

SECTION 15189PRE-FABRICATED UNDERGROUND PIPEPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Furnish and install pre-fabricated insulated underground pipe system and accessories where shown on the Drawings.
- B. Related work specified elsewhere (when applicable):
 - 1. Calking and flashing are specified in Division 7.
 - 2. Trench excavation and backfill are specified in Division 2.
- C. Where possible, straight sections without fittings shall be furnished in 40 foot lengths.

1.2 QUALITY ASSURANCE

- A. Provide pipe and fittings manufactured in the United States.
- B. Acceptable Manufacturers:
 - 1. Rovanco Corporation
 - 2. Perma-Pipe/Ricwil
 - 3. Or approved equal meeting all requirements of Part 2 of this Section.
- C. Manufacturer shall submit shop drawings for approval.
 - 1. Shop drawings shall show expansion loops, anchors, end seals, field closure guides, etc.
 - 2. The entire system shall be factory engineered.
- D. A representative of the manufacturer shall be present for all critical periods.
 - 1. Critical periods shall include but not be limited to:
 - a. Inspection of materials for damages after receipt at jobsite.
 - b. Supervision of joint assembly.
 - c. Supervision of hydrostatic testing.
 - d. Other supervision as required to provide a complete integral system.

PART 2 - PRODUCTS2.1 MATERIALS

- A. Service pipe and fittings:
 - 1. Type "L" copper tubing, hard drawn conforming to ASTM B-88.
 - 2. Couplings shall be bronze and grooved for O-ring seals.
 - 3. All other fittings shall be ASA B16.22 wrought copper fittings. Solder joints shall be made with silver solder or brazing alloys melting at above 1100°F.
- B. Insulation:
 - 1. Foamed urethane having a maximum "K" factor of .15 (BTU/Hr. sq. Ft./°F/In.) at 75°F and a density of not less than 2 lbs/ft³.
 - 2. Uniform thickness securely bonded to service pipe.
 - 3. Minimum thickness - 1.0 inches.

- C. Vapor Seal Jacket System:
 - 1. White PVC (Polyvinyl Chloride) of Type 1, Grade I, ASTM, D-1784, minimum thickness of 60 mils.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All straight pipe with O-ring slip couplings shall be installed in accordance with the manufacturer's recommendations.
- B. Fittings shall be silver soldered or brazed.
- C. Immediately after installation in ditch partially backfill in the middle of each unit leaving all joints exposed for inspection then hydrostatically test all underground pipe at 100 psig for 2 hours. Completely, remake any joints that leak and retest.
- D. After successful hydrostatic test, place concrete thrust blocks and allow to cure for 3 days before backfilling.
- E. Backfill and tamp by hand to a minimum of 12" above top of jacket with rock free backfill. Backfill remainder with material free of rock over 4 inches in diameter. Do not use tracked or wheeled vehicles for tamping.

END OF SECTION