SECTION 15280
EQUIPMENT INSULATION

PART 1 GENERAL

1.1 REFERENCES

A. ASTM B209: Aluminum and Aluminum-Alloy Sheet and Plate.
B. ASTM C533: Calcium Silicate Block and Pipe Thermal Insulation.
C. ASTM C552: Cellular Glass Block and Pipe Thermal Insulation.

1.2 SUBMITTALS

A. Submit under provisions of Section 15000.
B. Product Data: For each product used in this project, provide catalog data for insulation, jackets and accessories, and installation instructions.
C. Samples: Not required.

1.3 QUALITY ASSURANCE

A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with ASTM E84.
B. Applicator: Company specializing in performing the work of this section with minimum three years experience.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
B. Store insulation in original wrapping, and protect from weather and construction traffic.
C. Protect insulation against dirt, water, chemical, and mechanical damage.

PART 2 PRODUCTS

2.1 CELLULAR GLASS INSULATION

A. Provide molded, impermeable, noncombustible, cellular glass equipment insulation. K-value shall be 0.35 at 75°F. ASTM C552
B. For interior applications, provide vapor barrier mastic and reinforcing membrane.
C. For exterior applications, provide vapor barrier mastic, reinforcing membrane and aluminum jacket.
D. Provide open mesh, synthetic membrane to reinforce mastic finishes. Thread count shall be 6 strands by 6 strands per square inch. Thickness shall be 27 mils.
E. Provide 18-ga, Type 304 stainless steel tie wire with twisted ends on maximum 12” centers.
F. Provide flexible, acrylic latex coating for use with cellular glass insulation to provide a vapor barrier finish.

2.2 HYDROUS CALCIUM SILICATE
A. Provide molded, asbestos free, noncombustible, hydrous calcium silicate equipment insulation. K-value shall be 0.40 at 250°F. ASTM C533
B. Provide 18-ga. Type 304 stainless steel tie wires with twisted ends on maximum 12” centers.
C. Provide insulating cement compatible with insulation.

2.3 ALUMINUM JACKET

A. Provide 20 mil thick, stucco embossed pattern finish, Type 1100 aluminum jacket. For horizontal equipment, locate seams on bottom. ASTM B209
B. Provide 0.5” wide, 20-mil thick, Type 3003 aluminum bands on maximum 24” centers.

PART 3 EXECUTION

3.1 EXAMINATION

A. Before applying insulation, verify that equipment has been inspected, tested and approved.
B. Before applying insulation, verify that surfaces are clean (with foreign material removed) and dry.

3.2 INSTALLATION

A. Install materials in accordance with manufacturer's instructions.
B. Do not insulate factory-insulated equipment.
C. On exposed equipment, locate insulation seams in least visible locations.
D. Apply insulation as close as possible to equipment by grooving, scoring, and beveling insulation, if necessary. Secure insulation to equipment with studs, pins, clips, adhesive, wires, or bands.
E. Fill joints, cracks, seams, and depressions with bedding compound to form smooth surface. On cold equipment, use vapor barrier cement.
F. Finish insulation at support, protrusions, and interruptions.
G. Do NOT insulate over nameplate or ASME stamps. Bevel and seal insulation around such.
H. Install insulation for equipment requiring access for maintenance, repair, or cleaning, in such a manner that it can be easily removed and replaced without damage.
I. Chilled Water Pumps: Provide 2” thick, cellular glass equipment insulation.
J. Chilled Water Air Separators: Provide 2” thick, cellular glass equipment insulation.
K. Chilled Water Expansion Tanks: Provide 2” thick, cellular glass equipment insulation.
L. Chilled Water Chemical Treatment Shot Feeder: Provide 2” thick, cellular glass equipment insulation.
M. Emergency Generator Muffler and Exhaust Pipe: Provide 4” thick, hydrous calcium silicate equipment insulation.

END OF SECTION