

DETAILED SPECIFICATION

Field applied insulation with PE cover jacket for above grade piping

1. GENERAL

The pipe shall be field insulated using polyisocyanurate or polyurethane insulation and PE covers for outer jacketing with related sundry items as supplied by GF Urecon Ltd. The insulation of associated fittings and accessories shall be as per GF Urecon's recommendations. The product shall be manufactured in accordance to ISO 9001 Standards, or approved equal.

2. PIPE INSULATION HALF SHELLS*

***segments shall be supplied for core pipe size $\geq 400\text{mm}\varnothing$ (16in \varnothing)**

- a) Material: Rigid polyisocyanurate or polyurethane foam.
 - b) Density: (ASTM D1622) 32 kg/m³ (2.0 lbs/ft³).
 - c) Compressive strength: (ASTM D1621) 124 to 186 kPa (18 to 27 lbs/in²).
 - d) Closed cell content: (ASTM D6226) 90%, minimum.
 - e) Water absorption: (ASTM C272) 2.0% by volume.
 - f) K factor: (ASTM C518) 0.027 W/m °C (0.19 Btu • in/ft² • hr • °F).
 - g) Thickness: typically 50.8 mm (2 in), other thicknesses upon request
- Note: The insulation shall be pre-grooved on the inside or slightly oversized to accommodate heat trace cable(s) if applicable.*

3. OUTER JACKET ON PIPE INSULATION

The outer protective jacket shall consist of cut and rolled PE sheets in 3.17 mm (125 mils) or 4.44 mm (175 mils) thickness. Material shall be field secured in place with a minimum 50.8 mm (2 in) overlap piece to piece using 13 mm (½ in) wide stainless steel bands and gear clamps. The longitudinal seam shall have a minimum 50.8 mm (2 in) lap and shall be positioned in such a way as to shed water or minimize water ingress. Typical banding spacing is 300 mm (12 in), although closer spacing may be considered for ≥ 400 mm (16 in) diameter jacket. Contact your GF Urecon representative for assistance with the design if required.

- a) Service temperature range: from cryogenic to 93.3 °C (200 °F); the overall factory insulated system limitations are dependent on the core pipe type, insulation and application.
- b) Temperature limitations: minimum ambient installation temperature -34 °C (-29 °F).

General recommendation for PE sheet thicknesses:

Insulation OD ≤ 304.8 mm (12")	@ 3.17 mm (125 mils)
Insulation OD > 304.8 mm (12")	@ 4.44 mm (175 mils)

4. INSULATION KITS FOR FITTINGS

Insulation kits for fittings shall consist of rigid polyisocyanurate or polyurethane foam half shells complete with a heavy polymer protective coating on the outside surfaces. All insulation kits shall be supplied complete with silicone caulking, stainless steel bands and gear clamps. If the insulation shells are form hugging to the fitting, 152.4 mm (6 in) wide PE cover sheets with stainless steel bands and gear clamps shall be supplied for each end of the kit.

a) Rigid polyisocyanurate or polyurethane foam

- 1. Density: (ASTM D1622) 32 kg/m³ (2.0 lbs/ft³).
- 2. Compressive strength: (ASTM D1621) 124 to 186 kPa (18 to 27 lbs/in²).
- 3. Closed cell content: (ASTM D2856) 90%, minimum.
- 4. Water absorption: (ASTM C272) 2.0% by volume.
- 5. K factor: (ASTM C518) 0.027 W/m°C (0.19 Btu • in/ft² • hr • °F).
- 6. Thickness: typically 50.8 mm (2 in), other thicknesses upon request, shall match pipe insulation thickness.

b) Polymer coating, GF Urecon BL-100-20EP

1. Two component high density polyurethane coating, black in color.
2. Density: 1170 kg/m³ (73 lbs/ft³).
3. Durometer D scale 60.
4. Tensile strength: 11.10 MPa (1610 lbs/in²).
5. Tear strength: 26.5 N/mm (151 lbs/in).
6. Thickness: 2.54 mm (100 mils) outside surfaces, 0.51 mm (20 mils) inside surfaces.

5. ELECTRIC TRACING SYSTEM

The electric tracing system and associated controls shall be as per the manufacturer's recommendations with particular attention being paid to the watt densities applied on plastic pipes. The heat tracing cable shall be fastened to the pipe and fittings with aluminum tape. All tracing cables and related accessories to be CSA approved and comply with CSA heat tracing standard C22.2 No. 130-03. Standard of acceptance is GF Urecon's Thermocable or approved equal. Please contact your GF Urecon representative for further details and design assistance.

Note: Physical characteristics are nominal and may vary depending on pipe type and diameter.

CANADA

75 boulevard Dupont
Coteau-du-lac (Québec) J0P 1B0
Tél: (450) 455-0961 Fax: (450) 455-0350
E-mail: urecon.can@georgfischer.com

5010 – 43rd Avenue
Calmar (Alberta) T0C 0V0
Tel: (780) 985-3636 Fax: (780) 985-2466
E-mail: urecon.can@georgfischer.com

WEB SITE: www.urecon.com

ISO 9001 Registered Company

UNITED STATES

Tel: (321) 638-2364
E-mail: surecon.usa@georgfischer.com

WEB SITE: www.urecon.com