

**Part 1 General**

**1.1 PRODUCT DATA**

- .1 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.

**1.2 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan

**Part 2 Products**

**2.1 DUCT LINER**

- .1 General:
  - .1 Fibrous glass duct liner: air stream side faced with mat facing.
  - .2 Flame spread rating shall not exceed 25. Smoke development rating shall not exceed 50 when tested in accordance with CAN/ULC-S102.
- .2 Rigid:
  - .1 Use on flat interior plenum surfaces (ducts with any single dimension greater than 1.5 m or with access to interior will be considered a plenum).
  - .2 25 mm thick, to CGSB 51-GP-10M, fibrous glass rigid board duct liner.
  - .3 Density: 48 kg/m<sup>3</sup> minimum.
  - .4 Thermal resistance to be minimum 0.76 m<sup>2</sup> deg. C/W for 25 mm thickness when tested in accordance with ASTM C177, at 24 deg C mean temperature.
- .3 Flexible:
  - .1 Use on round, oval or rectangle (except plenums) surfaces.
  - .2 25 mm thick, to CGSB-51-GP-11M, fibrous glass blanket duct liner.
  - .3 Density: 24 kg/m<sup>3</sup> minimum.
  - .4 Thermal resistance to be minimum 0.63 m<sup>2</sup> deg. C/W for 25 mm thickness when tested in accordance with ASTM C177, at 24 deg C mean temperature.
- .4 Acceptable material: Knauf, Owens Corning, Johns Manville, Certain Teed.

## **2.2 ADHESIVE**

- .1 Meet requirements of NFPA 90A and NFPA 90B.
- .2 Flame spread rating shall not exceed 25. Smoke development rating shall not exceed 50. Temperature range -29°C to +93°C.

## **2.3 FASTENERS**

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

## **2.4 JOINT TAPE**

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

## **2.5 SEALER**

- .1 Meet requirements of NFPA 90A and NFPA90B.
- .2 Flame spread rating shall not exceed 25. Smoke development rating shall not exceed 50. Temperature range -68°C to +93°C.

## **Part 3 Execution**

### **3.1 GENERAL**

- .1 Do work in accordance with recommendations of SMACNA duct liner standards as indicated in SMACNA HVAC Duct Construction Standards, Metal and Flexible, except as specified otherwise.
- .2 Line inside of ducts where indicated.
- .3 Duct dimensions, as indicated, are clear inside duct lining.

### **3.2 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.
  - .2 In addition to adhesive, install weld pins not less than 2 rows per surface and not more than 425 mm on centres.

### 3.3 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 one coat 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 where air velocity in duct exceeds 7.6m/s.

**END OF SECTION 23 33 53**