

**PART 1 - GENERAL****1.1 REFERENCES**

- .1 American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE).
- .2 Department of Justice Canada (Jus).
  - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
  - .2 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).
- .4 National Fire Protection Association (NFPA).
  - .1 NFPA 90A-02, Standard for the Installation of Air-Conditioning and Ventilating Systems.
  - .2 NFPA 90B-02, Standard for Installation of Warm Air Heating and Air-Conditioning Systems.
- .5 Sheet Metal and Air-Conditioning Contractors' National Association (SMACNA).
  - .1 SMACNA HVAC Duct Construction Standards - Metal and Flexible, 95 (Addendum No.1, November 1997).
  - .2 SMACNA IAQ Guideline for Occupied Buildings under Construction, 1<sup>st</sup> Edition, 1995.
- .6 Underwriters' Laboratories Inc. (UL).
  - .1 UL 181-96, Standard for Factory-Made Air Ducts and Air Connectors.
- .7 Underwriters' Laboratories of Canada (ULC).
  - .1 CAN/ULC-S110-1986 (R2001), Fire Tests for Air Ducts.

**1.2 SUBMITTALS**

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.

### **1.3 QUALITY ASSURANCE**

- .1 Certification of Ratings:
  - .1 Catalogue or published ratings to be those obtained from tests carried out by manufacturer or independent testing agency signifying adherence to Codes and Standards.
- .2 Health and Safety:
  - .1 Apply pertinent measures in accordance with Section 01 35 29.06 - Health and Safety Requirements.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Protect on site stored or installed absorptive material from moisture damage.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL**

- .1 Factory fabricated to CAN/ULC-S110-07.
- .2 Pressure drop coefficients listed below are based on relative sheet metal duct pressure drop coefficient of 1.00.
- .3 Flame spread rating not to exceed 25. Smoke developed rating not to exceed 50.

### **2.2 METALLIC - INSULATED**

- .1 Spiral wound flexible aluminum with glass fibre thermal insulation with vapour barrier and vinyl reinforced jacket, as indicated.
  - .1 Aluminum sheet thickness: Not less than 0.15 mm.
  - .2 Insulation thickness: Not less than 25 mm.
- .2 Performance.
  - .1 Factory tested to 3 kPa without leakage.
  - .2 Maximum relative pressure drop coefficient: 3.
  - .3 Leakage: 0%.

## FLEXIBLE DUCTS

- .4 Thermal loss/gain: 1.03 W/m<sup>2</sup>/°C.
- .5 ULC approved Class 1.
- .6 Acceptable products: Flex Master, T/L-A Model or equivalent.

**PART 3 - EXECUTION****3.1 INSTALLATION OF FLEXIBLE DUCT**

- .1 Install flexible air ducts where specified in compliance with SMACNA recommendations, ANSI/NFPA 90A, 90B, and UL 181 Standards.
- .2 Flexible ductwork must be supported in accordance with SMACNA.
- .3 Flexible duct length connected to diffuser must not be greater than 1,200 mm.
- .4 Flexible duct length connected to boxes must not be greater than 900 mm.

**END OF SECTION**