

## **1. 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, 1st 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.

## **2. PART 2 - PRODUCTS**

### **2.1 General**

- .1 Factory fabricated to CAN/ULC-S110.
- .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 – Uninsulated**

- .1 Type 1 : spiral wound flexible aluminum or stainless steel as indicated.
- .2 Performance:
  - .1 Factory tested to 2.5 kPa without leakage.
  - .2 Maximum relative pressure drop coefficient: 3.
  - .3 Acceptable products : Flexmaster T/L.

### **2.3 Metallic - Insulated**

- .1 Type 2: spiral wound flexible aluminum with factory applied, 25mm thick flexible glass fibre thermal insulation with vapour barrier and vinyl jacket, as indicated.
- .2 Performance:
  - .1 Factory tested to 2.5 kPa without leakage.
  - .2 Maximum relative pressure drop coefficient: 3.
  - .3 Thermal loss/gain: 1.03 W/m<sup>2</sup>. degrees C mean.
- .3 Acceptable product: Flexmaster T/L – Thermal.

### **3. PART 3 – EXECUTION**

#### **3.1 Duct Installation**

- .1 Install in accordance with: CAN/ULC-S110, UL-181, NFPA 90A, NFPA 90B and SMACNA pertinent standards.