

SECTION 23 07 16
HVAC EQUIPMENT INSULATION

PART 1 GENERAL

1.1 REFERENCES

- A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- B. ASTM C534 – Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form
- C. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation
- D. ASTM C1534 – Standard Specification for Flexible Polymeric Sheet Insulation Used as a Thermal and Sound Absorbing Liner for Duct Systems
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials

1.2 SUBMITTALS

- A. Submit under provisions of Section 23 05 00.
- 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 per ASTM E84.
- B. Applicator: A company specializing in performing the work of this section with minimum 3-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, with a K-value of 0.35 at 75°F. ASTM C552
 - 1. For interior applications, provide vapor barrier mastic and reinforcing membrane or 5 ply self-adhesive vapor barrier mold inhibiting jacket (0.0000 perms)
 - 2. For exterior applications, provide vapor barrier mastic, reinforcing membrane and aluminum jacket or : eliminate the mastic and aluminum jacket and use one product 5 ply self-adhesive vapor barrier mold inhibiting jacket (0.0000 perms), UV stable; no additional mechanical attachments needed.
- B. Provide open mesh, synthetic membrane to reinforce mastic finishes, with a thread count of 6 strands by 6 strands per square inch and a thickness of 27 mils.
- C. Provide 18-ga, Type 304 stainless steel tie wire with twisted ends on maximum 12" centers.
- D. Provide flexible, acrylic latex coating for use with cellular glass insulation to provide a vapor barrier finish.

2.2 ALUMINUM JACKET

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

The School District of Palm Beach County

Project Name:

SDPBC Project No.:

2.3 5 PLY SELF-ADHESIVE VAPOR BARRIER AND WEATHER BARRIER JACKET

- A. For pipes, provide Self-Adhesive high performance Vapor Barrier and Weather Barrier Jacket 6mils thick with a perm rating of 0.0000 and is UV stable— finishes include; stucco embossed white, embossed black and smooth silver, with 10-year warranty.
- B. High performance acrylic adhesive capable of installation with no further mechanical attachments

2.4 AMRAFLEX/ARMACELL – ELASTOMERIC THERMAL INSULATION

- A. Fiber free, closed cell and low VOC
- B. Provide built-in vapor barrier
- C. 2" thickness with R-Value of R-8
- D. Apply sheet insulation to unit with manufacturer's recommended adhesive glue all joints.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Before applying insulation, verify that equipment inspection, testing and approval are complete.
- B. Before applying insulation, verify that surfaces are clean (all 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 as necessary, then secure 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 allows easily removal and replacement without damage.
- I. Chilled Water Pumps: Provide 2" thick, cellular glass equipment insulation.
 - 1. Install block insulation around pump assembly in such a fashion that it can be removed without damage to each half and secure with stainless steel bands
- 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. Chilled Water Strainers at each air handler: Provide 2" thick cellular glass around assembly in such a fashion that it can be removed without damage to each half and secure with stainless steel bands

END OF SECTION