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***Piping Systems, Inc*.**

November 13, 2023

**Part 1 – General**

**1.01 Below Ground Pre-Insulated Foam System with Fusio-technik® PP-RCT125 Carrier Pipe**

**1.02 This piping system** shall be **Fusio-technik®** **PP-RCT125 WOR carrier pipe x HDPE jacket
pre-insulated with HiTherm PIR300 25/50 polyisocyanurate foam** as manufactured by **Rovanco® Piping Systems** of Joliet, Illinois.

**Part 2 - Products**

**2.01 Carrier Pipe** Pipe shall be manufactured by Aquatechnik® Polypropylene Random
Co-Polymer, Fusio-technik® PP-RCT 125WOR resin meeting the short-term properties and
long-term strength requirements of ASTM F 2389-17 and contain “White Oxidative Resistance”, (WOR). The pipe shall contain no rework or recycled materials and manufactured only from “virgin” resins. All pipes shall be made in a three-layer extrusion process. All pipes shall comply with the rated pressure requirements of ASTM F 2389-17. All pipe shall be certified as complying with NSF 14, NSF 61, NSF 51,
ASTM F 2389-17 and CSA B137.11.

**2.02 Carrier Pipe Fittings:** Injection molded fittings shall be provided on all fittings through
12” diameter unless otherwise approved as a “custom fitting” and manufactured from a
high-quality Polypropylene Random Co-Polymer, PP-R Super 80 SDR5 resin meeting the
short-term properties and long-term strength requirements of ASTM F 2389-17A. The fittings
shall contain no rework or recycled materials and manufactured only from “virgin” resins.
All fittings shall be certified by as complying with NSF 14, NSF 61, NSF 51 and ASTM F 2389
or CSA B137.11. Fittings larger than 12” diameter shall be fabricated by Aquatechnik®
North America using the same piping material furnished for the piping application and complying with NSF 14, NSF 61, NSF 51 and ASTM F 2389-17 or CSA B137.11.

**2.03 Carrier Pipe Insulation:** Carrier pipe insulation shall be HiTherm® PIR300 25/50
polyisocyanurate foam injected with one shot into the annular space between carrier pipe and jacket. Insulation shall be rigid, >90% closed cell polyisocyanurate with a minimum 2.0 lbs per foot3 density, compressive strength of 30 psi @ 75˚F, an initial thermal conductivity K factor no higher than 0.14 @ 75˚F per ASTM C-518 and meet E84 25/50 flame/smoke passive fire resistance rating. Maximum continuous operating temperature of polyisocyanurate foam shall be -297˚F to 300˚F with infrequent allowances for intermittent spikes up to 350˚F.

**2.04 Insulation Fittings & Joints:** All straight joints and fitting joints shall be insulated using material supplied by system manufacturer.

**2.05 Jacketing Material:** The outer casing shall be seamless high-density polyethylene (HDPE) conforming to ASTM D3350. Type III, Category 5, Class C and Grade P23/P34. With a minimum of 2% by weight of carbon black. Minimum thickness is 175 mils. For actual thickness contact Rovanco® or see official submittal documents. No FRP overwrap or sprayed jacketing will be allowed. Average jacket thickness shall be in accordance with Table 1.

Table 1:

|  |  |
| --- | --- |
| Jacket Size In Inches\* | Jacket Thickness In Mils |
| 6.60 | 200 |
| 6.60 | 200 |
| 6.60 | 200 |
| 6.60 | 200 |
| 8.00 | 175 |
| 10.00 | 175 |
| 10.00 | 175 |
| 12.43 | 175 |
| 14.06 | 175 |
| 15.87 | 175 |
| 17.83 | 175 |
| 19.80 | 200 |
| 22.17 | 200 |
| 24.17 | 225 |
| 26.26 | 200 |
| 31.64 | 225 |
| 31.64 | 445 |
| 36.00 | 445 |

\*Larger pipe sizes are available upon request.

**2.06 Backfill:** Should be tamped compactly in place so as to assure a stable surface. No rock should be used in the first foot of backfill. 24 inches, top to pipe to grade, of compacted fill shall meet H-20 Highway Loading.

**2.07 Manufacturer’s Assistance:** Rovanco® will provide a field service man on-site to properly train the installing personnel in all phases of installation, (if required).

**2.08 Approved Vendor:** The Rovanco® Below Ground Pre-Insulated Foam Piping System is engineered with Fusio-technik® PP-RCT 125 carrier pipe. All other manufacturers wishing to bid on this project must be ISO 9001 certified and provide the engineer with certified test data from either foam manufacturer or an independent testing agency that the product is capable of withstanding the service temperature continuously. The manufacturer shall obtain written approval from the engineer 10 days prior to bid date. Contact our home office or local representative for insulation sizing.