

220700 PLUMBING INSULATION

Part 1 – GENERAL

1.1 Description

A. This section details the guidelines and expectations for the design and installation of plumbing 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

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

1.3 Quality Assurance

A. All testing on piping shall be complete prior to receiving any insulation. JHU personnel should be notified 11 working days in advance to witness testing.

Part 2 – PRODUCTS

2.1 Piping

A. Domestic Cold Water, Condensate Drain Piping, Interior Roof Drains, and Plumbing Vents:

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.
3. Roof drains and plumbing vents shall be insulated for at least the first 10' below the roof.

B. Domestic Hot Water and Recirculating 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:

Pipe Size (nominal OD)	Insulation Thickness

0 – 1.5"	1"
2" – 4"	2"
Over 4"	2.5"

C. Other:

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

2. All heating and cooling system pumps, hot water heaters and equipment shall have removable insulation blankets. These are machine sewn with Velcro fasteners.

Part 3 – EXECUTION

3.1 All fittings, flanges, and unions shall be insulated the same as its corresponding piping.

3.2 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.

3.3 Where piping is insulated, provide valve operator extensions to suit insulation thickness.

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

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 potentially wet areas, then extend sleeve 4" above finished floor level.