

# company

## Coesprene®



building the future **together**

Technical manual 2017



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## Coesprene®

**Coesprene® is an insert joint drainage system made of copolymer polypropylene + reinforcing charges that has exceptional strength and is resistance to mechanical stress.**

The product line consists of a multilayer pipe with mono and dual sockets, and fittings in PP, ranging from a diameter of 32 mm up to 160 mm. Pipes and fittings have a "mono-lip" seal that ensures great hydraulic seal even during backflow. The PP copolymer is composed of a molecular chain of polypropylene and ethylene, whose combination gives greater elasticity. Laboratory tests demonstrate resistance to aging of over 50 years. Coesprene® pipes and fittings are compliant with standard UNI EN 1451-1.

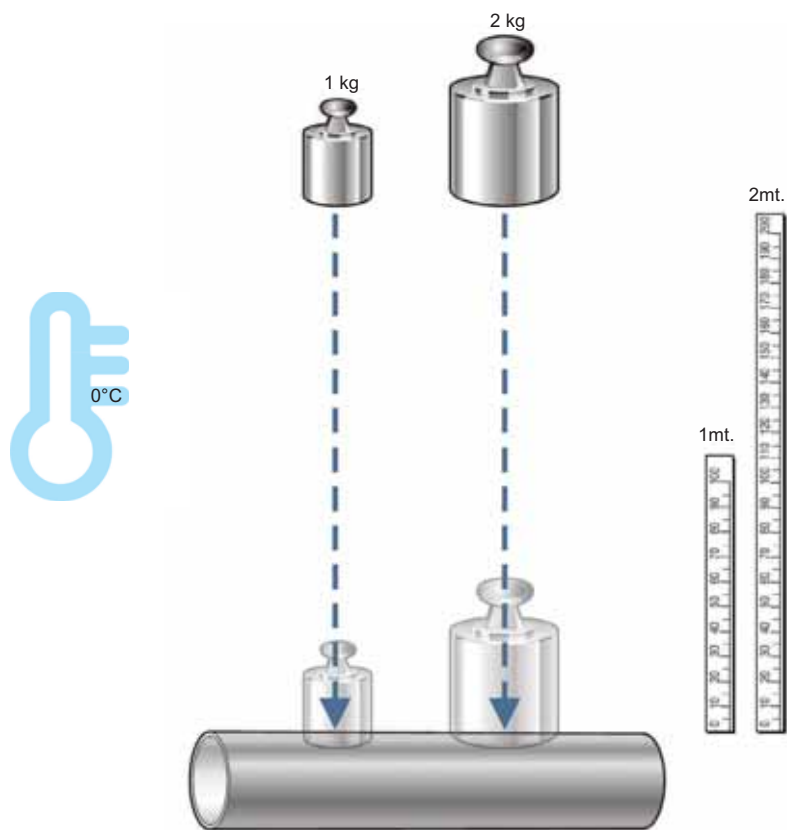
### Coesprene® MULTILAYER PIPE

- MULTILAYER PIPES WITH COPOLYMER PPC INTERMEDIATE LAYER + REINFORCING CHARGES FOR INCREASED STRENGTH
- EXCELLENT RESISTANCE TO LOW TEMPERATURES, VERY HOT WATER AND CHEMICAL AGENTS
- "MONO LIP" SEAL FOR A PERFECT HYDRAULIC SEAL EVEN DURING BACKFLOW

# STRENGTH TESTING

## Balldrop tests

The Balldrop test is performed to test the exceptional strength of the Coesprene® system, in accordance with EN 1451-1 and EN 744. It consists in subjecting the product samples to a force of impact of variable weight (minimum 0.5 Kg - Maximum 4 Kg) at a height of 1 and 2 metres. The test specimens under examination (Coesprene® Multilayer Pipe sections 30 to 40 cm long, diam. 110 mm) were conditioned at a temperature of 0°C.



Coesprene®		
1 kg 1m	Sample 1	ok
	Sample 2	ok
2 kg 1 m	Sample 1	ok
	Sample 2	ok
1 kg 2 m	Sample 1	ok
	Sample 2	ok
2 kg 2 m	Sample 1	ok
	Sample 2	ok

**Results:**  
All Coesprene® Multilayer Pipe samples passed the strength test



## COESPREENE® PIPES

Coesprene® Multilayer Pipe is the range of multilayer pipes made of polypropylene copolymer (molecular chain of polypropylene and ethylene) + reinforcing charges, diam. 32 to 160 mm.

### Pipe marking

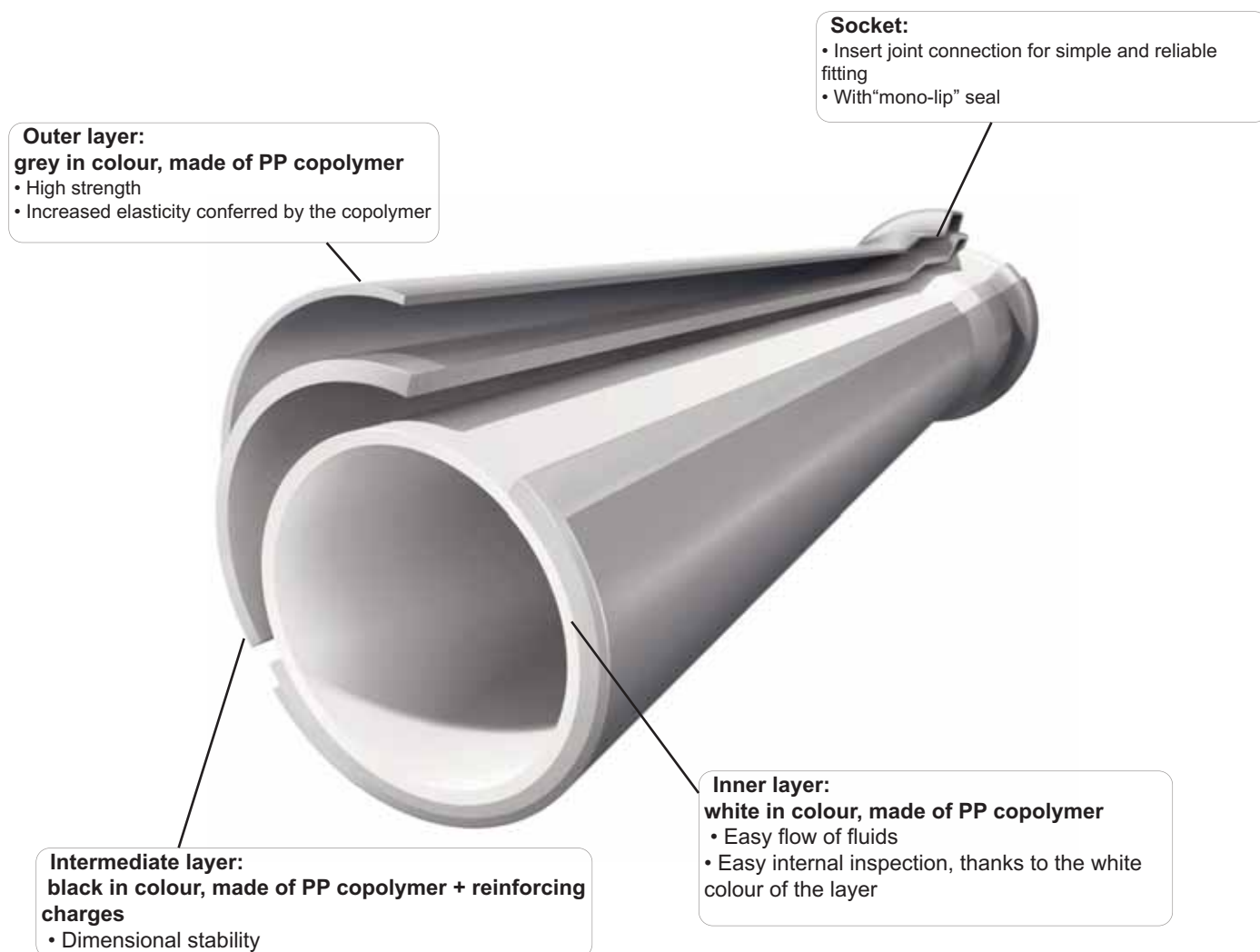
COES, Coesprene®, Multilayer Pipe, Extruder no., PP, DN x thickness, HTEM or HTDM, certificates and reference name, production date.

### Chemical resistance

Coesprene® resists to a very large number of chemical agents, in accordance with ISO/TR 10358

### Range

From DN 32 to 160mm. Pipes are also available in double-socket version up to DN 125mm.



## COESPREENE® FITTINGS

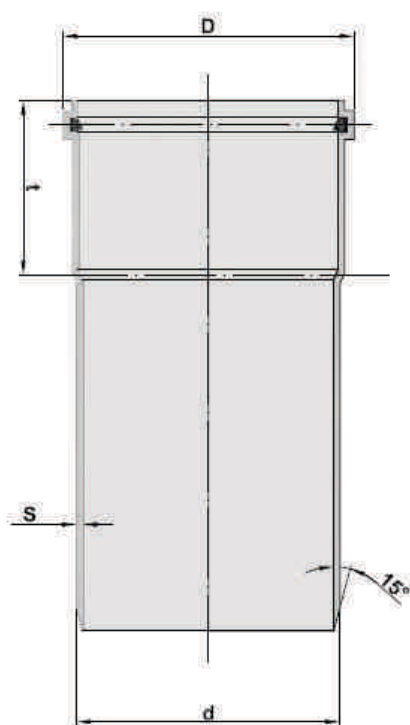
Coesprene® fittings are made of PP.

A “**mono-lip**” seal is positioned in the fittings socket to ensure a better hydraulic seal, even during backflow.



### Socket dimensions

The dimensions of the sockets are compliant with standard UNI-EN 1451-1 and use PGL seals. The thicknesses of Coesprene® pipes and fittings, with diameters ranging from 32mm to 160 mm, are compliant with standard UNI-EN 1451-1.



Socket dimensions

d	s	D	t
32	1,8	42	46
40	1,8	54	51
50	1,8	64	52
75	1,9	89	55
90	2,2	106	59
110	2,7	128	64
125	3,1	145	72
160	3,9	184	82

## “SOCKET” CONNECTION

### Connection instructions

Socket connection is fast and easy:

- 1) Clean the ends of pipe and fitting
- 2) Check the integrity of the socket seal (Fig.1)



Fig. 1

- 3) Lubricate the part to be inserted with COES lube (Fig.2)



Fig. 2

- 4) Insert the pipe up to the abutment of the socket; then slide it out 10 mm (Fig.3).

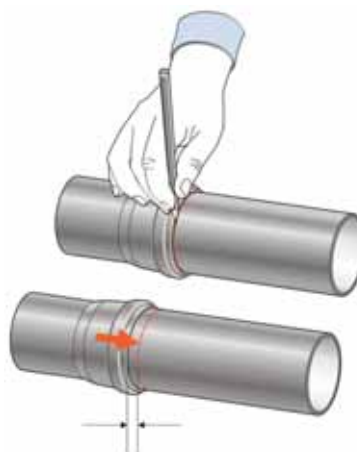


Fig. 3

- 5) Coesprene® pipes and fittings have perfectly bevelled ends to facilitate insertion. If using pipe sections, make a clear and perpendicular cut (Fig.4). Therefore, in order not to damage the seal during insertion, make sure to perform bevelling using the appropriate tool (Fig. 5).

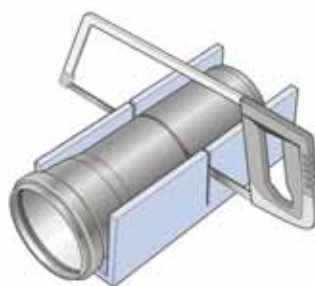


Fig. 4



Fig. 5

## FASTENING THE SYSTEM

The design and sizing of sewage and rainwater systems must take into account standard UNI 12056-1-2.

For the installation and use of Coesprene® system, please take into account of any national provisions or laws.

The socket system ensures the hydraulic seal. Any mechanical stress must be taken into account during design and assembly, so as not to affect the integrity of the system's hydraulic seal. Pipes must be fastened using bracelets, placed under the socket, in order to prevent it from slipping (Fig. 1).

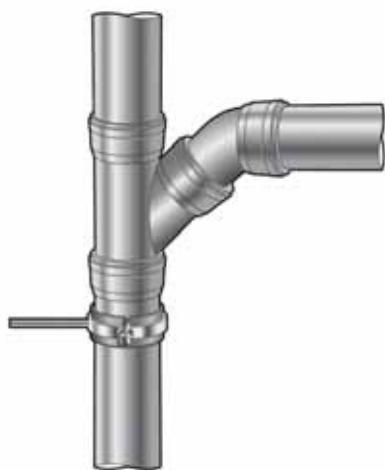


Fig. 1

The maximum distance between the bracelets must not exceed:

- 10 times the diameter of the pipe for horizontal pipes;
- 15 times the diameter of the pipe for vertical pipes.

Moreover, all fittings which involve a change in direction of the system must be properly clamped to prevent the socket from slipping in the event of accidental excess pressure. The water column should not exceed a maximum height of 5 metres.

To insert a new branch into an existing pipe use a triple depth sleeve (HTLL) and follow the step below:

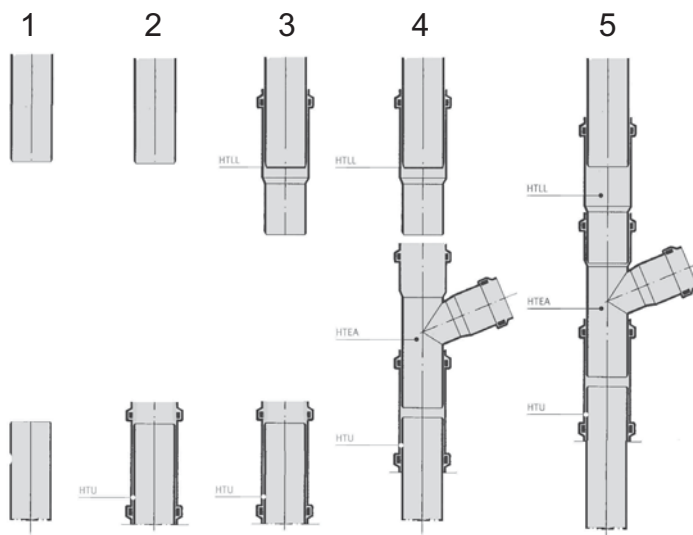
1- cut a pipe section from the existing system. The length of the section must be equal to the new branch length plus the insert depth of the triple depth sleeve.

2- insert HTU sleeve on the lower end of the existing pipe

3- insert HTLL sleeve on the upper end of the existing pipe until abutment

4- insert HTEA branch into HTLL sleeve

5- slide down together HTEA branch and HTLL sleeve until insertion into the HTU sleeve below



It is possible to reuse pipe sections left over by joining them using HTU sleeves or sleeves with double sockets (Fig. 3).

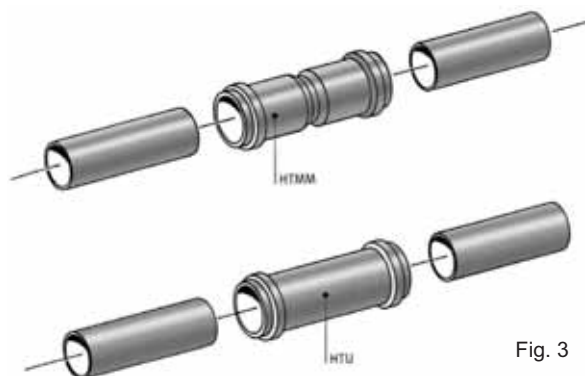


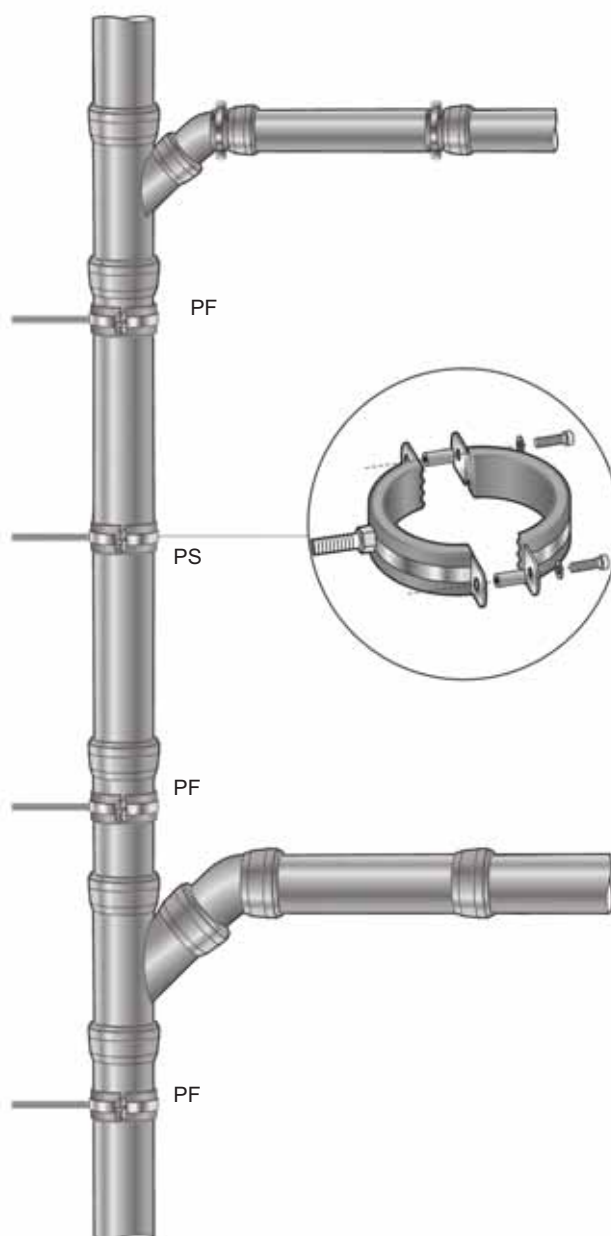
Fig. 3



The socket length has been calculated to absorb thermal expansions of pipes of 2 meters maximum length. It is normal practice to estimate thermal expansion as 5 mm per metre for waste water drainage and 2 mm per metre for downpipe columns.

**The system must be built in such a way that thermal expansion is not prevented.**

A fixed point that blocks that part of the system must be installed under the socket of each pipe. The rest of the system is free to expand.



## FIRE RESISTANCE ACCESSORIES: FIRE PROTECTION SLEEVE

To operate and install the fire protection sleeve, consult the Coestilen® system installation instructions



Coesprene® is designed for internal drainage systems of civil and industrial buildings, in the following areas of application:

- **Sanitary fixtures drainage**
- **Washing machine and dishwasher drainage**
- **Prolonged waste water drainage** (large kitchens, laundries, industrial systems)
- **Aggressive fluid drainage** in schools, laboratories and industrial plants (in this case, the chemical resistance of the material at operating temperature can be found indicatively in ISO/TR 10358)

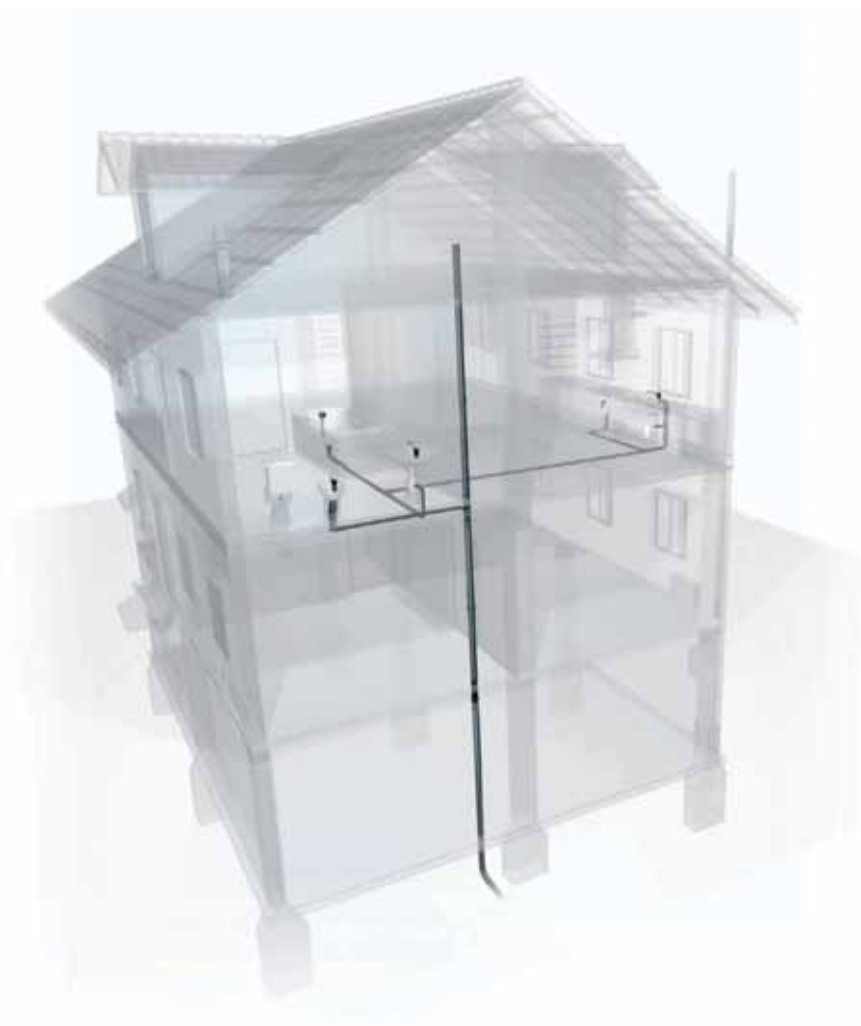
- **Rainwater run-off inside buildings**

- **Ventilation branches and columns (DIN 1986/4)**

### Operating conditions

Maximum temperature of conveyed fluids not under pressure: 95°C.

**N.B. Coesprene® cannot be used to convey waste water containing petrol or benzene (DIN 1986/3,2.3).**



## TRANSPORT

In event of pipes being removed from their factory packaging avoid disorderly transportation, (Fig.1).



Fig. 1

Avoid dragging pipes on the ground or against the sides and tailgate of the vehicle (Fig.2).

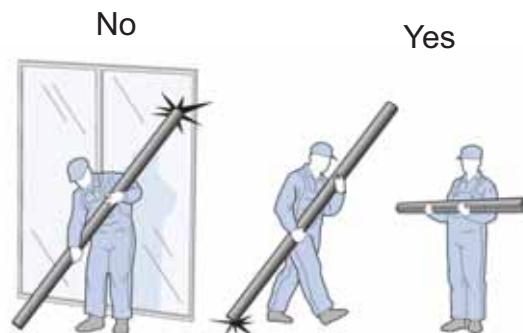


Fig. 2

## STORAGE

### Pipe stacking

- Place smooth pipes on flat surfaces; socketed pipes are packaged using special frames to prevent warping.
- Do not exceed 1.5 m in height when stacking.
- Outdoor storage must not exceed 2 years.

### Fitting storage

- The same criteria used for pipes also apply to fittings.
- Avoid contact with petrol or Benzene.

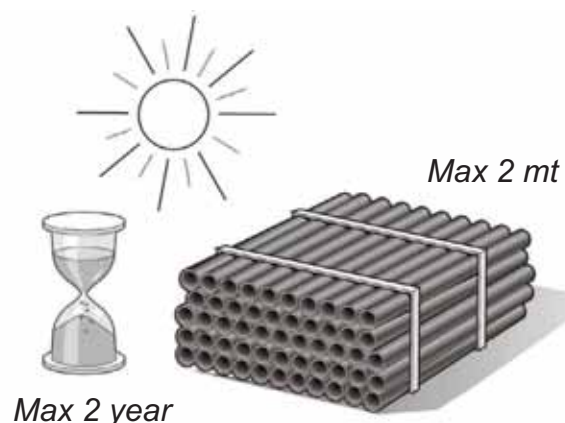
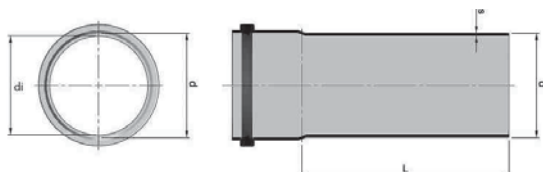




Fig. 3



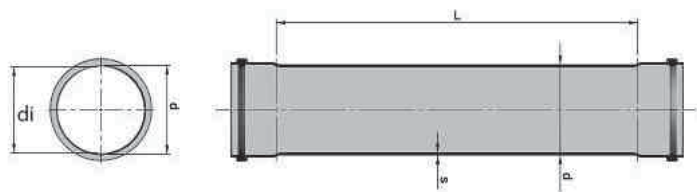
MULTILAYER PIPE WITH ONE SOCKET HTEM





code	d	di	L	s	S*		
F8PTU0301	32	28,4	150	1,8	20	40	2240
F8PTU0302	32	28,4	250	1,8	20	40	2240
F8PTU0305	32	28,4	500	1,8	20	35	420
F8PTU0310	32	28,4	1000	1,8	20	35	420
F8PTU0315	32	28,4	1500	1,8	20	35	420
F8PTU0320	32	28,4	2000	1,8	20	35	420
F8PTU0330	32	28,4	3000	1,8	20	35	420
F8PTU0401	40	36,4	150	1,8	20	30	1680
F8PTU0402	40	36,4	250	1,8	20	40	1600
F8PTU0405	40	36,4	500	1,8	20	35	420
F8PTU0410	40	36,4	1000	1,8	20	35	420
F8PTU0415	40	36,4	1500	1,8	20	35	420
F8PTU0420	40	36,4	2000	1,8	20	35	420
F8PTU0430	40	36,4	3000	1,8	20	35	420
F8PTU0501	50	46,4	150	1,8	20	30	1400
F8PTU0502	50	46,4	250	1,8	20	30	1200
F8PTU0505	50	46,4	500	1,8	20	24	288
F8PTU0510	50	46,4	1000	1,8	20	24	288
F8PTU0515	50	46,4	1500	1,8	20	24	288
F8PTU0520	50	46,4	2000	1,8	20	24	288
F8PTU0530	50	46,4	3000	1,8	20	24	288
F8PTU0701	75	71,2	150	1,9	20	30	800
F8PTU0702	75	71,2	250	1,9	20	25	500
F8PTU0705	75	71,2	500	1,9	20	12	144
F8PTU0710	75	71,2	1000	1,9	20	12	144
F8PTU0715	75	71,2	1500	1,9	20	12	144
F8PTU0720	75	71,2	2000	1,9	20	12	144
F8PTU0730	75	71,2	3000	1,9	20	12	144
F8PTU0901	90	85,4	150	2,3	20	25	500
F8PTU0902	90	85,4	250	2,3	20	15	300
F8PTU0905	90	85,4	500	2,3	20	9	108
F8PTU0910	90	85,4	1000	2,3	20	9	108
F8PTU0915	90	85,4	1500	2,3	20	9	108
F8PTU0920	90	85,4	2000	2,3	20	9	108
F8PTU0930	90	85,4	3000	2,3	20	9	108
F8PTU1101	110	104,6	150	2,7	20	15	360
F8PTU1102	110	104,6	250	2,7	20	10	240
F8PTU1105	110	104,6	500	2,7	20	9	81
F8PTU1110	110	104,6	1000	2,7	20	9	81
F8PTU1115	110	104,6	1500	2,7	20	9	81
F8PTU1120	110	104,6	2000	2,7	20	9	81
F8PTU1130	110	104,6	3000	2,7	20	9	81
F8PTU1202	125	118,8	250	3,1	20	18	216
F8PTU1205	125	118,8	500	3,1	20	6	72
F8PTU1210	125	118,8	1000	3,1	20	6	72
F8PTU1215	125	118,8	1500	3,1	20	6	72
F8PTU1220	125	118,8	2000	3,1	20	6	72
F8PTU1230	125	118,8	3000	3,1	20	6	72
F8PTU1602	160	152,2	250	3,9	20	5	75
F8PTU1605	160	152,2	500	3,9	20	4	36
F8PTU1610	160	152,2	1000	3,9	20	4	36
F8PTU1615	160	152,2	1500	3,9	20	4	36
F8PTU1620	160	152,2	2000	3,9	20	4	36
F8PTU1630	160	152,2	3000	3,9	20	4	36



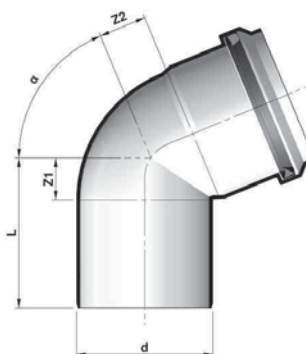
## MULTILAYER PIPE WITH TWO SOCKETS HTDM



code	d	di	L	s	S*		
F8PTD0305	32	28,4	500	1,8	20	35	420
F8PTD0310	32	28,4	1000	1,8	20	35	420
F8PTD0315	32	28,4	1500	1,8	20	35	420
F8PTD0320	32	28,4	2000	1,8	20	35	420
F8PTD0330	32	28,4	3000	1,8	20	35	420
F8PTD0405	40	36,4	500	1,8	20	35	420
F8PTD0410	40	36,4	1000	1,8	20	35	420
F8PTD0415	40	36,4	1500	1,8	20	35	420
F8PTD0420	40	36,4	2000	1,8	20	35	420
F8PTD0430	40	36,4	3000	1,8	20	35	420
F8PTD0505	50	46,4	500	1,8	20	24	288
F8PTD0510	50	46,4	1000	1,8	20	24	288
F8PTD0515	50	46,4	1500	1,8	20	24	288
F8PTD0520	50	46,4	2000	1,8	20	24	288
F8PTD0530	50	46,4	3000	1,8	20	24	288
F8PTD0705	75	71,2	500	1,9	20	12	144
F8PTD0710	75	71,2	1000	1,9	20	12	144
F8PTD0715	75	71,2	1500	1,9	20	12	144
F8PTD0720	75	71,2	2000	1,9	20	12	144
F8PTD0730	75	71,2	3000	1,9	20	12	144
F8PTD0905	90	85,4	500	2,3	20	9	108
F8PTD0910	90	85,4	1000	2,3	20	9	108
F8PTD0915	90	85,4	1500	2,3	20	9	108
F8PTD0920	90	85,4	2000	2,3	20	9	108
F8PTD0930	90	85,4	3000	2,3	20	9	108
F8PTD1105	110	104,6	500	2,7	20	9	81
F8PTD1110	110	104,6	1000	2,7	20	9	81
F8PTD1115	110	104,6	1500	2,7	20	9	81
F8PTD1120	110	104,6	2000	2,7	20	9	81
F8PTD1130	110	104,6	3000	2,7	20	9	81
F8PTD1205	125	118,8	500	3,1	20	6	72
F8PTD1210	125	118,8	1000	3,1	20	6	72
F8PTD1215	125	118,8	1500	3,1	20	6	72
F8PTD1220	125	118,8	2000	3,1	20	6	72
F8PTD1230	125	118,8	3000	3,1	20	6	72


S\* Dimension series under the standard EN15191

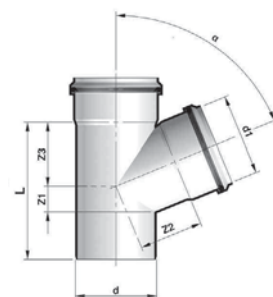
**BEND HTB**



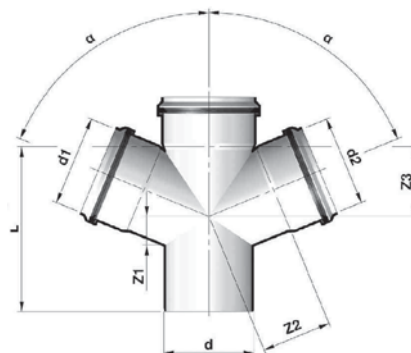
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F9PGO0315	32	15°	3	7	54	40
F9PGO0330	32	30°	6	7	52	40
F9PGO0345	32	45°	8	10	55	40
F9PGO0367	32	67,5°	13	15	60	40
F9PGO0387	32	87,5°	14	16	62	40
F9PGO0415	40	15°	5	8	54	40
F9PGO0430	40	30°	7	11	56	40
F9PGO0445	40	45°	10	14	59	40
F9PGO0467	40	67,5°	16	20	65	40
F9PGO0480	40	80°	20	24	69	40
F9PGO0487	40	87,5°	23	26	72	40
F9PGO0515	50	15°	5	9	55	30
F9PGO0530	50	30°	9	12	59	30
F9PGO0545	50	45°	12	16	62	30
F9PGO0567	50	67,5°	20	23	70	30
F9PGO0580	50	80°	24	28	74	30
F9PGO0587	50	87,5°	28	31	78	30
F9PGO0715	75	15°	7	11	64	20
F9PGO0730	75	30°	12	15	69	20
F9PGO0745	75	45°	18	21	75	20
F9PGO0767	75	67,5°	28	31	85	20
F9PGO0780	75	80°	35	38	92	20
F9PGO0787	75	87,5°	40	43	97	20
F9PGO0915	90	15°	8	13	78	20
F9PGO0930	90	30°	14	20	84	20
F9PGO0945	90	45°	21	27	91	20
F9PGO0967	90	67,5°	34	40	104	20
F9PGO0987	90	87,5°	50	56	120	20
F9PGO1115	110	15°	9	14	74	20
F9PGO1130	110	30°	17	21	82	20
F9PGO1145	110	45°	25	29	90	20
F9PGO1167	110	67,5°	40	44	105	20
F9PGO1180	110	80°	50	54	115	20
F9PGO1187	110	87,5°	57	61	122	20
F9PGO1215	125	15°	10	14	92	10
F9PGO1230	125	30°	10	15	92	15
F9PGO1245	125	45°	28	33	110	10
F9PGO1267	125	67,5°	45	50	127	10
F9PGO1287	125	87,5°	65	70	147	10
F9PGO1615	160	15°	12	18	11	15
F9PGO1630	160	30°	29	23	123	15
F9PGO1645	160	45°	42	36	136	10
F9PGO1687	160	87,5°	89	83	183	5

## BRANCH HTEA

code	d/d1	α	z1	z2	z3	L	
F9PB40303	32/32	45°	9	40	40	95	20
F9PB60303	32/32	67,5°	16	25	33	96	20
F9PB80303	32/32	87,5°	23	18	25	70	20
F9PB40403	40/32	45°	14	44	46	95	20
F9PB60403	40/32	67,5°	10	49	49	100	40
F9PB40404	40/40	45°	10	49	49	110	20
F9PB60404	40/40	67,5°	16	33	33	98	20
F9PB80404	40/40	87,5°	23	25	25	97	20
F9PB40504	50/40	45°	5	56	54	109	20
F9PB60504	50/40	67,5°	14	39	35	99	20
F9PB80504	50/40	87,5°	23	30	35	98	20
F9PB40505	50/50	45°	12	61	61	129	20
F9PB60505	50/50	67,5°	20	41	41	111	20
F9PB80505	50/50	87,5°	28	30	30	108	20
F9PB40704	75/40	45°	7	74	67	117	20
F9PB60704	75/40	67,5°	9	52	40	106	20
F9PB80704	75/40	87,5°	22	42	26	105	20
F9PB40705	75/50	45°	1	79	74	130	20
F9PB60705	75/50	67,5°	14	54	46	117	20
F9PB80705	75/50	87,5°	27	43	31	115	20
F9PB40707	75/75	45°	18	91	91	162	20
F9PB60707	75/75	67,5°	28	59	59	140	20
F9PB80707	75/75	87,5°	40	43	43	136	20
F9PB40904	90/40	45°	3	89	81	148	15
F9PB80904	90/40	87,5°	27	50	31	128	15
F9PB40905	90/50	45°	15	89	81	145	15
F9PB80905	90/50	87,5°	27	50	31	130	15
F9PB40909	90/90	45°	23	109	109	200	15
F9PB80909	90/90	87,5°	46	51	51	171	15
F9PB41104	110/40	45°	24	99	84	125	20
F9PB61104	110/40	67,5°	3	71	48	116	20
F9PB81104	110/40	87,5°	23	59	27	115	20
F9PB41105	110/50	45°	17	104	91	139	20
F9PB61105	110/50	67,5°	8	73	54	127	20
F9PB81105	110/50	87,5°	28	60	32	125	20
F9PB41107	110/75	45°	1	116	109	175	20
F9PB61107	110/75	67,5°	22	78	67	154	20
F9PB81107	110/75	87,5°	40	60	45	150	20
F9PB81109	110/90	87,5°	40,7	62,4	51,5	215	20
F9PB41109	110/90	45°	9,3	124,4	118,5	250	20
F9PB41111	110/110	45°	25	134	134	219	20
F9PB61111	110/110	67,5°	40	86	86	186	20
F9PB81111	110/110	87,5°	57	62	62	179	20
F9PB41211	125/110	45°	18	143	141	243	10
F9PB61211	125/110	67,5°	37	93	88	210	10
F9PB81211	125/110	87,5°	57	68	62	204	10
F9PB41212	125/125	45°	33	152	152	266	10
F9PB61212	125/125	67,5°	48	97	97	266	10
F9PB81212	125/125	87,5°	66	69	69	266	10
F9PB41611	160/110	45°	0	168	159	260	5
F9PB61611	160/110	67,5°	31	113	96	230	6
F9PB81611	160/110	87,5°	59	86	62	225	5
F9PB41612	160/125	45°	12	176	169	282	5
F9PB61612	160/125	67,5°	39	116	104	245	5
F9PB81612*	160/125	87,5°	67	86	69	236	5
F9PB41616	160/160	45°	36	193	193	329	4
F9PB61616	160/160	67,5°	58	123	123	281	5
F9PB81616	160/160	87,5°	84	87	87	271	5



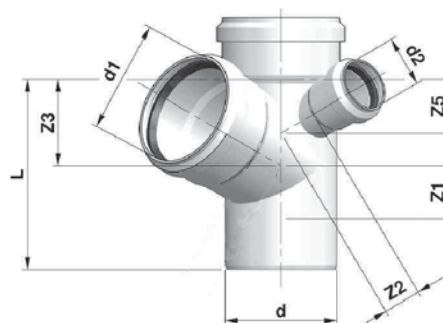
\* Prefabricated



## DOUBLE BRANCH HTDA

code	d/d1/d2	$\alpha$	Z1	Z2	Z3	L	
F9PBD0505*	50/50/50	67,5°	11,6	40	41	113	10
F9PBD4904	90/40/40	45°	7	89	81	148	10
F9PBD4905	90/50/50	45°	7	89	91	148	10
F9PBD1104*	110/40/40	67,5°	12	69	46	113	10
F9PBD8104*	110/40/40	87°	12	69	26	113	10
F9PBD4105	110/50/50	45°	17	103	91	145	10
F9PBD1105*	110/50/50	67,5°	8	71	51	135	10
F9PBD8105•	110/50/50	87,5°	8	73	54	131	10
F9PBD1111*	110/110/110	67,5°	40	85	85	201	10
F9PBD8111*	110/110/110	87,5°	45	59	63	182	10

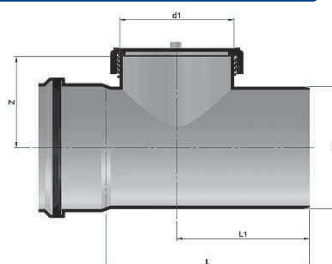
\*Prefabricated



## 67,50° DOUBLE CORNER BRANCH HTED

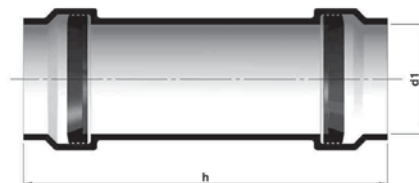
code	d/d1/d2	$\alpha$	Z1	Z2	Z3	Z4	Z5	L	
F9PBS0115•	110/110/50	67,5°	10	48	54	71,5	53	156	10
F9PBS0151•	110/50/110	67,5°	10	48	54	71,5	85,5	188	10
F9PBS1105•	110/50/50	67,5°	40	86	86	85	53	202	10
F9PBS1111•	110/110/110	67,5°	40	86	86	85	85,5	202	10


\*Prefabricated

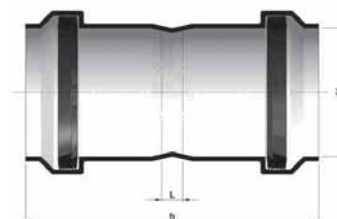



## INSPECTION WITH SCREW CAP HTRE

code	d	d1	L	L1	Z	
F9PIL0505	50	50	115	80	55	20
F9PIL0707	75	75	142	96	66	20
F9PIL0909	90	100	170	107	75	10
F9PIL1111	110	103	185	119	82	10
F9PIL1212	125	103	214	135	97	10
F9PIL1616	160	120	228	158	117	10

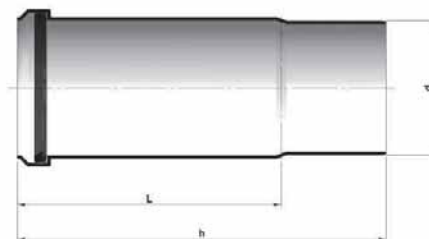
**SLEEVE HTU**

code	d1	h	
F9PMA0300	32	108	20
F9PMA0400	40	104	20
F9PMA0500	50	104	20
F9PMA0700	75	110	25
F9PMA0900	90	120	20
F9PMA1100	110	126	20
F9PMA1200	125	180	20
F9PMA1600	160	204	10


**DOUBLE-SOCKET SLEEVE HTMM**

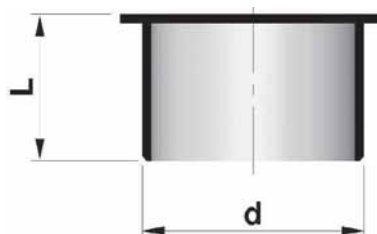
code	d1	L	h	
F9PM20300	32	3	108	20
F9PM20400	40	9	112	40
F9PM20500	50	9	115	20
F9PM20700	75	10	118	25
F9PM20900	90	11	131	20
F9PM21100	110	12	134	20
F9PM21200	125	42	185	20
F9PM21600	160	49	211	20






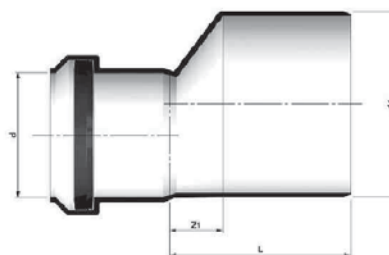
TRIPLE-DEPTH SOCKET HTLL


code	d	L	h	
F9PM30400	40	112	168	30
F9PM30500	50	114	170	20
F9PM30700	75	185	245	20
F9PM30900	90	177	247	20
F9PM31100	110	185	258	20
F9PM31200	125	150	220	10

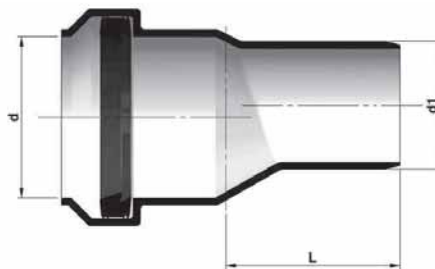



CLOSING PLUG HTM

code	d	L	
F9PTC0400	40	23	30
F9PTC0500	50	23	200
F9PTC0700	75	27	100
F9PTC0900	90	39	20
F9PTC1100	110	27	20
F9PTC1200	125	33	10

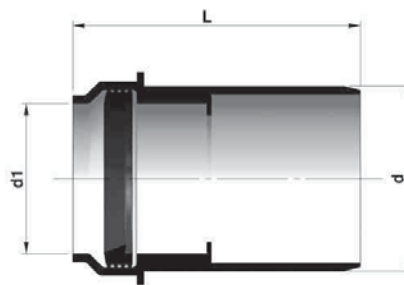
**INCREASE HTR**

code	d/d1	z1	L	
F9PRE0304	32/40	10	53	20
F9PRE0305	32/50	16	66	20
F9PRE0307	32/75	30	85	20
F9PRE0405	40/50	12	62	20
F9PRE0407	40/75	20	80	30
F9PRE0409	40/90	35	105	20
F9PRE0411	40/110	40	100	20
F9PRE0507	50/75	20	73	20
F9PRE0509	50/90	31	100	20
F9PRE0511	50/110	40	100	20
F9PRE0709	75/90	17	86	20
F9PRE0711	75/110	26	86	20
F9PRE0911	90/110	20	90	20
F9PRE1112	110/125	14	101	20
F9PRE1116E	110/160	36	121	20
F9PRE1216	125/160	28	114	10

**ECCENTRIC REDUCER**

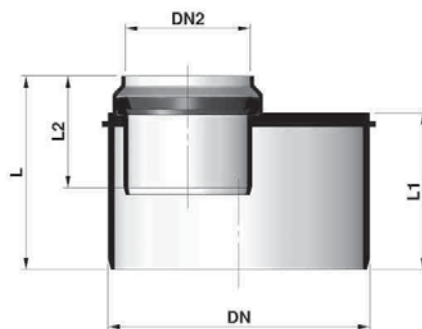
code	d/d1	L	
F9PRE0403	40/32	98	20
F9PRE0504	50/40	54	20

### SOCKET FOR REDUCER



code	d/d1	L	
F9PRR0403	40/32	65	20
F9PRR0504	50/40	55	20
F9PRR0907	90/75	76	20

### ECCENTRIC BUILT-IN REDUCER

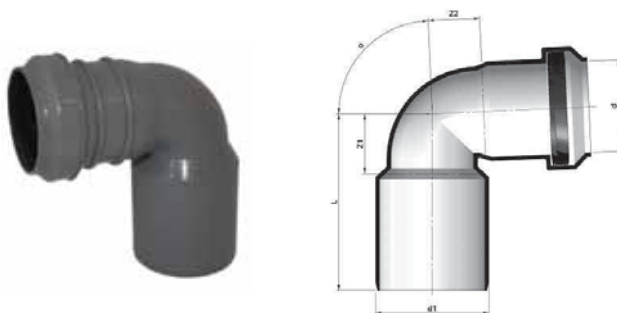



code	DN	DN2	L	L1	L2	
F9PRC0704	75	40	75	59	46,5	20
F9PRC0705	75	50	75	59	58	20
F9PRC0904	90	40	77	61	46,5	20
F9PRC0905	90	50	76	61	45,5	20
F9PRC1104	110	40	82	66	54	20
F9PRC1105	110	50	82	66	45,5	20
F9PRC1107	110	75	82	66	56	20
F9PRC1109	110	90	81,5	66	55	20
F9PRC1207	125	75	85	70	55	20
F9PRC1211	125	110	86	68	61	20

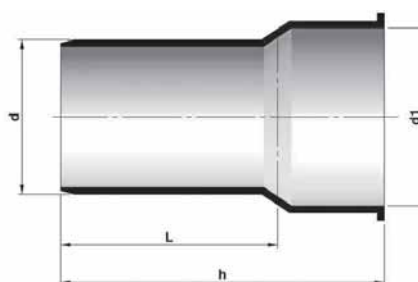
### DOUBLE REDUCER




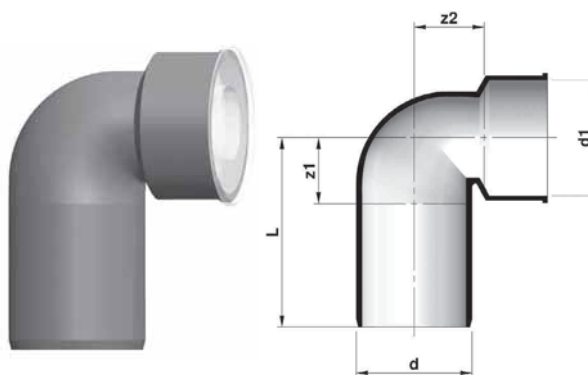
code	DN	DN1	DN2	L	L1	
F9PRC1144	110	40	40	30	60	10


**REDUCED BEND HTBR**

code	d/d1	$\alpha$	Z1	Z2	L	
F9PCR0405	40/50	87,5°	28	26	78	10

**COUPLING FOR TRAP HTS**


code	d	d1	L	h	
F9PMS0346	30	46	56	83,5	40
F9PMS0446	40	46	56	83,5	20
F9PMS0405	40	50	56	83,5	20
F9PMS0505	50	50	57	82,5	40
F9PMS0506	50	60	55,5	85,5	20

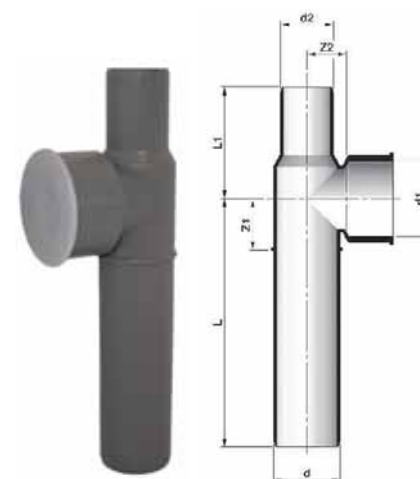
**TECHNICAL BEND HTSW, WITH PLUG**

code	d	d1	z1	z2	L	
F9PCT0346	32	46	23,5	24	76	20
F9PCT0446	40	46	23,5	24	76	20
F9PCT0405	40	50	23,5	24	76	20
F9PCT0505	50	50	28,5	29	82	20
F9PCT0506	50	60	28,5	29	82	30




**EXTENDED TECHNICAL BEND HTSWL, WITH PLUG**

code	d	d1	Z1	Z2	L	
<b>F9PCTL446</b>	40	46	23,5	20	152	40
<b>F9PCTL405</b>	40	50	23,5	20	152	40

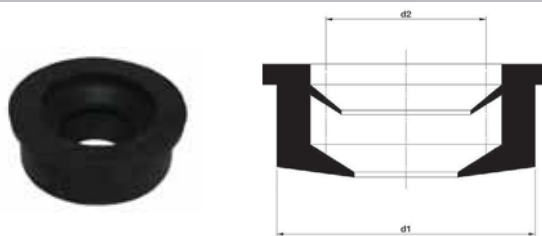


**VENTILATED TECHNICAL BEND HTSW, WITH PLUG**

code	d	d1	Z1	Z2	d2	L	L1	
<b>F9PCTV446</b>	40	46	23,5	20	32	152	67	20
<b>F9PCTV450</b>	40	50	23,5	20	32	152	67	20



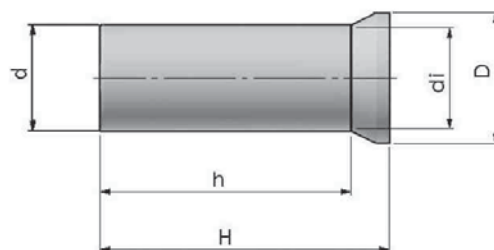
## RUBBER CLAMP SEAL



code	d1	d2	
F04GC2632	46	26÷32	50
F04GC4046	46	40	50
F04GC5058	60	50	50
F9PMG0501	50	26÷32	20
F9PMG0502	50	38÷40	20
F9PMG0601	60	26÷32	20
F9PMG0602	60	38÷40	20
F9PMG0603	60	50	20

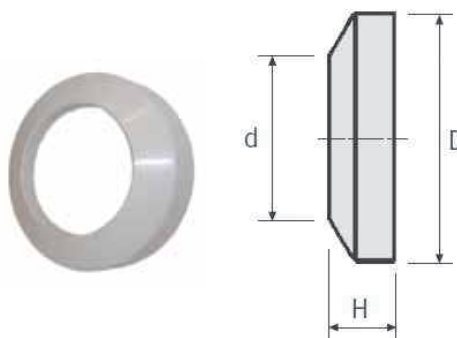
Note: to be used for:

- coupling for trap HTS
- technical curve HTSW
- extended technical curve HTSWL
- ventilated technical curve HTSW

WHITE PP HTSK COUPLING FOR W.C. CONNECTION WITH WALL DRAIN  
COMPLETE WITH WHITE SEAL

code	d	D	di	H	h	
F04NB0900	90	135	85±5	300	249	10
F04NB1100	110	135	105±5	300	260	10

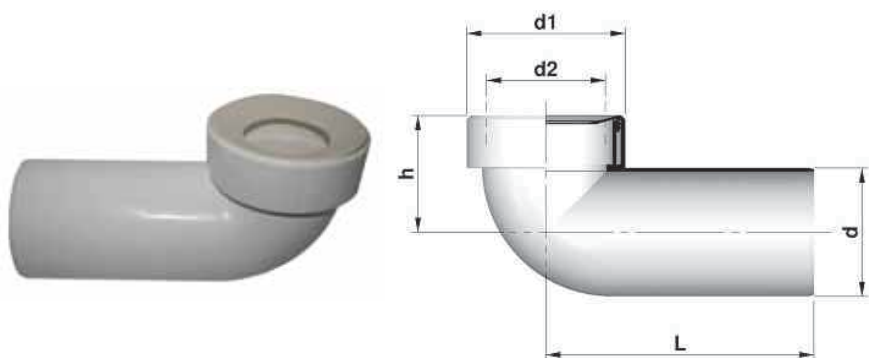
Coestilen® discount




## WHITE PP ROSETTE FOR COUPLING HTSK

code	d	D	H	
F04MA0917	90	145	43	100
F04MA1117	110	160	50	20

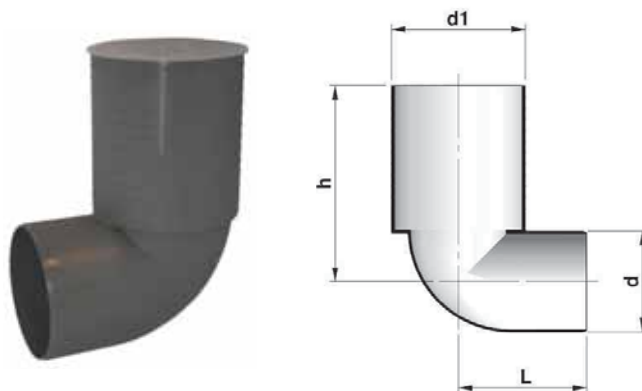
Coestilen® discount




**WHITE PP 90° WC BEND WITH SEAL HTSB**

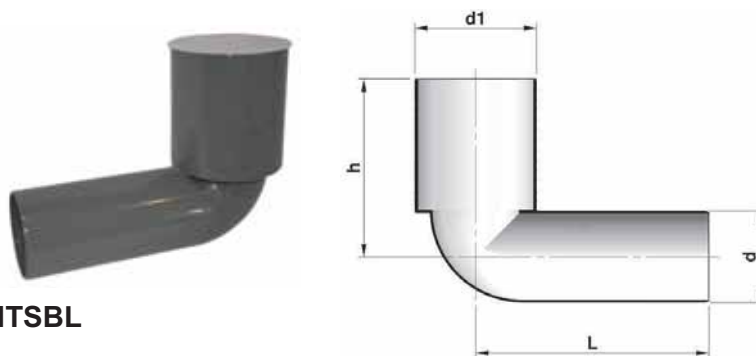
code	d	d1	d2	L	h	
<b>F9PCW110B</b>	110	136	120±5	230	100	5


**90° WC BEND HTSBL**

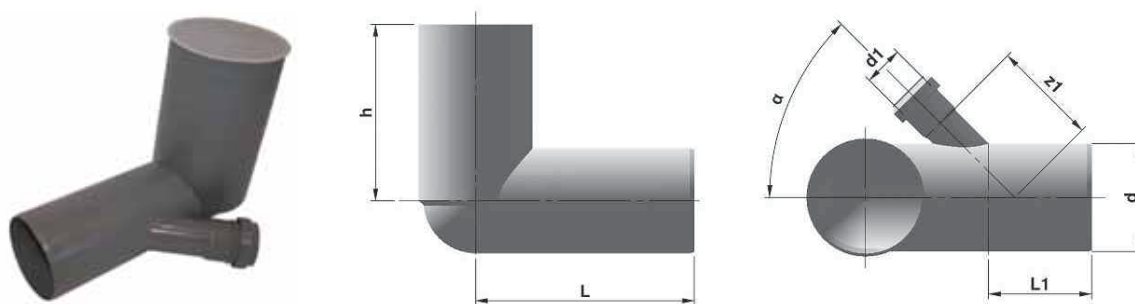


code	d	d1	L	h	
<b>F9PWL110C</b>	110	120	120	185	10

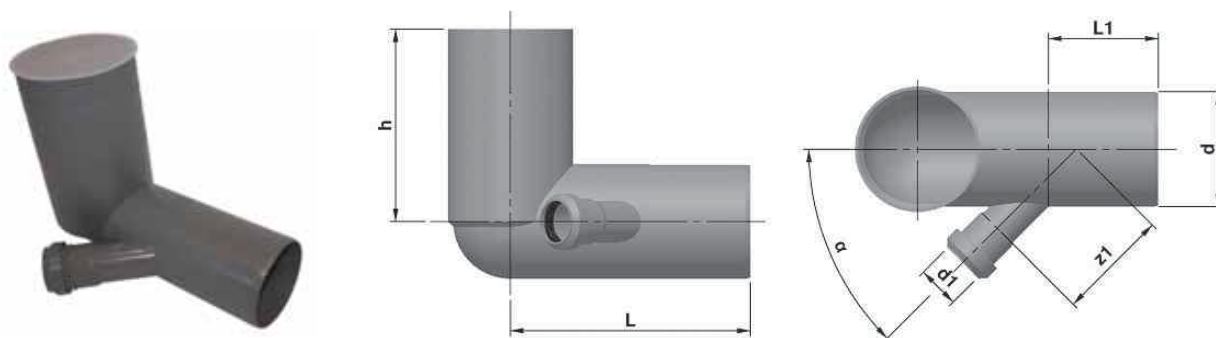
**EXTENDED 90° WC BEND HTSBL**



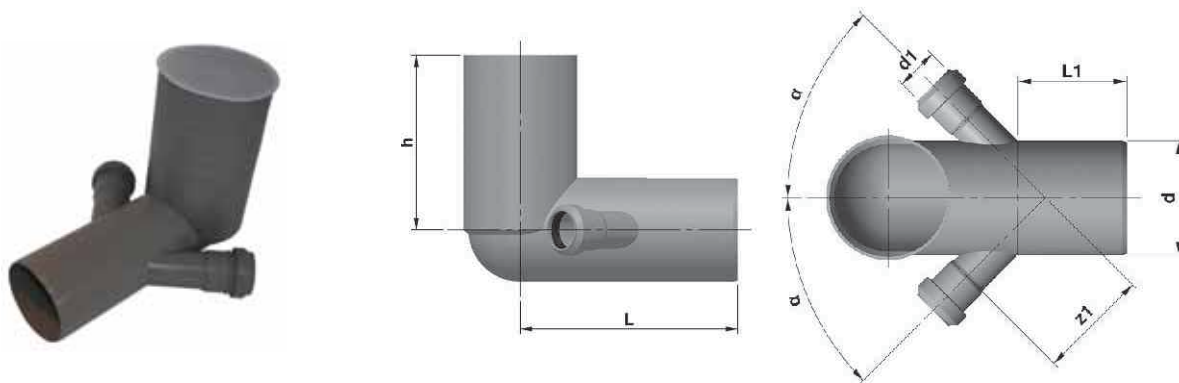
code	d	d1	L	h	
<b>F9PWL0900</b>	90	120	230	175	5
<b>F9PWL1100</b>	110	120	230	185	5

**EXTENDED WC BEND WITH LEFT COUPLING HTSBL**

code	d/d1	$\alpha$	z1	h	L1	L	
F9PWL09S4	90/40	45°	107	185	105	230	5
F9PWL09S5	90/50	45°	107	185	100	230	5
F9PWL11S4	110/40	45°	105	185	105	230	5
F9PWL11S5	110/50	45°	105	185	100	230	5

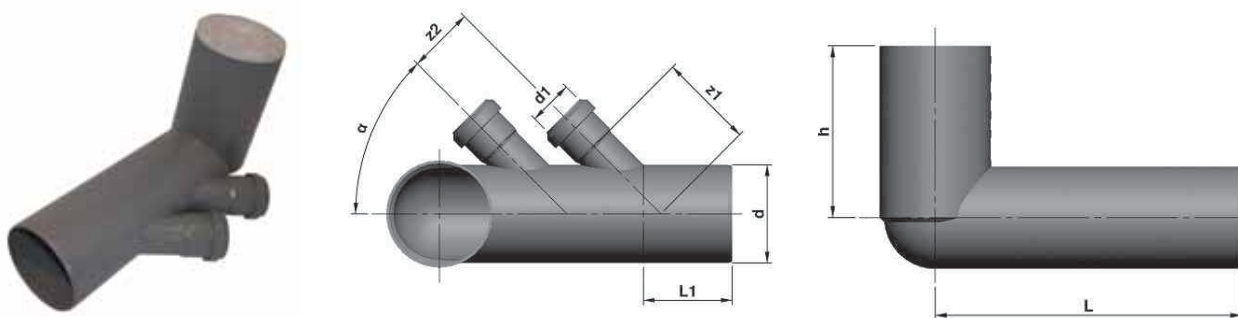
**EXTENDED W.C. BEND WITH RIGHT COUPLING HTSBL**

code	d/d1	$\alpha$	z1	h	L1	L	
F9PWL09D4	90/40	45°	107	185	105	230	5
F9PWL09D5	90/50	45°	107	185	100	230	5
F9PWL11D4	110/40	45°	105	185	105	230	5
F9PWL11D5	110/50	45°	105	185	100	230	5



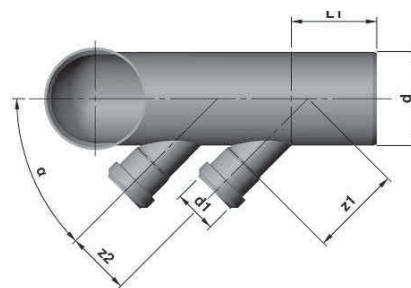
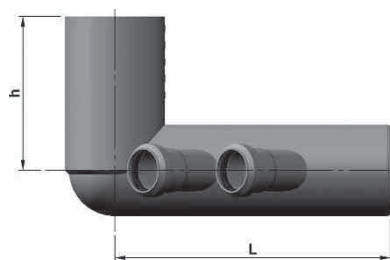
**EXTENDED W.C. BEND WITH 2 COUPLINGS HTSBL**


code	d/d1	$\alpha$	z1	h	L1	L	
F9PWL0924	90/40	45°	107	185	105	230	5
F9PWL0925	90/50	45°	107	185	100	230	5
F9PWL1124	110/40	45°	105	185	105	230	5
F9PWL1125	110/50	45°	105	185	100	230	5

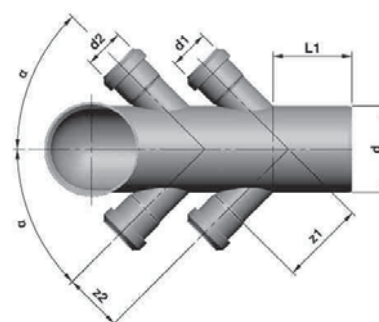
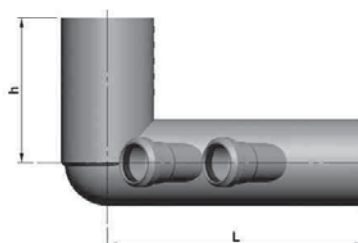



**EXTENDED W.C. BEND WITH TWO LEFT COUPLINGS HTSBL**

code	d/d1/d2	$\alpha$	z1	z2	L1	L	h	
F9PWL1125S	110/50/50	45°	107	75	100	330	185	10

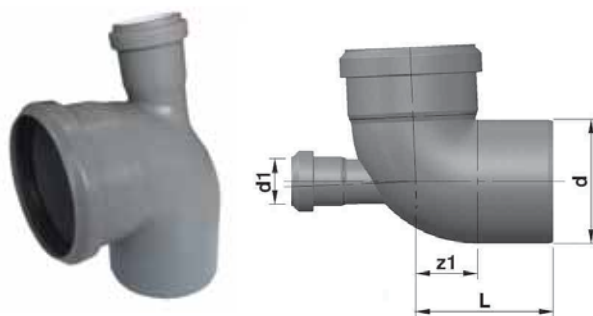
**EXTENDED W.C. BEND WITH TWO RIGHT COUPLINGS HTSBL**

code	d/d1/d2	$\alpha$	z1	z2	L1	L	h	
<b>F9PWL1125D</b>	110/50/50	45°	107	75	100	330	185	10


**EXTENDED W.C. BEND WITH FOUR COUPLINGS HTSBL**

code	d/d1/d2	$\alpha$	z1	z2	L1	L	h	
<b>F9PWL1145</b>	110/50/50	45°	107	75	100	330	185	10

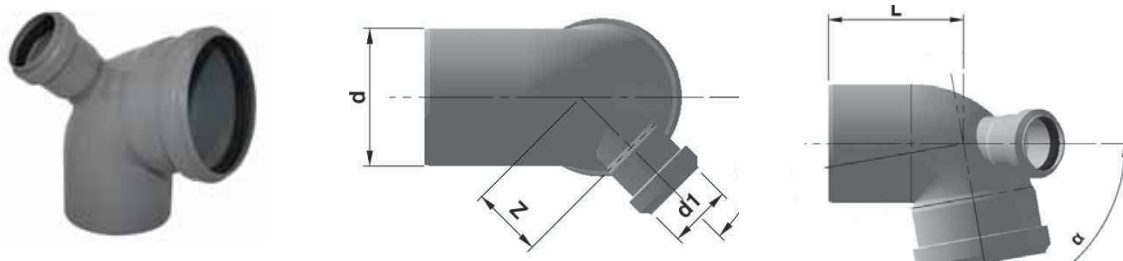





**87,5° WC BEND WITH FRONT COUPLING HTB**

code	d/d1	L	z1	
F9PGW1104*	110/40	122	64	10
F9PGW1105*	110/50	122	64	10

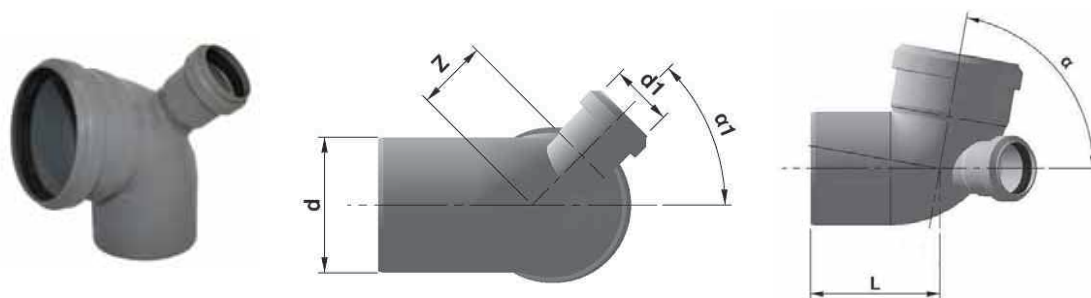
\* Prefabricated




**BEND HTB WITH 45° LEFT COUPLING COMPLETE WITH SEAL**

code	d/d1	$\alpha$	L	Z	
F9PGWA114*	110/40	80°	125	57	10
F9PGWB114*	110/40	87,5°	125	57	10
F9PGWA115*	110/50	80°	125	57	10
F9PGWB115*	110/50	87,5°	125	57	10

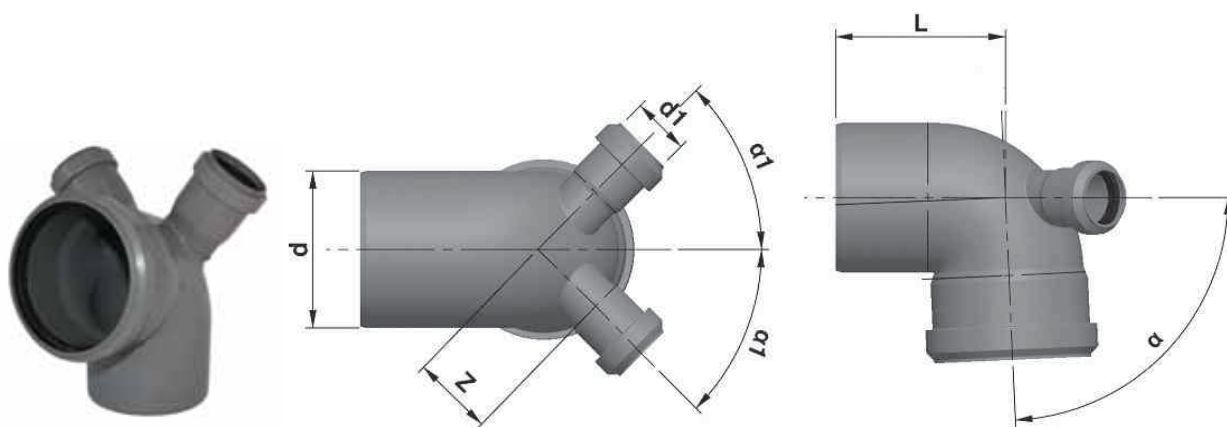
\* Prefabricated




### BEND HTB WITH 45° RIGHT COUPLING COMPLETE WITH SEAL

code	d/d1	α	L	Z	
F9PGWC114*	110/40	80°	125	57	10
F9PGWD114*	110/40	87,5°	125	57	10
F9PGWC115*	110/50	80°	125	57	10
F9PGWD115*	110/50	87,5°	125	57	10

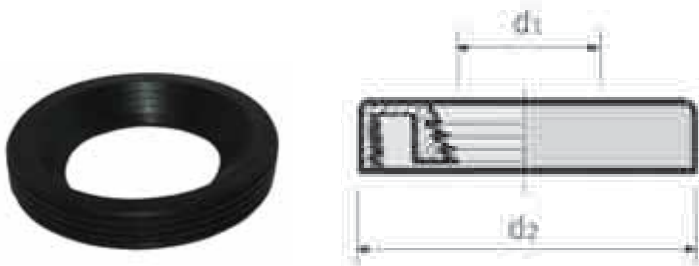
\* Prefabricated



### BEND HTB WITH 45° DOUBLE COUPLING COMPLETE WITH SEAL

code	d/d1	α	L	Z	
F9PGWE114*	110/40/40	80°	125	57	10
F9PGWF114*	110/40/40	87,5°	125	57	10
F9PGWE115*	110/50/50	80°	125	57	10
F9PGWF115	110/50/50	87,5°	125	57	10

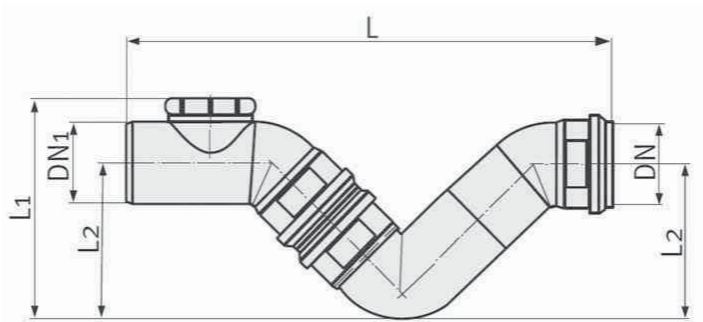
\* Prefabricated




SEAL FOR WC BENDS

code	d1	d2	
F04GW1020	102±5	120	10

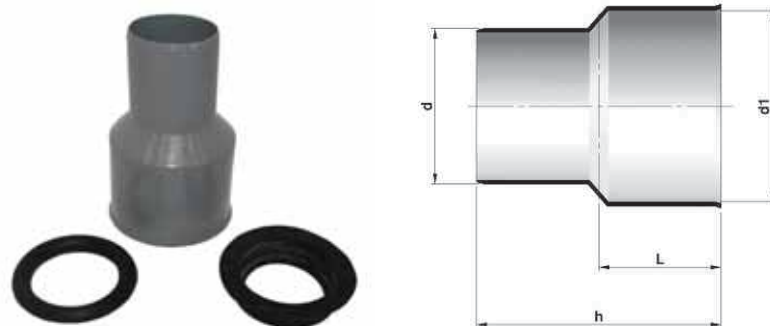
Note: to be used for:  
– 90° extended WC curve HTSBL (right/left coupling)  
– extended WC curve with 1-2 couplings HTSBL




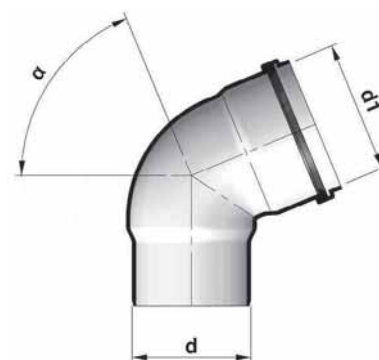
FIRENZE TRAP


code	DN	DN1	L	L1	L2	
F9PSF1111*	110	110	535	260	180	5
F9PSF1212*	125	125	600	310	200	5

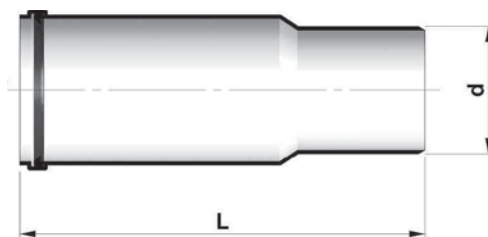
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\* Prefabricated

**FITTING FOR CONNECTION WITH CAST IRON PIPES WITH DOUBLE SEAL HTUG**


code	d	d1	L	h	
F9PRA0500	50	72	58	120	20
F9PRA0700	75	82	58	120	20
F9PRA1100	110	124	67	131	15
F9PRA1200	125	151	112	180	20

**PVC FITTING FOR CONNECTION BETWEEN PVC-PP (Glued)**

code	d/d1	$\alpha$	
F9PG11110	100/110	15°	20
F9PG31110	100/110	30°	20
F9PG41110	100/110	45°	20
F9PG61110	100/110	67°	20
F9PG81110	100/110	87°	20




**SLIDING PVC SLEEVE FOR REPAIRS (Glued)**

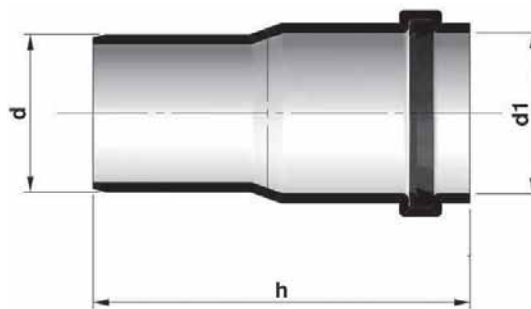
code	d	L	
F9PMS1122	110	320	10




**PVC FITTING FOR CONNECTION WITH ETEMIT PIPES (Glued)**

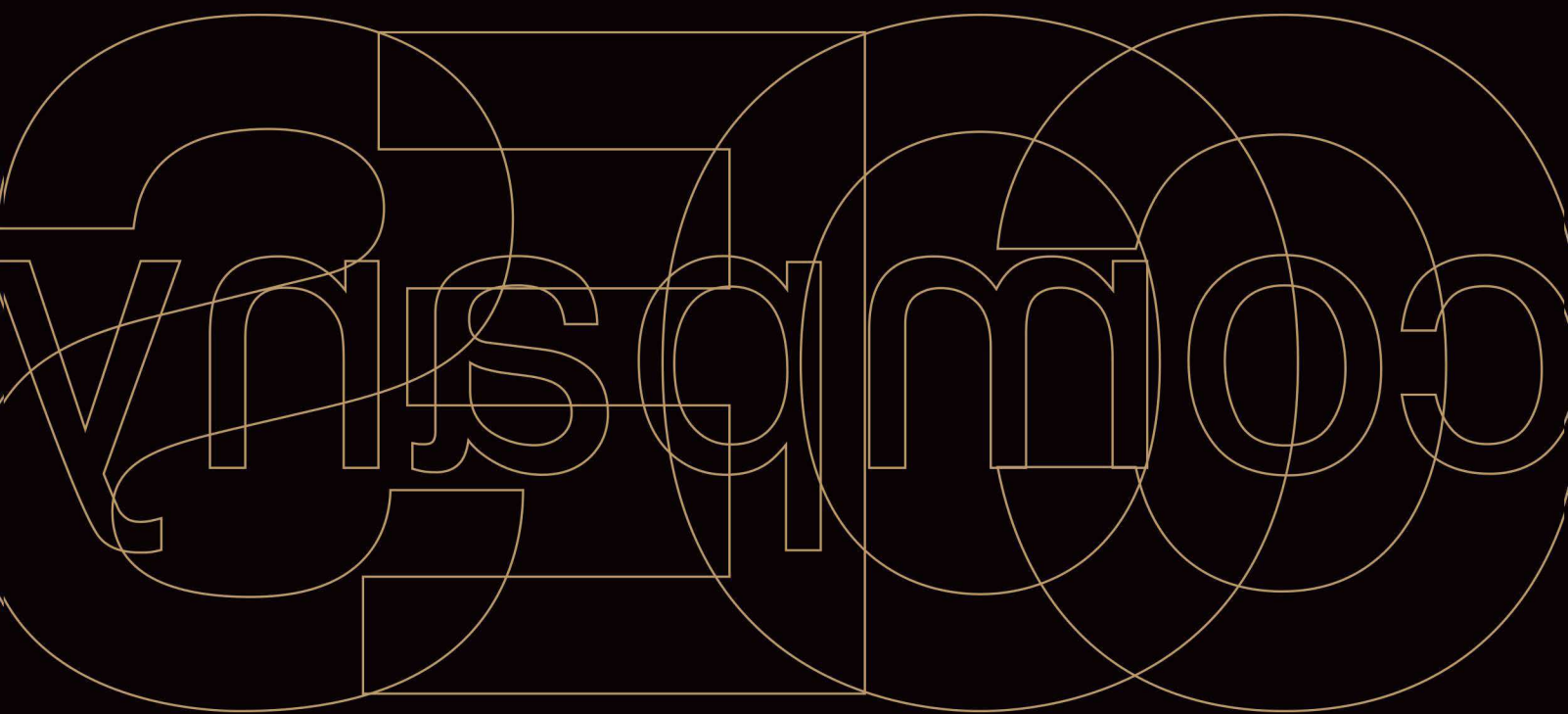
code	d/d1	L	
F9PCE1113*	110/130	280	10
F9PCE1114*	110/140	355	10

\* Prefabricated



**PVC STUB PIPE FOR CONNECTION WITH PVC (Glued)**

code	d/d1	h	
F9PVC0404	40/40	108	10
F9PVC0505	50/50	120	10
F9PVC0807	80/75	135	10
F9PVC0910	90/100	148	10
F9PVC1009	100/90	144	10
F9PRD1110	100/110	-	20
F9PVC1110	110/100	180	10
F9PVC1112	110/125	166	10
F9PVC1211	125/110	190	10
F9PVC1212	125/125	182	10



# Coesprene®



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**In copertina**

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di Philippe Stark  
**ISTANBUL**

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