

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Section 23 05 00 - Common Work Results for HVAC

**1.2                REFERENCES**

- .1            ASTM International
  - .1            ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.

**1.3                ACTION AND INFORMATIONAL SUBMITTALS**

- .1            Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2            Product Data:
  - .1            Submit manufacturer's instructions, printed product literature and data sheets for dampers and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2            Construction IAQ Management Plan:
    - .1            Submit Indoor Air Quality (IAQ) Plan for pre-occupancy phases of building.
    - .2            During construction meet or exceed the requirements of SMACNA IAQ Guideline for Occupied Buildings Under Construction.

**1.4                CLOSEOUT SUBMITTALS**

- .1            Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2            Operation and Maintenance Data: submit operation and maintenance data for dampers for incorporation into manual.

**1.5                REPLACEMENT MATERIALS**

- .1            Where materials or products are specified by trademark name, consult the Instructions to Bidders document for procedures to follow regarding the request for approval of materials or product replacement.

**1.6                DELIVERY, STORAGE AND HANDLING**

- .1            Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.
- .2            Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3            Storage and Handling Requirements:
  - .1            Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

- .2 Store and protect dampers from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.

## **Part 2 Products**

### **2.1 MULTI-LEAF DAMPERS**

- .1 Opposed blade type.
- .1 Blades and frame from same material as duct.
- .2 Interlocking blades, complete with extruded vinyl seals, spring stainless steel side seals, structurally formed and welded galvanized steel 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 Performance:
  - .1 Leakage: less than 2% of rated air flow in closed position.

### **2.2 MULTI-LEAF INSULATED DAMPERS**

- .1 For use when in contact with outdoor air.
- .2 Opposed blade type.
- .3 Blades and frame from same material as duct.
- .4 Interlocking blades, complete with extruded vinyl seals, spring stainless steel side seals, structurally formed and welded galvanized steel frame.
- .5 Pressure fit self-lubricated bronze bearings.
- .6 Linkage: plated steel tie rods, brass pivots and plated steel brackets, complete with plated steel control rod.
- .7 Performance:
  - .1 Leakage: less than 2% of rated air flow in closed position.
- .8 Aluminum dampers, insulated
  - .1 Frame insulated with extruded polystyrene foam, RSI 0.88.
  - .2 Extruded aluminum dampers, cavities insulated with polyurethane foam, RSI 0.88.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for damper installation in accordance with manufacturer's written instructions.

- .1 Visually inspect substrate in presence of Departmental Representative.
- .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.2 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.

### **3.3 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**END OF SECTION**