

SECTION 15260
PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Piping insulation.
- B. Jackets and accessories.

1.02 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 15410 - Plumbing Piping: Placement of hangers and hanger inserts.

1.03 REFERENCES

- A. ASTM C177 - Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
- B. ASTM C335 - Steady-State Heat Transfer Properties of Horizontal Pipe Insulation.
- C. ASTM C518 - Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- D. ASTM C533 - Calcium Silicate Block and Pipe Thermal Insulation.
- E. ASTM C585 - Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).
- F. ASTM D1667 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Closed Cell Foam).
- G. ASTM D2842 - Water Absorption of Rigid Cellular Plastics.
- H. ASTM E84 - Surface Burning Characteristics of Building Materials.
- I. ASTM E96 - Water Vapor Transmission of Materials.
- J. NFPA 255 - Surface Burning Characteristics of Building Materials.
- K. UL 723 - Surface Burning characteristics of building materials.

1.04 SUBMITTALS

- A. Submit under provisions of Section General Conditions.

- B. Product Data: Provide product description, list of materials and thickness for each service, and locations.
- C. Manufacturer's Installation Instructions: Indicate procedures which ensure acceptable workmanship and installation standards will be achieved.

1.05 QUALITY ASSURANCE

- A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with NFPA 255.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01600.
- B. Deliver materials to site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- C. Store insulation in original wrapping and protect from weather and construction traffic.
- D. Protect insulation against dirt, water, chemical, and mechanical damage.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

2.01 CELLULAR FOAM

- A. Manufacturers:

Not Used
- B. Insulation: ASTM C552.
 - 1. 'K' ('ksi') value: ASTM c177 or c518; 0.028 at 75 degrees F.
 - 2. Maximum Water Vapor Transmission: 0.1 perm.
- C. Elastomeric Foam Adhesive
 - 1. Manufacturers:

Not Used

2. Air dried, contact adhesive, compatible with insulation.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. On exposed piping, locate insulation and cover seams in least visible locations.
- C. Insulated dual temperature pipes or cold pipes conveying fluids below ambient temperature:
 1. Provide vapor barrier jackets, factory applied or field applied.
 2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe.
 3. Finish with glass cloth and vapor barrier adhesive.
 4. PVC fitting covers may be used.
 5. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations.
 6. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
- D. For insulated pipes conveying fluids above ambient temperature:
 1. Provide standard jackets, with or without vapor barrier, factory applied or field applied.
 2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe.
 3. Finish with glass cloth and adhesive.
 4. PVC fitting covers may be used.
 5. For hot piping conveying fluids 140 degrees F, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
 6. For hot piping conveying fluids over 140 degrees F (degrees C), insulate flanges and unions at equipment.
- E. Finish insulation at supports, protrusions, and interruptions.
- F. For buried piping, provide factory fabricated assembly with inner all-purpose service jacket with self sealing lap, and asphalt impregnated open mesh glass fabric, with one mil

(0.025 mm) thick aluminum foil sandwiched between three layers of bituminous compound; outer surface faced with a polyester film.

3.03 TOLERANCE

- A. Substituted insulation materials shall provide thermal resistance within 10 percent at normal conditions, as materials indicated.

3.04 CELLULAR FOAM INSULATION SCHEDULE

PIPING SYSTEMS	Pipe Size	Thickness
	Inch (mm)	Inch (mm)
A. Plumbing systems	Up to ¾"	¾"
	1" & above	1"

END OF SECTION