

1.1 **GENERAL**

1.2 **REFERENCES**

- .1 Sheet Metal and Air Conditioning National Association (SMACNA)
  - .1 SMACNA HVAC Duct Construction Standards, Metal and Flexible-2005.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).

1.3 **SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 00 10 – General Instructions. Include product characteristics, performance criteria, and limitations.
    - .1 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 00 10 – General Instructions.
    - .2 Indicate the following: material, frame, blades and bearings.
  - .2 Quality assurance submittals: submit following in accordance with Section 01 00 10 – General Instructions.
    - .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
    - .2 Instructions: submit manufacturer's installation instructions.

1.4 **QUALITY ASSURANCE**

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

2 **PRODUCTS**

2.1 **GENERAL**

- .1 Manufacture to SMACNA standards.

2.2 **SINGLE BLADE DAMPERS**

- .1 Fabricate from same material as duct, but one sheet metal thickness heavier. V-groove stiffened.
- .2 Size and configuration to recommendations of SMACNA, except maximum height 100mm.
- .3 Locking quadrant with shaft extension to accommodate insulation thickness.
- .4 Inside and outside bronze end bearings.
- .5 Channel frame of same material as adjacent duct, complete with angle stop.

**2.3 MULTI-BLADED DAMPERS**

- .1 Factory manufactured of material compatible with duct.
- .2 Opposed blade: configuration, metal thickness and construction to recommendations of SMACNA.
- .3 Maximum blade height: 100mm.
- .4 Bearings: pin in bronze bushings.
- .5 Linkage: shaft extension with locking quadrant.
- .6 Channel frame of same material as adjacent duct, complete with angle stop.

**3 EXECUTION**

**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

**3.2 INSTALLATION**

- .1 Install where indicated.
- .2 Install in accordance with recommendations of SMACNA and in accordance with manufacturer's instructions.
- .3 Locate balancing dampers in each branch duct, for supply, return and exhaust systems.
- .4 Runouts to registers and diffusers: install single blade damper located as close as possible to main ducts.
- .5 Dampers: vibration free.
- .6 Ensure damper operators are observable and accessible.
- .7 Corrections and adjustments conducted by Departmental Representative.

**3.3 CLEANING**

- .1 Proceed in accordance with Section 01 00 10 – General Instructions.