



THERMAFLEX®

Product Catalogue
International

FLEXALEN SOLUTIONS



NEW
Flexalen 600 HP
Page 59-61

- ✓ Speed of installation
- ✓ Flexibility
- ✓ Stock availability
- ✓ Sustainability
- ✓ Project support



THERMAFLEX®

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Disclaimer

All recommendations and information provided in this product catalogue are based on our knowledge and experience. Product specifications are intended as guidelines. Since conditions of service are beyond our control, users must satisfy themselves that products are suitable for the intended use. No guarantee or warranty is given or implied or that any use of products will not infringe rights belonging to other parties. We reserve the right to change product design and properties without notification.



The power of Thermaflex®

Our innovative, reliable quality solutions help you save energy and extend the lifespan of both insulation and the systems it protects. Our Cradle-to-Cradle products help you realise your sustainability ambitions.

Our customised insulation materials also offer protection, impact resistance and sound insulation. They are suitable for many applications, including heating and cooling networks, buildings, transport, shipbuilding, products, equipment and packaging.

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Pre Insulated Piping

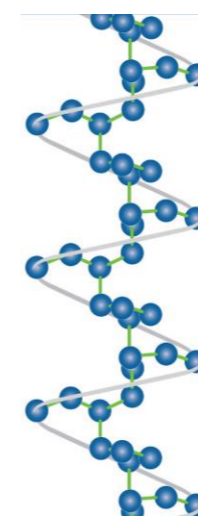


Smart networks for decades

Durable and efficient distribution solutions for heating, cooling and drinking water applications. Optimal performance combined with quick and easy installation.

Advantages of PB insulated pipes

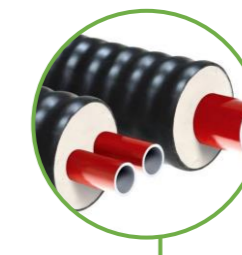
POLYBUTEN – *The perfect material with over 40 years legacy*



- Long service life
- High pressure resistance 95°C/8bar or 5 bar (OD125-OD315) and very good acoustic properties
- High flexibility - small bending radii especially for the small diameters
- Smooth inner surface - Low pressure drop
- Low thermal conductivity
- Wide range of joining techniques including homogeneous welded joints
- Best suited for mechanical jointing systems due to excellent creep behaviour
- Extensive product range from OD20 - OD315
- 100% recyclable, the only Cradle to Cradle™ certified pipe system in the world
- Resistant to limescale deposits
- Chemical resistance (also for aggressive thermal waters in use for decades)

FLEXALEN®

Flexalen 600
Extremely flexible pre insulated piping system for Heating/Cooling networks and cold & hot tap water



Flexalen PU
Highly efficient pre-insulated piping in sticks and on coil for heat transport

Flexalen Hybrid Solution
Optimal combination of the best thermal insulation (lowest heat losses) and maximum flexibility (easiest and fastest installation)



Engineer . Produce . Deliver . Support . Guarantee

- 100% In-House Manufacturing
- Standard- and Project Specific Prefabrication
- Network design- and Technical Support



Flexalen® 600 Heating

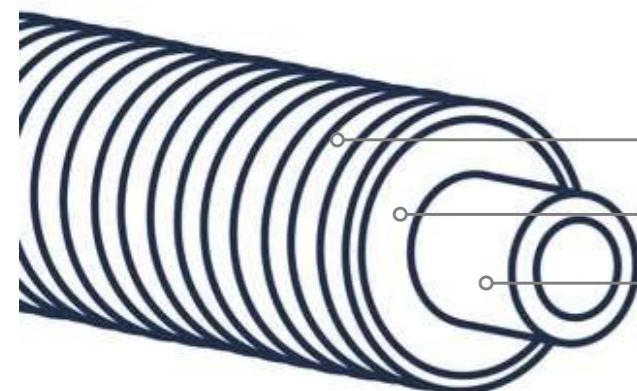
Pre-insulated piping system by Thermaflex®

Extremely flexible and easy to install pre-insulated pipe system for heating / cooling



Benefits

- Fast and easy installation
- Safest choice with homogeneous welding and high-pressure rating 95°C/8bar
- Large network capacity with full compatibility with Flexalen® PU with service pipes up to OD315mm
- The only Cradle to Cradle™ certified pre-insulated pipe system in the world
- Thermaflex service: Support with integrated network design, calculation tools, training and on-site support



Design

- **Corrugated PE Casing pipe**
Flexibility and mechanical protection
- **Polyolefin foam**
Closed-cell, CFC-free
- **Polybutene service pipe, PB-H**
With and without EVOH layer

Applications

- Local / District heating and cooling networks
- Biogas / Biomass / Waste heat recovery
- Geothermal distribution lines
- Island networks
- A to B Connections

Technical Properties

Flexalen® 600 is a pre-insulated flexible plastic pipe system produced conform the European standard EN15632-1,3 (DOC), QB08 certified (CSTB) and KIWA system certified as well as third-party controlled according to BRL KOMO 5609-2 and BRL-K17401.

PB-H service pipe (EN-ISO 15876)	
Max. service temperature	95°C
Max. operating pressure	8bar*(95°C)
*depending on the diameter	

Thermal Insulation	
Polyolefin foam	
Closed-cell structure, CFC-free	
Water vapor diffusion $\mu \geq 3,500$	



Flexalen® 600 Heat losses

Heat loss q [W/m] for one Single line								
Flexalen® 600 Single line	Operating temperature T of the flow or return line [°C]							
	20°C	30°C	40°C	50°C	60°C	70°C	80°C	90°C
25 / 90	1.48	2.96	4.44	5.92	7.40	8.88	10.36	11.84
32 / 90	1.82	3.64	5.46	7.28	9.10	10.92	12.74	14.56
40 / 90	2.30	4.60	6.90	9.20	11.50	13.80	16.10	18.40
40 / 125	1.78	3.56	5.34	7.12	8.90	10.68	12.46	14.24
50 / 125	2.19	4.38	6.57	8.76	10.95	13.14	15.33	17.52
50 / 160	1.82	3.64	5.46	7.28	9.10	10.92	12.74	14.56
63 / 125	2.90	5.80	8.70	11.60	14.50	17.40	20.30	23.20
63 / 160	2.22	4.44	6.66	8.88	11.10	13.32	15.54	17.76
75 / 160	2.65	5.30	7.95	10.60	13.25	15.90	18.55	21.20
90 / 160	3.36	6.72	10.08	13.44	16.80	20.16	23.52	26.88
110 / 200	3.54	7.08	10.62	14.16	17.70	21.24	24.78	28.32
125 / 200	4.30	8.60	12.90	17.20	21.50	25.80	30.10	34.40

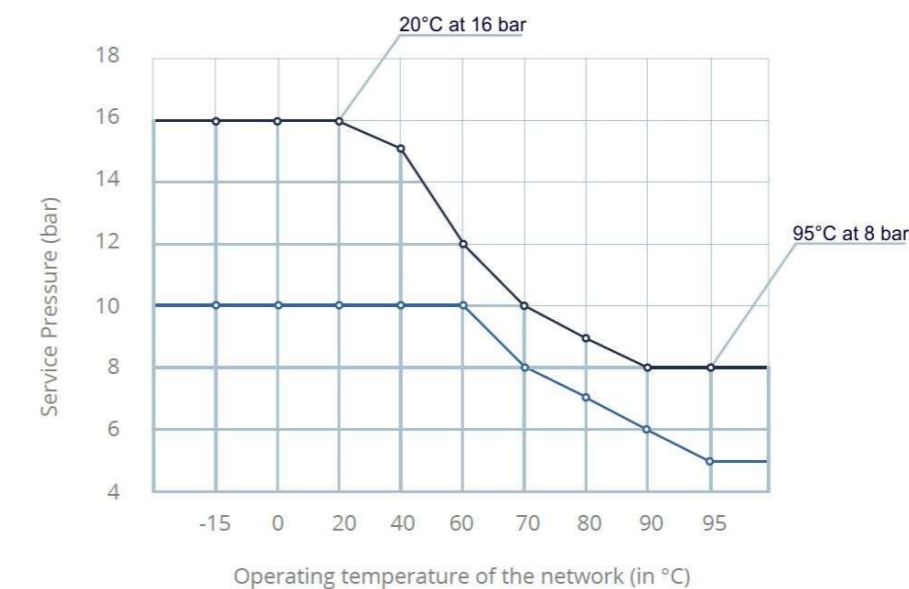
Heat loss q [W/m] for one Double line						
Flexalen® 600 Double line	Average operating temperature T of the flow and return line [°C]					
	30°C	40°C	50°C	60°C	70°C	80°C
25 + 25 / 125	4.42	6.63	8.84	11.05	13.26	15.47
32 + 32 / 125	5.66	8.49	11.32	14.15	16.98	19.81
32 + 32 / 160	4.16	6.24	8.32	10.40	12.48	14.56
40 + 40 / 160	5.10	7.65	10.20	12.75	15.30	17.85
50 + 50 / 160	6.76	10.14	13.52	16.90	20.28	23.66
63 + 63 / 200	7.26	10.89	14.52	18.15	21.78	25.41

Calculation parameter

λ_{soil} : 1.00 W/m·K
R soil surface to ambient air: 0.0685 m²·K/W
 T_{soil} : 10.0 °C
Soil covering: 0.8 m

The heat loss characteristics are in accordance with the European standard for flexible heating pipes systems EN15632.

Flexalen® 600 Pressure rating

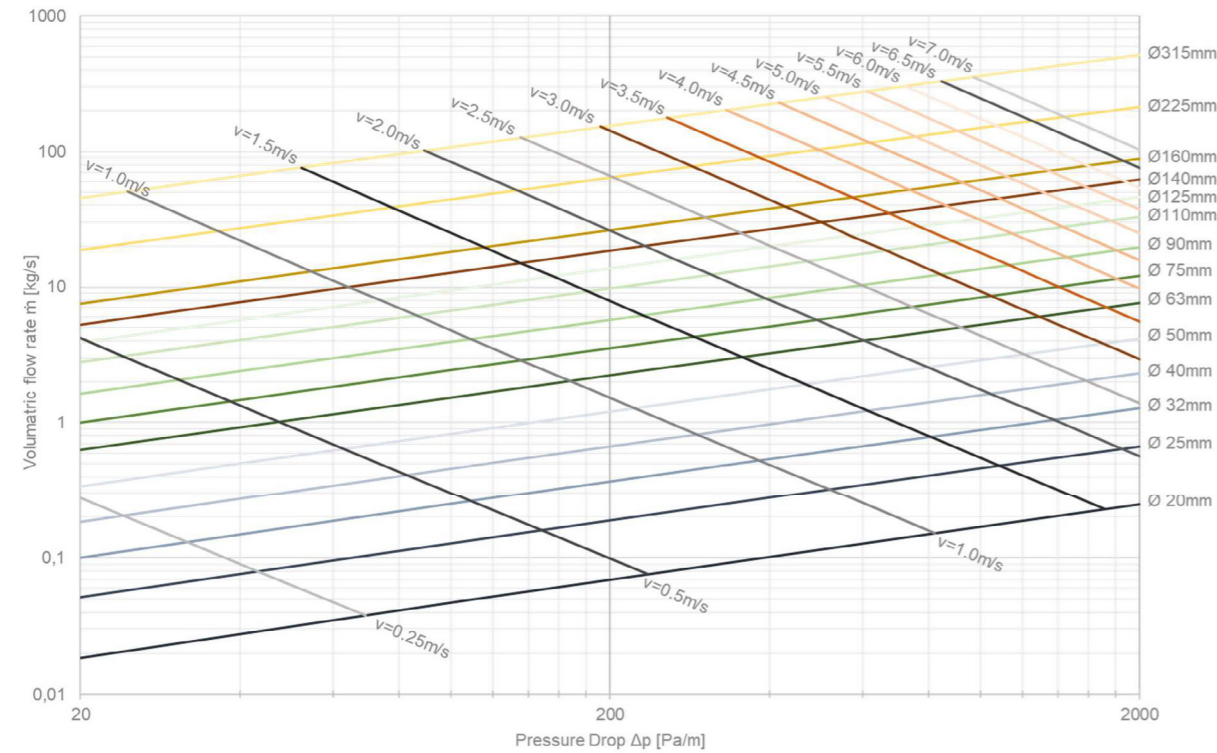


- Up to OD110 20°C/16 bar 95°C/8 bar
- \geq OD125 20°C/10 bar 95°C/5 bar

Flexalen® 600 Pressure drop PB

Determine the pressure drop using Flexalen pipe systems at a flow temperature of 90°C (Flow line). For lower medium temperatures the pressure drop is higher: e.g. for 60°C 10%; for 10°C 20% higher.

For support on a complete district heating network design please contact your Thermaflex partner!



Availability - Heating / Cooling

Single line						
Product code	Dimension [mm]	Service pipe OD x s [mm]	Casing pipe OD [mm]	Weight [kg/m]	Min. bending radius [m]	Max. length [m]
1010-090025-001	25 / 90	25 x 2.3	90	0.75	0.40	500
1010-090032-001	32 / 90	32 x 3.0	90	0.86	0.40	500
1010-090040-001	40 / 90	40 x 3.7	90	1.00	0.50	500
1010-125040-001	40 / 125	40 x 3.7	125	1.98	0.50	300
1010-125050-001	50 / 125	50 x 4.6	125	2.08	0.70	300
1010-160050-001	50 / 160	50 x 4.6	160	2.40	0.70	150
1010-125063-001	63 / 125	63 x 5.8	125	2.43	0.80	300
1011-125063-015	63 / 125 SL ²	63 x 5.8	125	2.43	0.80	6
1010-160063-001	63 / 160	63 x 5.8	160	2.75	0.80	150
1010-160075-001	75 / 160	75 x 6.8	160	3.03	0.80	150
1011-160075-015	75 / 160 SL ²	75 x 6.8	160	3.03	0.80	6
1010-160090-001	90 / 160	90 x 8.2	160	3.64	1.00	150
1011-160090-015	90 / 160 SL ²	90 x 8.2	160	3.64	1.00	6
1000-200110-001	110 / 200	110 x 10.0 ¹	200	5.40	1.25	100
1001-200110-015	110 / 200 SL ^{2,3}	110 x 10.0 ¹	200	5.40	1.25	6
1001-200110-035	110 / 200 SL ²	110 x 10.0 ¹	200	5.40	1.25	12
1000-200125-001	125 / 200 ³	125 x 11.4 ¹	200	6.38	1.50	80
1001-200125-015	125 / 200 SL ^{2,3}	125 x 11.4 ¹	200	6.38	1.50	6
1001-200125-030	125 / 200 SL ^{2,3}	125 x 11.4 ¹	200	6.38	1.50	12

Double line						
Product code	Dimension [mm]	Service pipe OD x s [mm]	Casing pipe OD [mm]	Weight [kg/m]	Min. bending radius [m]	Max. length [m]
1030-125025-001	25 + 25 / 125	25 x 2.3	125	1.80	0.60	300
1030-125032-001	32 + 32 / 125	32 x 3.0	125	1.90	0.60	300
1030-160032-001	32 + 32 / 160	32 x 3.0	160	2.14	0.60	150
1030-160040-001	40 + 40 / 160	40 x 3.7	160	2.50	0.80	150
1030-160050-001	50 + 50 / 160	50 x 4.6	160	3.00	0.80	150
1030-200063-001	63 + 63 / 200	63 x 5.8	200	4.50	1.25	100

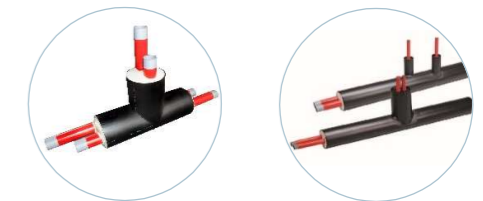
Higher insulation range with increased insulation thickness and improved energy efficiency

¹ Without EVOH layer (Not included into the System Certification)

² Semi-flexible pipe system, straight lengths (available in 6m&12m sticks)

³ Maximum temperature / pressure rating 95°C / 5 bar

- All types of homogenous plastic welded Prefabrications
- Prefabricated house connections
- Full range of weldable PB fittings
- Compression fitting system
- Full range of accessories and tools



Flexalen® 600 Water

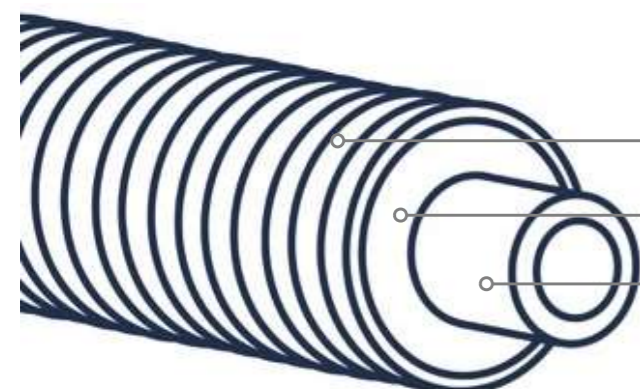
Pre-insulated piping system by Thermaflex®

Extremely flexible and easy to install pre-insulated pipe system for domestic water applications



Benefits

- Fast and easy installation
- Safest choice with homogeneous welding, one material, for increased reliability
- Large network capacity with full compatibility with Flexalen® PU SL with service pipes up to OD315mm
- The only Cradle to Cradle™ certified pre-insulated pipe system in the world
- Thermaflex service: Support with integrated network design, calculation tools, training and on-site support



Design

- **Corrugated PE Casing pipe**
Flexibility and mechanical protection
- **Polyolefin foam**
Closed-cell, CFC-free
- **Polybutene service pipe, PB-H**

Applications

- All domestic hot- and cold-water applications
- Drinking water
- Geothermal water

Technical Properties

Flexalen® 600 is a pre-insulated flexible plastic pipe system produced conform the European standard EN15632-1,3 (DOC) and KIWA system certified as well as third-party controlled according BRL-K17401. The PB service pipe has several drinking water approvals like KTW (DE), WRAS(UK), ATA(NL), ACS (FR) and many more.

PB-1 service pipe (EN-ISO 15876)

Max. service temperature	95°C
Continuous service temperature	80°C
Max. operating pressure	8bar*(95°C)

*depending on the diameter

Thermal Insulation

Polyolefin foam
Closed-cell structure, CFC-free
Water vapor diffusion $\mu \geq 3,500$



Flexalen® 600 Heat losses

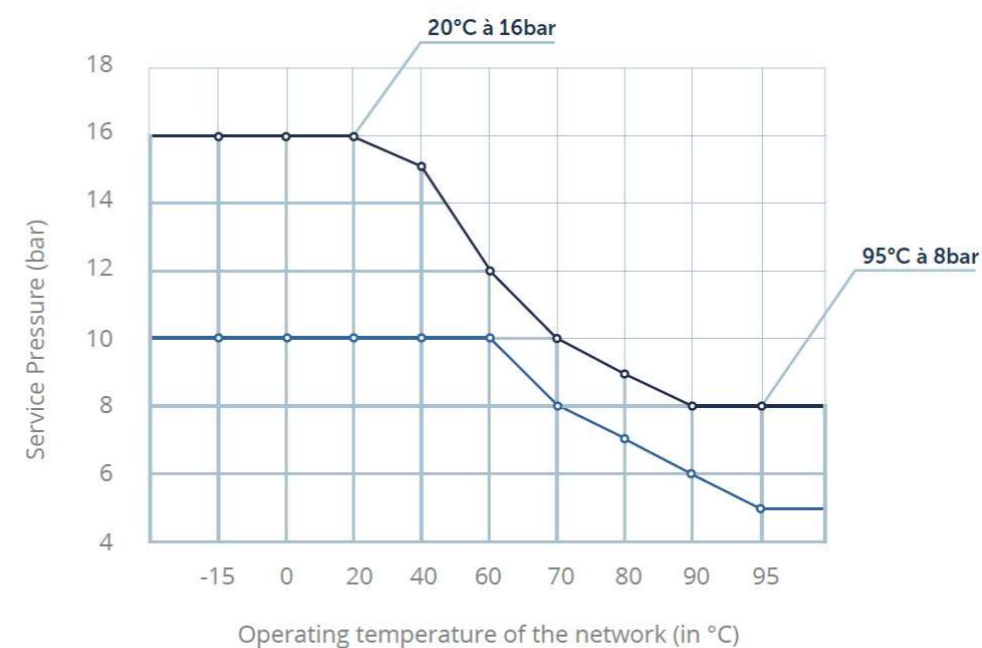
Heat loss q [W/m] for one Single line								
Flexalen® 600 Single line	Operating temperature T [°C]							
	20°C	30°C	40°C	50°C	60°C	70°C	80°C	
25 / 90	1.4	2.8	4.3	5.8	7.4	9.0	10.6	
32 / 90	1.7	3.5	5.3	7.2	9.1	11.1	13.1	
40 / 90	2.2	4.4	6.7	9.1	11.5	14.0	16.5	
40 / 125	1.7	3.4	5.2	7.0	8.9	10.8	12.8	
50 / 90	3.0	6.0	9.1	12.4	15.7	19.0	22.5	
50 / 125	2.1	4.2	6.4	8.6	10.9	13.3	15.7	
50 / 160	1.7	3.5	5.3	7.2	9.1	11.1	13.1	
63 / 125	2.8	5.6	8.5	11.5	14.5	17.6	20.8	
63 / 160	2.1	4.3	6.5	8.8	11.1	13.5	15.9	
75 / 125	3.7	7.4	11.3	15.3	19.3	23.5	27.7	
75 / 160	2.5	5.1	7.8	10.5	13.2	16.1	19.0	
90 / 160	3.2	6.5	9.9	13.3	16.8	20.4	24.1	
110 / 200	3.4	6.9	10.4	14.0	17.7	21.5	25.3	
125 / 200	4.1	8.3	12.6	17.0	21.5	26.1	30.7	

Calculation parameter

λ_{soil} :	1.00 W/m·K
R soil surface to ambient air:	0.0685 m²·K/W
T _{soil} :	10.0 °C
Soil covering:	0.8 m

The heat loss characteristics are in accordance with the European standard for flexible heating pipes systems EN15632. During the expected lifetime of the product these values will increase by 7-10 %.

Flexalen® 600 Pressure rating

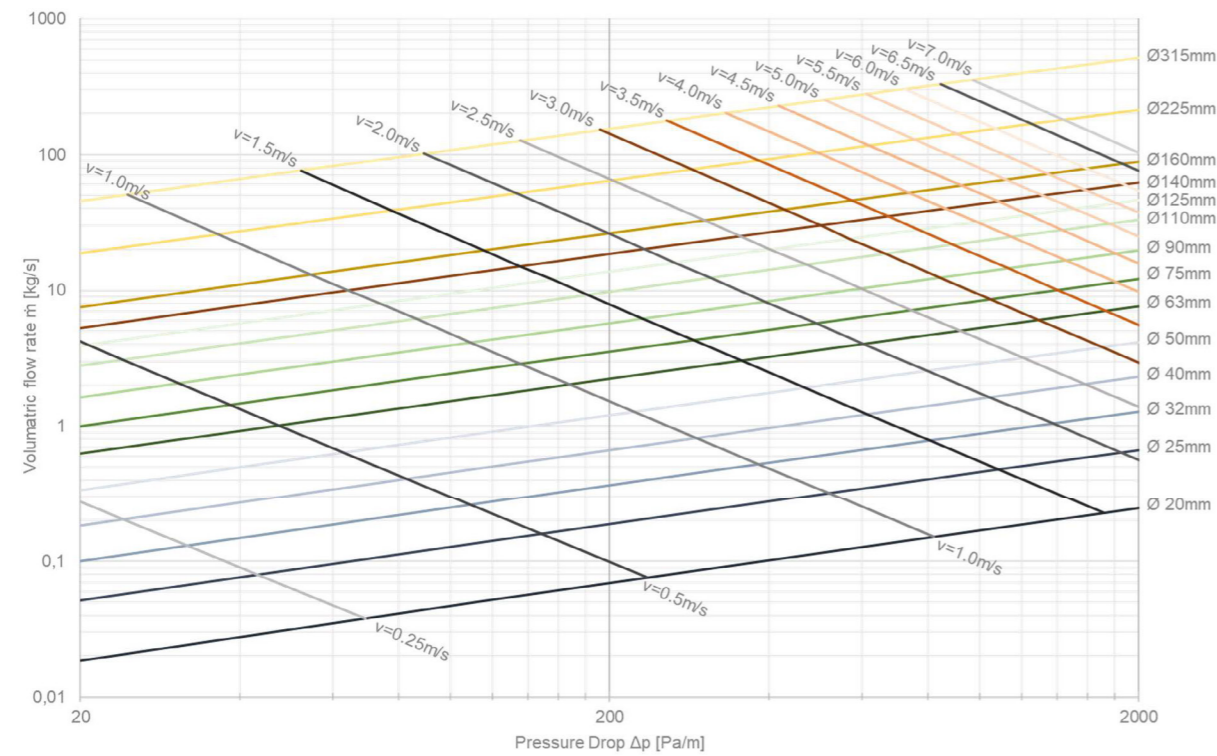


- Up to OD110 20°C/16 bar 95°C/8 bar
- \geq OD125 20°C/10 bar 95°C/5 bar

Flexalen® 600 Pressure drop PB

Determine the pressure drop using Flexalen pipe systems at a flow temperature of 90°C (Flow line). For lower medium temperatures the pressure drop is higher: e.g. for 60°C 10%; for 10°C 20% higher.

For support on a complete district heating network design please contact your Thermaflex partner!



Availability - Domestic Water

Single line						
Product code	Dimension	Service pipe OD x s [mm]	Casing pipe OD [mm]	Weight [kg/m]	min. bending radius [m]	max. length [m]
1000-090025-001	25 / 90	25 x 2.3	90	0.75	0.40	500
1000-090032-001	32 / 90	32 x 2.9	90	0.86	0.40	500
1000-090040-001	40 / 90	40 x 3.7	90	1.00	0.50	500
1000-125040-001	40 / 125	40 x 3.7	125	1.98	0.50	300
1000-090050-001	50 / 90	50 x 4.6	90	1.22	0.50	500
1000-125050-001	50 / 125	50 x 4.6	125	2.08	0.70	300
1000-160050-001	50 / 160	50 x 4.6	160	2.40	0.70	150
1000-125063-001	63 / 125	63 x 5.8	125	2.43	0.80	300
1001-125063-015	63 / 125 SL ¹	63 x 5.8	125	2.43	0.80	6
1000-160063-001	63 / 160	63 x 5.8	160	2.75	0.80	150
1000-125075-001	75 / 125	75 x 6.8	125	3.03	0.80	300
1000-160075-001	75 / 160	75 x 6.8	160	3.03	0.80	150
1001-160075-015	75 / 160 SL ¹	75 x 6.8	160	3.03	0.80	6
1000-160090-001	90 / 160	90 x 8.2	160	3.64	1.00	150
1001-160090-015	90 / 160 SL ¹	90 x 8.2	160	3.64	1.00	6
1000-200110-001	110 / 200	110 x 10.0	200	5.40	1.25	100
1001-200110-015	110 / 200 SL ¹	110 x 10.0	200	5.40	1.25	6
1000-200125-001	125 / 200 ²	125 x 11.4	200	6.38	1.50	80
1001-200125-015	125 / 200 SL ^{1,2}	125 x 11.4	200	6.38	1.50	6

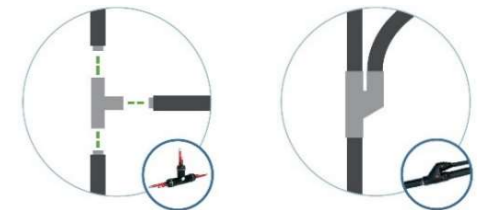
Double line						
Product code	Dimension	Service pipe OD x s [mm]	Casing pipe OD [mm]	Weight [kg/m]	min. bending radius [m]	max. length [m]
1020-125025-001	25 + 25 / 125	25 x 2.3 + 25 x 2.3	125	1.80	0.60	300
1120-125000-001	32 + 25 / 125	32 x 2.9 + 25 x 2.3	125	1.50	0.60	300
1120-160000-001	40 + 25 / 160	40 x 3.7 + 25 x 2.3	160	2.60	0.80	150
1120-160002-001	50 + 32 / 160	50 x 4.6 + 32 x 2.9	160	3.01	0.90	150
1121-200005-001	63 + 32 / 200	63 x 5.8 + 32 x 2.9	200	3.35	1.00	50
1121-200006-001	63 + 40 / 200	63 x 5.8 + 40 x 3.7	200	3.49	1.00	50

■ higher insulation range with increased delivery time

¹ semi-flexible pipe system, straight lengths (available in 6m sticks)

² maximum temperature / pressure rating 95°C / 5 bar

- FlexaLink, prefabricated house connections
- All types of homogenous plastic welded Prefabrications
- Full range of weldable PB fittings
- Compression fitting system
- Full range of accessories and tools



Flexalen® 600 FP

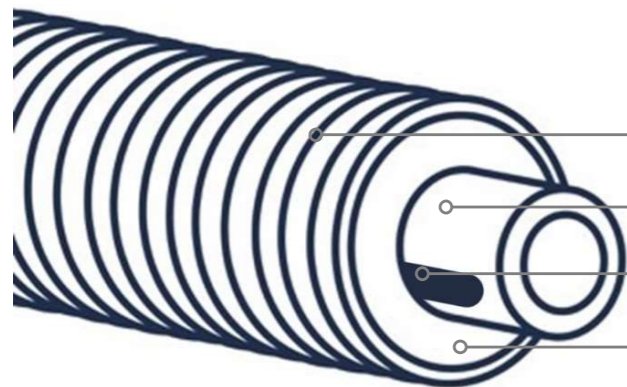
Pre-insulated piping system by Thermaflex®

Extremely flexible and easy to install pre-insulated pipe system with frost protection cable for domestic water applications



Benefits

- Built-in frost protection cable to prevent pipes from freezing
- Safest choice with homogeneous welding, one material, for increased reliability
- Full compatibility with Flexalen® 600 and Flexalen® PU
- Thermaflex service: Support with integrated network design, calculation tools, training and on-site support



Design

- Polyethylene corrugated pipe, PE
Flexibility and mechanical protection
- Polybutene service pipe, PB-H
- Frost protection cable
20W/m @ 10°C
- Polyolefin foam
Closed-cell, CFC-free

Applications

- All domestic hot- and cold-water applications
- Drinking water
- Geothermal water

Technical Properties

Flexalen® 600 FP is a pre-insulated flexible plastic pipe system produced conform the European standard EN15632- 1,3 (DOC) and KIWA system certified as well as third-party controlled according BRL-K17401. The PB service pipe has several drinking water approvals like KTW (DE), WRAS(UK), ATA(NL), ACS (FR) and many more.

PB-H service pipe (EN-ISO 15876)

Max. and continuous service temperature	80°C*
Max. operating pressure	8bar(95°C)

*service temperature limited by max. service temperature of the heating cable!

Thermal Insulation

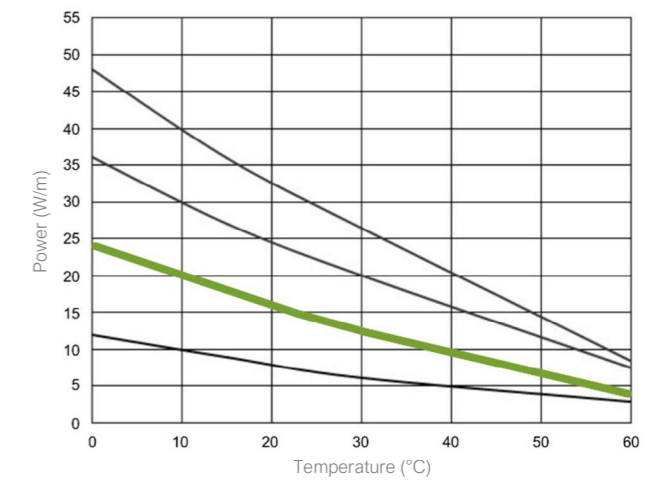
Polyolefin foam
Closed-cell structure, CFC-free
Water vapor diffusion $\mu \geq 3,500$

Frost Protection Cable

Power @ 10°C	20W/m*	
Nominal voltage	230V	
Max. pipe surface temperature	Energized	65°C
	Deenergized	80°C
Max. length	170m	

*power changes depending on the temperature and prevents overheating (see green graph)

Frost Protection Cable Power Change



Availability

Flexalen® 600 FP

Product code	Dimension	Service pipe OD x s [mm]	Jacket pipe OD [mm]	Max. length [m]
1040-090025-001	25 / 90	25 x 2.3	90	500
1040-090032-001	32 / 90	32 x 2.9	90	500
1041-125040-001	40 / 125	40 x 3.7	125	50
1041-125050-001	50 / 125	50 x 4.6	125	50
1041-160063-001	63 / 160	63 x 5.8	160	50

Frost Protection Cable Accessories (required for operation)

Product code	Description
7043-000000-000	Termination & connection set to electricity supply
7043-000100-501	Electronic surface thermostat

Additional accessories available on demand



- All types of homogenous plastic welded Prefabrications
- Full range of weldable PB fittings
- Compression fitting system
- Full range of accessories and tools

Flexalen® PU

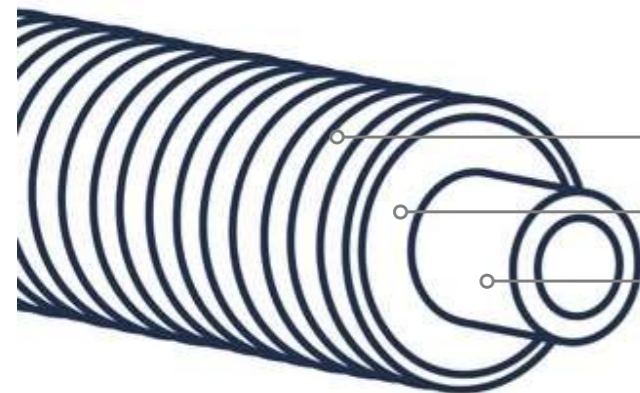
Pre-insulated piping system by Thermaflex®

High performance, flexible pre-insulated plastic system for heating applications



Benefits

- Highest insulation class for plastic pipe systems and perfect fit for low temperature heating networks
- Large network capacity with service pipes up to OD315mm
- Full compatibility with Flexalen® 600: combine highest insulation class of main lines with the most flexible house connection lines
- Safest choice with homogeneous welding and high-pressure rating 95°C/8bar, for increased reliability
- Thermaflex service: Support with integrated network design, calculation tools, training and on-site support



Design

- **LDPE / HDPE Casing pipe**
Flexibility and mechanical protection
- **PUR foam**
Closed-cell, CFC-free
- **Polybutene service pipe, PB-H**
With EVOH layer

Applications

- Local district heating networks
- Biogas / Biomass / Waste heat recovery
- Island networks for Residential, Schools, Hospitals, etc.

Technical Properties

Flexalen® PU is a pre-insulated plastic pipe system consisting of fully flexible and semi-flexible pipes (SL). The flexible pre-insulated pipe system is produced conform to the European standard EN15632-1, 2 (DOC), QB08 certified (CSTB) and KIWA system certified as well as third-party controlled according BRL KOMO 5609-2. The PB service pipes are conform to EN-ISO 15876. The PUR foam and LDPE casing pipe of the semi-flexible pre-insulated pipes (SL) fulfil the functional requirements according EN253.



PB-H service pipe (EN-ISO 15876)

Max. service temperature	95°C
Max. operating pressure	8bar*(95°C)

*depending on the diameter, see Flexalen® PU Pressure rating.

Thermal Insulation

Cyclopentane-based PUR foam
Closed-cell structure, CFC-free
Thermal Conductivity $\lambda \leq 0.022$ W/m·K @ 50°C**

**semi-flexible pipes (SL): Thermal Conductivity ≤ 0.029 W/m·K @ 50°C; both λ_{dec} .

Flexalen® PU Heat losses

Heat loss q [W/m] for one Single line

Flexalen® PU Single line	Operating temperature T of the flow or return line [°C]							
	20°C	30°C	40°C	50°C	60°C	70°C	80°C	90°C
25 / 91	1.03	2.06	3.09	4.12	5.15	6.18	7.20	8.23
32 / 91	1.26	2.53	3.79	5.05	6.32	7.58	8.84	10.10
40 / 111	1.28	2.57	3.85	5.13	6.41	7.70	8.98	10.26
50 / 126	1.41	2.82	4.23	5.64	7.05	8.46	9.87	11.28
63 / 142	1.61	3.21	4.82	6.43	8.04	9.64	11.25	12.86
75 / 162	1.68	3.37	5.05	6.74	8.42	10.11	11.79	13.48
90 / 182	1.83	3.65	5.48	7.30	9.13	10.95	12.78	14.61
110 / 200 SL	2.66	5.33	7.99	10.65	13.31	15.98	18.64	21.30
125 / 200 SL	3.27	6.55	9.82	13.10	16.37	19.64	22.92	26.19
140 / 225 SL	3.26	6.51	9.77	13.03	16.28	19.54	22.80	26.06
160 / 250 SL	3.44	6.87	10.31	13.75	17.18	20.62	24.06	27.50
225 / 315 SL	4.37	8.74	13.10	17.47	21.84	26.21	30.58	34.94
315 / 450 SL	4.22	8.45	12.67	16.89	21.11	25.34	29.56	33.78

Heat loss q [W/m] for one Double line

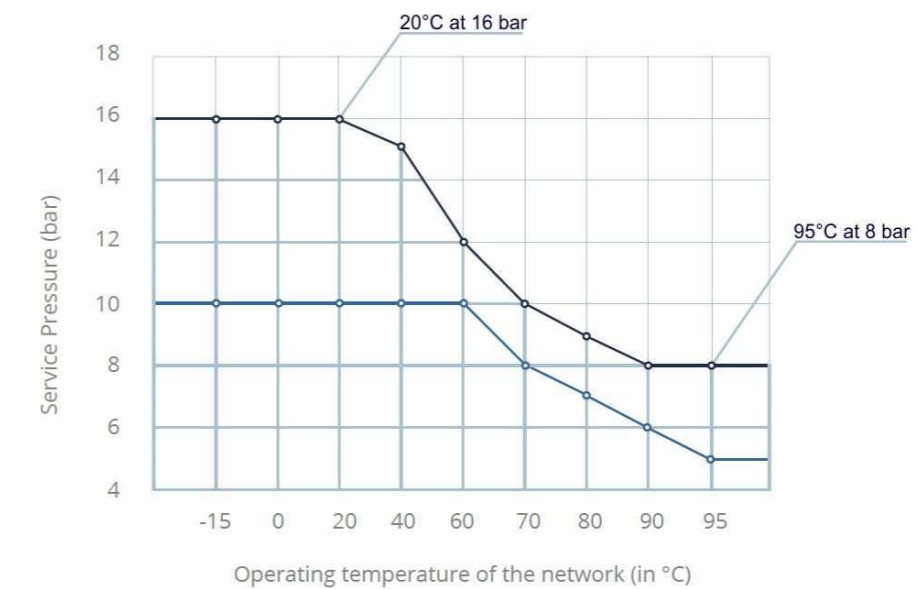
Flexalen® PU Double line	Average operating temperature T of the flow and return line [°C]					
	30°C	40°C	50°C	60°C	70°C	80°C
25 + 25 / 111	2.89	4.33	5.77	7.22	8.66	10.10
32 + 32 / 126	3.23	4.84	6.46	8.07	9.68	11.30
40 + 40 / 142	3.66	5.49	7.33	9.16	10.99	12.82
50 + 50 / 182	3.44	5.15	6.87	8.59	10.31	12.02
63 + 63 / 202	4.05	6.08	8.10	10.13	12.15	14.18
75 + 75 / 202	5.65	8.48	11.31	14.14	16.96	19.79

Calculation parameter

λ_{soil} :	1.00 W/m·K
R soil surface to ambient air:	0.0685 m²·K/W
T_{soil} :	10.0 °C
Soil covering:	0.8 m

The heat loss characteristics are in accordance with the European standard for flexible heating pipes systems EN15632.

Flexalen® PU Pressure rating

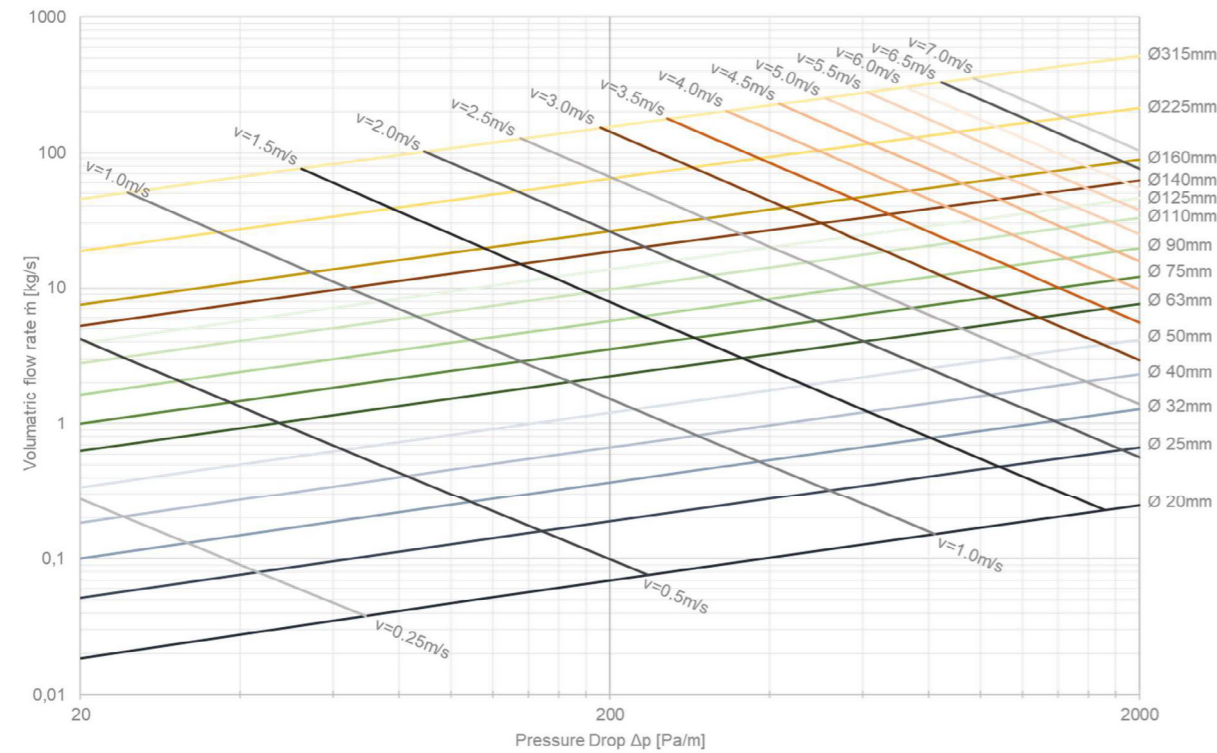


- Up to OD110 20°C/16 bar 95°C/8 bar
- \geq OD125 20°C/10 bar 95°C/5 bar

Flexalen® PU Pressure drop PB

Determine the pressure drop using Flexalen pipe systems at a flow temperature of 90°C (Flow line). For lower medium temperatures the pressure drop is higher: e.g. for 60°C 10%; for 10°C 20% higher.

For support on a complete district heating network design please contact your Thermaflex partner!



Availability

- Single lines on coils, Flexalen PU OD25-90mm
- Single lines in sticks, Flexalen PU SL OD63-315 mm with smooth casing pipe
- Double lines on coils, Flexalen PU OD25-75 mm



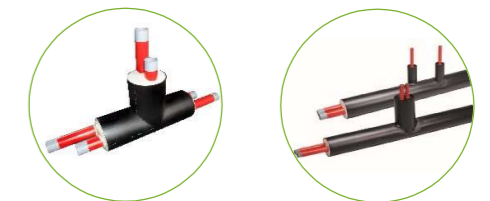
Single line						
Product code	Dimension [mm]	Service pipe OD x s [mm]	Casing pipe OD [mm]	Weight [kg/m]	Min. bending radius [m]	Max. length [m]
1210-091025-001	25 / 91	25 x 2.3	91	1.22	0.55	570
1210-091032-001	32 / 91	32 x 3.0	91	1.30	0.55	570
1210-111040-001	40 / 111	40 x 3.7	111	1.80	0.60	410
1210-126050-001	50 / 126	50 x 4.6	126	2.32	1.00	300
1210-142063-001	63 / 142	63 x 5.8	142	3.00	1.00	225
1921-140063-030	63 / 140 SL ^{1,2}	63 x 5.8	140	3.00	12.00	11.8
1210-162075-001	75 / 162	75 x 6.8	162	3.85	1.10	150
1921-160075-030	75 / 160 SL ^{1,2}	75 x 6.8	160	3.85	12.00	11.8
1210-182090-001	90 / 182	90 x 8.2	182	4.90	1.30	86
1921-180090-030	90 / 180 SL ^{1,2}	90 x 8.2	180	4.90	16.00	11.8
1920-200110-030	110 / 200 SL ¹	110 x 10.0	200	6.30	16.00	11.8
1920-200125-030	125 / 200 SL ¹	125 x 11.4	200	7.40	16.00	11.8
1920-225140-030	140 / 225 SL ¹	140 x 12.7	225	9.00	18.00	11.8
1920-250160-030	160 / 250 SL ¹	160 x 14.6	250	11.70	20.00	11.8
1920-315225-010	225 / 315 SL ¹	225 x 20.5	315	22.00	26.00	5.8
1920-315225-030	225 / 315 SL ¹	225 x 20.5	315	22.00	26.00	11.8
1920-450315-005	315 / 450 SL ¹	315 x 28.6	450	36.00	-	3.0
1920-450315-010	315 / 450 SL ¹	315 x 28.6	450	36.00	-	6.0

Note: OD110-315 without EVOH layer ¹ semi-flexible pipe system, straight lengths (available in sticks) ² on request

Double line						
Product code	Dimension [mm]	Service pipe OD x s [mm]	Casing pipe OD [mm]	Weight [kg/m]	Min. bending radius [m]	Max. length [m]
1230-111025-001	25 + 25 / 111	25 x 2.3	111	1.73	0.60	410
1230-126032-001	32 + 32 / 126	32 x 3.0	126	2.23	1.00	300
1230-142040-001	40 + 40 / 142	40 x 3.7	142	2.85	1.00	225
1230-182050-001	50 + 50 / 182	50 x 4.6	182	4.31	1.30	86
1230-202063-001	63 + 63 / 202	63 x 5.8	202	5.44	1.40	80
1230-202075-001	75 + 75 / 202 ³	75 x 6.8	202	6.27	1.40	80

³ on request and only recommended to use for A-B connections

- Prefabricated house connections
- All types of homogenous plastic welded Prefabrications
- Full range of weldable PB fittings
- Compression fitting system
- Full range of accessories and tools



Flexalen® Multiline

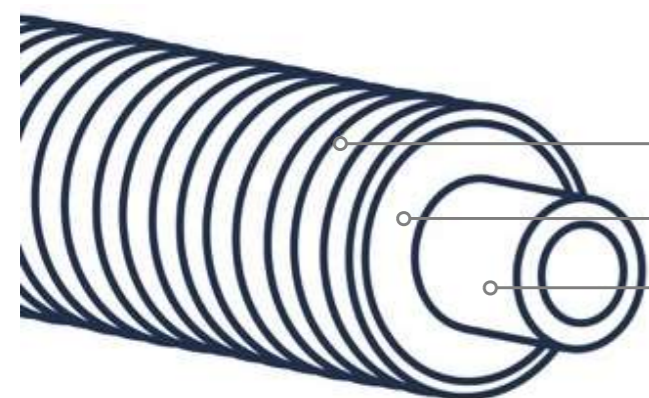
Pre-insulated piping system by Thermaflex®

Extremely flexible and multi-functional for heating, hot water and circulations applications



Benefits

- Flexible and robust jacket pipe with 3 - 4 service pipes, individually combinable
- Safest choice with homogeneous welding, one material, for increased reliability
- Full compatibility with Flexalen® 600
- Thermaflex service: Support with integrated network design, calculation tools, training and on-site support



Design

- **Polyethylene corrugated pipe, PE**
Flexibility and mechanical protection
- **Polyolefin foam**
Closed-cell, CFC-free
- **Polybutene service pipes, PB-1**
With and without oxygen barrier

Applications

- Connecting annex buildings to the heating and water distribution system
- Small size island networks

Technical Properties

PB-1 service pipe (EN-ISO 15876)

Max. service temperature	95°C
Continuous service temperature	80°C
Max. operating pressure	8bar (95°C)

Thermal Insulation

Polyolefin foam
Closed-cell structure, CFC-free
Water vapor diffusion $\mu \geq 3,500$

Availability

Standard assortment

Product code	Dimension ¹	Service pipe OD x s [mm] Heating ²	Service pipe OD x s [mm] Heating ²	Service pipe OD x s [mm] Hot water	Service pipe OD x s [mm] Circulation	Casing pipe OD [mm]	Max. length [m]
1141-160002-003	H25+25 & S25+25 / 160	25 x 2.3	25 x 2.3	25 x 2.3	25 x 2.3	160	50
1141-200001-003	H32+32 & S32+25 / 200	32 x 3.0	32 x 3.0	32 x 2.9	25 x 2.3	200	50
1141-200005-003	H40+40 & S40+25 / 200	40 x 3.7	40 x 3.7	40 x 3.7	25 x 2.3	200	50

¹H=heating, S=hot water/circulation ² with oxygen barrier

Other combinations with 3 or 4 PB service pipes possible on request as defined beneath. Combinations of PB service pipes depend on the number of service pipes and the OD of the casing pipe. For more information ask your local Thermaflex partner.

Possible combinations

PB service pipe OD x s [mm]	x	Casing pipe OD [mm]	→	Combinations				
 Heating  Water	x	 Casing pipe OD [mm]	→	Number of service pipes				
				 1	 2	 3	 4	
50 x 4.6	50 x 4.6	160		32	32	25	25	Max. PB OD
40 x 3.7	40 x 3.7	200		25	25	20	20	Min. PB OD
32 x 3.0	32 x 2.9			50	50	40	32	Max. PB OD
25 x 2.3	25 x 2.3			40	40	32	25	
	20 x 2.8			32	32	25	20	Min. PB OD



- All types of homogenous plastic welded Prefabrications
- Full range of weldable PB fittings
- Compression fitting system
- Full range of accessories and tools

ProtecTube

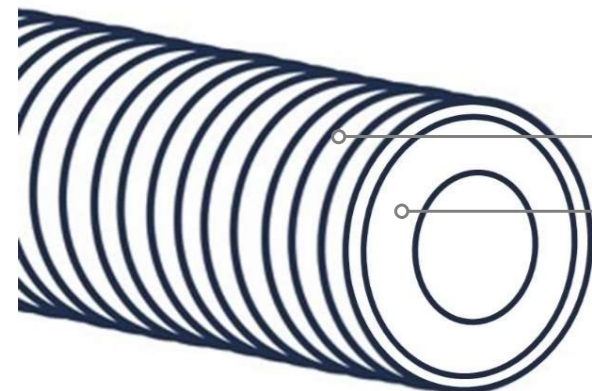
Pre-insulated ducting by Thermaflex®

Universal ducting as thermal and sound insulation as well as mechanical protection for a wide scope of applications



Benefits

- Universal protection of pipes, tubes and cables
- Excellent flexible
- Extremely lightweight
- Robust and stable in form due to corrugated casing pipe
- Outer casing resistant to UV radiation
- Environmentally friendly and fully recyclable – Cradle to Cradle Certified™ Silver



Design

Polyethylene corrugated pipe, PE
Flexibility and mechanical protection

Polyolefin foam
Closed-cell, CFC-free

Applications

- Feed lines for heat pumps
- Empty piping system with thermal insulation
- Mechanical protection for pipes and cables

Availability

Universal insulation duct						
Product code	Dimension	Outer casing OD [mm]	Insulation ID [mm]	Weight [kg/m]	min. bending radius [m]	max. length [m]
1100-090000-000	90	90	40 - 45	0.57	0.30	500
1100-125000-000	125	125	63 - 68	0.91	0.40	300
1100-160000-000	160	160	90 - 95	1.41	0.60	150
1100-200000-000	200	200	110 - 115	1.82	0.80	80

- Wide selection of waterproof endcaps
- Joining technology
- Full range of accessories



Technical Properties

Complete System

Fire classification	SBI Euroclass F according to EN13501
Service temperature range	-15°C to +90°C

Insulation foam

Polyolefin foam
Closed-cell structure, CFC-free



Flexalen® PB Pipes

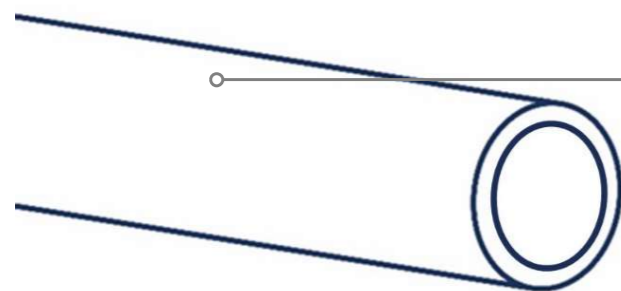
Piping system by Thermaflex®

Flexible polybutene service pipes for sanitary and thermal network solutions



Benefits

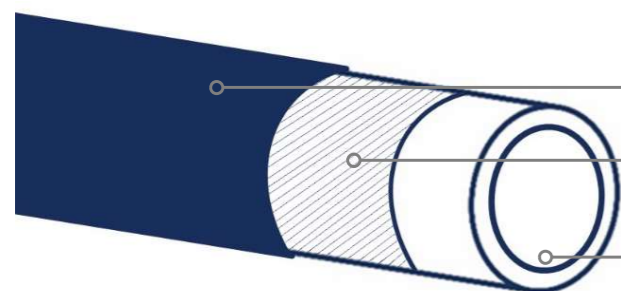
- Long-life performance, high-pressure rating 95°C/8bar and very good acoustic properties
- Ultra-flexibility – small bending radius especially in the small diameters
- Large product range from OD20 - OD315mm
- Multiple connection techniques including homogeneous welded joints
- Best for mechanical fitting systems due to excellent creep behavior
- The only Cradle to Cradle™ certified pipe system in the world



Design PB Grey
Polybutene service pipe, PB-H
without oxygen barrier

Applications

- All domestic hot-, cold water and plumbing applications
- Drinking water
- Geothermal water
- Compressed air



Design PB Red
EVOH layer
oxygen barrier
Adhesive
ensures secure bonding of polybutene to barrier layer
Polybutene service pipe, PB-H

Applications

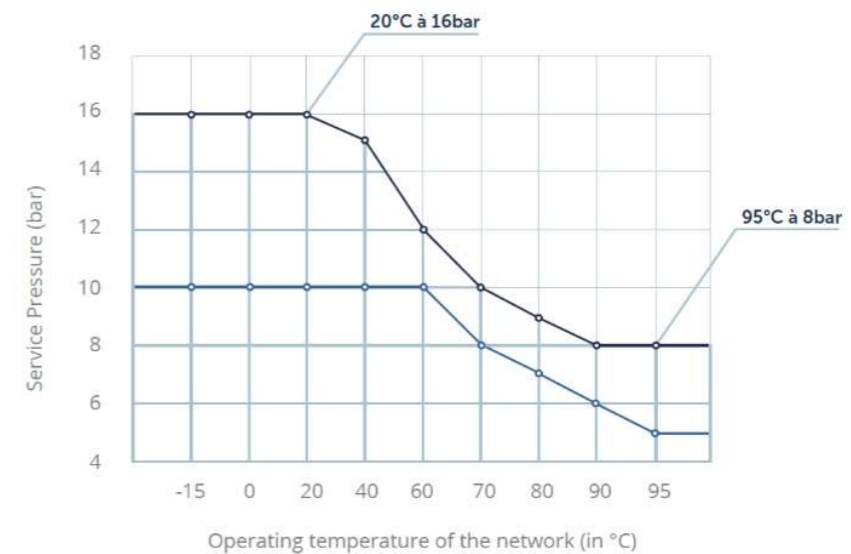
- Heating
- Underfloor heating
- Local district heating and cooling networks

Technical Properties

Flexalen® PB is a Polybutene homopolymer (PB-H) service pipe suitable for cold- and hot water as well as heating applications. The flexible Flexalen® PB service pipes are produced according EN ISO 15876 – 1,2 and third party controlled by KIWA. They also fulfill several national drinking water requirements like WRAS, DVGW / KTW, KIWA / ATA, ACS and many more.

Properties	Units SI	Values	Standard requirement	Testing method
Physical properties				
Melt Flow Rate MRF 190°C/2.16 kg	dg/min	0.4		ISO 1133-1
Density	g/cm ³	0.938		ISO 1183-1
Mechanical properties				
Flexural Elastic Modulus	MPa	450		ISO 178
Tensile strength at yield	MPa	17		ISO8986-2
Tensile strength at break	MPa	30		ISO8986-2
Tensile elongation at Break	%	200		ISO8986-2
Thermal properties				
Service Temperature	°C	-15 to 95	Thermaflex declaration	-
Thermal conductivity (20°C)	W/(m·K)	0.19		ASTM C177
Coefficient of linear thermal expansion	mm/(m·K)	0.13		ASTM D696
Melt point	°C	131		DSC
Glass transition temperature	°C	-16		DMTA
Fire classification	-	B2	DIN4102-1	DIN50050-1(1/88)
Other properties				
Color	-	grey		EN 13469
Wet abrasion	%	1		Sand Slurry Test, 23°C, 100h
Surface roughness of pipe	mm	0.007		
Oxygen tightness (PB-H service pipes 25-90 with EVOH, 110 - 315 without)	mg/m ² d @ 80°C	< 1.8	EN15632-3:2010+A1:2014	ISO 17455

Flexalen® PB Pipes Pressure rating



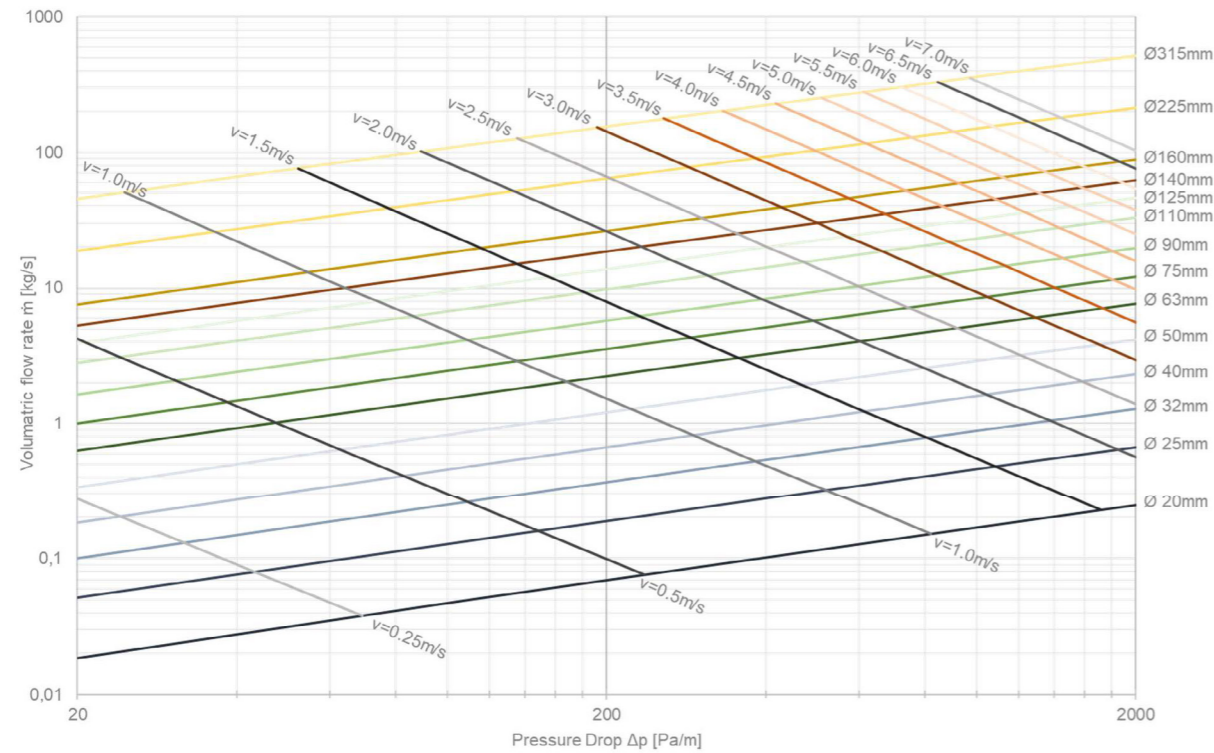
- Up to OD110 20°C/16 bar 95°C/8 bar
- ≥ OD125 20°C/10 bar 95°C/5 bar



Flexalen® PB Pipes Pressure drop

Determine the pressure drop using Flexalen pipe systems at a flow temperature of 90°C (Flow line). For a medium temperature of 60°C the pressure drop is around 10% higher. For a medium temperature of 10°C the pressure drop is around 20% higher.

For support on a complete district heating network design please contact your Thermaflex partner!



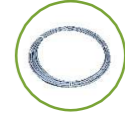
Joining techniques

- Polyfusion socket welding
- Electrofusion socket connections
- Butt fusion welding
- Mechanical fittings



Availability

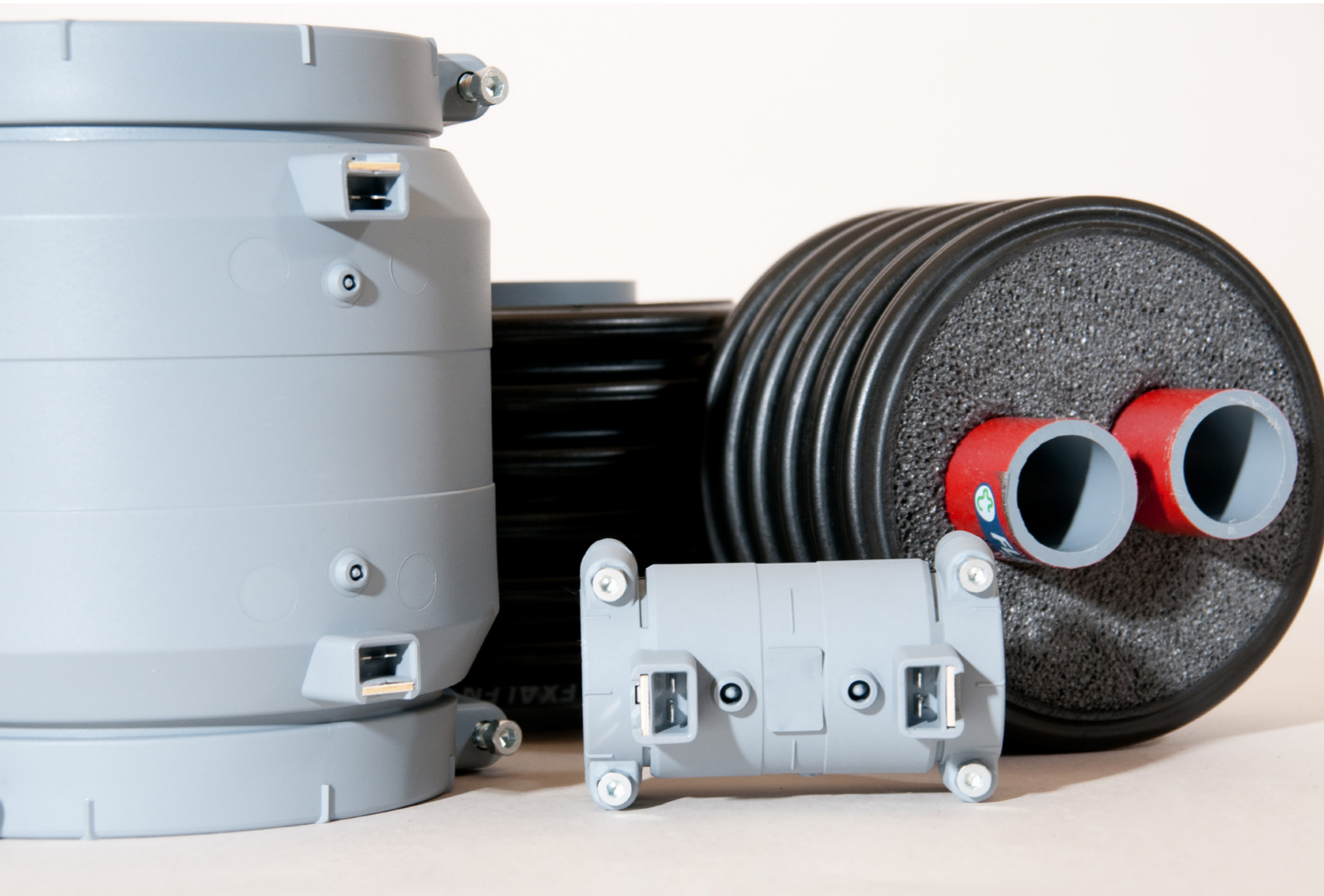
- Sticks, PB Pipes in straight length, uncoiled
- PB Pipe Package, 1.5m sticks in different sales units
- Coils with inner diameter of 1.5m



Without EVOH layer - Sticks, PB Pipe Packages and Coils									
Dimension	OD x s [mm]	SDR class	Weight [kg/m]	min. bending radius [mm]	Product version - stick			Product version - coil	
					Length [m]	Sales unit [pcs]	Product code	Length [m]	Product code
20	20 x 2.8	7.4	0.14	200	5.8	1	1301-020000-010	102	1302-020000-102
								400	1302-020000-400
25	25 x 2.3	11	0.15	250	1.5	4	1301-025000-002	102	1302-025000-102
					6.0	1	1301-025000-015	300	1302-025000-300
32	32 x 2.9	11	0.26	320	1.5	4	1301-032000-002	102	1302-032000-102
					6.0	1	1301-032000-015	300	1302-032000-300
40	40 x 3.7	11	0.4	400	1.5	3	1301-040000-002	102	1302-040000-102
					6.0	1	1301-040000-015		
50	50 x 4.6	11	0.62	500	1.5	3	1301-050000-002	102	1302-050000-102
					6.0	1	1301-050000-015		
63	63 x 5.8	11	0.98	630	1.5	2	1301-063000-002	102	1302-063000-102
					6.0	1	1301-063000-015		
75	75 x 6.8	11	1.39	750	1.5	2	1301-075000-002	102	1302-075000-102
					6.0	1	1301-075000-015		
90	90 x 8.2	11	1.98	900	1.5	2	1301-090000-002		
					6.0	1	1301-090000-015		
110	110 x 10.0	11	2.95	1100	1.5	2	1301-110000-002		
					6.0	1	1301-110000-015		
					11.8	1	1301-110000-030		
125	125 x 11.4	11	3.82	1250	6.0	1	1301-125000-015		
					11.8	1	1301-125000-030		
140	140 x 12.7	11	4.77	-	6.0	1	1301-140000-015		
					11.8	1	1301-140000-030		
160	160 x 14.6	11	6.27	-	6.0	1	1301-160000-015		
					11.8	1	1301-160000-030		
225	225 x 20.5	11	12.38	-	5.8	1	1301-225000-010		
					11.8	1	1301-225000-030		
315	315 x 28.6	11	24.16	-	3.0	1	1301-315000-005		

With EVOH layer - Sticks and Coils									
Dimension	OD x s [mm]	SDR class	Weight [kg/m]	min. bending radius [mm]	Product version - stick			Product version - coil	
					Length [m]	Sales unit [pcs]	Product code	Length [m]	Product code
25	25 x 2.3	11	0.15	250	6.0	1	1311-025000-015	102	1312-025000-102
								300	1312-025000-300
32	32 x 2.9	11	0.26	320	6.0	1	1311-032000-015	102	1312-032000-102
								300	1312-032000-300
32	32 x 3.0	11	0.26	320					
40	40 x 3.7	11	0.4	400	6.0	1	1311-040000-015	102	1312-040000-102
50	50 x 4.6	11	0.62	500	6.0	1	1311-050000-015	102	1312-050000-102
63	63 x 5.8	11	0.98	630	6.0	1	1311-063000-015	102	1312-063000-102
75	75 x 6.8	11	1.39	750	6.0	1	1311-075000-015	102	1312-075000-102
90	90 x 8.2	11	1.98	900	6.0	1	1311-090000-015		

Flexalen® Accessories, Prefabs & Tools



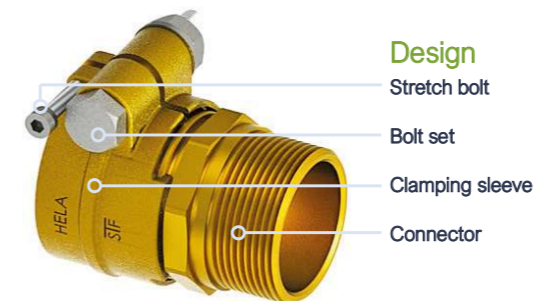
A Total Solution

The accurate selection of accessories and tools is perfectly adapted to Flexalen® pre-insulated pipe systems to guarantee a fast and reliable network installation

Flexalen® Compression fitting system

Pre-insulated piping system by Thermaflex®

Mechanical fitting system for Flexalen®PB service pipes



Benefits

- Fast and easy installation without special tools
- Safest choice for underground and accessible area installation at high-pressure rating 95°C/8bar
- System certification BRL 5609-2¹ and QB08 (Avis technique Flexalen) certified
- Safe and durable connection without rubber sealings

Technical Properties

Compression fitting system for Flexalen® PB service pipes for potable water, heating and district heating applications. The Compression fitting system is included in the CSTB/QB08 and KIWA Flexalen® system certifications and third-party controlled according BRL KOMO 5609-2 and Avis technique Flexalen.

Properties	
Max. operating pressure	8bar*(95°C)
Standard dimension ratio (Service pipe)	SDR11
Pipe series (Service pipe)	S5
Suitable for service pipes with and without EVOH layer	
Suitable to connect PB to PEX service pipes	

*depending on diameter

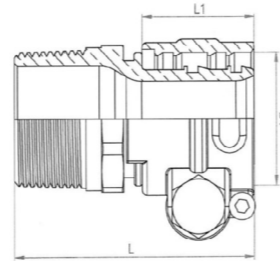
Material	
Material fitting body / Connector*	CW625N, CB770S
Weld adapter	S355
Clamp sleeve*	CW625N and CB770S
Bolt set (Tightening bolt)	Stainless steel 316
Stretch bolt	Zinc Zn

Availability

Compression fitting, Male thread

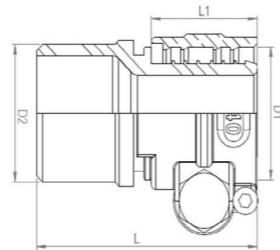
Product code	Service pipe OD x s [mm]	Transition MT (BSP) [mm]	L [mm]	L1 [mm]	Weight [mm]
1730-020000-481*	20 x 2.8	3/4"	61	25.5	0.19
1730-025000-481	25 x 2.3	3/4"	61	26.0	0.19
1730-032000-481	32 x 3.0	1"	68	29.0	0.32
1730-040000-481	40 x 3.7	5/4"	77	36.0	0.55
1730-050000-481	50 x 4.6	6/4"	79	36.0	0.64
1730-063000-481	63 x 5.8	2"	97	46.0	1.13
1730-075000-481	75 x 6.8	2 1/2"	107	53.0	1.68
1730-090000-481	90 x 8.2	3"	119	58.0	2.59
1730-110000-481	110 x 10.0	4"	135	70.0	4.05
1730-125000-481	125 x 11.4	5"	144	69.0	5.44
1730-140000-481	140 x 12.7	5"	137	70.0	6.71
1730-160000-481	160 x 14.6	6"	145	70.0	7.64

*SDR7.4 / S3.2



Compression fitting, Weld adapter

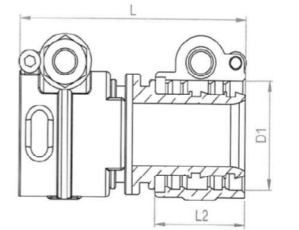
Product code	Service pipe OD x s [mm]	Transition NPS (DN) [mm]	L [mm]	L1 [mm]	Weight [mm]
1730-025000-480	25 x 2.3	DN20	61	26	0.18
1730-032000-480	32 x 3.0	DN25	63	29	0.28
1730-040000-480	40 x 3.7	DN32	75	36	0.50
1730-050000-480	50 x 4.6	DN40	84	36	0.64
1730-063000-480	63 x 5.8	DN50	88	46	0.97
1730-075000-480	75 x 6.8	DN65	101	53	1.57
1730-090000-480	90 x 8.2	DN80	108	58	2.29
1730-110000-480	110 x 10.0	DN100	114	70	3.53
1730-125000-480	125 x 11.4	DN100	120	69	4.34
1730-140000-480	140 x 12.7	DN125	120	70	5.60
1730-160000-480	160 x 14.6	DN150	145	70	7.23



Availability

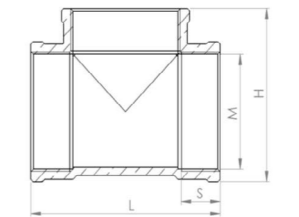
Compression Coupler

Product code	Service pipe OD x s [mm]	Service pipe OD x s [mm]	L [mm]	L2 [mm]	Weight [mm]
1730-025025-480	25 x 2.3	25 x 2.3	68	26	0.27
1730-032032-480	32 x 3.0	32 x 3.0	75	29	0.44
1730-040040-480	40 x 3.7	40 x 3.7	90	36	0.82
1730-050050-480	50 x 4.6	50 x 4.6	90	36	0.99
1730-063063-480	63 x 5.8	63 x 5.8	110	46	1.69
1730-075075-480	75 x 6.8	75 x 6.8	128	53	2.64
1730-090090-480	90 x 8.2	90 x 8.2	144	58	4.01
1730-110110-480	110 x 10.0	110 x 10.0	168	70	6.35
1730-125125-480	125 x 11.4	125 x 11.4	167	69	8.10
1730-140140-480	140 x 12.7	140 x 12.7	169	70	10.17
1730-160160-480	160 x 14.6	160 x 14.6	169	70	11.64



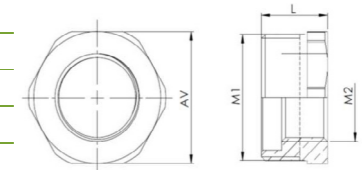
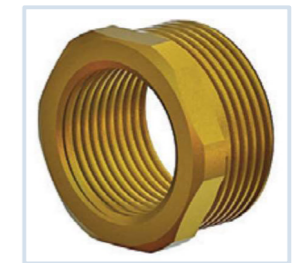
Brass T-piece female for Compression fitting, Male Thread

Product code	M Thread (ISO7)	L [mm]	H [mm]	Weight [mm]
1730-025000-484	3/4"	50	45	0.18
1730-032000-484	1"	60	51	0.28
1730-040000-484	5/4"	72	61	0.44
1730-050000-484	6/4"	84	71	0.64
1730-063000-484	2"	116	92	0.90
1730-075000-484	2 1/2"	130	109	1.82
1730-090000-484	3"	145	123	2.34
1730-110000-484	4"	181	156	3.82
1730-125000-484	5"	238	198	7.00



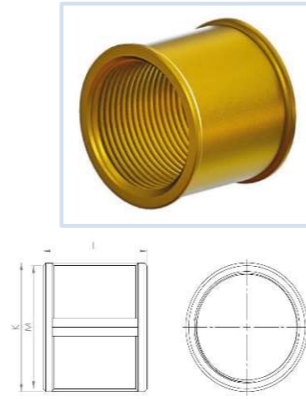
Brass Reducer Male / Female for Compression fitting, Male Thread

Product code	M1 Thread (ISO7)	M2 Thread (ISO7)	L [mm]	AV [mm]	Weight [mm]
1730-032025-485	1"	3/4"	22	34	0.18
1730-040032-485	5/4"	1"	24	43	0.18
1730-050040-485	6/4"	5/4"	26	50	0.28
1730-063032-485	2"	1"	32	62	0.27
1730-063040-485	2"	5/4"	32	62	0.50
1730-063050-485	2"	6/4"	32	62	0.49
1730-075050-485	2 1/2"	6/4"	37	78	0.64
1730-075063-485	2 1/2"	2"	37	78	0.63
1730-090063-485	3"	2"	40	91	0.96
1730-090075-485	3"	2 1/2"	40	91	0.64
1730-110063-485	4"	2"	48	115	2.17
1730-110075-485	4"	2 1/2"	48	115	1.76
1730-110090-485	4"	3"	48	115	1.48
1730-125090-485	5"	3"	57	130	3.12
1730-125110-485	5"	4"	57	130	2.04

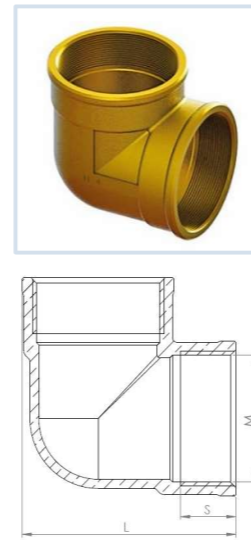


Availability

Brass Socket Female for Compression fitting, Male Thread				
Product code	M Thread (ISO7)	L [mm]	K [mm]	Weight [mm]
1730-025025-486	3/4"	37	39	0.15
1730-032032-486	1"	37	39	0.15
1730-040040-486	5/4"	45	50	0.22
1730-050050-486	6/4"	53	56	0.31
1730-063063-486	2"	57	68	0.44



Brass Elbow Female for Compression fitting, Male Thread			
Product code	M Thread (ISO7)	L [mm]	Weight [mm]
1730-025000-483	3/4"	60	0.20
1730-032000-483	1"	61	0.26
1730-040000-483	5/4"	69	0.36
1730-050000-483	6/4"	76	0.52
1730-063000-483	2"	92	0.73
1730-075000-483	2 1/2"	109	1.47
1730-090000-483	3"	124	1.95
1730-110000-483	4"	157	3.28
1730-125000-483	5"	198	5.29



Brass Threaded Flange



- For making flange connections in combination with Compression Fittings SDR11 or other Brass Components
- Can be used for all Flexalen Pipe Systems
- Suitable for Heating-, Sanitary- and Drinking Water Applications
- Note: Counter flange, sealing and screws must be provided by the customer

Logistics charges: Depending on weight.

Article Code	Description For Service Pipe(s) OD mm / DN	Sales unit	Weight [kg/Pcs.]	Availability
1730-032000-488	Flange Adaptor DN25 with IT 1"	1 Pcs.	1,1	●
1730-040000-488	Flange Adaptor DN32 with IT 1 1/4"	1 Pcs.	1,5	●
1730-050000-488	Flange Adaptor DN40 with IT 1 1/2"	1 Pcs.	2,0	●
1730-063000-488	Flange Adaptor DN50 with IT 2"	1 Pcs.	2,0	●
1730-075000-488	Flange Adaptor DN65 with IT 2 1/2"	1 Pcs.	3,6	●
1730-090000-488	Flange Adaptor DN80 with IT 3"	1 Pcs.	4,4	●
1730-110000-488	Flange Adaptor DN100 with IT 4"	1 Pcs.	4,2	●

PB-Welding Flange Set



- Contains: Flanged sleeve with welded pipe end, Loose flange (DIN 2501, PN 10) and Elastomeric seal
- For OD 125, 160 and 225 mm: Welding collar for butt welding instead of the collar bushing
- Can be used for all Flexalen Pipe Systems
- Note: Additional electrofusion sockets are required for connection to PB pipes. For OD 140 the welding flange is available on request. In addition, the counter flange and screws must be provided by the customer

Logistics charges: Depending on weight.

Article Code	Description For Service Pipe(s) OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1737-063000-008	PB welding flange, weld end (63)	1 Pcs.	1,1	●
1737-075000-008	PB welding flange, weld end (75)	1 Pcs.	1,7	●
1737-090000-008	PB welding flange, weld end (90)	1 Pcs.	1,9	●
1737-110000-008	PB welding flange, weld end (110)	1 Pcs.	2,4	●
1737-125000-008	PB welding flange, weld end (125)	1 Pcs.	2,7	●
1737-160000-008	PB welding flange, weld end (160)	1 Pcs.	4,4	●
1737-225000-010	PB welding flange, weld end (225)	1 Pcs.	6,8	●

Availability: Inventory goods for deliveries in customary quantities, Increased delivery times / minimum order quantities required (please consult us)

Pipe Clamps Flexalen 600

Single / Double Pipe Clamp



- For restraining the carrier pipes at structurally necessary support points
- Including anchoring plates, threaded pipes and bends
- Can be used for all Flexalen single and twin pipe systems; required for Flexalen 600 pipe systems

Logistics charges: Depending on weight.

Article Code	Description For Service Pipe(s) OD mm / DN	Sales unit	Weight [kg/Pcs.]	Availability
1791-025020-002	Single / Double Clamp 1 / 2x20-25 mm / DN15-20	1 Pcs.	1,5	●
1791-025025-003	Single / Double Clamp 1 / 2x25 mm / DN20	1 Pcs.	1,5	●
1791-032032-003	Single / Double Clamp 1 / 2x32 mm / DN25	1 Pcs.	1,6	●
1791-040040-003	Single / Double Clamp 1 / 2x40 mm / DN32	1 Pcs.	1,6	●
1791-050050-003	Single / Double Clamp 1 / 2x50 mm / DN40	1 Pcs.	1,7	●
1791-063063-003	Single / Double Clamp 1 / 2x63 mm / DN50	1 Pcs.	1,8	●

Reinforced Single Pipe Clamp



- For restraining the carrier pipes at structurally necessary support points
- Including anchoring plates, threaded pipes and bends
- Reinforced version with additional polybutene inlay shells
- Can be used for all Flexalen single pipe systems; required for Flexalen 600 pipe systems

Logistics charges: Depending on weight

Article Code	Description For Service Pipe(s) OD mm / DN	Sales unit	Weight [kg/Pcs.]	Availability
1791-075075-001	Single Clamp 1x75 mm / DN65	1 Pcs.	6,2	●
1791-090090-001	Single Clamp 1x90 mm / DN80	1 Pcs.	6,6	●
1791-110110-001	Single Clamp 1x110 mm / DN100	1 Pcs.	7,2	●
1791-125125-001	Single Clamp 1x125 mm / DN100	1 Pcs.	7,3	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Wall Penetration Sealings

Annular Space Sealing for Pressing Water



- Installation with core bore or casing pipe, one seal per wall duct
- Suitable for up to 3 bar water pressure and high groundwater levels
- Material: EPDM, metal parts made of V2A Steel
- Protected position in masonry
- Easy and quick installation
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For Outer Casing OD mm / Drill Hole Ø mm	Sales unit	Weight [kg/Pcs.]	Availability
1760-090150-000	Annular space sealing for outer casing OD90-91 / Hole 150	1 Pcs.	1,6	●
1760-110200-000	Annular space sealing for outer casing OD110-111 / Hole 200	1 Pcs.	3,0	●
1760-125200-000	Annular space sealing for outer casing OD125-126 / Hole 200	1 Pcs.	2,6	●
1760-140200-000	Annular space sealing for outer casing OD140-142 / Hole 200	1 Pcs.	2,2	●
1760-160250-000	Annular space sealing for outer casing OD160-162 / Hole 250	1 Pcs.	4,1	●
1760-180250-000	Annular space sealing for outer casing OD180-182 / Hole 250	1 Pcs.	3,3	●
1760-200250-000	Annular space sealing for outer casing OD200-202 / Hole 250	1 Pcs.	2,4	●
1760-225300-000	Annular space sealing for outer casing OD225 / Hole 300	1 Pcs.	4,3	●
1760-250350-000	Annular space sealing for outer casing OD250 / Hole 350	1 Pcs.	6,5	●
1760-315400-000	Annular space sealing for outer casing OD315 / Hole 400	1 Pcs.	6,6	●
1760-450600-000	Annular space sealing for outer casing OD450 / Hole 600	1 Pcs.	17,1	●

Labyrinth Sealing

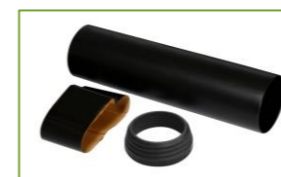


- High-quality rubber ring with special profile
- Installation in concrete construction with wall opening; seal ring gap with mortar / concrete
- Suitable for up to 0.5 bar water pressure
- Easy and quick installation
- Can be used for Flexalen PU and PU SL pipe systems

Logistics charges: Depending on weight

Article Code	Description For Outer Casing OD mm	Sales unit	Weight [kg/Pcs.]	Availability
2761-091000-000	Labyrinth sealing for outer casing OD91	1 Pcs.	0,3	●
2761-111000-000	Labyrinth sealing for outer casing OD111	1 Pcs.	0,3	●
2761-126000-000	Labyrinth sealing for outer casing OD126	1 Pcs.	0,4	●
2761-142000-000	Labyrinth sealing for outer casing OD142	1 Pcs.	0,4	●
2761-162000-000	Labyrinth sealing for outer casing OD162	1 Pcs.	0,5	●
2761-182000-000	Labyrinth sealing for outer casing OD182	1 Pcs.	0,5	●
2761-202000-000	Labyrinth sealing for outer casing OD202	1 Pcs.	0,5	●
2761-225000-000	Labyrinth sealing for outer casing OD225	1 Pcs.	0,5	●
2761-250000-000	Labyrinth sealing for outer casing OD250	1 Pcs.	0,6	●
2761-315000-000	Labyrinth sealing for outer casing OD315	1 Pcs.	0,6	●
2761-450000-000	Labyrinth sealing for outer casing OD450	1 Pcs.	0,6	●

Sealing kit for Wall Penetrations



- Set contains: 1x PE sleeve (length approx. 600mm), 1x shrink sleeve and 1x labyrinth seal
- High-quality rubber ring with special profile
- Installation in concrete construction with wall opening; seal ring gap with mortar / concrete
- Suitable for up to 0.5 bar water pressure
- Easy and quick installation
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For Outer Casing OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1749-090000-000	Sealing kit for outer casing OD90-91	1 Set	0,9	●
1749-125000-000	Sealing kit for outer casing OD125-126	1 Set	1,2	●
1749-160000-000	Sealing kit for outer casing OD160-162	1 Set	1,2	●
1749-200000-000	Sealing kit for outer casing OD200-202	1 Set	1,3	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

End Caps

Rubber End Caps for Flexalen 600 Single Pipe Systems



- Waterproof rubber sleeve for sealing between service pipe and corrugated casing pipe
- Can be used for Flexalen 600 Heating & Sanitary single pipe systems, Flexalen 600 SL and 600 FP

Logistics charges: Depending on weight

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Weight [kg/Pcs.]	Availability
1741-090050-020	End cap 1xOD20-50 (Outer Casing 90)	1 Pcs.	0,1	●
1741-125075-032	End cap 1xOD32-75 (Outer Casing 125)	1 Pcs.	0,2	●
1741-160090-050	End cap 1xOD50-90 (Outer Casing 160)	1 Pcs.	0,2	●
1741-200125-110	End cap 1xOD110-125 (Outer Casing 200)	1 Pcs.	0,2	●

Rubber End Caps for Flexalen 600 Twin Pipe Systems



- Waterproof rubber sleeve for sealing between service pipes and corrugated casing pipe
- Can be used for Flexalen 600 Heating & Sanitary double pipe systems

Logistics charges: Depending on weight

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Weight [kg/Pcs.]	Availability
1742-125032-020	End cap 2xOD20-32 (Outer Casing 125)	1 Pcs.	0,2	●
1742-160050-032	End cap 2xOD32-50 (Outer Casing 160)	1 Pcs.	0,2	●
1742-200063-063	End cap 2xOD63 (Outer Casing 200)	1 Pcs.	0,2	●

Rubber End Caps for Flexalen Multiline Systems



- Waterproof rubber sleeve for sealing between service pipes and corrugated casing pipe
- Can be used for Flexalen Multiline

Logistics charges: Depending on weight

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Weight [kg/Pcs.]	Availability
1744-160000-000	End cap Multiline (Outer Casing 160)	1 Pcs.	0,2	●
1744-200000-000	End cap Multiline (Outer Casing 200)	1 Pcs.	0,3	●

Heat Shrink End Caps for Flexalen PU & PU SL Single Pipe Systems



- Waterproof end cap for sealing between service pipe and (corrugated) casing pipe
- For house entries and all free pipe ends
- Can be used for Flexalen PU and Flexalen PU SL Single pipe systems

Logistics charges: Depending on weight

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Weight [kg/Pcs.]	Availability
1745-025025-000	Shrink end cap 1xOD25 (Outer Casing 91)	1 Pcs.	0,2	●
1745-032032-000	Shrink end cap 1xOD32 (Outer Casing 91)	1 Pcs.	0,2	●
1745-040050-000	Shrink end cap 1xOD40-50 (Outer Casing 111-126)	1 Pcs.	0,2	●
1745-063075-000	Shrink end cap 1xOD63-75 (Outer Casing 142-162)	1 Pcs.	0,2	●
1745-090125-000	Shrink end cap 1xOD90-125 (Outer Casing 182-202)	1 Pcs.	0,2	●
1745-140140-000	Shrink end cap 1xOD140 (Outer Casing 225)	1 Pcs.	0,2	●
1745-160160-000	Shrink end cap 1xOD160 (Outer Casing 250)	1 Pcs.	0,2	●
1745-225225-000	Shrink end cap 1xOD225 (Outer Casing 315)	1 Pcs.	0,4	●
1745-315315-000	Shrink end cap 1xOD315 (Outer Casing 450)	1 Pcs.	0,5	●

Heat Shrink End Caps for Flexalen PU Twin Pipe Systems



- Waterproof end cap for sealing between service pipes and corrugated casing pipe
- For house entries and all free pipe ends
- Can be used for Flexalen PU Twin pipe systems

Logistics charges: Depending on weight

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Weight [kg/Pcs.]	Availability
1745-025025-200	Shrink end cap 2xOD25 (Outer Casing 111)	1 Pcs.	0,2	●
1745-032040-200	Shrink end cap 2xOD32-40 (Outer Casing 126-142)	1 Pcs.	0,2	●
1745-050050-200	Shrink end cap 2xOD50 (Outer Casing 182)	1 Pcs.	0,2	●
1745-063075-200	Shrink end cap 2xOD63-75 (Outer Casing 202)	1 Pcs.	0,2	●

Polybutene-Electrofusion Fittings

PB Straight Socket



- For a homogeneous service pipe connection
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For PB-Service Pipe(s) OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1700-020000-000	PB-Electrofusion socket fitting - Straight - OD20	1 Pcs.	0,1	●
1700-025000-000	PB-Electrofusion socket fitting - Straight - OD25	1 Pcs.	0,1	●
1700-032000-000	PB-Electrofusion socket fitting - Straight - OD32	1 Pcs.	0,1	●
1700-040000-000	PB-Electrofusion socket fitting - Straight - OD40	1 Pcs.	0,1	●
1700-050000-000	PB-Electrofusion socket fitting - Straight - OD50	1 Pcs.	0,1	●
1700-063000-000	PB-Electrofusion socket fitting - Straight - OD63	1 Pcs.	0,2	●
1700-075000-000	PB-Electrofusion socket fitting - Straight - OD75	1 Pcs.	0,3	●
1700-090000-000	PB-Electrofusion socket fitting - Straight - OD90	1 Pcs.	0,5	●
1700-110000-000	PB-Electrofusion socket fitting - Straight - OD110	1 Pcs.	0,8	●
1700-125000-000	PB-Electrofusion socket fitting - Straight - OD125	1 Pcs.	1,5	●
1700-160000-000	PB-Electrofusion socket fitting - Straight - OD160	1 Pcs.	2,0	●
1700-225000-000	PB-Electrofusion socket fitting - Straight - OD225	1 Pcs.	4,5	●

PB Elbow



- For a homogeneous service pipe connection
- 45° and 90° elbow
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description für PB-Service Pipe(s) OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1703-020090-000	PB-Electrofusion socket fitting - Elbow 90° - OD20	1 Pcs.	0,1	●
1703-025045-000	PB-Electrofusion socket fitting - Elbow 45° - OD25	1 Pcs.	0,1	●
1703-025090-000	PB-Electrofusion socket fitting - Elbow 90° - OD25	1 Pcs.	0,1	●
1703-032045-000	PB-Electrofusion socket fitting - Elbow 45° - OD32	1 Pcs.	0,1	●
1703-032090-000	PB-Electrofusion socket fitting - Elbow 90° - OD32	1 Pcs.	0,1	●
1703-040045-000	PB-Electrofusion socket fitting - Elbow 45° - OD40	1 Pcs.	0,1	●
1703-040090-000	PB-Electrofusion socket fitting - Elbow 90° - OD40	1 Pcs.	0,1	●
1703-050045-000	PB-Electrofusion socket fitting - Elbow 45° - OD50	1 Pcs.	0,1	●
1703-050090-000	PB-Electrofusion socket fitting - Elbow 90° - OD50	1 Pcs.	0,2	●
1703-063045-000	PB-Electrofusion socket fitting - Elbow 45° - OD63	1 Pcs.	0,3	●
1703-063090-000	PB-Electrofusion socket fitting - Elbow 90° - OD63	1 Pcs.	0,3	●
1703-075045-000	PB-Electrofusion socket fitting - Elbow 45° - OD75	1 Pcs.	0,5	●
1703-075090-000	PB-Electrofusion socket fitting - Elbow 90° - OD75	1 Pcs.	0,5	●
1703-090045-000	PB-Electrofusion socket fitting - Elbow 45° - OD90	1 Pcs.	0,7	●
1703-090090-000	PB-Electrofusion socket fitting - Elbow 90° - OD90	1 Pcs.	0,8	●
1703-110045-000	PB-Electrofusion socket fitting - Elbow 45° - OD110	1 Pcs.	1,1	●
1703-110090-000	PB-Electrofusion socket fitting - Elbow 90° - OD110	1 Pcs.	1,3	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

PB T-Piece



- For a homogeneous service pipe connection
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For PB-Service Pipe(s) OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1701-020020-020	PB-Electrofusion socket fitting - T-Piece - OD20	1 Pcs.	0,1	●
1701-025025-025	PB-Electrofusion socket fitting - T-Piece - OD25	1 Pcs.	0,1	●
1701-032025-025	PB-Electrofusion socket fitting - T-Piece - OD32/OD25/OD25	1 Pcs.	0,1	●
1701-032025-032	PB-Electrofusion socket fitting - T-Piece - OD32/OD25/OD32	1 Pcs.	0,1	●
1701-032032-032	PB-Electrofusion socket fitting - T-Piece - OD32	1 Pcs.	0,1	●
1701-040025-040	PB-Electrofusion socket fitting - T-Piece - OD40/OD25/OD40	1 Pcs.	0,1	●
1701-040032-040	PB-Electrofusion socket fitting - T-Piece - OD40/OD32/OD40	1 Pcs.	0,2	●
1701-040040-040	PB-Electrofusion socket fitting - T-Piece - OD40	1 Pcs.	0,2	●
1701-050025-050	PB-Electrofusion socket fitting - T-Piece - OD50/OD25/OD50	1 Pcs.	0,3	●
1701-050032-050	PB-Electrofusion socket fitting - T-Piece - OD50/OD32/OD50	1 Pcs.	0,4	●
1701-050050-050	PB-Electrofusion socket fitting - T-Piece - OD50	1 Pcs.	0,3	●
1701-063025-063	PB-Electrofusion socket fitting - T-Piece - OD63/OD25/OD63	1 Pcs.	0,4	●
1701-063040-063	PB-Electrofusion socket fitting - T-Piece - OD63/OD40/OD63	1 Pcs.	0,4	●
1701-063063-063	PB-Electrofusion socket fitting - T-Piece - OD63	1 Pcs.	0,5	●
1701-075075-075	PB-Electrofusion socket fitting - T-Piece - OD75	1 Pcs.	0,7	●
1701-090090-090	PB-Electrofusion socket fitting - T-Piece - OD90	1 Pcs.	0,9	●
1701-110110-110	PB-Electrofusion socket fitting - T-Piece - OD110	1 Pcs.	1,9	●

PB Reduction



- For a homogeneous service pipe connection
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For PB-Service Pipe(s) OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1702-025020-000	PB-Electrofusion socket fitting - Reduction - OD25/20	1 Pcs.	0,1	●
1702-032025-000	PB-Electrofusion socket fitting - Reduction - OD32/25	1 Pcs.	0,1	●
1702-040025-000	PB-Electrofusion socket fitting - Reduction - OD40/25	1 Pcs.	0,1	●
1702-040032-000	PB-Electrofusion socket fitting - Reduction - OD40/32	1 Pcs.	0,1	●
1702-050025-000	PB-Electrofusion socket fitting - Reduction - OD50/25	1 Pcs.	0,1	●
1702-050032-000	PB-Electrofusion socket fitting - Reduction - OD50/32	1 Pcs.	0,1	●
1702-050040-000	PB-Electrofusion socket fitting - Reduction - OD50/40	1 Pcs.	0,1	●
1702-063025-000	PB-Electrofusion socket fitting - Reduction - OD63/25	1 Pcs.	0,1	●
1702-063032-000	PB-Electrofusion socket fitting - Reduction - OD63/32	1 Pcs.	0,1	●
1702-063040-000	PB-Electrofusion socket fitting - Reduction - OD63/40	1 Pcs.	0,1	●
1702-063050-000	PB-Electrofusion socket fitting - Reduction - OD63/50	1 Pcs.	0,1	●
1702-075025-001	PB-Electrofusion socket fitting - Reduction - OD75/25	1 Pcs.	0,2	●
1702-075032-001	PB-Electrofusion socket fitting - Reduction - OD75/32	1 Pcs.	0,2	●
1702-075040-001	PB-Electrofusion socket fitting - Reduction - OD75/40	1 Pcs.	0,2	●
1702-075050-001	PB-Electrofusion socket fitting - Reduction - OD75/50	1 Pcs.	0,2	●
1702-075063-000	PB-Electrofusion socket fitting - Reduction - OD75/63	1 Pcs.	0,2	●
1702-090025-001	PB-Electrofusion socket fitting - Reduction - OD90/25	1 Pcs.	0,3	●
1702-090032-001	PB-Electrofusion socket fitting - Reduction - OD90/32	1 Pcs.	0,3	●
1702-090040-001	PB-Electrofusion socket fitting - Reduction - OD90/40	1 Pcs.	0,3	●
1702-090050-001	PB-Electrofusion socket fitting - Reduction - OD90/50	1 Pcs.	0,3	●
1702-090063-000	PB-Electrofusion socket fitting - Reduction - OD90/63	1 Pcs.	0,3	●
1702-090075-000	PB-Electrofusion socket fitting - Reduction - OD90/75	1 Pcs.	0,4	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

PB Reduction



- For a homogeneous service pipe connection
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For PB-Service Pipe(s) OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1702-110025-001	PB-Electrofusio socket fitting - Reduction - OD110/25	1 Pcs.	0,4	●
1702-110032-001	PB-Electrofusio socket fitting - Reduction - OD110/32	1 Pcs.	0,4	●
1702-110040-001	PB-Electrofusio socket fitting - Reduction - OD110/40	1 Pcs.	0,4	●
1702-110050-001	PB-Electrofusio socket fitting - Reduction - OD110/50	1 Pcs.	0,4	●
1702-110063-000	PB-Electrofusio socket fitting - Reduction - OD110/63	1 Pcs.	0,4	●
1702-110075-000	PB-Electrofusio socket fitting - Reduction - OD110/75	1 Pcs.	0,5	●
1702-110090-000	PB-Electrofusio socket fitting - Reduction - OD110/90	1 Pcs.	0,6	●

PB Transition - Union Male Thread



- Electrofusion fitting with male thread connection for connecting onward pipelines
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For PB-Service Pipe(s) OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1738-020000-002	PB-Electrofusio socket fitting - PB/Steel OD20 / ½"	1 Pcs.	0,2	●
1738-025000-002	PB-Electrofusio socket fitting - PB/Steel OD25 / ¾"	1 Pcs.	0,3	●
1738-032000-002	PB-Electrofusio socket fitting - PB/Steel OD32 / 1"	1 Pcs.	0,5	●
1738-040000-002	PB-Electrofusio socket fitting - PB/Steel OD40 / 1 ¼"	1 Pcs.	0,7	●
1738-050000-002	PB-Electrofusio socket fitting - PB/Steel OD50 / 1 ½"	1 Pcs.	0,8	●
1738-063000-002	PB-Electrofusio socket fitting - PB/Steel OD63 / 2"	1 Pcs.	1,2	●

PB Transition - Union Female Thread



- Electrofusion fitting with female thread connection for connecting onward pipelines
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For PB-Service Pipe(s) OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1738-020000-003	PB-Electrofusio socket fitting - PB/Steel OD20 / ½"	1 Pcs.	0,2	●
1738-025000-003	PB-Electrofusio socket fitting - PB/Steel OD25 / ¾"	1 Pcs.	0,3	●
1738-032000-003	PB-Electrofusio socket fitting - PB/Steel OD32 / 1"	1 Pcs.	0,4	●
1738-040000-003	PB-Electrofusio socket fitting - PB/Steel OD40 / 1 ¼"	1 Pcs.	0,6	●
1738-050000-003	PB-Electrofusio socket fitting - PB/Steel OD50 / 1 ½"	1 Pcs.	0,7	●
1738-063000-003	PB-Electrofusio socket fitting - PB/Steel OD63 / 2"	1 Pcs.	1,1	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

PB Gate Valve



- For a homogeneous service pipe connection
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For PB-Service Pipe(s) OD mm	Sales unit	Price	Weight [kg/Pcs.]	Availability
1704-020000-000	Gate valve with PB-Electrofusio socket fitting OD20	1 Pcs.	€ 95,98	0,4	●
1704-025000-000	Gate valve with PB-Electrofusio socket fitting OD25	1 Pcs.	€ 95,35	0,4	●
1704-032000-000	Gate valve with PB-Electrofusio socket fitting OD32	1 Pcs.	€ 98,66	0,4	●
1704-040000-000	Gate valve with PB-Electrofusio socket fitting OD40	1 Pcs.	€ 147,58	1,1	●
1704-050000-000	Gate valve with PB-Electrofusio socket fitting OD50	1 Pcs.	€ 171,99	1,3	●
1704-063000-000	Gate valve with PB-Electrofusio socket fitting OD63	1 Pcs.	€ 226,60	1,6	●

PB End Cap



- Electrofusion End termination for polybutene pipe
- Can be used for all Flexalen pipe systems

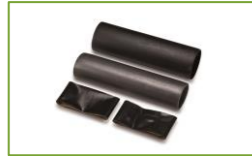
Logistics charges: Depending on weight

Article Code	Description For PB-Service Pipe(s) OD mm	Sales unit	Price	Weight [kg/Pcs.]	Availability
1705-020000-000	PB-Electrofusio socket fitting - End Cap - OD20	1 Pcs.	€ 16,72	0,1	●
1705-025000-000	PB-Electrofusio socket fitting - End Cap - OD25	1 Pcs.	€ 18,05	0,1	●
1705-032000-000	PB-Electrofusio socket fitting - End Cap - OD32	1 Pcs.	€ 21,52	0,1	●
1705-040000-000	PB-Electrofusio socket fitting - End Cap - OD40	1 Pcs.	€ 25,86	0,1	●
1705-050000-000	PB-Electrofusio socket fitting - End Cap - OD50	1 Pcs.	€ 38,58	0,2	●
1705-063000-000	PB-Electrofusio socket fitting - End Cap - OD63	1 Pcs.	€ 58,75	0,3	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Post-Insulation Sets

Post-Insulation Set PO



- Post-insulation set for post-insulation of pipe connections
- Set containing: Heat-shrinkable PE sleeve, PE insulation material, 2 Shrink sleeves; Straight and Reduced version
- Can be used for Flexalen 600 Heating & Sanitary, 600 SL and 600 FP pipe systems

Logistics charges: Depending on weight

Post-Insulation Set PO Straight

Article Code	Description For Outer Casing OD mm	Sales unit	Price	Weight [kg/Pcs.]	Availability
1746-090075-000	Post-Insulation Set PO - Straight - Outer Casing OD75-90	1 Set	€ 47,32	1,0	●
1746-125125-000	Post-Insulation Set PO - Straight - Outer Casing OD125	1 Set	€ 58,89	1,4	●
1746-160160-000	Post-Insulation Set PO - Straight - Outer Casing OD160	1 Set	€ 71,86	1,8	●
1746-200200-000	Post-Insulation Set PO - Straight - Outer Casing OD200	1 Set	€ 99,47	2,7	●

Post-Insulation Set PO Reduced

Article Code	Description für Outer Casing OD mm	Sales unit	Price	Weight [kg/Pcs.]	Availability
1747-125090-000	Post-Insulation Set PO - Reduced - Outer Casing OD125/90	1 Set	€ 104,73	1,8	●
1747-160090-000	Post-Insulation Set PO - Reduced - Outer Casing OD160/90	1 Set	€ 189,97	1,8	●
1747-160125-000	Post-Insulation Set PO - Reduced - Outer Casing OD160/125	1 Set	€ 126,50	1,8	●
1747-200125-000	Post-Insulation Set PO - Reduced - Outer Casing OD200/125	1 Set	€ 231,70	1,8	●
1747-200160-000	Post-Insulation Set PO - Reduced - Outer Casing OD200/160	1 Set	€ 160,20	1,8	●

Post-Insulation Set PU



- Post-insulation set for post-insulation of pipe connections
- Set containing: Heat-shrinkable PE sleeve, 3 Shrink sleeves, 2c PUR foam, one vent plug, one welding plug, Straight and Reduced version
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Post-Insulation Set PU Straight

Article Code	Description For Outer Casing OD mm	Sales unit	Price	Weight [kg/Pcs.]	Availability
1748-090090-000	Post-Insulation Set PU - Straight - Outer Casing OD90-91	1 Set	€ 87,04	1,5	●
1748-110110-000	Post-Insulation Set PU - Straight - Outer Casing OD110-111	1 Set	€ 95,42	1,9	●
1748-125125-000	Post-Insulation Set PU - Straight - Outer Casing OD125-126	1 Set	€ 99,15	2,2	●
1748-140140-000	Post-Insulation Set PU - Straight - Outer Casing OD140-142	1 Set	€ 105,35	2,6	●
1748-160160-000	Post-Insulation Set PU - Straight - Outer Casing OD160-162	1 Set	€ 114,68	3,2	●
1748-180180-000	Post-Insulation Set PU - Straight - Outer Casing OD180-182	1 Set	€ 127,21	3,6	●
1748-200200-000	Post-Insulation Set PU - Straight - Outer Casing OD200-202	1 Set	€ 152,18	4,4	●
1748-225225-000	Post-Insulation Set PU - Straight - Outer Casing OD225	1 Set	€ 129,60	4,8	●
1748-250250-000	Post-Insulation Set PU - Straight - Outer Casing OD250	1 Set	€ 174,22	5,6	●
1748-315315-000	Post-Insulation Set PU - Straight - Outer Casing OD315	1 Set	€ 225,64	8,3	●
1748-450450-000	Post-Insulation Set PU - Straight - Outer Casing OD450	1 Set	€ 413,73	16,6	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Post-Insulation Set PU



- Post-insulation set for post-insulation of pipe connections
- Set containing: Heat-shrinkable PE sleeve, 3 Shrink sleeves, 2c PUR foam, one vent plug, one welding plug, Straight and Reduced version
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Post-Insulation Set PU Reduced

Article Code	Description For Outer Casing OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1750-110090-000	Post-Insulation Set PU - Reduced - Outer Casing OD110-111/90	1 Set	2,1	●
1750-125090-000	Post-Insulation Set PU - Reduced - Outer Casing OD125-126/90	1 Set	2,1	●
1750-125110-000	Post-Insulation Set PU - Reduced - Outer Casing OD125-126/110	1 Set	2,1	●
1750-140090-000	Post-Insulation Set PU - Reduced - Outer Casing OD140-142/90	1 Set	2,4	●
1750-140110-000	Post-Insulation Set PU - Reduced - Outer Casing OD140-142/110	1 Set	2,4	●
1750-140125-000	Post-Insulation Set PU - Reduced - Outer Casing OD140-142/125	1 Set	2,6	●
1750-160090-000	Post-Insulation Set PU - Reduced - Outer Casing OD160-162/90	1 Set	2,6	●
1750-160110-000	Post-Insulation Set PU - Reduced - Outer Casing OD160-162/110	1 Set	2,9	●
1750-160125-000	Post-Insulation Set PU - Reduced - Outer Casing OD160-162/125	1 Set	2,9	●
1750-160140-000	Post-Insulation Set PU - Reduced - Outer Casing OD160-162/140	1 Set	3,2	●
1750-180090-000	Post-Insulation Set PU - Reduced - Outer Casing OD180-182/90	1 Set	3,6	●
1750-180110-000	Post-Insulation Set PU - Reduced - Outer Casing OD180-182/110	1 Set	3,8	●
1750-180125-000	Post-Insulation Set PU - Reduced - Outer Casing OD180-182/125	1 Set	3,8	●
1750-180140-000	Post-Insulation Set PU - Reduced - Outer Casing OD180-182/140	1 Set	3,9	●
1750-180160-000	Post-Insulation Set PU - Reduced - Outer Casing OD180-182/160	1 Set	3,9	●
1750-200090-000	Post-Insulation Set PU - Reduced - Outer Casing OD200-202/90	1 Set	4,0	●
1750-200110-000	Post-Insulation Set PU - Reduced - Outer Casing OD200-202/110	1 Set	4,1	●
1750-200125-000	Post-Insulation Set PU - Reduced - Outer Casing OD200-202/125	1 Set	4,2	●
1750-200140-000	Post-Insulation Set PU - Reduced - Outer Casing OD200-202/140	1 Set	4,2	●
1750-200160-000	Post-Insulation Set PU - Reduced - Outer Casing OD200-202/160	1 Set	4,4	●
1750-200180-000	Post-Insulation Set PU - Reduced - Outer Casing OD200-202/180	1 Set	4,4	●

Post-Insulation End Cap



- Post Insulation Set for Pipe end Terminations
- Set containing: Shrinkable sliding sleeve closed on one side (Blind connection) and 1 heat shrink sleeve
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For Outer Casing OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1792-090000-000	Post-Insulation End Cap Set - OD90	1 Set	1,0	●
1792-110000-000	Post-Insulation End Cap Set - OD110	1 Set	1,0	●
1792-125000-000	Post-Insulation End Cap Set - OD125	1 Set	1,0	●
1792-140000-000	Post-Insulation End Cap Set - OD140	1 Set	1,0	●
1792-160000-000	Post-Insulation End Cap Set - OD160	1 Set	1,2	●
1792-180000-000	Post-Insulation End Cap Set - OD180	1 Set	1,5	●
1792-200000-000	Post-Insulation End Cap Set - OD200	1 Set	2,2	●
1792-225000-000	Post-Insulation End Cap Set - OD225	1 Set	2,8	●
1792-250000-000	Post-Insulation End Cap Set - OD250	1 Set	3,0	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Post-Insulation Kit



- Post-insulation set for T / L -pieces
- Set containing: 2 T- / L- piece half shell set, 1 structural adhesive 310ml tube, Set of bolts, nuts and washer, 1 heat adhesive sealing patch, PU 2k foam insulation incl. instruction, 1 ventilation plug and instruction leaflet
- For Flexalen® 600 Single Pipes OD40 - OD63 and Twin Pipes 2xOD25 - 2xOD50
- For insulation of PB-welding fittings or Flexalen® System Compression fittings
- For OD125 / 160 / 200 mm outer casing pipes

Logistics charges: Depending on weight

Article Code	Description für Outer Casing OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1799-125200-001	FLEXALEN 600 Post-Insulation Set T-Piece OD125-200	1 Pcs.	21,6	●
1799-125200-101	FLEXALEN 600 Post-Insulation Set L-Piece OD125-200	1 Pcs.	17,0	●

House Entry Bends



- The house entry bend is supplied as a set with 2 shrink sleeves each for sealing the transfer bend ends
- Defined position and easy 90° deflection
- Suitable for a wide range of installation situations
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For Outer Casing OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1762-125000-000	House entry bend Outer Casing OD125 (Bends: OD 160 / DI 150)	1 Set	5,5	●
1762-160000-000	House entry bend Outer Casing OD160 (Bends: OD 200 / DI 192)	1 Set	7,3	●

Shrink Sleeves

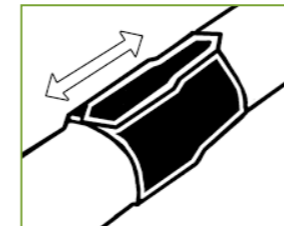


- For waterproof connection or repair of the outer casing
- Width approx. 15 cm
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For Outer Casing OD mm	Shrinking Range [mm]	Sales unit	Weight [kg/Pcs.]	Availability
1743-090090-000	Shrink Sleeve - OD90	115-80	1 Pcs.	0,1	●
1743-110110-000	Shrink Sleeve - OD110	130-90	1 Pcs.	0,1	●
1743-125125-000	Shrink Sleeve - OD125	170-110	1 Pcs.	0,1	●
1743-160160-000	Shrink Sleeve - OD160	190-125	1 Pcs.	0,1	●
1743-160160-901	Shrink Sleeve - OD160 1175L	210-135	1 Pcs.	0,2	●
1743-225200-000	Shrink Sleeve - OD225/OD200	260-165	1 Pcs.	0,2	●
1743-250250-000	Shrink Sleeve - OD250	290-185	1 Pcs.	0,2	●
1743-315315-000	Shrink Sleeve - OD315	370-235	1 Pcs.	0,5	●

Outer Casing Repair Set



- Set contains: Heat shrink sleeve, Sealing flap (Roll)
- For subsequent, watertight repair of the outer casing
- Width approx. 60 cm
- Can be used for all Flexalen pipe systems

Logistics charges: Depending on weight

Article Code	Description For Outer Casing OD mm	Sales unit	Weight [kg/Pcs.]	Availability
1743-090090-100	Outer casing repair set - OD90	1 Pcs.	0,2	●
1743-125125-100	Outer casing repair set - OD125	1 Pcs.	0,2	●
1743-160160-100	Outer casing repair set - OD160	1 Pcs.	0,3	●
1743-200200-100	Outer casing repair set - OD200	1 Pcs.	0,3	●

Warning Tape



- Color: yellow, with trilingual print (English, French, German)

Logistics charges: Depending on weight

Article Code	Description	Sales unit	Weight [kg/Pcs.]	Availability
1799-000000-002	Route warning tape, yellow, 100 m Roll	1 Roll	0,6	●

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Pre-Insulated Prefabricated Parts

Pre-Insulated Elbow 90° Single Pipe



- Factory manufactured prefabricated pre-insulated parts
- Note: For installation, additional (electrofusion / mechanical) fittings, end caps and post insulation sets are required
- Elbow legs: 1,0m x 1,5m

Logistics charges: for each prefab, 0,3 loading meters are calculated

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Loading meter	Availability
1400-090025-800	Pre-Insulated Elbow 90° Single Pipe 1xOD25 (90) - Grey	1 Pcs.	0,3	●
1400-090032-800	Pre-Insulated Elbow 90° Single Pipe 1xOD32 (90) - Grey	1 Pcs.	0,3	●
1400-090040-800	Pre-Insulated Elbow 90° Single Pipe 1xOD40 (90) - Grey	1 Pcs.	0,3	●
1400-090050-800	Pre-Insulated Elbow 90° Single Pipe 1xOD50 (90) - Grey	1 Pcs.	0,3	●
1400-125040-800	Pre-Insulated Elbow 90° Single Pipe 1xOD40 (125) - Grey	1 Pcs.	0,3	●
1400-125050-800	Pre-Insulated Elbow 90° Single Pipe 1xOD50 (125) - Grey	1 Pcs.	0,3	●
1400-125063-800	Pre-Insulated Elbow 90° Single Pipe 1xOD63 (125) - Grey	1 Pcs.	0,3	●
1400-125075-800	Pre-Insulated Elbow 90° Single Pipe 1xOD75 (125) - Grey	1 Pcs.	0,3	●
1400-160050-800	Pre-Insulated Elbow 90° Single Pipe 1xOD50 (160) - Grey	1 Pcs.	0,3	●
1400-160075-800	Pre-Insulated Elbow 90° Single Pipe 1xOD75 (160) - Grey	1 Pcs.	0,3	●
1400-160090-800	Pre-Insulated Elbow 90° Single Pipe 1xOD90 (160) - Grey	1 Pcs.	0,3	●
1400-200110-800	Pre-Insulated Elbow 90° Single Pipe 1xOD110 (200) - Grey	1 Pcs.	0,3	●
1400-200125-800	Pre-Insulated Elbow 90° Single Pipe 1xOD125 (200) - Grey	1 Pcs.	0,3	●
1400-225140-800	Pre-Insulated Elbow 90° Single Pipe 1xOD140 (225) - Grey	1 Pcs.	0,3	●
1400-250160-800	Pre-Insulated Elbow 90° Single Pipe 1xOD160 (250) - Grey	1 Pcs.	0,3	●
1400-315225-800	Pre-Insulated Elbow 90° Single Pipe 1xOD225 (315) - Grey	1 Pcs.	0,3	●
1400-450315-800	Pre-Insulated Elbow 90° Single Pipe 1xOD315 (450) - Grey	1 Pcs.	0,3	●

1402-090025-800	Pre-Insulated Elbow 90° Single Pipe 1xOD25 (90) - Red	1 Pcs.	0,3	●
1402-090032-800	Pre-Insulated Elbow 90° Single Pipe 1xOD32 (90) - Red	1 Pcs.	0,3	●
1402-090040-800	Pre-Insulated Elbow 90° Single Pipe 1xOD40 (90) - Red	1 Pcs.	0,3	●
1402-110040-800	Pre-Insulated Elbow 90° Single Pipe 1xOD40 (110) - Red	1 Pcs.	0,3	●
1402-125040-800	Pre-Insulated Elbow 90° Single Pipe 1xOD40 (125) - Red	1 Pcs.	0,3	●
1402-125050-800	Pre-Insulated Elbow 90° Single Pipe 1xOD50 (125) - Red	1 Pcs.	0,3	●
1402-125063-800	Pre-Insulated Elbow 90° Single Pipe 1xOD63 (125) - Red	1 Pcs.	0,3	●
1402-140063-800	Pre-Insulated Elbow 90° Single Pipe 1xOD63 (140) - Red	1 Pcs.	0,3	●
1402-160050-800	Pre-Insulated Elbow 90° Single Pipe 1xOD50 (160) - Red	1 Pcs.	0,3	●
1402-160063-800	Pre-Insulated Elbow 90° Single Pipe 1xOD63 (160) - Red	1 Pcs.	0,3	●
1402-160075-800	Pre-Insulated Elbow 90° Single Pipe 1xOD75 (160) - Red	1 Pcs.	0,3	●
1402-160090-800	Pre-Insulated Elbow 90° Single Pipe 1xOD90 (160) - Red	1 Pcs.	0,3	●
1402-180090-800	Pre-Insulated Elbow 90° Single Pipe 1xOD90 (180) - Red	1 Pcs.	0,3	●

Other options are available on demand

Service pipe OD [mm]	Elbow 90° Single Pipe Outer Casing											
	90	110	125	140	160	180	200	225	250	315	450	
25	G / R											
32	G / R											
40	G / R	R	G / R									
50	G		G / R		G / R							
63			G / R	R	R							
75			G		G / R							
90					G / R	R						
110							G					
125							G					
140								G				
160									G			
225										G		
315											G	

G = Grey / R = Red

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Pre-Insulated Elbow 90° Twin Pipe



- Factory manufactured prefabricated pre-insulated parts
- Note: For installation, additional (electrofusion / mechanical) fittings, end caps and post insulation sets are required
- Elbow legs: 1,0m x 1,5m

Logistics charges: for each prefab, 0,3 loading meters are calculated

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Loading meter	Availability
1404-125025-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD25 (125) - Grey	1 Pcs.	0,3	●
1404-125032-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD32 (125) - Grey	1 Pcs.	0,3	●
1404-160040-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD40 (160) - Grey	1 Pcs.	0,3	●
1404-160050-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD50 (160) - Grey	1 Pcs.	0,3	●
1404-200063-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD63 (200) - Grey	1 Pcs.	0,3	●
1406-110025-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD25 (110) - Red	1 Pcs.	0,3	●
1406-125025-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD25 (125) - Red	1 Pcs.	0,3	●
1406-125032-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD32 (125) - Red	1 Pcs.	0,3	●
1406-160032-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD32 (160) - Red	1 Pcs.	0,3	●
1406-140040-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD40 (140) - Red	1 Pcs.	0,3	●
1406-160040-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD40 (160) - Red	1 Pcs.	0,3	●
1406-160050-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD50 (160) - Red	1 Pcs.	0,3	●
1406-180050-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD50 (180) - Red	1 Pcs.	0,3	●
1406-200063-800	Pre-Insulated Elbow 90° Twin Pipe 2xOD63 (200) - Red	1 Pcs.	0,3	●

Other options are available on demand

Service pipe OD [mm]	Elbow 90° Twin Pipe Outer Casing											
	90	110	125	140	160	180	200	225	250	315	450	
25+25		R	G / R									
32+32			G / R		R							
40+40				R	G / R							
50+50					G	R						
63+63							G / R					

G = Grey / R = Red

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Pre-Insulated Elbow 45° Single Pipe



- Factory manufactured prefabricated pre-insulated parts
- Note: For installation, additional (electrofusion / mechanical) fittings, end caps and post insulation sets are required
- Elbow legs: 1,0m x 1,0m

Logistics charges: for each prefab, 0,3 loading meters are calculated

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Loading meter	Availability
1401-200110-800	Pre-Insulated Elbow 45° Single Pipe 1xOD110 (200) - Grey	1 Pcs.	0,3	●
1401-200125-800	Pre-Insulated Elbow 45° Single Pipe 1xOD125 (200) - Grey	1 Pcs.	0,3	●
1401-225140-800	Pre-Insulated Elbow 45° Single Pipe 1xOD140 (225) - Grey	1 Pcs.	0,3	●
1401-250160-800	Pre-Insulated Elbow 45° Single Pipe 1xOD160 (250) - Grey	1 Pcs.	0,3	●
1401-315225-800	Pre-Insulated Elbow 45° Single Pipe 1xOD225 (315) - Grey	1 Pcs.	0,3	●
1401-450315-800	Pre-Insulated Elbow 45° Single Pipe 1xOD315 (450) - Grey	1 Pcs.	0,3	●

Other options are available on demand

Service pipe OD [mm]	Elbow 45° Single Pipe										
	Outer Casing										
	90	110	125	140	160	180	200	225	250	315	450
110							G				
125							G				
140								G			
160									G		
225										G	
315											G

G = Grey / R = Red

Pre-Insulated T-Piece Straight Single Pipe



- Factory manufactured prefabricated pre-insulated parts
- Note: For installation, additional (electrofusion / mechanical) fittings, end caps and post insulation sets are required

Logistics charges: for each prefab, 0,3 loading meters are calculated

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Loading meter	Availability
1410-090025-800	Pre-Insulated T-Piece Straight A25-A25-A25 (90-90-90) - Grey	1 Pcs.	0,3	●
1410-090032-800	Pre-Insulated T-Piece Straight A32-A32-A32 (90-90-90) - Grey	1 Pcs.	0,3	●
1410-090040-800	Pre-Insulated T-Piece Straight A40-A40-A40 (90-90-90) - Grey	1 Pcs.	0,3	●
1410-125040-800	Pre-Insulated T-Piece Straight A40-A40-A40 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-090050-800	Pre-Insulated T-Piece Straight A50-A50-A50 (90-90-90) - Grey	1 Pcs.	0,3	●
1410-125050-800	Pre-Insulated T-Piece Straight A50-A50-A50 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-160050-800	Pre-Insulated T-Piece Straight A50-A50-A50 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-125063-800	Pre-Insulated T-Piece Straight A63-A63-A63 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-000001-800	Pre-Insulated T-Piece Straight A75-A63-A75 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-000004-800	Pre-Insulated T-Piece Straight A110-A63-A110 (200-125-200) - Grey	1 Pcs.	0,3	●
1410-160063-800	Pre-Insulated T-Piece Straight A63-A63-A63 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-000002-800	Pre-Insulated T-Piece Straight A75-A63-A75 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-000003-800	Pre-Insulated T-Piece Straight A90-A63-A90 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-000005-800	Pre-Insulated T-Piece Straight A110-A63-A110 (200-160-200) - Grey	1 Pcs.	0,3	●
1410-125075-800	Pre-Insulated T-Piece Straight A75-A75-A75 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-160075-800	Pre-Insulated T-Piece Straight A75-A75-A75 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-160090-800	Pre-Insulated T-Piece Straight A90-A90-A90 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-200110-800	Pre-Insulated T-Piece Straight A110-A110-A110 (200-200-200) - Grey	1 Pcs.	0,3	●

1411-090025-800	Pre-Insulated T-Piece Straight A25-A25-A25 (90-90-90) - Red	1 Pcs.	0,3	●
1411-090032-800	Pre-Insulated T-Piece Straight A32-A32-A32 (90-90-90) - Red	1 Pcs.	0,3	●
1411-090040-800	Pre-Insulated T-Piece Straight A40-A40-A40 (90-90-90) - Red	1 Pcs.	0,3	●
1411-110040-800	Pre-Insulated T-Piece Straight A40-A40-A40 (110-110-110) - Red	1 Pcs.	0,3	●
1411-125040-800	Pre-Insulated T-Piece Straight A40-A40-A40 (125-125-125) - Red	1 Pcs.	0,3	●
1411-125050-800	Pre-Insulated T-Piece Straight A50-A50-A50 (125-125-125) - Red	1 Pcs.	0,3	●
1411-160050-800	Pre-Insulated T-Piece Straight A50-A50-A50 (160-160-160) - Red	1 Pcs.	0,3	●
1411-125063-800	Pre-Insulated T-Piece Straight A63-A63-A63 (125-125-125) - Red	1 Pcs.	0,3	●
1411-000005-800	Pre-Insulated T-Piece Straight A110-A63-A110 (200-125-200) - Red	1 Pcs.	0,3	●
1411-140063-800	Pre-Insulated T-Piece Straight A63-A63-A63 (140-140-140) - Red	1 Pcs.	0,3	●
1411-000001-800	Pre-Insulated T-Piece Straight A75-A63-A75 (160-140-160) - Red	1 Pcs.	0,3	●
1411-000003-800	Pre-Insulated T-Piece Straight A90-A63-A90 (180-140-180) - Red	1 Pcs.	0,3	●
1411-000006-800	Pre-Insulated T-Piece Straight A110-A63-A110 (200-140-200) - Red	1 Pcs.	0,3	●
1411-160063-800	Pre-Insulated T-Piece Straight A63-A63-A63 (160-160-160) - Red	1 Pcs.	0,3	●
1411-000002-800	Pre-Insulated T-Piece Straight A75-A63-A75 (160-160-160) - Red	1 Pcs.	0,3	●
1411-000004-800	Pre-Insulated T-Piece Straight A90-A63-A90 (160-160-160) - Red	1 Pcs.	0,3	●
1411-000007-800	Pre-Insulated T-Piece Straight A110-A63-A110 (200-160-200) - Red	1 Pcs.	0,3	●
1411-160075-800	Pre-Insulated T-Piece Straight A75-A75-A75 (160-160-160) - Red	1 Pcs.	0,3	●
1411-160090-800	Pre-Insulated T-Piece Straight A90-A90-A90 (160-160-160) - Red	1 Pcs.	0,3	●
1411-180090-800	Pre-Insulated T-Piece Straight A90-A90-A90 (180-180-180) - Red	1 Pcs.	0,3	●

Other options are available on demand

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Pre-Insulated T-Piece Raised Single Pipe



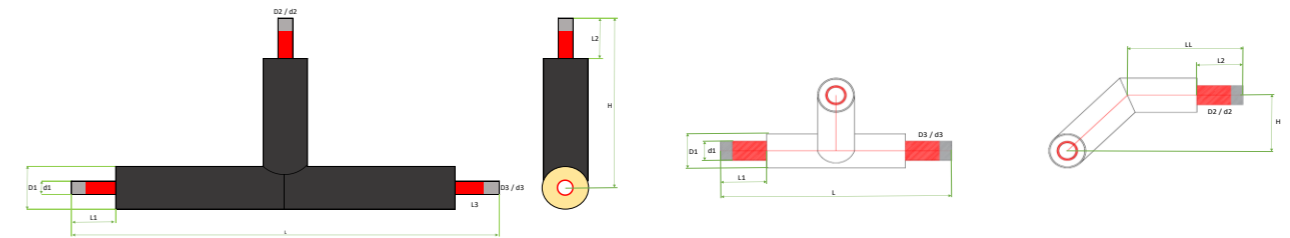
- Factory manufactured prefabricated pre-insulated parts
- Note: For installation, additional (electrofusion / mechanical) fittings, end caps and post insulation sets are required

Logistics charges: for each prefab, 0,3 loading meters are calculated

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Loading meter	Availability
1410-090025-850	Pre-Insulated T-Piece Raised A25-A25-A25 (90-90-90) - Grey	1 Pcs.	0,3	●
1410-090032-850	Pre-Insulated T-Piece Raised A32-A32-A32 (90-90-90) - Grey	1 Pcs.	0,3	●
1410-090040-850	Pre-Insulated T-Piece Raised A40-A40-A40 (90-90-90) - Grey	1 Pcs.	0,3	●
1410-125040-850	Pre-Insulated T-Piece Raised A40-A40-A40 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-090050-850	Pre-Insulated T-Piece Raised A50-A50-A50 (90-90-90) - Grey	1 Pcs.	0,3	●
1410-125050-850	Pre-Insulated T-Piece Raised A50-A50-A50 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-160050-850	Pre-Insulated T-Piece Raised A50-A50-A50 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-125063-850	Pre-Insulated T-Piece Raised A63-A63-A63 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-000001-850	Pre-Insulated T-Piece Raised A75-A63-A75 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-000004-850	Pre-Insulated T-Piece Raised A110-A63-A110 (200-125-200) -Grey	1 Pcs.	0,3	●
1410-160063-850	Pre-Insulated T-Piece Raised A63-A63-A63 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-000002-850	Pre-Insulated T-Piece Raised A75-A63-A75 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-000003-850	Pre-Insulated T-Piece Raised A90-A63-A90 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-000005-850	Pre-Insulated T-Piece Raised A110-A63-A110 (200-160-200) - Grey	1 Pcs.	0,3	●
1410-125075-850	Pre-Insulated T-Piece Raised A75-A75-A75 (125-125-125) - Grey	1 Pcs.	0,3	●
1410-160075-850	Pre-Insulated T-Piece Raised A75-A75-A75 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-160090-850	Pre-Insulated T-Piece Raised A90-A90-A90 (160-160-160) - Grey	1 Pcs.	0,3	●
1410-200110-850	Pre-Insulated T-Piece Raised A110-A110-A110 (200-200-200) - Grey	1 Pcs.	0,3	●
1411-090025-850	Pre-Insulated T-Piece Raised A25-A25-A25 (90-90-90) - Red	1 Pcs.	0,3	●
1411-090032-850	Pre-Insulated T-Piece Raised A32-A32-A32 (90-90-90) - Red	1 Pcs.	0,3	●
1411-090040-850	Pre-Insulated T-Piece Raised A40-A40-A40 (90-90-90) - Red	1 Pcs.	0,3	●
1411-110040-850	Pre-Insulated T-Piece Raised A40-A40-A40 (110-110-110) - Red	1 Pcs.	0,3	●
1411-125040-850	Pre-Insulated T-Piece Raised A40-A40-A40 (125-125-125) - Red	1 Pcs.	0,3	●
1411-125050-850	Pre-Insulated T-Piece Raised A50-A50-A50 (125-125-125) - Red	1 Pcs.	0,3	●
1411-160050-850	Pre-Insulated T-Piece Raised A50-A50-A50 (160-160-160) - Red	1 Pcs.	0,3	●
1411-125063-850	Pre-Insulated T-Piece Raised A63-A63-A63 (125-125-125) - Red	1 Pcs.	0,3	●
1411-000005-850	Pre-Insulated T-Piece Raised A110-A63-A110 (200-125-200) - Red	1 Pcs.	0,3	●
1411-140063-850	Pre-Insulated T-Piece Raised A63-A63-A63 (140-140-140) - Red	1 Pcs.	0,3	●
1411-000001-850	Pre-Insulated T-Piece Raised A75-A63-A75 (160-140-160) - Red	1 Pcs.	0,3	●
1411-000003-850	Pre-Insulated T-Piece Raised A90-A63-A90 (180-140-180) - Red	1 Pcs.	0,3	●
1411-000006-850	Pre-Insulated T-Piece Raised A110-A63-A110 (200-140-200) - Red	1 Pcs.	0,3	●
1411-160063-850	Pre-Insulated T-Piece Raised A63-A63-A63 (160-160-160) - Red	1 Pcs.	0,3	●
1411-000002-850	Pre-Insulated T-Piece Raised A75-A63-A75 (160-160-160) - Red	1 Pcs.	0,3	●
1411-000004-850	Pre-Insulated T-Piece Raised A90-A63-A90 (160-160-160) - Red	1 Pcs.	0,3	●
1411-000007-850	Pre-Insulated T-Piece Raised A110-A63-A110 (200-160-200) - Red	1 Pcs.	0,3	●
1411-160075-850	Pre-Insulated T-Piece Raised A75-A75-A75 (160-160-160) - Red	1 Pcs.	0,3	●
1411-160090-850	Pre-Insulated T-Piece Raised A90-A90-A90 (160-160-160) - Red	1 Pcs.	0,3	●
1411-180090-850	Pre-Insulated T-Piece Raised A90-A90-A90 (180-180-180) - Red	1 Pcs.	0,3	●

Other options are available on demand

Pre-Insulated T-Piece Single Pipe



Main Line		Pre-Insulated T-Piece Single Pipe															
Service	Casing	Branch d2 / D2															
d1 / d3	D1 / D3	25	32	40	40	40	50	50	50	63	63	63	75	75	90	90	110
		90	90	90	110	125	90	125	160	125	140	160	125	160	160	180	200
25	90	G/R															
32	90		G/R														
40	90			G/R													
40	110				R												
40	125					G/R											
50	90						G										
50	125							G/R									
50	160								G/R								
63	125									G/R							
63	140										R						
63	160											G/R					
75	125								G				G				
75	160										R	G/R		G/R			
90	160											G/R			G/R		
90	180										R					R	
110	200									G/R	R	G/R					G

G = Grey / R = Red

Pre-Insulated T-Piece Twin Pipe



- Factory manufactured prefabricated pre-insulated parts
- Note: For installation, additional (electrofusion / mechanical) fittings, end caps and post insulation sets are required

Logistics charges: for each prefab, 0,3 loading meters are calculated

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Loading meter	Availability
1412-125025-800	Pre-Insulated DT-PieceA2x25-A2x25-A2x25 (125-125-125) - Grey	1 Pcs.	0,3	●
1412-125032-800	Pre-Insulated DT-PieceA2x32-A2x32-A2x32 (125-125-125) - Grey	1 Pcs.	0,3	●
1412-160040-800	Pre-Insulated DT-PieceA2x40-A2x40-A2x40 (160-160-160) - Grey	1 Pcs.	0,3	●
1412-160050-800	Pre-Insulated DT-PieceA2x50-A2x50-A2x50 (160-160-160) - Grey	1 Pcs.	0,3	●
1412-200063-800	Pre-Insulated DT-PieceA2x63-A2x63-A2x63 (200-200-200) - Grey	1 Pcs.	0,3	●
1413-110025-800	Pre-Insulated DT-PieceA2x25-A2x25-A2x25 (110-110-110) - Red	1 Pcs.	0,3	●
1413-125025-800	Pre-Insulated DT-PieceA2x25-A2x25-A2x25 (125-125-125) - Red	1 Pcs.	0,3	●
1413-125032-800	Pre-Insulated DT-PieceA2x32-A2x32-A2x32 (125-125-125) - Red	1 Pcs.	0,3	●
1413-160032-800	Pre-Insulated DT-PieceA2x32-A2x32-A2x32 (160-160-160) - Red	1 Pcs.	0,3	●
1413-140040-800	Pre-Insulated DT-PieceA2x40-A2x40-A2x40 (140-140-140) - Red	1 Pcs.	0,3	●
1413-160040-800	Pre-Insulated DT-PieceA2x40-A2x40-A2x40 (160-160-160) - Red	1 Pcs.	0,3	●
1413-160050-800	Pre-Insulated DT-PieceA2x50-A2x50-A2x50 (160-160-160) - Red	1 Pcs.	0,3	●
1413-180050-800	Pre-Insulated DT-PieceA2x50-A2x50-A2x50 (180-180-180) - Red	1 Pcs.	0,3	●
1413-200063-800	Pre-Insulated DT-PieceA2x63-A2x63-A2x63 (200-200-200) - Red	1 Pcs.	0,3	●

Other options are available on demand

Main Line		Pre-Insulated T-Piece Twin Pipe								
Service	Casing	Branch d2 / D2								
d1 / d3	D1 / D3	25+25	25+25	32+32	32+32	40+40	40+40	50+50	50+50	63+63
25+25	110	R								
25+25	125		G / R							
32+32	125			G / R						
32+32	160				R					
40+40	140					R				
40+40	160						G / R			
50+50	160							G / R		
50+50	180								R	
63+63	200									G / R

G = Grey / R = Red

Pre-Insulated Y-Piece



- Factory manufactured prefabricated pre-insulated parts
- Note: For installation, additional (electrofusion / mechanical) fittings, end caps and post insulation sets are required

Logistics charges: for each prefab, 0,3 loading meters are calculated

Article Code	Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Loading meter	Availability
1421-110251-800	Pre-Insulated Y-Piece OD090/025 - OD110/2x025 - Red	1 Pcs.	0,3	●
1421-125251-800	Pre-Insulated Y-Piece OD090/025 - OD125/2x025 - Red	1 Pcs.	0,3	●
1421-125321-800	Pre-Insulated Y-Piece OD090/032 - OD125/2x032 - Red	1 Pcs.	0,3	●
1421-160321-800	Pre-Insulated Y-Piece OD090/032 - OD160/2x032 - Red	1 Pcs.	0,3	●
1421-140401-800	Pre-Insulated Y-Piece OD110/040 - OD140/2x040 - Red	1 Pcs.	0,3	●
1421-160401-800	Pre-Insulated Y-Piece OD090/040 - OD160/2x040 - Red	1 Pcs.	0,3	●
1421-160402-800	Pre-Insulated Y-Piece OD125/040 - OD160/2x040 - Red	1 Pcs.	0,3	●
1421-160502-800	Pre-Insulated Y-Piece OD125/050 - OD160/2x050 - Red	1 Pcs.	0,3	●
1421-180501-800	Pre-Insulated Y-Piece OD125/050 - OD180/2x050 - Red	1 Pcs.	0,3	●
1421-200631-800	Pre-Insulated Y-Piece OD125/063 - OD200/2x063 - Red	1 Pcs.	0,3	●
1421-200632-800	Pre-Insulated Y-Piece OD140/063 - OD200/2x063 - Red	1 Pcs.	0,3	●
1421-200633-800	Pre-Insulated Y-Piece OD160/063 - OD200/2x063 - Red	1 Pcs.	0,3	●

Single Pipe		Pre-Insulated Y-Piece								
Service	Casing	Twin Pipe								
d1	D1	25+25	25+25	32+32	32+32	40+40	40+40	50+50	50+50	63+63
25	90	R	R							
32	90			R	R					
40	90						R			
40	110					R				
40	125						R			
50	125							R	R	
50	160									
63	125									R
63	140									R
63	160									R

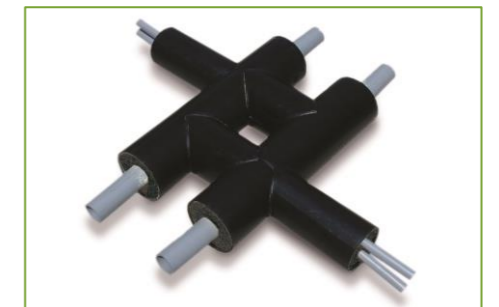
G = Grey / R = Red

Other Prefab parts according customer requirements / on request



Flexalen PHC

Prefabricated House Connection with Flexalen® PU SL Main line / Flexalen® 600 or Flexalen® PU House Connection line. Single- or Twin Pipe System

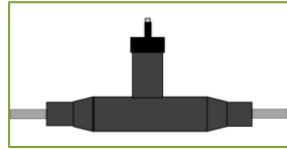


Pre-Insulated Custom made / Special Parts

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Pre-Insulated Ball Valves



- Pre-insulated ball valves with PB-pipe
- High end quality valves from Danish manufacturer DE Valves
- Note: For installation, additional (electrofusion / mechanical) fittings, end caps and post insulation sets are required

Logistics charges: for each prefab, 0,3 loading meters are calculated

Description For Service Pipe(s) OD mm (Outer Casing OD mm)	Sales unit	Price	Weight [kg/Pcs.]	Availability
Pre-Insulated ball valve OD25 (90)	1 Pcs.	€ 1.186,06	6,8	●
Pre-Insulated ball valve OD32 (90)	1 Pcs.	€ 1.227,22	7,0	●
Pre-Insulated ball valve OD40 (90)	1 Pcs.	€ 1.364,22	9,0	●
Pre-Insulated ball valve OD40 (110)	1 Pcs.	€ 1.326,33	9,1	●
Pre-Insulated ball valve OD50 (125)	1 Pcs.	€ 1.349,65	10,5	●
Pre-Insulated ball valve OD63 (125)	1 Pcs.	€ 1.600,34	12,8	●
Pre-Insulated ball valve OD63 (140)	1 Pcs.	€ 1.454,59	12,9	●
Pre-Insulated ball valve OD75 (160)	1 Pcs.	€ 1.801,47	17,2	●
Pre-Insulated ball valve OD90 (160)	1 Pcs.	€ 2.247,47	21,4	●
Pre-Insulated ball valve OD90 (180)	1 Pcs.	€ 2.060,91	21,5	●
Pre-Insulated ball valve OD110 (200)	1 Pcs.	€ 2.673,06	32,1	●
Pre-Insulated ball valve OD125 (200)	1 Pcs.	€ 3.011,20	34,7	●
Pre-Insulated ball valve OD140 (225)	1 Pcs.	€ 3.760,35	46,4	●
Pre-Insulated ball valve OD160 (250)	1 Pcs.	€ 4.349,18	63,8	●

IMPORTANT NOTE

Accessories such as spindle extensions and T-wrenches are available on request
Please contact us for the details and the exact definition of your requirements

Tools

	Article Code	Description	Sales unit	Weight [kg/Pcs.]	Availability
	1800-000000-000	Electrofusion Welding Machine HWSG-3	1 Pcs.	4,1	●
	1844-090025-000	Rotation Scraper Set 25-90 mm	1 Pcs.	19,5	●
	1880-063025-006	Alignment Clamp 25-63 mm	1 Pcs.	17,4	●
	1880-110063-006	Alignment Clamp 40-110 mm	1 Pcs.	19,0	●
	1899-063016-010	Plastic Pipe Cutter 16-63 mm	1 Pcs.	0,8	●
	1899-110050-010	Plastic Pipe Cutter 50-110 mm	1 Pcs.	2,0	●
	1899-160125-010	Plastic Pipe Cutter 125-160 mm	1 Pcs.	2,0	●
	1881-000000-001	Pipe Scraper	1 Pcs.	0,1	●
	1890-000000-000	PB/PE Plastic Cleaning Agent (1 Litre)	1 Pcs.	0,9	●
	1890-000000-001	Wet PB/PE Cleaning Tissues (Box)	1 Pcs.	0,3	●

Tools - Rental

Our equipment and tools for electrofusion- and butt welding are also available in a rental package

OD20 - OD110 - Heating/Sanitary (Red/Grey - with/without Diffusion Barrier) - Coils and Sticks

- Welding technique: Electrofusion welding
- Content of the flight case
 - Electrofusion welding machine HWSG3 220V OD16>OD110
 - Alignment clamp for EF welding OD25-OD63
 - Alignment clamp for EF welding OD40-OD110
 - Plastic Pipe Cutter 16-63mm
 - Plastic Pipe Cutter 50-110mm
 - Pipe Scraper 25-90 incl. Hand Scraper
 - Instruction Leaflets
- Rental Cost pro week **€ 125 / Week**
- Shipping Cost **€ 25 (Delivery and Return)**

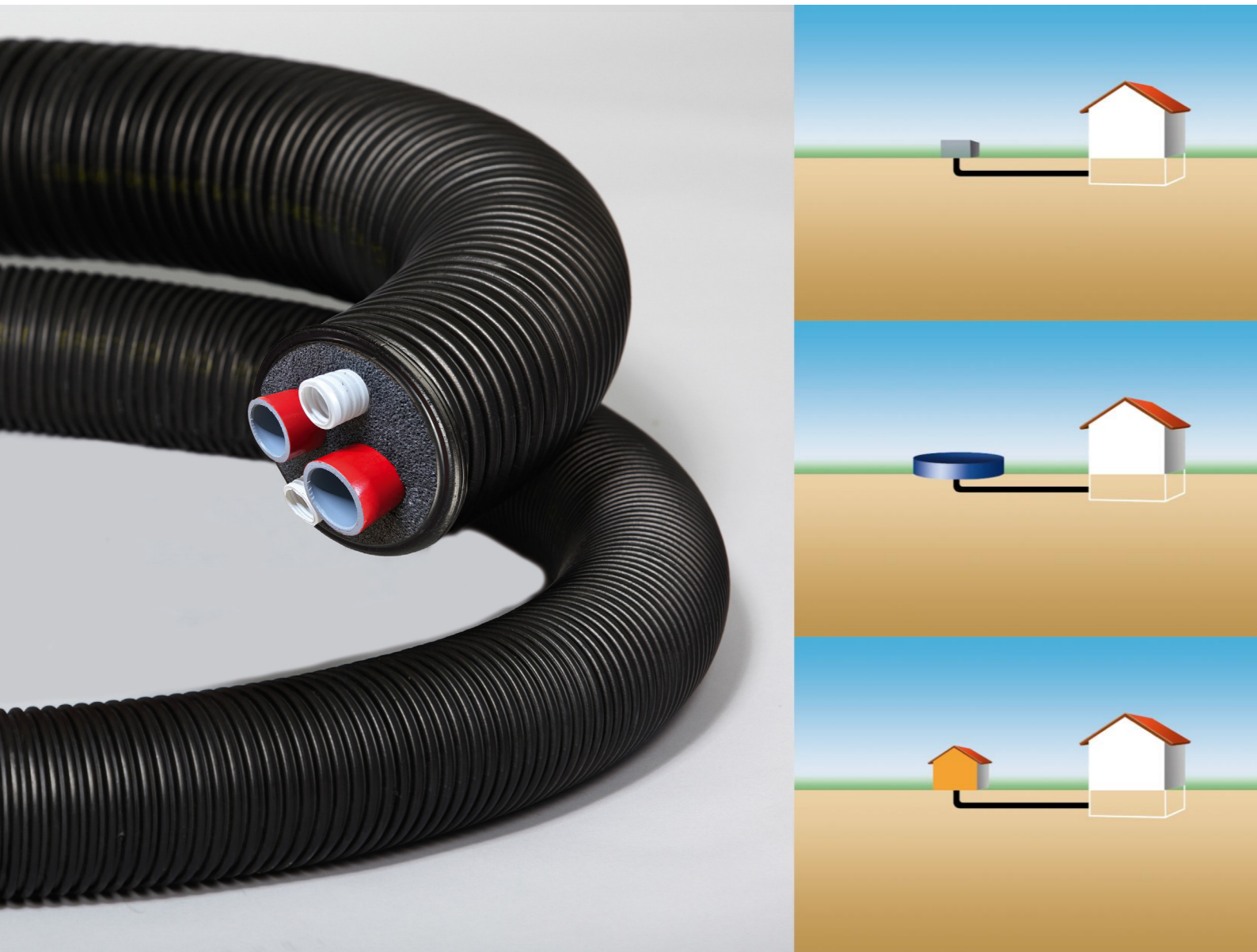


Welding equipment for larger diameters and butt welding are also available on request, please contact your local sales representative.

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Availability: ● Inventory goods for deliveries in customary quantities, ● Increased delivery times / minimum order quantities required (please consult us)

Flexalen® 600 Short Length Packages



The All-Round, All-In, Carefree Package

The complete solution for short A-B connections in a compact box. For a wide range of applications such as Monobloc Heat pumps or an auxiliary building.

Flexalen® 600 HP

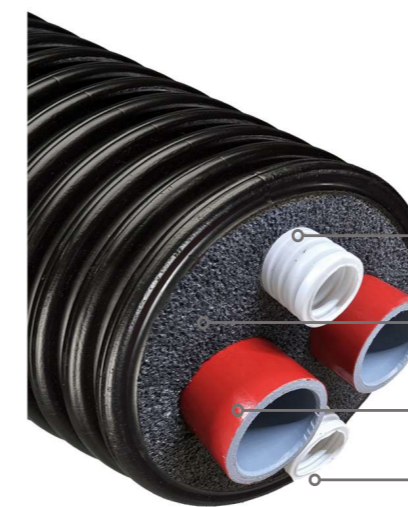
Pre-insulated piping system by Thermaflex®

Extremely flexible
Heat pump connection set



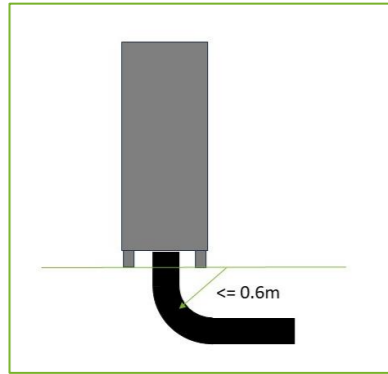
Benefits

- Extreme flexible for Fast and easy installation, Ideal for connecting Mono-block heat pumps
- Highest pressure rating 95°C/8bar
- The corrugated casing pipe, polyolefin foam and polybutylene service pipe are recyclable and Cradle to Cradle Certified® under the label of Flexalen® 600
- Safest choice with homogeneous welding or best performing compression fittings system
- Thermaflex service: Support with integrated network design, calculation tools, training and on-site support

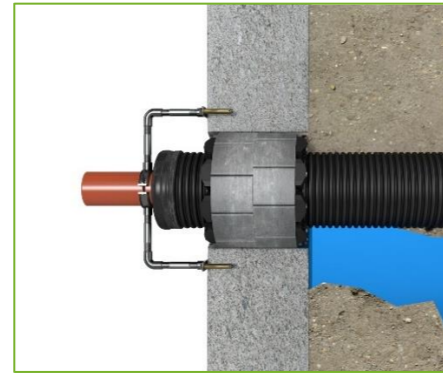


- Design Flexalen® 600 HP**
- **Corrugated PE Casing pipe**
Flexibility and mechanical protection
 - **Homogenous foamed Polyolefin foam**
Closed-cell, CFC-free
 - **Polybutene service pipe, PB-H**
With oxygen barrier
 - **Corrugated Conduit pipe, Polyolefin**
Easy insertion of cables

- Applications**
- Mono-block heat pump connection
 - Connection of adjacent buildings



Smallest bending radius max. 0.6m



One wall entry

Technical Properties Flexalen® 600

Flexalen® 600 is a pre-insulated flexible plastic pipe system produced conform the European standard EN15632-1,3 and KIWA system certified as well as third-party controlled according BRL KOMO 5609-2.

Flexalen® PB service pipe (EN-ISO 15876)	
Max. service temperature	95°C
Continuous operating temperature	80°C
Max. operating pressure	8bar (95°C)

Thermal Insulation	
Polyolefin foam	
Closed-cell structure, CFC-free	

Conduit	
Polyolefin material	
corrugated	

Flexalen® 600 Heat losses*

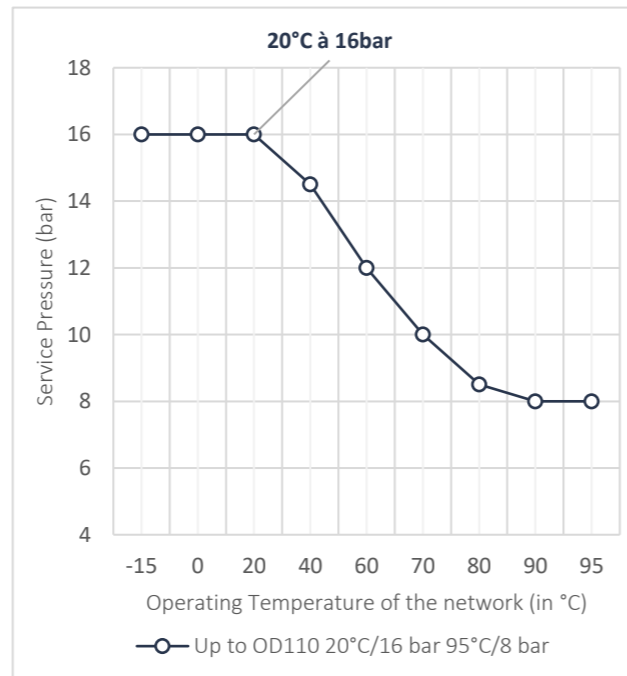
Flexalen® 600 Double line	Average operating temperature T [°C]						
	20°C	30°C	40°C	50°C	60°C	70°C	80°C
32 + 32 / 125	2.8	5.7	8.5	11.3	14.2	17.0	19.8
40 + 40 / 160	2.6	5.1	7.7	10.2	12.8	15.3	17.9
50 + 50 / 160	3.4	6.8	10.1	13.5	17.0	20.3	23.7

Calculation parameter:

λ_{soil} :	1.00 W/m·K
R soil surface to ambient air:	0.0685 m ² ·K/W
T_{soil} :	10.0 °C
Soil covering:	0.8 m

The heat loss characteristics are in accordance with the European standard for flexible heating pipes systems EN15632. Heat losses are for the standard Flexalen® 600 pre-insulated pipe.

Flexalen® 600 Pressure rating



Availability

Available as connection sets and by the meter.



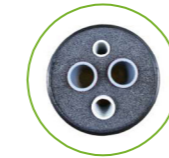
Set Content

Flexalen® 600 HP double pipe with conduits

4x compression fitting SDR11 male thread

2x end caps for quattro pipe

1x trace warning tape, 100m roll



Flexalen® 600 HP				Packaging		Product code	
Service pipe OD x s [mm]	Conduit OD [mm]	Casing pipe OD [mm]	Min. bending radius [m]	Length [m] ¹	Dimensions [cm]	Weight [kg]	
2x 32/3.03	25 + 25	125	0.5	5	145 x 145 x 35	20,5	1143-125001-004
				10	145 x 145 x 35	28,7	1143-125002-004
				15	145 x 145 x 50	27,5	1143-125003-004
				20	145 x 145 x 50	33,8	1143-125004-004
2x 40/3.7	32 + 25	160	0.6	5	145 x 145 x 35	28,4	1143-160001-004
				10	145 x 145 x 35	32,5	1143-160002-004
				15	145 x 145 x 50	42,3	1143-160003-004
				20	145 x 145 x 50	52,0	1143-160004-004
2x 50/4.6	32 + 25	160	0.6	5	145 x 145 x 35	28,4	1143-160051-004
				10	145 x 145 x 50	32,5	1143-160052-004
				15	145 x 145 x 50	42,3	1143-160053-004
				20	- ²	52,0	1143-160054-004

¹ Fixed length, other lengths available on request. Also available without carton as a pipe coil and attached accessories.
² delivered on coil, without cardboard box.

By the meter

Product Code	Dimension	Service pipes OD x e [mm]	Service Pipes [DN]	Service pipes [Inch]	Conduit 1	Conduit 2	Casing pipe OD [mm]	Weight [kg/m]	Smallest bending radius [m]	Coil I.D. max. [m]	Coil Width max. [m]	Coil Length max. [m]	Coil O.D. max. [m]
1140-125032-004	32 + 32 / 125	32 x 2.9	25	1"	25	25	125	2,00	0,50	1,50	1,2	300	2,9
1140-160040-004	40 + 40 / 160	40 x 3.7	32	1½"	32	25	160	2,60	0,60	1,50	1,2	150	2,9
1140-160050-004	50 + 50 / 160	50 x 4.6	40	1½"	32	25	160	3,10	0,60	1,50	1,2	150	2,9

Accessories



Compression fitting system



End caps



Wall entries / Annular space sealing



House entry bend



Clamps (recommended)



Warning tape



Full range of accessories and tools

Flexalen® 600 Short Length Package

Pre-insulated piping system by Thermaflex®

All-in-one pre-insulated pipe package for quick and efficient A to B connections



Benefits

- Flexible, pre-insulated plastic pipe system Flexalen® 600 with high pressure rating 95°C/8bar
- The only *Cradle to Cradle™* certified pre-insulated pipe system in the world
- Delivered in cardboard box, convenient for storage and transport
- Fast and easy installation

Set Content

Flexalen® 600 double pipe with oxygen barrier



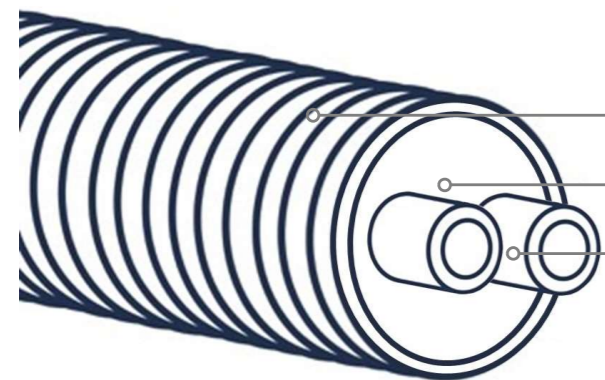
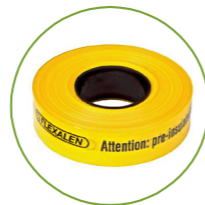
4x compression fitting SDR11 male thread



2x rubber end cap for double pipe



1x trace warning tape, 100m roll



Design Flexalen® 600

Polyethylene corrugated pipe, PE
Flexibility and mechanical protection

Polyolefin foam
Closed-cell, CFC-free

Polybutene service pipe, PB-1
With oxygen barrier

Applications

- Geothermal heat distribution lines
- Connection of adjacent buildings
- Heat pumps
- Pellet plants

Technical Properties Flexalen® 600

Flexalen® 600 is a pre-insulated flexible plastic pipe system produced conform the European standard EN15632-1,3 and KIWA system certified as well as third-party controlled according BRL KOMO 5609-2.

PB-1 service pipe (EN-ISO 15876)

Max. service temperature	95°C
Continuous operating temperature	80°C
Max. operating pressure	8bar (95°C)

Thermal Insulation

Polyolefin foam
Closed-cell structure, CFC-free
Water vapor diffusion $\mu \geq 3,500$

Flexalen® 600 Heat losses

Heat loss q [W/m] for one Double line

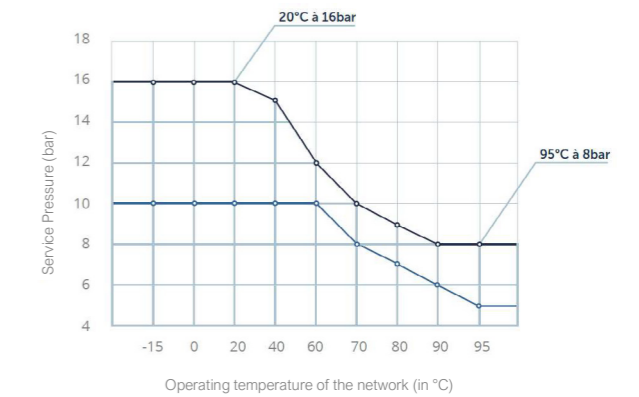
Flexalen® 600 Double line	Average operating temperature T [°C]						
	20°C	30°C	40°C	50°C	60°C	70°C	80°C
25 + 25 / 125	3.0	5.0	7.0	9.0	11.0	13.0	15.0
32 + 32 / 125	3.9	6.4	8.9	11.5	14.0	16.6	19.1
40 + 40 / 160	3.4	5.7	8.0	10.3	12.7	15.0	17.3

Calculation parameter:

λ_{soil} :	1.00 W/m-K
R soil surface to ambient air:	0.0685 m²-K/W
T_{soil} :	10.0 °C
Soil covering:	0.8 m

The heat loss characteristics are in accordance with the European standard for flexible heating pipes systems EN15632. During the expected lifetime of the product these values will increase by 7-10 %.

Flexalen® 600 Pressure rating



— Up to OD110 20°C/16 bar 95°C/8 bar
— ≥OD125 20°C/10 bar 95°C/5 bar

Availability

Flexalen® 600 double line				Packaging		Product code	
Dimension	Service pipe OD x s [mm]	Jacket pipe OD [mm]	Min. bending radius [m]	Length [m] ¹	Dimensions [cm]	weight [kg]	
25 + 25 / 125	25 x 2.3	125	0.6	8	145 x 145 x 35	21.7	1033-125025-020
				12	145 x 145 x 35	27.4	1033-125025-035
				16	145 x 145 x 50	33.8	1033-125025-040
				20	145 x 145 x 50	39.5	1033-125025-045
32 + 32 / 125	32 x 3.0	125	0.6	8	145 x 145 x 35	23.5	1033-125032-020
				12	145 x 145 x 35	30.0	1033-125032-035
				16	145 x 145 x 50	37.2	1033-125032-040
40 + 40 / 160	40 x 3.7	160	0.8	8	145 x 145 x 35	32.2	1033-160040-020
				12	145 x 145 x 50	42.1	1033-160040-035
				16	145 x 145 x 50	51.7	1033-160040-040
				20	- ²	43.0	1033-160040-045

¹ Fixed length, other lengths available on request.

² delivered on coil, without cardboard box.

- Full range of accessories and tools
- Wall entries
- Restraining clamps (recommended)



Dimension Guideline, Product Dimensions and Sizes & Conversion Table Flexalen Coil Length



Dimensioning Guideline

PB Service Pipe											
DN	20	25	32	40	50	65	80	100	100	150	200
Inch	¾	1	1 ¼	1 ½	2	2 ½	3	4	4	6	8
ID	20,4	26,2	32,6	40,8	51,4	61,2	73,6	90	102,2	130,8	184,0
OD	25	32	40	50	63	75	90	110	125	160	225

Transmittable power with Flexalen® district heating pipes

Temperature Difference 5K (Ex. 7°C - 12°C)											
kW v=1m/s	6	11	17	27	43	61	89	133	172	282	557

Temperature Difference 11K (Ex. 80°C - 69°C)											
kW v=1m/s	14	24	38	60	95	135	196	293	378	619	1226

Temperature Difference 20K (Ex. 80°C - 60°C)											
kW v=1m/s	28	44	69	110	173	246	356	533	687	1126	2228

Temperature Difference 25K (Ex. 80°C - 55°C)											
kW v=1m/s	35	56	87	137	217	308	445	666	859	1408	2785

Temperature Difference 30K (Ex. 80°C - 50°C)											
kW v=1m/s	42	67	104	165	260	370	534	800	1031	1690	3342

Temperature Difference 35K (Ex. 80°C - 45°C)											
kW v=1m/s	49	78	121	193	303	432	623	933	1203	1972	3898

Temperature Difference 40K (Ex. 80°C - 40°C)											
kW v=1m/s	56	89	140	220	346	494	712	1066	1375	2253	4456

For permitted higher flow velocities, use the following multipliers for the transmittable power

v=2m/s Factor: 2




v=3m/s Factor: 3


Pressure Drop (Ca.)


Pa/m (1m/s)	555	402	300	231	175	140	112	88	75	56	38
Pa/m (2m/s)						510	410	319	274	204	135
Pa/m (3m/s)									595	440	284

Product Dimensions and Sizes

Flexalen 600 - Heating / Cooling

Single Pipe						
Article Code	Dimension	Service Piper OD x s [mm]	Outer Casing OD [mm]	Weight [kg/m]	Bending Radius [m]	Max. Length [m]
1010-090025-001	25 / 90	25 x 2.3	90	0.75	0.40	500
1010-090032-001	32 / 90	32 x 3.0	90	0.86	0.40	500
1010-090040-001	40 / 90	40 x 3.7	90	1.00	0.50	500
1010-125040-001	40 / 125	40 x 3.7	125 	1.98	0.50	300
1010-125050-001	50 / 125	50 x 4.6	125	2.08	0.70	300
1010-160050-001	50 / 160	50 x 4.6	160 	2.40	0.70	150
1010-125063-001	63 / 125	63 x 5.8	125	2.43	0.80	300
1011-125063-015	63 / 125 SL ²	63 x 5.8	125	2.43	0.80	6
1010-160063-001	63 / 160	63 x 5.8	160 	2.75	0.80	150
1010-160075-001	75 / 160	75 x 6.8	160	3.03	0.80	150
1011-160075-015	75 / 160 SL ²	75 x 6.8	160	3.03	0.80	6
1010-160090-001	90 / 160	90 x 8.2	160	3.64	1.00	150
1011-160090-015	90 / 160 SL ²	90 x 8.2	160	3.64	1.00	6
1000-200110-001	110 / 200	110 x 10.0 ¹	200	5.40	1.25	100
1001-200110-015	110 / 200 SL ²	110 x 10.0 ¹	200	5.40	1.25	6
1000-200125-001	125 / 200 ³	125 x 11.4 ¹	200	6.38	1.50	80
1001-200125-015	125 / 200 SL ^{2,3}	125 x 11.4 ¹	200	6.38	1.50	6

Twin Pipe						
Article Code	Dimension	Service Piper OD x s [mm]	Outer Casing OD [mm]	Weight [kg/m]	Bending Radius [m]	Max. Length [m]
1030-125025-001 ⁴	25 + 25 / 125	25 x 2.3	125	1.80	0.60	300
1030-125032-001 ⁴	32 + 32 / 125	32 x 3.0	125	1.90	0.60	300
1030-160032-001	32 + 32 / 160	32 x 3.0	160 	2.14	0.60	150
1030-160040-001 ⁴	40 + 40 / 160	40 x 3.7	160	2.50	0.80	150
1030-160050-001	50 + 50 / 160	50 x 4.6	160	3.00	0.80	150
1030-200063-001	63 + 63 / 200	63 x 5.8	200	4.50	1.25	100

 Range with a higher insulation thickness and improved energy efficiency







¹ Without Oxygen Diffusion Barrier (Not included in the system certification)

² Semi-flexible Piping System (SL) (available in 6m sticks)

³ Maximum Temperature/Pressure 95°C @ 5 bar

⁴ Available as complete installation set (Twin pipe incl. Acc.) in a cardboard box (Short Length Package)

Flexalen 600 – Water (Sanitary)

Single Pipe						
Article Code	Dimension	Service Piper OD x s [mm]	Outer Casing OD [mm]	Weight [kg/m]	Bending Radius [m]	Max. Length [m]
1000-090025-001	25 / 90	25 x 2.3	90	0.75	0.40	500
1000-090032-001	32 / 90	32 x 2.9	90	0.86	0.40	500
1000-090040-001	40 / 90	40 x 3.7	90	1.00	0.50	500
1000-125040-001	40 / 125	40 x 3.7	125 	1.98	0.50	300
1000-090050-001	50 / 90	50 x 4.6	90	1.22	0.50	500
1000-125050-001	50 / 125	50 x 4.6	125 	2.08	0.70	300
1000-160050-001	50 / 160	50 x 4.6	160 	2.40	0.70	150
1000-125063-001	63 / 125	63 x 5.8	125	2.43	0.80	300
1001-125063-015	63 / 125 SL ¹	63 x 5.8	125	2.43	0.80	6
1000-160063-001	63 / 160	63 x 5.8	160 	2.75	0.80	150
1000-125075-001	75 / 125	75 x 6.8	125	3.03	0.80	300
1000-160075-001	75 / 160	75 x 6.8	160 	3.03	0.80	150
1001-160075-015	75 / 160 SL ¹	75 x 6.8	160 	3.03	0.80	6
1000-160090-001	90 / 160	90 x 8.2	160	3.64	1.00	150
1001-160090-015	90 / 160 SL ¹	90 x 8.2	160	3.64	1.00	6
1000-200110-001	110 / 200	110 x 10.0	200	5.40	1.25	100
1001-200110-015	110 / 200 SL ¹	110 x 10.0	200	5.40	1.25	6
1000-200125-001	125 / 200 ²	125 x 11.4	200	6.38	1.50	80
1001-200125-015	125 / 200 SL ^{1,2}	125 x 11.4	200	6.38	1.50	6

Twin Pipe						
Article Code	Dimension	Service Piper OD x s [mm]	Outer Casing OD [mm]	Weight [kg/m]	Bending Radius [m]	Max. Length [m]
1020-125025-001	25 + 25 / 125	25 x 2.3 + 25 x 2.3	125	1.80	0.60	300
1120-125000-001	32 + 25 / 125	32 x 2.9 + 25 x 2.3	125	1.50	0.60	300
1120-160000-001	40 + 25 / 160	40 x 3.7 + 25 x 2.3	160	2.60	0.80	150
1120-160002-001	50 + 32 / 160	50 x 4.6 + 32 x 2.9	160	3.01	0.90	150
1121-200005-001	63 + 32 / 200	63 x 5.8 + 32 x 2.9	200	3.35	1.00	50
1121-200006-001	63 + 40 / 200	63 x 5.8 + 40 x 3.7	200	3.49	1.00	50

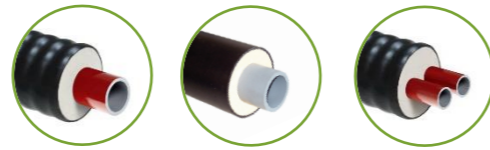
 Range with a higher insulation thickness and improved energy efficiency

¹ Semi-flexible Piping System (SL) (available in 6m sticks)

² Maximum Temperature/Pressure 95°C @ 5 bar

Flexalen PU

- Single Pipes on Coil, Flexalen PU OD25-90mm
- Single Pipes in Stick, Flexalen PU SL with waved (OD63, 75, 90mm) or smooth (OD110-315 mm) outer casing
- Twin Pipes on Coil, Flexalen PU OD25-75 mm



Single Pipe						
Article Code	Dimension	Service Piper OD x s [mm]	Outer Casing OD [mm]	Weight [kg/m]	Bending Radius [m]	Max. Length [m]
1210-091025-001	25 / 91 ³	25 x 2,3	91	1,22	0,55	570
1210-091032-001	32 / 91 ³	32 x 3,0	91	1,30	0,55	570
1210-111040-001	40 / 111 ³	40 x 3,7	111	1,80	0,60	410
1210-126050-001	50 / 126 ³	50 x 4,6	126	2,32	1,00	300
1210-142063-001	63 / 142 ³	63 x 5,8	142	3,00	1,00	225
1921-140063-030	63 / 140 SL ^{1,2}	63 x 5,8	140	3,00	12,00	11,8
1210-162075-001	75 / 162 ³	75 x 6,8	162	3,85	1,10	150
1921-160075-030	75 / 160 SL ^{1,2}	75 x 6,8	160	3,85	12,00	11,8
1210-182090-001	90 / 182 ³	90 x 8,2	182	4,90	1,30	86
1921-180090-030	90 / 180 SL ^{1,2}	90 x 8,2	180	4,90	16,00	11,8
1920-200110-030	110 / 200 SL ¹	110 x 10,0	200	6,30	16,00	11,8
1920-200125-030	125 / 200 SL ¹	125 x 11,4	200	7,40	16,00	11,8
1920-225140-030	140 / 225 SL ¹	140 x 12,7	225	9,00	18,00	11,8
1920-250160-030	160 / 250 SL ¹	160 x 14,6	250	11,70	20,00	11,8
1920-315225-010	225 / 315 SL ¹	225 x 20,5	315	22,00	26,00	5,8
1920-315225-030	225 / 315 SL ¹	225 x 20,5	315	22,00	26,00	11,8
1920-450315-005	315 / 450 SL ¹	315 x 28,6	450	36,00	--	3,0
1920-450315-010	315 / 450 SL ¹	315 x 28,6	450	36,00	--	6,0

Note: OD110-315 without EVOH Barrier

¹ Semi-flexible piping system, Stick

² On demand

Twin Pipe						
Article Code	Dimension	Service Piper OD x s [mm]	Outer Casing OD [mm]	Weight [kg/m]	Bending Radius [m]	Max. Length [m]
1230-111025-001	25 + 25 / 111	25 x 2,3	111	1,73	0,60	410
1230-126032-001	32 + 32 / 126	32 x 3,0	126	2,23	1,00	300
1230-142040-001	40 + 40 / 146	40 x 3,7	142	2,85	1,00	225
1230-182050-001	50 + 50 / 182	50 x 4,6	182	4,31	1,30	86
1230-202063-001	63 + 63 / 202	63 x 5,8	202	5,44	1,40	80
1230-202075-001	75 + 75 / 202 ³	75 x 6,8	202	6,27	1,40	80

³ On demand and only recommended for A-B Connections

Flexalen Protectube

Universal Insulation Channel						
Article Code	Dimension	Service Piper OD x s [mm]	Outer Casing OD [mm]	Weight [kg/m]	Bending Radius [m]	Max. Length [m]
1100-090000-000	90	90	40 - 45	0,57	0,30	500
1100-125000-000	125	125	63 - 68	0,91	0,40	300
1100-160000-000	160	160	90 - 95	1,41	0,60	150
1100-200000-000	200	200	110 - 155	1,82	0,80	80

Conversion Table Flexalen® Coil Length – Loading Metres

Required loading metres depending on the Flexalen coil length (m) and the outer diameter of the Flexalen outer casing.

For Flexalen 600, Flexalen 600 FP and Flexalen Multiline

Outer Casing OD mm	Coil Length up to... (m)										
	10	20	30	40	50	60	70	80	90	100	
90	0,2	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,8	0,9	
125	0,2	0,3	0,5	0,6	0,6	0,7	0,8	0,9	1,1	1,1	
160	0,3	0,4	0,5	0,6	0,8	1,1	1,1	1,1	1,1	1,1	
200	0,4	0,6	0,7	0,8	1,1	1,5	1,5	1,5	1,5	1,5	

Outer Casing OD mm	Coil Length up to... (m)										
	110	120	130	140	150	160	170	180	190	200	to 300
90	0,9	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1
125	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,5	1,5
160	1,5	1,5	1,5	1,5	1,5	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-	-	-	-

For Flexalen PU

Outer Casing OD mm	Coil Length up to... (m)										
	10	20	30	40	50	60	70	80	86/90	100	
91	0,4	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,0	1,1	
111	0,4	0,5	0,7	0,8	0,8	0,9	1,0	1,1	1,2	1,2	
126	0,4	0,5	0,7	0,8	0,8	0,9	1,0	1,1	1,2	1,2	
142	0,8	0,8	0,8	0,8	0,8	0,8	0,8	1,2	1,2	1,2	
162	0,8	0,8	0,8	0,8	0,8	0,8	1,2	1,2	1,2	1,5	
182	0,8	0,8	0,8	1,2	1,5	1,5	1,5	1,5	1,5	-	
202	0,8	0,8	1,2	1,2	1,5	1,5	1,5	1,5	-	-	

Outer Casing OD mm	Coil Length up to... (m)										
	110	120	130	140	150	160	170	180	190	200	> 200
91	1,1	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
111	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,5	1,5	1,5	1,5
126	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,5	1,5	1,5	1,5
142	1,5	1,5	1,5	1,5	1,5	-	-	-	-	-	-
162	1,5	1,5	1,5	1,5	1,5	-	-	-	-	-	-
182	-	-	-	-	-	-	-	-	-	-	-
202	-	-	-	-	-	-	-	-	-	-	-

The sum of all individual loading metres give the required total loading metres.

All coil lengths that are not listed are available on request.

For Megacoils (Coil diameter >2,6 m) a surcharge for MEGA trucks of 20% will be charged and these require an extended organisation time.

Notes

These General Terms and Conditions have been deposited with the Public Register at the Chamber of Commerce Midden-Brabant at Tilburg, The Netherlands, under file number 18116061.

Article 1 General
1.1 In these General Terms and Conditions the following definitions shall be applicable; definitions shall always be indicated with a capital letter:
- "Thermaflex" shall mean Thermaflex Isolatie B.V., registered address Veenweg 1, NL-5145 NS Waalwijk, The Netherlands, and any existing or future branch of Thermaflex's main office of which the business data and terms and conditions are administered under the abovementioned file number
- "Customer" shall mean the contract party of Thermaflex or, as the case may be, the addressee of the offer of Thermaflex
- "Products" shall mean all products and side-products, produced, offered and sold by Thermaflex, including any combinations of products such as tubes, insulation and fittings which are supplied by Thermaflex as one integrated product
1.2 These General Terms and Conditions are applicable to all offers and agreements by Thermaflex, unless deviated there from in writing. Customer accepts the applicability of these General Terms and Conditions by simple means of his order, regardless whether Customer's own conditions would read differently. Any applicability of Customer's purchasing or other terms and conditions is expressly rejected.
1.3 Deviations from these General Terms and Conditions are only valid if expressly confirmed by Thermaflex in writing.
1.4 Specific conditions in agreements in which these General Terms and Conditions have been declared applicable, prevail over these General Terms and Conditions.

Article 2 Offers, entering into force of the agreement, supplied data, deviations
2.1 All offers are without engagement and are valid for maximum 4 (four) weeks from the date of issue, unless indicated otherwise. The agreement enters into force by means of dispatching the order confirmation by Thermaflex. If for whatever reason the order confirmation is not dispatched, the entering into force of the Agreement is confirmed through the execution of it by Thermaflex. The date of dispatch of the abovementioned order confirmation or, as the case may be, the date on which Thermaflex starts executing the agreement, shall be the date the agreement enters into force.
2.2 All data concerning the Products such as composition, color, weight and the like, which are not laid down in written specifications by Thermaflex, are merely indicative and therefore not binding for Thermaflex. The same applies to shown or supplied samples.
2.3 If and to the extent specifications for the Products have been given by Thermaflex, delivery shall take place according to these specifications. In all other situations, deviations from supplied or shown models and samples shall not give rise to claims, replacement, damage compensation or any other right.

Article 3 Delivery terms, prices, price adjustments
3.1 Unless expressly agreed otherwise, all prices are based on delivery "EXW", ex works or warehouse, according to the definition of the Incoterms of the International Chamber of Commerce - ICC -, valid on delivery date.
If and to the extent Customer is requesting Thermaflex to arrange for transportation of the Products, for instance in case of emergency deliveries, all corresponding costs will be charged to Customer separately.
3.2 All prices given by Thermaflex are exclusive of turnover tax (VAT) and any other governmental levies on the sale and supply of the Products. Prices are inclusive of customary packaging material. If at Customer's request, specific packaging material is applied, all corresponding extra costs will be charged to Customer separately.
3.3 If after entering into force of the agreement, one or more pricing factors undergo an increase, even if such is a result of foreseeable circumstances, Thermaflex shall be entitled to adjust prices accordingly, taking into account any possibly applicable laws or governmental regulations.

Article 4 Delivery, delivery time, partial delivery
4.1 Products are delivered in adequate packaging, taking into account the way of transportation to the place of destination. The Products are deemed to be delivered at the date they are put at Customer's disposal at Thermaflex' works or warehouse.
4.2 Delivery times commence at the date of entering into force of the agreement or at the moment Thermaflex has complied with all formalities, necessary for the proper execution of the agreement. Thermaflex will do its utmost to comply with specified delivery dates, but such dates shall not be binding for Thermaflex. Not meeting the delivery dates shall not entitle Customer to terminate the agreement in whole or in part or to damage compensation, unless in case of gross negligence or wilful intent on the part of Thermaflex.
4.3 Thermaflex shall be entitled to deliver in parts. In case of partial delivery Customer shall pay the related invoice as if it were an individual transaction.

Article 5 Retention of title
5.1 Notwithstanding the passing of risk with respect to the Products according to the delivery condition EXW as mentioned in article 3.1, Thermaflex reserves title in all Products delivered to Customer for the time Customer has not, or not yet fully paid any amount due to Thermaflex regarding:
- a counter obligation by Customer resulting from the agreement or a similar agreement or regarding work performed by Thermaflex for Customer according to a comparable agreement
- a breach of contract by Customer in the prevailing or a similar agreement.
5.2 As long as title in the Products has not passed to Customer, Customer shall, other than in the normal course of its business and without written permission of Thermaflex, not be entitled to alienate, encumber, pledge or in any other way bring the Products within the power of third parties.

Article 6 Payment, credit collection
6.1 Unless expressly agreed otherwise, all payments shall be made without any deduction, discount or settlement, within 30 (thirty) days from the date of invoice to a bank account, specified by Thermaflex.
6.2 Customer payments shall first be used for the settlement of any interest and costs due and secondly for the settlement of invoices which are the longest due, even if Customer declares that payment is related to a later invoice.
6.3 In case of late payment, a late payment interest shall be incurred, as of the date of late payment and without notice of default, in the amount of 1% (one percent) per month or part thereof, as well as all judicial and extra judicial costs relating to the debt collection, which costs are set at 15% (fifteen percent) of the collectable amount with a minimum of € 250 (two hundred and fifty Euro).
6.4 Before and during the execution of the agreement, Thermaflex shall, if on good grounds it is fearing that Customer will not or not timely be able to fulfil its payment obligations towards Thermaflex, be entitled to stipulate additional payment conditions or to postpone the fulfilment of its obligations.

Article 7 Entrance inspection, claims, individual Products
7.1 At delivery of the Products, Customer shall perform an entrance inspection. If a difference in quantity between the ordered and delivered Products or any damage is established, Customer shall make pertaining reservations with the forwarder, in absence of which any claim against Thermaflex shall be null and void, and Customer shall inform Thermaflex immediately of the results.

7.2 Claims concerning directly visible defects in the Products as well as claims which can be established through superficial examination or simple checking, must be reported to Thermaflex within 8 (eight) working days, in absence of which Customer shall be deemed to have accepted the concerned Products. In such case, Thermaflex shall not be liable for any claim in this respect.
7.3 Claims concerning defects which can only be established through in-depth investigation, testing and the like, must be filed in writing with Thermaflex immediately after establishment, but at any rate within the warranty period as specified in article 7.6, in absence of which Thermaflex shall not be liable for any claim in this respect.
7.4 Claims concerning minor deviations in size, weight, colour, clearness and quality of the Products, which are deemed acceptable in the branch or cannot be avoided from a technical point of view, will not be accepted.
7.5 Customer shall at all times keep at least 90% (ninety percent) of the Products concerning which a claim has been filed, available for inspection. In case of claims, processing or further delivery of the concerned Products shall only take place after prior written approval by Thermaflex.
7.6 During a period of 10 (ten) years from the date of delivery as mentioned in article 4.1, Thermaflex warrants the quality of the Products in the sense that they have been manufactured with the required craftsmanship and that during manufacture the correct or prescribed raw materials have been used. If and to the extent Thermaflex has applied products or semi-products from suppliers, the warranty with respect to such products shall be equal to the warranty such suppliers will offer to Thermaflex, taking into account that the warranty period shall under no circumstances be longer than the abovementioned 10 (ten) years.
7.7 If a warranty claims appears to be valid, Thermaflex shall, at its own discretion, (i) take the concerned Products back and replace same with Products of good quality at its charge, or (ii) credit Customer the invoice value of the concerned Products. Returning the Products can only take place after prior written authorization from Thermaflex. Product returns shall be made in packaging which adequately protects the Products against transport damage.
7.8 Establishing a defect in part of the delivered Products does not entitle Customer to refuse all delivered Products. Payment obligations of Customer are not postponed by claims of whatever nature.
7.9 Any warranty becomes null and void in case, at the judgment of Thermaflex, the defect results from: (i) misuse or (ii) any use contrary to the purpose of the Product;
7.10 Except for the stipulations, comprised under article 8.2, the provisions of this article contain the total and exclusive liability of Thermaflex concerning claims or defects with respect to Products supplied by Thermaflex.

Article 8 Information and processing instructions with respect to combinations of Products
8.1 Regarding various Products, Thermaflex has issued, or will issue at a later point in time, further data in writing. Such data concern information and instructions concerning:
- transportation and storage,
- processing and/or assembling,
- mounting and use of these Products, as well as
- certification or qualification of personnel which has to process or assemble these Products.
8.2 Provided the information and processing instructions mentioned in article 8.1 are strictly complied with and there are no external causes such as subsidence or shifting of soil, tension and/or rupture in buildings and the like, Thermaflex warrants the tightness of combinations of Products which are supplied as an integral part for a period of 10 (ten) years from the date of delivery as mentioned in article 4.1.

Article 9 Liability, hold harmless
9.1 Without prejudice to Thermaflex's liability under any applicable legal provision, Thermaflex's liability shall be expressly limited to the fulfilment of its warranty obligations or the warranty obligations which suppliers have towards Thermaflex. Each and every liability arising out of- or related to any form of direct-, indirect- or consequential damage is expressly excluded.
9.2 If and to the extent consulting activities are requested from Thermaflex with respect to the Products to be supplied, such consulting activities shall be limited either to non-binding information or to the written specifications of the Products as laid down by Thermaflex. The correctness and completeness of all information, supplied by Thermaflex, must be checked and recalculated by Customer, or consultants operating on Customer's behalf, within the framework of the concrete situation within which consultancy has been requested. Thermaflex expressly disclaims any liability for consulting activities, regardless whether such liability is based on the law or any contractual obligation.
9.3 If and to the extent Thermaflex is held liable by a competent judge, notwithstanding the provisions of the preceding paragraph, Thermaflex's liability, however based, shall under all circumstances be limited to € 500,000 (fivehundredthousand Euro) per event or series of related events.
9.4 Customer shall hold Thermaflex harmless from any and all claims of third parties with respect to damages for which Thermaflex is not liable according to the provisions of these General Terms and Conditions.

Article 10 Export restrictions with respect to PB-Products, applicable laws and regulations
10.1 It is expressly stated that Products, made of- or based on polybutene granulate, are not suitable for delivery to- or use in the U.S., Canadian- or Mexican market. In view of this, the export, transit as well as export via third parties (indirect export) of the abovementioned Products to the U.S., Canada and/or Mexico is strictly forbidden.
10.2 Customer shall be responsible that the Products comply with the laws and regulations and standards, applicable in the country in which the Products are delivered, processed and/or assembled.

Article 11 General
11.1 Thermaflex shall be entitled to invoke force majeure which is understood to mean any circumstances which interfere with the execution of the agreement and which are not attributable to Thermaflex. Force majeure includes but shall not be limited to: strikes, occupations, a shortage of material, equipment or services, required for the fulfilment of the contractual obligation, unforeseeable stagnations at suppliers or other third parties on whom Thermaflex depends and all other matters and facts which are beyond Thermaflex's control.
11.2 Dutch Law is applicable to all legal relationships to which these General Terms and Conditions apply and to all agreements resulting there from. To the extent not expressly deviated there from in these General Terms and Conditions, the provisions of the Vienna Treaty of April 11, 1980 (Convention on the International Sale of Goods) shall also be applicable.
11.3 All disputes between Thermaflex and Customer -including those which are only considered as such by one of the parties- shall be judged by the competent Court at Breda, The Netherlands.



THERMAFLEX®

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