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Chapter 5 – Technical Construction and
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SECTION 23 07 00 Mechanical Insulation**A. GENERAL****(1) SUMMARY****(a) Section includes:**

- 1) Thermal insulation for specific mechanical piping, piping accessories, ductwork and mechanical equipment.

(2) NOTES TO DESIGNERS

- (a) Mechanical insulation shall comply with current adopted codes including the IECC and IMC. This standard is meant to provide guidance and direction in the specific areas noted. It is not meant to be a comprehensive specification covering all insulation applications on a given project. At a minimum all mechanical insulation must meet the requirements of the current energy efficiency code adopted by these standards.

B. PRODUCTS AND APPLICATIONS**(1) REMOVABLE/REUSABLE INSULATION COVERS. FOR ALL STEAM FITTINGS, STRAINERS, VALVES AND PLATE AND FRAME HEAT EXCHANGERS**

- (a) Applications: Removable jackets shall be provided for all steam fittings including flanges, valves, strainers, steam traps, PRV's, instrumentation, condensate receivers, equipment heads. Jackets shall also be used on all hot water and chilled water plate and frame heat exchangers and any equipment or surfaces that need to be accessed for maintenance or service. All jackets shall be field measured for a seamless fit.
- (b) Manufacturers:
 1. Insultech (by Shannon Enterprises)
 2. ThermaXX, LLC.
- (c) Materials:
 1. Jacket: Silicone Fiberglass composite
 2. Insulation: Needled fiberglass for dry locations and/or pyrogel for wet and damp locations including steam pits and vaults.
 3. Construction: To ensure ease of removal and reinstallation, jackets shall be fastened using a combination metal D-rings with fabric straps and Velcro depending on application temperature. Standard fastener "wire twists" may

only be used as a secondary fastening system as required for larger or odd shaped jackets.

4. Identification: Provide a permanently attached etched nameplate each jacket to identify its location and equipment served.
- (d) Installation: Jackets shall be custom measured for a precise fit and shall be installed by the jacket manufacturer to ensure a good fit.
 - (e) Warranty: Warranty all materials and labor for a period of five years.

(2) REFRIGERANT PIPING.

- (a) Applications: This applies to all field installed insulation for refrigerant piping.
- (b) Manufacturers:
 1. Armaflex
 2. K-Flex
- (c) Materials:
 1. Unslit Insulation: Flexible, closed-cell elastomeric.
 2. Slit Insulation: Flexible, closed-cell elastomeric with overlap type closure system equal to K-flex Insul-lock DS or Armaflex AP Lapseal.
 3. Jacket: None required for interior piping, except as required for exposed piping for cleaning or aesthetics. Exterior piping shall have continuous aluminum jacketing for protection. Jacketing may be integral to the insulation or may be applied separately. Field applied jacketing shall be adhered directly to insulation. Jacketing shall have PVC backing with aluminum foil coating equal to K-Flex Clad Al.
 4. Insulated hangers: Insulated hangers shall be used to provide a continuous insulation and vapor barrier.
- (d) Installation: The insulation shall be applied continuously. Piping $\frac{3}{4}$ " and below may be sleeved at 90 degree elbows. Piping above $\frac{3}{4}$ " shall have mitered corners at elbows.
- (e) Note that exposed interior or exterior refrigeration piping may need additional decorative line cover sets as determined by UNH and architectural consultants on a case by case basis.

C. EXECUTION

- (a) All insulation shall be installed in a neat and professional manner. All surfaces shall be fully covered by insulation to conserve energy, prevent condensation and protect personnel.

END OF SECTION