

**1 GENERAL**

**1.1 REFERENCES**

- .1 American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE).
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).
- .3 National Fire Protection Association (NFPA).
  - .1 NFPA 90A-12, Standard for the Installation of Air-Conditioning and Ventilating Systems.
- .4 Sheet Metal and Air-Conditioning Contractors' National Association (SMACNA).
  - .1 SMACNA HVAC Duct Construction Standards – Metal and Flexible, 05
- .5 Underwriters' Laboratories Inc. (UL).
  - .1 UL 181-05, Standard for Factory-Made Air Ducts and Air Connectors.
- .6 Underwriters' Laboratories of Canada (ULC).
  - .1 CAN/ULC-S110-2007, Fire Tests for Air Ducts.

**1.2 SUBMITTALS**

- .1 Make submittals in accordance with Section 01 00 10 – General Instructions.
- .2 Product Data: submit WHMIS MSDS in accordance with Section 01 00 10 – General Instructions for the following:
  - .1 Thermal properties.
  - .2 Friction loss.
  - .3 Acoustical loss.
  - .4 Leakage.
  - .5 Fire rating.
- .3 Samples: submit samples with product data of different types of flexible duct being used in accordance with Section 01 00 10 – General Instructions.

**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 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

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**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 – INSULATED**

- .1 Spiral wound flexible aluminum with factory applied, 37 mm thick flexible glass fibre thermal insulation with vapour barrier and foil jacket.
- .2 Performance:
  - .1 Factory tested to 2.5 kPa without leakage.
  - .2 Maximum relative pressure drop coefficient: 3.
  - .3 Thermal loss/gain: 3 W/m<sup>2</sup>. degrees C mean.

**3 EXECUTION**

**3.1 DUCT INSTALLATION**

- .1 Install in accordance with: CAN/ULC-S110 UL-181, NFPA 90B, SMACNA.
- .2 Install as straight as possible.
- .3 Maximum length to be 1.5 m, unless shown otherwise