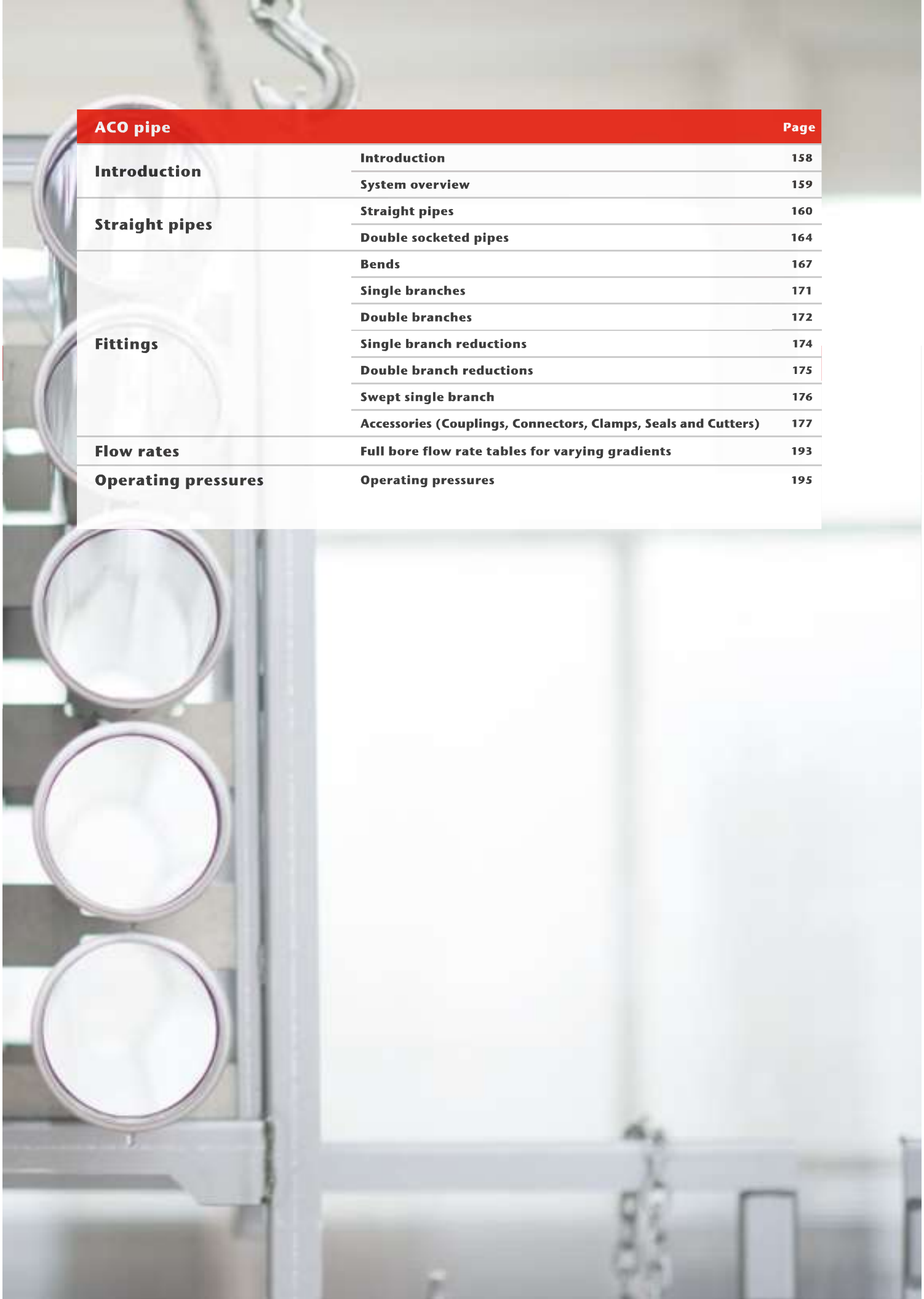


Introduction

ACO pipe is the ideal system for gray and black water, rainwater and industrial waste water drainage applications. When used with ACO gully and ACO channel systems, ACO pipe provides a unique, complex building drainage solution.

ACO pipe and fittings are available in 40 mm, 50 mm, 75 mm, 110 mm, 125 mm, 160 mm, 200 mm, 250 mm and 315 mm external diameters with the standard lengths from 0.15 meter up to 6 meter for optimum practicality and ease of assembly.

ACO pipe push-fit connection

Reliable for vacuum and gravity piping systems.

ACO pipe double lip seal delivers the ultimate system reliability. The unique and sophisticated design of lips and cavities provide tight connections.

Push-fit advantages

- Easy to assemble
- Time saving
- Cost saving
- Tight connection

System overview

Straight pipes

Fittings

Bends

Branches

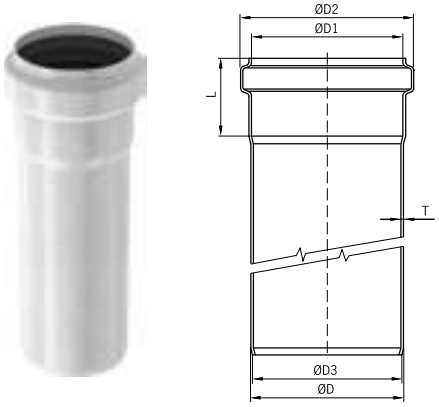
Accessories

Straight pipes

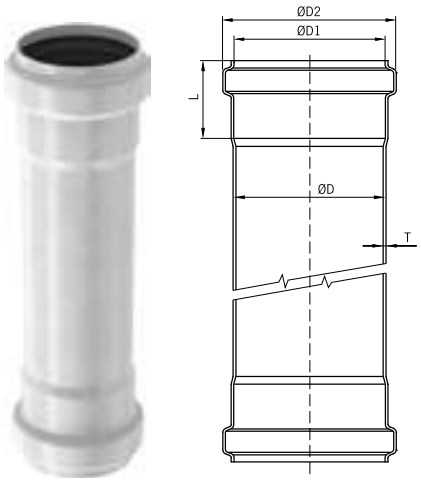
Product information

- 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



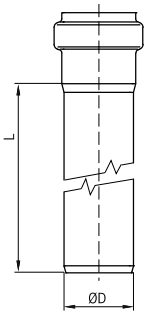
ACO pipe - double socketed pipe



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

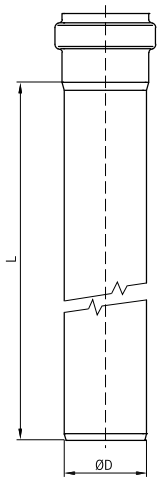
ACO pipe - straight pipe 40 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	40	150	0.2	**417304**	**417320**
	40	250	0.3	**417306**	**417322**
	40	500	0.6	**417308**	**417324**
	40	750	0.8	**417310**	**417278**
	40	1000	1.1	**417312**	**417380**
	40	1500	1.6	**417314**	**417282**
	40	2000	2.1	**417316**	**417284**
	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**



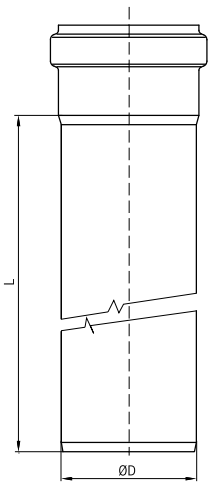
ACO pipe - straight pipe 50 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	50	150	0.2	**98501**	**98551**
	50	250	0.4	**98503**	**98553**
	50	500	0.7	**98505**	**98555**
	50	750	1.0	**98507**	**98557**
	50	1000	1.3	**98509**	**98559**
	50	1500	1.9	**98511**	**98561**
	50	2000	2.6	**98513**	**98563**
	50	2500	3.2	**419275**	**419283**
	50	3000	3.8	**98515**	**98565**
	50	4000	5.0	**419459**	**419483**
	50	5000	6.3	**419467**	**419491**
	50	6000	7.5	**419475**	**419499**



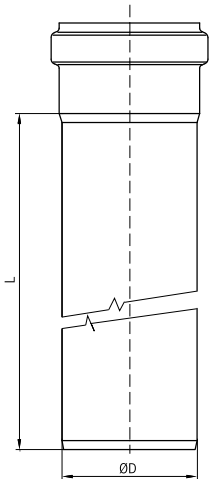
ACO pipe - straight pipe 75 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	75	150	0.4	**98517**	**98567**
	75	250	0.6	**98519**	**98569**
	75	500	1.0	**98521**	**98571**
	75	750	1.5	**98523**	**98573**
	75	1000	2.0	**98525**	**98575**
	75	1500	2.9	**98527**	**98577**
	75	2000	3.6	**98529**	**98579**
	75	2500	4.8	**419277**	**419285**
	75	3000	5.7	**98531**	**98581**
	75	4000	7.6	**419461**	**419485**
	75	5000	9.4	**419469**	**419493**
	75	6000	11.3	**419477**	**419501**



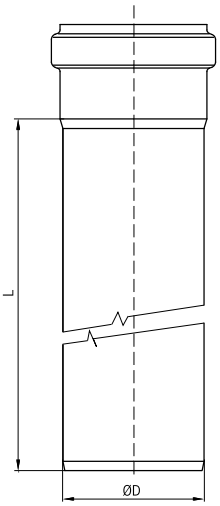
ACO pipe - straight pipe 110 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	110	150	0.6	**98533**	**98583**
	110	250	0.9	**98535**	**98585**
	110	500	1.5	**98537**	**98587**
	110	750	2.2	**98539**	**98589**
	110	1000	2.9	**98541**	**98591**
	110	1500	4.3	**98543**	**98593**
	110	2000	5.7	**98545**	**98595**
	110	2500	7.1	**419279**	**419287**
	110	3000	8.4	**98547**	**98597**
	110	4000	11.1	**419463**	**419487**
	110	5000	13.9	**419471**	**419495**
	110	6000	16.7	**419479**	**419503**



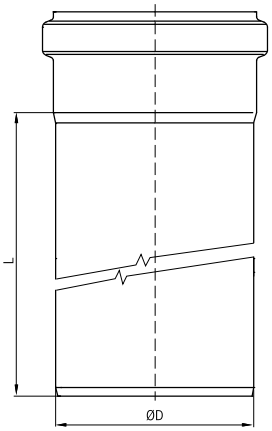
ACO pipe - straight pipe 125 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	125	150	0.7	**419693**	**419713**
	125	250	1.0	**419695**	**419715**
	125	500	1.7	**419697**	**419717**
	125	750	2.5	**419699**	**419719**
	125	1000	3.3	**419701**	**419721**
	125	1500	4.9	**419703**	**419723**
	125	2000	6.5	**419705**	**419725**
	125	2500	8.1	**419709**	**419729**
	125	3000	9.6	**419707**	**419727**
	125	6000	19.0	**419711**	**419731**



ACO pipe - straight pipe 160 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	160	150	1.1	**98549**	**98599**
	160	250	1.6	**98601**	**98651**
	160	500	2.9	**98603**	**98653**
	160	750	4.1	**98605**	**98655**
	160	1000	5.4	**98607**	**98657**
	160	1500	7.9	**98609**	**98659**
	160	2000	10.4	**98611**	**98661**
	160	2500	12.9	**419281**	**419289**
	160	3000	15.4	**98613**	**98663**
	160	4000	20.4	**419465**	**419489**
	160	5000	25.4	**419473**	**419497**
	160	6000	30.4	**419481**	**419505**



ACO pipe - straight pipe 200 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	200	500	4.5	**419383**	**419384**
	200	1000	8.3	**419387**	**419388**
	200	2000	15.8	**419391**	**419392**
	200	3000	23.2	**419395**	**419396**
Viton®	200	500	4.5	**419385**	**419386**
	200	1000	8.3	**419389**	**419390**
	200	2000	15.8	**419393**	**419394**
	200	3000	23.2	**419397**	**419398**

ACO pipe - straight pipe 250 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	250	500	5.5	**417071**	**417072**
	250	1000	10.2	**417075**	**417076**
	250	2000	19.4	**417079**	**417080**
	250	3000	28.7	**417083**	**417084**
Viton®	250	500	5.5	**417073**	**417074**
	250	1000	10.2	**417077**	**417078**
	250	2000	19.4	**417081**	**417082**
	250	3000	28.7	**417085**	**417086**

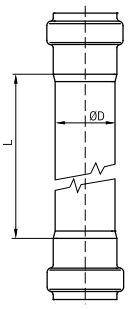
ACO pipe - straight pipe 315 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	315	500	9.8	**417238**	**417200**
	315	1000	17.7	**417239**	**417201**
	315	2000	33.5	**417240**	**417202**
	315	3000	49.3	**417241**	**417203**

Double socketed pipes

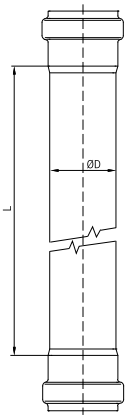
ACO pipe - double socketed pipe 40 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**



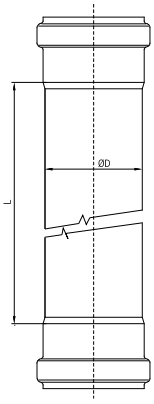
ACO pipe - double socketed pipe 50 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	50	250	0.4	**419555**	**419595**
	50	500	0.7	**419557**	**419597**
	50	750	1.1	**419559**	**419599**
	50	1000	1.4	**419561**	**419601**
	50	1500	2.0	**419563**	**419603**
	50	2000	2.6	**419565**	**419605**
	50	3000	3.9	**419567**	**419607**



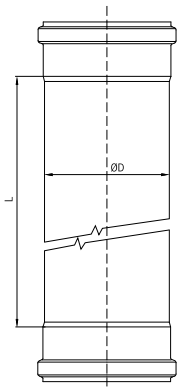
ACO pipe - double socketed pipe 75 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	75	250	0.7	**419569**	**419609**
	75	500	1.2	**419571**	**419611**
	75	750	1.6	**419573**	**419613**
	75	1000	2.1	**419575**	**419615**
	75	1500	3.0	**419577**	**419617**
	75	2000	4.0	**419579**	**419619**
	75	3000	5.8	**419581**	**419621**



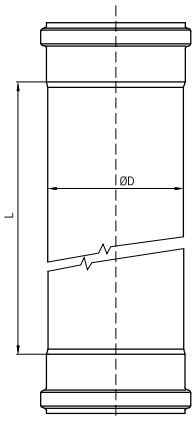
ACO pipe - double socketed pipe 110 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	110	500	1.7	**419583**	**419623**
	110	750	2.4	**419585**	**419625**
	110	1000	3.0	**419587**	**419627**
	110	1500	4.4	**419589**	**419629**
	110	2000	5.7	**419591**	**419631**
	110	3000	8.4	**419593**	**419633**



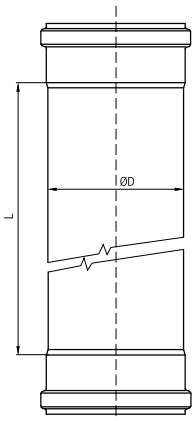
ACO pipe - double socketed pipe 125 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	125	500	1.7	**419788**	**419800**
	125	750	2.5	**419790**	**419802**
	125	1000	3.3	**419792**	**419804**
	125	1500	4.9	**419794**	**419806**
	125	2000	6.5	**419796**	**419808**
	125	3000	9.6	**419798**	**419810**



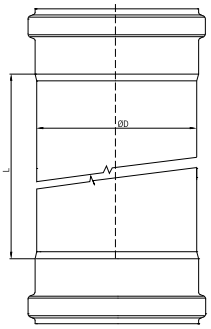
ACO pipe - double socketed pipe 160 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	160	500	3.3	**419635**	**419647**
	160	750	4.5	**419637**	**419649**
	160	1000	5.8	**419639**	**419651**
	160	1500	8.2	**419641**	**419653**
	160	2000	10.7	**419643**	**419655**
	160	3000	15.7	**419645**	**419657**



ACO pipe - double socketed pipe 200 mm

Seal material	Outlet diameter øD [mm]	Active length L [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	200	500	5.0	**419658**	**419659**
	200	1000	8.6	**419662**	**419663**
	200	2000	15.9	**419666**	**419667**
	200	3000	23.1	**419670**	**419671**
Viton®	200	500	5.0	**419660**	**419661**
	200	1000	8.6	**419664**	**419665**
	200	2000	15.9	**419668**	**419669**
	200	3000	23.1	**419672**	**419673**



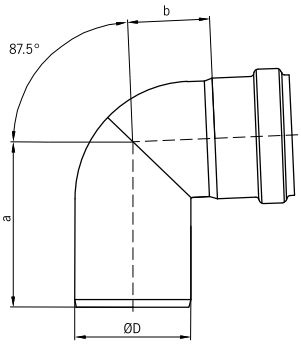
Bends

Product information

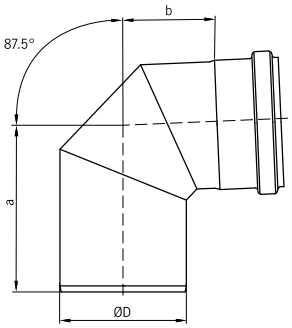
- Bends are available in 40 mm, 50 mm, 75 mm, 110 mm, 125 mm, 160 mm, 200 mm, 250 mm and 315 mm external diameters
- Available in 1.4301 (AISI 304) and 1.4404 (AISI 316L) grades stainless steel
- Push-fit system for quick assembly
- Superior seal security – components comprise a unique double lip sealing 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°

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



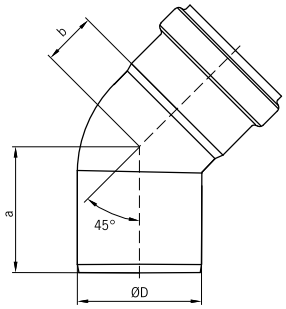
Shape valid for øD 125, 200, 250 and 315.



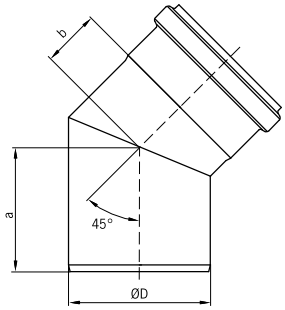
Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	40	79	32	0.2	**417342**	**417350**
	50	86	40	0.2	**98700**	**98750**
	75	107	53	0.4	**98702**	**98752**
	110	134	67	0.7	**98704**	**98754**
	125	161	93	0.8	**419732**	**419734**
	160	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**
Viton®	50	86	40	0.2	**98701**	**98751**
	75	107	53	0.4	**98703**	**98753**
	110	134	67	0.7	**98705**	**98755**
	125	161	93	0.8	**419733**	**419735**
	160	181	105	1.7	**98707**	**98757**
	200	215	129	3.9	**419412**	**419414**
	250	297	198	5.1	**-**	**417090**

ACO pipe - bend 45°

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

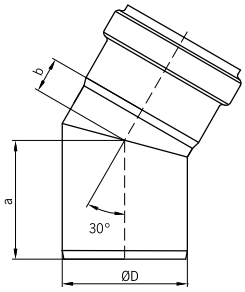


Shape valid for øD 125, 200, 250 and 315.



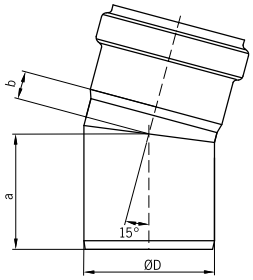
Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	40	58	21	0.2	**417344**	**417352**
	50	62	24	0.2	**98708**	**98758**
	75	76	32	0.3	**98710**	**98760**
	110	93	42	0.5	**98712**	**98762**
	125	110	50	0.6	**419736**	**419738**
	160	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**
Viton®	50	62	24	0.2	**98709**	**98759**
	75	76	32	0.3	**98711**	**98761**
	110	93	42	0.5	**98713**	**98763**
	125	110	50	0.6	**419737**	**419739**
	160	131	55	1.3	**98715**	**98765**
	200	152	60	2.7	**419408**	**419410**
	250	177	76	4.1	**-**	**417094**

ACO pipe - bend 30°



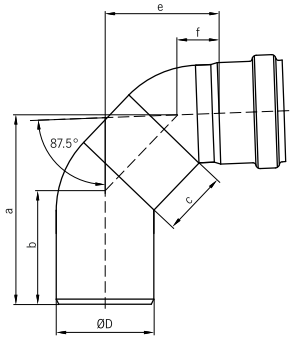
Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	40	55	14	0.1	**417346**	**417354**
	50	57	16	0.2	**98716**	**98766**
	75	71	21	0.3	**98718**	**98768**
	110	85	27	0.5	**98720**	**98770**
	125	98	28	0.6	**419740**	**419742**
	160	110	40	1.2	**98722**	**98772**
	200	137	45	2.3	**419403**	**419405**
	250	153	58	2.9	**-**	**417096**
	315	172	68	5.8	**-**	**417206**
Viton®	50	57	16	0.2	**98717**	**98767**
	75	71	21	0.3	**98719**	**98769**
	110	85	27	0.5	**98721**	**98771**
	125	98	28	0.6	**419741**	**419743**
	160	110	40	1.2	**98723**	**98773**
	200	137	45	2.3	**419404**	**419406**
	250	153	58	2.9	**-**	**417098**

ACO pipe - bend 15°



Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	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**
Viton®	50	54	12	0.1	**98725**	**98775**
	75	66	16	0.3	**98727**	**98777**
	110	78	15	0.4	**98729**	**98779**
	125	84	19	0.5	**419745**	**419747**
	160	99	29	1.0	**98731**	**98781**
	200	123	31	1.9	**419400**	**419402**
	250	136	40	2.5	**-**	**417102**

ACO pipe - long bend 87.5°



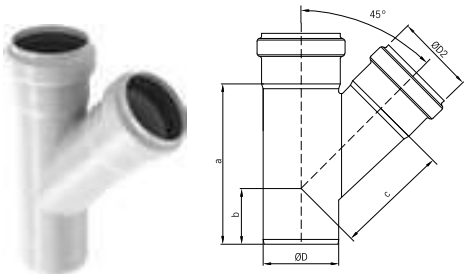
Seal material	Outlet diameter	Dimensions					Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	c [mm]	e [mm]	f [mm]	[kg]	1.4301	1.4404
EPDM	40	105	64	50	67	40	0.2	**417340**	**417338**
	50	123	71	50	75	25	0.3	**419146**	**419000**
	75	146	87	50	88	32	0.5	**419148**	**419002**
	110	316	103	250	246	39	1.4	**419150**	**419004**
	160	360	126	250	270	92	2.2	**419152**	**419144**
Viton®	50	123	71	50	75	25	0.3	**419147**	**419001**
	75	146	87	50	88	32	0.5	**419149**	**419003**
	110	316	103	250	246	39	1.4	**419151**	**419005**
	160	360	126	250	270	92	2.2	**419153**	**419145**

Branches

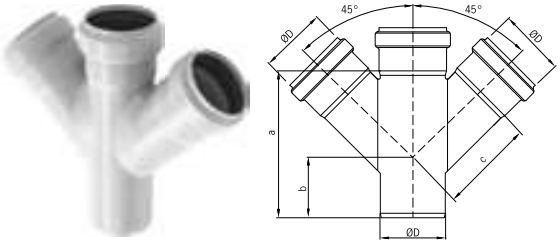
Product information

- 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

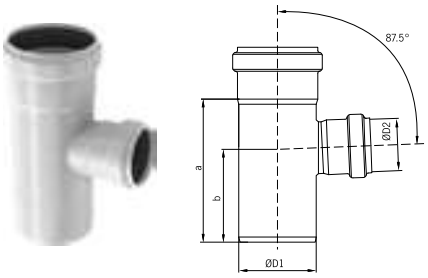
ACO pipe - single branch



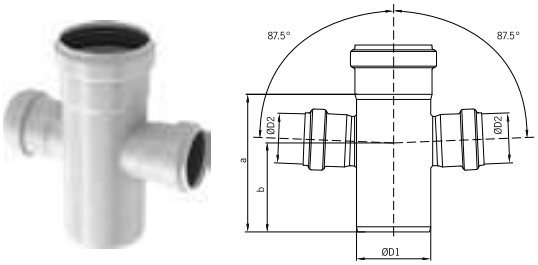
ACO pipe - double branch



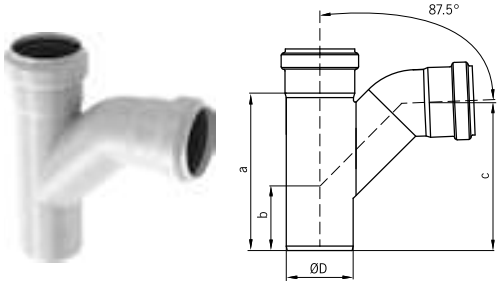
ACO pipe - single branch reduction



ACO pipe - double branch reduction

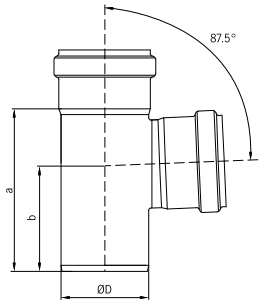


ACO pipe - swept single branch



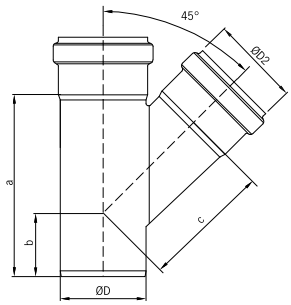
Single branches

ACO pipe - single branch 87.5°



Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	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**
Viton®	50	106	71	0.3	**98733**	**98783**
	75	139	90	0.5	**98735**	**98785**
	110	183	117	0.8	**98737**	**98787**
	125	220	135	0.9	**419749**	**419751**
	160	288	184	2.3	**98739**	**98789**
	200	333	206	4.5	**419420**	**419422**
	250	363	215	5.5	**-**	**417106**

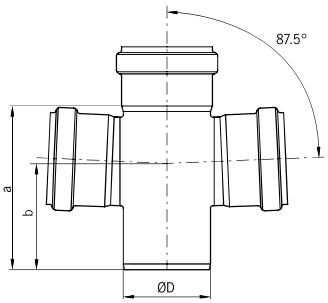
ACO pipe - single branch 45°



Seal material	Outlet diameter	Dimensions			Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	c [mm]	[kg]	1.4301	1.4404
EPDM	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**
Viton®	50	128	57	76	0.3	**98749**	**98799**
	75	179	74	110	0.5	**98801**	**98851**
	110	233	88	149	1.0	**98803**	**98853**
	125	273	103	170	1.1	**419761**	**419763**
	160	332	119	222	2.6	**98805**	**98855**
	200	415	151	274	5.7	**419428**	**419430**
	250	513	172	336	9.2	**-**	**417110**

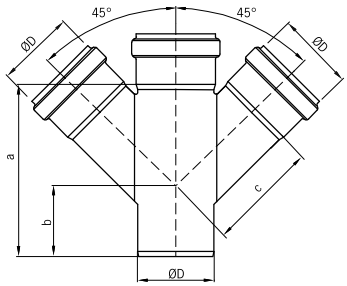
Double branches

ACO pipe - double branch 87.5°



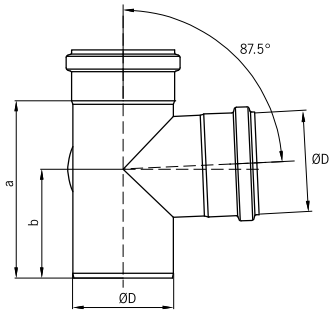
Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	40	101	69	0.3	**417364**	**417370**
	50	106	71	0.3	**98740**	**98790**
	75	139	90	0.6	**98742**	**98792**
	110	183	117	0.9	**98744**	**98794**
	160	288	184	2.7	**98746**	**98796**
Viton®	50	106	71	0.3	**98741**	**98791**
	75	139	90	0.6	**98743**	**98793**
	110	183	117	0.9	**98745**	**98795**
	160	288	184	2.7	**98747**	**98797**

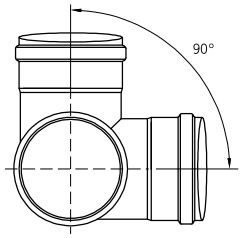
ACO pipe - double branch 45°



Seal material	Outlet diameter	Dimensions			Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	c [mm]	[kg]	1.4301	1.4404
EPDM	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**
Viton®	50	128	57	76	0.4	**98807**	**98857**
	75	179	74	110	0.7	**98809**	**98859**
	110	233	88	149	1.2	**98811**	**98861**
	160	332	184	222	3.5	**98813**	**98863**
	250	509	172	336	11	**-**	**417122**

ACO pipe - corner branch 87.5°

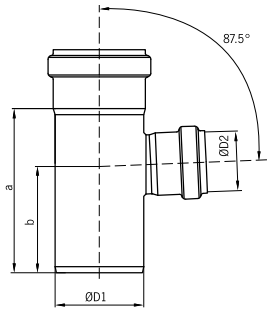




Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	40	101	69	0.3	**417414**	**417415**
	50	106	71	0.4	**419162**	**419210**
	75	139	90	0.7	**419164**	**419212**
	110	183	117	1.1	**419166**	**419214**
	160	288	184	2.9	**419168**	**419216**
Viton®	50	106	71	0.4	**419163**	**419211**
	75	139	90	0.7	**419165**	**419213**
	110	183	117	1.1	**419167**	**419215**
	160	288	184	2.9	**419169**	**419217**

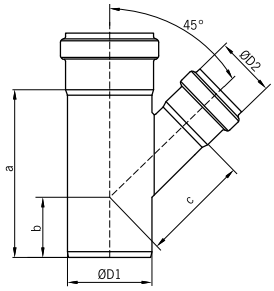
Single branch reductions

ACO pipe - single branch reduction 87.5°



Seal material	Outlet diameter		Dimensions		Weight	Item number	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	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**
Viton®	75	50	139	90	0.3	**98929**	**98931**
	110	50	183	117	0.5	**98933**	**98935**
	110	75	183	117	0.8	**98937**	**98939**
	125	75	187	110	0.9	**419753**	**419755**
	125	110	205	127	0.9	**419757**	**419759**
	160	110	288	184	2.3	**400692**	**400694**
	200	160	293	186	3.7	**419416**	**419418**
	250	200	349	226	5.8	-	**417114**

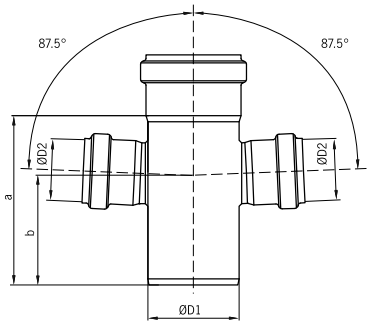
ACO pipe - single branch reduction 45°



Seal material	Outlet diameter		Dimensions			Weight	Item number	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	c [mm]	[kg]	1.4301	1.4404
EPDM	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**
Viton®	75	50	144	56	94	0.3	**400662**	**400664**
	110	50	147	42	119	0.5	**400666**	**400668**
	110	75	182	60	135	1.0	**400670**	**400672**
	125	75	200	65	141	1.1	**419765**	**419767**
	125	110	250	90	160	1.1	**419769**	**419771**
	160	110	332	119	191	2.6	**400700**	**400702**
	200	160	359	123	250	4.7	**419424**	**419426**
	250	200	429	175	307	7.6	-	**417118**

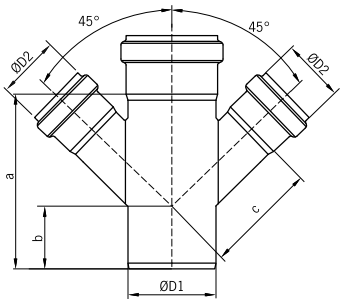
Double branch reductions

ACO pipe - double branch reduction 87.5°



Seal material	Outlet diameter		Dimensions		Weight	Item number	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	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**
Viton®	75	50	139	90	0.3	**98941**	**98943**
	110	50	183	117	0.6	**98945**	**98947**
	110	75	183	117	0.9	**98901**	**98903**
	160	110	288	184	2.7	**400696**	**400698**

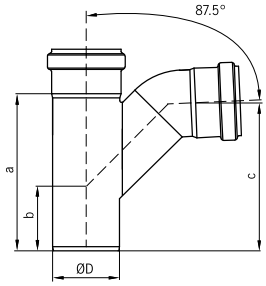
ACO pipe - double branch reduction 45°



Seal material	Outlet diameter		Dimensions			Weight	Item number	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	c [mm]	[kg]	1.4301	1.4404
EPDM	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**
Viton®	75	50	144	56	94	0.4	**400674**	**400676**
	110	50	147	42	119	0.7	**400678**	**400680**
	110	75	182	60	135	1.2	**400682**	**400684**
	160	110	332	119	190	3.5	**400704**	**400706**
	250	200	429	150	307	10.1	**-**	**417126**

Swept single branch

ACO pipe - swept single branch 87.5°



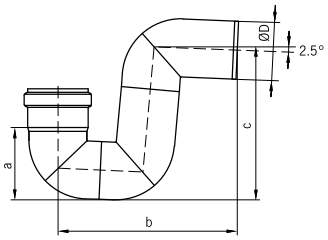
Seal material	Outlet diameter	Dimensions			Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	c [mm]	[kg]	1.4301	1.4404
EPDM	40	115	55	105	0.3	**417376**	**417380**
	50	128	57	117	0.3	**98814**	**98864**
	75	179	74	157	0.6	**98816**	**98866**
	110	233	88	209	1.1	**98818**	**98868**
	160	332	184	302	2.8	**98820**	**98870**
Viton®	50	128	57	117	0.3	**98815**	**98865**
	75	179	74	157	0.6	**98817**	**98867**
	110	233	88	209	1.1	**98819**	**98869**
	160	332	184	302	2.8	**98821**	**98871**

Accessories

Product information

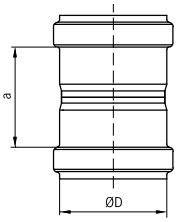
- Accessories are available in 40 mm, 50 mm, 75 mm, 110 mm, 125 mm, 160 mm, 200 mm, 250 mm and 315 mm external diameters
- Available in 1.4301 (AISI 304) and 1.4404 (AISI 316L) grades stainless steel
- Push-fit system for quick assembly
- Superior seal security – components comprise a unique double lip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

"P" trap



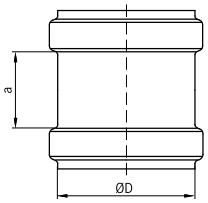
Seal material	Outlet diameter	Dimensions			Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	c [mm]	[kg]	1.4301	1.4404
EPDM	50	68	187	149	0.5	**98822**	**98872**
	75	94	232	193	0.7	**98824**	**98874**
	110	132	300	254	1.3	**98826**	**98876**
	160	190	403	347	3.3	**98828**	**98878**
Viton®	50	68	187	149	0.5	**98823**	**98873**
	75	94	232	193	0.7	**98825**	**98875**
	110	132	300	254	1.3	**98827**	**98877**
	160	190	403	347	3.3	**98829**	**98879**

Straight coupling



Seal material	Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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	**-**	**417159**
	315	179	5.2	**-**	**417225**
Viton®	50	54	0.1	**98921**	**98971**
	75	75	0.2	**98923**	**98973**
	110	84	0.4	**98925**	**98975**
	125	140	0.4	**419814**	**419816**
	160	110	0.8	**98927**	**98977**
	200	136	1.8	**419432**	**419434**
	250	181	3.1	**-**	**417161**

Repair coupling



Seal material	Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
EPDM	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**
Viton®	50	44	0.1	**98831**	**98881**
	75	46	0.2	**98833**	**98883**
	110	52	0.3	**98835**	**98885**
	125	70	0.3	**419773**	**419775**
	160	76	0.7	**98837**	**98887**
	200	100	1.5	**419436**	**419438**
	250	182	2.4	**-**	**417141**

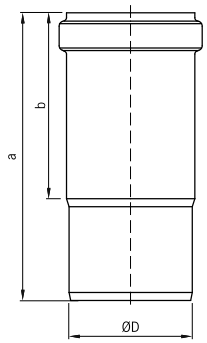
Note:

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:

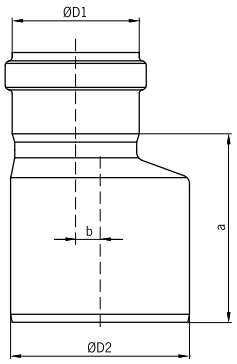
Mark the final position of the repair coupling on the installed pipe system to ensure the coupling seals are positioned symmetrically about the pipe joint.

Expansion socket



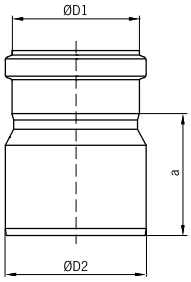
Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	40	150	90	0.2	**417382**	**417384**
	50	159	102	0.2	**98664**	**98666**
	75	175	113	0.3	**98668**	**98670**
	110	200	121	0.5	**98672**	**98674**
	125	250	165	0.6	**419776**	**419778**
	160	292	170	1.4	**98676**	**98678**
	250	400	190	3.8	**-**	**417143**
	315	450	200	7.2	**-**	**417221**
Viton®	50	159	102	0.2	**98665**	**98667**
	75	175	113	0.3	**98669**	**98671**
	110	200	121	0.5	**98673**	**98675**
	125	250	165	0.6	**419777**	**419779**
	160	292	170	1.4	**98677**	**98679**
	250	400	190	3.8	**-**	**417145**

Eccentric increaser coupling



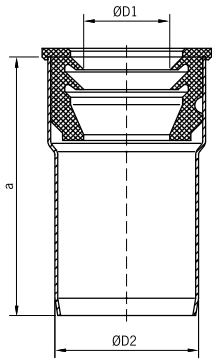
Seal material	Outlet diameter		Dimensions		Weight	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	[kg]	1.4404
EPDM	40	50	85	5	0.3	**417418**
	50	75	75	7	0.3	**98892**
	50	110	110	25	0.4	**98978**
	75	110	110	15	0.5	**98894**
	110	160	160	22	1.1	**98896**
	200	250	180	15	2.4	**417135**
	250	315	190	15	4.4	**417218**
Viton®	50	75	75	7	0.3	**98893**
	50	110	110	25	0.4	**98979**
	75	110	110	15	0.5	**98895**
	110	160	160	22	1.1	**98897**
	200	250	180	15	2.4	**417136**

Concentric increaser coupling



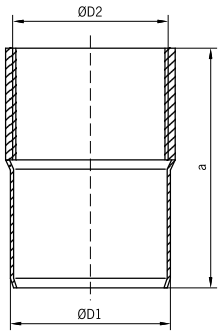
Seal material	Outlet diameter		Dimension	Weight	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	[kg]	1.4404
EPDM	40	75	85	0.3	**417417**
	50	75	88	0.3	**419826**
	50	110	113	1.4	**417018**
	75	125	105	0.6	**419828**
	110	125	107	0.6	**419780**
	110	160	126	0.9	**419830**
	125	160	160	1.2	**419811**
	160	200	200	1.8	**419441**
	200	250	180	2.4	**417133**
	315	250	190	4.4	**417217**
Viton®	110	125	125	0.6	**419781**
	125	160	160	1.2	**419812**
	160	200	200	1.8	**419442**
	200	250	180	2.4	**417134**

Increaser connector



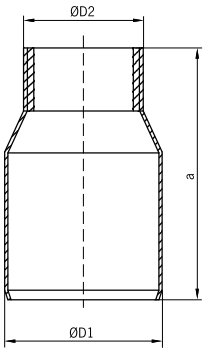
Seal material	Outlet diameter		Dimensions	Weight	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	[kg]	1.4404
NBR	32	50	90	0.2	**419373**
	40	50	90	0.2	**419374**

Connector with internal screw thread and spigot



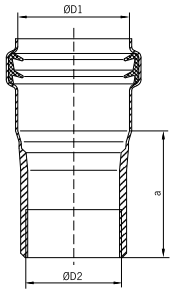
Outlet diameter		Dimensions	Weight	Item number
øD1 [mm]	øD2 [mm]	a [mm]	[kg]	1.4404
50	G 1¼"	72	0.2	**98956**
50	G 1½"	75	0.3	**98957**
50	G 2"	80	0.3	**98958**

Connector with external screw thread and spigot



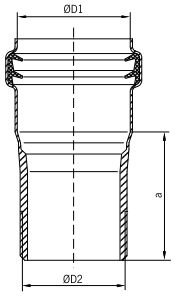
Outlet diameter		Dimensions	Weight	Item number
øD1 [mm]	øD2 [mm]	a [mm]	[kg]	1.4404
50	G 1¼"	100	0.2	**419330**
50	G 1½"	100	0.3	**419331**
50	G 2"	100	0.3	**419332**

Connector with socket and internal screw thread



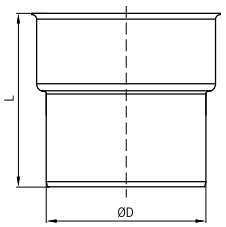
Seal material	Outlet diameter		Dimensions	Weight	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	[kg]	1.4404
EPDM	50	G 1¼"	58	0.2	**419333**
	50	G 1½"	58	0.3	**419335**
	50	G 2"	58	0.3	**419337**
Viton®	50	G 1¼"	58	0.2	**419334**
	50	G 1½"	58	0.3	**419336**
	50	G 2"	58	0.3	**419338**

Connector with socket and external screw thread



Seal material	Outlet diameter		Dimensions	Weight	Item number
	øD1 [mm]	øD2 [mm]	a [mm]	[kg]	1.4404
EPDM	50	G 1¼"	58	0.2	**419250**
	50	G 1½"	58	0.3	**419252**
	50	G 2"	58	0.3	**419254**
Viton®	50	G 1¼"	58	0.2	**419251**
	50	G 1½"	58	0.3	**419253**
	50	G 2"	58	0.3	**419255**

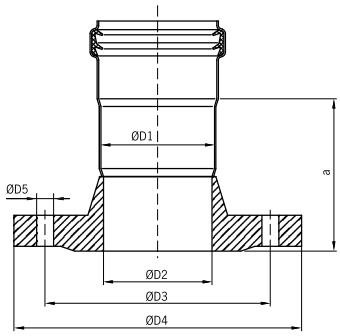
Connector cast iron spigot → ACO pipe socket



Outlet diameter	Dimensions	Weight	Item number
øD [mm]	L [mm]	[kg]	1.4404
75	121	0.4	**98904**
110	137	0.6	**98906**

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

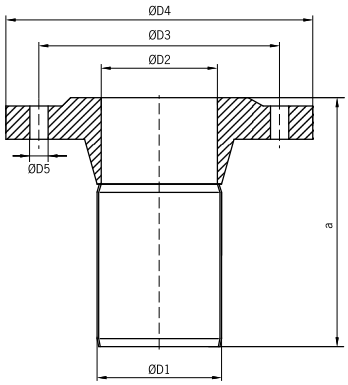
Connector with socket and flange



Seal material	Outlet diameter				n x øD5	Dimensions	Weight	Item number
	øD1 [mm]	øD2 [mm]	øD3 [mm]	øD4 [mm]	[mm]	a [mm]	[kg]	1.4404
EPDM	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**
Viton®	50	DN 40	110	150	4 × 18	100	2.3	**419257**
	50	DN 50	125	165	4 × 18	100	2.7	**419259**
	75	DN 65	145	185	4 × 18	100	3.4	**419261**
	110	DN 100	180	220	8 × 18	100	4.9	**419263**
	200	DN 200	295	340	12 × 22	102	12.0	**419515**

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

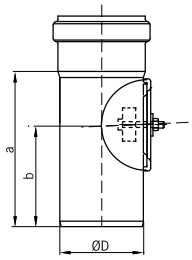
Connector with flange and spigot



Outlet diameter				n x øD5	Dimensions	Weight	Item number
øD1 [mm]	øD2 [mm]	øD3 [mm]	øD4 [mm]	[mm]	a [mm]	[kg]	1.4404
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**

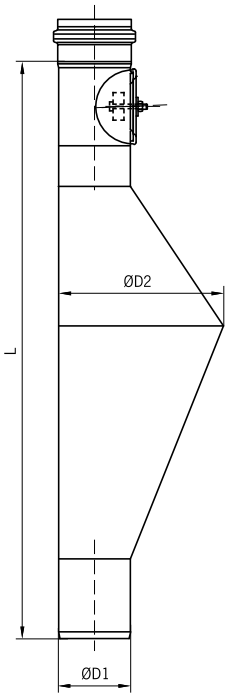
Note:
n – number of holes for screws in the flange.
Flange PN 16 DIN 2633.
Flange PN 6 and PN 10 available on request.

Access unit



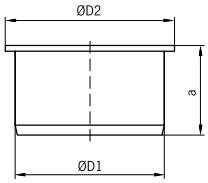
Seal material	Outlet diameter	Dimensions		Weight	Item number	Item number
	øD [mm]	a [mm]	b [mm]	[kg]	1.4301	1.4404
EPDM	75	139	90	0.5	**98913**	**98963**
	110	183	117	0.8	**98915**	**98965**
	125	210	135	0.9	**419783**	**419785**
	160	288	184	2.3	**98917**	**98967**
	200	293	186	3.7	**419676**	**419678**
	250	290	184	3.8	**-**	**417128**
	315	340	228	8.9	**-**	**417214**
Viton®	75	139	90	0.5	**98914**	**98964**
	110	183	117	0.8	**98916**	**98966**
	125	210	135	0.9	**419784**	**419786**
	160	288	184	2.3	**98918**	**98968**
	200	293	186	3.7	**419677**	**419679**
	250	290	184	3.8	**-**	**417130**

Rat-stop



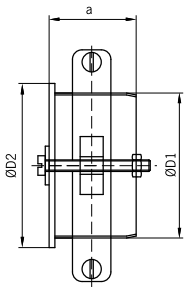
Seal material	Outlet diameter		Dimensions	Weight	Item number	Item number
	øD1 [mm]	øD2 [mm]	L [mm]	[kg]	1.4301	1.4404
EPDM	110	250	864	3.8	**419268**	**419270**
Viton®	110	250	864	3.8	**419269**	**419271**

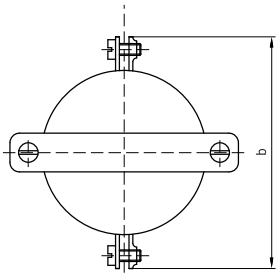
Socket plug



Outlet diameter		Dimensions	Weight	Item number
øD1 [mm]	øD2 [mm]	a [mm]	[kg]	1.4404
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**

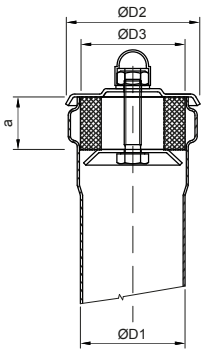
Socket plug with clamp





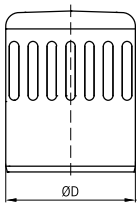
Outlet diameter		Dimensions		Weight	Item number
øD1 [mm]	øD2 [mm]	a [mm]	b [mm]	[kg]	1.4404
40					**417402**
50	58	45	88	0.4	**419138**
75	85	45	120	0.6	**419139**
110	120	45	167	0.8	**419140**
160	170	50	214	1.1	**419141**
250	260	83	302	1.3	**417132**
315	325	130	371	3.7	**417216**

Drainplugs with screwed plug



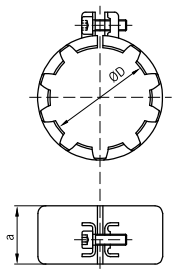
Outlet diameter			Dimensions	Weight	Item number	Item number
øD1 [mm]	øD2 [mm]	øD3 [mm]	a [mm]	[kg]	1.4301	1.4404
50	64	50	25	0.08	**419942**	**419948**
75	92	75	25	0.5	**419943**	**419949**
110	126	105	15	0.5	**419944**	**419950**
125	160	124	12	0.9	**419945**	**419951**
160	186	166	20	1.2	**419946**	**419952**

Vent cowl



Outlet diameter	Weight	Item number
øD [mm]	[kg]	1.4404
110	0.4	**98962**

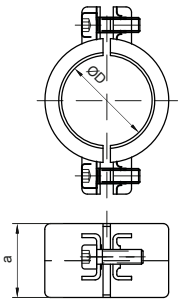
Socket clamp



Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Item number 1.4404
50	40	0.11	**417067**
75	43	0.16	**417069**
110	43	0.25	**417227**

Note: See page 193 for maximum operating pressures

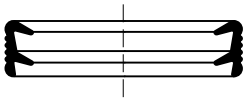
Socket clamp - two parts



Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Item number 1.4301	Item number 1.4404
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 193 for maximum operating pressures

Seal

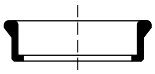



Outlet diameter øD [mm]	Weight [kg]	Item number EPDM	Item number NBR	Item number Viton®
40	0.01	**417400**	**417401**	**–**
50	0.01	**98400**	**417037**	**98404**
75	0.02	**98401**	**417038**	**98405**
110	0.05	**98402**	**417039**	**98406**
125	0.06	**419453**	**417041**	**419454**
160	0.08	**98403**	**417040**	**98407**
200	0.10	**98433**	**417042**	**98437**
250	0.12	**417146**	**417148**	**417147**
315	0.30	**417222**	**417223**	**–**

Note:

Detailed technical data sheet on page 228

Reduction sealing cast iron spigot → ACO pipe socket

Outlet diameter øD [mm]	Weight [kg]	Item number EPDM
DN 70/75	0.06	**400580**
DN 100/110	0.10	**400581**
DN 150/160	0.14	**400582**

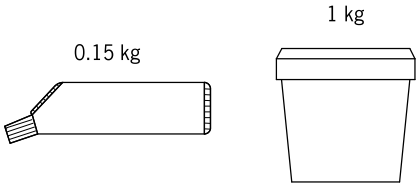
Note:

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

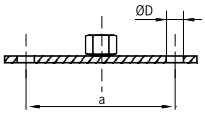

Outlet diameter øD [mm]	Weight [kg]	Item number EPDM
DN 70/75	0.05	**400586**
DN 100/110	0.08	**400587**
DN 150/160	0.12	**400588**

ACO Universal lubricant



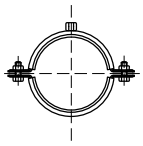
Weight [kg]	Item number
0.15	**E80350000**
1.00	**E80350001**

Fixing plate



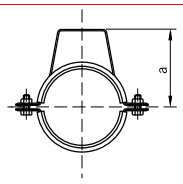
Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Item number Galvanised steel	Item number 1.4404
8.4	70	0.05	**400525**	**400521**

Support bracket with rubber infill



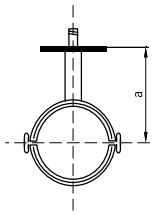
Outlet diameter øD [mm]	Weight [kg]	Item number Galvanised steel	Item number 1.4404
40	0.12	**417434**	**417359**
50	0.14	**400533**	**400529**
75	0.23	**400534**	**400530**
110	0.33	**400535**	**400531**
125	0.36	**419854**	**419855**
160	0.39	**400536**	**400532**
200	0.44	**419451**	**419675**
250	0.60	**–**	**417149**
315	1.0	**–**	**417224**

Support bracket with rubber infill and stirrup



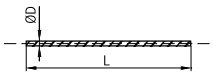
Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Item number Galvanised steel	Item number 1.4404
50	56	0.18	**400541**	**400537**
75	80	0.28	**400542**	**400538**
110	116	0.41	**400543**	**400539**
160	166	0.48	**400544**	**400540**

Support bracket with rubber infill and key



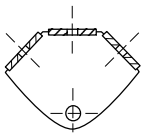
Outlet diameter øD [mm]	Dimensions a [mm]	Weight [kg]	Item number Galvanised steel	Item number 1.4404
50	120	0.16	**400549**	**400545**
75	133	0.26	**400550**	**400546**
110	150	0.38	**400551**	**400547**
160	175	0.44	**400552**	**400548**

Threaded support pole M8



øD [mm]	L [mm]	Weight [kg]	Item number Galvanised steel	Item number 1.4404
M8	1000	0.39	**400557**	**400553**
M8	90	0.03	**400558**	**400554**
M8	40	0.016	**400559**	**400555**

Set for axial fixing



Weight [kg]	Item number Galvanised steel	Item number 1.4404
0.11	**400565**	**400561**

Joiner/disjoiner

øD [mm]	**Weight** [kg]	Item number
100 - 400	25	**417070**

Electric cutter 50 – 110 mm

Note	Weight [kg]	Item number
in plastic case	20	**400745**

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

Manual cutter set 50-110 mm

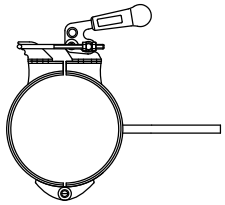
Note	Weight [kg]	Item number
in plastic case	3.50	**419363**

Manual cutter

øD [mm]	**Weight** [kg]	Item number
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.

Holder for manual cutting



øD [mm]	**Weight** [kg]	**Item number**
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.

Replacement discs for manual cutters

Note	**Weight** [kg]	**Item number**
for cutter 419363	0.005	**419365**
for cutters 400738 and 419364	0.005	**400578**

Note:
Minimum order quantity – 10 pcs.

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 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]
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 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]
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.

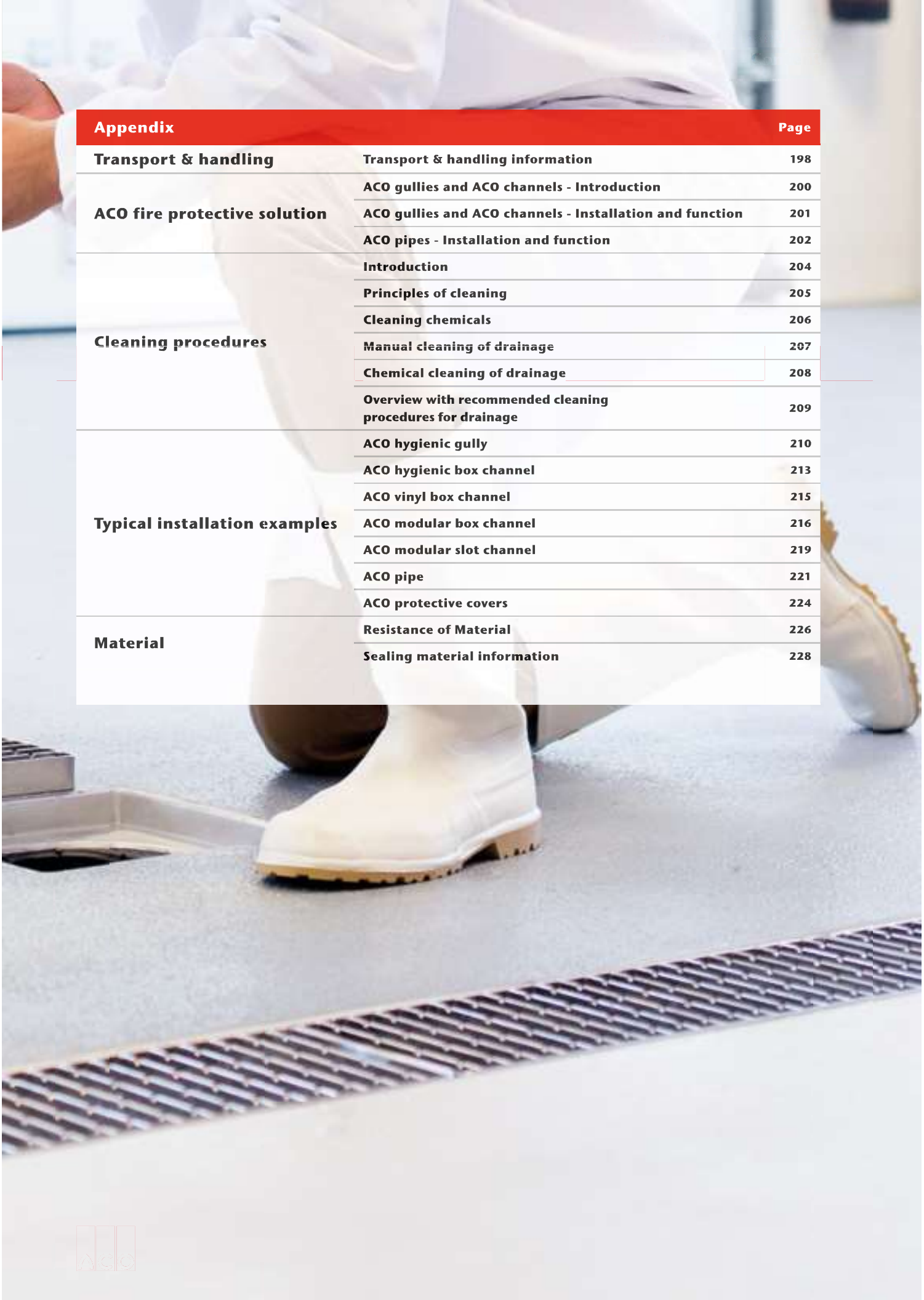
Operating pressures

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	2.0
50	0.5	2.0
75	0.5	2.0
110	0.5	2.0
125	0.5	2.0
160	0.5	1.0
200	0.5	1.0
250	0.5	1.0
315	0.5	1.0

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



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Transport & handling information

ACO gully

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

ACO channel

- The maximum transportable length of channel is 6 000 mm. In case of container or air transport, the recommended maximum transport length is 2 000 mm. Long channels over 6 000 mm are standardly divided in 6 m sections with transport joins.
- If one piece channel is required, the channel will have to be welded on site. Please contact our Sales/Technical department.
- ACO channel is for such requirement packed on framed/ non framed pallets fixed by plastic tape.
- Products are protected by wooden inserts and frames, in some cases PE foil or bubble foil is used.
- Articles are either wrapped seperately in ACO paper box or placed loose within EUR pallet space. It is strongly recommended that channels / channel parts / accessories are transported in their original packaging to avoid damage and / or loss of parts.
- Store preferably on dry and flat surface.
- Handle the channels/ channel parts/ accesories with care. Careful truck un/loading procedures are crucial. Any rough manipulation (like dragging along the ground, dumping off the truck etc...) can cause deformation and potentially cause product malfunctions.
- Contact with carbon steel may cause stainless steel corrosion.

ACO grating

- Standard grating length for ACO hygienic box channel is 500 mm and 1 000 mm for ACO modular box channel.
- ACO grating is packed on framed pallets protected by cardboard inserts and PE foil.
- Articles are either wrapped seperately in ACO paper box or placed loose within EUR pallet space.
- It is strongly recommended to transport gratings in their original packaging to avoid damage. Store preferably on dry and flat surface.
- Handle the gratings with care.
- Any rough manipulation (like dragging along the ground, dumping off the truck...) can cause deformation and potentially cause product malfunctions.
- Contact with carbon steel may cause stainless steel corrosion.

ACO pipe

- Maximum transport length of straight pipes pallets is 6 080 mm and width 820 mm.
- Straight pipes are packed on framed/ non framed long pallets, protected by wooden inserts and supports.
- Articles are either wrapped in cardboard and stretch or PE foil. Fittings are packed in cardboard boxes and stacked on foiled EUR pallets.
- It is strongly recommended to transport and store the pipes and fittings in their original packaging to avoid damage and/or the loss of parts. Store preferably on dry and flat surface.
- Handle the pipes and fittings with care. Any rough handling (like dragging along the ground, dumping off the truck...) can cause deformation and potentially cause product malfunctions.
- Contact with carbon steel may cause stainless steel corrosion.

ACO gullies and ACO channels - Introduction

ACO has developed a solution which prevents the spreading of fire and high temperatures within different building´s floors where ACO hygienic gully, ACO hygienic channel and ACO pipe are installed.

The solution has been tested according to EN 1366-2 Fire resistance tests for service installations and classified according to EN 13501 Fire classifications of construction products and building elements. For classification details please see chart below.

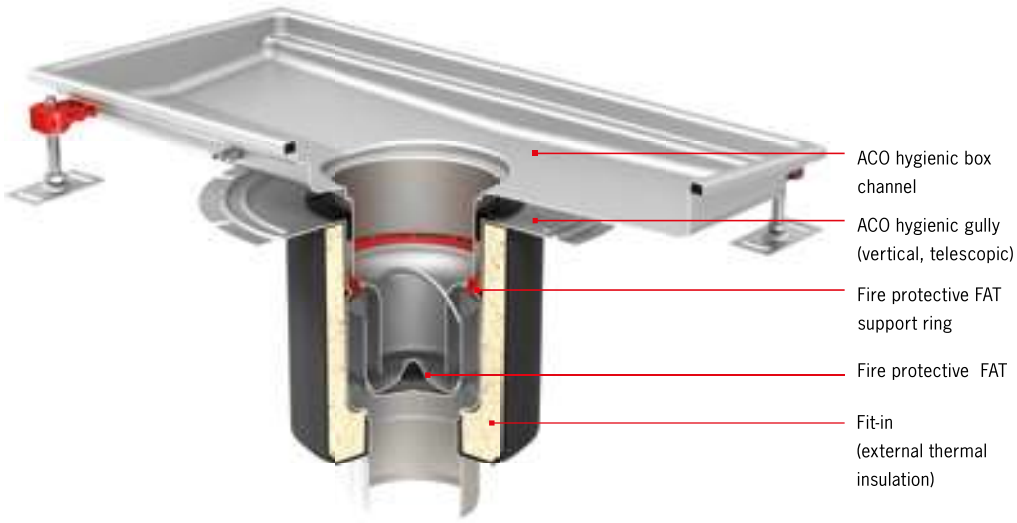
ACO fire protective kit can be used with telescopic vertical or fixed height vertical ACO hygienic gully and with ACO hygienic box channel, consisting of following items:

- External protection – Fit in
- Internal protection
  - Fire protective foul air trap
  - Fire protective foul air trap support

This solution has been designed and tested for use in either concrete or aerated concrete ceiling slabs with a minimum height of 150 mm.

ACO hygienic gully and ACO hygienic box channel installed with ACO fire protective kit can be connected to any kind of sewerage with ACO pipe regardless of its material, e.g. non combustible cast iron drain pipes SML, stainless steel ACO pipe (building material class A1) or plastic drain pipes (building material class B1/B2). All mentioned components of external and internal protection must be used to guarantee correct function of fire protection!

Tested at: PAVUS, a.s. protocol: No. Pr-13-2.061

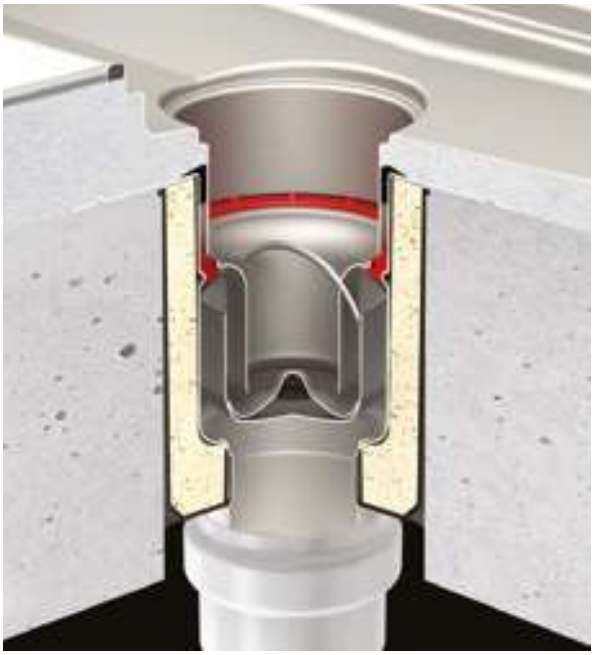


Gully type	Outlet diameter	Classification
ACO hygienic gully 142	75	EI 180
	110	EI 120
ACO hygienic gully 157	75	EI 180
	110	EI 120
ACO hygienic gully 218	110	EI 180
	160	EI 90

Classification according to EN 13 501, protocol: PK2-11-13-901-C-0

ACO hygienic gully 142 – Accessories ➔ Page 72
ACO hygienic gully 157 – Accessories ➔ Page 73
ACO hygienic gully 218 – Accessories ➔ Page 74

ACO gullies and ACO channels - Installation and function



Before activation

- Installation scheme with assembled fire protective solution in ceiling construction.

Fire activation

- Function of fire protective solution to prevent the spread of fire within storey structure by transmission (ACO gully).
- Time preventing the spread of fire is limited from 90 minutes to 180 minutes.

ACO pipe - Installation and function

ACO pipe push-fit system is classified and certified as a non-combustible product (as it is manufactured in compliance to EN 1124, part 1 & part 2). This standard classifies the ACO pipe systems as class A1 fire resistant (highest rating).

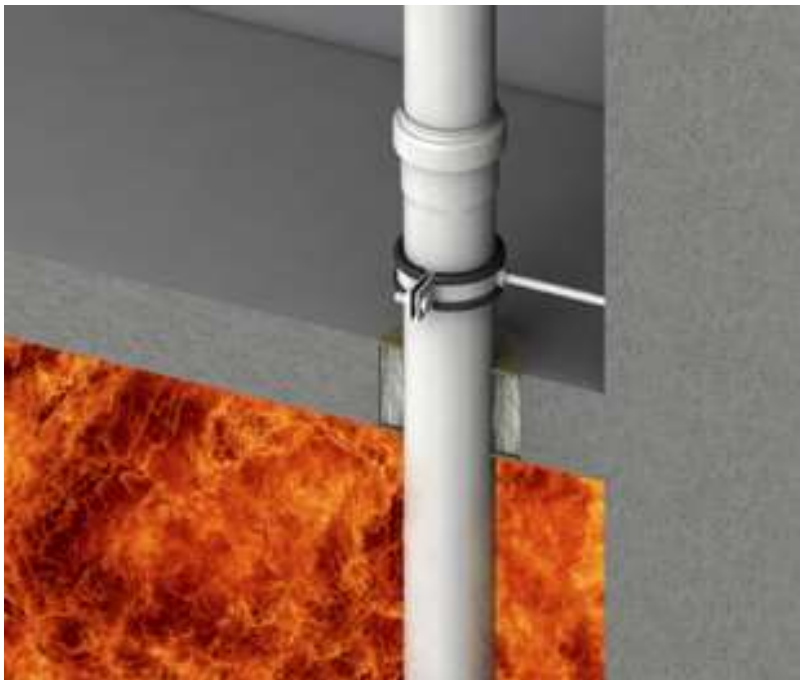
ACO pipe systems are certified also by SITAC authority as fire resistant (cert. no. 0410-01).

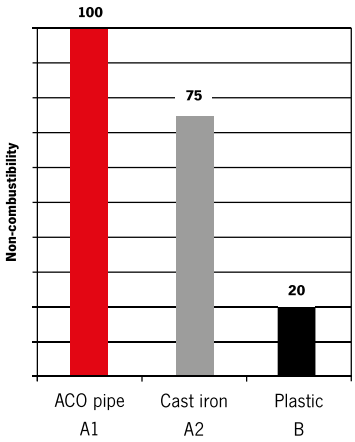
Special certificate of fire resistance for coated pipes (no. CSI PK-13-083) is available.

Fire certificates from marine authorities are available.

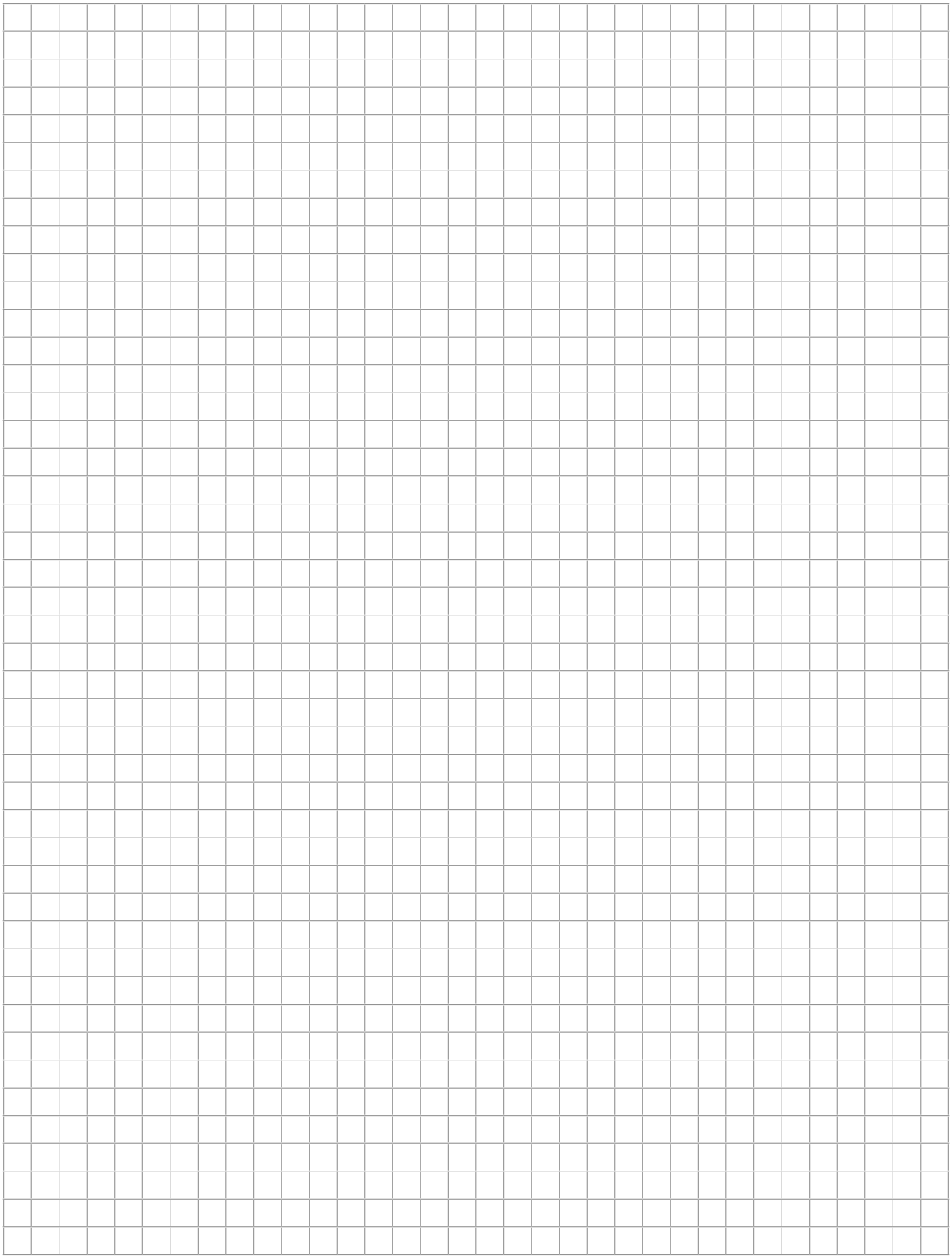
Non combustibility:

- Non combustible
- No additional fire collars needed at installation
- No toxic fumes emitted in case of fire
- EN 1124





Notes



Introduction

Drainage is a critical component affecting the hygienic performance of commercial food preparation business. Effective drainage helps to mitigate hazards from the external environment and is central to the safe and hygienic operation internally. Within the food production facility, surface liquids represent potential hazard of microbiological contamination. Liquids may be part of the cleaning process, or may originate from specific equipment discharge points, or be simply the result of an accidental spillage. Quite often the liquids contains other components – organic matter being predominant. Floor drainage components cater for these situations through three core functions - interception, conveyance of fluids, and ability to act as a barrier.

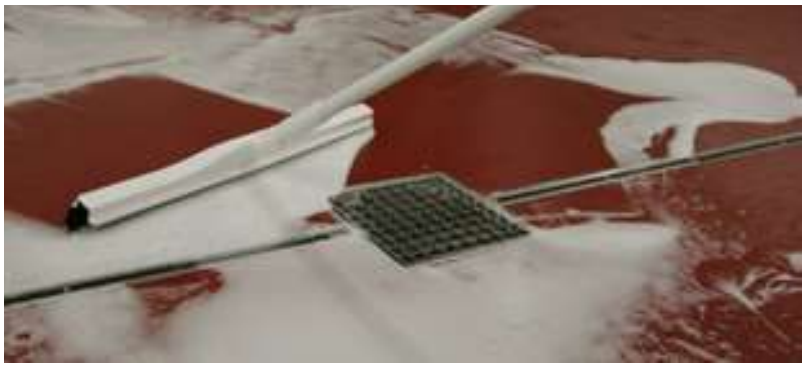
Effective cleaning of drainage in commercial food preparation business reduces risk of contamination and spoiling of food during preparation, processing, and storage. The main objective of cleaning is to remove soil to obtain clean surface and thereby reduce number of microorganisms. A further reduction of microorganism can be obtained by disinfection step.

Principles of cleaning

The principles of cleaning involve combination of thermal, kinetic and chemical energy. The cleaning processes are always combination of these factors and time of these to work. The key point to highlight is that all equipment – **including drainage** – in food processing plant should have hygienic design, which is easy to clean and disinfect. Otherwise the cleaning process is time and energy consuming and not cost effective. All surfaces of ACO stainless steel drainage are hygienically designed – no sharp corners, edges, dead spaces and crevices. ACO drainage is easily accessible for cleaning and visual inspection.

The effectiveness of drainage cleaning depends on number of factors:

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



There are two different types of surface to be cleaned:

Product contact surface
All equipment that itentionally or unitentionally (e.g. due to splashing) comes to contact with final product or from which product or condensate may drain, drop or be drawn into the main product or product container.

Non product contact surface
All other exposed surfaces, including surfaces associated with equipment, such as support structures, control panels and external surfaces. It also includes surfaces related to the manufacturing environment, such as floors, walls and drain channels.

We also differenciate cleaning process as whether it is applied dry or wet.

Dry cleaning
Dry cleaning is essentially a mechanical removal of soils using sweeping, brushing, wiping and vacuuming. Enviroments typically to be cleaned by dry methods include plants which are producing flour, cocoa, dry milk products, dry soups and dry infant formulas.

Wet cleaning
Wet cleaning involves application of fluids (usually water based) to achieve the desired cleaning result. This can be applied to Open Plant Cleaning (OPC): surfaces to be cleaned have to be accessible to fluids. In addition, some components may be physically removed from production area and cleaned separately – Cleaning out of place (COP). Drainage systems require wet cleaning.

The last is a distinction between whether the cleaning process is done manually or automatically.

Manual cleaning
Manual cleaning is generally considered as labour intensive and, therefore often expensive. The manual tools should be hygienic – resistant to applied chemicals and suitable for a specific operation. On top of it; operators should be properly trained to be able to perform cleaning as expected to achieve clean surfaces. ACO drainage has all elements of hygienic design that makes cleaning of ACO drainage much easier and faster when compared to competitive products.

Automatic cleaning
Utensils and dismantled parts of equipment are cleaned and disinfected automatically in industrial washing machines, tray or tunnel washers (automatic COP). CIP is also defined as automatic cleaning system.

Cleaning chemicals

There are three main classes of cleaning compounds:

- detergents
- alkalies
- acids
- disinfectants/sanitizers

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

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

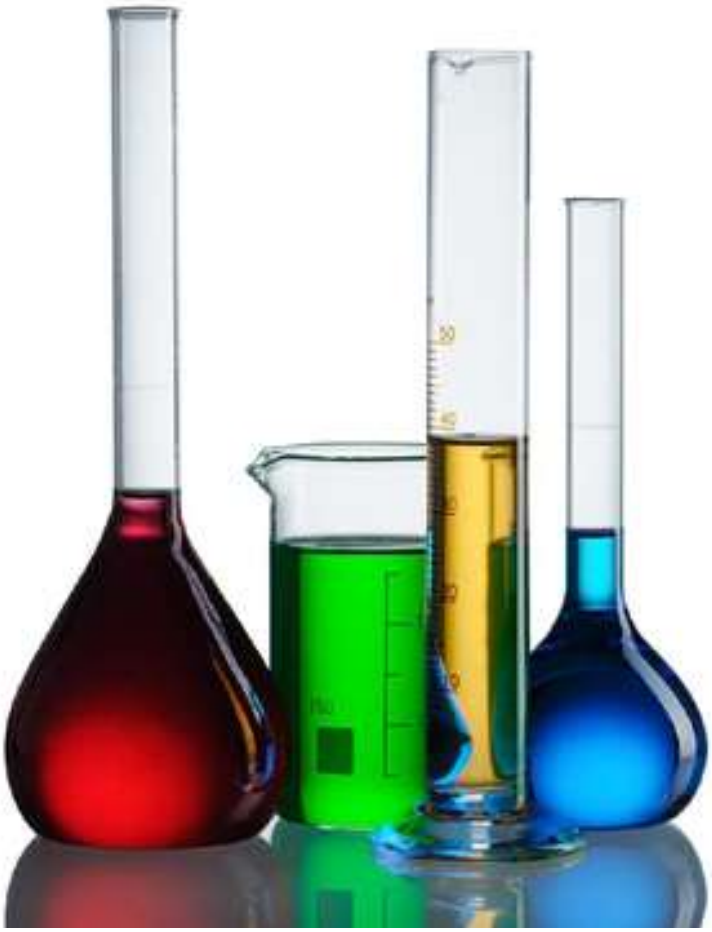
Acids
Acids, both organic and inorganic, are commonly used for removal of mineral deposits, such as: hard water scale or milkstone. Acids are potentialy corrosive to construction materials and must be used with care.

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

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

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

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



Manual cleaning of drainage

1 
Remove all present grocery, raw materials, wrapping materials and tools.

2 
Cover all equipment that could be contaminated.

3 
Remove excess dirt from floor and gratings, and place into designated container.

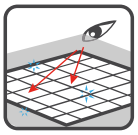
4 
Remove gratings.

5 
Remove and empty silt basket and foul air trap.

6 
Place collected waste and dirt into designated container. Rinse grating, silt basket and foul air trap with clean water. Then place foul air trap into its original position.

7 
Wash all surfaces with designated detergent and designated hand brush.

8 
Rinse all surfaces with clean water.

9 
Visually check surface cleanliness - repeat cleaning process if neccessary.

10 
Place silt basket and grating to its original position.

11 
Rinse the entire equipment with clean water.

Chemical cleaning of drainage

1 
Remove all present grocery, raw materials, wrapping materials and tools.

2 
Cover all equipment that could be contaminated.

3 
Remove excess dirt from floor and gratings; and place into designated container.

4 
Remove gratings.

5 
Remove and empty silt basket and foul air trap.

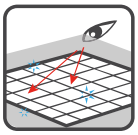
6 
Place collected waste and dirt into designated container. Rinse grating, silt basket and foul air trap with clean water. Then place foul air trap into its original position.

7 
Apply foam to all surfaces.

8 

Leave foam for 15 minutes.

9 
Rinse off foam with clean water.

10 
Visually check surface cleanliness - repeat cleaning process if neccessary.

11 
Place silt basket and grating to its original position.

12 
Rinse the entire equipment with clean water.

Overview with recommended cleaning procedures for drainage

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

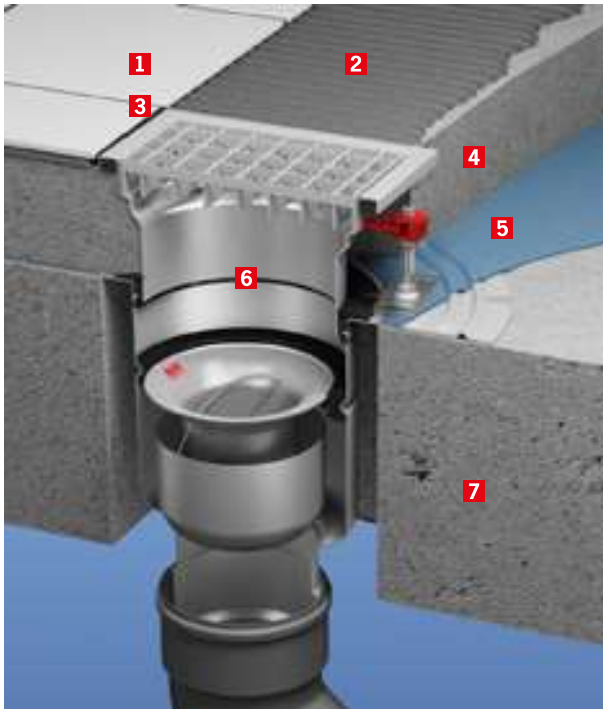
Frequency	Procedure	Physical agents	Chemical agents	Examples of chemical cleaning agents suitable for ACO stainless steel drainage
Daily	Removal of organic deposits (fats, proteins, saccharides and polysaccharides)	▪ Steam ▪ Medium pressure water to max 25 bar ▪ Mechanical / kinetic energy (brushes,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

Any cleaning procedures, including those recommended by equipment suppliers, must be properly validated at the equipment, where it will be applied and on the soil that could be expected even after certain time of usage.

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

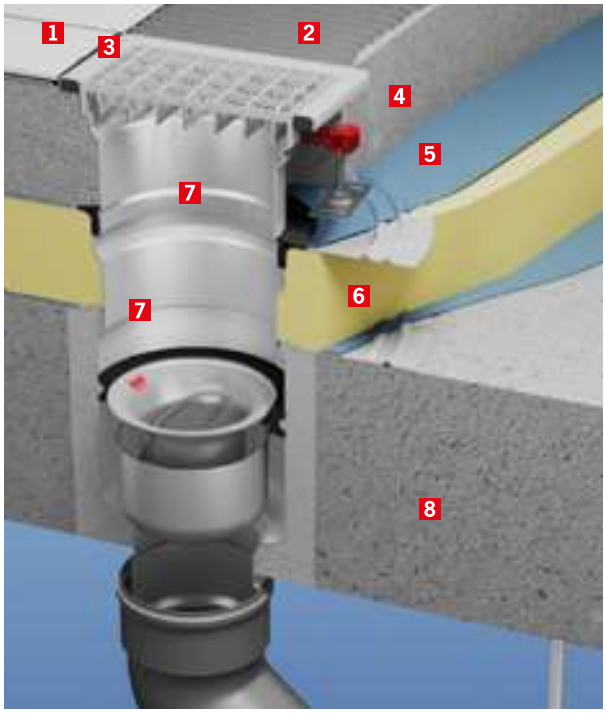
ACO hygienic gully

ACO hygienic gully – telescopic flanged gully installed in suspended concrete slab construction



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

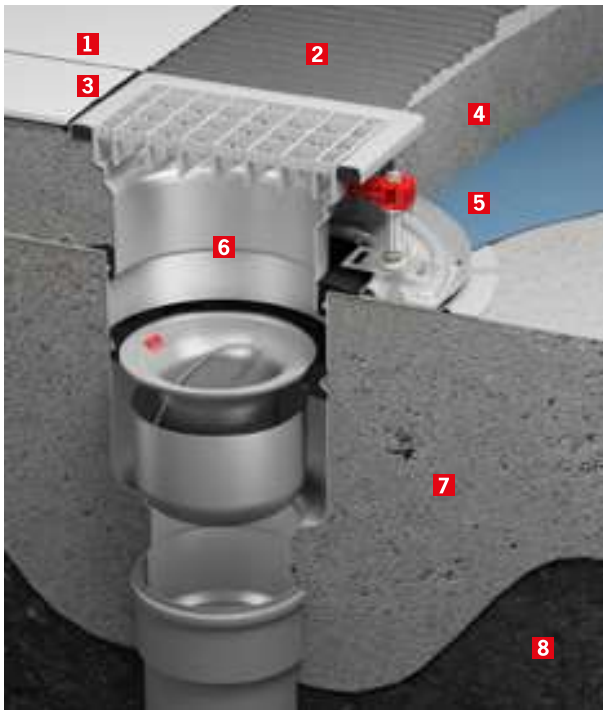
ACO hygienic gully – telescopic flanged gully and raising flanged piece installed in suspended concrete slab construction



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

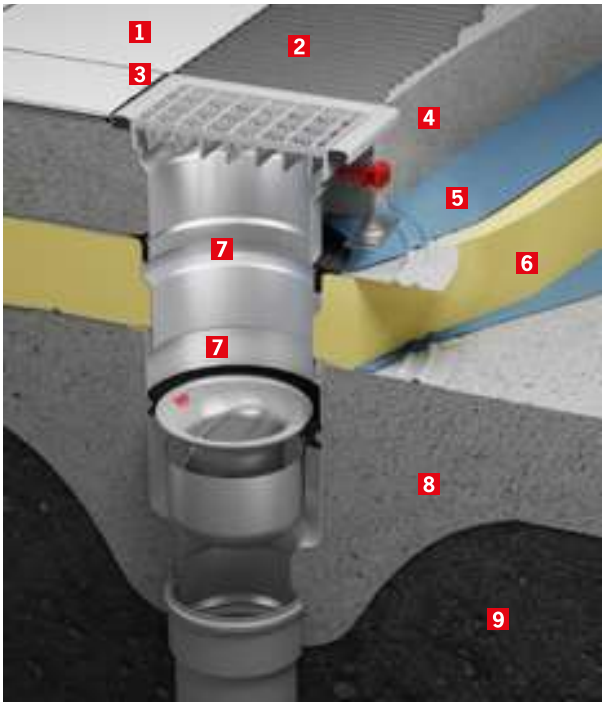
ACO hygienic gully – telescopic flanged gully installed in solid concrete floor

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



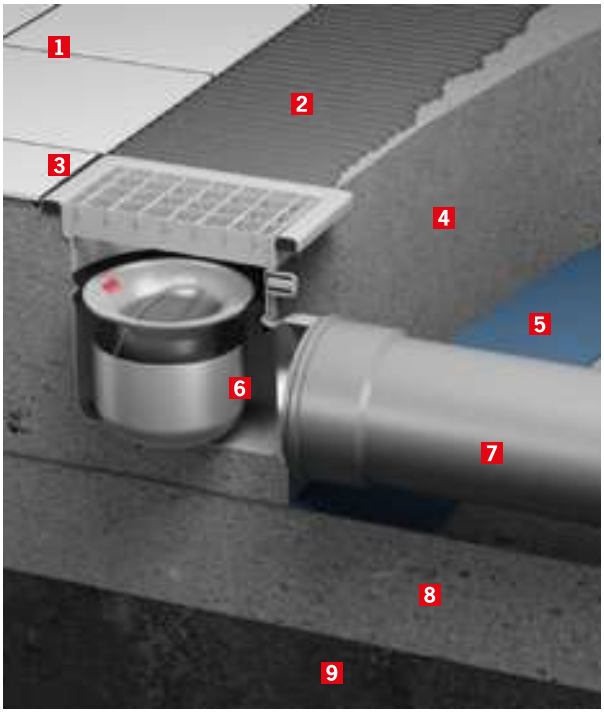
ACO hygienic gully – telescopic flanged gully and raising piece installed in solid concrete floor

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



ACO hygienic gully – fixed height gully installed in solid concrete floor

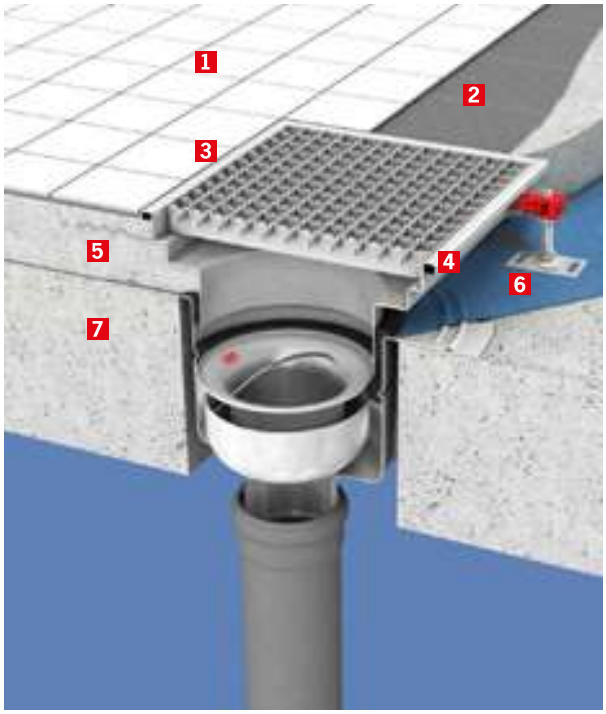
1 Ceramic tiles
2 Tile cement
3 Mastic sealant
4 Floor screed
5 Dampf proof membrane (DPM)
6 Gully
7 Outlet pipe
8 Floor slab
9 Compacted soil



ACO hygienic box channel

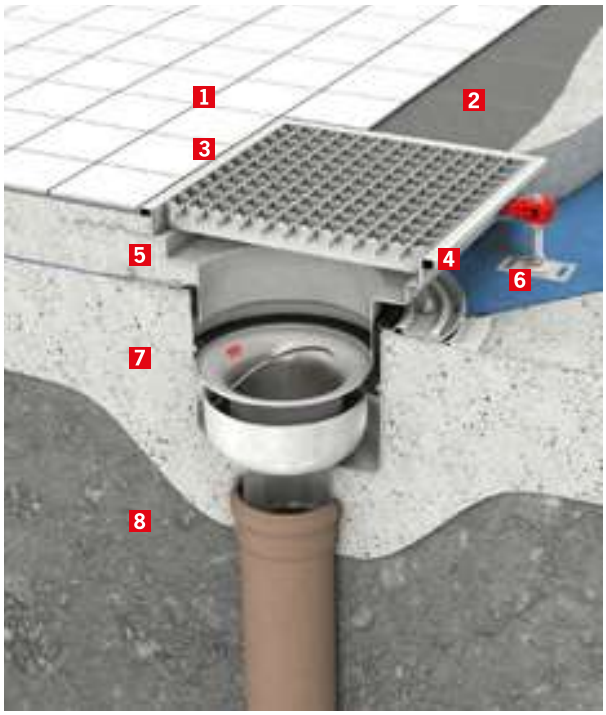
ACO hygienic box channel standard type – ACO hygienic gully with adhesive bonding flange (Tiled floor)

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



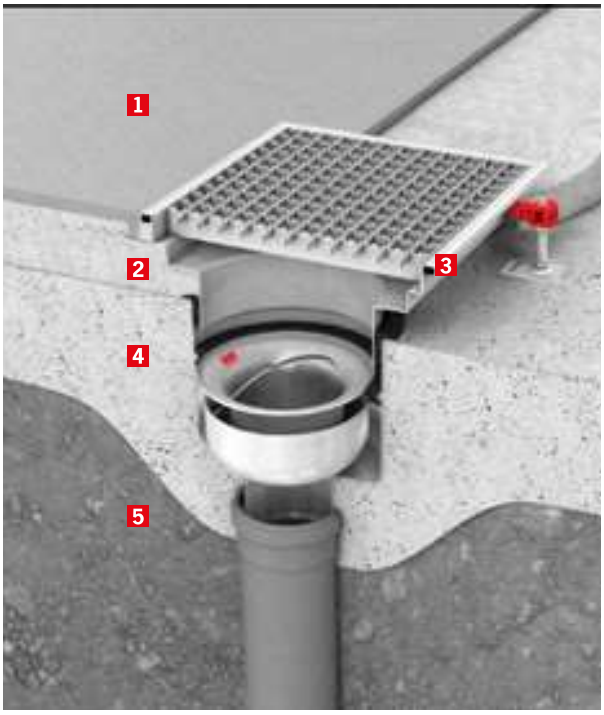
ACO hygienic box channel standard type – ACO hygienic gully with mechanical clamping flange (Tiled floor)

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



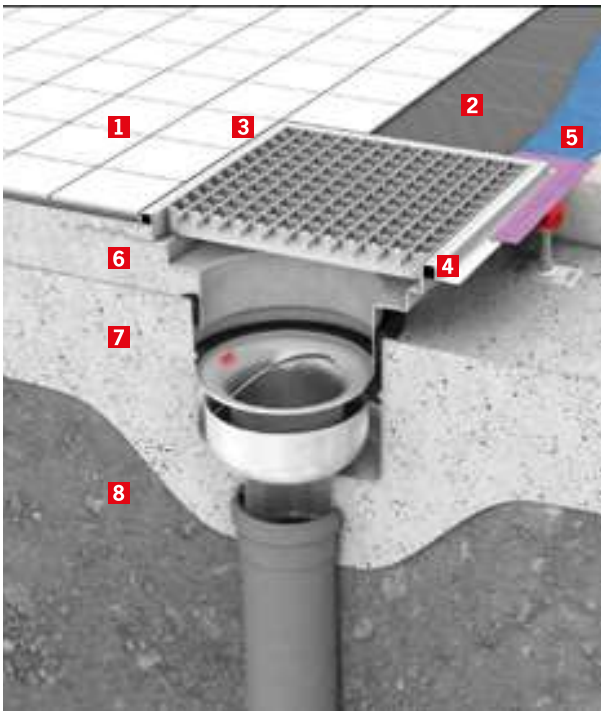
ACO hygienic box channel standard type – ACO hygienic gully with location flange (Resin floor)

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



ACO hygienic box channel extendend type – ACO hygienic gully with location flange (Tiled floor)

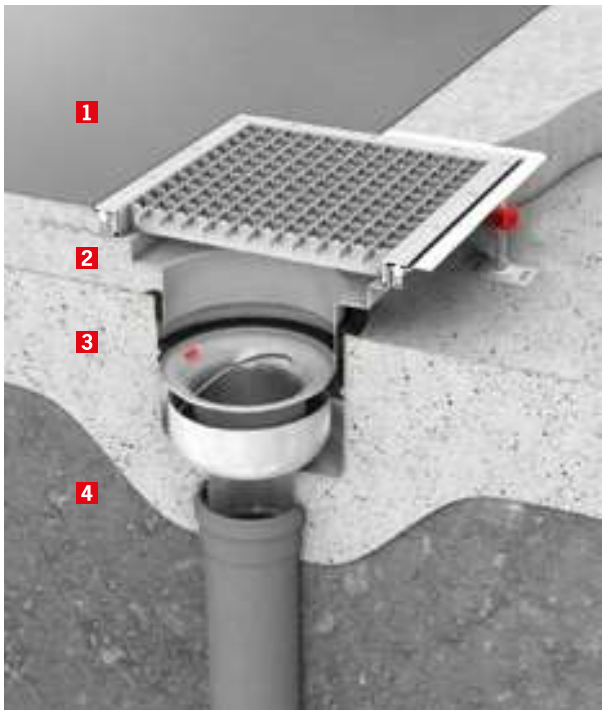
1. Ceramic tiles
2. Tile cement
3. Mastic sealant
4. Rubber infill
5. Water proof membrane
6. Floor screed
7. Solid concrete floor slab
8. Compacted soil



ACO vinyl box channel

ACO vinyl box channel – ACO hygienic gully with location flange (Vinyl floor)

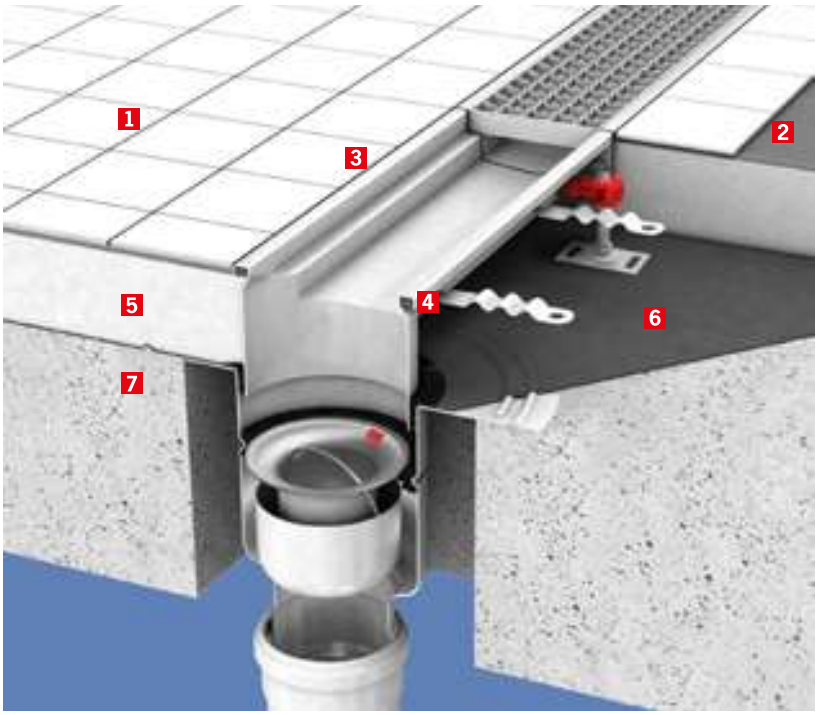
1 Vinyl floor
2 Floor screed
3 Solid concrete floor slab
4 Compacted soil



ACO modular box channel

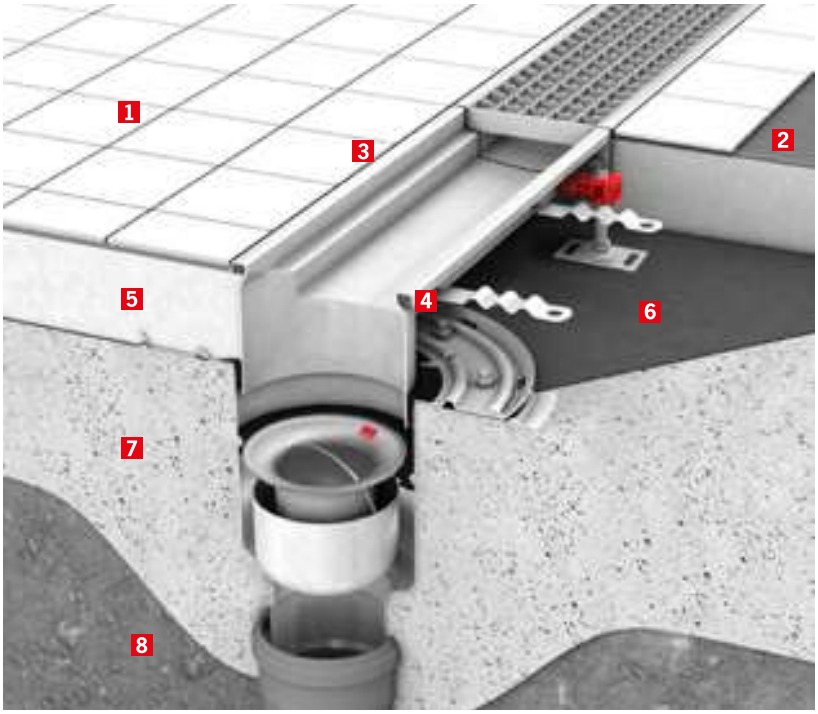
ACO modular box channel standard type – ACO hygienic gully with adhesive bonding flange (Tiled floor)

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



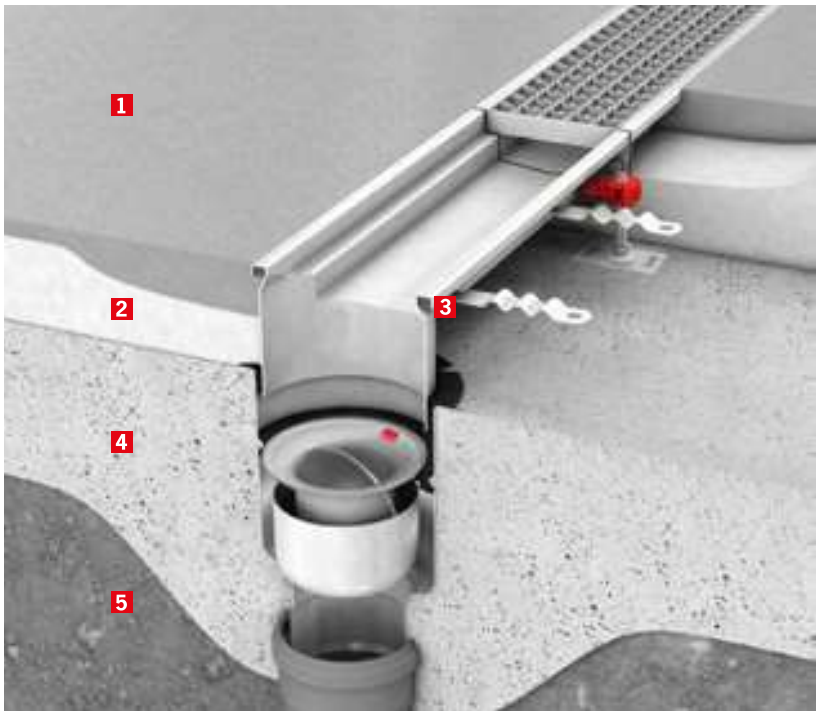
ACO modular box channel standard type – ACO hygienic gully with mechanical clamping flange (Tiled floor)

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



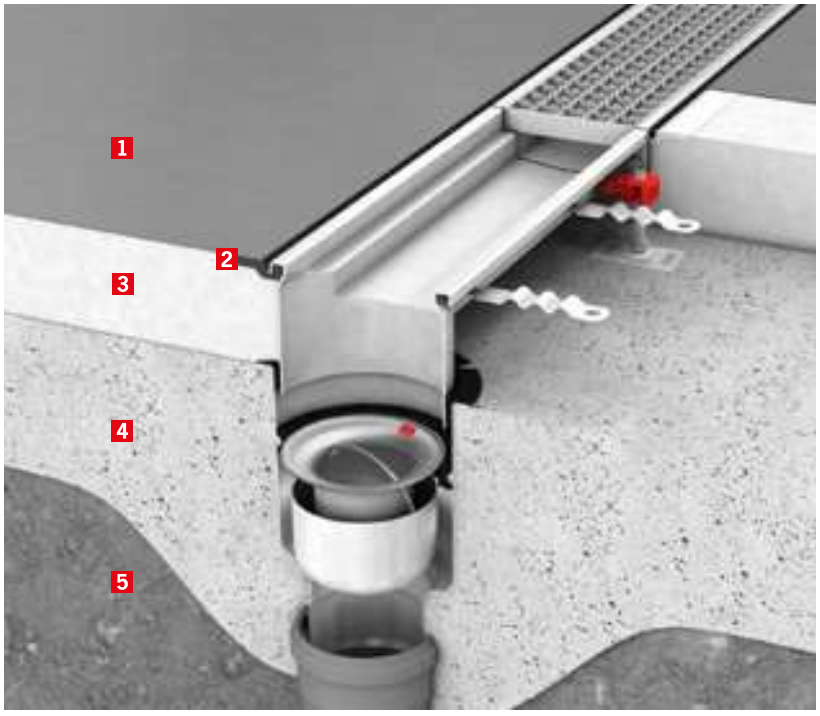
ACO modular box channel standard type – ACO hygienic gully with location flange (Resin floor)

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



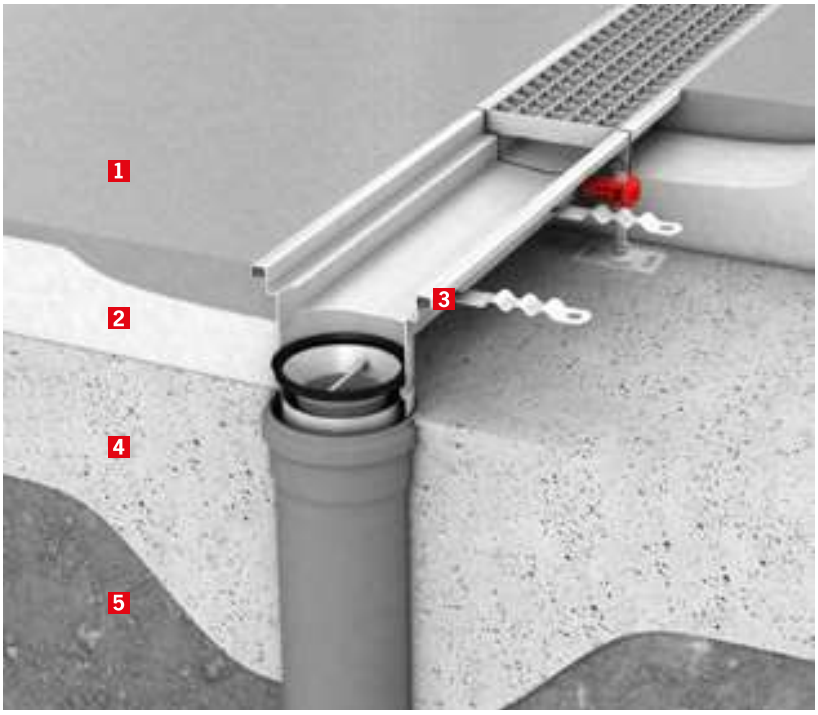
ACO modular box channel vinyl type – ACO hygienic gully with location flange (Vinyl floor)

1 Vinyl floor
2 Vinyl seal
3 Floor screed
4 Solid concrete floor slab
5 Compacted soil



ACO modular box channel standard type – direct connection to sewage pipe system (Resin floor)

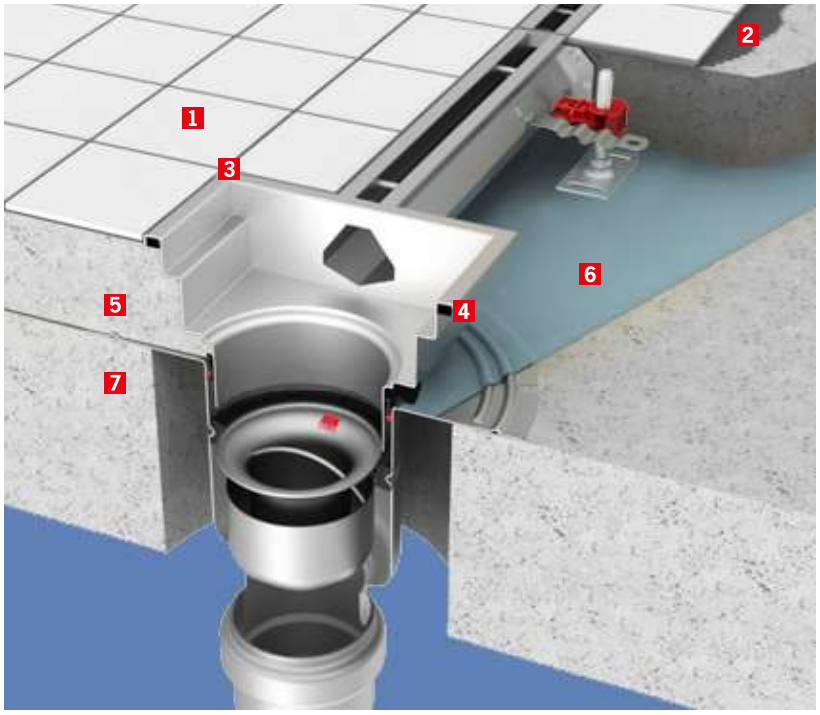
1 Epoxy/resin floor
2 Floor screed
3 Rubber infill
4 Solid concrete floor slab
5 Compacted soil



ACO modular slot channel

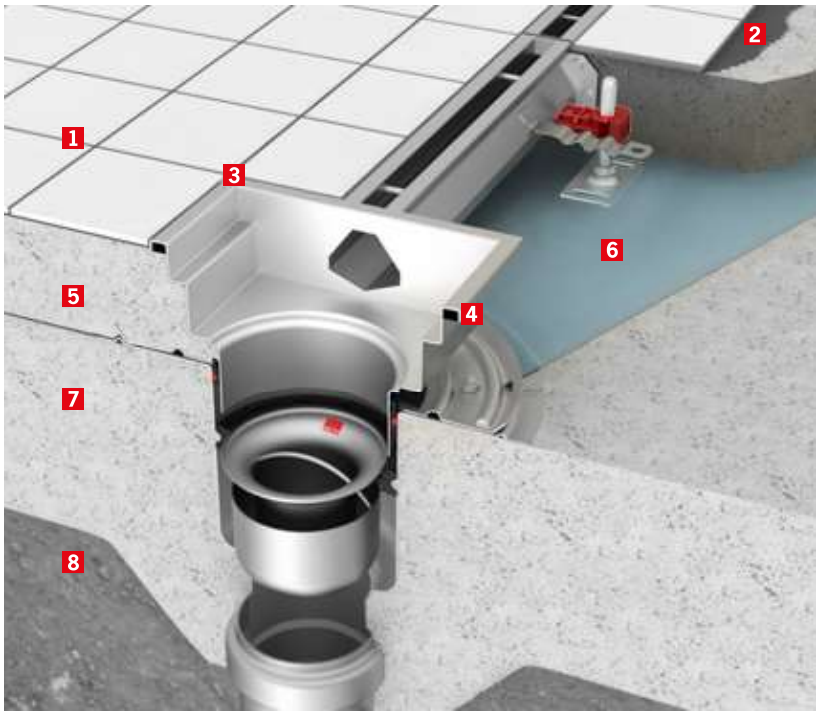
ACO modular slot channel standard type – ACO hygienic gully with adhesive bonding flange (Tiled floor)

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

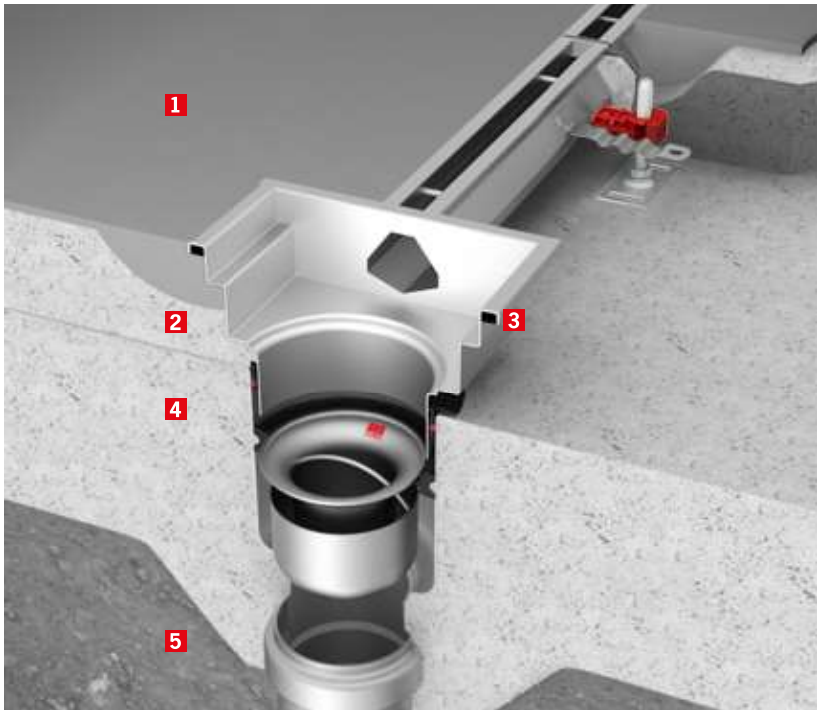


ACO modular slot channel standard type – ACO hygienic gully with mechanical clamping flange (Tiled floor)

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



ACO modular slot channel standard type – ACO hygienic gully with location flange (Resin floor)



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

ACO 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.

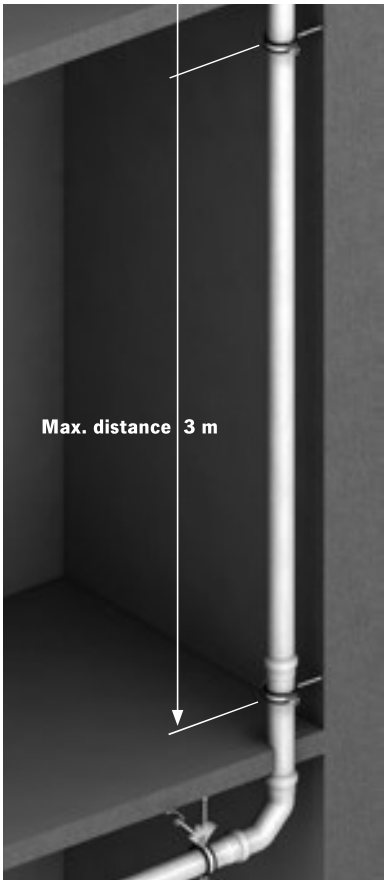
These tools are designed to form the edge bevel on the male spigoted end of the pipe. Carbon steel cutting wheels are not suitable.

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.

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 200 mm of the bottom. Fit brackets at each change of pipework is direction or junction points. Pipework should be at least 30 mm from the wall to facilitate 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 of the pipe between brackets should not exceed 1.5 mm. The discretion of the installer should be applied in each instance to ensure that the pipe is adequately supported.



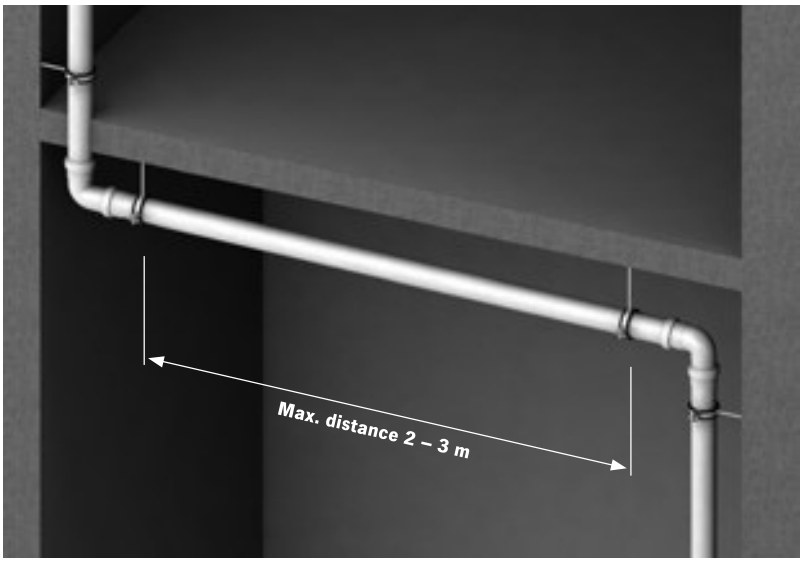
Horizontal pipe runs

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

Recommended distances; for installation follow your local standards.



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 upper table).

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.

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 protective covers

Description

Features and benefits:
- Protection from building material debris
- Eliminates cleaning of drainage after installation
- Prevents injuries on worksite
- Certified according to EN 12811-1 for scaffolding load class 3
- Eco friendly and easily disposable

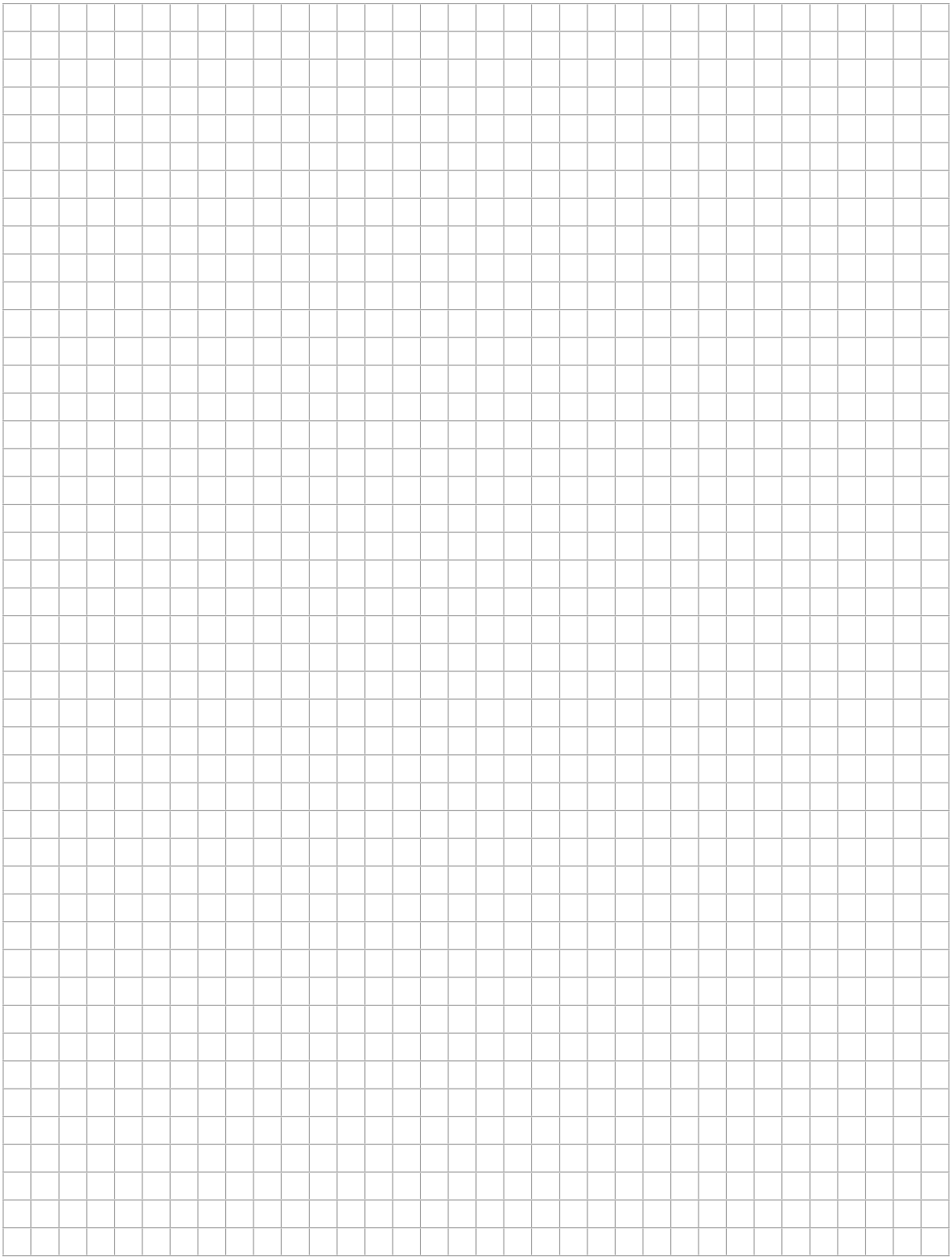
ACO protective covers made from OSB are available for:
- All ACO hygienic gullies and ACO hygienic box channels, standard, semi-standard and customized
- ACO vinyl box channels, standard, semi-standard and customized
- Gully tops on ACO slot channels, semi-standard and customized

Order information:
- For standard articles, add _**C** at the end of product article number (example: 111111_C)
- For semi-standard and customized articles, specify this option in the order process

Load area	Maximum load capacity	Maximum pressure
200 x 200 mm	max. 100 kg	max. 2.5 N/cm²
500 x 500 mm	max. 150 kg	max. 0.6 N/cm²
1000 x 1000 mm	max. 200 kg	max. 0.2 N/cm²

Classification according to EN 12811-1 for scaffolding load class 3

Notes



Resistance of Material

1 = Very good service to operating limit of material 2 = Moderate service 3 = Limited or variable service 4 = Unsatisfactory	AISI 316 L Stainless	AISI 304 Stainless	EPDM	NBR	FPM	TPEV
Acetone	1	1	1	4	4	1
Acetic acid (diluted) 30%	1	1	1	2	2	1
Acetic acid 100%	1	1	1	3	3	1
Acetic acid anhydride	1	1	2	3	4	2
Aluminium chloride	4	4	1	1	1	1
Aluminium sulfate	1	4	1	1	1	1
Ammonium carbonate	1	1	1	4	2	1
Ammonium chloride	2	3	1	1	1	1
Ammonium hydroxide	1	1	1	4	2	1
Amyl chloride	1	1	4	4	1	4
Anilin	1	1	2	4	3	1
Anilin hydrochloride	4	4	2	2	2	2
Barium chloride	2	2	1	1	1	1
Barium hydroxide	1	1	1	1	1	1
Benzaldehyde	1	1	1	4	4	1
Benzene	1	1	4	4	1	4
Benzoic acid	1	1	4	4	1	1
Borax	1	1	1	2	1	1
Boric acid	1	1	1	1	1	1
Bromine	4	4	4	4	1	4
Bromine chloride acid	4	4	1	2	1	2
Bromine hydrogen acid	4	4	1	4	1	2
Bromoethylene	1	1	-	-	-	-
Butanol	1	1	4	1	1	3
Butyl acetat	1	1	2	2	4	3
Butyric acid	1	1	2	4	4	3
Calcium bisulfate el sulfite	1	1	4	1	1	1
Calcium chloride	2	2	1	1	1	1
Calcium hydroxide	1	1	1	1	1	1
Calcium hypoklorite	2	3	1	3	1	3
Carbon disulfide	1	1	4	4	1	3
Carbon tetrachloride	1	1	4	3	1	4
Chloracetic acid (mono)	4	4	2	4	4	2
Chloride	4	4	-	-	-	-
Chloril acid	4	4	1	4	-	3
Chlorine (dry)	1	1	1	2	1	4
Chlorobenzene	1	1	4	4	1	4
Chloroform	2	2	4	4	1	4
Chlorosulfonic acid	2	3	4	4	3	4
Copper chloride	2	2	1	1	1	1
Copper nitrate	1	1	1	1	1	1
Copper sulfate	1	1	1	1	1	1
Ether	1	1	3	4	3	3
Ethyl chloride	1	1	1	1	1	3
Fatty acid	1	1	4	2	1	1
Fluorine (dry)	1	1	-	-	-	-
Fluorine hydrogen acid	4	4	2	4	1	4
Formaldehyde	1	1	1	2	1	1
Formic acid	1	1	1	2	3	2
Furfural	1	1	2	4	4	4
Gallic acid	1	1	2	2	1	2
Hydrochloric acid	4	4	1	4	1	1
Hydrogen peroxide	1	1	3	4	2	3
Iodine (wet)	4	4	2	2	1	2
Lead acetate	1	1	1	2	4	1

Note:
Concentration levels and length of exposure have a direct influence on the resistance of stainless steel to certain chemicals. Each application should therefore be carefully reviewed to determine the suitability of stainless steel.

Assumptions:
Data presented are used as a guide only, for detailed information please contact our Sales/Technical department.

1 = Very good service to operating limit of material 2 = Moderate service 3 = Limited or variable service 4 = Unsatisfactory	AISI 316 L Stainless	AISI 304 Stainless	EPDM	NBR	FPM	TPEV
Magnesium chloride	2	2	1	1	1	1
Magnesium sulfate	1	1	1	1	1	1
Mercury	1	1	1	1	1	1
Methanol	1	1	1	1	3	1
Methyl chloride	1	1	3	4	1	3
Methylene chloride	2	2	4	4	2	4
Natphalene	1	1	4	4	1	1
Nickel chloride	2	2	1	1	1	1
Nickel sulfate	1	1	1	1	1	1
Nitric acid	3	3	3	4	1	4
Oxalic acid	3	3	1	2	1	2
Perchloric acid	4	4	2	4	1	1
Phorsphor acid	1	1	2	4	1	1
Picric acid	1	1	2	2	1	2
Potassium bromide	1	1	1	1	1	1
Potassium carbonate	1	1	1	2	1	1
Potassium chlorate	1	1	1	1	1	1
Potassium cyanide	1	1	1	1	1	1
Potassium hydroxide	1	1	1	2	2	1
Potassium nitrate	1	1	1	1	1	1
Potassium permanganate	1	1	1	3	1	1
Potassium sulfate	1	1	1	1	1	1
Potassium sulfide	1	1	1	1	1	1
Potassiumchloride	2	2	1	1	1	1
Prophylene dichloride	1	1	4	4	1	4
Sal ammoniac	2	3	1	1	1	1
Silver nitrate	1	1	1	2	1	1
Soda (ash)	1	1	1	1	1	1
Sodium acetate	1	1	1	2	4	1
Sodium bicarbonate	1	1	1	1	1	1
Sodium bisulfate	1	3	1	2	1	1
Sodium bisulfite	1	1	1	1	1	1
Sodium bromide	2	2	1	3	1	2
Sodium chlorate	1	1	1	2	1	1
Sodium chloride	4	4	1	1	1	1
Sodium cyanide	1	1	1	1	1	1
Sodium fluoride	1	1	1	1	1	1
Sodium hydroxide	1	1	1	2	2	1
Sodium hypoklorite	4	4	2	2	1	1
Sodium nitrate	1	1	1	2	2	1
Sodium sulfate	1	1	1	1	1	1
Sodium sulfide	1	1	1	1	1	1
Sodium sulfite	1	1	1	1	1	1
Stannicous chloride	2	3	2	1	1	2
Sulfur	1	1	1	4	1	1
Sulfur chloride	1	1	4	3	1	3
Sulfur dioxide	1	2	1	4	1	1
Sulfuric acid	4	4	2	4	1	3
Sulfurous acid	1	3	2	2	1	2
Tionyl chloride	1	1	4	4	1	4
Toluene (toluol)	1	1	4	4	1	4
Trichloroethylene	1	1	4	3	1	4
Turpentine	1	1	4	1	1	4
Xylene (xylol)	1	1	4	4	2	4
Zinc sulfate	1	1	1	1	1	1

Note:
Concentration levels and length of exposure have a direct influence on the resistance of stainless steel to certain chemicals. Each application should therefore be carefully reviewed to determine the suitability of stainless steel.

Assumptions:
Data presented are used as a guide only, for detailed information please contact our Sales/Technical department.

Sealing material information

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.

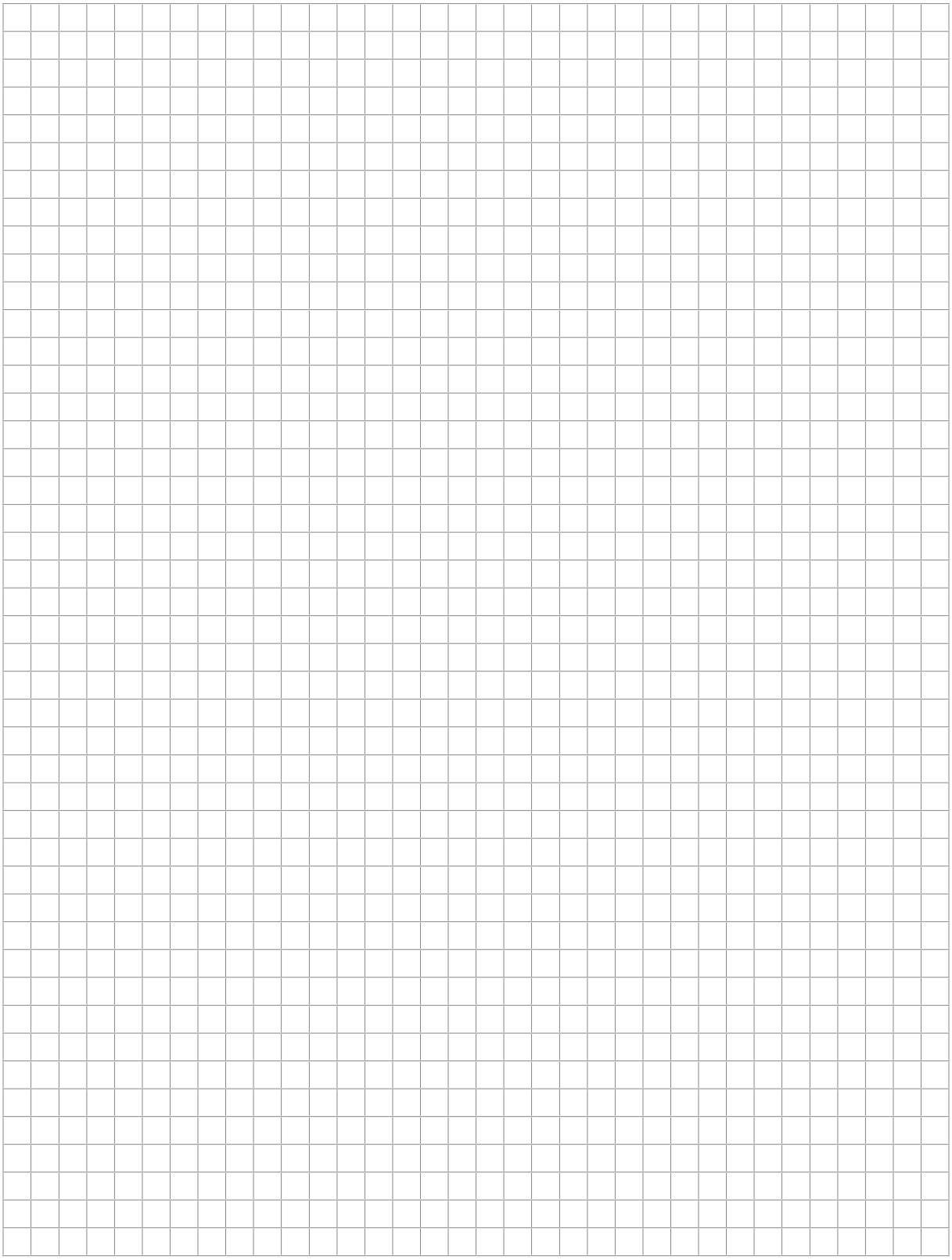
FPM
(fluoroelastomer) – Viton®
Green sealing rubber ring which is suitable for special applications where oil, solvents and strong acids are present in waste water; and for applications with higher temperatures. Viton® seal has limited resistance to chemicals like acetone, methyl alcohol.

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.

Notes



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