

SECTION 15042 - HVAC INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Sections “Special Requirements”, “General Requirements”, and “General Conditions” form a part of this Section by this reference thereto and shall have the same force and effect as if printed herewith in full

1.2 DESCRIPTION OF WORK:

- A. Extent of HVAC Systems Insulation required by this section is indicated on drawings and by requirements of this section.

1.3 QUALITY ASSURANCE:

- A. Installer's Qualifications: Firm which at least 5 years successful installation experience on projects with hvac insulations similar to that required for this project.
- B. Flame/Smoke Ratings: provide composite hvac insulation (insulation, jackets, coverings, sealers, mastics and adhesives) with flame-spread index of 25 or less, and smoke-developed index of 50 or less, as tested by ASTM E8 84 (NFPA 255) method.

1. Exception: Outdoor hvac insulation may have flame spread index of 75 and smoke developed index of 150.

1.4 SUBMITTALS:

- A. Product Data: Submit manufacturer's technical product data and installation instructions for each type of hvac insulation. Submit complete schedules showing manufacturer's product number, k-value, thickness, and furnished accessories for each hvac system or item requiring insulation.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, the following:
 - 1. Armstrong World Industries, Inc.
 - 2. Rubatex Corp.

2.2 PIPING INSULATION MATERIALS

- A. Flexible Unicellular Piping Insulation: Pre-molded tubular flexible white closed-cell foam insulation with a pressure sensitive adhesive system along pre-slit longitudinal joint for closure and vapor sealing. Insulation shall have a "K value" of 0.27 at 75°F. Insulation shall be selected to match pipe O.D. ARMSTRONG Self-Seal Armaflex 2000 or equal.
 - 1. For fittings and valves in piping fabricate fitting covers from miter-cut sections of the insulation. Use manufacturer's recommended adhesive to attach and seal fitting cover. Use 1½" wide matching tape to seal butt ends of adjoining insulation sections.

2.3 HVAC PIPING SYSTEM INSULATION:

- A. Insulation Omitted: Omit insulation on hot piping within radiation enclosures or unit cabinets; and on unions, flanges, strainers, flexible connections, and expansion joints.
- B. Insulate the following HVAC piping systems:
 - 1. Refrigerant Piping: Insulate refrigerant piping suction systems, both interior and exterior .Insulate refrigerant piping liquid, outdoors only, with 1" thick flexible unicellular insulation:
 - 2. Condensate Drain Piping: Insulate condensate drain piping systems with 1/2" thick flexible unicellular insulation.
 - 3. Steam Piping; Insulate steam piping within UV cabinets ahead of control valve with 1" thick flexible unicellular. Also see 3.2.7 below

PART 3 - EXECUTION

3.1 PREPARATION – PIPING INSULATION

- A. DO NOT install covering before piping has been tested and approved.
- B. Insure surface is clean and dry prior to installation. Insure insulation is dry before and during application. Finish with systems at operating conditions.

3.2 INSTALLATION OF PIPING INSULATION:

- A. General: Install insulation products in accordance with manufacturer's written instructions, and in accordance with recognized industry practices to ensure that insulation serves its intended purpose.
 - 1. Install insulation on pipe systems subsequent to testing, and acceptance of tests.
 - 2. Install insulation materials with smooth and even surfaces. Insulate each continuous run of piping with full-length units of insulation, with single cut piece to complete run. Do not use cut pieces or scraps abutting each other. Install pipe shields below insulation to allow continuous insulation on piping.

3. Clean and dry pipe surfaces prior to insulating. Butt insulation joints firmly together to ensure complete and tight fit over surfaces to be covered. Do not apply insulation to wet surfaces.
4. Maintain integrity of vapor-barrier jackets on pipe insulation and protect to prevent puncture or other damage.
5. Cover valves, fittings and similar items in each piping system with equivalent thickness and composition of insulation as applied to adjoining pipe run. Install factory molded, precut or job fabricated units (at Installer's option) except where specific form or type is indicated.
6. Extend piping insulation without interruption through walls, floors and similar piping penetrations.
7. Reinsulate portions of existing steam pipe insulation where new pipe connections are indicated to be made to existing piping. New insulation shall match existing in thickness, material, and jacket appearance.
8. Protect flexible unicellular insulation installed outdoors where exposed to sunlight with application of two coats of manufacturer's recommended white weather-resistant finish.
9. For all insulated piping systems, seal all pipe insulation terminations (butt ends) at valves, fittings, wall penetrations and pipe supports with vapor barrier mastic.

3.3 PROTECTION AND REPLACEMENT:

- A. Replace damaged insulation which cannot be repaired satisfactorily, including units with vapor barrier damage and moisture saturated units.
- B. Protection: Insulation Installer shall advise Contractor of required protection for insulation work during remainder of construction period, to avoid damage and deterioration.

END OF SECTION 15042