



Product catalogue

ACO Stainless Steel Gully Systems

- Handbook for Specifiers, Installers and Contractors

ACO Building Drainage

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

ACO Building Drainage is a new concept within the ACO Group. Our mission: to eliminate design risk, to reduce installed and life cost and to deliver exceptional finish and performance in every product application.

We achieve this through three factors:

- High performance materials
- Design experience and project support
- Global manufacturing capacity

Our global resources and fabrication 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's extensive portfolio includes:

- Stainless steel gullies
- Standard stainless steel and galvanised steel channels
- Bespoke channel drainage systems
- Stainless steel socketed pipe system
- Roof/Balcony drainage systems
- Stainless steel and aluminium access covers
- Anti-flood backflow protection systems
- Wetroom and shower drainage
- Grease Management systems

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 3500 people are employed in 40 countries throughout the world.

Tel: 01462 816666

Fax: 01462 851490

e-mail Enquiries: buildingdrainage@aco.co.uk

website: www.acobuildingdrainage.co.uk



Contents

General introduction	
ACO Building Drainage gullies	4
Load class	6
Standards and accreditations	7
Fixed height and telescopic gullies by family range 157 (EG200 & EG250), 218 (EG300), 357 (EG400)	
Systems overview	8
Characteristics and benefits	11
Gully guide	14
Technical data and order information	17
Installation guide	33
EG150 Eurogullies	
System overview	36
Characteristics and benefits	37
Technical data and order information	38
Installation guide	42
Rodding eyes	
System overview	43
Characteristics and benefits	43
Technical data and order information	44
Installation guide	45
Micro floor gullies	
System overview	46
Characteristics and benefits	46
Technical data and order information	47
Installation guide	47
Bespoke gullies	
Tundish gullies	48
Care and maintenance	
Factors affecting maintenance	49
Maintenance programme	49
Cleaning methods	50
Precautions	50
Conclusion	50
Stainless steel	
Stainless steel families and corrosion resistance	51
Stainless steel finishing processes	53
Material resistance chart	54

ACO Building Drainage gullies

ACO Building Drainage gullies represent the accumulation of many years practical experience and design know-how in stainless steel fabrication technologies.

All the systems featured here are manufactured in austenitic stainless steel grades 304 or 316 and are fully pickle passivated in order to ensure corrosion free product. Their design includes smooth bowl shaped structures to minimise possible siltation, and all include an integral foul air trap.

The five systems present the designer and installer with literally hundreds of 'off the shelf' product combinations to meet nearly every conceivable need or application. However should our range not meet your requirements we have a considerable capacity for bespoke design and manufacture: tundishes, extra inlets, extended bodies or spigots and non-standard outlet sizes can all be accommodated, but please allow extra lead time.

The gully systems fall into five main categories:

- Fixed Height and Telescopic gully systems
- EG150 Eurogully systems
- Rodding eyes
- Micro Floor gullies
- Bespoke gullies

Each have particular benefits which are summarised briefly here with in depth description and full feature and benefit listings in their relevant sections.



Fixed Height and Telescopic gully systems - Page 8

Typical applications:

- Kitchens
- Food processing factories
- Brewing, bottling and canning plants
- Chilled warehouses
- Laboratories
- Chemical and pharmaceutical industries
- Leisure industries
- Human and animal healthcare



Key features:

- Hygienic design including large radii formed contours, deep-drawn components and minimal welds to minimise crevices and bacteria traps according to BS EN 1672 and BS EN ISO 14159
- Stainless steel gully fully compliant to BS EN 1253
- Available in 304 or 316 grades of stainless steel
- Dry sump design ensures no standing waste water in gully base
- Fully removable and easily cleaned stainless steel foul air trap (FAT)
- Removable hygienic and corrosion resistant Nitrile FAT support
- Wide range of gratings to Load Class L15 – M125 (BS EN 1253) or C250 (BS EN 124)

ACO Building Drainage gullies



EG150 Eurogully range - Page 36

Typical applications:

- Pedestrian areas
- Light industrial use
- Shower areas
- Washdowns

Key features:

- Versatility
- Horizontal or vertical spigot outlet
- Available in 304 and 316 grades of stainless steel
- Designed for cementitious and resin screed, ceramic tile and vinyl sheet floor
- Damp proof membrane bonding flange available
- Up to three back inlets



Rodding Eyes - Page 43

Typical applications:

- Kitchens
- Brewing, bottling and canning plants
- Commercial applications
- Healthcare
- Hospitals
- Chemical plants
- Washrooms
- Retail

Key features:

- Double sealed rodding point with solid cover Class K3 to BS EN 1253
- Mainly for light duty applications
- Stainless steel grade 304 pickle passivated with EPDM double seal
- Vertical Ø110mm spigot outlet



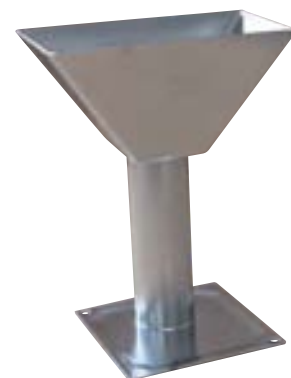
Micro Floor gully - Page 46

Typical applications:

- Washrooms
- Toilet areas
- Plant rooms

Key features:

- Shallow light duty gully ideal for construction with depth restrictions
- 40mm OD outlet
- Easy maintenance
- Rodding access and foul air trap as standard



Bespoke gullies - Page 48

- ACO Building Drainage offer design and manufacture capabilities to accommodate any requests
- Dedicated in-house engineers who provide initial guidance through to technical drawings

Load class

ACO Building Drainage consciously decided to develop the ACO Stainless Steel Gully system to conform to appropriate European standards in order to provide the specifier with confidence to specify products that will offer known reliable performance criteria.

The gully system has been tested in accordance with BS EN 1253 and BS EN 124.



Application Icon	BS EN 124 (Manhole & Gully Tops)	BS EN 1253 (Gullies for Buildings)	Slow Moving Wheel Load (Tonnes)	
			Pneumatic Tyres	Solid Tyres
	-	H1.5	Non-load bearing	Non-load bearing
	A15	K3	0.5	N/A
	-	L15	1.5	N/A
	-		2.5	0.5
	B125	M125	5.0	0.75
	C250		6.5	1.0
	D400		11.0	3.0
	E600		16.0	5.0

Standards and accreditations

Hygienic standards

In order to maintain a clean and sustainable hygienic environment, it is essential that drainage elements should be designed and manufactured to rigorous standards to ensure bacteria and pathogen traps are minimised.

All ACO gullies are designed for optimum hygiene performance taking into account guidelines described in BS EN 1672 and BS EN ISO 14159 to minimise hygiene risk.

Slip resistance

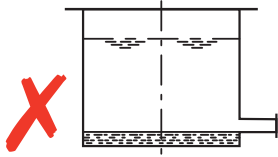
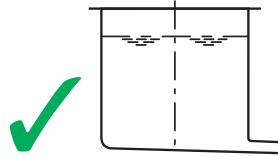
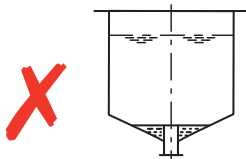
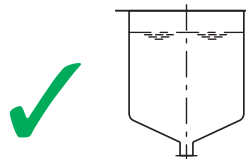
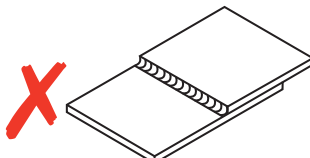
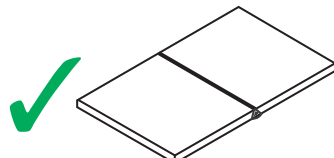
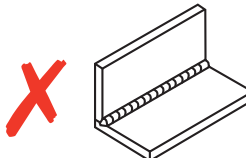
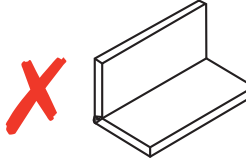
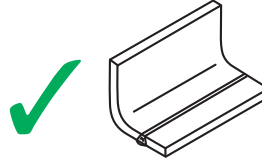
The consequences of slips in food processing and kitchen areas can be very serious as accidents can easily occur involving high temperature foodstuffs and cooking surfaces. For applications where the potential for slipping is increased, enhanced slip resistant gratings should be considered. For this reason the ACO gully portfolio includes a range of slip resistant gratings.

Certification

ACO stainless steel gullies are manufactured and tested in accordance with BS EN 1253 – Gullies in buildings.

NBS specification

The ACO gully range should be specified in section R11:315. Assistance in completing this clause can be found in the ACO Building Drainage entry in NBS Plus, on our website www.acobuildingdrainage.co.uk/about-us/nbs-plus-product-specifications.aspx or please contact our Design Services Team on 01462 816666.

Hygiene risk according to BS EN 1672 and BS EN ISO 14159	Acceptable according to BS EN 1672 and BS EN ISO 14159
 Not drainable design	 Drainable design
 Not drainable design	 Drainable design
 Continuously welded lap joint	 Continuously welded butt
 Welded in corners	 Round internal corner
 Welded in corners	 Welded in smooth area

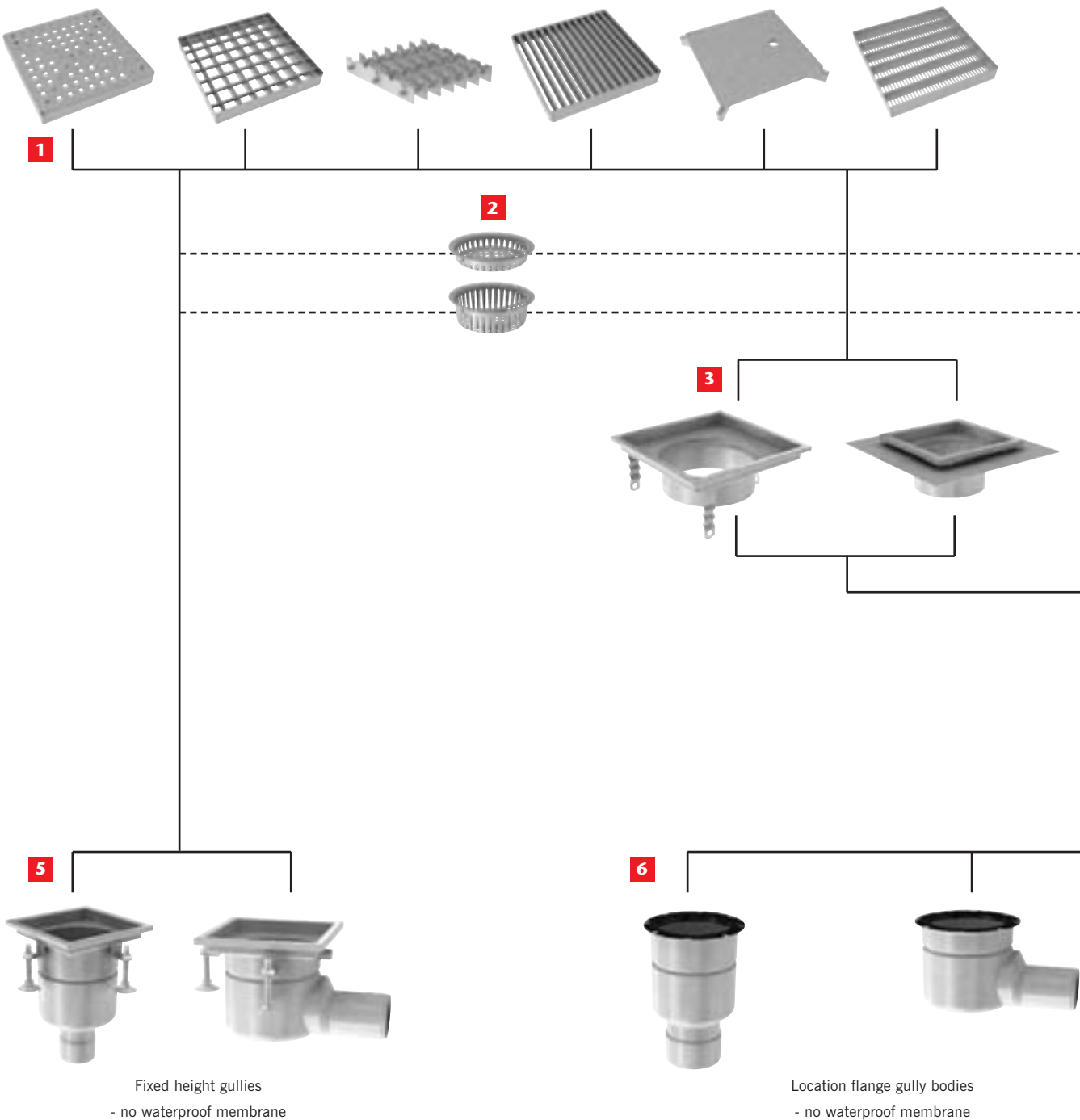
System overview - 157 (EG200 & EG250) and 218 (EG300) fixed height and telescopic

ACO Building Drainage gully ranges 157 and 218 are further developments of our highly successful current ranges EG200/EG250 and EG300.

ACO stainless steel gullies are designed to be used in commercial applications where hygiene, durability and performance requirements are paramount. ACO gullies are

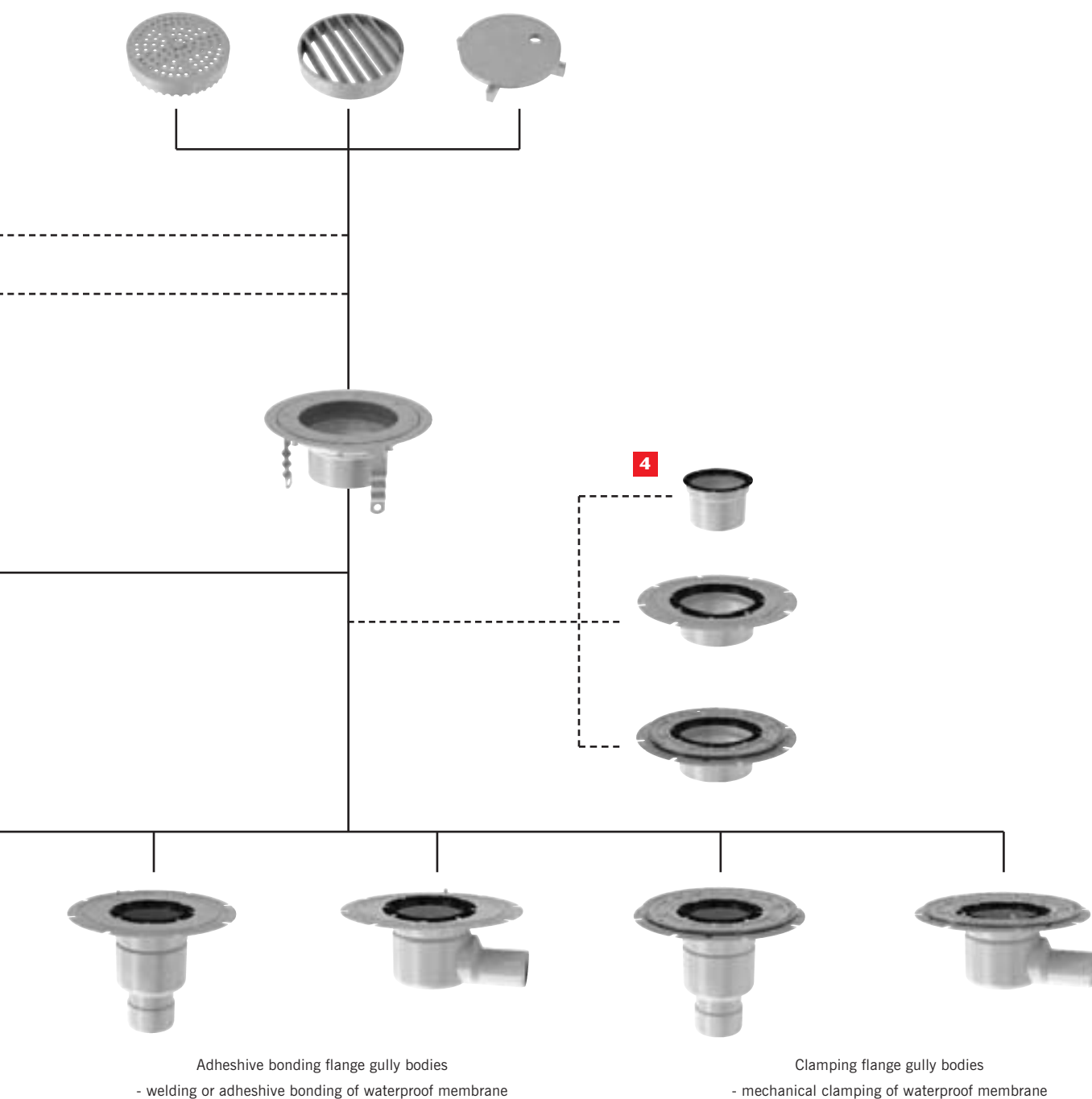
available in a number of versions featuring different flow rates, grating designs, sizes and spigot outlet diameters to suit various applications. The floor construction and depth, together with the use of any waterproofing membrane play an important role in the selection of the appropriate type of gully. ACO offers 4 generic gully configurations as shown below.

Fixed height gullies are convenient, free-standing units suitable for cementitious, resin or tiled floors. Telescopic gullies can be installed either with ACO gully tops or with ACO stainless steel linear drainage channels in most flooring constructions, including floors with waterproofing membranes. All ACO gullies are available with vertical or horizontal spigot outlets.

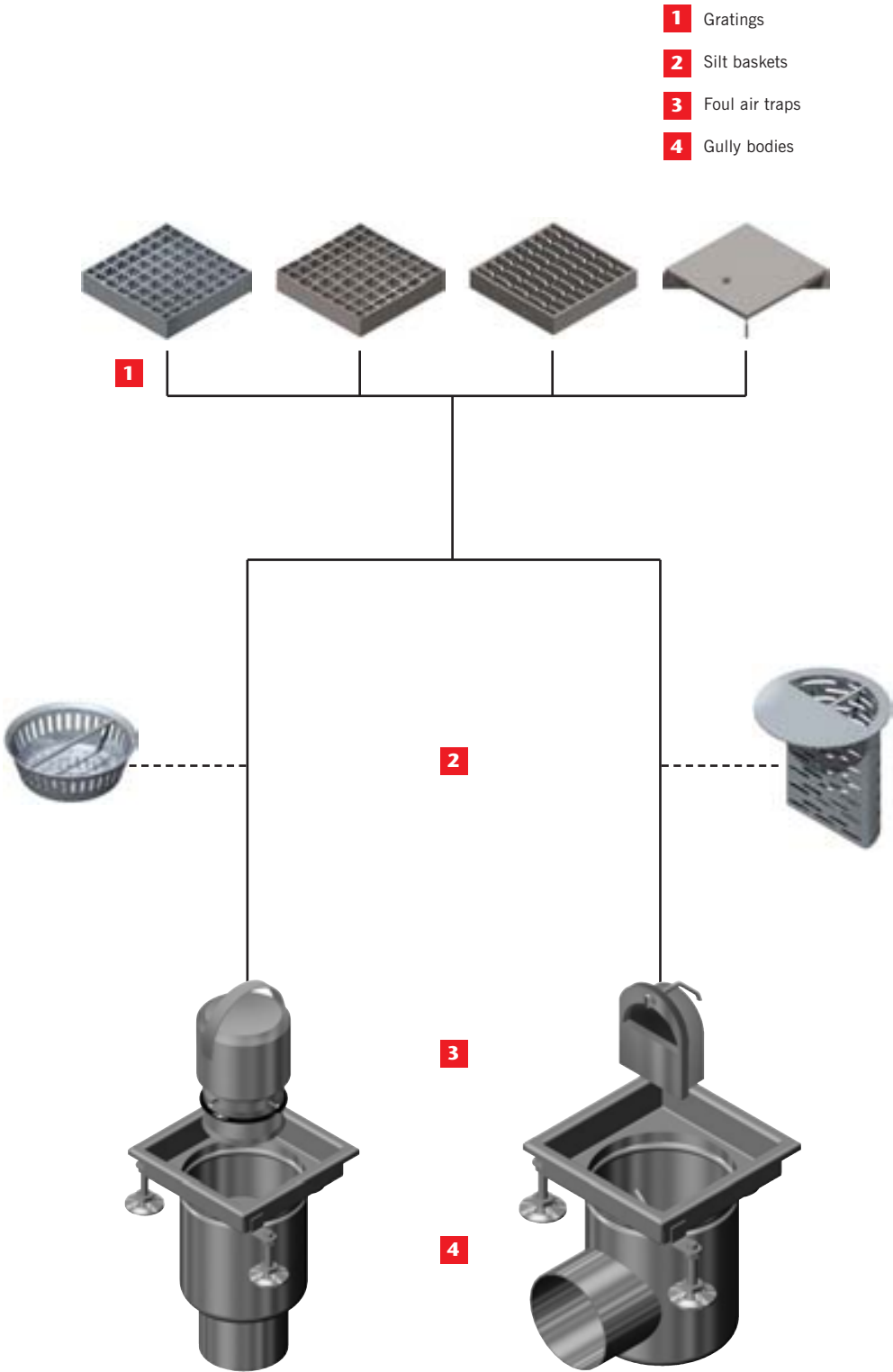


Fixed height and telescopic gullies by family range 157, 218 and 357

- 1** Gratings
- 2** Silt baskets
- 3** Gully tops
- 4** Raising pieces
- 5** Gully bodies for fixed height
- 6** Gully bodies for telescopic adjustable gullies

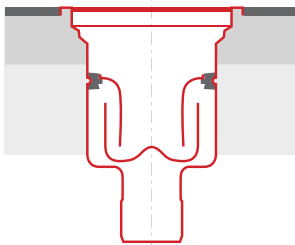


System overview - 357 (EG400) fixed height



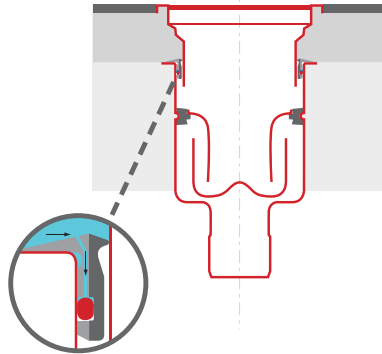
Characteristics and benefits

Fixed height gullies



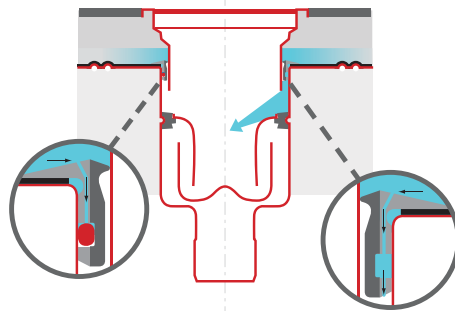
- Fixed gully height
- No waterproofing membrane connection
- No seepage drainage facility

Telescopic gullies



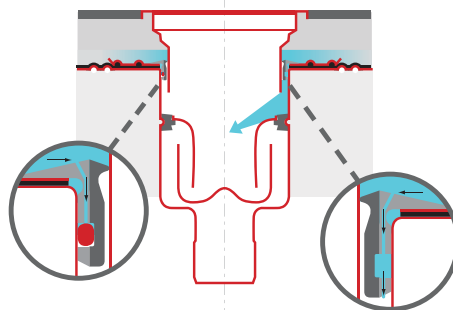
With location flange

- Friction lock height adjustment
- 360° rotatable top
- No waterproof membrane connection
- No seepage drainage



With adhesive bonding flange

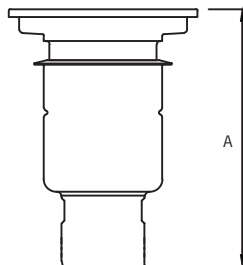
- Friction lock height adjustment
- 360° rotatable top
- Adhesive bonding flange for waterproofing layer
- Seepage drainage or sealed solution easily configured on installation



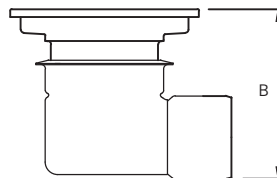
With mechanical clamping flange

- Friction lock height adjustment
- 360° rotatable top
- Mechanical clamping flange for waterproofing layer
- Seepage drainage or sealed solution easily configured on installation

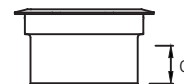
Invert heights and adjustment depths of telescopic gullies



Vertical outlet telescopic gully



Horizontal outlet telescopic gully



Raising piece

Gully 157

- A = 309mm to 359mm
- B = 216mm to 244mm
- C (Vertical gully) = 79mm adjustment
- C (Horizontal gully) = 56mm adjustment

Gully 218 (Ø110 outlet)

- A = 317mm to 367mm
- B = 223mm to 251mm
- C (Vertical gully) = 79mm adjustment
- C (Horizontal gully) = 56mm adjustment

Gully 218 (Ø160 outlet)

- A = 292mm to 342mm
- B = N/A
- C (Vertical gully) = 79mm adjustment
- C (Horizontal gully) = 56mm adjustment

Characteristics and benefits

Features and benefits

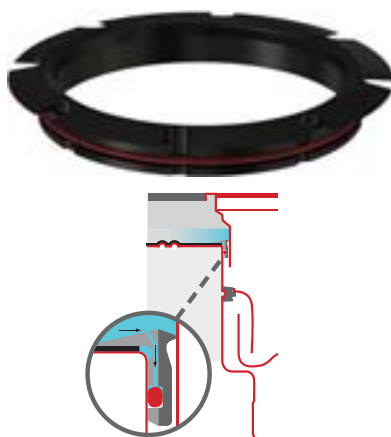
ACO gully features & benefits:

- 1** Edge in-fill significantly improves hygiene and durability
- 2** Large radii for easy cleaning
- 3** Deep-drawn body ensures smooth contours eliminating crevices
- 4** Friction ring reduces installation time
- 5** Friction ring easily convertible for membrane drainage
- 6** Foul air trap design minimises evaporation rate and aerosol mobility
- 7** Dry sump design, no water retention in sump
- 8** Gully flow rate and self-cleansing exceeds requirements of BS EN 1253
- 9** Fully removable foul air trap and support for easy cleaning
- 10** Deep-drawn stainless steel silt basket eliminates crevices



Friction ring*

Sealing function

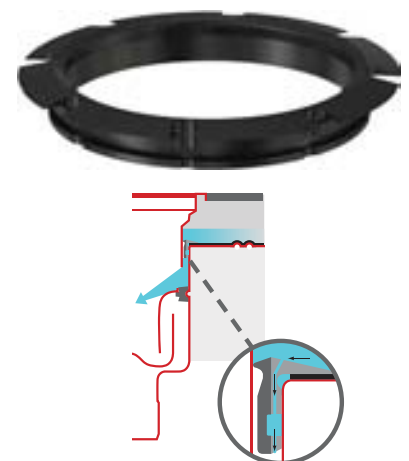


Easy removable sealing ring



Removal of the red O-ring opens the water drainage ways.

Drainage function



*Patent applied for

Characteristics and benefits



Specifier benefits

- Hygienic design following BS EN 1672 and BS EN ISO 14159 requirements
- Stainless steel construction for durability and long life
- Gully top edge infill supplied as standard for hygiene and durability
- Wide range of gratings for all load class applications
- Slip resistant gratings available for added user safety
- Low construction height
- Fully compliant to BS EN 1253
- Reliable waterproofing membrane connection options
- Waterproofing membrane seepage drainage provision
- Suitable for all floor types including vinyl flooring

Contractor benefits

- Low construction height
- Friction lock telescopic adjustment reduces installation time
- Gully levelling facilities
- Quick and reliable flange connection for waterproofing membranes
- Friction ring converts easily to membrane seepage drainage
- Gully top edge infill for durability and eliminates time-consuming back filling
- Easy installation for all floor types – ceramic tiles, cementitious, resin screeds and vinyl

User benefits

- Fully compliant to BS EN 1253
- Hygienic design following BS EN 1672 and BS EN ISO 14159 requirements
- Slip resistant gratings available for added user safety
- Easy and low cost cleaning
- Stainless steel construction for durability and long life
- Optional silt basket
- Wide range of gratings
- Gully top edge infill for hygiene and durability
- Positive membrane drainage for enhanced construction life

Gully guide

This guide helps the designer to select the appropriate gully for each particular application by following seven simple steps.

Step 1

Depending on the composition of the floor construction, the appropriate type of gully should be selected.

No waterproofing membrane		With waterproofing membrane	
Fixed height	Telescopic adjustable – location flange	Telescopic adjustable – adhesive bonding flange	Telescopic adjustable – mechanical clamping flange
			
■ Fixed height construction ■ Easy installation ■ Suitable for areas where waterproofing is independent of the gully body	■ Used in combinations with gully tops or linear drainage channels ■ Adjustable height and full rotation of the gully top ■ Ideal for applications where final floor height unknown ■ Suitable for areas where waterproofing is independent of the gully body	■ Waterproofing connection by welding or adhesive bonding ■ Usable with gully tops or linear drainage channels ■ Adjustable height and full rotation of the gully top	■ Waterproofing connection by mechanical clamping flange ■ Usable with gully tops or linear drainage channels ■ Adjustable height and full rotation of the gully top

Gully guide

Step 2

If required, select the raising piece for floor constructions with double waterproofing layers or for increasing the overall height of the gully.
Applicable only for telescopic adjustable gullies.

No waterproofing membrane connected to raising piece

Telescopic adjustable – location flange



- Usable with gully tops or linear drainage channels
- Adjustable height and rotation
- Increases overall height by 95mm

Waterproofing membrane connected to raising piece

Telescopic adjustable – adhesive bonding flange and mechanical clamping flange



- Waterproofing connection by welding or adhesive bonding
- Usable with gully tops or linear drainage
- Adjustable height and rotation
- Increases overall height by 95mm



- Waterproofing connection by mechanical clamping flange
- Usable with gully tops or linear drainage channels
- Adjustable height and rotation
- Increases overall height by 95mm

Step 3

Establish the location, size, orientation and invert depth (if appropriate) of slab/screed pipework as this will determine the type of gully.



Vertical outlet



Horizontal outlet

Step 4

An important factor in the selection of the correct gully is the required flow rate. Flow rate is affected by several factors such as the size and height of the gully body, use of silt basket and overall assembly height.

Description	Outlet Size	Fixed height gullies				Telescopic adjustable gullies		
		200×200	250×250	300×300	400×400	200×200	250×250	300×300
157 vertical outlet flow rate [l/s]	110mm	3.5	3.5	–	–	2.8–4.5	2.8–4.5	–
157 horizontal outlet flow [rate l/s]	110mm	2.8	2.8	4.4	–	2.8–4.5	2.8–4.5	–
218 vertical outlet flow rate [l/s]	110mm	–	–	5.0	–	–	–	5.0–6.3
218 horizontal outlet flow [rate l/s]	110mm	–	–	–	–	–	–	4.4–5.5
218 vertical outlet flow rate [l/s]	160mm	–	–	5.0	–	–	–	5.0–6.3
357 horizontal outlet flow [rate l/s]	160mm	–	–	–	8.5	–	–	–
357 vertical outlet flow [rate l/s]	160mm	–	–	–	10.0	–	–	–
357 horizontal outlet flow [rate l/s]	200mm	–	–	–	9.5	–	–	–
357 vertical outlet flow [rate l/s]	200mm	–	–	–	11.0	–	–	–

Gully guide

Step 5

For the collection of solid particles, the gully can be fitted with an optional silt basket.

	Gully 157		Gully 218		Gully 357	
Silt basket						
Type of spigot	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
Capacity (litres)	0.3	0.6	0.7	1.4	9.0	9.5

Step 6

The final floor finish determines the gully top selection.

Ceramic/screed	Thin-bed	Vinyl/flexible
		
For tiled, resin screed or cementitious flooring	For thin-bed applications or tanked flooring	Mechanical clamp for reliable connection to vinyl flooring

Step 7

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

- Traffic load classes
- Hygiene
- Slip resistance

	Mesh		Quadrato	Ladder		Slot cover	Heelsafe	ARLA	Volcano
Description									
	Slip resistant	Plain	Plain	Slip resistant	Plain	Plain	Plain	Slip resistant	Slip resistant
Hygiene	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Slip resistance	Yes	Yes	No	Yes	No	No	No	Yes	Yes
200×200	L15	L15	L15	M125	C250	M125	L15	L15	L15
250×250	L15	L15	L15	M125	C250	M125	L15	L15	L15
300×300	L15	L15	L15	M125	C250	M125	L15	L15	L15
400×400	C250	C250	–	–	C250	C250	–	–	–

Load class L15, M125 according to BS EN 1253

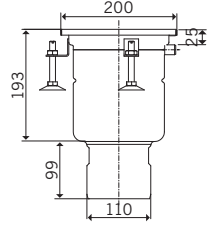
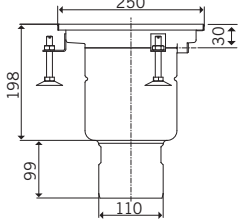
Load class C250 according to BS EN 124

Technical data and order information

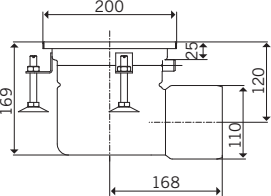
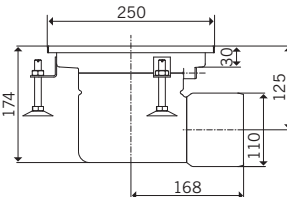
ACO gully 157 – fixed height – vertical and horizontal outlet

- Hygienic design including large radii formed contours, deep-drawn components and minimal welds to minimise crevices and bacteria traps according to BS EN 1672 and BS EN ISO 14159
- Stainless steel gully fully compliant to BS EN 1253
- Available in 304 or 316 grades of stainless steel
- Dry sump design ensures no standing waste water in gully base
- Fully removable and easily cleaned stainless steel foul air trap (FAT)
- Removable hygienic and corrosion resistant Nitrile FAT support
- High flow rate gullies from 2.8 l/s to 3.50 l/s
- Gully top frame size: 200×200mm or 250×250mm
- Outlet spigot Ø110mm
- Wide range of gratings to Load Class L15 – M125 (BS EN 1253) or C250 (BS EN 124)
- Optional high volume silt basket 0.3 litre (horizontal outlet) or 0.6 litre (vertical outlet)

ACO gully 157 – fixed height – vertical outlet

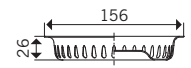
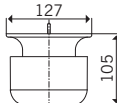
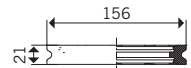
Description	Top size	Outlet Size	Flow Rate	Stainless Steel	Part No.
 	200×200mm	Ø110mm	3.5 l/s	304	408003
				316	408103
 	250×250mm	Ø110mm	3.5 l/s	304	408019
				316	408119

ACO gully 157 – fixed height – horizontal outlet

Description	Top size	Outlet Size	Flow Rate	Stainless Steel	Part No.
 	200×200mm	Ø110mm	2.8 l/s	304	408011
				316	408111
 	250×250mm	Ø110mm	2.8 l/s	304	408027
				316	408127

Technical data and order information

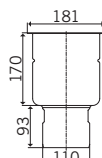
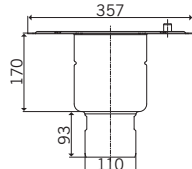
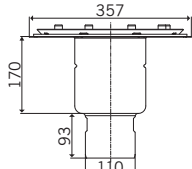
ACO gully 157 – fixed height – accessories and spares

Description		Material	Part No.
 	Vertical outlet gully silt basket 0.6 litre capacity	304	408202
		316	408212
 	Horizontal outlet gully silt basket 0.3 litre capacity	304	408203
		316	408213
 	Foul air trap (replacement)	304	408200
		316	408210
 	Foul Air Trap support (replacement)	Nitrile	408201

ACO gully 157 – telescopic – vertical and horizontal outlet

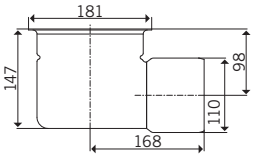
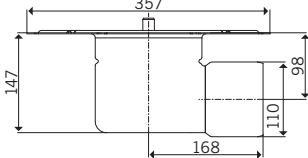
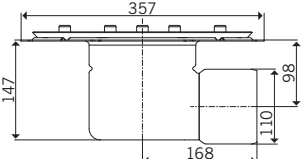
- Hygienic design including large radii formed contours, deep-drawn components and minimal welds to minimise crevices and bacteria traps according to BS EN 1672 and BS EN ISO 14159
- Stainless steel gully fully compliant to BS EN 1253 available in 304 or 316 grades of stainless steel
- Dry sump design ensures no standing waste water in gully base
- Fully removable and easily cleaned stainless steel foul air trap (FAT)
- Removable hygienic and corrosion resistant Nitrile FAT support
- High flow rate gullies from 2.75 l/s to 3.50 l/s
- Friction lock adjustable and 360° rotatable gully top
- Gully top frame size: 200×200mm or 250×250mm
- Outlet spigot Ø110mm
- Wide range of gratings to load class L15 – M125 (BS EN 1253) or C250 (BS EN 124)
- Optional high volume silt basket 0.3 litre (horizontal outlet) or 0.6 litre (vertical outlet)
- Gully body with location flange or integrated membrane flange for either adhesive bonding or mechanical clamp

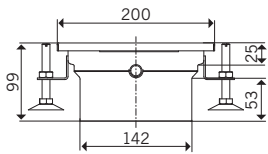
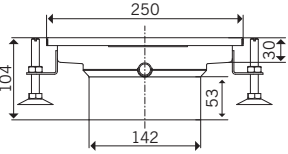
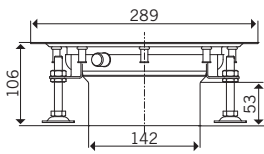
ACO gully 157 – telescopic – vertical outlet

Description		Flange type	Outlet Size	Flow Rate*	Stainless Steel	Part No.
 	Location flange	Ø110mm	2.8 - 4.5 l/s	304	408055	
				316	408155	
 	Adhesive bonding flange	Ø110mm	2.8 - 4.5 l/s	304	408057	
				316	408157	
 	Mechanical clamping flange	Ø110mm	2.8 - 4.5 l/s	304	408059	
				316	408159	

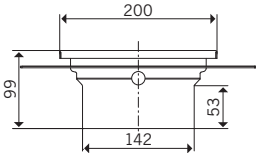
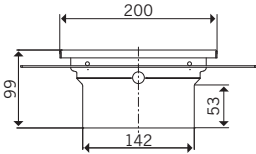
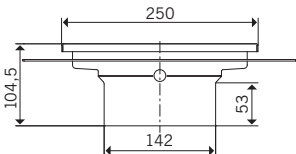
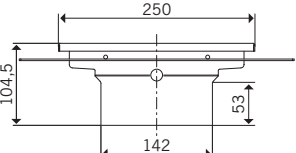
*Flow rate will depend on telescopic height configuration when installed

Technical data and order information

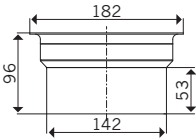
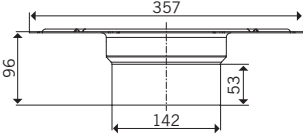
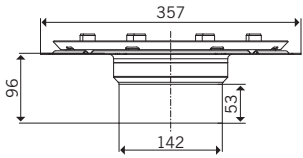
ACO gully 157 – telescopic – horizontal outlet					
Description	Flange type	Outlet Size	Flow Rate	Stainless Steel	Part No.
 	Location flange	Ø110mm	2.8 l/s	304	408079
				316	408179
 	Adhesive bonding flange	Ø110mm	2.8 l/s	304	408081
				316	408181
 	Mechanical clamping flange	Ø110mm	2.8 l/s	304	408083
				316	408183

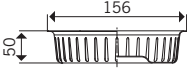
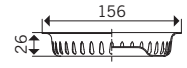
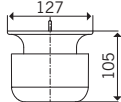
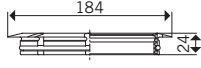
ACO gully 157 – telescopic – gully tops				
Description	Top type	Grating Depth	Stainless Steel	Part No.
 	Square top 200×200mm (concrete, tiled and resin screed floors)	25mm	304	408208
			316	408218
 	Square top 250×250mm (concrete, tiled and resin screed floors)	30mm	304	408248
			316	408258
 	Vinyl floor top	30mm	304	408240
			316	408250

Technical data and order information

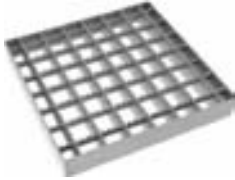
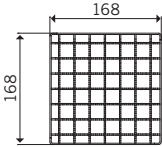
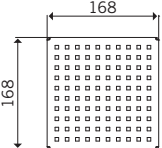
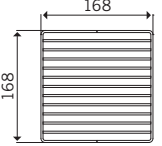
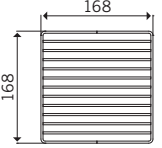
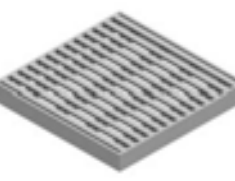
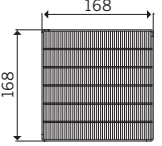
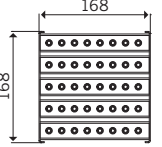
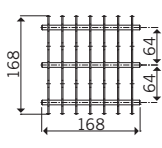
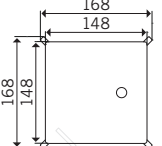
ACO gully 157 – telescopic – gully tops				
Description	Top type	Grating depth	Stainless Steel	Part No.
 	Thin-bed top or tanked flooring	25mm	304	408241
			316	408251
 	Thin-bed top or tanked flooring with drainage holes	25mm	304	408244
			316	408254
 	Thin-bed top or tanked flooring	30mm	304	408245
			316	408255
 	Thin-bed top or tanked flooring with drainage holes	30mm	304	408246
			316	408256

Technical data and order information

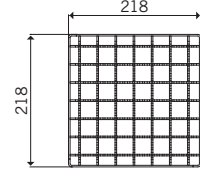
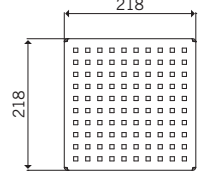
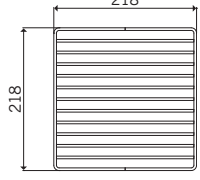
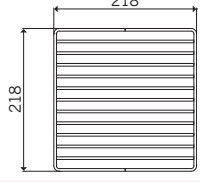
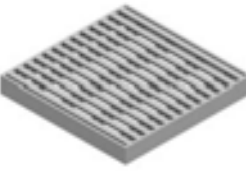
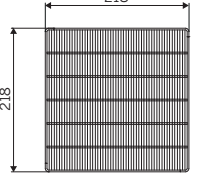
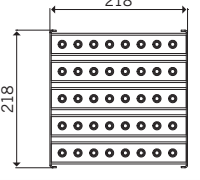
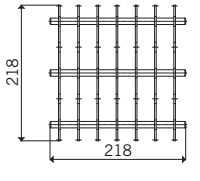
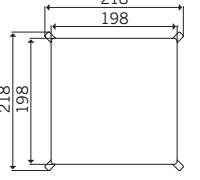
ACO gully 157 – telescopic – raising pieces				
Description		Raising piece type	Stainless Steel	Part No.
 		Raising piece with location flange	304	408249
			316	408259
 		Raising piece with adhesive bonding flange	304	408206
			316	408216
 		Raising piece with mechanical clamping flange with screws	304	408207
			316	408217

ACO gully 157 – telescopic – accessories and spares				
Description			Stainless Steel	Part No.
 		Vertical outlet gully silt basket 0.6 litre capacity	304	408202
			316	408212
 		Horizontal outlet gully silt basket 0.3 litre capacity	304	408203
			316	408213
 		Foul air trap (replacement)	304	408200
			316	408210
 		Foul air trap support (replacement)	Nitrile	408201
 		Friction ring installation set (replacement)	Nitrile	408205

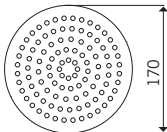
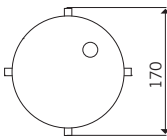
Technical data and order information

ACO gully 157 – gratings for frame 200×200mm (25mm deep)					
Description	Type	Load class	Surface	Stainless Steel	Part No.
 	Mesh grating	L15	Slip Resistant	304	408090
				316	408190
			Plain	304	408091
				316	408191
 	Quadrato grating	L15	Brushed	304	408092
				316	408192
 	Ladder grating	M125	Slip Resistant	304	408093
				316	408193
			Plain	304	408020
				316	408120
 	Ladder grating	C250	Plain	304	408043
			Plain	316	408143
 	Heelsafe grating	L15	Brushed	304	408022
				316	408122
 	Volcano grating	L15	Slip Resistant	304	408094
				316	408194
 	Arla grating	L15	Slip Resistant	304	408023
				316	408123
 	Slot cover	M125	Plain	304	408021
				316	408121

Technical data and order information

ACO gully 157 – gratings for frame 250×250mm (30mm deep)						
Description	Type	Load class	Surface	Stainless Steel	Part No.	
 	Mesh grating	L15	Slip Resistant	304	408095	
				316	408195	
			Plain	304	408096	
				316	408196	
 	Quadrato grating	L15	Brushed	304	408097	
				316	408197	
 	Ladder grating	M125	Slip Resistant	304	408028	
				316	408128	
			Plain	304	408029	
				316	408129	
 	Ladder grating	C250	Plain	304	408044	
				316	408144	
 	Heelsafe grating	L15	Brushed	304	408031	
				316	408131	
 	Volcano grating	L15	Slip Resistant	304	408033	
				316	408133	
 	Arla grating	L15	Slip Resistant	304	408032	
				316	408132	
 	Slot cover	M125	Plain	304	408030	
				316	408130	

Technical data and order information

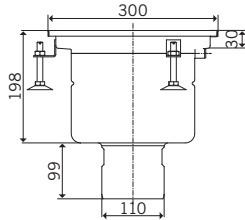
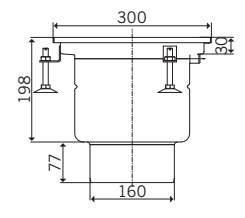
ACO gully 157 – gratings for vinyl top (30mm deep)						
Description		Type	Load class	Surface	Stainless Steel	Part No.
 		Ladder grating	M125	Plain	304	97146
					316	97367
 		Perforated grating	L15	Plain	304	97152
					316	97369
 		Slot cover	M125	Plain	304	97154
					316	97370

Technical data and order information

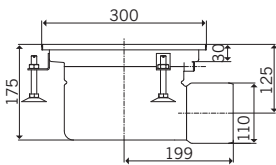
ACO gully 218 – fixed height – vertical and horizontal outlet

- Hygienic design including large radii formed contours, deep-drawn components and minimal welds to minimise crevices and bacteria traps according to BS EN 1672 and BS EN ISO 14159
- Stainless steel gully fully compliant to BS EN 1253
- Available in 304 or 316 grades of stainless steel
- Dry sump design ensures no standing waste water in gully base
- Fully removable and easily cleaned stainless steel foul air trap (FAT)
- Removable hygienic and corrosion resistant Nitrile FAT support
- High flow rate gullies from 4.4 l/s
- Gully top frame size: 300×300mm
- Outlet spigot Ø110mm or Ø160mm for vertical outlet, Ø110mm for horizontal outlet.
- Wide range of gratings to load class L15 – M125 (BS EN 1253) or C250 (BS EN 124)
- Optional high volume silt basket 0.7 litre (horizontal outlet) or 1.4 litre (vertical outlet)

ACO gully 218 – fixed height – vertical outlet

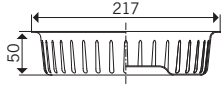
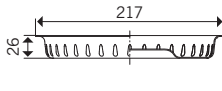
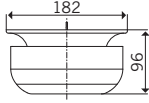
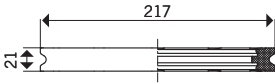
Description	Top size	Outlet Size	Flow Rate	Material	Part No.
 	300×300mm	Ø110mm	5.0 l/s	304	408005
				316	408105
 	300×300mm	Ø160mm	5.0 l/s	304	408007
				316	408107

ACO gully 218 – fixed height – horizontal outlet

Description	Top size	Outlet Size	Flow Rate	Material	Part No.
 	300×300mm	Ø110mm	4.4 l/s	304	408013
				316	408113

Technical data and order information

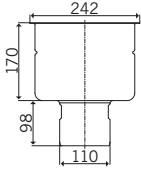
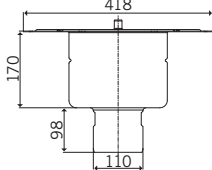
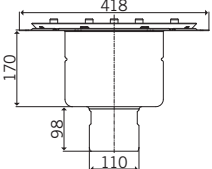
ACO gully 218 – fixed height – accessories and spares

Description		Material	Part No.
 	Vertical outlet gully silt basket 1.4 litre capacity	304	408222
		316	408232
 	Horizontal outlet gully silt basket 0.7 litre capacity	304	408223
		316	408233
 	Foul air trap (replacement)	304	408220
		316	408230
 	Foul air trap support (replacement)	Nitrile	408221

ACO gully 218 – telescopic – vertical and horizontal outlet

- Hygienic design including large radii formed contours, deep-drawn components and minimal welds to minimise crevices and bacteria traps according to BS EN 1672 and BS EN ISO 14159
- Stainless steel gully fully compliant to BS EN 1253
- Available in 304 or 316 grades of stainless steel
- Fully removable and easily cleaned stainless steel foul air trap (FAT)
- Removable hygienic and corrosion resistant Nitrile FAT support
- High flow rate gullies from 4.4 l/s
- Friction lock adjustable and 360° rotatable gully top
- Outlet spigot Ø110mm or Ø160mm for vertical outlet, Ø110mm for horizontal outlet only
- Gully top frame size: 300×300mm
- Wide range of gratings to load class L15 – M125 (BS EN 1253) or C250 (BS EN 124)
- Optional high volume silt basket 0.7 litre (horizontal outlet) or 1.4 litre (vertical outlet)
- Gully body with location flange or integrated membrane flange for either adhesive bonding or mechanical clamp

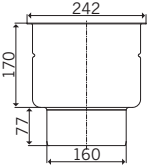
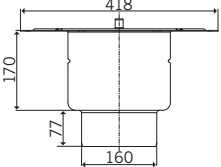
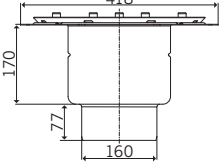
ACO gully 218 – telescopic – vertical outlet

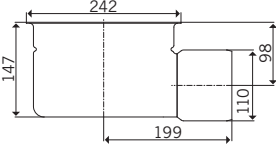
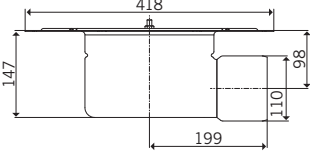
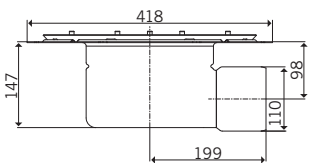
Description	Flange type	Outlet Size	Flow Rate*	Material	Part No.
 	Location flange	Ø110mm	5.0 - 6.3 l/s	304	408061
				316	408161
 	Adhesive bonding flange	Ø110mm	5.0 - 6.3 l/s	304	408063
				316	408163
 	Mechanical clamping flange	Ø110mm	5.0 - 6.3 l/s	304	408065
				316	408165

*Flow rate will depend on telescopic height configuration when installed

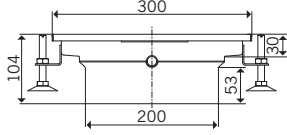
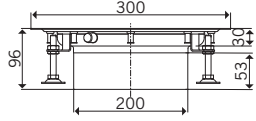
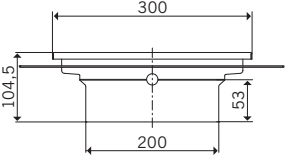
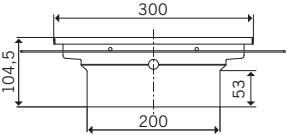
Technical data and order information

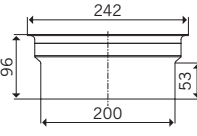
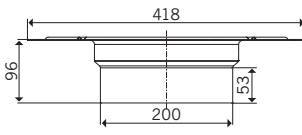
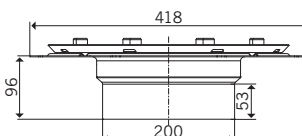
ACO gully 218 – telescopic – vertical outlet

ACO gully 218 – telescopic – vertical outlet						
Description	Flange type	Outlet Size	Flow Rate	Material	Part No.	
 	Location flange	Ø160mm	5.0 - 6.3 l/s	304	408067	
				316	408167	
 	Adhesive bonding flange	Ø160mm	5.0 - 6.3 l/s	304	408069	
				316	408169	
 	Mechanical clamping flange	Ø160mm	5.0 - 6.3 l/s	304	408071	
				316	408171	

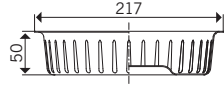
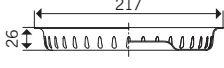
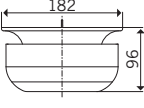
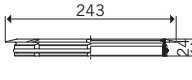
ACO gully 218 – telescopic – horizontal outlet						
Description	Flange type	Outlet Size	Flow Rate	Material	Part No.	
 	Location flange	Ø110mm	4.4 - 5.5 l/s	304	408085	
				316	408185	
 	Adhesive bonding flange	Ø110mm	4.4 - 5.5 l/s	304	408087	
				316	408187	
 	Mechanical clamping flange	Ø110mm	4.4 - 5.5 l/s	304	408089	
				316	408189	

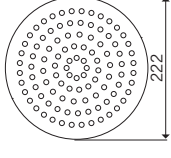
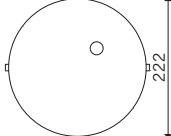
Technical data and order information

ACO gully 218 – telescopic – gully tops					
Description		Top type	Grating depth	Material	Part No.
 	Square top 300×300mm (concrete, tiled and resin screed floors)		30mm	304	408228
				316	408238
 	Vinyl floor top		30mm	304	408242
				316	408252
 	Thin-bed top or tanked flooring		30mm	304	408243
				316	408253
 	Thin-bed top or tanked flooring with drainage holes		30mm	304	408247
				316	408257

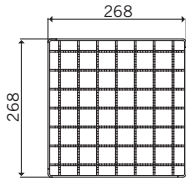
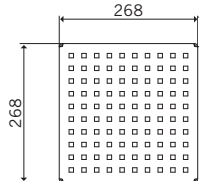
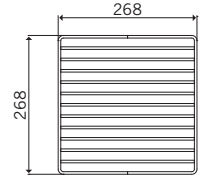
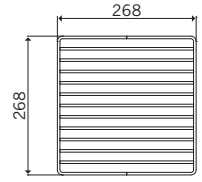
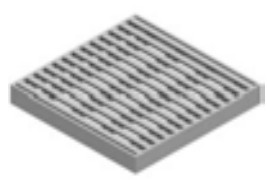
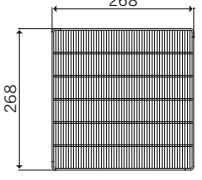
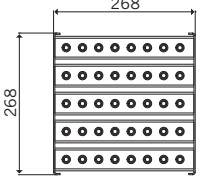
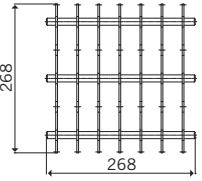
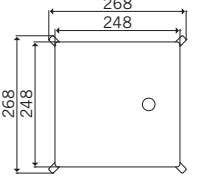
ACO gully 218 – telescopic – raising pieces				
Description		Raising piece type	Material	Part No.
 	Raising piece with location flange		304	408209
			316	408219
 	Raising piece with adhesive bonding flange		304	408226
			316	408236
 	Raising piece with mechanical clamping flange with screws		304	408227
			316	408237

Technical data and order information

ACO gully 218 – telescopic – accessories and spares				
Description		Material	Part No.	
 	Vertical outlet gully silt basket 1.4 litre capacity	304	408222	
		316	408232	
 	Horizontal outlet gully silt basket 0.7 litre capacity	304	408223	
		316	408233	
 	Foul air trap (replacement)	304	408220	
		316	408230	
 	Foul air trap support (replacement)	Nitrile	408221	
 	Friction ring installation set (replacement)	Nitrile	408225	

ACO gully 218 – gratings for vinyl top (30mm deep)						
Description		Type	Load class	Surface	Material	Part No.
 	Ladder grating	M125		Plain	304	97148
					316	97388
 	Perforated grating	L15		Plain	304	97153
					316	97390
 	Slot cover	M125		Plain	304	97156
					316	97391

Technical data and order information

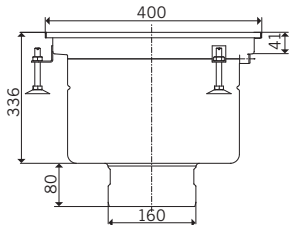
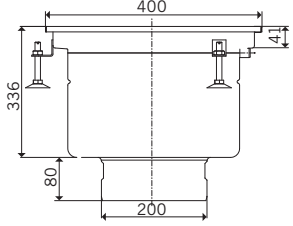
ACO gully 218 – gratings for frame 300×300mm (30mm deep)					
Description	Type	Load class	Surface	Material	Part No.
 	Mesh grating	L15	Slip Resistant	304	408034
				316	408134
			Plain	304	408035
				316	408135
 	Quadrato grating	L15	Brushed	304	408036
				316	408136
 	Ladder grating	M125	Slip Resistant	304	408037
				316	408137
			Plain	304	408038
				316	408138
 	Ladder grating	C250	Plain	304	408045
				316	408145
 	Heelsafe grating	L15	Brushed	304	408040
				316	408140
 	Volcano grating	L15	Slip Resistant	304	408042
				316	408142
 	Arla grating	L15	Slip Resistant	304	408041
				316	408141
 	Slot cover	M125	Plain	304	408039
				316	408139

Technical data and order information

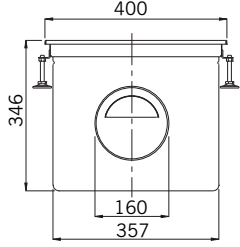
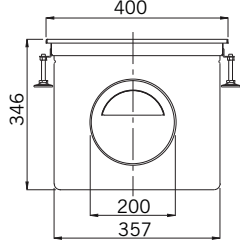
ACO gully 357 – fixed height – vertical and horizontal outlet

- One-piece gullies, designed to be used in commercial applications suitable for concrete, resin or tiled floors.
- The gullies are manufactured from 2mm and 3mm thick austenitic stainless steel Grades 304 or 316 to BS EN 10088.
- The gullies are pickle passivated to ensure corrosion free joints.
- Optional basket collects debris effectively.
- The gullies are supplied complete with a one piece foul air trap. The foul air traps, both on the vertical and horizontal gullies, are completely removable to allow rodding access to the connecting pipework for easy cleaning and maintenance.
- The height adjustable levelling feet make installation quick and easy.
- Bowl shaped bodies deter silt and debris collecting in corners making cleaning easy.
- Ø160mm and Ø200mm spigot outlets are available.
- Electrical earthing point is provided as standard on every gully body.
- Chamfered spigot outlets allow easy push fit connection onto existing drainage pipes.

ACO gully 357 – fixed height – vertical outlet

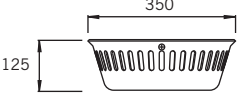
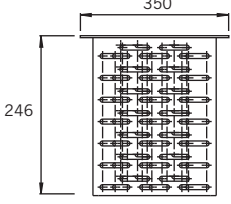
Description	Top Size	Outlet Size	Flow Rate	Stainless Steel	Part No.
 	400x400mm	Ø160mm	10.0 l/s	304	05766
				316	15766
 	400x400mm	Ø200mm	11.0 l/s	304	05768
				316	15768

ACO gully 357 – fixed height – horizontal outlet

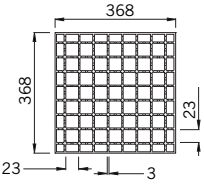
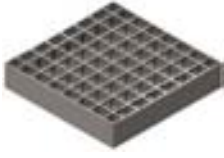
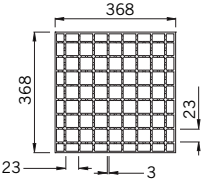
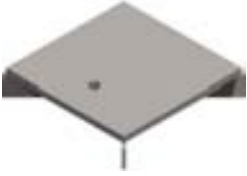
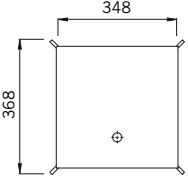
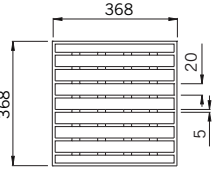
Description	Top Size	Outlet Size	Flow Rate	Stainless Steel	Part No.
 	400x400mm	Ø160mm	8.5 l/s	304	05767
				316	15767
 	400x400mm	Ø200mm	9.5 l/s	304	05769
				316	15769

Technical data and order information

ACO gully 357 – fixed height – accessories and spares

Description		Stainless Steel	Part No.
 	Vertical outlet gully silt basket 9.5 litres capacity	304	05790
		316	15790
 	Horizontal outlet gully silt basket 9.0 litres capacity	304	05791
		316	15791

ACO gully 357 – gratings for 400 x 400mm (40mm deep)

Description	Type	Load class	Surface	Stainless Steel	Part No.
 	Mesh grating	C250	Slip Resistant	304	05926
				316	15926
 	Mesh grating	C250	Plain	304	05927
				316	15927
 	Slot cover	C250	Plain	304	05943
				316	15943
 	Ladder grating	C250	Reversible Slip Resistant	304	401694
				316	401698

Installation guide

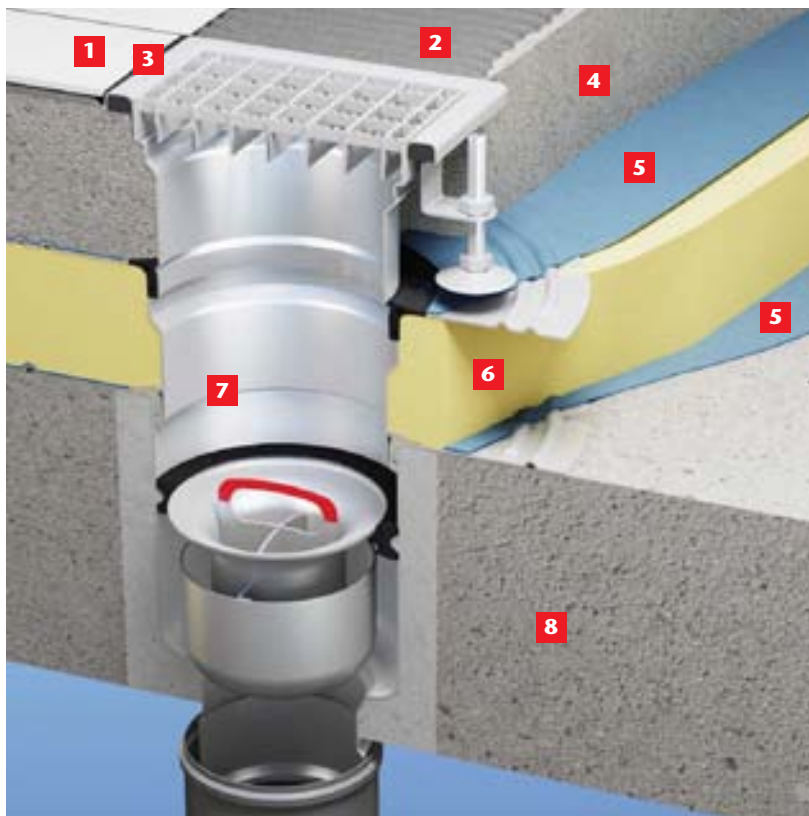
Telescopic flanged gully installed in suspended concrete slab construction

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



Telescopic flanged gully and raising flanged piece installed in suspended concrete slab construction

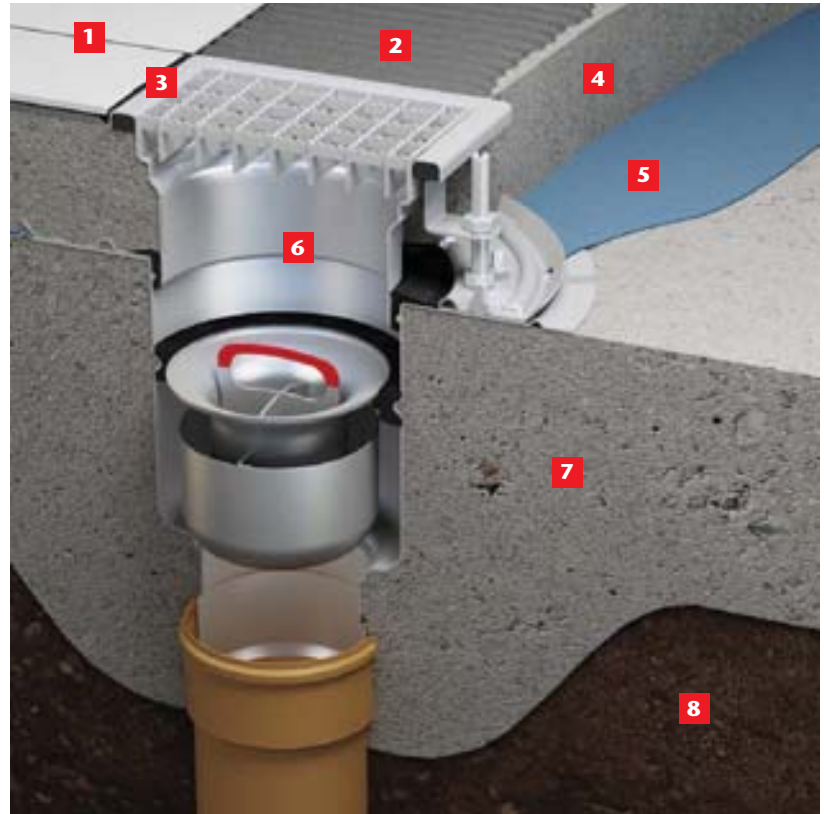
- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Floor screed
- 5** Damp proof membrane (DPM)
- 6** Insulation
- 7** Double flange gully
- 8** Suspended concrete slab core-drilled to accept gully body



Installation guide

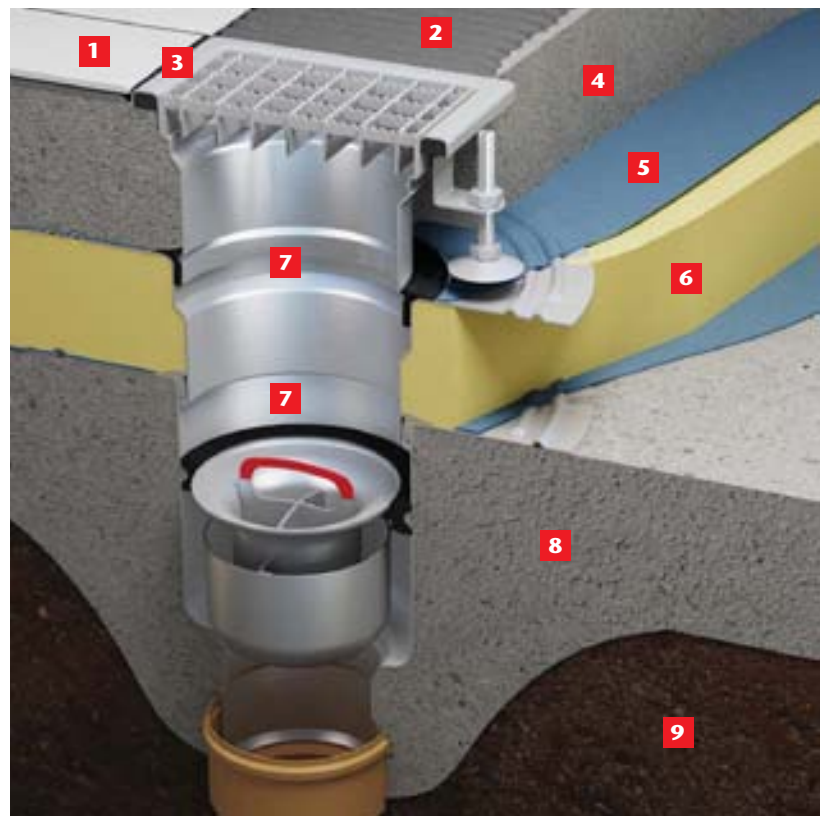
Telescopic flanged gully installed in solid concrete floor

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



Telescopic flanged gully and raising piece installed in solid concrete floor

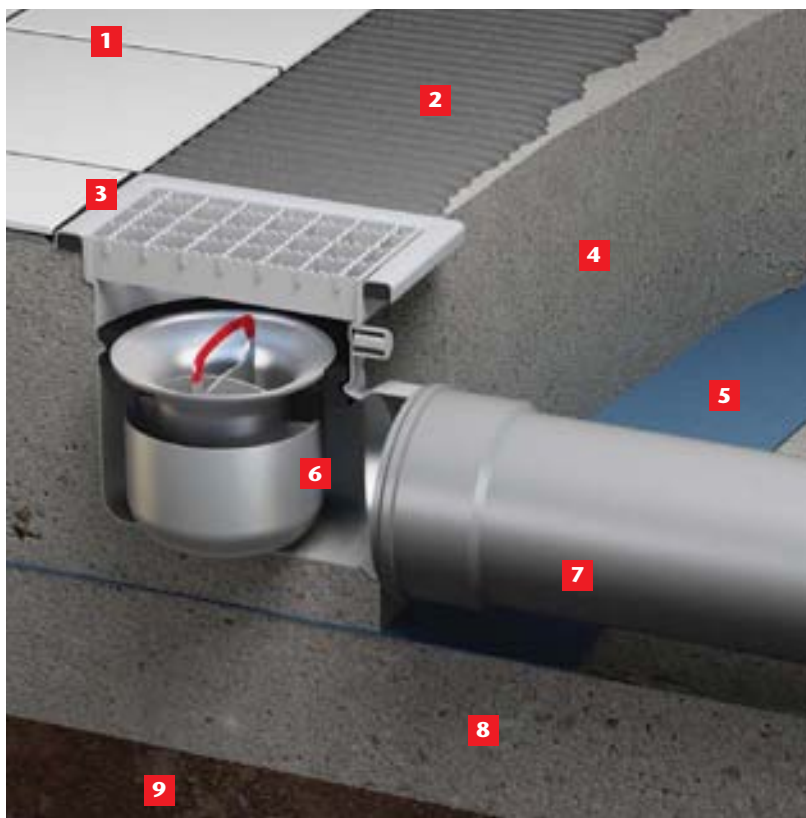
- 1** Ceramic tiles
- 2** Tile cement
- 3** Mastic sealant
- 4** Floor screed
- 5** Damp proof membrane (DPM)
- 6** Insulation
- 7** Double flange gully
- 8** Solid concrete floor slab
- 9** Compacted soil or hardcore



Installation guide

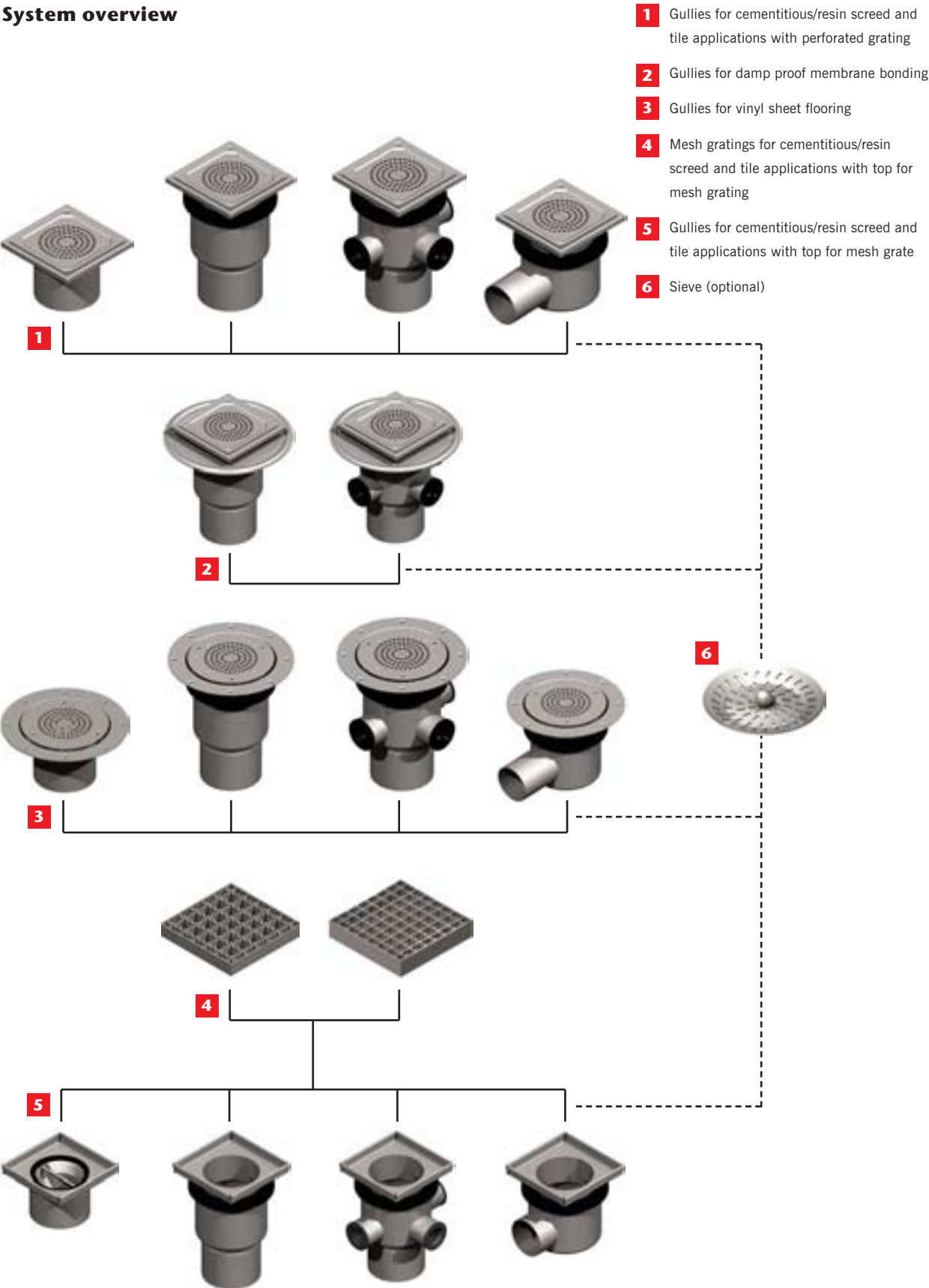
Fixed height gully installed in solid concrete floor

- 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 or hardcore



EG150 Eurogully

System overview



EG150 Eurogully

Characteristics and benefits

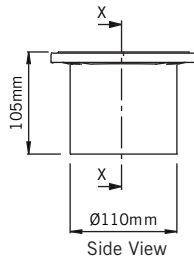
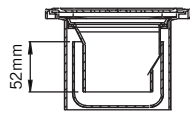
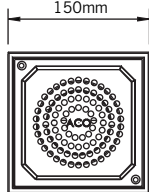
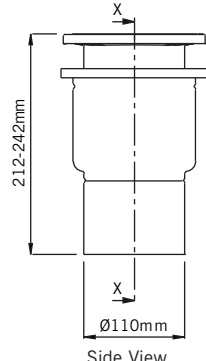
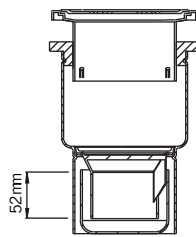
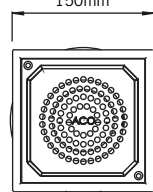
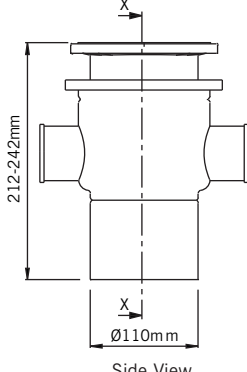
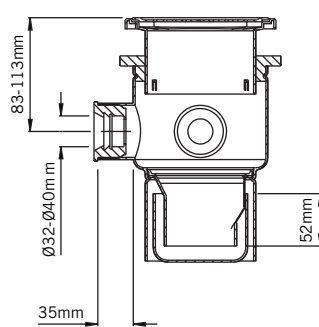
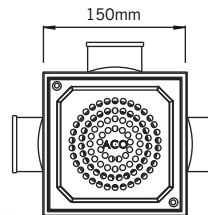
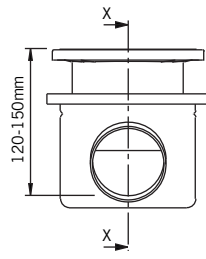
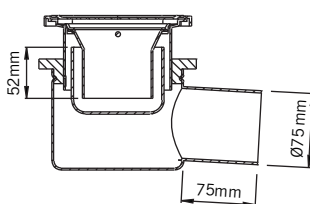
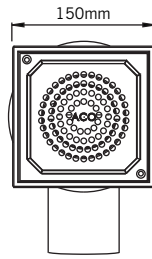
- 1** Foot safe, perforated grating fitted as standard for pedestrian applications. Load class K3 to BS EN 1253.
- 2** Optional removable sieve.
- 3** Removable in-line foul air trap fitted as standard, flow rate 1.2 l/s. 50mm water seal meets requirements of BS EN 1253.
- 4** Telescopic height variant providing full 360° rotation and +/- 7.5° pitch and roll adjustment.
- 5** Smooth contour design minimises bacteria traps.
- 6** 3 back inlet variant available supplied with fully interchangeable adaptors to suit 32mm / 1.25" to BS 5254 and 40mm / 1.5" to BS 5255 waste pipes.
- 7** Ø110mm vertical spigot outlet.
- 8** Clamp for vinyl flooring.
- 9** End stops provided to prevent accidental dismantling on telescopic variants.
- 10** DPM bonding flanges available for the ultimate in sub-floor security.
- 11** Available with Ø75mm horizontal spigot outlet.
- 12** Shallow gully option, ideal for suspended floor or other restricted depth applications.



EG150 Eurogully

Technical data and order information

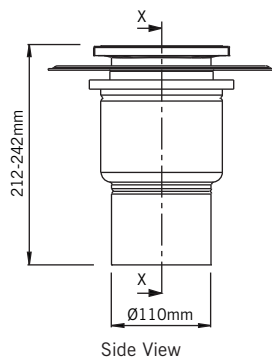
For cementitious/resin screed and tile applications

Description	304 Part No	316 Part No	Flow Rate	Load Class to BS EN 1253
				
EG150FVL/110	97211	97261	1.2l/s	K3
				
EG150TV/110	97200	97250	1.2l/s	K3
				
EG150TV3i/110	97202	97252	1.2l/s	K3
				
EG150THL/75	97201	97251	1.2l/s	K3

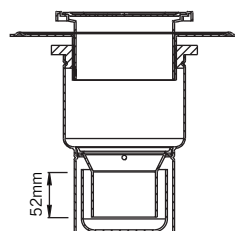
EG150 Eurogully

Technical data and order information

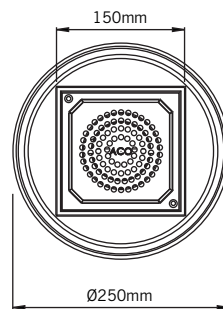
For damp proof membrane bonding				
Description	304 Part No	316 Part No	Flow Rate	Load Class to BS EN 1253



Side View

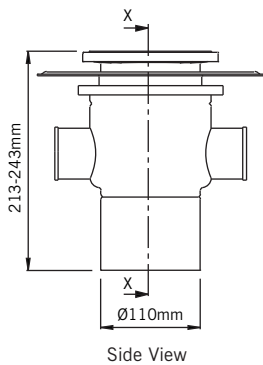


Section X-X

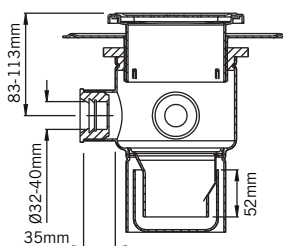


Plan View

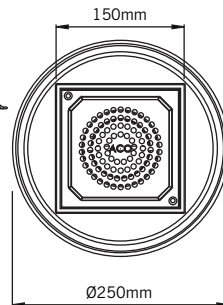
EG150TVB/110	97216	97266	1.2l/s	K3
--------------	-------	-------	--------	----



Side View



Section X-X

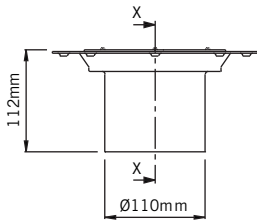
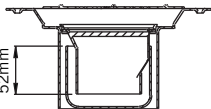
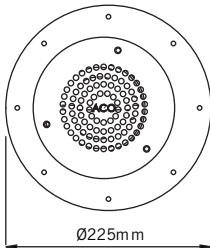
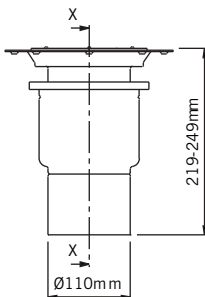
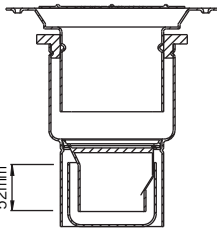
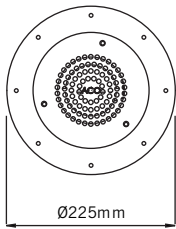
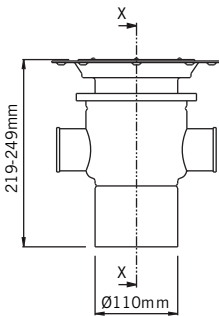
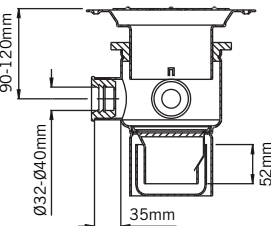
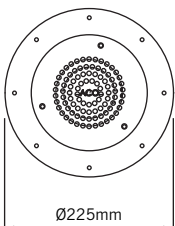
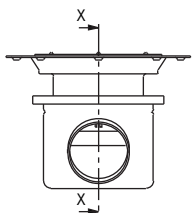
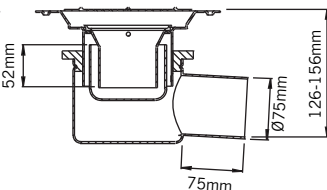
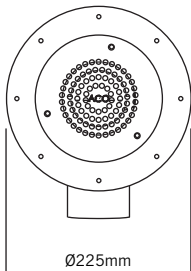


Plan View

EG150TVB3i/110	97205	97255	1.2l/s	K3
----------------	-------	-------	--------	----

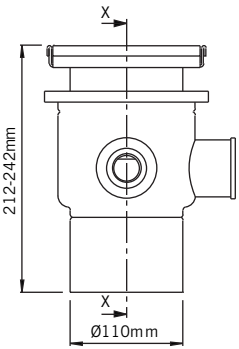
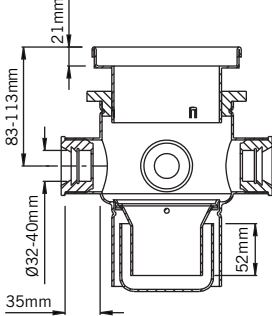
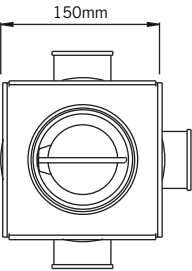
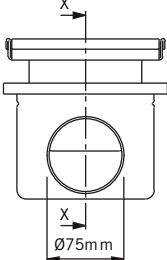
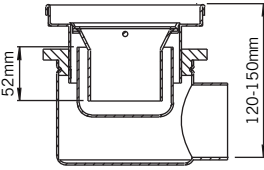
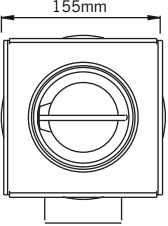
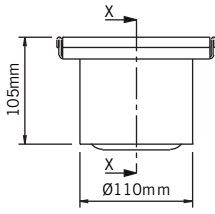
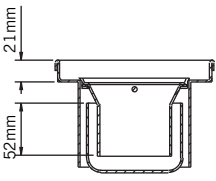
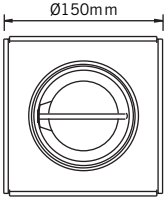
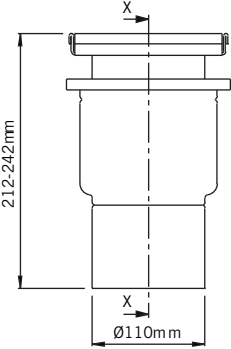
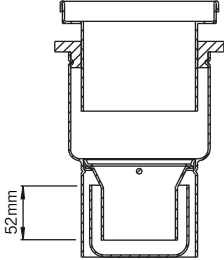
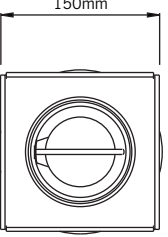
EG150 Eurogully

Technical data and order information

For vinyl sheet flooring				
Description	304 Part No	316 Part No	Flow Rate	Load Class to BS EN 1253
 Side View:  Section X-X:  Plan View: 	97212	97262	1.2l/s	K3
 Side View:  Section X-X:  Plan View: 	97207	97257	1.2l/s	K3
 Side View:  Section X-X:  Plan View: 	97209	97259	1.2l/s	K3
 Side View:  Section X-X:  Plan View: 	97208	97258	1.2l/s	K3

EG150 Eurogully

Technical data and order information

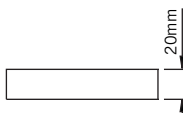
For cementitious/resin screed and tile applications with top for mesh grate				
Description	304 Part No	316 Part No	Flow Rate	Load Class to BS EN 1253
	 Side View	 Section X-X	 Plan View	
EG150TVM3i/110	97312	97314	1.2l/s	K3
	 Side View	 Section X-X	 Plan View	
EG150THLM/75	97308	97310	1.2l/s	K3
	 Side View	 Section X-X	 Plan View	
EG150FVLM/110	400834	400835	1.2l/s	K3
	 Side View	 Section X-X	 Plan View	
EG150TVM/110	97296	97298	1.2l/s	K3

EG150 Eurogully

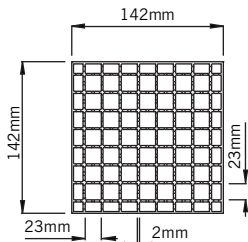
Technical data and order information

Mesh gratings

EG150AS grating 142mm x 142mm slip resistant



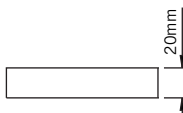
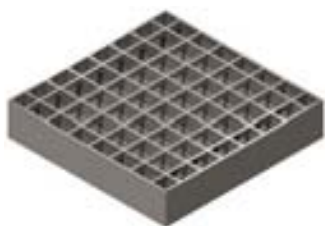
Side View



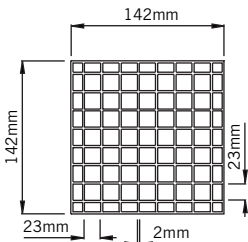
Plan View

Description	304 Part No	316 Part No	Load Class to BS EN 1253
EG150AS	05964	15964	K3

EG150PL grating 142mm x 142mm plain mesh



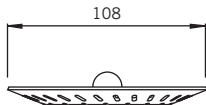
Side View



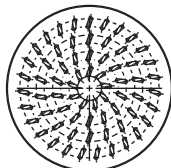
Plan View

Description	304 Part No	316 Part No	Load Class to BS EN 1253
EG150PL	05965	15965	K3

EG150SI - sieve



Side View



Plan View

Description	304 Part No	316 Part No
EG150SI - sieve	97235	97285

Installation guide

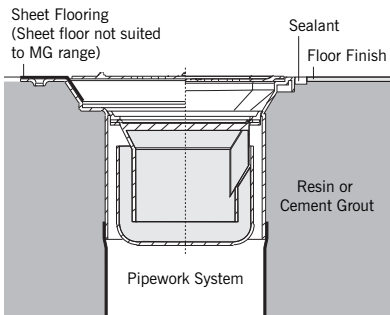
EG150 Eurogully

Locate the gully in the correct position in the floor and connect to drainage pipework system.

Backfill around the drain and dress floor finish up to the drain edge. Remove any protective tape/film from the unit.

A mastic sealant of bead width 5 - 8mm is recommended around the outside of the drain top edge and floor finish where a good watertight seal is required between the two materials.

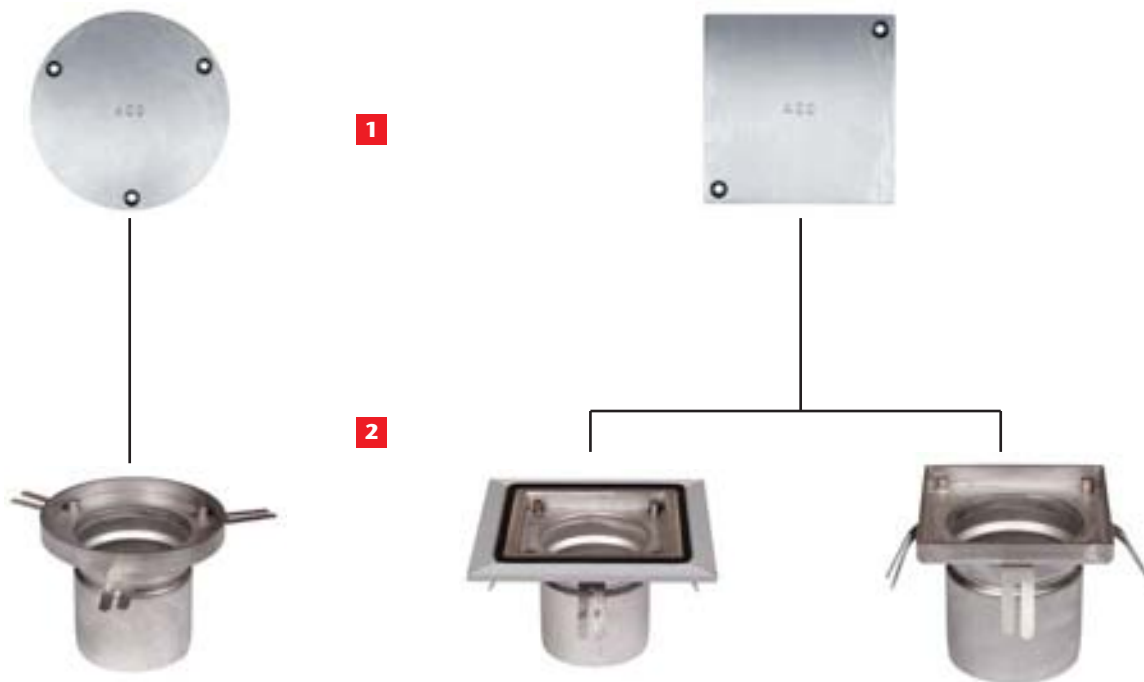
Ensure the sealant is applied in accordance with the manufacturer's instructions.



Rodding eyes

System overview

- 1** Solid cover in 304 stainless steel
- 2** Rodding eye gullies



Characteristics and benefits

- Used for connection to 110mm pipework.
- Solid circular and square access covers complete with double EPDM seal manufactured from 304 stainless steel.
- Square 304 stainless steel bezel fitted with ACO Vinyl Seal® for welded flexible sheet flooring applications. Frame outside dimensions: 171 x 171mm, vertical outlet: Ø110mm.
- Square 304 grade stainless steel bezel for ceramic tile, resin and cementitious applications. Frame outside dimensions: 150 x 150mm, vertical outlet: Ø110mm.
- Circular 304 grade stainless steel bezel for resin and cementitious floor applications. Frame outside dimensions: Ø168mm, vertical spigot outlet: Ø110mm.

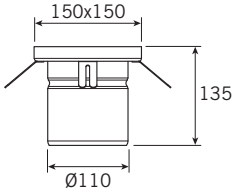
Rodding eyes

Technical data and order information

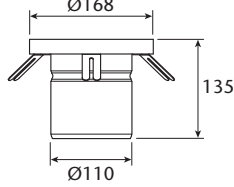
Solid covers for rodding eyes

Description	Load Class to BS EN 1253	Overall Module Including Bezels	Part No 304 Stainless Steel
Circular solid cover Complete with double EPDM seal 	K3	168mm	105049
Square solid cover Complete with double EPDM seal 	K3	150mm	105054

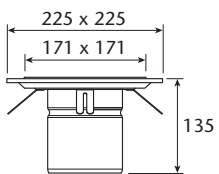
Rodding eyes gullies for tiles, resin and cementitious flooring applications

Description	Load Class to BS EN 1253	Part No 304 Stainless Steel
 	K3	104010

Rodding eyes gullies for resin and cementitious flooring applications

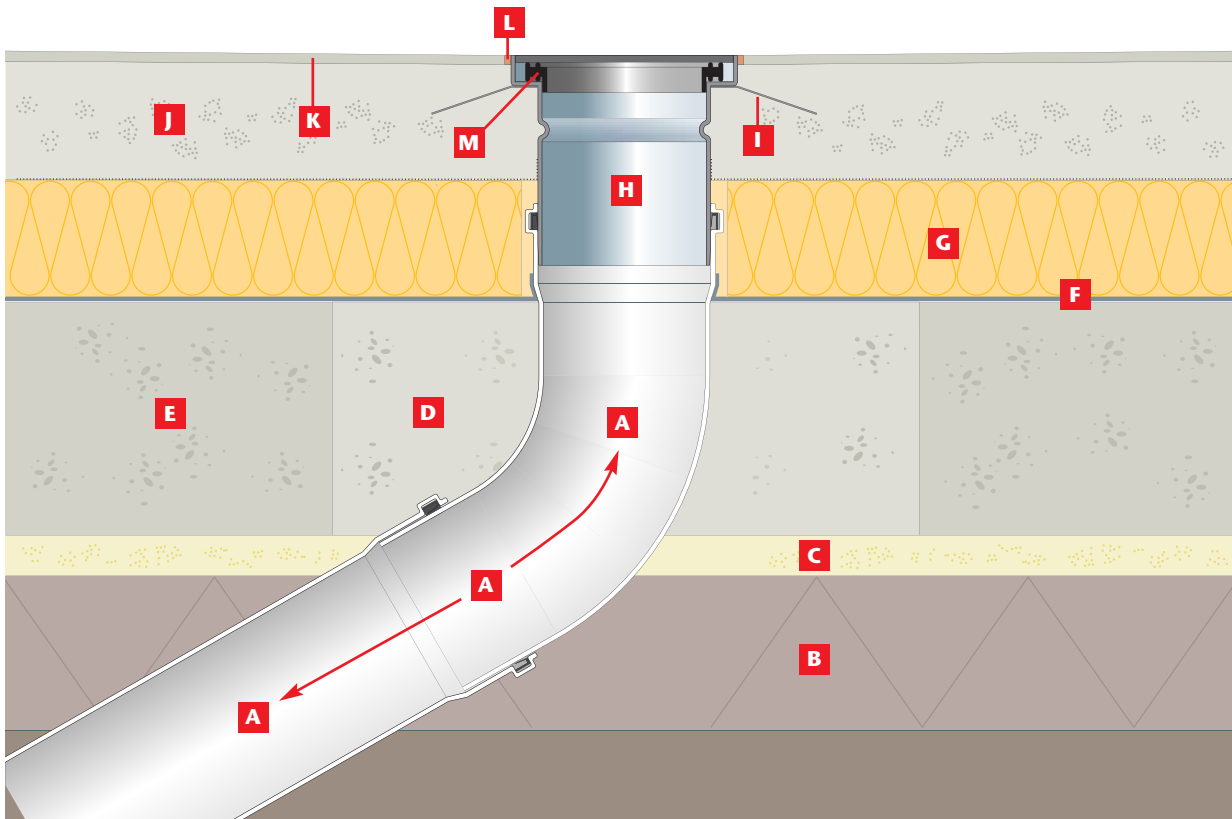
Description	Load Class to BS EN 1253	Part No 304 Stainless Steel
 	K3	104004

Rodding eyes gullies for flexible sheet flooring applications

Description	Load Class to BS EN 1253	Part No 304 Stainless Steel
 	K3	105070

Installation guide

Direct connection rodding access with resin finish in ground floor



1. Install access pipe **A** and prepare hardcore base **B** with sand blinding **C**. Cover pipe end, box out and backfill concrete **D** around pipe.
2. Remove shuttering and pour concrete floor slab **E**.
3. Lay DPM **F** and lay insulation **G** around access pipe.
4. Connect square or circular rodding access top **H** to drain pipe and set to finished floor level. Bend down tangs **I** to key with screed.
5. Lay the screed **J** to a 1:80 fall working the mix under the flange of the gully top. When dry, lay a resin finish **K** to required thickness leaving a 5mm gap **L** at the bezel edge for a gun applied flexible sealant.
6. Fit double seal **M** and solid cover to suit.

Micro floor gullies

System Overview



Characteristics and benefits

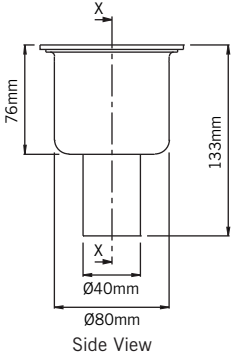
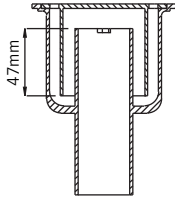
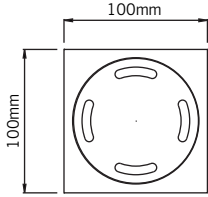
- The Micro Floor Gully is a light duty, compact trapped drain manufactured from Grade 304 stainless steel.
- Designed to provide discrete drainage for washrooms, toilet areas and plant rooms.
- An invert depth of just 76mm makes it ideal for use in areas where depth is restricted or for refurbishment work where excavation can be kept at a minimum.

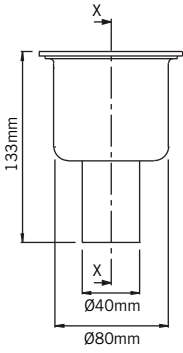
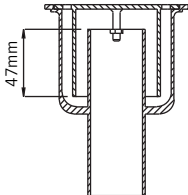
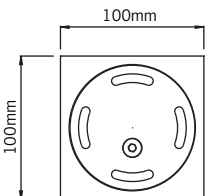
- 1** The gully is supplied with a circular grating located in a 100mm square top. Optional lockable grating is also available.
- 2** The foul air trap is an integral part of the grating and allows full rodding access to the drainage pipework and eradicates the need for additional rodding eyes.
- 3** Suitable for use with cementitious/resin screed and tile applications
- 4** Complete with fixing tangs with earth wire connections.
- 5** 50mm water seal depth meets requirements of BS EN 1253.
- 6** Compact unit 133mm overall.
- 7** The drain has a vertical spigot outlet allowing easy connection to existing pipework with either push fit or compression fittings.



Micro floor gullies

Technical data and order information

Micro floor gully - no locking				
Description	304 Part No	316 Part No	Flow Rate	Load Class to BS EN 1253
				
MG100FSV/40	4156	N/A	0.24l/s	K3

Micro floor gully - with locking				
Description	304 Part No	316 Part No	Flow Rate	Load Class to BS EN 1253
				
MGL100FSV/40	4157	N/A	0.24l/s	K3

Installation guide

Micro floor gullies

Locate the drain in the correct position in the floor and connect to the drainage pipework system.

Backfill around the drain and dress floor finish up to the drain edge. Remove any protective tape/film from the unit.

A mastic sealant of bead width 5 - 8mm is recommended around the outside of the drain top edge and floor finish where a good watertight seal is required between the two materials.

Ensure the sealant is applied in accordance with the manufacturer's instructions.

Bespoke gullies

Tundish gullies

If we cannot meet your requirements with our existing product ranges, we can offer bespoke solutions to suit any application. With our professional design and manufacture capabilities we can accommodate any requests.

ACO tundish gullies are part of our bespoke gully range which also includes additional inlets, extended bodies or spigots and non-standard outlet sizes.

Whatever the size, height, inlets and capacity you require; we can offer you our bespoke solutions but please allow extra lead time.



Care and maintenance

Factors affecting maintenance

Surface contamination and the formation of deposits must be prevented in order to maintain a durable and hygienic surface.

These deposits may be minute particles of iron or rust from other sources used in the building of new or refurbished premises and not removed until after the stainless steel drainage products have been installed. Wire brushes and wire wool must not be used to remove marks and cement spillages as this will only serve to introduce iron impurities to the material surface. Care must also be taken when storing, erecting or cutting carbon steels near to stainless steel.

Industrial and even naturally occurring atmospheric conditions can produce deposits which can be equally corrosive, e.g. salt deposits from marine conditions.

The working environment can offer more aggressive conditions, for example the high humidity found in swimming pools increases the speed of discolouration and therefore requires maintenance on a more frequent basis.

Modern processes use many cleaners, sterilisers and bleaches for hygienic purposes. All these proprietary solutions, when used in accordance with makers instructions are safe, but if used incorrectly (e.g. warm or concentrated) can cause discolouration and corrosion on the surface of any quality of stainless steel.

Strong acid solutions are sometimes used to clean masonry and tiling cements from buildings but they should never be permitted to come into contact with metals, including stainless steel. If this should happen the acid solution must be removed immediately by copious applications of water.

Maintenance programme

With care taken during fabrication and installation, cleaning before handing over to the client should present no special problems, although more attention may be required if the installation period has been prolonged.

Where surface contamination is suspected, immediate attention to cleaning after site fixing will encourage a trouble free product.

Food and beverage handling, pharmaceutical and chemical industry applications require extremely high levels of cleanliness.

Advice is often sought concerning the frequency of cleaning stainless steel and the answer is quite simple: clean the metal when it is dirty in order to restore its original appearance. This may vary from once to four times a year for external applications or it may be once a day for an item in hygienic or aggressive situations.

Frequency and cost of cleaning is lower with stainless steel than with many other materials.

Care & maintenance

Cleaning methods

Stainless steel and nitrile rubber is easy to clean. Washing with soap or a mild detergent and warm water followed by a clear water rinse is usually quite adequate for many industrial applications. An enhanced aesthetic appearance will be achieved if the cleaned surface is finally wiped dry.

Precautions

Acids should only be used for on-site cleaning when all other methods have been proved unsatisfactory. Rubber gloves should be used and care taken to see that acid cleaners are not spilt over adjacent areas.

Special precautions are necessary with oxalic acid. Solvents should not be used in closed places without adequate ventilation. Smoking must be avoided when using solvent. **Manufacturer's directions should be followed.**

Conclusion

If all the suggestions and actions in the table below have been attempted, stainless steel has the facility to be mechanically cleaned by specialists on site. Please contact ACO Building Drainage for further assistance.

Problem	Cleaning agent	Comment
Routine cleaning, all finishes.	Soap or mild detergent and water (such as washing up liquid).	Sponge, rinse with clean water, wipe dry if necessary.
Fingerprints, all finishes.	Soap or warm water or organic solvent (e.g. acetone, alcohol).	Rinse with clean water, wipe dry if necessary.
Stubborn stains and discolouration.	Mild cleaning solutions (e.g. Jif, Goddard Stainless Steel Care).	Rinse well with clean water and wipe dry.
Oil and grease marks, all finishes.	Organic solvents (e.g. acetone, alcohol).	Clean after soap and water, rinse with clean water and dry.
Rust and other corrosion products.	Oxalic acid. The cleaning solution should be applied with a swab and allowed to stand for 15–20 minutes before being washed away with water. May continue using Jif to give final clean.	Rinse well with clean water (precautions for acid cleaners should be observed).
Scratches on brush (satin) finish.	Household synthetic fibre scouring pads (e.g. Scotch Brite fibre pad). For deeper scratches; apply in direction of polishing. Then clean with soap or detergent as per routine cleaning.	Do not use ordinary steel wool (iron particles can become embedded in stainless steel and cause further surface problems).

Stainless steel

Stainless steel families & corrosion resistance

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% chromium, however most stainless steels commonly used contain around 18% chromium. Other significant alloying elements include nickel and for superior corrosion resistant properties, molybdenum.

For ACO Building Drainage applications, the principal properties of stainless steel may be summarised as follows:

- Durable and corrosion resistant in highly aggressive environments.
- Hygienic, easily cleaned surfaces.
- Aesthetically attractive surface finish.
- Good forming and fabrication characteristics.
- Excellent strength and resistance to oxidation at high temperatures.
- Non-magnetic.

All of which make stainless steel an obvious first choice material for demanding applications.

Stainless steel families

Stainless steel is used across a wide spectrum of engineering applications and this has led to the development of the vast range of different types of stainless steels that are now available. There are four main grades of stainless steel:

Austenitic Stainless Steels

This group of stainless steels is the most widely used and encompasses the generic 304 and 316 grades of material. These materials are used in the ACO Building Drainage manufacturing process and are ideal for applications including **food processing, dairy, brewing, pharmaceutical, chemical and petrochemical industries.**

304 grade stainless steels contain around 18% chromium and 10% nickel and provides excellent corrosion resistance. For applications where superior corrosion resistance properties are required under extreme conditions particularly where chlorides are involved, 316 grade stainless steels are used and contain around 17% chromium, 12% nickel and 2.2% molybdenum.

Unlike all other grades of stainless steels, austenitic grades are non-magnetic and as a consequence magnetic particles are not attracted to the system surfaces which otherwise would encourage both contamination and corrosion.

Ferritic Stainless Steels

Ferritic stainless steels have inferior corrosion resistance properties compared to austenitic 304 and 316 grades and are used in less demanding applications such as domestic appliance and motor car trim. This grade of stainless steel is slightly more brittle when compared to austenitic grades.

Ferritic steels contain between 11.5% and 16.5% chromium and less than 0.5% nickel. This group of steels are magnetic and will attract particulates which can cause contamination problems. Ferritic steels are **not suitable for drainage products.**

Martensitic Stainless Steels

Martensitic steels are magnetic and have the highest strength of the groups of stainless steels, however they also have the poorest corrosion resistance. They can be hardened by heat treatment and generally find their main application in cutlery manufacture.

Martensitic steels contain around 12.5% chromium and contain a relatively high carbon content of 0.3% (austenitic and ferritic steels contain around 0.02% and 0.04% carbon respectively).

Martensitic steels' poor corrosion resistance make them **unsuitable for drainage applications.**

Duplex Stainless Steels

Duplex stainless steels have an effective austenitic/ferritic structure and are characterised by good corrosion resistance, high strength and in particular, good resistance to stress corrosion cracking. Duplex steels contain around 22% chromium, 5.5% nickel, 3% molybdenum and 0.02% carbon. This group of steels are magnetic and will attract particulates which can cause contamination problems and therefore are **unsuitable for drainage applications.**

Stainless steel

Corrosion Resistance

The single most important property of stainless steels and the reason for their existence and widespread use, is their natural corrosion resistance. In spite of their name, stainless steels can both 'stain' and corrode if used incorrectly.

The reason for the good corrosion properties is due to the formation of a very thin, invisible oxide film that forms on the surface of the material in oxidising environments such as the atmosphere and water.

This film is a chromium-rich oxide which protects the steel from attack in aggressive environments. As chromium is added to a steel, a rapid reduction in the corrosion rate is observed because of this protective film. In order to obtain a compact and continuous passive film, a chromium content of at least 11% is required. Passivity increases fairly rapidly with increasing chromium content up to about 17% chromium.

The most important alloying element is therefore chromium, but a number of other elements including nickel, molybdenum and nitrogen also contribute to the corrosion resistance properties of stainless steels. Other alloying elements may also be added to enhance the corrosion resistance in particular environments.

Stainless steels must oxidise in order to form the passive, chromium-rich oxide film. Stainless steels have a very strong tendency to passivate and only a small amount of oxidising agents are needed for passivation - air and water are sufficient to passivate stainless steels and indeed, this oxide film is spontaneously regenerated when exposed to oxygen. An important factor to note is that the passive film is self-healing, so when the material is cut or machined or, should chemical or mechanical damage occur, the passive film will 'heal' or re-passivate in oxidising environments - unlike a painted finish on mild steel.

Selection of the correct grade of material for each application is an important factor in the design process. It is important to note that even 316 grades of stainless steel are not immune to all kinds of chemical attack; use with reducing solutions, such as hydrochloric and sulphuric acids particularly when in concentrated and/or hot form, requires careful consideration. See material resistance chart on pages 55 and 56.

Stainless steel

Stainless steel finishing processes

A stainless steel finish should appear clean, smooth and faultless. This is obvious when the steel is used for such purposes demanding stringent hygiene or decorative trim applications, but a fine surface finish is also crucial in respect to its corrosion resistant properties.

The corrosion resistance properties of stainless steel are achieved by the spontaneous formation of a very thin chromium-rich oxide layer over the surface of the material. Unfortunately, surface defects and imperfections introduced during the manufacturing process may drastically disturb the self healing process of the passive layer and subsequently reduce the corrosion resistance of the material. In the manufacturing process it is the welding that creates the greatest challenge to corrosion resistance. All ACO Building Drainage products are subjected to specialised treatment to ensure the material retains the maximum resistance to corrosion.

Untreated stainless steel

The blue oxide film has substantially reduced corrosion resistance.



After welding stainless steel, a bluish high temperature oxide film can be seen which has substantially inferior corrosion protection properties compared to the original passive layer. Immediately beneath this blue oxide film is a thin layer of chromium depleted metal which makes the metal surface susceptible to corrosion. Post weld treatment is, therefore, very important to restore the corrosion protection properties and is effectively achieved by removing the blue high temperature oxide film and chromium depleted layer to restore the surface of the material. This 'cleaning' is essentially a controlled corrosion process using chemicals, this will restore not only its original corrosion resistance performance but also the high quality aesthetics.

The chemical processing methods used in the ACO Building Drainage process are summarised as follows:

■ Pickle passivation (acid treatment)

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



■ Electropolishing (electrochemical process)

After pickle passivation, some products are then immersed in an electrolytic fluid in which the products become the anode of a direct current electrical circuit. This process is characterized by the selective attack on the surface of the components whereby upstanding roughness is preferentially dissolved and will yield a progressively smoother, brighter surface.



■ Linishing (mechanical process)

ACO gullies have a linished upper edge to enhance installation aesthetics.

Stainless steel

Material resistance chart

The corrosion resistance information contained within this table is indicative only. All data is based on reactions noted at an ambient temperature of 20°C. Higher temperatures will generally reduce the corrosion resistance of the materials.

Please contact ACO Building Drainage if guarantees are required of specific material suitability.

We shall arrange for tests to be undertaken with the reagent to establish the chemical resistance of the materials. Other gasket and sealing ring materials are available. Please contact us for further information.

● Recommended

? Suitable. However, contact ACO Building Drainage for further advice.

x Not recommended

~ No data available

Reagent	Stainless Steel 304	Stainless Steel 316	EPDM	Neoprene Gasket	Viton Gasket
Acetic Acid 20%	●	●	●	?	●
Acetic Acid 80%	●	●	●	x	●
Acetone	●	●	●	●	x
Alcohol (Methyl or Ethyl)	●	●	●	●	?
Aluminium Chloride	?	?	●	●	●
Aluminium Sulphate	●	●	●	●	●
Ammonia Gas (Dry)	●	●	~	●	~
Ammonium Chloride	?	?	●	●	●
Ammonium Hydroxide	●	●	●	●	●
Ammonium Nitrate	●	●	●	●	●
Ammonium Phosphate	●	●	●	●	●
Ammonium Sulphate	?	●	●	●	●
Ammonium Sulphide	●	●	~	~	~
Amyl Chloride	●	●	x	~	?
Aniline	●	●	?	x	●
Barium Chloride	●	●	●	●	●
Barium Hydroxide 10%	~	~	●	●	●
Barium Sulphate	●	●	●	●	●
Barium Sulphide	~	~	●	●	●
Beer	●	●	●	●	●
Beet Sugar Liquors	●	●	●	●	●
Benzene	●	●	x	x	●
Benzoic Acid	●	●	x	●	●
Bleach -12.5%Active Cl	~	~	●	x	x
Boric Acid	●	●	●	●	●
Bromic Acid	?	?	~	~	~
Bromine Water	x	x	~	x	~
Butane	●	●	x	●	●
Calcium Carbonate	●	●	●	●	●
Calcium Chloride	x	?	●	●	●
Calcium Hydroxide	?	●	●	●	●
Calcium Hypochlorite	x	?	?	x	●
Calcium Sulphate	●	●	●	~	●
Cane Sugar Liquors	~	~	●	●	●
Carbon Acid	~	~	●	●	●
Carbon Bisulphide	●	●	x	x	●
Carbon Dioxide	●	●	●	●	●
Carbon Monoxide	●	●	●	●	●

Reagent	Stainless Steel 304	Stainless Steel 316	EPDM	Neoprene Gasket	Viton Gasket
Carbon Tetrachloride	?	?	x	x	●
Caustic Potash	●	●	●	~	●
Caustic Soda	●	●	●	●	●
Chloride (Dry)	?	?	●	x	●
Chloride (Wet)	x	x	x	x	?
Chloroacetic Acid	~	●	?	x	●
Chlorobenzene	●	●	x	x	●
Chloroform	?	?	x	x	●
Chrome Acid 50%	x	x	?	x	●
Chromic Acid 10%	●	●	x	x	●
Citric Acid	?	●	●	●	●
Copper Chloride	x	x	●	●	●
Copper Cyanide	●	●	●	●	●
Copper Nitrate	●	●	~	●	●
Copper Sulphate	●	●	●	●	●
Cottonseed Oil	~	~	x	●	●
Cresol	~	~	x	x	x
Cyclohexanone	?	●	●	x	x
Cyclohexanol	~	~	x	●	x
Dimethyleaniline	~	~	?	●	●
Dionylphalate	~	~	?	x	x
Disodium Phosphate	~	~	●	x	●
Distilled Water	●	●	●	●	●
Ethyl Acetate	●	●	?	x	x
Ethylene Chloride	●	●	x	x	?
Ethylene Glycol	●	●	●	●	●
Fatty acids (Cb)	●	●	x	?	●
Ferric Sulphate	●	●	●	●	●
Fluorene Gas (wet)	x	x	●	x	?
Formaldehyde (37%)	●	●	●	●	●
Formic Acid (90%)	x	●	●	●	?
Freon 12	●	●	●	●	●
Fruit Juices and Pulp	?	●	~	●	●
Furfural	●	●	x	x	x
Gasoline (Refined)	●	●	x	●	●
Glucose	●	●	●	●	●
Glycerine	●	●	●	●	●

Stainless steel

Material resistance chart

Reagent	Stainless Steel 304	Stainless Steel 316	EPDM	Neoprene Gasket	Viton Gasket
Hydrobromic Acid (20%)	x	x	●	x	●
Hydrochloric Acid (40%)	x	x	x	●	●
Hydrocyanic Acid	●	●	?	●	●
Hydrogen Peroxide (90%)	●	●	x	x	●
Hydroquinone	~	~	x	●	●
Hypochlorous Acid	~	~	x	x	●
Iodine	x	?	?	x	●
Kerosene	●	●	x	●	●
Lactic Acid 25%	●	●	●	●	●
Linseed Oil	●	●	x	●	●
Liqueurs	~	~	?	x	●
Magnesium Chloride	?	?	●	●	●
Magnesium Sulphate	●	●	●	●	●
Maleic Acid	?	?	x	x	●
Methyl Chloride	?	?	x	x	●
Methyl Ethyl Ketone	~	~	●	x	x
Milk	●	●	●	●	●
Minerals Oils	~	~	x	●	●
Muriatic Acid	x	x	?	●	●
Nickel Chloride	?	?	●	●	●
Nickel Sulphate	●	●	●	●	●
Oils and Fats	●	●	?	?	●
Oleic Acid	●	●	●	?	●
Oleum	~	~	x	x	●
Oxalic Acid	?	?	●	x	●
Palmitic Acid 10%	~	~	●	x	●
Perchloric Acid 10%	x	x	?	●	●
Perchloric Acid 70%	x	x	?	x	●
Petroleum Oils (Sour)	●	●	x	●	●
Phenol 5%	●	●	?	x	●
Phosphorous Trichloride	●	●	●	x	●
Photographic Solutions	?	?	●	●	●
Picric Acid	●	●	●	●	●
Plating Solutions	~	~	~	x	●
Potassium Carbonate	●	●	●	●	●
Potassium Chloride	●	●	●	●	●
Potassium Cyanide	●	●	●	●	●
Potassium Dichromate	●	●	●	●	●
Potassium Hydroxide	●	●	●	●	●
Potassium Permanganate	●	●	●	●	●
Potassium Sulphate	●	●	●	●	●
Propane Gas	~	~	~	?	●
Propyl Alcohol	~	~	●	●	●

Reagent	Stainless Steel 304	Stainless Steel 316	EPDM	Neoprene Gasket	Viton Gasket
Sea Water	x	?	●	●	●
Sewage	?	?	●	●	●
Silver Nitrate	●	●	●	●	●
Silver Sulphate	●	●	●	●	x
Sodium Bicarbonate	●	●	●	●	●
Sodium Bisulphite	●	●	●	●	x
Sodium Carbonate	●	●	●	●	●
Sodium Cyanide	●	●	●	●	●
Sodium Ferrocyanide	~	~	?	●	●
Sodium Hydroxide	●	●	●	●	●
Sodium Hypochlorite	?	●	?	●	●
Sodium Sulphate	●	●	●	●	●
Sodium Sulphide	?	●	●	●	●
Sodium Sulphite	?	●	●	●	●
Sodium Thiosulphate	●	●	●	●	●
Stannous Chloride	?	?	x	●	●
Stearic Acid	●	●	?	●	●
Sulphite Liquor	~	~	?	●	●
Sulphurous Acid	?	?	?	x	●
Sulphur	?	●	~	●	●
Sulphur Dioxide (Dry)	?	●	●	x	●
Sulphur Dioxide (Wet)	?	●	●	●	●
Sulphuric Acid 50%	x	x	?	●	●
Sulphuric Acid 70%	x	x	?	●	●
Sulphuric Acid 93%	x	x	?	x	●
Tannic Acid	●	●	●	●	●
Tanning Liquors	●	●	●	●	●
Tartaric Acid	~	~	?	●	●
Toluene	~	~	x	x	x
Trichloroethylene	●	●	x	x	x
Triethanolamine	~	~	●	●	x
Trisodium Phosphate	~	~	●	●	●
Turpentine	●	●	x	x	●
Urea	●	●	●	●	●
Urine	●	●	●	●	●
Vinegar	●	●	●	●	●
Water (Fresh)	●	●	●	●	●
Water (Mine)	●	●	●	●	●
Water (Salt)	?	?	●	●	●
Whisky	●	●	●	●	●
Wines	●	●	●	●	●
Xylene	~	~	x	x	x
Zinc Chloride	x	x	●	●	●
Zinc Sulphate	?	●	●	●	●

ACO Technologies plc

- ACO Building Drainage
- ACO Water Management
Civils + Infrastructure
Urban + Landscape
- ACO Sport
- ACO Wildlife
- ACO Technic
- ACO Home & Garden

ACO Building Drainage

A division of ACO Technologies plc

ACO Business Centre

Caxton Road

Bedford

Bedfordshire

MK41 0LF

Tel: 01462 816666

Fax: 01462 851490

e-mail: buildingdrainage@aco.co.uk

www.acobuildingdrainage.co.uk

The ACO Group: A strong family you can depend on.

© January 2012 ACO Technologies plc. All reasonable care has been taken in compiling the information in this document. All recommendations and suggestions on the use of ACO products are made without guarantee since the conditions of use are beyond the control of the Company. It is the customer's responsibility to ensure that each product is fit for its intended purpose, and that the actual conditions of use are suitable. This brochure and any advice is provided by ACO Technologies plc (the Company) free of charge and accordingly on terms that no liability including liability for negligence will attach to the Company or its servants or agents arising out of or in connection with or in relation to this brochure or any such advice. Any goods supplied by the Company will be supplied solely upon its standard conditions of sale, copies of which are available on request. The Company's policy of continuous product development and improvement renders specifications liable to modification. Information provided in this brochure is therefore subject to change without prior notification.

