PART 1 GENERAL

1.1 SUMMARY

.1 Section Includes:

.1 Operating dampers for mechanical forced air ventilation and air conditioning systems.

1.2 REFERENCES

.1 American Society for Testing and Materials International (ASTM)

.1 ASTM A 653/A653M-04a, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.

.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 33 00 - Submittal Procedures. 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 33 00 - Submittal Procedures.

.2 Indicate the following:

.1 Performance data.

.2 Specifications

.2 Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures.

.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.

.3 Closeout Submittals:

.1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals

1.4 QUALITY ASSURANCE

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

.2 Certificates:

.1 Catalogue or published ratings those obtained from tests carried out by manufacturer or those ordered by manufacturer from independent testing agency.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Packing, shipping, handling and unloading:

.1 Deliver, store and handle in accordance with manufacturer's written instructions and Section 01 61 00 - Common Product Requirements.

.2 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Waste Management and Disposal:

.1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS

2.1 MULTI-LEAF DAMPERS

.1 Opposed or parallel blade type as indicated.

.2 Structurally formed steel or extruded aluminum, interlocking blades, complete with extruded vinyl seals, spring stainless steel side seals, structurally formed and welded galvanized steel or extruded aluminum frame.

.3 Pressure fit self-lubricated bronze bearings.

.4 Linkage: plated steel tie rods, brass pivots and plated steel brackets, complete with plated steel control rod.

.5 Operator: to Section 25 30 02 – EMCS: Field Control Devices.

.6 Performance:

.1 Leakage: in closed position to be less than 2% of rated air flow at 500 Pa differential across damper.

.2 Pressure drop: at full open position to be less than 25 Pa differential across damper at 10 m/s.

.7 Insulated aluminum dampers:

.1 Frames: insulated with extruded polystyrene foam with RSI factor of 5.0.

.2 Blades: constructed from aluminum extrusions with internal hollows insulated with polyurethane or polystyrene foam, RSI factor of 5.0.

2.2 DISC TYPE DAMPERS

.1 Frame: insulated brake formed, welded, 1.6 mm thick, galvanized steel to ASTM A 653M.

.2 Disc: insulated spin formed, 1.6 mm thick, galvanized steel to ASTM A 653M.

.3 Gasket: extruded neoprene, field replaceable, with 10-year warranty.

.4 Bearings: roller self lubricated and sealed.

.5 Operator: compatible with damper, spring loaded actuator.

.6 Performance:

.1 Leakage: in closed position to be less than 2% of rated air flow at 500 Pa pressure differential across damper.

.2 Pressure drop: at full open position to be less than 25 Pa differential across damper at 10 m/s.

2.3 BACK DRAFT DAMPERS

.1 Automatic gravity operated, multi leaf, aluminum or steel construction with nylon bearings, centre pivoted, spring assisted or counterweighted.

2.4 RELIEF DAMPERS

.1 Automatic multi-leaf steel or aluminum dampers with ball bearing centre pivoted and counter-weights set to open as indicated.

PART 3 EXECUTION

3.1 INSTALLATION

.1 Install where indicated.

.2 Install in accordance with recommendations of SMACNA and manufacturer's instructions.

.3 Seal multiple damper modules with silicon sealant.

.4 Install access door adjacent to each damper. See Section 23 33 00 – Air Duct Accessories.

.5 Ensure dampers are observable and accessible.

3.2 **CLEANING**

.1 Proceed in accordance with Section 01 74 11 - Cleaning.

.2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION