
230700 HVAC INSULATION

Part 1 – GENERAL

1.1 Description

A. This section details the guidelines and expectations for the design and installation of HVAC piping insulation on Johns Hopkins University Homewood Campus. Project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However, unless there is adequate written justification and approval from the JHFRE Engineering and Energy Department, it is expected that these guidelines will govern the design and specifications.

1.2 Submittals

N/A

1.3 Quality Assurance

A. Insulation requirements shall conform to the latest adopted energy conservation code.

B. All pipe and ductwork insulation shall be continuous through walls, partitions, ceiling openings, and sleeves.

Part 2 – PRODUCTS

2.1 Piping

A. Piping

1. Material: Inorganic glass fiber with a thermal conductivity, k , of 0.23 btu-in/hr-ft²-F @ 75° F.

2. Jacket: White kraft paper bonded to aluminum foil, reinforced with fiberglass scrim.

3. Thickness: 1" thick on all pipe sizes.

B. Other:

1. All valves 2" and larger shall have removable insulation blankets. These are machine sewn with Velcro fasteners.

2. Provide removable insulation on equipment that will need periodic maintenance or inspection. These items include but are not limited to valves, strainers, pressure reducing valves, pressure relief valves, steam traps, pumps, expansion tanks, air eliminators, heat exchangers, storage tanks, etc.

Part 3 – EXECUTION

- 3.1 Piping insulation shall not be installed until hydrostatic tests have been successfully completed, witnessed and accepted by JHFRE.
- 3.2 All fittings, flanges, and unions shall be insulated the same as its corresponding piping.
- 3.3 Insulation shall continue unbroken through any hangers. The insulation shall rest on shields so as not to overly compress the insulation. Provide insulation protection shields fabricated from galvanized steel at all pipe hangers and supports.
- 3.4 Where piping is insulated, provide valve operator extensions to suit insulation thickness.
- 3.5 Raw edges of insulation shall be sealed to prevent moisture from penetrating the insulation.
- 3.6 Insulation on all cold surfaces must be applied with a continuous vapor seal. Hangers, supports, etc., that are secured directly to cold surfaces must be insulated and sealed to prevent condensation.
- 3.7 Special protection shall be considered for insulation subject to abuse, moisture, weather, etc.
- 3.8 When passing through floors, partitions, roofs and walls, cut sleeves to length for mounting flush with both surfaces. Except when passing through floors of mechanical equipment areas or other wet areas, then extend sleeve 4" above finished floor level.
- 3.9 Insulation on all cold surfaces must be applied with a continuous vapor seal. Hangers, supports, etc., that are secured directly to cold surfaces must be insulated and sealed to prevent condensation. Raw edges of insulation shall be sealed to prevent moisture from penetrating the insulation.
- 3.10 All ductwork passing through potentially cold spaces or above/behind drywall ceilings shall be fully insulated to prevent condensation.