

Approved: 2013-06-30

Part 1 General

1.1 RELATED REQUIREMENTS

1.2 REFERENCE STANDARDS

- .1 ASTM International (ASTM)
 - .1 ASTM C423-09a, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
 - .2 ASTM C916-85 (2007), Standard Specification for Adhesives for Duct Thermal Insulation.
 - .3 ASTM C1071-12, Standard specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material).
 - .4 ASTM C1338-08, Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
 - .5 ASTM G21-09, Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- .2 National Fire Protection Association (NFPA)
 - .1 NFPA 90A-12, Standard for the Installation of Air Conditioning and Ventilating Systems.
 - .2 NFPA 90B-12, Standard for the Installation of Warm Air Heating and Air Conditioning Systems.
- .3 North American Insulation Manufacturers Association (NAIMA)
 - .1 NAIMA AH116-2002, Fibrous Glass Duct Construction Standards.
- .4 Sheet Metal and Air Conditioning Contractor s National Association (SMACNA)
 - .1 SMACNA, HVAC Duct Construction Standards, Metal and Flexible-2005.
 - .2 SMACNA IAQ Guideline for Occupied Buildings Under Construction-2007.
- .5 Underwriter s Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-10, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with division 1.
- .2 Product Data:
 - .1 Submit manufacturer s instructions, printed product literature and data sheets for duct liners and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with division 1.

- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer s name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors and in accordance with manufacturer s recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect duct liners from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 DUCT LINER

- .1 General:
 - .1 Mineral Fibre duct liner: air surface coated .
 - .2 Flame spread rating shall not exceed 25. Smoke development rating shall not exceed 50 when tested in accordance with NFPA 90A, CAN/ULC-S102 and NFPA 90B.
 - .3 Fungi resistance: to ASTM C1338, ASTM G21.
- .2 Flexible:
 - .1 Use on round surfaces.
 - .2 25mm thick, to ASTM C1071 Type[1, fibrous glass blanket duct liner.
 - .3 Density: 24 kg/m³minimum.
 - .4 Minimum NRC of 0.65 at 25 mm thickness based on Type A mounting to ASTM C423.

2.2 ADHESIVE

- .1 Adhesive: to NFPA 90A and NFPA 90B or ASTM C916.
- .2 Flame spread rating shall not exceed 25. Smoke development rating shall not exceed 50. Temperature range minus 29 degrees C to plus 93 degrees C.
- .3 Water-based type.

2.3 FASTENERS

- .1 Weld pins 2.0 mm diameter, length to suit thickness of insulation. Polymer or Nylon retaining clips, 32 mm square.

2.4 JOINT TAPE

- .1 Poly-Vinyl treated open weave fiberglass membrane 50 mm wide.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for duct liner installation in accordance with manufacturer s written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 GENERAL

- .1 Do work in accordance with NAIMA AH116 and SMACNA HVAC Duct Construction Standard except as specified otherwise.
- .2 Line inside of ducts where indicated.
- .3 Duct dimensions, as indicated, are clear inside duct lining.

3.3 DUCT LINER

- .1 Install in accordance with manufacturer s recommendations, and as follows:
 - .1 Fasten to interior sheet metal surface with 100% coverage of adhesive to ASTM C916.
 - .1 Exposed leading edges and transverse joints to be factory coated or coated with adhesive during fabrication.
 - .2 In addition to adhesive, install weld pins not less than 2 rows per surface and not more than 425 mm on centres to compress duct liner sufficiently to hold it firmly in place.
 - .2 In systems, where air velocities exceed 20.3 m/s, install galvanized sheet metal nosing to leading edges of duct liner.

3.4 JOINTS

- .1 Seal butt joints, exposed edges, weld pin and clip penetrations and damaged areas of liner with joint tape and sealer. Install joint tape in accordance with manufacturer s written recommendations, and as follows:
 - .1 Bed tape in sealer.
 - .2 Apply 2 coats of sealer over tape.
- .2 Replace damaged areas of liner at discretion of Departmental Representative.
- .3 Protect leading edges of duct sections with sheet metal nosing having 15 mm overlap and fastened to duct.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with division 1.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with division 1.

END OF SECTION