

# NC State University Design and Construction Guidelines

## Division 23 Mechanical Insulation

### 1.0 Purpose

- A. These standards apply to the insulation of piping, equipment and ductwork

### 2.0 General Requirements

A. Ductwork Insulation

1. Acoustic lining should be minimized and is strongly discouraged. Exposed lining downstream of VAV boxes is acceptable provided is it installed with a sheet metal nosing at the leading edge. Exposed edges shall be sealed.
2. Exposed ductwork shall be fiberglass insulation with factory aluminum vapor barrier and all service jacket.
3. Concealed ductwork as installed above ceilings or within chases shall be insulated with a wrap and factory applied vapor barrier.
4. All outside air intake ducts and plenums shall be insulated with rigid board insulation.

B. Piping Insulation

Location	Utility Type	Pipe Size	Insulation	Jacket	Thickness
Mechanical Equipment Room	Chilled Water Steam Steam Condensate Domestic Water (hot & cold)				
Tunnel, Arch Tiles	Chilled Water Steam Steam Condensate Domestic Water (hot & cold)				
Manholes	Chilled Water Steam Steam Condensate Domestic Water (hot & cold)				
Direct Burial	Chilled Water Steam Steam Condensate Domestic Water (hot & cold)				

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### C. Types:

1. Factory molded tubular fiberglass, w/ factory applied jacket. Jacket shall be kraft paper, all service type w/ fiberglass reinforced foil vapor barrier.
2. Calcium silicate insulation molded, high temperature, abuse-resistant pipe and block insulation; composed of hydrous calcium silicate for use on systems operating up to 1200°F (649°C).