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***Piping Systems, Inc*.**

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**Part 1 – General**

**1.01 Field Insulated Flexible PE-XA Pipe x HDPE Jacketed System**

**1.02 This system** shall be **PE-XA Pexgol x HDPE Jacketed Piping System** for Hot Water, Chilled Water, and Process Piping Applications up to 230°F as manufactured by **Rovanco Piping Systems** of Joliet, Illinois.

**Part 2 - Products**

**2.01 Carrier Pipe:** SDR 11 PexGol PE-XA extruded, cross-linked polyethylene in coils up to 14”, or standard straight lengths from 16” – 28”. Coils can be insulated with field applied 40-foot insulation/jacket sections. Straight lengths can be pre-insulated at Rovanco.

Multiple carrier pipe connection methods available: Electrofusion, Victaulic coupling, and GP flanged couplers. Other carrier pipe types are available upon request. Factory fabricated and   
pre-engineered to actual field dimensions.

* 1. **Carrier Pipe Insulation:** Insulation shall be a polyurethane foam injected with one shot into

the annular space between carrier pipe and jacket. Insulation shall be rigid, minimum 90% closed cell polyurethane with a minimum 2.0 lbs per foot3 density, compressive strength of 30 psi @ 75˚F and a thermal conductivity K factor no higher than 0.180 @ 75˚F per ASTM C-518. Maximum operating temperature of urethane foam shall not exceed 250˚F.

* 1. **Jacketing Material:** The outer casing shall be 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 150 mils. No FRP overwrap or sprayed jacketing will be allowed. Minimum jacket thickness shall be in accordance with Table 1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Nominal Pipe Size  In Inches | Minimum Insulation Thickness In Included | Jacket Size In Inches | Jacket Thickness  In Mils | |
| 1-1/2 | 2.15 | 6.60 | | 200 |
| 2 | 1.91 | 6.60 | | 200 |
| 2-1/2 | 1.66 | 6.60 | | 200 |
| 3 | 1.35 | 6.60 | | 200 |
| 4 | 1.57 | 8.00 | | 175 |
| 5 | 2.04 | 10.00 | | 175 |
| 6 | 1.51 | 10.00 | | 175 |
| 8 | 1.72 | 12.43 | | 175 |
| 10 | 1.48 | 14.06 | | 175 |
| 12 | 1.38 | 15.87 | | 175 |
| 14 | 1.74 | 17.83 | | 175 |
| 16 | 1.7 | 19.80 | | 200 |
| 18 | 1.89 | 22.17 | | 200 |
| 20 | 1.86 | 24.17 | | 225 |

Table 1:

**2.04 Joining Method:** Straight lengths of pipe will be joined by HDPE electro-fusion fittings.

**2.05 Fittings:** All fittings will conform to pipe type and will be insulated and jacketed with materials supplied by the system supplier as per manufacturers’ standard procedures.

**2.06 End Seals:** Each length of pre-insulated pipe will be fitted with a watertight mastic end seal at jacket and pipe surfaces. All field cuts will be sealed with a field applied end seal.

**2.07 Insulation of Straight Joints:** After welding and testing, all joints shall be insulated and sealed as per manufacturers’ standard procedures.

**2.08 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.

**2.09 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).

**2.10 Approved Vendors:** HDPE Piping Systems by Rovanco, Joliet, Illinois or approved, ISO Certified, equal. Any alternate supplier must submit their technical data to the engineer ten days prior to bid date to be approved in writing as an equal.