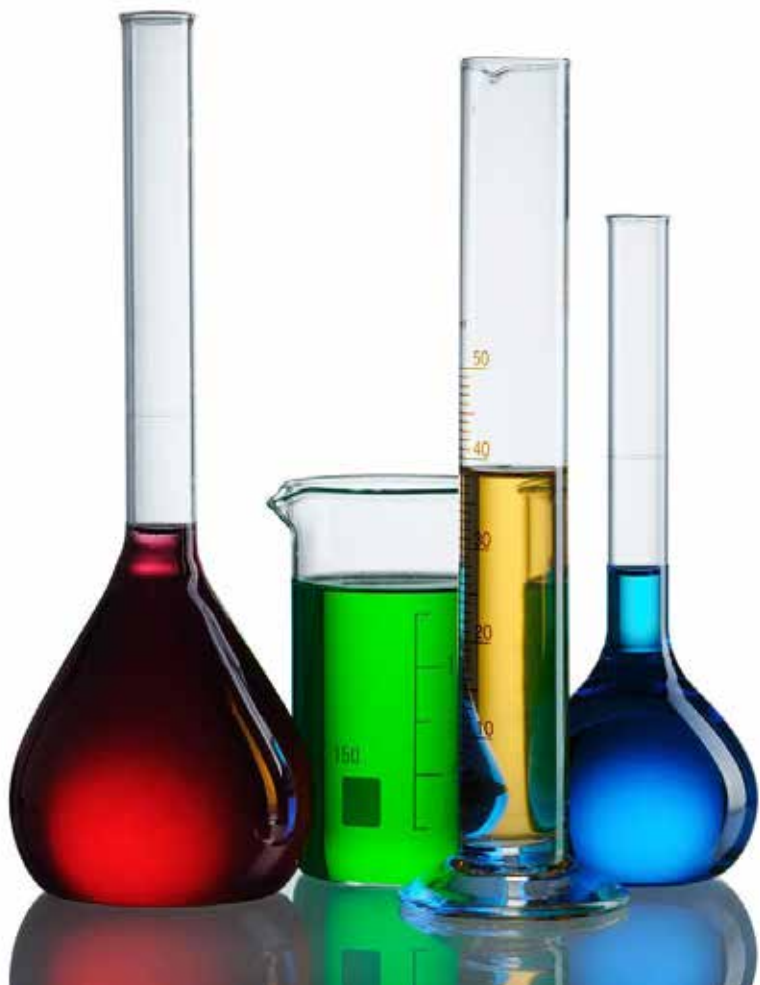
Disinfectants/sanitisers

In case of high risk areas or production areas with microbiological sensitive products, the floors and drain systems should be sprayed with disinfectants/sanitisers, which will reduce the contamination risk even more. The disinfectants/sanitisers will kill remaining micro-organisms, compliant to the required specifications.

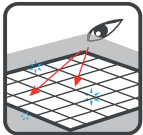
The plant downtime and labour associated with cleaning is major cost of any food processing operation.

Sources of soil

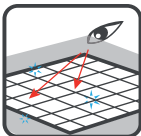
Primary source of soil is from processed food product itself. Microbiological biofilms mainly contribute to the soil build-ups on drainage surfaces. These films vary in their solubility depending upon such factors as heat, age, humidity, time, etc. It is essential that personnel involved in the development and cleaning process design have understanding of the nature of the soil to be removed before selecting a detergent and cleaning method. The rule of thumb is that acid cleaners dissolve alkaline soils (minerals), and detergents dissolve acid soils and food wastes (proteins).



Manual Cleaning of Drainage

- 1**  Remove all present foodstuffs, raw materials, wrapping materials and tools.
- 2**  Cover all equipment that could be contaminated.
- 3**  Remove excess dirt from floor and gratings, and place into designated container.
- 4**  Remove gratings.
- 5**  Remove and empty silt basket and Foul Air Trap.
- 6**  Place collected waste and dirt into designated container. Rinse grating, silt basket and Foul Air Trap with clean water. Then place Foul Air Trap into its original position. Rinse the Foul Air Trap with clean water.
- 7**  Wash all surfaces with designated detergent and designated hand brush.
- 8**  Rinse all surfaces with clean water.
- 9**  Visually check surface cleanliness - repeat cleaning process if necessary.
- 10**  Place silt basket and grating to its original position.
- 11**  Rinse the entire equipment with clean water.

Chemical Cleaning of Drainage

- 1**  Remove excess dirt from floor and gratings; and place into designated container.
- 2**  Cover all equipment that could be contaminated.
- 3**  Remove excess dirt from floor and gratings; and place into designated container.
- 4**  Remove gratings.
- 5**  Remove and empty silt basket and Foul Air Trap.
- 6**  Place collected waste and dirt into designated container. Rinse grating, silt basket and Foul Air Trap with clean water. Then place Foul Air Trap into its original position. Rinse the Foul Air Trap with clean water.
- 7**  Apply foam to all surfaces.
- 8**  Leave foam for 15 minutes.
- 9**  Rinse off foam with clean water.
- 10**  Visually check surface cleanliness - repeat cleaning process if necessary.
- 11**  Place silt basket and grating to its original position.
- 12**  Rinse the entire equipment with clean water.

Overview with Recommended Cleaning Procedures for Drainage

These instructions are for guidance only. **Always follow manufacturer's instructions.**
All procedures have to be verified and adjusted to the application specifics.

Frequency	Procedure	Physical agents	Chemical agents	Examples of chemical cleaning agents suitable for ACO stainless steel drainage
Daily	Removal of organic deposits (fats, proteins, saccharides and polysaccharides)	▪ Steam ▪ Medium pressure water to max 25 bar ▪ Mechanical / kinetic energy (brushes, CIP medium velocity)	▪ Caustics (sodium hydroxide, potassium hydroxide) ▪ Detergents / surfactants	Standard chemical agents used for floor cleaning should be sufficient (should be validated) Oxofoam, Endorochlor (Diversey)
Weekly	Removal of inorganic deposits that could promote very resistant biofilms	Mechanical abrasive methods – polishing	▪ Nitric acid for stainless steel passivation where chlorine attack could be expected ▪ Inorganic acids (phosphoric acid) ▪ Weak organic acids	▪ Acifoam (Diversey) ▪ Acigel (Diversey) ▪ Super Dilac (Diversey)
Note	Removal of rinse water residues	Removal of excess water with a squeegee	Alcohols (isopropylalcohol, ethanol)	Chlorine tablets (Suma Tab D4 by Diversey) are often added to the water in foul trap in microbial sensitive production areas

Any cleaning procedures, including those recommended by equipment suppliers, must be properly validated on equipment and its surroundings to prevent long-term damage or contamination.

Always follow manufacturer's instructions to avoid damage to the equipment.

ACO Technologies plc

- ACO Building Drainage
- ACO Water Management
Civils + Infrastructure
Urban + Landscape
- ACO Sport
- ACO Wildlife

ACO Building Drainage

A division of ACO Technologies plc
ACO Business Centre
Caxton Road
Bedford
Bedfordshire
MK41 0LF
Tel: 01462 810400
Fax: 01462 851490

e-mail: abdinfo@aco.co.uk
www.acobd.co.uk

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