

Flexalen® PU

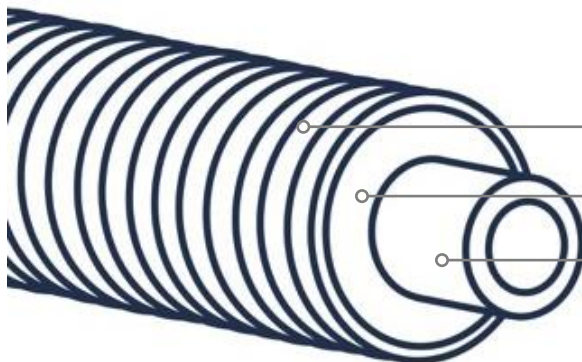
Pre-insulated piping system by Thermaflex®

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 OD125 mm (PU SL up to OD315 mm)
- 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



Design

LDPE Casing pipe
Flexibility and mechanical protection

PUR foam
Closed-cell, CFC-free

Polybutene service pipe, PB-H
With and without 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. The flexible pre-insulated pipe system is produced conforming 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.



PB-H service pipe (EN-ISO 15876)

Service temperature	-10°C to +95°C
Max. operating pressure	<125 OD 8bar*(95°C) >125 OD 5bar*(95°C)

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

Thermal Insulation

PUR foam, CFC-free
Closed-cell structure
Thermal Conductivity $\lambda \leq 0.021$ W/m·K @ 50°C

Disclaimer

All recommendations and information provided on this data sheet 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 the products will not infringe rights belonging to other parties. We reserve the right to change product design and properties without notification.



Flexalen® PU Heat losses

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

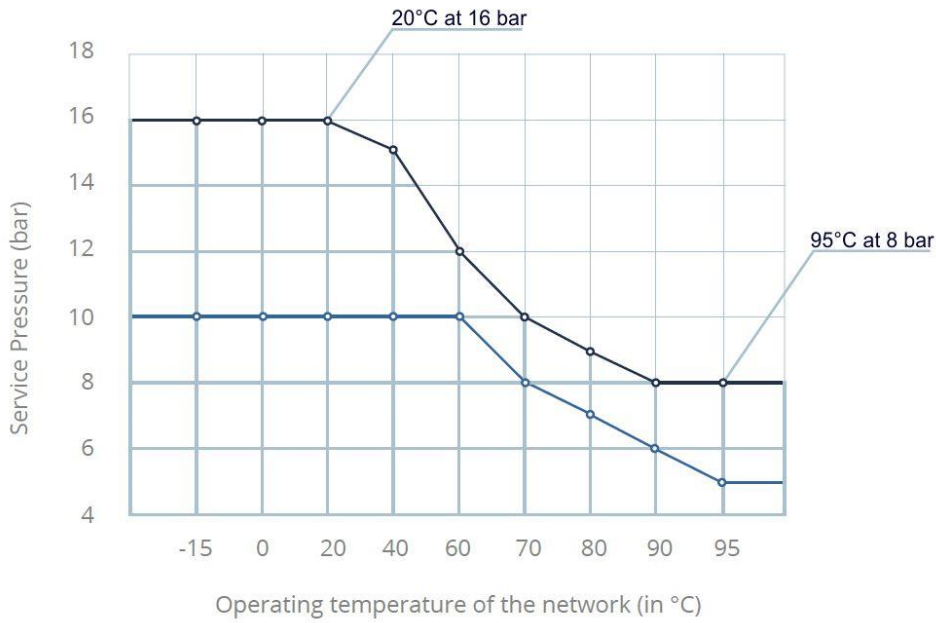
The heat loss characteristics are in accordance with the European standard for flexible heating pipes systems EN15632.

Heat loss Q [W/m] for Flexalen® PU Single line										
Dimensions	U-value [W/mK]	Insulation Class	Delta Temperature [DT] between the waterflow in the pipe and surrounding ground [°C]							
			Q=U*DT [W/m]							
			DT=10	DT=20	DT=30	DT=40	DT=50	DT=60	DT=70	
25 / 91	0.098	6	0.98	1.96	2.93	3.91	4.89	5.87	6.85	
32 / 91	0.120	6	1.20	2.40	3.61	4.81	6.01	7.21	8.41	
40 / 111	0.123	6	1.23	2.46	3.69	4.92	6.15	7.38	8.61	
50 / 126	0.135	6	1.35	2.70	4.04	5.39	6.74	8.09	9.43	
63 / 142	0.152	6	1.52	3.03	4.55	6.07	7.59	9.10	10.62	
75 / 162	0.159	6	1.59	3.18	4.78	6.37	7.96	9.55	11.14	
90 / 182	0.174	6	1.74	3.48	5.22	6.96	8.70	10.44	12.17	
110 / 202	0.199	6	1.99	3.98	5.97	7.96	9.94	11.93	13.92	
125 / 225	0.205	6	2.05	4.10	6.14	8.19	10.24	12.29	14.33	

Heat loss Q [W/m] for Flexalen® PU Double line									
Dimensions	U-value [W/mK]	Delta Temperature [DT] between the waterflow in the pipe and surrounding ground [°C]							
		Q=U*DT [W/m]							
		DT=10	DT=20	DT=30	DT=40	DT=50	DT=60	DT=70	
25 + 25 / 111	0.138	1.38	2.77	4.15	5.53	6.92	8.30	9.68	
32 + 32 / 126	0.153	1.53	3.06	4.60	6.13	7.66	9.19	10.72	
40 + 40 / 142	0.172	1.72	3.44	5.16	6.88	8.60	10.32	12.04	
50 + 50 / 182	0.162	1.62	3.24	4.87	6.49	8.11	9.73	11.36	
63 + 63 / 202	0.191	1.91	3.82	5.73	7.65	9.56	11.47	13.38	
75 + 75 / 225	0.211	2.11	4.22	6.33	8.44	10.55	12.66	14.76	



Flexalen® PU Pressure rating



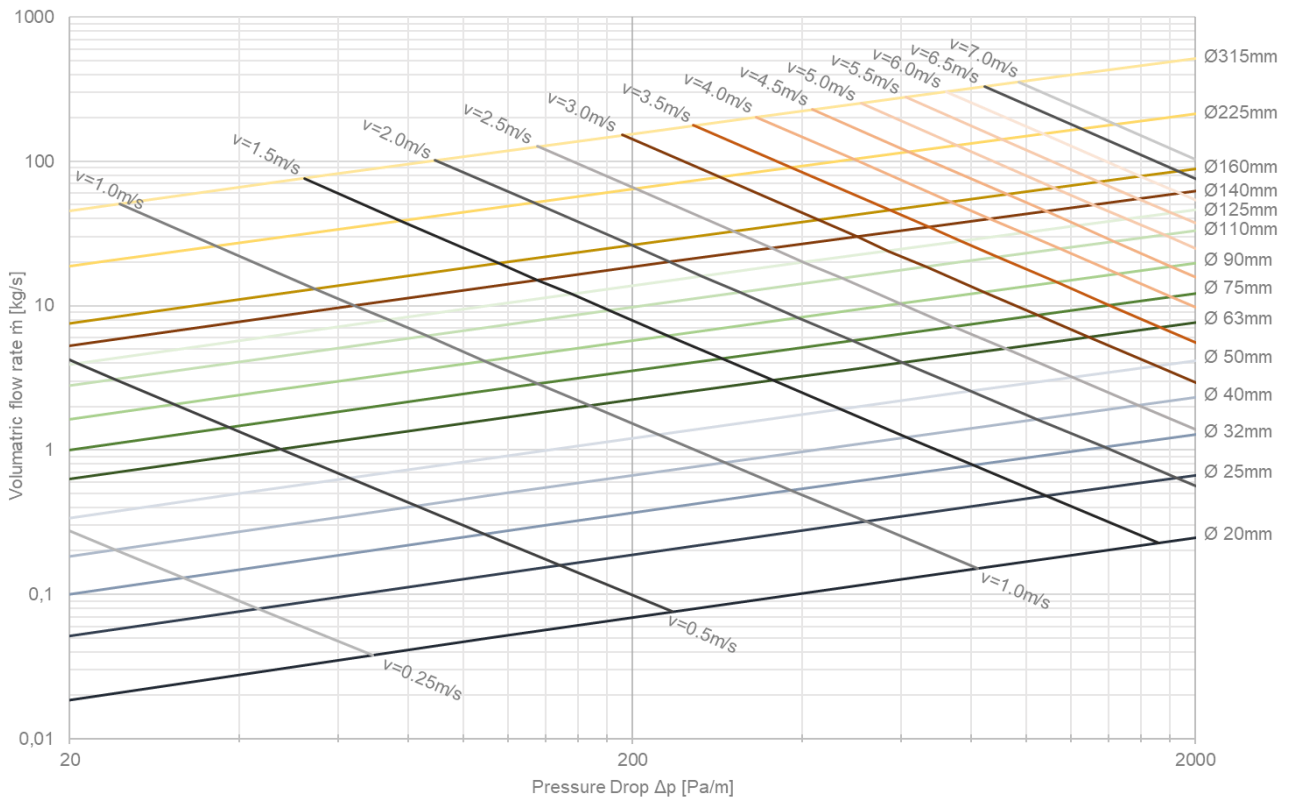
- Up to OD110 20°C/16 bar 95°C/8 bar
- ≥ OD125 20°C/10 bar 95°C/5 bar



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.

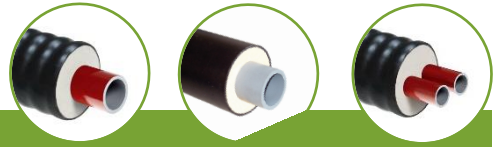
For support on a complete district heating network design please contact your Thermafex partner!





Availability

- Single lines on coils, Flexalen PU OD25-125mm
- 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	1.31	0.55	570
1210-091032-001	32 / 91	32 x 2.9	91	1.38	0.55	570
1210-111040-001	40 / 111	40 x 3.7	111	1.93	0.60	410
1210-126050-001	50 / 126	50 x 4.6	126	2.35	1.00	300
1210-142063-001	63 / 142	63 x 5.8	142	3.03	1.00	225
1210-162075-001	75 / 162	75 x 6.8	162	3.96	1.10	150
1210-182090-001	90 / 182	90 x 8.2	182	5.14	1.30	86
1200-202110-001*	110 / 202	110 x 10.0	202	6.94	1.40	80
1200-225125-001*	125 / 225	125 x 11.4	225	8.77	1.60	80

* Service pipe without oxygen barrier (not included in the system certification), additional Flexalen 600 clamps necessary!

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	1.74	0.60	410
1230-126032-001	32 + 32 / 126	32 x 2.9	126	2.27	1.00	300
1230-142040-001	40 + 40 / 142	40 x 3.7	142	2.88	1.00	225
1230-182050-001	50 + 50 / 182	50 x 4.6	182	4.38	1.30	86
1230-202063-001	63 + 63 / 202	63 x 5.8	202	5.40	1.40	80
1230-225075-001	75 + 75 / 225	75 x 6.8	225	8.83	1.60	80

- 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

