ACO Building Drainage

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CI/SfB (52.9)	

Pipework Systems

Product catalogue

ACO PIPE® Stainless steel pipework systems

ACO Building Drainage

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

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

Our global resources and 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 is a division of ACO Technologies plc and part of the worldwide ACO Group. The Group has sales in excess of £700 million worldwide with production facilities in the UK, Germany, France, Switzerland, Denmark, Spain, Poland, Czech Republic, Australia and the USA. In total more than 4,000 people are employed in over 40 countries throughout the world.

ACO Bulding Drainage Enquiries Team:
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- A complete pricing service to merchants, contractors and clients.

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

ACO Bulding Drainage Design Services Team:
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- Technical and installation advice.
- Detailed design and 'Value Engineering' advice.
- Hydraulic calculations and AutoCAD drawings.
- Advice on suitability of ACO equivalent products.

ACO Bulding Drainage Marketing and Media Support
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- For all product brochures, imagery or merchandising material requests.

collect:

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

clean:

- Grease Management Systems

hold:

- Anti-flood Backflow Protection Systems

release:

- Lifting Stations

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VAT No: GB 650 7977 05
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For quick access to our website, scan:

Contents

General introduction

Stainless steel pipework

The ACO Building Drainage name is synonymous with the highest standards in product design, range diversity and function for industrial, commercial and architectural drainage products manufactured in stainless steel.

As part of the growing range of engineered drainage solutions, ACO PIPE® presents a wide range of socketed waste pipework systems in thin-wall stainless steel for above and below ground drainage applications.

ACO PIPE® is a reliable, lightweight and durable push-fit pipework system, designed, produced and tested for soil, waste,rainwater and industrial wastewater drainage applications.

ACO PIPE® stainless steel socketed pipe systems provide the modern metal alternative to PVC-u and cast iron soil and waste pipework.

Together with the other products of ACO Group it creates a perfect system and offers a sustainable drainage solution with unique advantages to the customers. ACO stainless steel gully and channel systems provide a unique system for building drainage. The push-fit system ensures quick and easy assembly for a reliable installation for gravity and vacuum drainage.

All ACO PIPE® interconnecting seals and fittings incorporate a unique double sealing system providing a trouble-free, reliable sealing system - every time.

The wide range of fittings available utilises advanced cold forming techniques, thereby reducing the manufacturing cost and minimizing the amount of welded components, to provide the ultimate in system reliability.

Steel has better aesthetics than alternative pipe materials but if the finish and visual appeal of your pipe network is important to you, ACO also give customers the option of specifying specific finishing treatment or coating for their ACO Pipe products. Contact us for more information on the options available.

Typical applications

ACO PIPE® stainless steel pipe is the fast track alternative to cast iron or PVC-u pipe systems and is available in standard and non-standard pipe sizes with easy to assemble push-on fittings. ACO PIPE® is ideal for:

- Food processing plants
- Commercial buildings
- Chemical processing plant
- Industrial buildings
- Hotels
- Kitchens
- Leisure centres
- Hospitals
- Laboratories
- Schools
- Abattoirs

Product benefits

ACO PIPE® socketed stainless steel systems significantly reduces installation time and associated costs along with long term maintenance and care costs.

- Easy installation
- Highly corrosion resistant
- Lightweight and easy to handle
- Double sealed jointed system
- Simple push-fit assembly
- Low thermal expansion coefficient
- No painting required
- Electro-polished option
- Sustainable material
- Hygienic

General introduction

ACO PIPE® material information

ACO PIPE® stainless steel pipework systems are manufactured from austenitic stainless steel in grades 304 and 316. All products are pickled and passivated for optimum durability and corrosion resistance. Surface treatment by means of electropolishing or varnishing is available.

The hard, smooth surface of stainless steel makes it easy to clean and provides efficient flow for water and waste products.

ACO PIPE® sockets are fitted with EPDM seals as standard. For particularly aggressive chemical applications, specify 316 grade stainless steel with Viton® seals for increased resistance

Push-fit connection

Very reliable for vacuum and gravity piping system.

ACO PIPE® double lip seal for ultimate system reliability. The unique design of the lips and cavities gives ACO PIPE® full liquid-tight sealing.

- Push-fit advantages
- Easy to assemble
- Time saving
- Cost saving
- Water tight connection

Sound

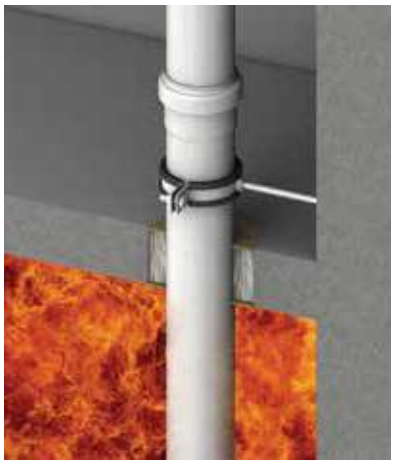
Results of acoustic tests on ACO PIPE® performed to BS EN 13466 are available upon request.

Reaction to fire

ACO PIPE® push-fit system is designed and manufactured to BS EN 1124 Parts 1 & 2 and is non-combustible and classified as class A 'no contribution to fire' as provided for in Commission Decision 96/603/EC as amended.

ACO PIPE® systems are also certified by the Swedish Institute for Technical Approval in Construction (SITAC) as fire resistant, Certificate No 0410-01.

- Non combustible
- No additional fire collars needed at installation
- No toxic fumes emitted in case of fire
- BS EN 1124, SITAC, CSI, DNV and ABS fire certification available

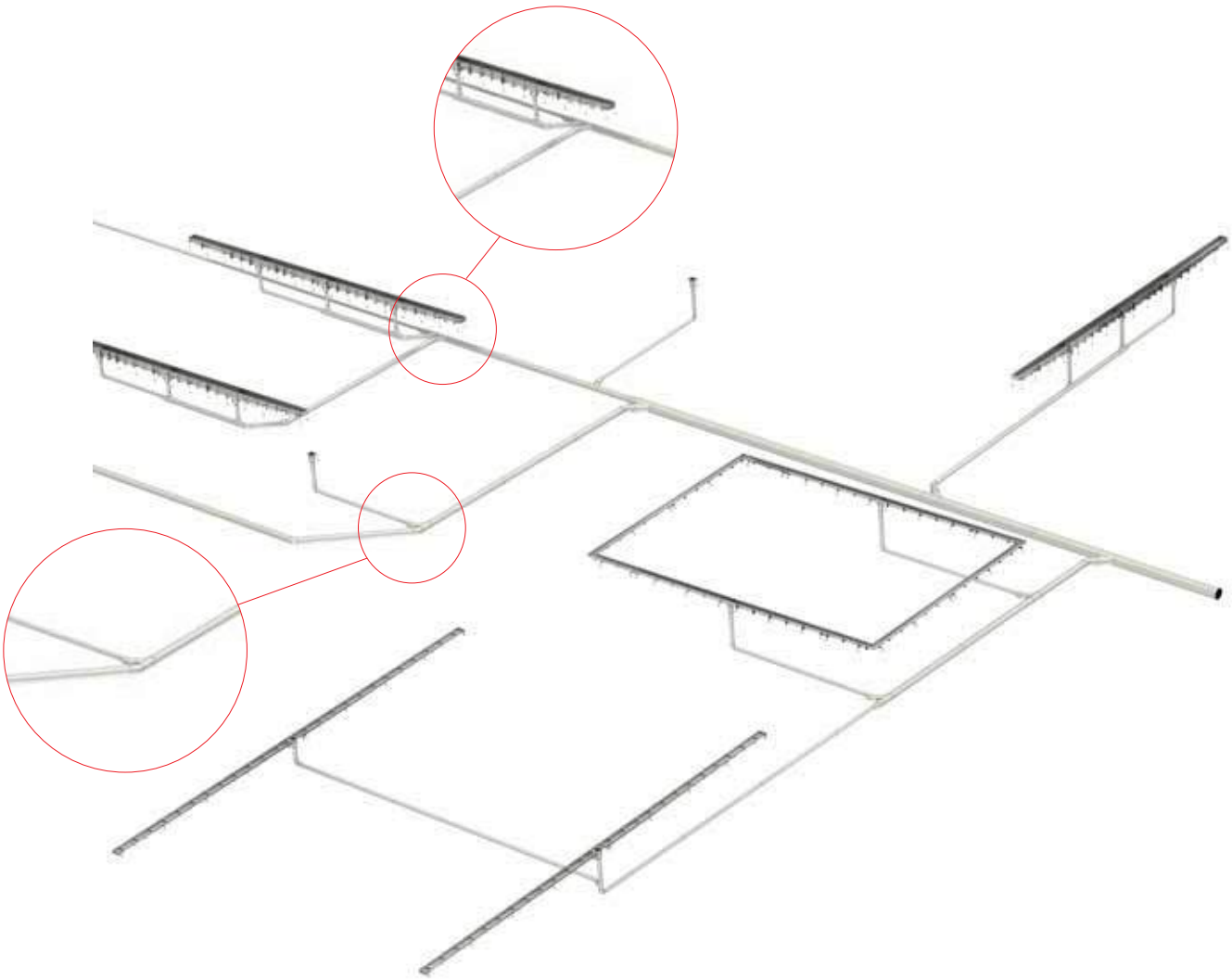


General introduction

Characteristics and system overview

ACO PIPE® is the ideal system for grey and black water, rainwater and industrial waste water drainage application. Use in conjunction with ACO stainless steel gully and channel systems to provide a complete building drainage solution.

ACO PIPE® stainless steel pipes and fittings are available in 40mm, 50mm, 75mm, 110mm, 125mm, 160mm, 200mm, 250mm and 315mm external diameters with the standard lengths from 0.15 metre up to 3 metres for optimum practicality and ease of assembly.

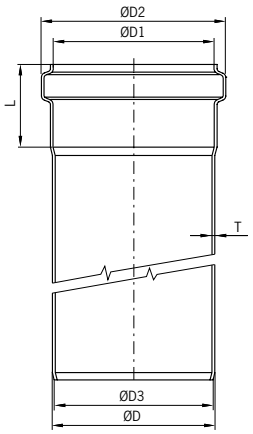


Straight Single socketed pipe

Product information

- Pipes are available in 40 mm, 50 mm, 75 mm, 110 mm, 125 mm, 160 mm, 200 mm, 250 mm and 315 mm external diameters
- Lengths from 0.15 meter up to 6 meter
- Available in 1.4301 (AISI 304) and 1.4404 (AISI 316L) grades stainless steel
- Push-fit system for quick assembly
- Superior seal security – components comprise a unique double lip sealing system, ideal for extraneous conditions
- Fully comply to EN 1124
- EPDM and Viton® seals available
- Fully pickled and passivated

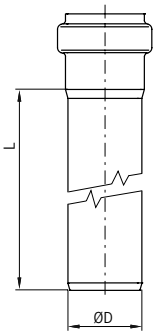
ACO pipe - straight pipe



Dimensions of socket and spigot					
øD [mm]	$øD_1$ [mm]	$øD_2$ [mm]	$øD_3$ [mm]	**Socket length** L [mm]	**Wall thickness** T [mm]
40	41	51.5	38	40	1.0
50	51	62.0	47	42	1.0
75	76	87.5	72	50	1.0
110	111	125.5	107	57	1.0
125	126	141.0	122	63	1.0
160	161	178.0	156	70	1.25
200	201	219.0	195	80	1.5
250	251	268.6	245	90	1.5
315	316.2	334.2	309	100	2.0

ACO pipe - straight pipe 40 mm

Outlet diameter øD [mm]	**Active length** L [mm]	**Weight** [kg]	**Part No** EPDM* 304	**Part No** EPDM* 316
40	150	0.2	**417304**	**417320**
40	250	0.3	**417306**	**417322**
40	500	0.6	**417308**	**417324**
40	750	0.8	**417310**	**417326**
40	1000	1.1	**417312**	**417328**
40	1500	1.6	**417314**	**417330**
40	2000	2.1	**417316**	**417332**
40	2500	2.8	**417260**	**417262**
40	3000	3.1	**417318**	**417334**
40	4000	4.1	**417264**	**417270**
40	5000	5.1	**417266**	**417272**
40	6000	6.1	**417268**	**417274**



* See page 38 for NBr seal. Viton® seal not available for 40mm dia pipe.

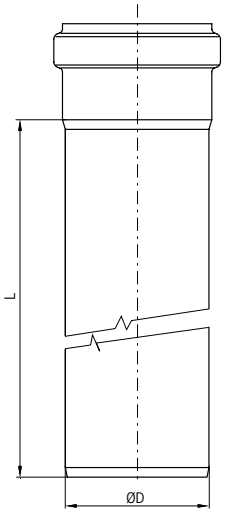
Straight Single socketed pipe

ACO pipe - straight pipe 50 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
50	150	0.2	**98500**	**98550**
50	250	0.4	**98502**	**98552**
50	500	0.7	**98504**	**98554**
50	750	1.0	**98506**	**98556**
50	1000	1.3	**98508**	**98558**
50	1500	1.9	**98510**	**98560**
50	2000	2.6	**98512**	**98562**
50	2500	3.2	**419274**	**419282**
50	3000	3.8	**98514**	**98564**
50	4000	5.0	**419458**	**419482**
50	5000	6.3	**419466**	**419490**
50	6000	7.5	**419474**	**419498**

ACO pipe - straight pipe 75 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
75	150	0.4	**98516**	**98566**
75	250	0.6	**98518**	**98568**
75	500	1.0	**98520**	**98570**
75	750	1.5	**98522**	**98572**
75	1000	2.0	**98524**	**98574**
75	1500	2.9	**98526**	**98576**
75	2000	3.6	**98528**	**98578**
75	2500	4.8	**419276**	**419284**
75	3000	5.7	**98530**	**98580**
75	4000	7.6	**419460**	**419484**
75	5000	9.4	**419468**	**419492**
75	6000	11.3	**419476**	**419500**



ACO pipe - straight pipe 110 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
110	150	0.6	**98532**	**98582**
110	250	0.9	**98534**	**98584**
110	500	1.5	**98536**	**98586**
110	750	2.2	**98538**	**98588**
110	1000	2.9	**98540**	**98590**
110	1500	4.3	**98542**	**98592**
110	2000	5.7	**98544**	**98594**
110	2500	7.1	**419278**	**419286**
110	3000	8.4	**98546**	**98596**
110	4000	11.1	**419462**	**419486**
110	5000	13.9	**419470**	**419494**
110	6000	16.7	**419478**	**419502**

* See page 38 for NBr seal and Viton® seals.

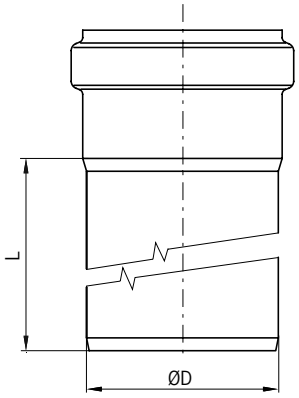
Straight Single socketed pipe

ACO pipe - straight pipe 125 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
125	150	0.7	**419692**	**419712**
125	250	1.0	**419694**	**419714**
125	500	1.7	**419696**	**419716**
125	750	2.5	**419698**	**419718**
125	1000	3.3	**419700**	**419720**
125	1500	4.9	**419702**	**419722**
125	2000	6.5	**419704**	**419724**
125	2500	8.1	**419708**	**419728**
125	3000	9.6	**419706**	**419726**
125	6000	19.0	**419710**	**419730**

ACO pipe - straight pipe 160 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
160	150	1.1	**98548**	**98598**
160	250	1.6	**98600**	**98650**
160	500	2.9	**98602**	**98652**
160	750	4.1	**98604**	**98654**
160	1000	5.4	**98606**	**98656**
160	1500	7.9	**98608**	**98658**
160	2000	10.4	**98610**	**98660**
160	2500	12.9	**419280**	**419288**
160	3000	15.4	**98612**	**98662**
160	4000	20.4	**419464**	**419488**
160	5000	25.4	**419472**	**419496**
160	6000	30.4	**419480**	**419504**



ACO pipe - straight pipe 200 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
200	500	4.5	**419383**	**419384**
200	1000	8.3	**419387**	**419388**
200	2000	15.8	**419391**	**419392**
200	3000	23.2	**419395**	**419396**

ACO pipe - straight pipe 250 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
250	500	5.5	**417071**	**417072**
250	1000	10.2	**417075**	**417076**
250	2000	19.4	**417079**	**417080**
250	3000	28.7	**417083**	**417084**

ACO pipe - straight pipe 315 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM** 304	Part No EPDM** 316
315	500	9.8	**417238**	**417200**
315	1000	17.7	**417239**	**417201**
315	2000	33.5	**417240**	**417202**
315	3000	49.3	**417241**	**417203**

* See page 38 for NBr seal and Viton® seals.

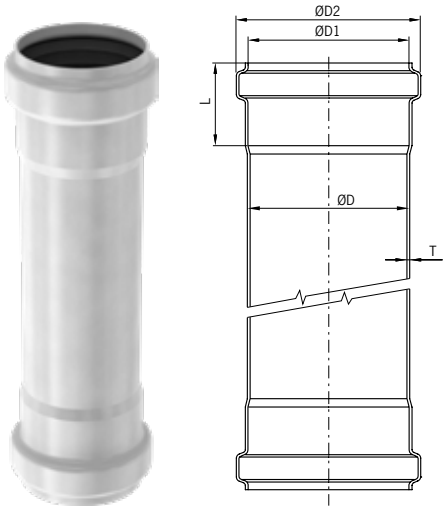
** See page 38 for NBr seal. Viton® seal not available for 315mm dia pipe.

Straight Double socketed pipe

Product information

- Pipes are available in 40 mm, 50 mm, 75 mm, 110 mm, 125 mm, 160 mm, 200 mm, 250 mm and 315 mm external diameters
- Lengths from 0.15 meter up to 6 meter
- Available in 1.4301 (AISI 304) and 1.4404 (AISI 316L) grades stainless steel
- Push-fit system for quick assembly
- Superior seal security – components comprise a unique double lip sealing system, ideal for extraneous conditions
- Fully comply to EN 1124
- EPDM and Viton® seals available
- Fully pickled and passivated

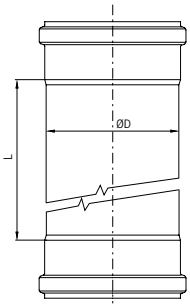
ACO pipe - double socketed pipe



Dimensions of socket and spigot					
øD [mm]	$øD_1$ [mm]	$øD_2$ [mm]	$øD_3$ [mm]	**Socket length** L [mm]	**Wall thickness** T [mm]
40	41	51.5	38	40	1.0
50	51	62.0	47	42	1.0
75	76	87.5	72	50	1.0
110	111	125.5	107	57	1.0
125	126	141.0	122	63	1.0
160	161	178.0	156	70	1.25
200	201	219.0	195	80	1.5
250	251	268.6	245	90	1.5
315	316.2	334.2	309	100	2.0

ACO pipe - straight pipe 40 mm

Outlet diameter øD [mm]	**Active length** L [mm]	**Weight** [kg]	**Part No** EPDM*	
			304	316
40	250	0.2	**417276**	**417290**
40	500	0.6	**417278**	**417292**
40	750	0.9	**417280**	**417294**
40	1000	1.2	**417282**	**417296**
40	1500	1.8	**417284**	**417298**
40	2000	2.4	**417286**	**417300**
40	3000	3.6	**417288**	**417302**



* See page 38 for NBr seal. Viton® seal not available for 40mm pipe.

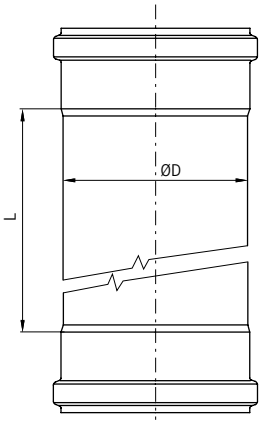
Straight Double socketed pipe

ACO pipe - double socketed pipe 40 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
40	250	0.2	**417276**	**417290**
40	500	0.6	**417278**	**417292**
40	750	0.9	**417280**	**417294**
40	1000	1.2	**417282**	**417296**
40	1500	1.8	**417284**	**417298**
40	2000	2.4	**417286**	**417300**
40	3000	3.6	**417288**	**417302**

ACO pipe - double socketed pipe 50 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
50	250	0.4	**419554**	**419594**
50	500	0.7	**419556**	**419596**
50	750	1.1	**419558**	**419598**
50	1000	1.4	**419560**	**419600**
50	1500	2.0	**419562**	**419602**
50	2000	2.6	**419564**	**419604**
50	3000	3.9	**419566**	**419606**



ACO pipe - double socketed pipe 75 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
75	250	0.7	**419568**	**419608**
75	500	1.2	**419570**	**419610**
75	750	1.6	**419572**	**419612**
75	1000	2.1	**419574**	**419614**
75	1500	3.0	**419576**	**419616**
75	2000	4.0	**419578**	**419618**
75	3000	5.8	**419580**	**419620**

ACO pipe - double socketed pipe 110 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
110	500	1.7	**419582**	**419622**
110	750	2.4	**419584**	**419624**
110	1000	3.0	**419586**	**419626**
110	1500	4.4	**419588**	**419628**
110	2000	5.7	**419590**	**419630**
110	3000	8.4	**419592**	**419632**

* See page 30 for information on NBr and Viton® seals.

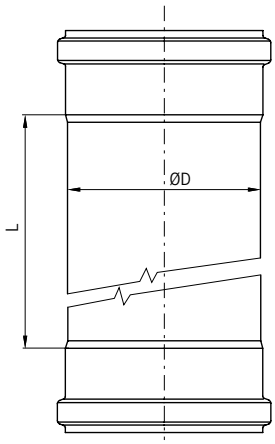
Straight Double socketed pipe

ACO pipe - double socketed pipe 125 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
125	500	1.7	**419787**	**419799**
125	750	2.5	**419789**	**419801**
125	1000	3.3	**419791**	**419803**
125	1500	4.9	**419793**	**419805**
125	2000	6.5	**419795**	**419807**
125	3000	9.6	**419797**	**419809**

ACO pipe - double socketed pipe 160 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
160	500	3.3	**419634**	**419646**
160	750	4.5	**419636**	**419648**
160	1000	5.8	**419638**	**419650**
160	1500	8.2	**419640**	**419652**
160	2000	10.7	**419642**	**419654**
160	3000	15.7	**419644**	**419656**



ACO pipe - double socketed pipe 200 mm

Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Part No EPDM* 304	Part No EPDM* 316
200	500	5.0	**419658**	**419659**
200	1000	8.6	**419662**	**419663**
200	2000	15.9	**419666**	**419667**
200	3000	23.1	**419670**	**419671**

* Seals also available in NBr and Viton®, see page 38 for information.

Double socketed pipe are not available for dia. 250mm and 315mm

Bends

Product information

- Bends are available in 40 mm, 50 mm, 75 mm, 110 mm, 125 mm, 160 mm, 200 mm, 250 mm and 315 mm external diameters
- Available in 1.4301 (AISI 304) and 1.4404 (AISI 316L) grades stainless steel
- Push-fit system for quick assembly
- Superior seal security – components comprise a unique double lip sealing system, ideal for extraneous conditions
- Fully chemically pickled and passivated
- EPDM and Viton® seals available
- Fully comply to EN 1124

ACO pipe - bend 87.5°

ACO pipe - bend 45°

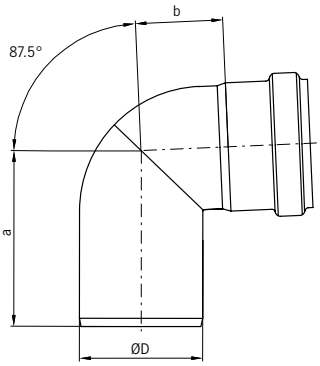
ACO pipe - bend 30°

ACO pipe - long bend 87.5°

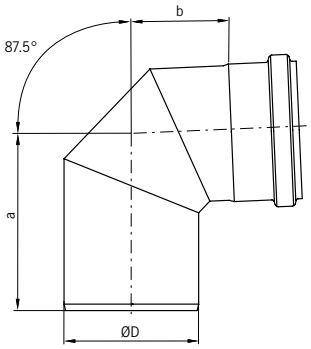
ACO pipe - bend 15°

ACO pipe - bend 87.5°

Shape valid for øD 40, 50, 75, 110 and 160.



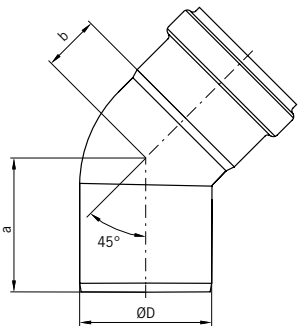
Shape valid for øD 125, 200, 250 and 315.



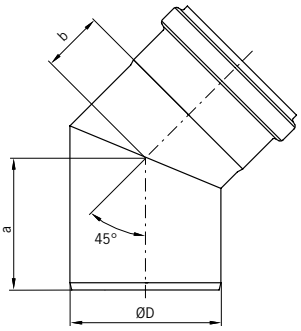
Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No	
	a [mm]	b [mm]		EPDM*	
				304	316
40**	79	32	0.2	**417342**	**417350**
50	86	40	0.2	**98700**	**98750**
75	107	53	0.4	**98702**	**98752**
110	134	67	0.7	**98704**	**98754**
125	161	93	0.8	**419732**	**419734**
160	181	105	1.7	**98706**	**98756**
200	215	129	3.9	**419411**	**419413**
250	297	198	5.1	**-**	**417088**
315**	393	286	12.8	**-**	**417204**

ACO pipe - bend 45°

Shape valid for øD 40, 50, 75, 110 and 160.



Shape valid for øD 125, 200, 250 and 315.



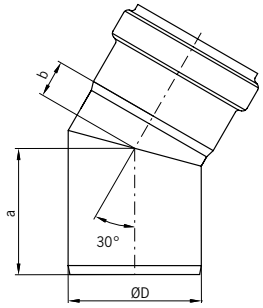
Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No	
	a [mm]	b [mm]		EPDM*	
				304	316
40**	58	21	0.2	**417344**	**417352**
50	62	24	0.2	**98708**	**98758**
75	76	32	0.3	**98710**	**98760**
110	93	42	0.5	**98712**	**98762**
125	110	50	0.6	**419736**	**419738**
160	131	55	1.3	**98714**	**98764**
200	152	60	2.7	**419407**	**419409**
250	177	76	4.1	**-**	**417092**
315**	199	91	7.2	**-**	**417205**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

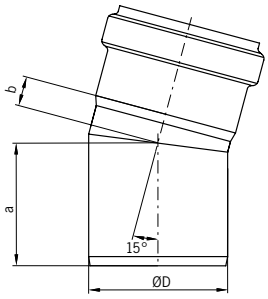
Bends

ACO pipe - bend 30°



Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No EPDM*	
	a [mm]	b [mm]		304	316
40**	55	14	0.1	**417346**	**417354**
50	57	16	0.2	**98716**	**98766**
75	71	21	0.3	**98718**	**98768**
110	85	27	0.5	**98720**	**98770**
125	98	28	0.6	**419740**	**419742**
160	110	40	1.2	**98722**	**98772**
200	137	45	2.3	**419403**	**419405**
250	153	58	2.9	**-**	**417096**
315**	172	68	5.8	**-**	**417206**

ACO pipe - bend 15°

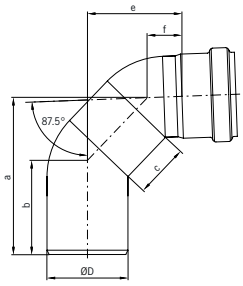


Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No EPDM*	
	a [mm]	b [mm]		304	316
40**	53	11	0.1	**417348**	**417356**
50	54	12	0.1	**98724**	**98774**
75	66	16	0.3	**98726**	**98776**
110	78	15	0.4	**98728**	**98778**
125	84	19	0.5	**419744**	**419746**
160	99	29	1.0	**98730**	**98780**
200	123	31	1.9	**419399**	**419401**
250	136	40	2.5	**-**	**417100**
315**	151	46	5.4	**-**	**417207**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

ACO pipe - long bend 87.5°

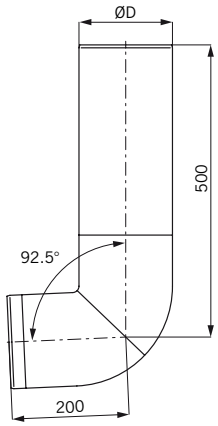


Outlet diameter	Dimensions					Weight	Part No	
							EPDM*	
øD [mm]	a [mm]	b [mm]	c [mm]	e [mm]	f [mm]	[kg]	304	316
40**	105	64	50	67	40	0.2	**417340**	**417338**
50	123	71	50	75	25	0.3	**419146**	**419000**
75	146	87	50	88	32	0.5	**419148**	**419002**
110	316	103	250	246	39	1.4	**419150**	**419004**
160	360	126	250	270	92	2.2	**419152**	**419144**

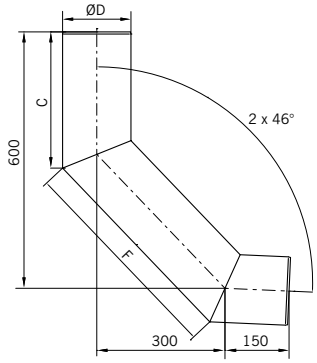
* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40mm pipe diameters.

1 x 92.5" tall bend



D	Weight	Part No	Part No
(mm)	(kg)	304	316
110	2.0	417056	417057
160	3.7	417058	417059



D	C	F	Weight	Part No	Part No
(mm)	(mm)	(mm)	(kg)	304	316
110	309	478	2.4	417060	417061
160	319	498	4.4	417062	417063

Branches

Product information

- Branches are available in 40 mm, 50 mm, 75 mm, 110 mm, 125 mm, 160 mm, 200 mm, 250 mm and 315 mm external diameters
- Available in 1.4301 (AISI 304) and 1.4404 (AISI 316L) grades stainless steel
- Push-fit system for quick assembly
- Superior seal security – components comprise a unique double lip sealing system, ideal for extraneous conditions
- Fully comply to EN 1124
- EPDM and Viton® seals available
- Fully pickled and passivated

ACO pipe - single branch

ACO pipe - double branch

ACO pipe - single branch reduction

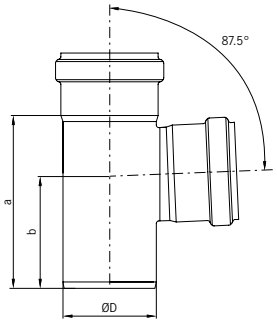
ACO pipe - double branch reduction

ACO pipe - swept single branch

ACO pipe - corner branch

Single branches

ACO pipe - single branch 87.5°

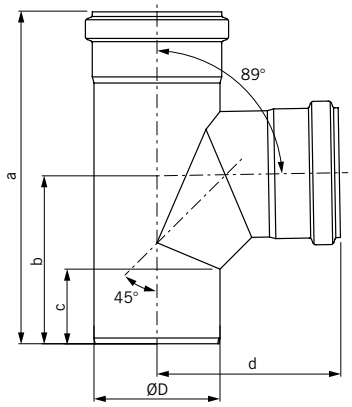


Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No	
	a [mm]	b [mm]		EPDM*	
				304	316
40**	101	69	0.3	**417362**	**417368**
50	106	71	0.3	**98732**	**98782**
75	139	90	0.5	**98734**	**98784**
110	183	117	0.8	**98736**	**98786**
125	220	135	0.9	**419748**	**419750**
160	288	184	2.3	**98738**	**98788**
200	333	206	4.5	**419419**	**419421**
250	363	215	5.5	**-**	**417104**
315**	476	281	14.8	**-**	**417208**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

89° single swept branch special

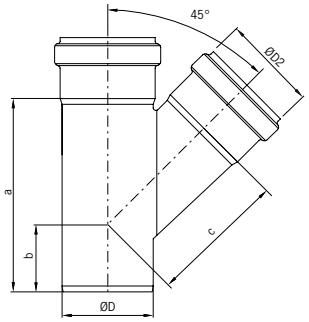


D (mm)	a (mm)	b (mm)	c (mm)	d (mm)	Weight (kg)	Part No
						EPDM*
						304
110	295	148	76	160	1.1	**415111**
75	229	125	68	134	0.6	**415112**
50	170	88	48	100	0.3	**415113**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

ACO pipe - single branch 45°



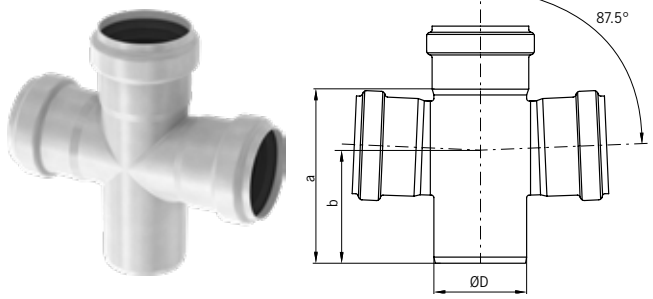
Outlet diameter øD [mm]	Dimensions a [mm]	b [mm]	c [mm]	Weight [kg]	Part No EPDM* 304	316
40**	118	58	63	0.3	**417366**	**417372**
50	128	57	76	0.3	**98748**	**98798**
75	179	74	110	0.5	**98800**	**98850**
110	233	88	149	1.0	**98802**	**98852**
125	273	103	170	1.1	**419760**	**419762**
160	332	119	222	2.6	**98804**	**98854**
200	415	151	274	5.7	**419427**	**419429**
250	513	172	336	9.2	**-**	**417108**
315**	616	195	521	20.6	**-**	**417209**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

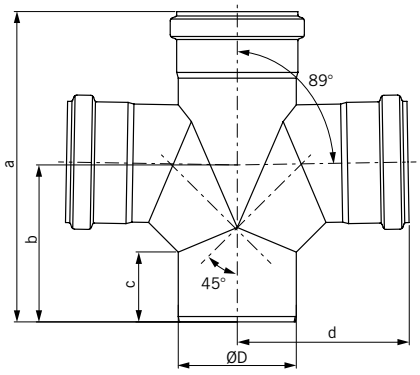
Double branches

ACO pipe - double branch 87.5°



Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No	
	a [mm]	b [mm]		EPDM*	
				304	316
40**	101	69	0.3	**417364**	**417370**
50	106	71	0.3	**98740**	**98790**
75	139	90	0.6	**98742**	**98792**
110	183	117	0.9	**98744**	**98794**
160	288	184	2.7	**98746**	**98796**

89° Double swept branch special

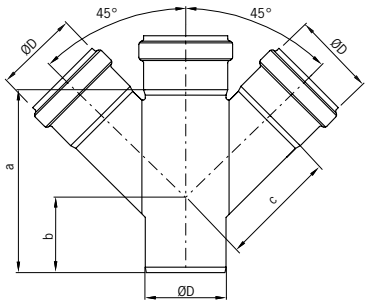


D (mm)	a (mm)	b (mm)	c (mm)	d (mm)	Weight (kg)	Part No
						EPDM*
						304
110	295	148	76	160	**1.4**	**415108**
75	229	125	68	134	**0.8**	**415109**
50	170	88	48	100	**0.4**	**405110**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40mm pipe diameters.

ACO pipe - double branch 45°



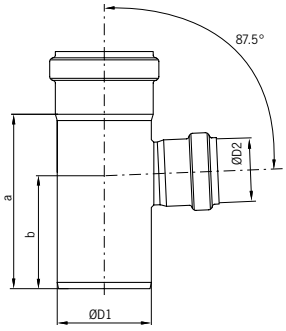
Outlet diameter øD [mm]	Dimensions			Weight [kg]	Part No	
	a [mm]	b [mm]	c [mm]		EPDM*	
					304	316
40**	118	58	63	0.4	**417374**	**417378**
50	128	57	76	0.4	**98806**	**98856**
75	179	74	110	0.7	**98808**	**98858**
110	233	88	149	1.2	**98810**	**98860**
160	332	184	222	3.5	**98812**	**98862**
250	509	172	336	11	**-**	**417120**
315**	616	195	521	29.7	**-**	**417212**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

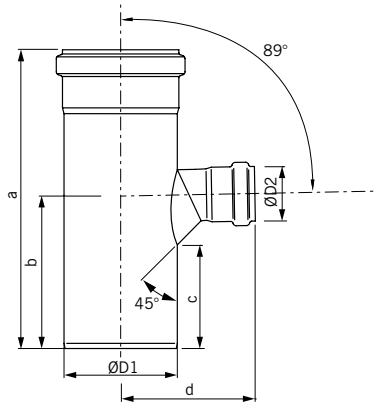
Single branch reductions

ACO pipe - single branch reduction 87.5°



Outlet diameter		Dimensions		Weight [kg]	Part No	
					EPDM*	
øD1 [mm]	øD2 [mm]	a [mm]	b [mm]		304	316
50	40**	106	98	0.3	**417442**	**417443**
75	40**	139	98	0.3	**417444**	**417445**
75	50	139	90	0.3	**98928**	**98930**
110	50	183	117	0.5	**98932**	**98934**
110	75	183	117	0.8	**98936**	**98938**
125	75	187	110	0.9	**419752**	**419754**
125	110	205	127	0.9	**419756**	**419758**
160	110	288	184	2.3	**400691**	**400693**
200	160	293	186	3.7	**419415**	**419417**
250	200	349	226	5.8	**-**	**417112**
315**	250	411	248	10.5	**-**	**417210**

89° single swept branch reduction special

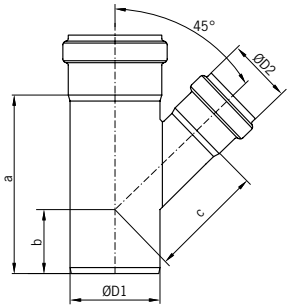


D1 (mm)	D2 (mm)	a (mm)	b (mm)	c (mm)	d w(kg)	Weight (kg)	Part No
							EPDM*
							304
110	50	295	148	104	**135**	**0.9**	**415106**
110	75	295	148	81	**143**	**1.0**	**415107**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

ACO pipe - single branch reduction 45°



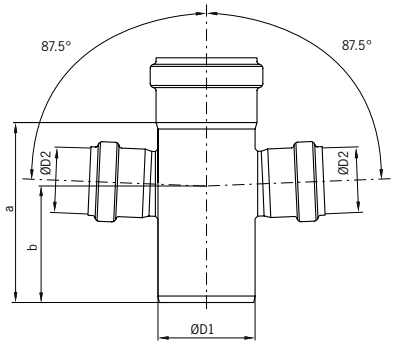
Outlet diameter		Dimensions			Weight [kg]	Part No	
						EPDM*	
øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	c [mm]		304	316
50	40**	119	55	71	0.3	**417406**	**417408**
75	40**	144	94	56	0.3	**417446**	**417447**
75	50	144	56	94	0.3	**400661**	**400663**
110	50	147	42	119	0.5	**400665**	**400667**
110	75	182	60	135	1.0	**400669**	**400671**
125	75	200	65	141	1.1	**419764**	**419766**
125	110	250	90	160	1.1	**419768**	**419770**
160	110	332	119	191	2.6	**400699**	**400701**
200	160	359	123	250	4.7	**419423**	**419425**
250	200	429	175	307	7.6	**-**	**417116**
315**	250	513	149	382	14.0	**-**	**417211**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

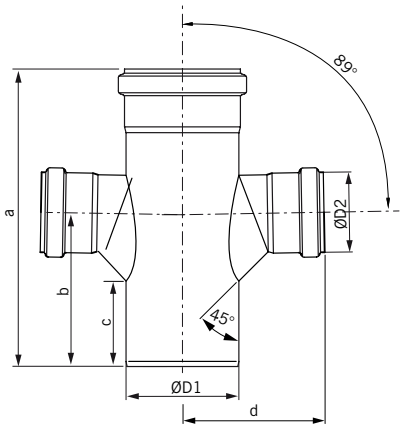
Double branch reductions

ACO pipe - double branch reduction 87.5°



Outlet diameter		Dimensions		Weight [kg]	Part No	
					EPDM*	
øD1 [mm]	øD2 [mm]	a [mm]	b [mm]		304	316
50	40**				**417398**	**417399**
75	50	139	90	0.3	**98940**	**98942**
110	50	183	117	0.6	**98944**	**98946**
110	75	183	117	0.9	**98900**	**98902**
160	110	288	184	2.7	**400695**	**400697**

ACO pipe - 89° double swept branch reduction special

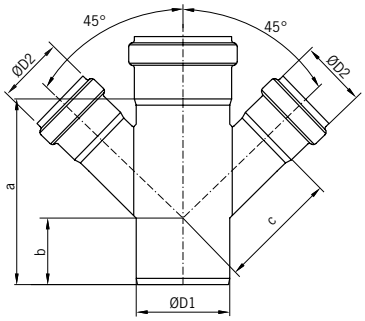


D1 (mm)	D2 (mm)	a (mm)	b (mm)	c (mm)	d **w**(kg)	Weight (kg)	Part No
							EPDM*
							304
110	50	295	148	81	**143**	**1.1**	**415104**
110	75	295	148	104	**135**	**1.0**	**415105**

* Seals also available in NBr and Viton®, see page 38 for information.

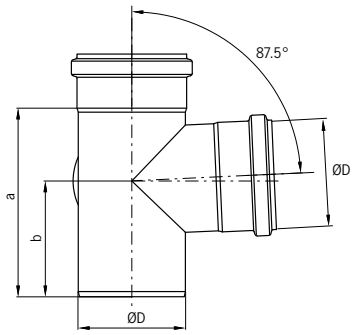
** Viton® seal not available for 40mm pipe diameters.

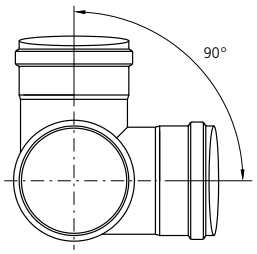
ACO pipe - double branch reduction 45°



Outlet diameter		Dimensions			Weight [kg]	Part No	
						EPDM*	
øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	c [mm]		304	316
50	40**	119	55	71	0.3	**417410**	**417412**
75	50	144	56	94	0.4	**400673**	**400675**
110	50	147	42	119	0.7	**400677**	**400679**
110	75	182	60	135	1.2	**400681**	**400683**
160	110	332	119	190	3.5	**400703**	**400705**
250	200	429	150	307	10.1	**-**	**417124**
315**	250	513	149	382	17.8	**-**	**417213**

ACO pipe - corner branch 87.5°





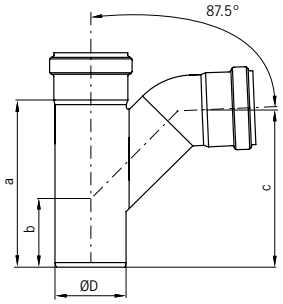
Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No	
				EPDM*	
	a [mm]	b [mm]		304	316
40**	101	69	0.3	**417414**	**417415**
50	106	71	0.4	**419162**	**419210**
75	139	90	0.7	**419164**	**419212**
110	183	117	1.1	**419166**	**419214**
125	220	135	1.6	**417020**	**417021**
160	288	184	2.9	**419168**	**419216**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

Swept single branch

ACO pipe - swept single branch 87.5°



Outlet diameter øD [mm]	Dimensions			Weight [kg]	Part No	
					EPDM*	
	a [mm]	b [mm]	c [mm]		304	316
40**	115	55	105	0.3	**417376**	**417380**
50	128	57	117	0.3	**98814**	**98864**
75	179	74	157	0.6	**98816**	**98866**
110	233	88	209	1.1	**98818**	**98868**
160	332	184	302	2.8	**98820**	**98870**

* Seals also available in NBr and Viton®, see page 38 for information.

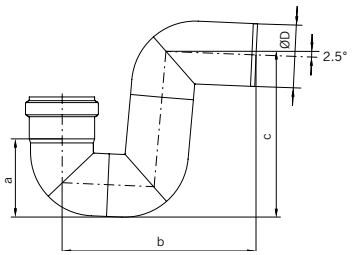
** Viton® seal not available for 40mm pipe diameters.

Accessories

Product information

- Accessories are available in 40 mm, 50 mm, 75 mm, 110 mm, 125 mm, 160 mm, 200 mm, 250 mm and 315 mm external diameters
- Available in 1.4301 (AISI 304) and 1.4404 (AISI 316L) grades stainless steel
- Push-fit system for quick assembly
- Superior seal security – components comprise a unique double lip sealing system, ideal for extraneous conditions
- Fully comply to EN 1124
- EPDM and Viton® seals available
- Fully pickled and passivated

"P" trap

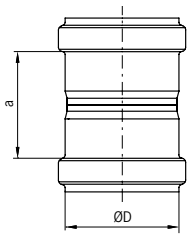


Outlet diameter øD [mm]	Dimensions			Weight [kg]	Part No	
					EPDM	
	a [mm]	b [mm]	c [mm]		304	316
50	68	187	149	0.5	**98822**	**98872**
75	94	232	193	0.7	**98824**	**98874**
110	132	300	254	1.3	**98826**	**98876**
160	190	403	347	3.3	**98828**	**98878**

* Seals also available in NBr and Viton®, see page 38 for information.

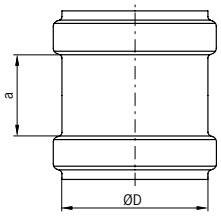
** Viton® seal not available for 40 and 315mm pipe diameters.

Straight coupling



Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Part No EPDM*	
			304	316
40**	51	0.1	**417392**	**417394**
50	54	0.1	**98920**	**98970**
75	75	0.2	**98922**	**98972**
110	84	0.4	**98924**	**98974**
125	140	0.4	**419813**	**419815**
160	110	0.8	**98926**	**98976**
200	136	1.8	**419431**	**419433**
250	181	3.1	**-**	**417160**
315**	179	5.2	**-**	**417225**

Repair coupling



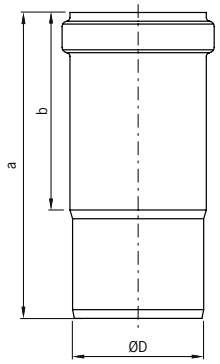
Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Part No EPDM*	
			304	316
40**	57	0.1	**417388**	**417390**
50	44	0.1	**98830**	**98880**
75	46	0.2	**98832**	**98882**
110	52	0.3	**98834**	**98884**
125	70	0.3	**419772**	**419774**
160	76	0.7	**98836**	**98886**
200	100	1.5	**419435**	**419437**
250	182	2.4	**-**	**417139**
315**	179	4.9	**-**	**417220**

Note:
Repair couplings are used to aid a convenient repair to a damaged in-situ pipe. Unlike the standard straight coupling, there is no central registration to limit the insertion depth of the pipe. The repair coupling slides completely over a pipe joint and simply re-positioned to bridge the required pipe joint.

Installation tip:
Mark the final position of the repair coupling on the installed pipe system to ensure the coupling seals are positioned symmetrically about the pipe joint.

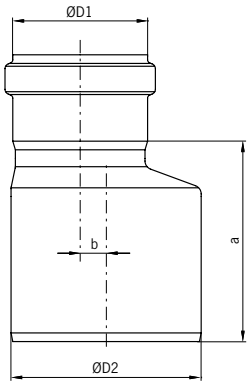
* Seals also available in NBr and Viton®, see page 38 for information.
** Viton® seal not available for 40 and 315mm pipe diameters.

Expansion socket



Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No	
				EPDM*	
	a [mm]	b [mm]		304	316
40**	150	90	0.2	**417382**	**417384**
50	159	102	0.2	**98664**	**98666**
75	175	113	0.3	**98668**	**98670**
110	200	121	0.5	**98672**	**98674**
125	250	165	0.6	**419776**	**419778**
160	292	170	1.4	**98676**	**98678**
250	400	190	3.8	**-**	**417143**
315	450	200	7.2	**-**	**417221**

Eccentric increaser coupling

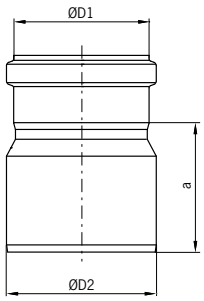


Outlet diameter		Dimensions		Weight [kg]	Part No
					EPDM*
øD1 [mm]	øD2 [mm]	a [mm]	b [mm]		316
40**	50	85	5	0.3	**417418**
40**	75	85	17	0.3	**417419**
50	75	75	7	0.3	**98892**
50	110	110	25	0.4	**98978**
75	110	110	15	0.5	**98894**
110	160	160	22	1.1	**98896**
200	250	180	15	2.4	**417135**
250	315 **	190	15	4.4	**417218**

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

Concentric increaser coupling

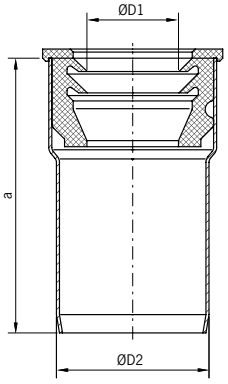


Outlet diameter		Dimension	Weight	Part No
		a [mm]	[kg]	EPDM*
øD1 [mm]	øD2 [mm]			316
40**	50	85	0.25	**417416**
40**	75	85	0.3	**417417**
50	75	88	0.3	**419826**
50	110	113	1.4	**417018**
75	125	105	0.6	**419828**
110	125	107	0.6	**419780**
110	160	126	0.9	**419830**
125	160	160	1.2	**419811**
160	200	200	1.8	**419441**
200	250	180	2.4	**417133**
315*	250	190	4.4	**417217**

* Seals also available in NBr and Viton®, see page 38 for information.

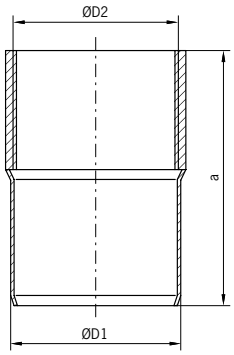
** Viton® seal not available for 40 and 315mm pipe diameters.

Increaser connector



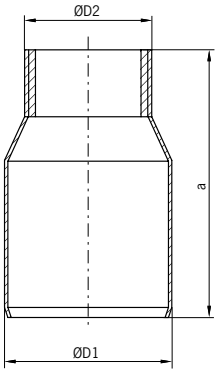
Outlet diameter		Dimensions	Weight	Part No
		a [mm]	[kg]	NBR
øD1 [mm]	øD2 [mm]			316
32	50	90	0.2	**419373**
40	50	90	0.2	**419374**

Connector with internal screw thread and spigot



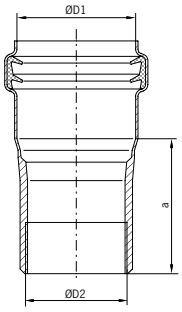
Outlet diameter		Dimensions	Weight	Part No
øD1 [mm]	øD2 [mm]	a [mm]	[kg]	316
40	G 1¼"	70	0.2	**417337**
50	G 1¼"	72	0.2	**98956**
50	G 1½"	75	0.3	**98957**
50	G 2"	80	0.3	**98958**

Connector with external screw thread and spigot



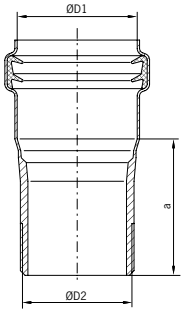
Outlet diameter		Dimensions	Weight	Part No
øD1 [mm]	øD2 [mm]	a [mm]	[kg]	316
50	G 1¼"	100	0.2	**419330**
50	G 1½"	100	0.3	**419331**
50	G 2"	100	0.3	**419332**

Connector with socket and internal screw thread



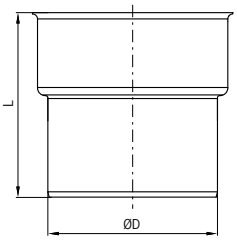
Outlet diameter		Dimensions	Weight	Part No
				EPDM*
øD1 [mm]	øD2 [mm]	a [mm]	[kg]	316
40**	G 1¼"	35	0.2	**417336**
50	G 1¼"	58	0.2	**419333**
50	G 1½"	58	0.3	**419335**
50	G 2"	58	0.3	**419337**

Connector with socket and external screw thread



Outlet diameter		Dimensions	Weight	Part No
				EPDM*
øD1 [mm]	øD2 [mm]	a [mm]	[kg]	316
50	G 1¼"	58	0.2	**419250**
50	G 1½"	58	0.3	**419252**
50	G 2"	58	0.3	**419254**

Connector cast iron spigot → ACO pipe socket



Outlet diameter	Dimensions	Weight	Part No
øD [mm]	L [mm]	[kg]	316
75	121	0.4	**98904**
110	137	0.6	**98906**
160	174	1.0	**98905**

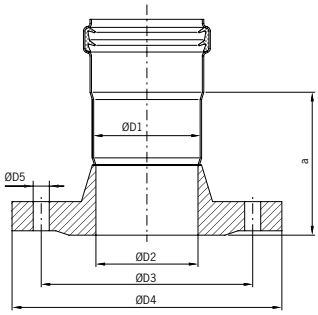
Note:

To be used with reduction sealing item number 400580 for DN 75 and 400581 for DN 110

* Seals also available in NBr and Viton®, see page 38 for information.

** Viton® seal not available for 40 and 315mm pipe diameters.

Connector with socket and flange

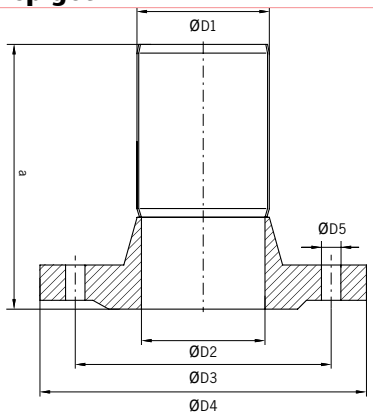


Outlet diameter				n x øD5	Dimensions	Weight	Part No
				[mm]	a [mm]	[kg]	EPDM*
øD1 [mm]	øD2 [mm]	øD3 [mm]	øD4 [mm]				316
40	DN 40	110	150	4 × 18	100	2.0	**417420**
40	DN 40	110	150	4 × 18	100	2.0	**417421**
50	DN 40	110	150	4 × 18	100	2.3	**419256**
50	DN 50	125	165	4 × 18	100	2.7	**419258**
75	DN 65	145	185	4 × 18	100	3.4	**419260**
110	DN 100	180	220	8 × 18	100	4.9	**419262**
200	DN 200	295	340	12 × 22	102	12.0	**419514**

* Seals also available in NBr and Viton®, see page 38 for information.
** Viton® seal not available for 40 and 315mm pipe diameters.

Note:
n – number of holes for screws in the flange.
Flange PN 16 DIN 2633.
Flange PN 6 and PN 10 available on request.

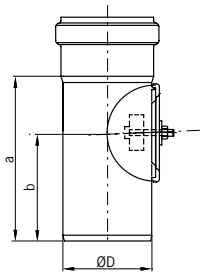
Connector with flange and spigot



Outlet diameter				n x øD5	Dimensions	Weight	Part No
øD1 [mm]	øD2 [mm]	øD3 [mm]	øD4 [mm]	[mm]	a [mm]	[kg]	316
40	DN 40	100	130	4 × 18	161	1.6	**417430**
40	DN 50	100	130	4 × 18	161	1.6	**417431**
40	DN 40	110	150	4 × 18	165	2.0	**417422**
40	DN 50	110	150	4 × 18	165	2.0	**417423**
50	DN 40	110	150	4 × 18	192	2.3	**419264**
50	DN 50	125	165	4 × 18	192	2.7	**419265**
75	DN 65	145	185	4 × 18	245	3.4	**419266**
110	DN 100	180	220	8 × 18	259	4.9	**419267**
160	DN 150	240	285	8 × 22	200	8.5	**419540**
200	DN 200	295	240	12 × 22	240	12.3	**419541**

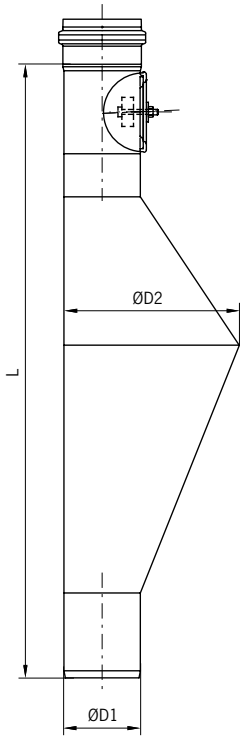
Note:
n – number of holes for screws in the flange.
Flange PN 16 DIN 2633. | Flange PN 6 and PN 10 available on request.

Access unit



Outlet diameter øD [mm]	Dimensions		Weight [kg]	Part No	
	a [mm]	b [mm]		EPDM*	
				304	316
75	139	90	0.5	**98913**	**98963**
110	183	117	0.8	**98915**	**98965**
125	210	135	0.9	**419783**	**419785**
160	288	184	2.3	**98917**	**98967**
200	293	186	3.7	**419676**	**419678**
250	290	184	3.8	**-**	**417128**
315**	340	228	8.9	**-**	**417214**

Rat-stop

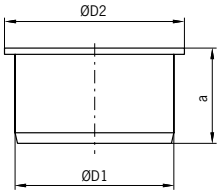


Seal material	Outlet diameter		Dimensions	Weight	Part No	
	øD1 [mm]	øD2 [mm]	L [mm]	[kg]	304	316
EPDM*	110	250	864	3.8	**419268**	**419270**

* Seals also available in NBr and Viton®, see page 38 for information.

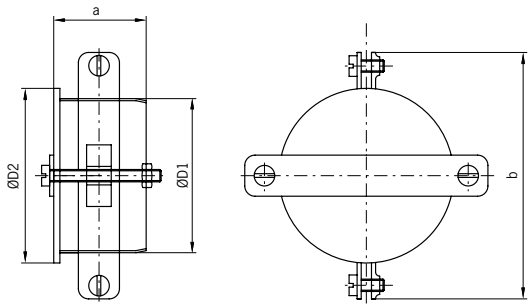
** Viton® seal not available for 40 and 315mm pipe diameters.

Socket plug



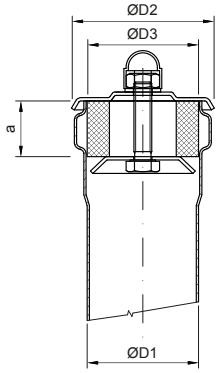
Outlet diameter		Dimensions	Weight	Part No
øD1 [mm]	øD2 [mm]	a [mm]	[kg]	316
40	35	50	0.1	**417405**
50	58	45	0.1	**98888**
75	85	45	0.3	**98889**
110	120	45	0.5	**98890**
125	135	50	0.6	**419782**
160	170	50	0.5	**98891**
200	210	50	0.7	**98994**
250	260	83	1.0	**417131**
315	325	73	2.2	**417215**

Socket plug with clamp



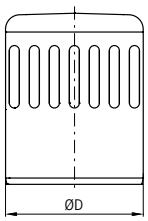
Outlet diameter		Dimensions		Weight	Part No
øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	[kg]	316
40					**417402**
50	58	45	88	0.4	**419138**
75	85	45	120	0.6	**419139**
110	120	45	167	0.8	**419140**
160	170	50	214	1.1	**419141**
250	260	83	302	1.3	**417132**
315	325	130	371	3.7	**417216**

Drainplugs with screwed plug



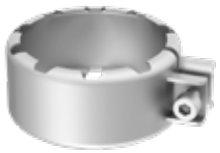
Outlet diameter			Dimensions	Weight	Part No	
øD1 [mm]	øD2 [mm]	øD3 [mm]	a [mm]	[kg]	304	316
50	64	50	25	0.1	**419942**	**419948**
75	92	75	25	0.5	**419943**	**419949**
110	126	105	15	0.5	**419944**	**419950**
125	160	124	12	0.9	**419945**	**419951**
160	186	166	20	1.2	**419946**	**419952**

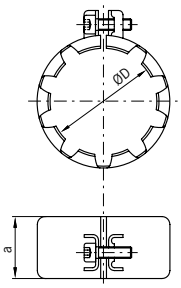
Vent cowl



Outlet diameter	Weight	Part No
øD [mm]	[kg]	316
110	0.4	**98962**

Socket clamp

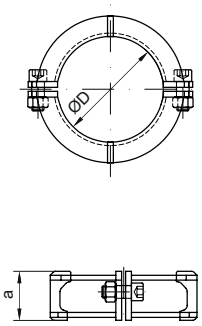




Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Part No 316
50	40	0.11	**417067**
75	43	0.16	**417069**
110	43	0.25	**417227**

Note: See page 45 for maximum operating pressures

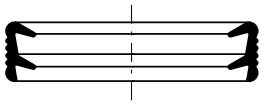
Socket clamp - two parts



Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Part No 304	 316
40	36	0.10	**417396**	**417397**
50	40	0.14	**417024**	**417025**
75	40	0.25	**417026**	**417027**
110	43	0.34	**417028**	**417029**
125	45	0.38	**417016**	**417017**
160	45	0.48	**417030**	**417031**
200	45	0.51	**–**	**419983**
250	45	0.71	**–**	**417137**
315	48	0.9	**–**	**417219**

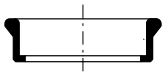
Note: See page 45 for maximum operating pressures

Seal




Outlet diameter øD [mm]	Weight [kg]	Part No EPDM	Part No NBR	Part No Viton®
40	0.01	**417400**	**417401**	**–**
50	0.01	**98400**	**417037**	**98404**
75	0.02	**98401**	**417038**	**98405**
110	0.05	**98402**	**417039**	**98406**
125	0.06	**419453**	**417041**	**419454**
160	0.08	**98403**	**417040**	**98407**
200	0.10	**98433**	**417042**	**98437**
250	0.12	**417146**	**417148**	**417147**
315	0.30	**417222**	**417223**	**–**

Reduction sealing cast iron spigot ➔ ACO pipe socket

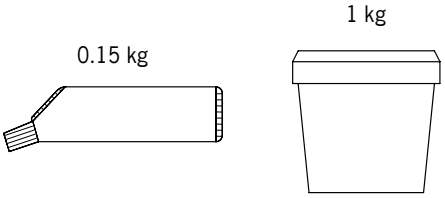
Outlet diameter øD [mm]	Weight [kg]	Part No EPDM
DN 70/75	0.06	**400580**
DN 100/110	0.10	**400581**
DN 150/160	0.14	**400582**

Note:
While purchasing AP reduction sealing cast iron spigot ➔ ACO pipe, it is necessary to order AP cast iron connector.

Reduction sealing ACO pipe spigot ➔ cast iron socket

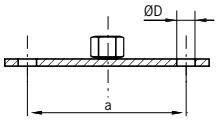

Outlet diameter øD [mm]	Weight [kg]	Part No EPDM
DN 70/75	0.05	**400586**
DN 100/110	0.08	**400587**
DN 150/160	0.12	**400588**

ACO Universal lubricant



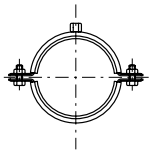
Weight [kg]	Part No
0.15	**E80350000**
1.00	**E80350001**

Fixing plate



Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Part No	
			Galvanised steel	316
8.4	70	0.05	**400525**	**400521**

Support bracket with rubber infill

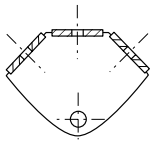


Outlet diameter øD [mm]	Weight [kg]	Part No	
		Galvanised steel	316
40	0.12	**417434**	**417359**
50	0.14	**400533**	**400529**
75	0.23	**400534**	**400530**
110	0.33	**400535**	**400531**
125	0.36	**419854**	**419855**
160	0.39	**400536**	**400532**
200	0.44	**419451**	**419675**
250	0.60	**–**	**417149**
315	1.0	**–**	**417224**

Threaded support pole M8

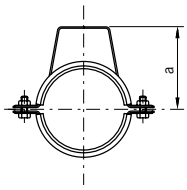
øD [mm]	L [mm]	Weight [kg]	Part No	
			Galvanised Steel	316
M8	1000	0.39	**400557**	**400553**
M8	90	0.03	**400558**	**400554**
M8	40	0.016	**400559**	**400555**

Set for axial fixing



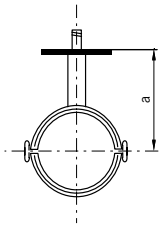
Weight [kg]	Part No Galvanised steel	Part No 316
0.11	**400565**	**400561**

Support bracket with rubber infill and stirrup



Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Part No	
			Galvanised Steel	316
40			**417358**	**417360**
50	56	0.18	**400541**	**400537**
75	80	0.28	**400542**	**400538**
110	116	0.41	**400543**	**400539**
160	166	0.48	**400544**	**400540**

Support bracket with rubber infill and key



Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Part No	
			Galvanised Steel	316
40			–	**417361**
50	120	0.16	**400549**	**400545**
75	133	0.26	**400550**	**400546**
110	150	0.38	**400551**	**400547**
160	175	0.44	**400552**	**400548**

Joiner/disjoiner

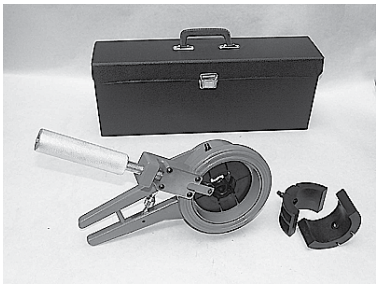
øD [mm]	**Weight** [kg]	Part No
100 - 400	25	**417070**

Electric cutter 50 – 110 mm

Note	Weight [kg]	Part No
in plastic case	20	**400745**

Note: Convinient tool for pipe cutting, suitable for larger projects

Manual cutter set 50-110 mm



Note	Weight [kg]	Part No
in plastic case	3.50	**419363**

Manual cutter

øD [mm]	**Weight** [kg]	Part No
50–110	1.0	**419364**
110–160	2.0	**400738**
160–250	2.0	**417228**

Note:

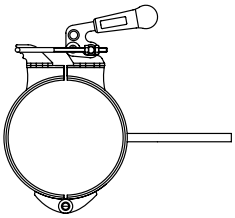
ACO pipe manual cutter should be ordered together with a holder for manual cutting.

Replacement discs for manual cutters

Note	Weight [kg]	Part No
for cutter 419363	0.005	**419365**
for cutters 400738 and 419364	0.005	**400578**

Note:
Minimum order quantity – 10 pcs.

Holder for manual cutting



øD [mm]	Weight [kg]	Part No
125	3.5	**419857**
160	4.0	**400742**
200	4.5	**400743**

Note: ACO pipe holder for manual cutting should be ordered together with ACO pipe manual cutter.

Full bore flow rate tables for varying gradients

For rainwater/storm drainage applications

Flow rates based on Colebrook-White formula.
Roughness coefficient ks = 0.6 mm

Gradient	Pipe ø 40 mm		Pipe ø 50 mm		Pipe ø 75 mm		Pipe ø 110 mm		Pipe ø 125 mm	
[%]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]
10.0			2.74	1.52	8.40	2.01	23.81	2.60	33.61	2.83
7.5			2.38	1.31	7.28	1.74	20.62	2.25	29.11	2.45
5.0			1.94	1.07	5.94	1.42	16.83	1.84	23.77	2.00
4.5			1.84	1.02	5.64	1.35	15.97	1.74	22.55	1.90
4.0			1.73	0.96	5.31	1.27	15.06	1.64	21.26	1.79
3.5			1.62	0.90	4.97	1.19	14.08	1.54	19.88	1.67
3.0			1.50	0.83	4.60	1.10	13.04	1.42	18.41	1.55
2.5			1.37	0.76	4.20	1.00	11.90	1.30	16.80	1.41
2.0			1.23	0.68	3.76	0.90	10.64	1.16	15.03	1.26
1.5			1.06	0.59	3.25	0.78	9.22	1.01	13.01	1.10
1.0			0.87	0.48	2.66	0.63	7.53	0.82	10.63	0.89

Gradient	Pipe ø 160 mm		Pipe ø 200 mm		Pipe ø 250 mm		Pipe ø 315 mm	
Gradient [%]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]
10.0	64.15	3.31	116.89	3.83	218.31	4.45	401.51	5.15
7.5	55.56	2.87	101.22	3.32	188.95	3.85	347.54	4.46
5.0	45.36	2.34	82.65	2.71	154.13	3.14	283.52	3.64
4.5	43.03	2.22	78.40	2.57	146.17	2.98	268.90	3.45
4.0	40.57	2.10	73.92	2.43	137.77	2.81	253.45	3.25
3.5	37.95	1.96	69.14	2.27	128.82	2.63	236.99	3.04
3.0	35.13	1.81	64.01	2.10	119.20	2.43	219.31	2.82
2.5	32.07	1.66	58.43	1.92	108.74	2.22	200.09	2.57
2.0	28.68	1.48	52.26	1.71	97.18	1.98	178.83	2.30
1.5	24.84	1.28	45.26	1.48	84.05	1.71	154.70	1.99
1.0	20.28	1.05	36.95	1.21	68.48	1.40	126.07	1.62

Note:
The flow rates shown above assume an unrestricted discharge from the pipe. For installations without an unrestricted discharge, the flow rate will be affected
by the downstream throttle.

For shallow gradients, the Colebrook-White formula underestimates flow rates (because when gradient tends towards zero %, velocity also tends to zero).
For level or nearly level installations (slope < 1 %), spatially varied flow tables should be used.

For soil/foul water drainage applications

Flow rates based on Colebrook-White formula.
Roughness coefficient ks = 0.6 mm

Gradient	Pipe ø 40 mm		Pipe ø 50 mm		Pipe ø 75 mm		Pipe ø 110 mm		Pipe ø 125 mm	
[%]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]
10.0			2.30	1.27	7.14	1.71	20.45	2.23	28.97	2.44
7.5			1.99	1.10	6.19	1.48	17.71	1.93	25.09	2.11
5.0			1.63	0.90	5.05	1.21	14.46	1.58	20.49	1.72
4.5			1.54	0.85	4.79	1.14	13.72	1.50	19.43	1.64
4.0			1.46	0.80	4.52	1.08	12.94	1.41	18.32	1.54
3.5			1.36	0.75	4.23	1.01	12.10	1.32	17.14	1.44
3.0			1.26	0.70	3.91	0.93	11.20	1.22	15.87	1.34
2.5			1.15	0.64	3.57	0.85	10.23	1.12	14.49	1.22
2.0			1.03	0.57	3.19	0.76	9.15	1.00	12.96	1.09
1.5			0.89	0.49	2.77	0.66	7.92	0.86	11.22	0.94
1.0			0.73	0.40	2.26	0.54	6.47	0.71	9.16	0.77

Gradient	Pipe ø 160 mm		Pipe ø 200 mm		Pipe ø 250 mm		Pipe ø 315 mm	
[%]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]	Flow rate Q [l/s]	Velocity v [m/s]
10.0	55.61	2.87	101.81	3.34	206.87	4.22	382.95	4.92
7.5	48.16	2.49	88.17	2.89	177.84	3.62	329.47	4.23
5.0	39.32	2.03	71.99	2.36	143.52	2.93	266.21	3.42
4.5	37.30	1.93	68.30	2.24	135.71	2.77	251.81	3.23
4.0	35.17	1.82	64.39	2.11	127.46	2.60	236.59	3.04
3.5	32.90	1.70	60.23	1.98	118.69	2.42	220.42	2.83
3.0	30.46	1.57	55.76	1.83	109.29	2.23	203.07	2.61
2.5	27.80	1.44	50.90	1.67	99.10	2.02	184.25	2.37
2.0	24.87	1.28	45.53	1.49	87.86	1.79	163.50	2.10
1.5	21.53	1.11	39.43	1.29	75.18	1.53	140.05	1.80
1.0	17.58	0.91	32.19	1.06	60.25	1.23	112.42	1.44

Note:
The flow rates shown above assume an unrestricted discharge from the pipe. For installations without an unrestricted discharge, the flow rate will be affected
by the downstream throttle.

For shallow gradients, the Colebrook-White formula underestimates flow rates (because when gradient tends towards zero %, velocity also tends to zero).
For level or nearly level installations (slope < 1 %), spatially varied flow tables should be used.

Operating pressures

The ACO pipe socketed stainless steel pipe systems are fitted with an unique, double lip seal manufactured from either EPDM or Viton®. The double lip seal arrangement provides added security for the ultimate long term reliability. The ACO pipe; socketed stainless steel pipe systems are tested and approved for operating pressures in gravity, siphonic and vacuum systems.

ACO pipe stainless steel pipe systems are designed for maximum working pressure 0.5 bar according to EN 1124. In case where higher pressure may apply, it is necessary to combine the system with socket clamps.

Pipe diameter [mm]	**Operating pressure** [bar]	
	Without socket clamp	With socket clamp
40	0.5	2.5
50	0.5	2.5
75	0.5	2.5
110	0.5	2.5
125	0.5	2.5
160	0.5	1.5
200	0.5	1.5
250	0.5	1.0
315	0.5	0.7

Vacuum applications	
Pipe diameter [mm]	Operating pressure [bar]
40	-0.8
50	-0.8
75	-0.8
110	-0.8
125	-0.8
160	-0.8
200	-0.8
250	-0.8
315	-0.8

ACO pipe

Generally

The following standards will help designers to select the correct size of pipe system for a particular application: EN 12056: gravity drainage systems inside buildings. EN 752: drain and sewer systems outside buildings. Installation should be in accordance with the manufacturer's recommendations as well as with EN 12056–2, EN 12056–3 and EN 752.

Pipe cutting

If it is necessary to adapt or shorten pipe lengths where tools are used, the cut must be square, clean and chamfered.

Suitable cutters are available from ACO.

These tools are designed to form the edge bevel on the male spigoted end of the pipe. Carbon steel cutting wheels are not suitable.

Pipe jointing

The assembly of pipe joints is quick and straightforward requiring only a light application of lubricant available from ACO to the chamfered pipe end. Ensure that the matching ends of the pipes and fittings are clean and free from contamination. Push-fit the pipe end into the socket, but do not push fully into the socket recess so as to allow for thermal expansion within the system.

Seal Assembly

Seal assembly

The double lip seal is easily removed and replaced from the female end of all pipes and fittings. This allows the on-site upgrade of seal material from EPDM or Viton without the need for special tools.

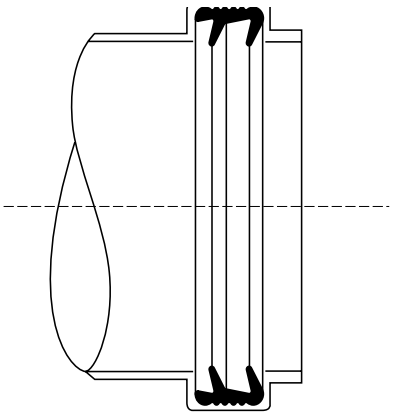
Seal installation notes

1. If changing the seal, ensure the correct size and grade of seal is selected for the application. For reference, EPDM seals are BLACK and Viton seals are GREEN. If in doubt, contact the ACO Building Drainage Helpline on 01462 816666 for assistance.

2. Ensure the seal itself and the zone around the pipe and/or fitting receiving the seal is clean, dry and free from dirt, dust or particulates.

3. Insert the dry seal into the pipe/fitting recess as shown in the diagram below. NOTE: the seal MUST be inserted so the double sealing lips face away from the opening of the pipe/fitting.

4. Do not use tools to aid the assembly process otherwise damage to the pipes, fittings and seals may occur.



Seal integrity

Providing the installation guidelines are followed and that all reasonable precautions are taken during the installation and that the system is not exposed to chemicals or conditions outside the specification for the component materials, a life expectancy of around 25 years can be reasonably expected. No guarantee on seal integrity can be offered as the ACO PIPE® components are subjected to a variety of installation and in-service operational variables beyond the control of ACO building Drainage.

Pipe weights

ACO PIPE® thin-wall stainless steel pipe systems are light in weight and high on performance with clear advantages in ease of handling and savings in labour costs over traditional metal pipe systems.

Engineers will need to know weights and loading when designing vertical stack and horizontal pipe run systems. The table gives weights for all pipe sizes empty and full of water.

Pipe diameter (mm)	Pipe weight Empty (kg/m)	Pipe weight Full (kg/m)
40	1.0	2.1
50	1.3	3.1
75	1.9	6.0
110	2.8	12.4
125	3.2	15.1
160	5.1	24.6
200	7.7	38.2
250	9.6	57.5
315	16.4	92.4

Socket clamps

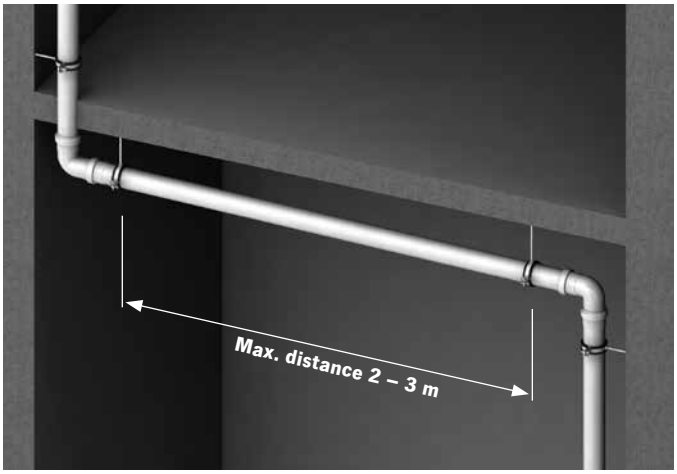
Drainage systems for soil, waste water and rainwater in above-ground installations are gravity systems with free drainage and should not be overloaded/clogged. the ACO PIPE® socketed systems have push-fit socket joints and consequently will not be able to resist internal pressure unless precautions are taken to ensure that the joints will not slide apart.

appropriate fixing to the building can prevent the joints from sliding apart in most cases, but if it is difficult or impossible to fix the pipes to the building, the socket clamps (Part No. 419134-7 - see page 37) can prevent the push-fit sockets and spigot ends from sliding apart if the system is overloaded or internal pressure is generated.

Horizontal pipe runs

Horizontal pipework should be supported by pipe brackets in 3 meter intervals maximum. One bracket should be within 300 mm of the pipe joint and the other approximately at the midpoint of the pipe length, but not more than 3 metres from the next bracket (depending on the pipe diameter- refer to the table below).

Additional brackets should be used at changes of direction and at junction points immediately downstream of the fitting. Horizontal pipe runs may be installed at a fall of 1 in 50 and feeder connections should be achieved using 45° branches. Where long pipe runs occur i.e. greater than 15 meters, a fixing arm should be attached to the bracket to prevent pendulum movement within the system.



As a guide, use the table below for bracket spacing on horizontal pipes.

Pipe diameter bracket spacing

Pipe ø [mm]	Length [m]
40	2.0
50	2.0
75	2.3
110	2.5
125	3.0
200	3.0
250	3.0

Vertical pipe stacks

The load applied with a fluid in the pipe is vertically down. Position the highest bracket adjacent to the top inlet of the pipe, then mount brackets at 3 meter spacings At the bottom of the vertical pipe, use a bracket within 200mm of the bottom. Fit brackets at each change of pipework is direction of junction points. Pipework should be at least 30mm from the wall to fascilitate maintenance and painting.

Pipe weights
Engineers should be aware of minimum and maximum weights when designing vertical stack and horizontal pipe run systems. Generally, when the pipe is completely full of water, then the vertical deflection should not exceed 1.5mm. The discretion of the installer should be applied in each instance to ensure that the pipe is adequately supported.

Below ground installation

Back-filling
Back-filling around the pipe can only start when the position of the pipe has been checked and approved.

Compression
Care should be taken to avoid distortion of both the pipe run and the pipe itself during back-filling and compaction. Avoid tipping backfill material directly onto the pipe system. If mechanical compaction is used, the weight and resultant compressive force must be taken into account to avoid distortion. Back-fill materials should be compacted to a minimum of 93%.

Filling in the excavation
Soil from the excavation can be used for filling, but larger stones and blocks should not be used. Compression of the filling material outside reinforced areas is not necessary if the settling will not cause problems or damage.

Local standards
It is recommended to install pipes according to local standards.

ACO PIPE® material information

Pipe material information

Thermal movement

ACO PIPE® stainless steel pipework systems have a low coefficient of thermal expansion, of approximately 1 in 1000mm per 60°C of temperature change.

The requirement for thermal tolerance on pipe systems is otherwise confined to hot water conditions. A comparison of approximate thermal movement between different pipe materials in mm per metre with a temperature change of 60°C is given below.

- Aluminium alloy 1.44mm
- Copper 0.98mm
- Grey cast iron 0.75mm
- HDPE 9.0mm
- PVCu 3.0mm
- Stainless steel 0.99mm

Coefficients of linear expansion (α) for various materials are as follows:

Material	Coeficient of linear expansion (10-6K-1)
HDPE	150.0
PVCu	50.0
Aluminium	24.0
Stainless steel	16.5
Copper	16.4
Grey cast iron	12.5

Sealing material information

EPDM
(ethylene propylene diene monomer)
Black sealing rubber ring, which is suitable for most applications where there are no oil or petrol residues in the waste water.

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

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

TPEV
(thermoplastic elastomer vulkanized)
Sealing rubber with excellent heat resistance, physical and mechanical properties. Suitable for pharmaceutical, medical, food and beverage applications. TPEV has limited resistance in oil or petrol residues in waste water.

Rubber type	Sealing materials			
	EPDM	NBR	FPM (Viton®)	TPEV
Colour	black	black	green	red
Temperature range	-50 / +130 / +150 °C	-30 / +80 / +100 °C	-20 / +200 / +300 °C	-35 / +120 / +140 °C
Resistance				
Water	excellent	good	good	excellent
Chemicals				
Acids	good	fair	excellent	good
Bases	good	fair	excellent	excellent
Benzene/Petrol	unsatisfied	excellent	excellent	limited
Oils				
ASTM Oil No. 1	unsatisfied	excellent	excellent	limited
ASTM Oil No. 3	unsatisfied	excellent	excellent	limited
Ozone & weather stresses	good	limited	good	good

To be sure of suitability for special applications please consult exact seal material features within ACO installation guide.

Care and maintenance

Maintenance programme
With care taken during the fabrication and installation, cleaning before handing over to the client should present no special problems, although more attention than normal 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 applicable to each industry.

Advice is often sought concerning the frequency of cleaning stainless steel and the answer is quite simple - clean the metal whenever it becomes dirty in order to restore its original appearance. This may vary from one to four times per year for external applications or it may be once per day for products installed in hygienic or chemically aggressive applications.

Frequency and cost of cleaning is lower with stainless steel than with many other materials and will often outweigh the initial higher cost of this superior product.

Stainless steel is easy to clean. Washing with soap or mild detergent in 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 and in accordance with manufacturers' instructions. Appropriate personal protection equipment should be used at all times.

Care should be taken to ensure that acid cleaners do not spill over adjacent areas. Solvents should not be used in confined areas without adequate ventilation and only in accordance with manufacturers' instructions.

Conclusion
If all the cleaning suggestions and actions in the table below have been attempted and the surface is still not satisfactory, stainless steel can be mechanically cleaned or electropolished by specialists on site. For further information, contact the ACO Building Drainage Helpline on 01462 816666 for help and assistance.

Problem	Cleaning Agent	Comments
Routine cleaning.	Soap or mild detergent (e.g. washing up liquid) and water.	Sponge, rinse with clean water. Wipe dry if necessary.
Fingerprints.	Soap and warm water or organic solvent (e.g. alcohol, acetone).	Rinse with clean water, wipe dry if necessary.
Stubborn stains and discolouration.	Mild cleaning solutions (e.g. Cif, GODDARD'S STAINLESS STEEL CARE).	Rinse well with clean water and wipe dry.
Oil and grease marks.	Organic solvent (e.g. alcohol, acetone).	Clean after with 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 clean water. May continue using Cif to give final clean.	Rinse will with clean water. Precautions for acid cleaners must be observed.

Note: Always read instructions on proprietry cleaning agents

Care and maintenance

The 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 if guarantees are required Legend of specific material suitability.

We shall arrange for tests to be undertaken with the reagent to establish the chemical resistance of the materials.

Legend

✓ Reccomend.
? Suitable.
However, contact ACO for further advice,
✕ Not reccomended.
~ No data available

Reagent	Stainless Steel 304	Stainless Steel 316	EPDM	Viton
Acetic Acid 20%	✓	✓	✓	✓
Acetic Acid 80%	✓	✓	✓	✓
Acetone	✓	✓	✓	✕
Alcohol (Methy or Ethyl)	✓	✓	✓	?
Aluminium Chloride	?	?	✓	✓
Aluminium Sulphate	✓	✓	✓	✓
Ammonia Gas (Dry)	✓	✓	~	~
Ammonium wChloride	?	?	✓	✓
Ammonium Hydroxide	✓	✓	✓	✓
Ammonium Nitrate	✓	✓	✓	✓
Ammonium Phosphate	✓	✓	✓	✓
Ammonium Sulphate	?	✓	✓	✓
Ammonium Sulphide	✓	✓	~	~
Amyl Chloride	✓	✓	✕	?
Aniline	✓	✓	?	✓
Barium Chloride	✓	✓	✓	✓
Barium Hydroxide 10%	~	~	✓	✓
Barium Sulphate	✓	✓	✓	✓
Barium Sulphide	~	~	✓	✓
Beer	✓	✓	✓	✓
Beet Sugar Liquors	✓	✓	✓	✓
Benzene	✓	✓	✕	✓
Benzoic Acid	✓	✓	✕	✓
Bleach - 12.5% Active C1	~	~	✓	✕
Boric Acid	✓	✓	✓	✓
Bromic Acid	?	?	~	~
Bromine Water	✕	✕	~	~
Butane	✓	✓	✕	✓
Calcium Carbonate	✓	✓	✓	✓
Calcium Chloride	✕	?	✓	✓
Calcium Hydroxide	?	✓	✓	✓
Calcium Hypochlorite	✕	?	?	✓
Calcium Sulphate	✓	✓	✓	✓
Cane Sugar Liquors	~	~	✓	✓
Carbonic Acid	~	~	✓	✓
Carbon Bisulphide	✓	✓	✕	✓
Carbon Dioxide	✓	✓	✓	✓
Carbon Monoxide	✓	✓	✓	✓
Carbon Tetrachloride	?	?	✕	✓

Reagent	Stainless Steel 304	Stainless Steel 316	EPDM	Viton
Caustic Potash	✓	✓	✓	✓
Caustic Soda 20%	✓	✓	✓	✓
Caustic Soda 50%	✓	✓	✓	✓
Caustic Soda 80%	✓	✓	✓	✓
Chlorine (Dry)	?	?	✓	✓
Chlorine (Wet)	✕	✕	✕	✓
Chloraocetic Acid	?	✓	?	✕
Chlorobenzene	✓	✓	✕	✓
Chloroform	?	?	✕	✓
Chromic Acid 50%	✕	✕	?	✓
Chromic Acid 10%	✓	✓	✕	?
Citric Acid	?	✓	✓	✓
Copper Chloride	✕	✕	✓	✓
Copper Cyanide	✓	✓	✓	✓
Copper Nitrate	✓	✓	~	✓
Copper Sulphate	✓	✓	✓	✓
Cottonseed Oil	~	~	✕	✓
Cresol	~	~	✕	✕
Cyclohexanone	?	✓	✕	✕
Cyclohexane	✓	✓	✕	✓
Diethylamine	?	?	?	✕
Disodium Phosphate	~	~	✓	✓
Distilled Water	✓	✓	✓	✓
Ethyl Acetate	✓	✓	?	✕
Ethylene Chloride	✓	✓	✕	?
Ethylene Glycol	✓	✓	✓	✓
Fatty acids (Cb)	✓	✓	✕	✓
Ferric Sulphate	✓	✓	✓	✓
Fluorene Gas (Wet)	✕	✕	✓	?
Formaldehyde 37%	✓	✓	✓	✓
Formic Acid 90%	✕	✓	✓	?
Freon 12	✓	✓	✓	✓
Fruit Juices & Pulp	?	✓	~	✓
Furfural	✓	✓	✕	✕
Gasoline (Refined)	✓	✓	✕	✓
Glucose	✓	✓	✓	✓
Glycerine	✓	✓	✓	✓

Care and maintenance

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

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

Associated ACO Building Drainage Product Ranges

GM-X Pipe Galvanised steel pipe and fittings system

ACO's GM-X pipe range of socketed galvanised steel pipe products is designed for external applications, such as rainwater drainage, where a robust and highly durable system is required.
GMX Pipe has a two-stage socket design utilising the GMX seal to provide rigid and solid, buckle-proof connection of fittings, guaranteeing joint tightness.

ACO GM-X pipe is available in different lengths and a choice of eight different diameters ranging in size from 32mm to 200 mm. GM-X pipe is compliant with BS EN 1123 and ACO also provides a range of accessories including angled bends, single, double and corner branches, connectors and brackets.

Features

- Option for vacuum connection with VACplus seal
- Rigid, buckle-proof connections
- Two-stage socket design with wide range of seals

Benefits

- Confirms to EN 1123
- Lightweight and easy to install
- Robust and highly durable
- Highly corrosion resistant

ACO Rainwater Outlets, an extensive range of high performance, lightweight rainwater outlets

ACO Building Drainage has a wide range of aluminium rainwater outlets and car park gullies which are suitable for use in a variety of commercial, industrial and residential applications.

Cost effective and durable, our range is capable of handling high flow rates to minimise the number of outlets required.

Features

- Capable of handling high flow rates
- Secure grating prevents vandalism

Benefits

- Cost effective and durable

Associated ACO Building Drainage Product Ranges

ACO Modular 125+

ACO Modular 125 Stainless Steel linear drainage is out most requested product range as it is suitable for most applications. ACO modular 125 is manufactured in stainless steel grade 304 as standard and 316 top order. available in a wide range of lengths, constant depths, sloping inverts and gratings 'off the shelf', it can be modified to meet your exact application requirements. Used together with ACO Gully 157 or 218 and ACO Pipe® it offers the specifier, contractor and user the benefits of a unified system for building drainage and one stop drainage solution with unique advantages - fully tested and classified to BS EN 1433, CE marked, pickle passivated for optimum durability and corrosion resistance, vee-bottomed profiled channel for enhanced flow efficiency, optional grating security locks and lightweight channel sections for sale and easy installation.

ACO Grease Separators - Above Ground

ACO's range of above ground, gravity grease separators (LipuJet) come in oval and round shapes to suit the area in which they will be placed. The LipuJet series are produced from roto-moulded or sheet polyethylene, but can also be supplied in stainless steel 316. All LipuJet grease separators are tested and certified in accordance with BS EN 1825. There are 4 levels of features and automation available to remove waste water from, clean and fill the separator. Standard the LipuJet grease separators are availble from NS1 to NS30 but ACO can supply grease separators for kitchens with higher flow rates. When the separator is installed below street level a lifting station should be used to pump the waste towards the sewer. The new ACO LipuSmart is an integrated grease separator complete with lifting station and sampling pot. The LipuSmart also comes in different feature/automation levels and size ranges from NS2 to NS10.

ACO Grease Separators - Below Ground

ACO's range of below ground, gravity grease separators provide a cost effective solution to remove fats, oils and grease (FOG) from the kitchen waste water. In those circumstances where there is no space inside the building the below ground separator can offer solution if there is enough outside space available. There are 2 versions available, the LipuMax series are produced from roto-moulded polyethylene and the ACO ECO-FPI is constructed using a spiral wound, twin-walled, high density polyethylene strip material. FPI is constructed using a spiral wound, twin-walled, high density polyethylene strip material. The ACO grease separators have therefor an excellent structural strength guaranteeing a long product life and once decommissioned the polyethylene can be re-used.

All product brochures are available for viewing and downloading at www.acobd.co.uk

ACO Engineered Solutions

ACO Engineered Solutions offer the designer / specifier a range of products virtually free from the constraints of 'off the shelf' items. Our engineers are able to offer detailed advice on all aspects of required design solutions, together with hydraulic flow analysis, practical site installation, suitable materials and best practices. ACO engineered solutions enjoy rigorous product management from initial enquiry through to post-delivery.

Examples of ACO Engineered Solution applications include:

- Workable drainage where there is limited invert depths
- Refurbishment situations with replacement channels and point drainage
- Interface with threshold details
- Discreet channel applications
- Radius channel applications

ACO Product Overview

ACO Building Drainage specialises in the development of corrosion resistant drainage systems and building products for applications across the internal and external built environments. Engineered to eliminate design risk, to optimise installation and to minimise lifetime ownership cost, every product in the range delivers exceptional levels of performance, finish and durability. Providing specialist drainage, grease management and fire-proofing systems that provide safe and hygienic solutions across a range of sectors including hospitals, chemical production, food and drink manufacture, leisure centres, laboratories and catering facilities, ACO Building Drainage has had unparalleled success over a number of years. In addition ACO provide stainless steel decorative tree grills, laser cut curved gratings and wet room drainage systems to complement settings that demand the highest aesthetic finish. 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.

The technical expertise, global resources and fabrication capacity within the ACO Building Drainage division make it possible for architects, engineers and contractors to realise the highest quality and value when selecting from our standard products, or, when using our engineered solution design service. ACO Building Drainage is a Division of the UK based ACO Technologies plc and part of the worldwide ACO Group.

ACO Technologies plc

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

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