SECTION 15081P – DUCT INSULATION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes ductwork insulation duct, liner insulation jackets, and accessories.

B. Insulation requirements apply to all ducts conveying outdoor air in conditioned or partially conditioned space, and to all ducts conveying heated, cooled, or dehumidified air.

C. Vapor retarder required requirements apply to all ducts conveying cooled air in any operating mode.

D. Related Sections:
   1. Section 01702 – Material Storage Requirements
   2. Section 15060 – Hangers and Supports: Execution requirements for inserts for placement by this section.
   3. Section 15075 Drawing – Mechanical Identification: Product requirements for mechanical identification for placement by this section.

PART 2 PERFORMANCE REQUIREMENTS

2.1 Insulation installer shall warranty against condensation for the first year. All staining or visible insulation damage caused by condensation shall be replaced at no cost to Owner in the first year.

2.2 Polyisocyanurate & formaldehyde insulations are not permitted within conditioned, occupied, or adjacent connected spaces.

2.3 MAN MADE MINERAL FIBER, FLEXIBLE BLANKET OR BATTS

A. Manufacturers:
   2. Substitutions: Section 01600 – Product Requirements.

B. Insulation: Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications. Type I.

C. Vapor Retarder Jacket, Type II Flexible and Low Permeance Vapor Retarders for Thermal Insulation.
1. For systems operating at temperatures below ambient, close and secure seams and joints. When outward clinching staples are used, seal penetrations.

D. Tie Wire: 0.048 inch stainless steel with twisted ends on maximum 12 inch centers.

E. Vapor Retarder Lap Adhesive:
   1. Compatible with insulation.

2.4 MINERAL FIBER, FLEXIBLE Insulation for exterior of sheet metal ducts

A. Insulation: ASTM C553 Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications, Type II.

B. Vapor Retarder Jacket:
   1. 0.0032 inch vinyl.
   2. Moisture vapor transmission: ASTM E96; 0.02 perm maximum.
   3. Secure with pressure sensitive tape.

C. Vapor Retarder Tape:
   1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.

2.5 MINERAL FIBER, RIGID Insulation for exterior of sheet metal ducts.

A. Insulation: ASTM C612 Mineral Fiber Block and Board Insulation, Type IA

B. Vapor Retarder Jacket:
   1. Kraft paper with glass fiber yarn and bonded to aluminized film.
   2. Moisture vapor transmission: ASTM E96; 0.04 perm maximum.
   3. Secure with Vapor Retarder Tape or two coats of vapor barrier mastic and glass tape.

C. Vapor Retarder Tape:
   1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.

D. Indoor Vapor Retarder Finish:
   2. Vinyl emulsion type acrylic, compatible with insulation, black color.
2.6 CELLULAR GLASS

A. Insulation: ASTM C552, Type II – pipe and tubing insulation, Class 2 - Jacketed.
   1. ‘K’ factor: ASTM C177 or ASTM C518, 0.29 at 75 degrees F.

2.7 GLASS FIBER, RIGID

A. Insulation: ASTM C612 [or ASTM C592]; rigid, noncombustible.
   1. ‘K’ factor: ASTM C177 or ASTM C518, 0.24 at 75 degrees F.
   2. Maximum Service Temperature: 450 degrees F.
   3. Maximum Moisture Absorption: 0.1 percent by volume.

B. Vapor Retarder Jacket: ASTM C1136 Flexible, Low Permeance Vapor Retarders for Thermal Insulation, Type II.

C. Facing: 1 inch galvanized steel hexagonal wire mesh stitched on one face of insulation.

D. Vapor Retarder Lap Adhesive:
   1. Compatible with insulation.

E. Insulating Cement/Mastic:
   1. ASTM C195.

END OF SECTION