

Product Catalog

Non-pressure underground drainage and sewerage of unplasticized poly(vinyl chloride) (PVC-U)



wavin

An Orbia business.

Technical characteristics of PVC-U plastics piping systems for non-pressure underground drainage and sewerage

Transport of sewage from residential, commercial and industrial buildings to treatment plants requires reliable and durable sewage networks. Wavin offers extensive and complete systems that allow the construction of a network with the lowest installation costs and future operating costs. They also take into account aspects of sustainable development.

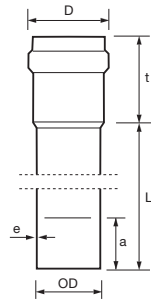
PVC piping systems have components such as pipes, fittings, adaptors dedicated with their respective joints intended for use in discharge pipes, drains and sewers which operate as gravity systems allowing for a maximum pressure of 40 kPa (acc. EN 476). They can be used both inside and outside buildings.

	Non-pressure underground drainage and sewerage of unplasticized poly(vinyl chloride) (PVC-U)																																																									
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Material	unplasticized poly(vinyl chloride) (PVC-U)																																																									
Range	<table border="1"> <thead> <tr> <th>Stiffness class</th> <th>Real stiffness</th> <th>Diameter range</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>≥ 4 kN/m²</td> <td>160 - 500</td> </tr> <tr> <td>8</td> <td>≥ 8 kN/m²</td> <td>110 - 500</td> </tr> <tr> <td></td> <td>≥ 12 kN/m²</td> <td>160 - 500</td> </tr> </tbody> </table>	Stiffness class	Real stiffness	Diameter range	4	≥ 4 kN/m ²	160 - 500	8	≥ 8 kN/m ²	110 - 500		≥ 12 kN/m ²	160 - 500	<table border="1"> <thead> <tr> <th>Stiffness class</th> <th>Real stiffness</th> <th>Diameter range</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>≥ 2 kN/m²</td> <td>160</td> </tr> <tr> <td>4</td> <td>≥ 4 kN/m²</td> <td>160 - 500</td> </tr> <tr> <td>8</td> <td>≥ 8 kN/m²</td> <td>110 - 500</td> </tr> </tbody> </table>	Stiffness class	Real stiffness	Diameter range	2	≥ 2 kN/m ²	160	4	≥ 4 kN/m ²	160 - 500	8	≥ 8 kN/m ²	110 - 500																																
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Intended use or uses:	<ul style="list-style-type: none"> – sanitary sewage networks – storm water and drainage networks – combined networks – sewage house connections – underfloor installations in low-rise buildings (UD) – sewer networks in mining areas (pipes with an extended socket) – networks with large slopes (pipes with a solid wall)) 																																																									
Application areas	<table border="1"> <thead> <tr> <th>Diameter</th> <th>SN 4</th> <th>SN 8</th> </tr> </thead> <tbody> <tr><td>Dn 110</td><td>UD / BD</td><td>UD</td></tr> <tr><td>Dn 160</td><td>UD / BD</td><td>UD</td></tr> <tr><td>Dn 200</td><td>UD / BD</td><td>UD</td></tr> <tr><td>Dn 250</td><td>UD / BD</td><td>UD</td></tr> <tr><td>Dn 315</td><td>UD / BD</td><td>UD</td></tr> <tr><td>Dn 400</td><td>UD / BD</td><td>UD</td></tr> <tr><td>Dn 500</td><td>UD / BD</td><td>UD</td></tr> </tbody> </table>	Diameter	SN 4	SN 8	Dn 110	UD / BD	UD	Dn 160	UD / BD	UD	Dn 200	UD / BD	UD	Dn 250	UD / BD	UD	Dn 315	UD / BD	UD	Dn 400	UD / BD	UD	Dn 500	UD / BD	UD	<table border="1"> <thead> <tr> <th>Diameter</th> <th>SN 2</th> <th>SN4</th> <th>SN8</th> </tr> </thead> <tbody> <tr><td>Dn 110</td><td></td><td>U</td><td>UD</td></tr> <tr><td>Dn 160</td><td>U</td><td>U</td><td>UD</td></tr> <tr><td>Dn 200</td><td></td><td>U</td><td>UD</td></tr> <tr><td>Dn 250</td><td></td><td>UD</td><td>UD</td></tr> <tr><td>Dn 315</td><td></td><td>UD</td><td>UD</td></tr> <tr><td>Dn 400</td><td></td><td>UD</td><td>UD</td></tr> <tr><td>Dn 500</td><td></td><td>UD</td><td>UD</td></tr> </tbody> </table> <p>NOTE: – application area code "U" - buried in ground outside the building structure and – application area code "UD"- both buried in ground, within the building structure and outside the building – application area code "B" - above ground inside the building The intended use is reflected in the marking of products by "U", "UD" and "BD".</p>	Diameter	SN 2	SN4	SN8	Dn 110		U	UD	Dn 160	U	U	UD	Dn 200		U	UD	Dn 250		UD	UD	Dn 315		UD	UD	Dn 400		UD	UD	Dn 500		UD	UD
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Characteristic installation places (without calculation)	<ul style="list-style-type: none"> – Soils group 1–4 acc. EN 1046 – Installation depth : 0,8–10 m – SN 8 – traffic load SLW 60 – Ground water level – till 5 m above pipe invert – Confirmed tightness acc. EN 476 and EN 1610: 0,5 bar 																																																									
Fittings and additional elements	<ul style="list-style-type: none"> – fittings: plugs, cups, double sockets, repairs sockets, bends, branches, reducers in range of diameters 110 till 500 mm – wide range of adapters for other pipe systems connections – mechanical saddles acc. EN 13598-1 – back flow valves 																																																									
Type of joints	Joints with an integral socket with elastomeric ring seal in groove s																																																									
Ring stiffness	<ul style="list-style-type: none"> – ring stiffness classes: SN 2, SN 4, SN 8 – real ring stiffness ≥ 10 and 12 kN/m² 																																																									



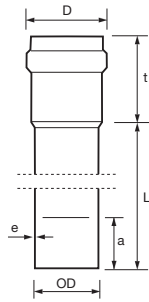
	Non-pressure underground drainage and sewerage of unplasticized poly(vinyl chloride) (PVC-U)	
Pipe type	Smooth wall with solid wall	Smooth 3 layers wall with foamed core
Possible direct connections	<ul style="list-style-type: none"> - all smooth wall pipes gravity systems (with sockets and seal ring in groove) - with X-Stream pipes (by special adaptors) - with Tegra and Basic manholes and inspection chambers <ul style="list-style-type: none"> a) Tegra 1000, 600 425 & 400 with SW pipe connections b) Basic 600, 400 & 315 - with X-Stream pipes (by special adaptors) - with gravity systems made of traditional materials (clay, concrete, cast iron) using transition adapters) 	
Technical specification	Solid wall pipes : - class 4, 8 - EN 1401 - SN12: certificate ITC 120347 VAO Fittings: - EN 1401	Multilayer wall pipes (with foamed core): - EN 13476-2 - class SN 2 (dn 160) ITB-KOT-2019/0931 Fittings: - with ribbed wall - EN 13476-3
Additional information	<ul style="list-style-type: none"> - color – red brown (RAL) - inside pipe marking in pipe dn ≥ 200 - pipe identification during CCTV inspection: producer, diameter, wall construction (LITE – solid wall, ML – multilayer with foamed core, stiffness class) - a wide range of mechanical saddles allowing the connection of new dn 160 pipes to active pipeline - 2 options of seals: <ul style="list-style-type: none"> a) SBR lip seal type BL acc. EN681-1 with marking WC (for sewer applications) b) EPDM/TPE seal with PP ring type DinLock acc. EN681-2 with marking WH/WT (for sewer applications/ oil resistant) - possible use of gaskets with a stiffening ring, resistant to bending during assembly 	

Smooth wall PVC-U pipes with solid wall



Pipe

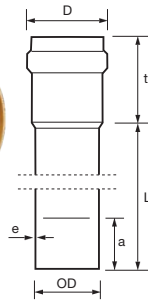
OD [mm]	L [mm]	e [mm]	D [mm]	t [mm]	a [mm]	Index SAP
SN 4, SDR 41						
160	2000	4,0	182	62	60	3041337
160	3000	4,0	182	62	60	3041338
160	6000	4,0	182	62	60	3041339
200	3000	4,9	224	77	80	3041421
200	6000	4,9	224	77	80	3041422
250	3000	6,2	284	93	104	3041423
250	6000	6,2	284	93	104	3041424
315	3000	7,7	352	103	118	3041425
315	6000	7,7	352	103	118	3041426
400	3000	9,8	444	119	138	3041427
400	6000	9,8	444	119	138	3041428
500	3000	12,3	554	138	163	3041439
500	6000	12,3	554	138	163	3041440
SN 8, SDR 34						
110	500	3,2	126	47	44	3043917
110	1000	3,2	126	47	44	3040752
110	2000	3,2	126	47	44	3040754
110	3000	3,2	126	47	44	3040755
110	6000	3,2	126	47	44	3040914
160	1000	4,7	182	62	60	3039077
160	2000	4,7	182	62	60	3040753
160	3000	4,7	182	62	60	3033805
160	6000	4,7	182	62	60	3039116
200	1000	5,9	226	77	80	3041477
200	2000	5,9	226	77	80	3043979
200	3000	5,9	226	77	80	3033806
200	6000	5,9	226	77	80	3039118
250	3000	7,3	285	94	107	3039178
250	6000	7,3	285	94	107	3039177
315	3000	9,2	354	103	121	3031888
315	6000	9,2	354	103	121	3039148
400	3000	11,7	447	119	142	3039075
400	6000	11,7	447	119	142	3039149
500	3000	14,6	558	139	167	3039073
500	6000	14,6	558	139	167	3040915
SN 12, S_R ≥ 12 kN/m²						
200	600	7,4	227	77	83	3043920
250	600	9,2	287	94	108	3043921
400	600	14,5	450	119	145	3043923
500	600	18,1	562	139	170	3043924



Pipe with with extended socket

OD [mm]	L [mm]	e [mm]	D [mm]	t [mm]	a [mm]	Index SAP
SN 8, SDR 34						
160	3000	4,7	194	200	146	3043927
160	6000	4,7	194	200	146	3043928
200	3000	5,9	238	200	148	3044027
200	6000	5,9	238	200	148	3044028
250	3000	7,3	285	200	179	3044029
250	6000	7,3	285	200	179	3044030
315	3000	9,2	354	211	189	3044031
315	6000	9,2	354	211	189	3044032
400	3000	11,7	447	226	204	3044033
400	6000	11,7	447	226	204	3044034
500	3000	14,6	558	246	214	3044035
500	6000	14,6	558	246	214	3044036

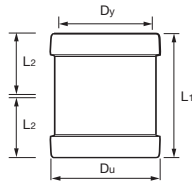
Smooth 3-layers wall PVC-U pipes with foamed core (Multilayer – ML)



Pipe

OD [mm]	L [mm]	e [mm]	D [mm]	t [mm]	a [mm]	Index SAP
SN 2, SDR 51						
160	1000	3,2	180	63	59	3043977
160	2000	3,2	180	63	59	3043978
160	3000	3,2	180	63	59	3022343
160	6000	3,2	180	63	59	3022443
SN 4, SDR 41						
110	500	3,2	126	47	44	3053761
110	1000	3,2	126	47	44	3043973
110	2000	3,2	126	47	44	3043974
110	3000	3,2	126	47	44	3069331
110	6000	3,2	126	47	44	3069333
160	500	4,0	180	63	60	3041836
160	1000	4,0	180	63	60	3041611
160	2000	4,0	180	63	60	3041786
160	3000	4,0	180	63	60	3022342
160	6000	4,0	180	63	60	3022442
200	1000	4,9	223	77	80	3041785
200	2000	4,9	223	77	80	3041784
200	3000	4,9	223	77	80	3022348
200	6000	4,9	223	77	80	3022448
250	3000	6,2	282	93	104	3022353
250	6000	6,2	282	93	104	3022455
315	3000	7,7	350	103	118	3022358
315	6000	7,7	350	103	118	3022463
400	3000	9,8	442	119	138	3041870
400	6000	9,8	442	119	138	3022469
500	3000	12,3	551	139	163	3041871
500	6000	12,3	551	139	163	3022475
SN 8, SDR 34						
110	500	3,2	125	47	44	3045132
110	1000	3,2	125	47	44	3045133
110	2000	3,2	125	47	44	3045134
110	3000	3,2	125	47	44	3045135
110	6000	3,2	125	47	44	3045136
160	1000	4,7	180	63	80	3031882
160	2000	4,7	180	63	80	3031883
160	3000	4,7	180	63	80	3031884
160	6000	4,7	180	63	80	3024151
200	1000	5,9	223	77	80	3031885
200	2000	5,9	223	77	80	3031886
200	3000	5,9	223	77	80	3031894
200	6000	5,9	223	77	80	3022450
250	3000	7,3	282	93	107	3033587
250	6000	7,3	282	93	107	3022457
315	3000	9,2	350	104	121	3031893
315	6000	9,2	350	104	121	3022464
400	3000	11,7	442	119	142	3031901
400	6000	11,7	442	119	142	3033589
500	3000	14,6	551	139	167	3033591
500	6000	14,6	551	139	167	3033590

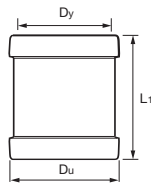
Fittings



Double Coupler with seal

Dy [mm]	Du [mm]	L1 [mm]	L2 [mm]	Index SAP
SN 4, class N				
160*	182	149	73	3032714
200	225	220	108	3024150
250	273,7	98,2	97,1	3055501
315	339,9	220	107,6	3055502
400	444	350	150	3017561
500	555	390	160	4001031
SN 8, class S				
110	127	123	60	3032719
160	182	149	73	3043969
200	225	220	108	3044148

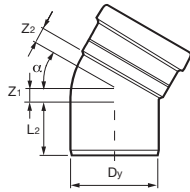
* 2 lips seal



Repair Coupler with seal

Dy [mm]	Du [mm]	L1 [mm]	Index SAP
SN 4, class N			
160*	182	149	3024152
200*	225	220	3023719
250	273,7	98,2	3055503
315	339,9	220	3055504
400	444	309	4001034
500	555	362	4001035
SN 4, class N			
110	127	123	3042065
160*	182	149	3041396
200*	225	220	3041475
315	351	310	3041551
400	457	380	3041552

* 2 lips seal

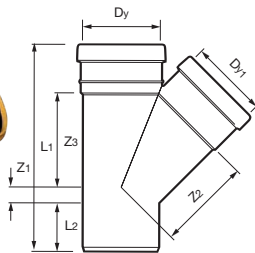


Bend with seal

Dy [mm] x α [°]	Z1 [mm]	Z2 [mm]	L2 [mm]	Index SAP
SN4, class N				
160 x 15*	12	18	81	3032722
160 x 30*	23	29	81	3032724
160 x 45*	36	42	81	3024159
160 x 67*	58	64	80	3001718
160 x 88*	84	90	81	3023742
200 x 15	13	24	100	3009593
200 x 30	30	39	100	3041340
200 x 45	46	55	100	3023720
200 x 67	72	80	100	3001722
200 x 88	105	114	100	3023904
250 x 15	19	30	121	3001599
250 x 30	37	49	121	3001600
250 x 45	57	69	121	3001601
250 x 88,5	132	143	121	3001602
315 x 15	23	38	142	3001603
315 x 30	47	61	142	3001604
315 x 45	72	86	142	3001605
315 x 88,5	166	180	142	3001606
400 x 15	115	80	155	4001041
400 x 30	115	55	155	3017568
400 x 45	125	120	155	4001042
400 x 87	216	229	155	4067646
500 x 15	80	35	178	4001044
500 x 30	90	60	178	4001045
500 x 45	114	137	178	4001046
500 x 90**	120	143	178	
SN 8, class S				
110 x 15*	9	15	60	3024156
110 x 22*	12	18	60	3043932
110 x 30*	16	22	60	3032723
110 x 45*	25	31	60	3032717
110 x 68*	41	47	60	3024157
110 x 88*	60	66	60	3024158
160 x 15*	12	18	81	3041526
160 x 30*	23	29	81	3041945
160 x 45*	36	42	81	3041394
160 x 88*	84	90	81	3041395
200 x 30	30	39	100	3043929
200 x 45	46	55	100	3043930
200 x 87,5	105	114	100	3043931

* 2 lips seal

** A bend 90° glued of two 45° bends has been obsoleted
Dimensions are for reference only. Use 2 of 45° bends instead

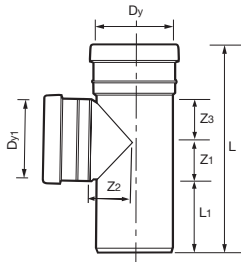


Branch 45°, 67° with seal

Dy/Dy1 [mm]	Z1 [mm]	Z2 [mm]	Z3 [mm]	L1 [mm]	L2 [mm]	Index SAP
SN 4, class N						
160/110x45*	0	168	158	309	81	3024160
160/160x45*	36	193	193	386	81	3032713
200/110x45*	58	195	239	484	100	3009595
200/160x45*	19	221	214	419	100	3023938
200/200x45*	46	241	241	470	100	3024149
250/110x45	-38	290	310	510	60	3009606
250/160x45	-3	260	250	550	160	3009608
250/200x45	24	350	310	640	166	3009609
250/250x45	57	340	340	680	143	3001630
315/110x45	-67	310	320	600	120	3009502
315/160x45	-33	340	340	680	180	3001634
315/200x45**	-16	327	307	534,5	132,5	3074442
315/250x45	39	437	408	751	144	4001061
315/315x45	83	398	432	819	144	4001056
SN 4, class N						
400/110x45	-70	414	365	640	155	3017574
400/160x45	-53	450	368	660	155	3017577
400/200x45	-25	405	400	720	155	4001065
400/250x45	10	473	465	820	155	3017580
400/315x45	42	533	482	869	155	3017582
400/400x45	122	605	512	979	155	4001063
500/160x45	-70	527	482	790	178	3017585
500/200x45	-63	553	473	810	178	4001068
500/250x45	2	543	550	950	178	3017588
500/315x45	22	626	560	980	178	3017590
500/400x45	69	653	637	1104	178	4001069
500/500x45	95	768	670	1163	178	4000899
SN 8, class S						
110/110x45*	25	133	133	276	60	3024154
110/110x67*	41	85	85	241	60	3024155
160/110x45*	0	169	158	309	81	3044057
160/160x45*	36	193	193	385	81	3041525
200/160x45*	19	222	214	419	100	3041474
200/200x45*	46	241	241	470	100	3044059

* 2 lips seal

** Remark: Injection moulded branch conforming to EN 13496-2 (class SN8) for systems of class SN 4 and SN8

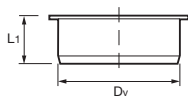


Branch 87° - 90° with seal

Dy/Dy1 [mm]	Z1 [mm]	Z2 [mm]	Z3 [mm]	L [mm]	L1 [mm]	Index SAP
SN 4, class N						
160/110x90	60	168	159	342	–	3009587
160/160x87*	84	87	89	329	81	3032712
200/110x87	61	100	67	–	–	3009598
200/160x87	86	108	91	394	–	3009600
200/200x87	105	111	11	435	–	3001735
250/110x87	65	129	71	–	–	3009610
250/160x87	89	132	95	–	–	3001633
250/200x87	108	134	115	–	–	3009611
250/250x87	132	138	138	–	–	3001631
315/110x87	90	219	120	514	144	3017570
315/160x87**	73	163	90	407,3	132,5	3074448
315/200x87	140	320	160	604	144	4001060
315/250x87	175	340	200	680	144	3017573
315/315x87**	151	167	168	562,5	132,5	3074470
400/110x87	120	264	165	630	155	3017575
400/160x87	175	277	160	680	155	3017578
400/200x87	140	284	245	730	155	3017579
400/250x87	175	265	200	720	155	3017581
400/315x87	240	298	260	845	155	3017583
400/400x87	255	575	250	850	155	4001064
500/160x87	177	327	200	775	178	3017586
500/200x87	177	334	200	775	178	3017587
500/250x87	192	340	225	815	178	3017589
500/315x87	232	348	300	930	178	3017591
500/400x87	292	360	300	990	178	3017592
500/500x87	282	443	380	1060	178	3017593
SN 8, class S						
110/110x67						3024155
110/110x88*	60	61	61	236	60	3024153
160/160x88*	84	87	87	328	86	3044058
200/160x87		120		435		3045078
200/200x87		125		480		3045079

* 2 lips seal

** Remark: Injection moulded branch conforming to PN-EN 13496-2 (class SN8) for systems of class SN 4 and SN8



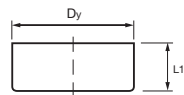
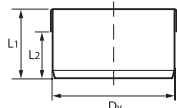
Plug with seal

Dy [mm]	L1 [mm]	L2 [mm]	Index SAP
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SN 4, class N

110	36	–	3043971
160	42	–	3032716
200	80	–	3022151
250	80	–	3009508
315	80	–	3009509
400	90	–	3009510
500*	155	110	3017491

* Typ 2



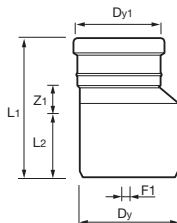
Cap

Dn [mm]	L1 [mm]	Dy [mm]	Index SAP
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SN 4, class N

110	32	116,0	3001656
160	42	167,5	3001656
200	50	209,1	3009571
250	55	262,8	3009505
315	62	330,9	3009506
400	70	420,1	3009507
500	80	525,1	3017490

Eccentric reducer



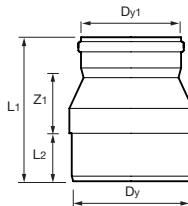
Reducer wit seal

Dy/Dy1 [mm]	F1 [mm]	L1 [mm]	L2 [mm]	Z1 [mm]	Index SAP
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Eccentric reducer SN 4, class N

160/110*	25	172	81	37	3023952
200/160*	18	219	120	29	3023953
250/200	42	274	134	38	3017594
315/250	54	337	144	50	4001080
400/315	71	401	165	64	4001081

Central reducer



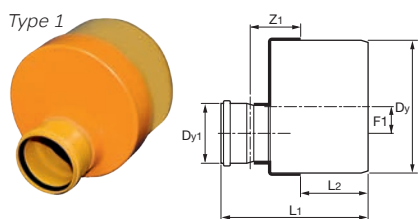
Centical reducer SN 4, class N

500/400	–	607	178	255	4001082
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Eccentric reducer SN 8, class S

160/110*	25	172	81	36	3041527
200/160*	18	218	120	29	3044071
250/200	25	315	145	70	3022145
315/250	32	355	150	85	3041553

* 2 lip seal



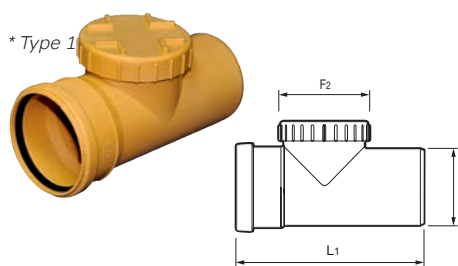
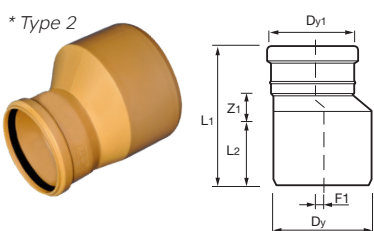
Multistage reducer with seal / Semi reducer

Dy/Dy1 [mm]	F1 [mm]	L1 [mm]	L2 [mm]	Z1 [mm]	Index SAP
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SN 4, class N

250/110	50	275	125	95	3044081
250/160	25	295	125	95	3022144
315/110	70	315	132	105	3044082
315/160	45	320	132	105	3022147
315/200*	32	390	155	135	4067647
400/200	80	365	150	125	3022148
400/250	35	380	150	135	3044083

* Type 2 – monolithic thermoformed reduction

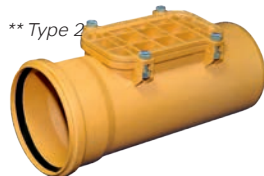


Access piece with seal

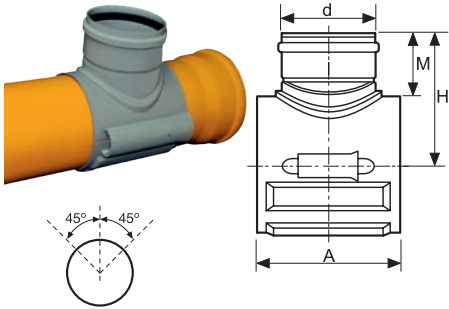
Dy [mm]	L1 [mm]	F2 [mm]	Index SAP
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SN 4, class N

110*	262	126,4	3022138
160**	400	200 x 100	3022140
200**	524	300 x 220	3009601
250*	722	183	3022141

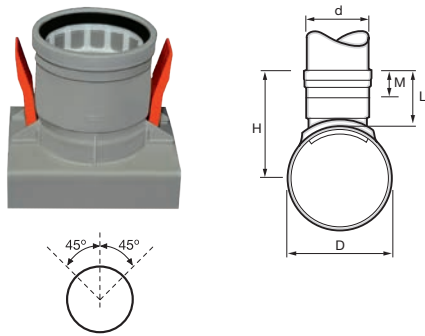


Mechanical saddles



Mechanical saddle for direct connection to smooth wall pipe - Type 1

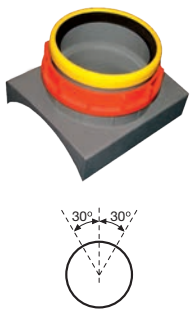
D/d [mm]	M [mm]	H [mm]	A [mm]	SDR	Index SAP
200/160	85	225	240	41	4000950



Mechanical saddle for direct connection to smooth wall pipe - Type 2 - Clickinlet

D/d [mm]	M [mm]	H [mm]	A [mm]	SDR	Index SAP
250/160	67	269	272	34	3003959
315/160	67	302	272	34	3003961
400/160	67	344	272	34	3003963
500/160	67	394	272	34	3001399
630/160	67	459	272	34	3001400

Compensation length 40 mm



Mechanical saddle for direct connection to smooth wall pipe - Type 3

Dimension [mm]	e [mm]	Index SAP
315/200	8,3	3022270
400/200	10,5	3022271
500/200	12,8	3022272

e – minimal wall thickness of main pipe

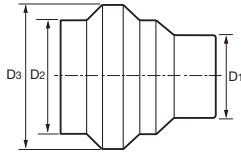


Drill for mechanical saddles (click inlets)

Dimension [mm]	F1 [mm]	Index SAP
160*	159	4005543
200	200	3022276

* for click inlets type 2

Adapters – fittings for piping systems of other materials



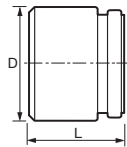
Adapter PVC socket - Clay Spigot

* Type 2



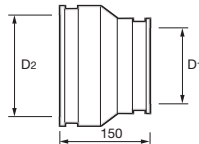
DN [mm]	PVC Dn [mm]	Kamionka Dn [mm]	D1 [mm]	D2 [mm]	D3 [mm]	Index SAP
110/110	110	100	110	137,0	160	3009602
160/150	160	150	160	193,0	229	3009604
200/200	200	200	200	248,0	283	3043369
250/250*	250	250	250	317,5	355	3044496
315/300*	315	300	315	371,5	400	3044497

* Type 2, PE, fitting without seal



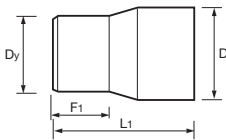
Adapter PVC spigot - Clay pipe socket

DN [mm]	PVC Dn [mm]	Clay Dn [mm]	D [mm]	L [mm]	Index SAP
110/110	110	100	132	104	3009576
160/150	160	150	187	109	3009591
200/200	200	200	242	235	3017487



Rubber connector PVC spigot – Clay spigot

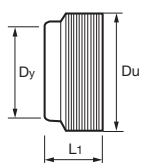
DN [mm]	PVC Dn [mm]	Clay Dn [mm]	D1 [mm]	D2 [mm]	Index SAP
160	160	172-191	160-172	185-191	4045556
200	200	228-250	200-228	242-250	3045057



Adapter PVC socket – Cast iron spigot

DN [mm]	PVC Dy [mm]	Cast iron D [mm]	L1 [mm]	F2 [mm]	Index SAP
110/110	110	124	134	60	3001669
160/150	160	176	166	81	3001671
200/200	200	226	200	99	3009503

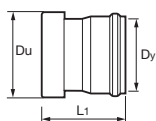
* Type 1



Adapter PVC spigot – Concrete pipe socket without seal

DN [mm]	PVC Dy [mm]	Concrete Dn [mm]	Du [mm]	L1 [mm]	Index SAP
110/110*	110	100	148	74	3045049
160/150*	160	150	206	95	3045050
200/200**	200	200	264	220	3022157
250/250**	250	250	323	325	3045090
315/300**	315	300	375	370	3022158
400/400**	400	400	502	415	3022159

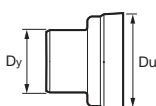
* Type 2



* Type 1
** Type 2



* Type 1

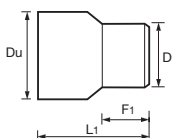


Adapter PVC socket – Concrete pipe spigot without seal

DN [mm]	PVC Dy [mm]	Concrete Dn [mm]	L1 [mm]	F1 [mm]	Du [mm]	Index SAP
*110/110	110	100	137	73	152	3022152
*160/150	160	150	218	86	210	3022154
**200/200	200	200	259	225	268	3022155
**250/250	250	250	305	250	341	3045087
**315/300	315	300	362	197	400	3045088
**400/400	400	400	418	222	525	3023170
**500/500	500	500	475	228	652	3045089



* Type 2

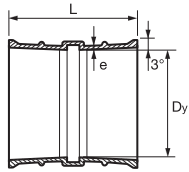


* Type 1
** Type 2

Seal

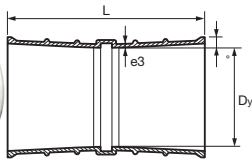
Pipe diameter DN	DIN-Lock seal in accordance with EN 681-2 on request		BL lip seal in accordance with EN 681-1	
	Material	Index SAP	Material	Index SAP
110	TPE + PP	4046005	SBR	4045195
160	TPE + PP	4046008	SBR	4045196
200	TPE + PP	4046009	SBR	4045197
250	TPE + PP	4046010	SBR	4045198
315	TPE + PP	4046011	SBR	4045199
400	TPE + PP	4046012	SBR	4045200
500	TPE + PP	4065906	SBR	4045201

Protective sleeves



Short protective sleeve with seal
 (passage through the wall, dilatation in the concrete slabs,
 exit from the rigid structure to the soil center)

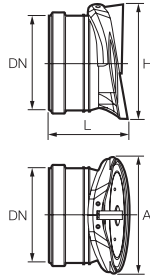
DN [mm]	Dy [mm]	e [mm]	L [mm]	Index SAP
110	110	5	110	3041325
160	160	5	110	3041328
200	200	5	110	3041349
250	250	5	110	3041350
315	315	6	110	3041351
400	400	6	110	3041352



Long protective sleeve with seal
 (passage through the wall, dilatation in the concrete slabs,
 exit from the rigid structure to the soil center)

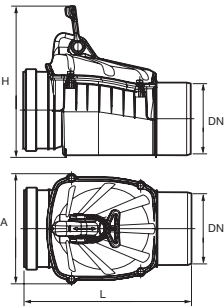
DN [mm]	Dy [mm]	e [mm]	L [mm]	Index SAP
110	110	5	240	3041353
160	160	5	240	3041354
200	200	5	240	3041355
250	250	5	240	3041356
315	315	6	240	3041357

Backflow valves



End backflow valves PP Type 0 with 1 flap

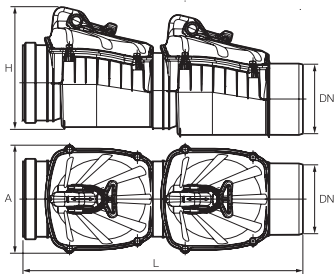
DN [mm]	L [mm]	A [mm]	H [mm]	Material	Index SAP
110	111	155	155	PP	4044929
160	144	212	209	PP	4044930
200	180	265	265	PP	4044931
250	221	311	320	PP	4067412
315	261	386	397	PP	4067413



Backflow valves PP Type 1 with 1 flap and + 1 mechanical lever for manual closing

DN [mm]	L [mm]	A [mm]	H [mm]	Material	Index SAP
110	287	188	210	PP	3044561
160	367	243	274	PP	4044923
200	580	311	328	PP	4044921
250	610	393	421	PP	4067414
315	752	485	517	PP	4067415

Flap with chromium - nickel protective guards securing the flap and gasket against rats.



Double flap backflow valve PP Type 2: 2 flaps + 2 levers for manual closing

DN [mm]	L [mm]	A [mm]	H [mm]	Material	Index SAP
110	287	188	210	PP	4044926
160	367	243	274	PP	4044927

Flap with chromium - nickel protective guards securing the flap and gasket against rats.

Remarks:

- 1) Backflow valves are anti-flood devices compliant with PN-EN 13564-1
- 2) More solutions with backflow valves, including valves:
 - built in the 425, 400 and 315 bases
 - to be installed in existing bases you can find in the "Wavin manholes and inspection chambers" catalog.

Normative references

EN 681-1, Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications
— Part 1: Vulcanized rubber

EN 681-2, Elastomeric Seals
— Materials requirements for pipe joint seals used in water and drainage applications
— Part 2: Thermoplastic elastomers

EN 1401-1, Plastics piping systems for non-pressure underground drainage and sewerage
— Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes, fittings and the system

EN 13476-1, Plastics piping systems for non-pressure underground drainage and sewerage
— Structuredwall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)
— Part 1: General requirements and performance characteristics

EN 13476-2, Plastics piping systems for non-pressure underground drainage and sewerage
— Structuredwall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)
— Part 2: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A

EN 13598-1 Plastics piping systems for non-pressure underground drainage and sewerage
— Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)
— Part 1: Specifications for ancillary fittings and shallow chambers

EN 476 General requirements for components used in drains and sewers

EN 1610 Construction and testing of drains and sewers

CEN/TR 1046 Thermoplastics piping and ducting systems
— Systems outside building structures for the conveyance of water or sewage
— Practices for underground installation

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- External and internal ducting systems



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