

DESIGN REQUIREMENTS

PLUMBING INSULATION

GENERAL INFORMATION

- 1.1 Comply with more stringent of following latest edition of Energy Conservation and Construction Code of New York City, ASHRAE and this Guideline.

DESIGN REQUIREMENTS

2.1 Insulation for Equipment

a. Hot Water Generators

1. 2 in. thick fiberglass, 3 lb. density insulation and hex mesh wire, screen finished with glass jacket adhered and coated with 2 coats of sealer.

b. Water Meters and Backflow Preventers

1. 1 in. thick fiberglass, 4 lb. density insulation with vapor barrier, coated with 2 coats of a vapor barrier sealer.

2.2 Insulation for Pipe and Fittings

- a. All domestic hot water, hot water return piping and fittings shall be insulated with fiberglass pipe insulation. The insulation shall have an average thermal conductivity of 0.22 BTU/hr-ft²-°F-in, at a mean temperature of 75°F.
- b. Cold water piping, drinking fountain waste, all leaders and AC unit drain piping shall be insulated with fiberglass pipe insulation with vapor barrier. The insulation shall have an average thermal conductivity of 0.22 BTU/hr-ft²-°F-in, at a mean temperature of 75°F.
- c. Insulation thickness shall be as follows:

SERVICE	PIPE SIZE	MINIMUM INSULATION THICKNESS
Domestic Cold Water	All	½"
Horizontal Leaders	All	½"
Vertical Leaders	All	½"

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SERVICE	PIPE SIZE	MINIMUM INSULATION THICKNESS
Domestic Hot Water	1½" & Smaller	1"
	2" & Larger	1½"
Drinking Fountain Waste	All	½"
AC Unit Drains and other piping subject to sweating	All	1"

- d. All fittings, valves, unions, flanges, etc. in water systems shall be insulated with pre-formed fiberglass fitting covers with pre-molded PVC covering. The insulation thickness shall match the thickness of the adjacent pipe.

- 2.3 The specifications shall state that all condensing drain piping and connections to equipment shall be insulated.

CONSTRUCTION REQUIREMENTS

3.1 General

- a. Insulation shall be applied to clean, dry surfaces at ambient room conditions. Do not install damaged insulation. Damaged insulation shall be removed from the job site. Any water-damaged insulation shall be removed and replaced by the Contractor at no additional cost.
- b. Insulation on cold surfaces where vapor barrier jackets are used shall be applied with a continuous, unbroken vapor seal. Hangers, supports, anchors, etc. that are secured directly to cold piping shall be adequately insulated and vapor sealed to prevent condensation.
- c. The use of duct tape for patching insulation is prohibited.
- d. Insulation shall not be installed until the piping system has been tested to the satisfaction of the University, and is signed off.
- e. Existing insulation damaged or removed shall be replaced with material and workmanship as that specified for the new work.
- f. Insulation shall be continuous through wall and ceiling openings and sleeves.
- g. Provide galvanized metal shields between hangers (or supports) and pipe insulation.



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- h. Nameplates, identification tags, stampings and final connections to plumbing fixtures shall not be insulated.
- i. Horizontal leader piping shall be insulated up to and including the first fitting of the vertical leader.
- j. Meet all ADA requirements for undercounter sink and lavatory installations.
- k. The application of all insulation materials, accessories and finishes shall be in accordance with the manufacturer's published recommendations.
- l. Fill surface imperfections such as chipped edges, small joints, cracks, voids or holes with insulation material and smooth all such areas with a skim coat of insulating cement.

REFERENCE

- 4.1 The applicable CSI Specification Section is 22 07 00.