SECTION 232900 - DUCTWORK INSULATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Ductwork insulation

1.2 SUBMITTALS

A. Product Data: Provide product description, list of materials and thickness for each service, and locations.

B. Manufacturer's Installation Instructions: Indicate procedures which ensure acceptable workmanship and installation standards will be achieved.

1.3 QUALITY ASSURANCE

A. Materials: Flame spread/smoke developed rating of 25/50 in accordance with ASTM E84, NFPA 255, and UL 723.

1.4 QUALIFICATIONS

A. Applicator: Company specializing in performing the work of this section with minimum three years experience.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 15000.

B. Deliver materials to site in original factory packaging, labeled with manufacturer's density and thickness.

C. Store insulation in original wrapping and protect from weather and construction traffic.

D. Protect insulation against dirt, water, chemical, and mechanical damage.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.

PART 2 - PRODUCTS

2.1 GLASS FIBER BLANKET INSULATION

A. Insulation: ASTM C553; flexible, noncombustible blanket with Foil Scrim Kraft (FSK) vapor barrier jacket.

1. 'K' value : ASTM C518, 0.29 at 75 deg F
2. Maximum service temperature: 250 deg F
3. Maximum moisture absorption: 0.20 percent by volume.
4. Density: 1.0 lb/cu ft
5. Moisture vapor transmission: ASTM E96; 0.04 perm.

B. Adhesive: Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.

1. FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.

2.2 FIRE-RATED BLANKET

A. High-temperature, flexible, blanket insulation with FSK jacket that is tested and certified to provide a 1-hour fire rating acceptable to authorities having jurisdiction.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that ductwork has been leak tested by the Contractor before applying insulation materials.

B. Verify that surfaces are clean, foreign material removed, and dry.

3.2 INSTALLATION

A. Install materials in accordance with manufacturer's instructions.

B. To ensure installed thermal performance, insulation shall be cut to “stretch-out” dimensions. This requires measurement of the duct perimeter, then cutting the insulation to the dimension (perimeter + add-on) indicated in the manufacturer’s stretch out chart. A 2” piece of insulation shall be removed from the facing at the end of the piece of insulation to form an overlapping taping flap.

C. The insulation shall be installed with the facing out. Adjacent sections of insulation shall be tightly butted with the 2” taping flap overlapping. All seams and flaps shall be sealed with pressure sensitive tape and coated with mastic to provide a vapor-tight seal.

D. Seal all tears, punctures, and/or other penetrations of the insulation facing with tape and mastic to provide a vapor-tight system.

E. Seal all seams and connections with glass fabric and mastic.

F. Insulated ductwork:

1. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
2. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.

3.3 TOLERANCE

A. Substituted insulation materials shall provide thermal resistance within 10 percent at normal conditions, as materials indicated.

3.4 FLEXIBLE GLASS FIBER DUCTWORK INSULATION SCHEDULE

DUCTWORK	MIN R-VALUE	FINISH
Supply Ductwork	R=6.0	Aluminum Film
Supply Ductwork in Attics	R=8.0	Aluminum Film
Return Ductwork	R=6.0	Aluminum Film
Outdoor Air Ductwork	R=6.0	Aluminum Film

END OF SECTION 232900