

SECTION 23 07 13 - DUCT INSULATIONS

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General, Supplementary and Special Conditions, apply to the work specified in this Section.

1.2 GENERAL REQUIREMENTS

- A. Install all insulation in conformance with manufacturer's recommendations and these specifications.
- B. All interior adhesives and sealants must meet VOC limit requirements of South Coast Air Quality Management District (SCAQMD) Rule #1168.
- C. All interior paints and coatings must meet VOC limit requirements of South Coast Air Quality Management District (SCAQMD) Rule #1113 and Green Seal GS-11 and GS-03.
- D. Insulation materials manufactured by the following list of companies will be acceptable provided their materials conform to these specifications (see Paragraph on Substitution): Armstrong, CertainTeed, Childers, Foster, Knauf, Koolphen, Manville, Owens-Corning and Pittsburg-Corning.
- E. Flame Spread and Smoke Requirements:
 - 1. All jackets, adhesives, coatings, insulating materials and vapor barrier mastics for air distribution systems shall meet the requirements of NFPA Bulletin 90-A with a flame spread of 25 or less and smoke developed rating not higher than 50.
 - 2. All jackets, adhesives, coatings, insulating materials and vapor barrier mastics for piping and equipment shall have a flame spread not higher than 25 and smoke developed rating not higher than 50.
 - 3. All materials containers shall have a U. L. Label.

PART 2 - MATERIALS AND METHODS

2.1 DUCT INSULATION

- A. GENERAL: Insulate all supply air ducts, return air ducts through un-insulated spaces and outside air ductwork, including kitchen hood supply air ducts and dryer vent. Insulate exhaust ducts down stream of inline fan backdraft damper. Insulate backs of air devices where ceiling above is not used as a return plenum.
- B. DUCTS INSIDE: 2" thick, fiberglass flexible duct insulation, 1 pound density (Type 100), conductivity (k) value not more than 0.27 at 75° mean temperature difference with an installed R value of 6 or higher, with factory adhered reinforced foil faced flame resistant Kraft paper vapor barrier. Wrap around duct with minimum lap of 2 inches each way, staple with 1/2" outward clinch staples 2" on center, secure on bottom of duct with water based, fire retardant adhesive (Foster 85-60 or Childers CP-127). For ducts 24" to 30" wide, provide one row of pins on bottom of duct, 16" on center. For wider ducts provide one row on bottom of duct for each 16" of width. Trim pins flush with retainer disk. Seal all with tape with Foster 30-80AF vapor barrier coating. For ducts in

mechanical rooms, reduce spacing to 12" on center for each 12" of dimension (all sides of duct). Seal joints and seams with 3" wide FSK foil tape, including termination of flex ducts, and coat tape with Foster 30-80AF vapor barrier coating. Where insulation terminates at equipment (AHU, fan coil, VAV box, etc) and where insulation is custom fitted to transitions and elbows, add glass cloth strip adhered with anti fungal Foster 30-80AF vapor barrier coating between equipment and insulation cover. Coating permeance shall be 0.013 perms or less at 43 mil dry thickness as tested by ASTM E96 and meet ASTM D5590 with 0 growth rating.

2.2 DUCT LINER

- A. GENERAL: Liner shall only be installed where specifically noted on the drawings. Use is typically for return air ducts, return air elbows/boots and certain supply air ducts in quiet areas. Liner shall be installed per manufacturer's recommendations.
- B. MATERIAL: 1" thick, 1½ pound per cubic foot density, neoprene faced, "K" value not more than .27 at 75° F mean temperature difference. Material shall be or coated with anti-microbial agent and manufactured by one of the following companies:
 - 1. CertainTeed Corporation's ToughtGard R or R-EP with Enhanced Surface
 - 2. Johns Manville's Duct Liner PM or Linacoustic RC
 - 3. Manson Insulation Products' AKOUSTI-LINER R Rigid Duct Liner or Flexible Duct Liner
 - 4. Owens Corning's QuietR Textile Duct Liner
- C. INSTALLATION: Adhere liner, with coated side toward air stream, to all interior sides of duct with 100% coverage of Foster 85-11. Further secure the liner with mechanical fasteners on maximum 12" centers. All edges and fasteners shall be coated with one brush coat of Foster 30-35.
- D. PLENUMS: Plenum interiors exposed to view through louvers and grilles shall be lined and have pins painted flat black. Provide bullnose on all edges facing in coming air direction.

END OF SECTION 23 07 13