

Wavin X-Stream  
Product Catalogue

# External gravity sewer and drainage systems



**wavin**

orbia 

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# 1. Wavin X-Stream – system elements

The Wavin X-Stream twin-wall pipes and fittings system. It is produced according to EN 13476-3 made of polypropylene (PP).

This system is dedicated to non-pressure pipe applications where a discharge of foul water and storm water is a majority.

The system is designed in SN8 ring stiffness class and is recommended to installation on heavy duty areas where high static and dynamic loads appear.

## Application field:

- ⊕ Foul water discharge pipe network
- ⊕ Storm water discharge pipe network
- ⊕ Industrial waste water discharge pipe network
- ⊕ Combined waste water discharge pipe network
- ⊕ Road & railway track culvers
- ⊕ Protection pipes
- ⊕ Chamber risers

## Pipes

The system Wavin X-Stream offers pipes in a range of DN/ID 100 and DN/ID800 in a standard pipe length of 3,0 and 6,0 m as well as full range of fittings. Pipes and fittings are connected with each other by means of socket and a shaped seal.

Bright color inside improves condition for CCTV inspection.

## Design of Wavin X-Stream pipes

Twin wall pipes are produced by means of co-extrusion. This technology gives smooth inner layer and corrugated outer one.

This design is characterized by low weight of a pipe keeping high stiffness class (SN8). The unique design of the twin wall pipe guarantees adequate ring flexibility, resistance to high dynamic and static loads, low deflection and water tightness.

## Fittings

All fittings are characterized by a unique design of the socket which allows quick and easy installation and secure connection joint. Apart of standard fittings other solutions are available on request.

## Advantages of the system

- ⊕ Unique socket connection - patented
- ⊕ Up to 50% lower push-in forces (socketed joints) quick and easy installation
- ⊕ Min. 0,5 bar water tightness
- ⊕ Low weight pipe, ease of transport, handling and installation
- ⊕ High chemical resistance
- ⊕ Durability of PP material
- ⊕ Resistance to abrasion
- ⊕ Low friction factor / hydraulic smoothness
- ⊕ High hydraulic efficiency allows lower pipe installation slope
- ⊕ Good behavior in a surrounding soil
- ⊕ Good transfer of high static loads (e.g. soil, road construction) and dynamic ones (e.g. heavy duty roads, motorways national roads)
- ⊕ Resistance to natural soil movements
- ⊕ Easy CCTV inspection
- ⊕ Full and wide range of fittings including transition fittings to PVC-U smooth walled pipe system

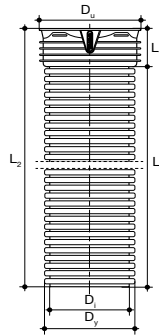
## Standard EN 13476-3

Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) -

*Part 3: Specifications for pipes and fittings with smooth internal and profiled external surface and the system, Type B.*



## 1.1. Wavin X-Stream pipes



Wavin X-Stream pipe (SN 8) with socket

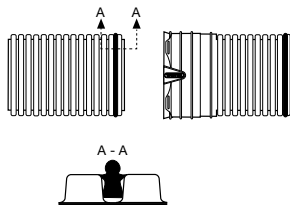
DN/ID [mm]	Di [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	L 2 [mm]	Index SAP
100	98	110	125	6000	70	6070	3023682
150	148	170	192	6000	92	6092	3024243
200	196	225	252	3000	126	3126	3021163
200	196	225	252	5500	126	3126	3039123
200	196	225	252	6000	126	6126	3011148
250	245	282	312	3000	145	3145	3021164
250	245	282	312	6000	145	6145	3011147
300	295	338	371	3000	163	3163	3021165
300	295	338	371	6000	163	6163	3011146
400	394	450	492	3000	200	3200	3031617
400	394	450	492	6000	200	6200	3031616
500	490	573	654	3000	247	3247	3021167
500	490	573	654	6000	247	6247	3011141
600	595	685	751	3000	295	3295	3030419
600	595	685	751	6000	295	6295	3030420
800	785	895	985	3000	400	3400	3021152
800	785	895	985	6000	400	6400	3011144



Wavin X-Stream pipe (SN 8) plain end

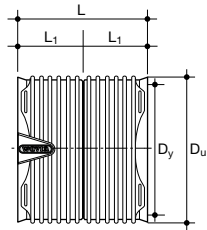
DN/ID [mm]	Di [mm]	Dy [mm]	L [mm]	Index SAP
200	196	225	6000	3043114
250	245	282	3000	3052658
250	245	282	6000	3043118
300	295	338	6000	3043120
400	394	450	3000	3043124
400	394	450	6000	3043126
500	490	573	3000	3052770
500	490	573	6000	3029669
600	595	685	3000	3052771
600	595	685	6000	3043131
800	785	895	3000	3043134
800	785	895	6000	3043136

## 1.2. Wavin X-Stream seals



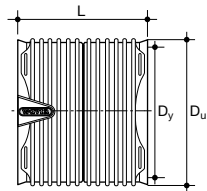
D1 [mm]	Material	Index SAP
100	EPDM	3023687
150	EPDM	3024282
200	EPDM	4023200
250	EPDM	4023201
300	EPDM	4023202
400	EPDM	4023203
500	EPDM	4023204
600	EPDM	4023205
800	EPDM	4081702

### 1.3. Wavin X-Stream fittings



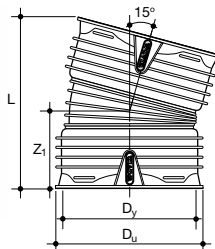
Double socket coupler

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Index SAP
100	111	125	140	70	3043193
150	170	201	202	99	3031630
200	225	252	255	126	3010942
250	282	312	294	145	3010943
300	338	371	329	163	3010944
400	450	492	406	200	3010945
500	573	654	500	247	3010947
600	685	751	596	295	3010948
800	895	985	728	347	3010802



Repair socket

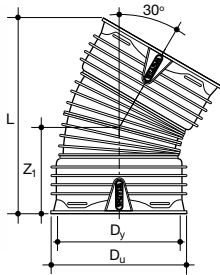
DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	Index SAP
100	111	125	140	3024615
150	170	201	202	3024131
200	225	252	255	3010927
250	282	312	294	3010928
300	338	371	329	3010929
400	450	492	406	3010930
500	573	654	500	3010932
600	685	751	596	3010933
800	895	985	703	3010810



Bend 15°

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	Z1 [mm]	Index SAP
100*	111	125	179	77	3043189
150	170	201	282	131	3031631
200	225	252	332	153	3015617
250	282	312	430	212	3015149
300	338	371	497	214	3015150
400	450	492	575	259	3015151
500	573	654	713	326	3015152
600	685	751	850	381	3015153

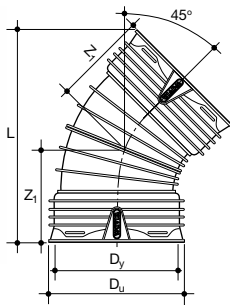
\* Single socket bend, Z1- spigot length.



Bend 30°

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	Z1 [mm]	Index SAP
100*	111	125	196	84	3043190
150	170	201	219	145	3031632
200	225	252	397	179	3015618
250	282	312	517	248	3015155
300	338	371	553	246	3015156
400	450	492	708	313	3015157
500	573	654	885	386	3015158
600	685	751	1053	458	3015159

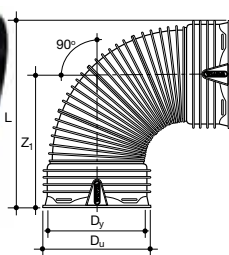
\* Single socket bend, Z1- spigot length.



Bend 45°

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	Z1 [mm]	Index SAP
100*	111	125	212	99	3023683
150	170	201	343	161	3010934
200	225	252	430	200	3010935
250	282	312	554	272	3010936
300	338	371	597	273	3010937
400	450	492	806	371	3010938
500	573	654	1013	447	3010940
600	685	751	1205	532	3010941

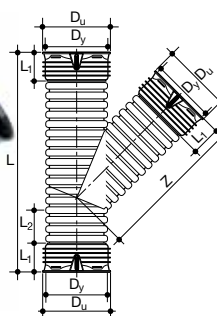
\* Single socket bend, Z1- spigot length.



Bend 90°

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	Z1 [mm]	Index SAP
100*	111	125	193	128	3023684
150	170	201	310	208	3024126
200	225	252	388	255	3020795
250	282	312	551	384	3020796
300	338	371	565	369	3042393
400	450	492	858	611	3020798
500	573	654	1083	618	3020799
600	685	751	1288	734	3020802

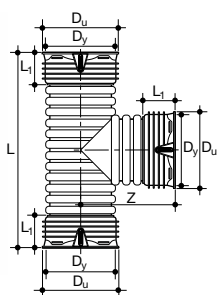
\* Single socket bend, Z1- spigot length.



T-branch 45°

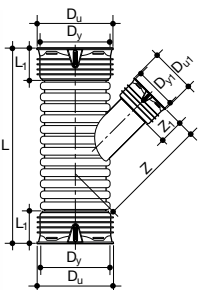
DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Z [mm]	L2 [mm]	Index SAP
100*	111	125	312		208	70	3023745
150	171	192	501	98	342		3024133
200	225	252	630	126	426		2002491
250	282	312	769	145	520		3020559
300	338	371	915	163	611		3018184

\* Branch with 2 sockets, L2 - spigot length.



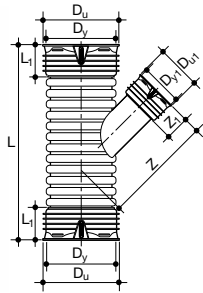
T-branch 90°

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Z [mm]	Index SAP
150	171	192	427	98	215	3045401
200	225	252	540	126	267	3045402



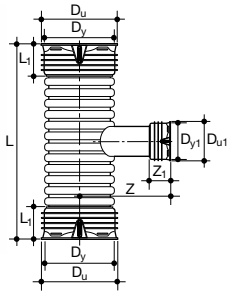
T-branch reducer 45°

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Dy1 [mm]	Du1 [mm]	Z [mm]	Z1 [mm]	Index SAP
200/150	225	252	650	126	170	201	370	99	3043163
250/200	282	312	769	145	225	252	461	126	2002489
300/150	338	371	800	163	170	201	390	99	3024240
300/200	338	371	830	163	225	252	420	126	3024241
400/150	450	492	880	200	170	201	515	99	3031611
400/200	450	492	930	200	225	252	440	126	3015625
400/250	450	492	1063	200	282	312	805	145	3052772
500/150	573	654	1085	247	170	201	459	99	3052781
500/200	573	654	1085	247	225	252	536	126	3041405



T-branch reducer 45°

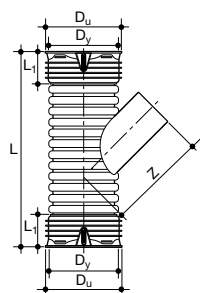
DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Dy1 [mm]	Du1 [mm]	Z [mm]	Z1 [mm]	Index SAP
600/200	685	751	1310	295	225	252	554	126	3019833



Reducing T-branch 90°

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Dy1 [mm]	Du1 [mm]	Z [mm]	Z1 [mm]	Index SAP
200/150	225	252	550	126	170	201	202	99	3031713
250/150	282	312	620	145	170	201	202	99	3043209
250/200	282	312	660	145	225	252	255	126	3043170
300/150	338	371	690	163	170	201	202	99	3043210
300/200	338	371	690	163	225	252	255	126	3043211
400/150	450	492	760	200	170	201	202	99	3043216
400/200	450	492	860	200	225	252	255	126	3043217
500/150	573	654	830	247	170	201	202	99	3043221
500/200	573	654	895	247	225	252	255	126	3043222
500/300	573	654	1070	247	338	371	329	163	3052784
600/150	685	751	910	295	170	201	202	99	3052788
600/250	685	751	1114	295	282	312	294	145	3052790
800/200	895	985	1120	347	225	252	255	126	3045521
800/250	895	985	1220	347	282	312	294	145	3052797
800/300	895	985	1220	347	338	371	329	163	3052799

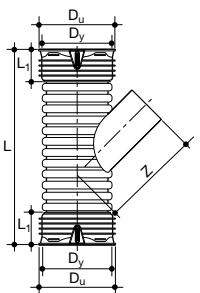




Reducing Y-branch for SW\* pipe socket (eg. PVC-U)

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Z [mm]	Index SAP
300/160*	340	371	894	163	420	3043176
400/160	450	492	962	200	300	3043215
400/200	450	492	950	200	350	3043214
500/200	573	654	1085	247	350	3052779
600/160	685	751	1215	295	350	3052787

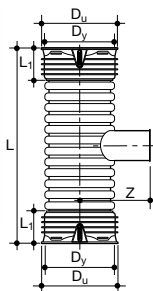
\* SW - smooth wall.



Reducing Y-branch for SW\* pipe (eg. PVC-U) with socket

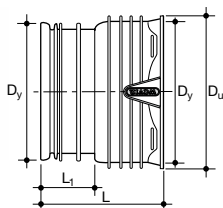
DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Z [mm]	Index SAP
250/160*	282	312	930	145	550	3076629
300/160	340	371	930	163	550	3015145
500/160*	573	654	1120	247	580	3015147
600/160**	685	751	1262	295	610	3015148

\* - with Wafix socket



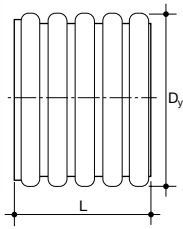
T-branch reducer 90° / SW socket

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Z [mm]	Index SAP
400/200	450	492	862	200	250	3043213
500/200	573	654	910	247	250	3043107
600/200	685	751	1012	295	255	3043197



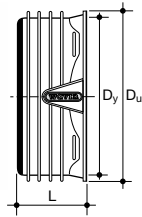
End-cap / plug

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Index SAP
100					3043191
300	338	371	299	136	3010951



### Plug

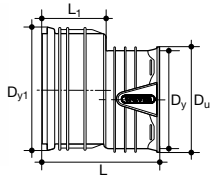
DN/ID [mm]	Dy [mm]	L [mm]	Index SAP
150	170	95	3031594
200	225	140	3010949
250	282	137	3010950
400	450	300	3010952
500	573	325	3010954
600	685	406	3010955
800	894	510	3010821



### End-cap

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	Index SAP
150	170	201	107	3042485
200	225	252	136	3042487
250	282	312	157	3042486
400	450	492	200	3041482
500	573	654	247	3041483
600	685	751	295	3041484
800	895	985	347	3041485

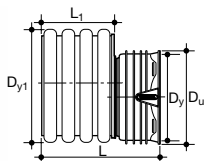
\* Type 1



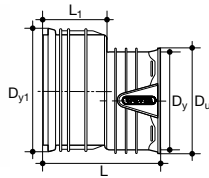
### Reducer

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Z [mm]	Index SAP
150/100*	170	111	127	167	97	3043158
200/100**	225	111	127	230	140	3043161
200/150*	225	170	201	214	116	3024127
250/100**	282	111	127	210	130	3043166
250/150**	282	170	201	240	130	3043168
250/200**	282	225	252	255	130	3015619
300/150*	338	170	201	241	143	3031664
300/200*	338	225	252	269	143	3024129
300/250*	338	282	312	289	143	3015160
400/200**	450	225	252	420	195	3028275
400/250**	450	282	312	360	195	3032297
400/300**	450	338	371	365	195	3015161
500/200**	573	225	252	376	240	3028276

\*\* Type 2



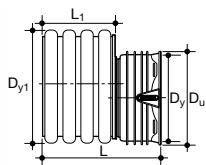
\* Type 1



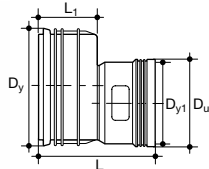
Reducer: X-Stream socket / X-Stream pipe

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	L1 [mm]	Z [mm]	Index SAP
500/300**	573	338	371	415	240	3023181
500/400**	573	450	492	435	240	3015162
600/250**	685	282	312	432	275	3024130
600/300**	685	338	371	459	275	3028277
600/400**	685	450	492	513	275	3024477
600/500**	685	573	654	570	275	3015163
800/600**	895	685	751	690	405	3016855

\*\* Type 2



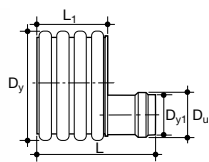
\* Type 1



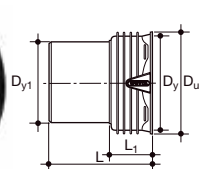
Reducer: X-Stream socket / SW\* (eg. PVC-U)

ID/SW [mm]	Dy [mm]	Du [mm]	Dy1 [mm]	L1 [mm]	L1 [mm]	Index SAP
150/110**	170	127	110	160	102	3024236
200/110**	225	127	110	200	140	3043162
200/160*	225	182	160	217	116	2002490
250/160**	282	182	160	220	130	3043169
300/160*	338	182	160	367	268	3021111
400/160**	450	182	160	397	195	3021112
400/315**	450	355	315	445	195	3024364
500/160**	573	182	160	437	240	3021113
500/315**	573	355	315	498	240	3029279
600/160**	685	182	160	522	275	3021114
600/315**	685	355	315	579	275	3029280

\*\* Type 2

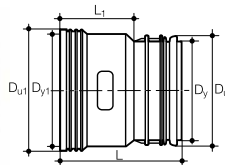


Adapter - transition piece X-Stream pipe / SW\* socket (eg. PVC-U)

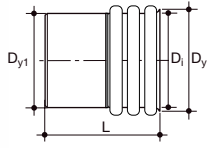


ID/SW [mm]	Dy [mm]	Dy1 [mm]	Du [mm]	Du1 [mm]	L [mm]	L1 [mm]	L2 [mm]	Index SAP
100/110	111	110	125		148	74	70	3043192
150/160	170	160	201		200	107	100	3043153
150/160*	145	161	170	182	190	103		3024238
200/200	225	200	252		274	126	145	3011090
250/250	282	250	312		302	145	150	3011091
300/315	338	315	371		338	168	170	3011092
400/400	450	400	492		368	200	150	3011093
500/500	573	500	654		427	247	160	3011094
600/630	685	630	751		500	295	200	3028278

\* Adapter- transition piece X-Stream 150 socket /PVC-U 160 SW (smooth walled) pipe.

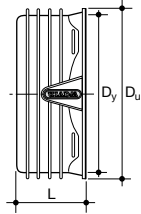


\* SW - smooth wall



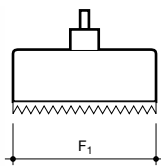
Adapter - transition piece X-Stream socket / PVC-U SW (smooth walled) socket

ID/SW [mm]	Dy [mm]	Dy1 [mm]	Di [mm]	L [mm]	Index SAP
150/160	170	160	148	155	3043151
200/200	225	200	196	245	3043152
300/315	338	315	295	330	3043157



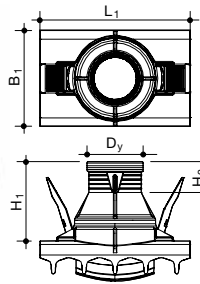
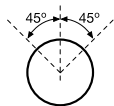
Protection sleeve

DN/ID [mm]	Dy [mm]	Du [mm]	L [mm]	Index SAP
150	170	201	107	3031595
200	225	252	136	3011097
250	282	312	157	3011098
300	338	371	184	3011099
400	450	492	200	3011100
500	573	654	247	3011102
600	685	751	295	3011103
800	895	985	347	3010916



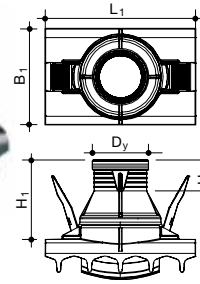
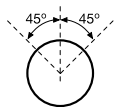
Drill for mechanical saddles

ID/SW [mm]	Index SAP
150/160	4005551



X-Stream mechanical saddle for XS 150 pipe

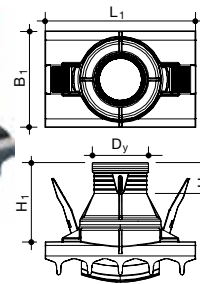
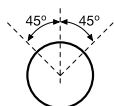
ID/SW [mm]	B1 [mm]	L1 [mm]	H1 [mm]	H2 [mm]	Dy [mm]	Index SAP
250/150	215	338	153	98	170	3001409



X-Stream mechanical saddle for SW 160 pipe

ID/SW [mm]	B1 [mm]	L1 [mm]	H1 [mm]	H2 [mm]	Dy [mm]	Index SAP
250/160	215	338	173	119	160	3001410
300/160	215	338	173	119	160	3001412
400/160	215	338	173	119	160	3031586
500/160	215	338	173	119	160	3001421
600/160	215	338	173	119	160	3031585
800/160	215	338	173	119	160	3001428

Length of compensation 40 mm.



X-Stream mechanical saddle for SW 160 pipe

ID/SW [mm]	B1 [mm]	L1 [mm]	H1 [mm]	H2 [mm]	Dy [mm]	Index SAP
250/160	215	338	173	119	160	3011242
300/160	215	338	173	119	160	3011243
400/160	215	338	173	119	160	3031548
500/160	215	338	173	119	160	3020991
600/160	215	338	173	119	160	3031547
800/160	215	338	173	119	160	3011247

Without compensation.

# 2. Hydraulic calculation / selection of Wavin X-Stream pipe diameter

Selection of X-Stream pipe diameter can be provided with a dedicated software available on our web site ([www.wavin.pl](http://www.wavin.pl)).

Calculation algorithm is based on a well known calculation formula of Colebrook – White

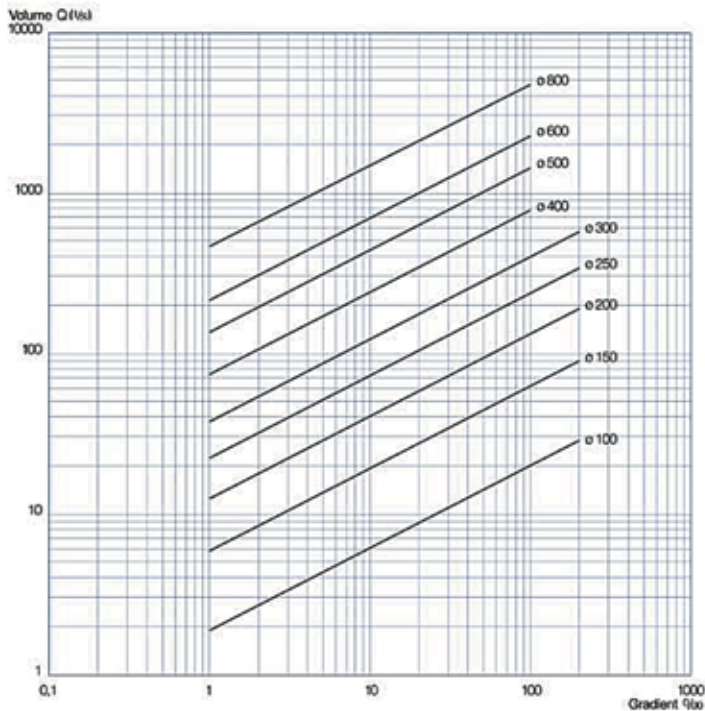
$$Q = -6,95 \times \log\left(\frac{0,74}{d \times \sqrt{d \times l} \times 10^6} + \frac{k}{3,71 \times d}\right) \times d^2 \times \sqrt{d \times l}$$

Wavin recommend absolute roughness coefficient of  $k = 0,25$  mm. This value takes into consideration irregularity of flow caused by joints, fittings as well as type of foul water. If the pipeline is carrying storm water then it is possible to reduce it to  $k = 0,1$  mm.

The flow volume through a partially filled pipe can be calculated with Brettig formula:

$$\frac{q}{Q_f} = 0,46 - 0,5 \times \cos\left(q \times \frac{y}{d}\right) + 0,04 \times \cos\left(2 \times q \times \frac{y}{d}\right)$$

The indication of flow volume through a completely filled pipe can be given by following diagram:



where:

Q - flow volume through a completely filled pipe [m<sup>3</sup>/s]

Q<sub>f</sub> - flow volume through a completely filled pipe, the energy line is in parallel to the pipeline [m<sup>3</sup>/s]

q - flow volume through a partially filled pipe [m<sup>3</sup>/s]

v - flow velocity in a partially filled pipe [m/s]

v<sub>f</sub> - flow velocity in a completely filled pipe [m/s]

l - pipe slope [m/m]

d - inner pipe diameter [m]

k - friction coefficient (absolute roughness coefficient k) [m]

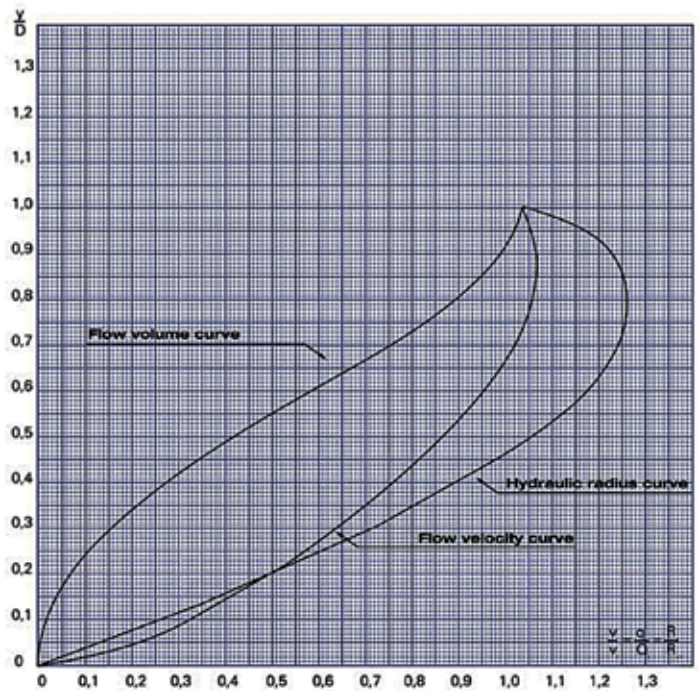
y - filling level in a partially filled pipe [m]

Taking into consideration a self-cleansing process in a pipe as well as real installation conditions it is recommended to use following minimum pipe slopes:

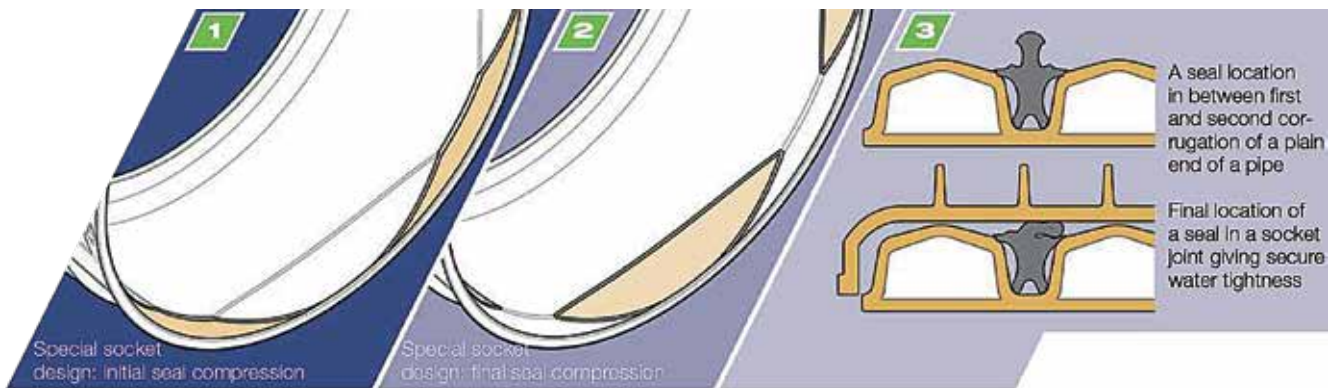
- 0,30% for < DN/ID 300 X-Stream pipes

- 0,15% for > DN/ID 300 X-Stream pipes

Diagram giving the change of flow volume, flow velocity and hydraulic radius as a function of the filling level in the pipe:



# 3. Installation manual



When a socket joint is under preparation it is possible to mark off the sequence of this procedure to ensure firm and water tight joint. An unique design of the socket guaranties reliable connection.

Until now, no other pipe system has offered so interesting and secure solution of element joint. This new joint technique ensures 100% water tightness and ease of installation.

## Wavin X-Stream socketed joint

Each socketed joint requires push-in forces to make successful connection. Using Wavin X-Stream socket design, push-in forces are reduced even by almost 50%. In case of X-Stream pipes with DN/ID 400 the pipe connection can be provided just by one man. However, DN/ID 500 & 600 pipe connections require just two men.

## Unique design of Wavin X-Stream socket

During the installation of X-Stream pipes and fittings when the symmetrical seal is placed in between first and second corrugation of a plain end of the pipe, one can mark off following steps of the assembly:

1. The plain end of the pipe (first corrugation) is placed in the socket; the seal is already pre-deformed,
2. The plain end of the pipe has already reached its final position in the socket. The seal is finally deformed, too
3. The socketed joint with the seal guarantee tightness on the minimum level of 0,5 bar water pressure (EN 476)

Using reduced push-in forces one can achieve tight and durable joint.

## Installation guidance

Using Wavin X-Stream system you have to follow standard rules which are well known and dedicated to pipe systems made of plastics.

Pipes should be laid down on a stable bedding where the socket is free from point loading and / or deformation. A material used for the bedding and a side-filling should be free from stones (over 40 mm).

A back-filling as well as way of its compaction should be chosen according to local soil conditions, pipe top cover and expected external loads (e.g. traffic load).

The pipe installation should be carried out according to guidance included in EN 1610 and ENV 1046. Any local rules (e.g. safety) should be fulfilled.

## Installation guide of Wavin X-Stream system

All installation works should be in line with the best practice and requirements stated in EN 1610 and ENV 1046. All local standards should be taken into account when applicable.



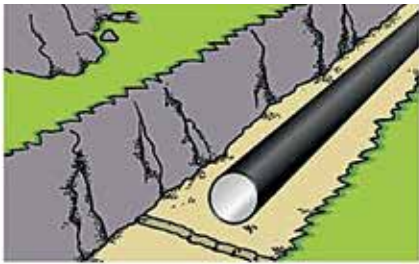
X-Stream pipes should be carried in an original packing units to avoid any damage.



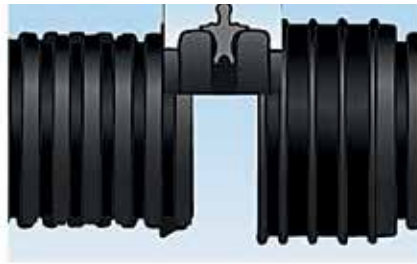
Loading and unloading should be carried with professional tools e.g. fork-wagon or crane.



During loading and unloading with a crane a soft belt should be used to avoid any mechanical damage.



Pipes should be placed on a ready bedding. Sandy bedding should be flat with proper slope. 5 to 10 cm of un-compacted bedding should be left to give a better support to the pipe itself and pipe bell connection. See details in EN 1610.



The seal groove between first and second corrugation should be cleaned out from any impurities before the seal is placed. Then the inner surface of the socket should be lubricated with long lasted one. The symmetrical seal should be placed on. Special designed socket (sculpture one) enable to reduce push-in forces even by 50% in a comparison with standard SW pipe system.



The side-fill should be provided up to approx. 50 cm above the top of the pipe. Remember that minimum layer above the top of the pipe when compaction is allowed is 20 cm. You can continue with a backfill with next layers. If there is no other restriction given in a design native soil can be used as a back-fill.

This gives the opportunity to make the bell connection by one man when the pipe diameter is  $< \text{DN/ID} - 400$  or two people when  $500 < \text{DN/ID} < 600$ .

Side-filling should be provided with a granular material, easy to compact, with max single layer of 30 cm. When the pipe diameter is lower than DN/ID 500 the sidefill layer should be thinner than a half of pipe diameter. This is related to the possibility to leave empty spaces without giving proper support to the pipe.



## Remember!

- ⤵ The granular material used for the bedding and the sidefill should be free from big and sharp shaped stones to avoid direct point loads on the pipe.
  - ⤵ In terms of predicted static and dynamic loads adequate compaction ratio of the sidefill and the backfill should be ensured.
  - ⤵ When necessary static calculation can be worked out using EN 1295-1 bases.
  - ⤵ It is recommended to ensure unchangeability of soil compaction ratio of the sidefill during lifetime of a pipeline.
  - ⤵ In terms of the bedding, the sidefill and the backfill material as well as soil compaction ratio all requirements inplaced in a design should be fulfilled.
- If there is a lack of information requirements stated in EN 1610 and ENV 1046 should be taken as a reference.

## Other systems

### Inspection chambers

Inspection chambers Tegra 425 and Tegra 600 and Tegra 1000 with pipe connections in range 110-300 - are produced with dedicated inlet and outlet sockets (XS) to join Wavin X-Stream pipes directly.

# Discover our broad portfolio at [wavin.com/asia](http://wavin.com/asia)

- Management of rainwater
- Heating and cooling
- Gas and water distribution
- External and internal ducting systems



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Orbia's Building and Infrastructure business Wavin is an innovative solutions provider for the global building and infrastructure industry. Backed by more than 60 years of product development experience, Wavin is advancing life around the world by building healthy, sustainable environments for global citizens. Whether it's to improve the distribution of clean drinking water, to make sanitation accessible for everyone, to create climate resilient cities, or to design comfortable living spaces, Wavin collaborates with municipal leaders, engineers, contractors, and installers to help future-proof communities, buildings and homes. Wavin has 12,000+ employees around 65 production sites worldwide, serving over 80 countries through a global sales and distribution network.

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Due to continuous product development, changes in technical specifications may change. Installation must comply with the installation instructions.