

URECON PRE-INSULATED PIPE DETAILED SPECIFICATION

General – Specifications (LOGSTOR – HOT WATER)

Pipe

Pre-insulated piping system shall comply to EN 253, and consist of steel carrier pipes, pipe polyurethane foam insulation with integral copper alarm wires and outer casing of polyethylene. The materials shall be bonded together to form a solid unit with shear and axial strength values as specified in the insulation (Series one) section.

Steel pipe

Logstor standard pipes are supplied in steel P235GH or St. 37.0 BW. Pipe material P235GH according to EN 10217-2 or St.37.0 BW according to DIN 1626. Dimensions and Tolerances comply with EN 253.

Mechanical properties:

Density 7850 kg/m³

Tensile strength > 350 N/mm²

Yield stress > 235 N/mm²

Young's modulus 2.1 x 10⁵ N/mm²

Supplied as straight pipes in lengths of 12 m.

HPDE casing

High-density polyethylene. Material according to EN 253.

Mechanical properties of HPDE :

Density > 940 kg/m³

Yield stress > 19 N/mm²

Thermal properties:

Coefficient of expansion 2 x 10⁻⁴ K⁻¹

Thermal conductivity 0.43 W/mK

Melt flow rate 0.3-0.8 g/10 min.

Thermal Stability:

Calculated continuous surface temperature greater than or equal to 50°C for 30 years.

.2 Oxidation induction timer (OIT): >30 min. at 210°.

Resistance against cracking formation:

Slow crack formation (notch sensitivity)

>3000 h (notch, 4 MPa, 80°, ISO 13479).

.2 Quick crack propagation (cold sensitivity)

>5 bar (0°C, ISO 13377)

Internal surface treatment:

All outer casings are corona-treated during production. This ensures an optimum adhesion between outer casing and insulation

Insulation (Series 1)

Hard polyurethane foam (PUR) in accordance to EN 253. Material Polyurethane foam made from polyol and isocyanate. The foam is homogenous with an average cell size of max. 0.5 mm.

Density > 60 kg/m³

Closed cells > 88%

Water absorption if boiled < 10% (Vol)

Compressive strength,

At 10 % deformation > 0.3 N/mm²

Axial shear strength > 0.12 N/mm²

Tangential shear strength > 0.20 N/mm²

Thermal conductivity at 50°C is < 0,0275 W/mK (before aging)

Max. continuous operating temperature: 140°C for 30 years

Nominal pipe diameter	Pipe outside diameter	Pipe wall thickness	Jacket outside diameter	Jacket thickness
mm	mm	mm	mm	mm
50 (2")	60.3	2.9	125	2.5
65 (2½")	76.1	2.9	140	3
80 (3")	88.9	3.2	160	3
100 (4")	114.3	3.6	200	3.2
125 (5")	139.7	3.6	225	3.5
150 (6")	168.3	4	250	3.9
200 (8")	219.1	4.5	315	4.9
250 (10")	273	5	400	6.3
300 (12")	323.9	5.6	450	7
350 (14")	355.6	5.6	500	7.8

*** Larger diameters & thicker insulation are available

Alarm Wires

The district heating pipe will be monitored by an alarm wire circuit in connection with a documented, proven technique.

Fittings

Pre-insulated fittings should comply to EN 448, all fittings (elbows, anchors, Tees etc) shall be pre-insulated.

Double Joint Kit

Joint applied shall be power transmitting.

Joint kit should comply to EN 489. Double water sealed system with 100% cross linked PE thermally shrinkable material. Joint kit to be BX type.

Valves

Pre-insulated ball valves should comply to EN 488. They shall be delivered as pre-insulated units and be designed on the basis of a maintenance-free ball valve with an all-welded valve body and a stainless polished valve ball placed in a spring-loaded Teflon seat. They shall be pre-insulated by Logstor with two service valves and a mounted gearbox operator.