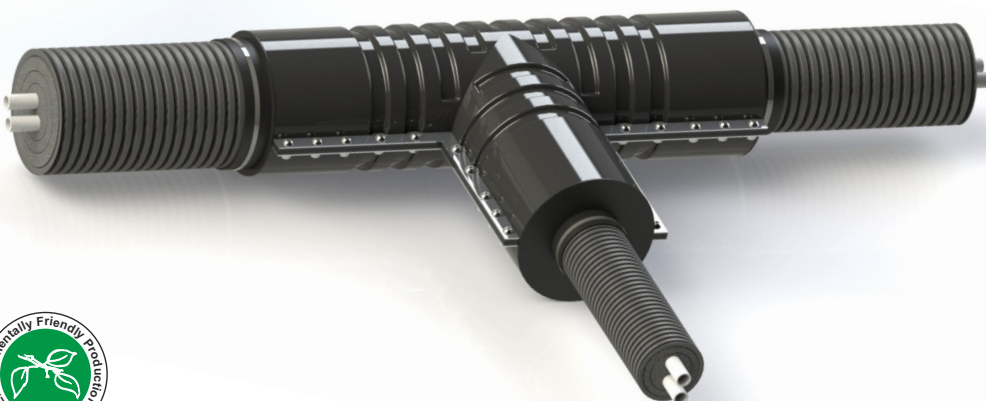


PRE-INSULATED PIPES FOR OUTDOOR APPLICATIONS

INFLEX BHD uno
INFLEX BHD duo
INFLEX BHD quattro



Inflex BHD are flexible, self-compensating, pre-insulated pipes serving for transport of fluids in heating, sanitary and heat engineering systems. Pipes are recommended for outdoor use in trenches/ aboveground systems, buildings, and locations where special mechanical protection is required.

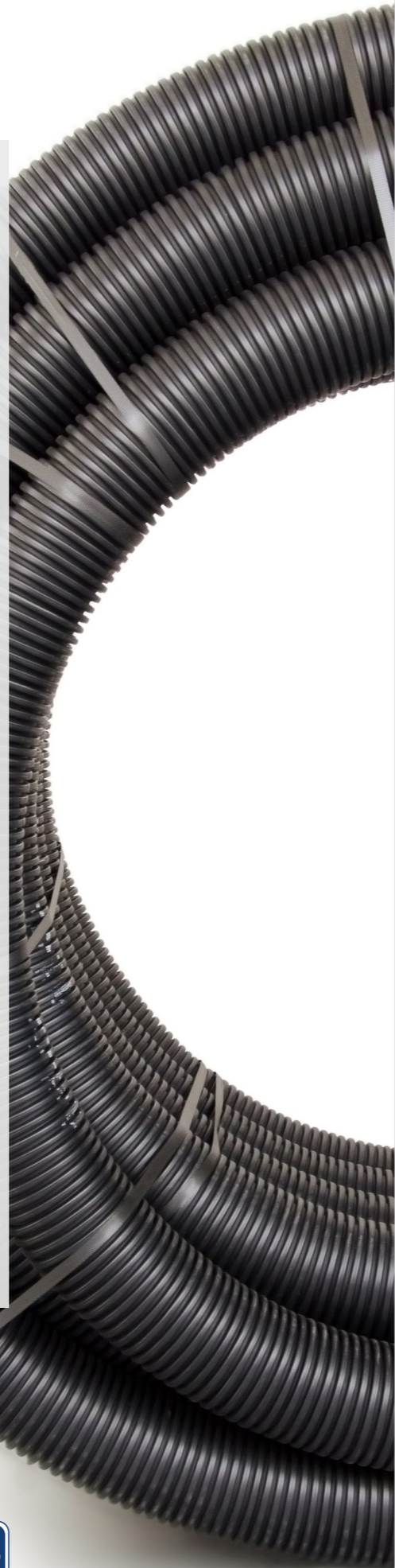
Depending on the type, pipes have one, two or four medial pipes. Pipes are available in SDR 11 and SDR 7.4 versions. Utility pipes are made from high-density polyethylene (HDPE) subjected to the cross-linking process (X - cross-linked). As a result of the formation of additional bonds between different molecules in the plastic, a three-dimensional supramolecular network is created, improving the polymer's physico-chemical properties. Thanks to this, utility 1 pipes have high resistance to aging, pressure, N stress corrosion, chemical substances, temperature, mechanical damage and other factors. Pipes are highly resistant to "scale accumulation" as well as to high flow rates and low pH value (aggressive water). Pipes are odorless and tasteless and are completely neutral to drinking water.

The applied insulating layer, made from soft, foamed polyethylene (EPE), ensures excellent thermal insulation over a wide range of temperatures. It is characterized by very high durability and invariability of insulating properties over time. Thanks to its closed cellular structure, the insulation is practically non-absorbent and is impermeable to water vapor. Moreover, it is characterized by excellent flexibility and resistance to mechanical deformations.

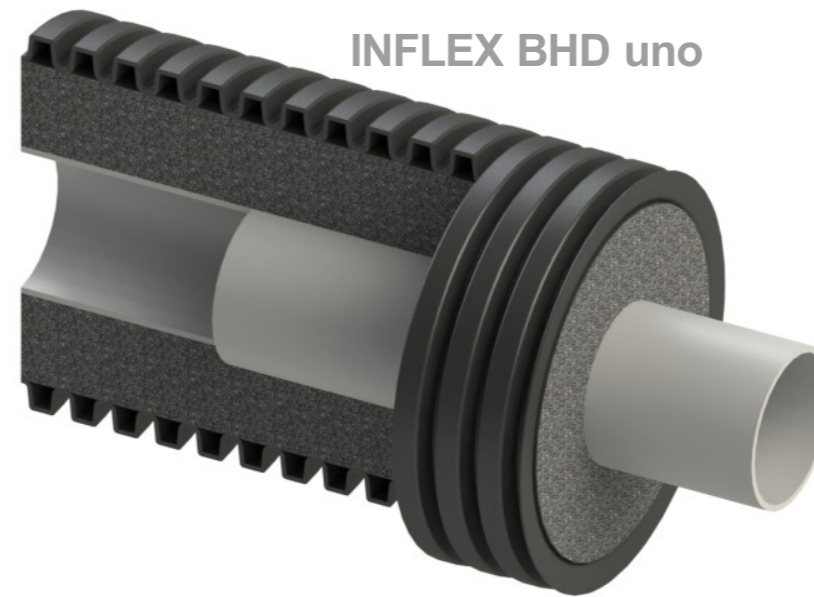
The exterior shielding pipe is made of high-density polyethylene (HDPE), which is characterized by very high mechanical strength and high impact resistance as well as resistance to UV radiation. The pipe has two layers, so that in the case of mechanical damage and perforation of the exterior layer, the interior layer serves as a barrier against water penetration into the pipe's interior. Moreover, air trapped in the pipe's "closed chambers" constitutes an additional thermal insulator.

Pre-insulated Inflex BHD pipes are distinguished among other types of pre-insulated pipes by very high flexibility over a wide temperature range, which significantly facilitates their installation under different conditions. Their high mechanical compression strength (500N) means that they are not only suitable for burying in the ground, but also for immersion in vibrated concrete. Pipes are available in 6-meter segments as well as in 25- and 50-meter coils.

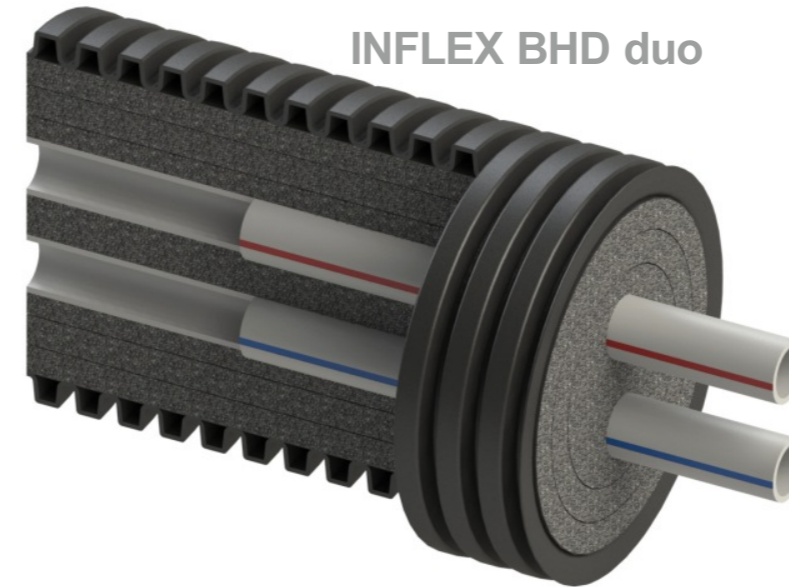
Pipes are manufactured according to standard PN-EN 15632-3 "District heating pipes - Pre-insulated flexible pipe systems - Part 3: Non bonded system with plastic service pipes; requirements and test methods."



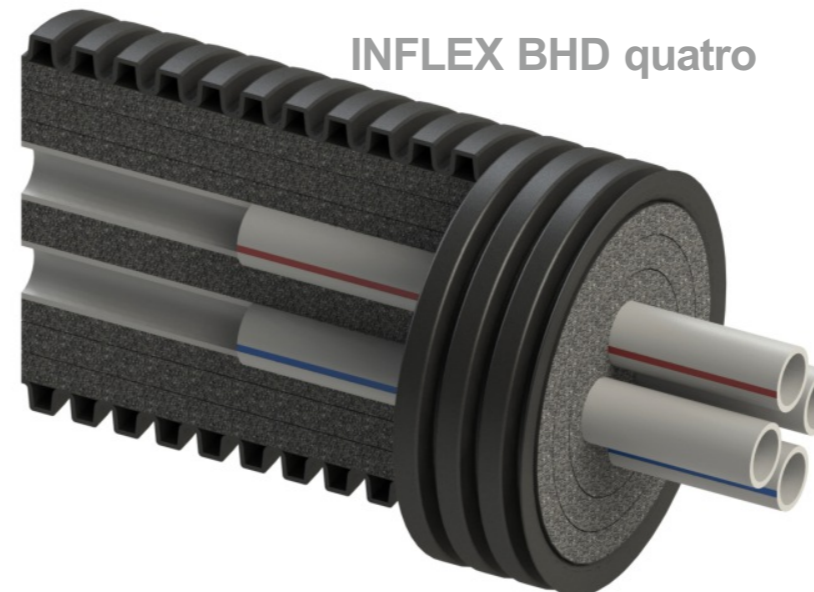
INFLEX BHD uno



INFLEX BHD duo



INFLEX BHD quatro



Carrier pipe

Type: **PEX, PEX/AL/PEX, PB, PERT, PERT/AL/PERT, others**
 Roughness factor: **0.0004 mm**
 Maximum operating temperature: **95°C**
 Maximum parameters of continuous operation:
type SDR 7.4-10 bar at temp. 70°C,
type SDR 11-6 bar at temp. 70°C,
 Resistance to aging: **excellent**

Insulation

Material: **modified polyethylene (EPE)**
 with closed cellular structure
 Insulation: **does not contain (H) CFC**
 Density: **30 kg/m³**
 Water vapor diffusion resistance factor: **>3000 p**
 Water absorbability: **B -1 %**
 Chemical resistance: **excellent**
 Resistance to aging: **excellent**

Exterior protection pipe

Type: **RIW**
 Material: **modified polyethylene (HDPE-mod)**
 Water vapor permeability: **minimal**
 Compression strength: **500N**
 Chemical resistance: **excellent**
 Resistance to UV: **2 years**
 Resistance to aging: **excellent**
 Color: **black**



Product free of CFC and HCFC.



INFLEX BHD uno

Pre-insulated pipe equipped with one utility pipe

INFLEX BHD uno SDR 11 (6bar)					
Diameter of utility pipe (mm)	Symbol of pipe	Thickness of insulation (mm)	Exterior diameter (mm)	Heat loss (W/m)*	Minimum bending radius (mm)**
16	BHD 16/2,0x63	19	63	14,09	240
	BHD 16/2,0x75	22,5	75	12,81	260
20	BHD 20/2,0x75	20,5	75	15,37	260
	BHD 20/2,0x90	27,5	90	12,97	280
25	BHD 25/2,3x75	18	75	18,22	310
	BHD 25/2,3x90	25	90	15,61	330
	BHD 25/2,3x110	34,5	110	12,94	350
32	BHD 32/2,9x90	21,5	90	20,13	450
	BHD 32/2,9x110	31	110	15,91	550
	BHD 32/2,9x160	53	160	11,73	650
40	BHD 40/3,7x110	27	110	20,07	600
	BHD 40/3,7x160	49	160	13,84	700
	BHD 40/3,7x200	67,5	200	11,62	800
50	BHD 50/4,6x110	22	110	27,16	650
	BHD 50/4,6x160	44	160	16,89	750
	BHD 50/4,6x200	62,5	200	13,69	850
63	BHD 63/5,8x110	15,5	110	42,84	700
	BHD 63/5,8x160	37,5	160	21,86	800
	BHD 63/5,8x200	56	200	16,78	900
75	BHD 75/6,8x160	31,5	160	28,12	850
	BHD 75/6,8x200	50	200	20,23	950
90	BHD 90/8,2x160	24	160	40,11	900
	BHD 90/8,2x200	42,5	200	25,78	1000
110	BHD 110/10x200	32,5	200	36,92	1200

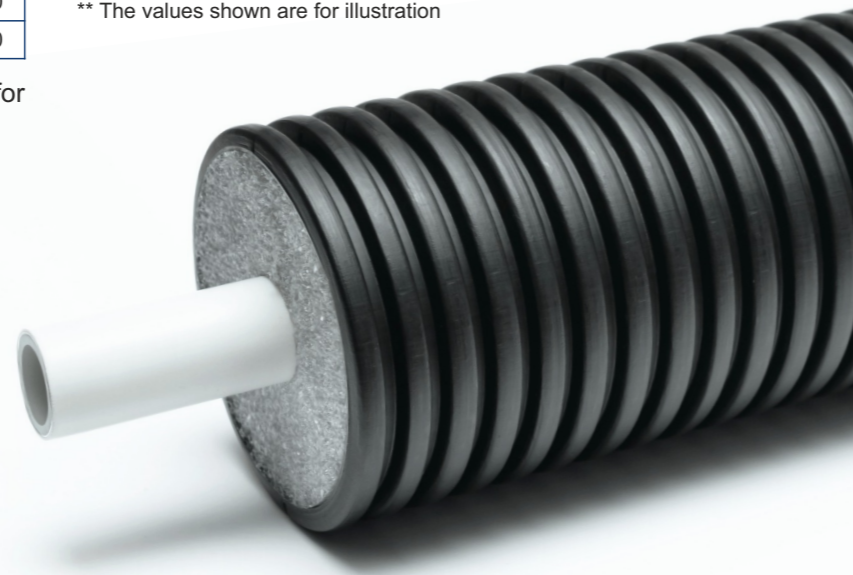
BHD uno pipes have one utility pipe. They are intended for applications in heating and sanitary systems

INFLEX BHD uno SDR 7,4 (10bar)					
Diameter of utility pipe (mm)	Symbol of pipe	Thickness of insulation (mm)	Exterior diameter (mm)	Heat loss (W/m)*	Minimum bending radius (mm)**
16	BHD 16/2,2x63	19	63	14,09	240
	BHD 16/2,2x75	22,5	75	12,81	260
20	BHD 20/2,8x75	20,5	75	15,37	260
	BHD 20/2,8x90	27,5	90	12,97	280
	BHD 20/2,8x110	37	110	11,08	300
25	BHD 25/3,5x75	18	75	18,22	310
	BHD 25/3,5x90	25	90	15,61	330
	BHD 25/3,5x110	34,5	110	12,94	350
32	BHD 32/4,4x90	21,5	90	20,13	450
	BHD 32/4,4x110	31	110	15,91	550
	BHD 32/4,4x160	53	160	11,73	650

*Average heat emission in W/m:

- T flow: 75°C
- T return: 40 °C
- T environmental: 5°C
- T Δ: 52,5K

** The values shown are for illustration



INFLEX BHD duo

Pre-insulated pipe equipped with two utility pipes

INFLEX BHD duo SDR 11 (6bar)				
Diameter of utility pipe (mm)	Symbol of pipe	Exterior diameter (mm)	Heat loss (W/m)*	Minimum bending radius (mm)**
2x20	BHD duo 2x20/2,0x110	110	13,0	300
	BHD duo 2x20/2,0x160	160	12,0	400
2x25	BHD duo 2x25/2,3x110	110	14,0	350
	BHD duo 2x25/2,3x160	160	13,0	450
	BHD duo 2x25/2,3x200	200	10,5	550
2x32	BHD duo 2x32/2,9x160	160	14,0	650
	BHD duo 2x32/2,9x200	200	12,0	750
2x40	BHD duo 2x40/3,7x160	160	18,5	700
	BHD duo 2x40/3,7x200	200	16,0	800
2x50	BHD duo 2x50/4,6x200	200	18,0	850
2x63	BHD duo 2x63/5,8x200	200	22,0	900
25+20	BHD duo 25/2,3+20/2,0x160	160	12,5	450
	BHD duo 25/2,3+20/2,0x200	200	10,5	550
32+25	BHD duo 32/2,9+25/2,3x160	160	13,5	650
	BHD duo 32/2,9+25/2,3x200	200	11,0	750
40+25	BHD duo 40/3,7+25/2,3x160	160	15,5	700
	BHD duo 40/3,7+25/2,3x200	200	13,0	800
50+25	BHD duo 50/4,6+25/2,3x160	160	16,0	800
	BHD duo 50/4,6+25/2,3x200	200	14,0	850

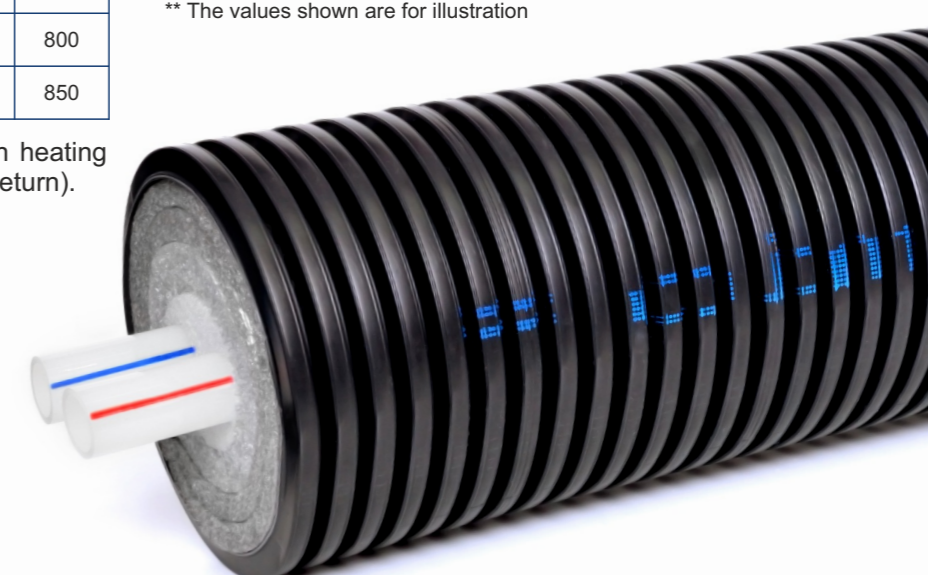
INFLEX BHD duo SDR 7,4 (10bar)				
Diameter of utility pipe (mm)	Symbol of pipe	Exterior diameter (mm)	Heat loss (W/m)*	Minimum bending radius (mm)**
2x20	BHD duo 2x20/2,8x110	110	13,0	300
	BHD duo 2x20/2,8x160	160	12,0	400
2x25	BHD duo 2x25/3,5x110	110	14,0	350
	BHD duo 2x25/3,5x160	160	13,0	450
	BHD duo 2x25/3,5x200	200	10,5	550
2x32	BHD duo 2x32/4,4x160	160	14,0	650
	BHD duo 2x32/4,4x200	200	12,0	750
25+20	BHD duo 25/3,5+20/2,8x160	160	12,5	450
	BHD duo 25/3,5+20/2,8x200	200	10,5	550
32+25	BHD duo 32/4,4+25/3,5x160	160	13,5	650
	BHD duo 32/4,4+25/3x200	200	11,0	750
40+25	BHD duo 40/3,7+25/2,3x160	160	15,5	700
	BHD duo 40/3,7+25/2,3x200	200	13,0	800
50+25	BHD duo 50/4,6+25/2,3x160	160	16,0	800
	BHD duo 50/4,6+25/2,3x200	200	14,0	850

*Average heat emission in W/m:

- T flow: 75°C
- T return: 40 °C
- T environmental: 5°C
- T Δ: 52,5K

** The values shown are for illustration

BHD duo pipes are intended for applications in heating systems. They have two utility pipes (supply and return).



INFLEX BHD quattro

Pre-insulated pipe equipped with four utility pipes



INFLEX BHD quattro SDR 11 (6bar)

Diameter of utility pipe (mm)	Symbol of pipe	Exterior diameter (mm)	Heat loss (W/m)*	Minimum bending radius (mm)**
4x25	BHD quattro 2x25/2,3+2x25/3,5x160	160	13,0	800
	BHD quattro 2x25/2,3+2x25/3,5x200	200	10,5	900
2x32 + 2x25	BHD quattro 2x32/2,9+2x25/3,5x160	160	13,5	800
	BHD quattro 2x32/2,9+2x25/3,5x200	200	11,0	900
3x32 + 1x25	BHD quattro 2x32/2,9+32/4,4+25/3,5x160	160	14,0	800
	BHD quattro 2x32/2,9+32/4,4+25/3,5x200	200	11,5	900

*Average heat emission in W/m:

- T flow: 75°C
- T return: 40 °C
- T environmental: 5°C
- T Δ: 52,5K

** The values shown are for illustration

BHD quattro pipes are a "2 in 1" solution. These pipes are intended for heating and sanitary systems. They have four utility pipes. Two of them find an application in a heating system (supply and return), and the other two find applications as sanitary pipes for hot and cold water.

THD T-pipe for joining pre-insulated pipes

The THD T-pipe is intended for joining three pre-insulated Inflex BHD pipes. Its unique design makes it possible to join individual Inflex BHD uno pipes with one another as well as multi-pipe Inflex BHD duo and BHD quattro systems.

The T-pipe's shells are made of high-density polyethylene (HDPE) characterized by high mechanical strength, impact resistance, resistance to most chemical compounds, as well as resistance to stress corrosion and aging. All metal elements, i.e. installation strips, bands and bolts are resistant to corrosion thanks to the application of stainless steel, making it possible to dismantle the T-pipe even after it has been underground for a very long time. This is particularly significant in the event of a pipeline failure and the need to replace damaged elements. After dismantling and replacing pipes, the T-pipe will be suitable for re-installation and re-use.

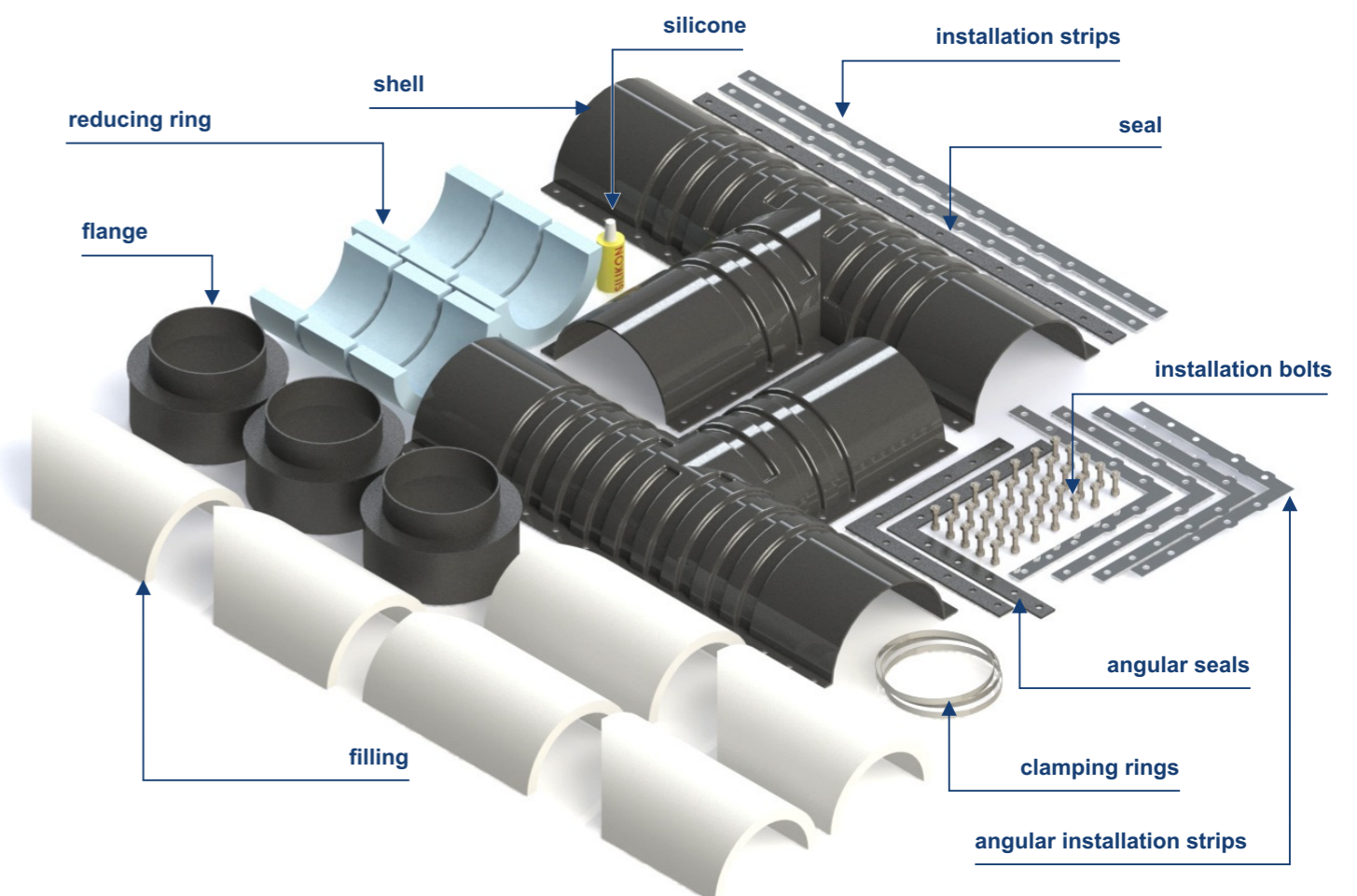
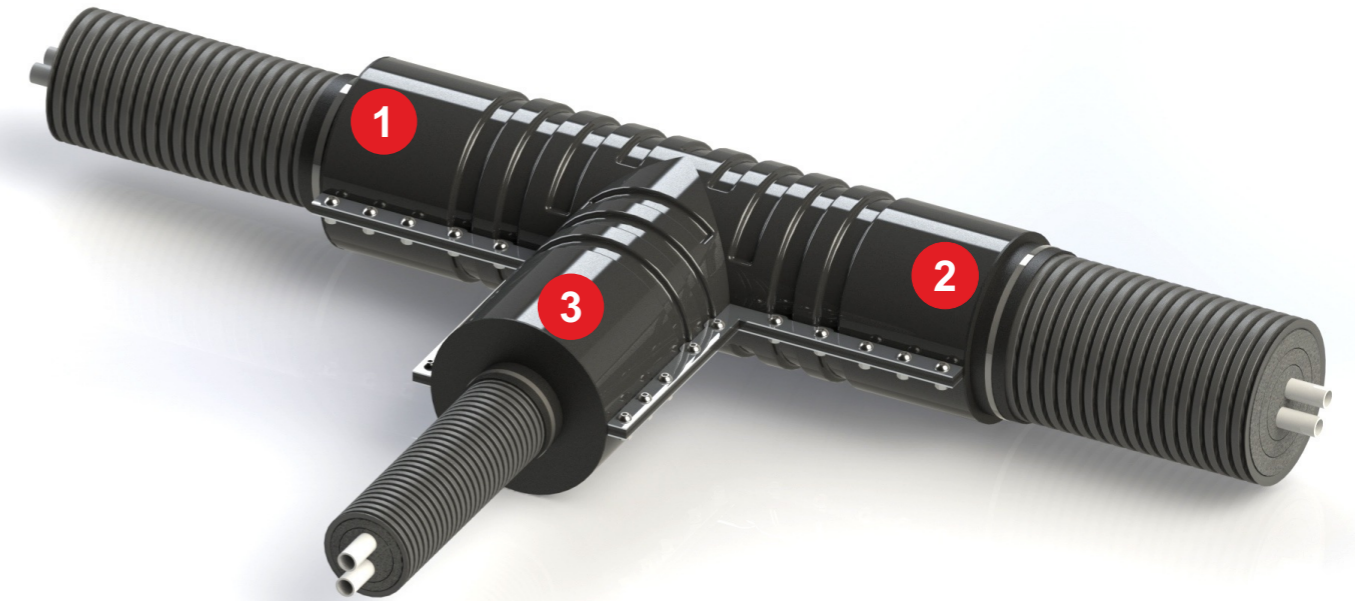
The T-pipe is adapted to pre-insulated pipes with exterior diameters: 90, 110, 160 and 200 mm.

In the order, the diameters of corrugated (exterior) pipes that are to be inserted into the T-pipe are to be specified - configuration 3 out of 4 available pipe dimensions.

It is also required to specify which pipe enters a specific connector pipe of the T-pipe - according to the numbers marked on the drawing (e.g.: 1-160 mm, 2-160 mm, 3-200 mm).

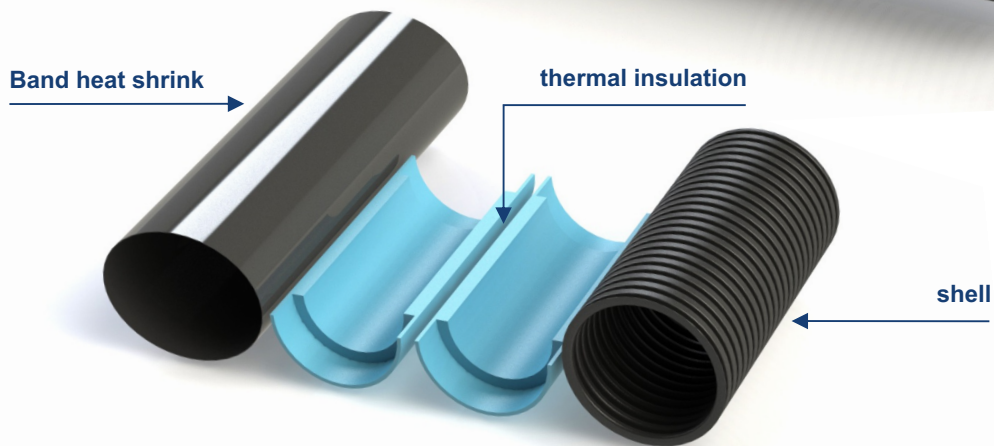
T-pipe for pre-insulated pipes

Symbol	Available pipe diameters in connector pipe (mm) 1	Available pipe diameters in connector pipe (mm) 2	Available pipe diameters in connector pipe (mm) 3
THD	90; 110; 160; 200	90; 110; 160; 200	90; 110; 160; 200



PHD straight connector

The PHD pipe connector is intended for joining pre-insulated Inflex BHD pipes. The connector protects the joint against mechanical damage. Thanks to the application of a heat-shrink band with a layer of glue, which, when heated, permanently bonds to the exterior surface of the pre-insulated pipe, the connector ensures tightness of the joint and prevents penetration of moisture into the pipe. The set has interior thermal insulation. The application of this connector requires the use of a gas torch in order to shrink the heat-shrink band. The connector cannot be dismantled.



PHD straight connector

PHD connector symbol	Application
PHD 63	connector for pipes with diameter of 63 mm
PHD 75	connector for pipes with diameter of 75 mm
PHD 90	connector for pipes with diameter of 90 mm
PHD 110	connector for pipes with diameter of 110 mm
PHD 160	connector for pipes with diameter of 160 mm
PHD 200	connector for pipes with diameter of 200 mm

The specification can be subject to change without notice.



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