

## **DAMPERS - FIRE AND SMOKE**

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### **1. GENERAL**

#### **1.1 Summary**

- .1 Section Includes:
  - .1 Fire and smoke dampers, and fire stop flaps.
- .2 Related Sections:
  - .1 23 33 00 Air Duct Accessories.

#### **1.2 References**

- .1 American National Standards Institute/National Fire Protection Association (ANSI/NFPA)
  - .1 ANSI/NFPA 90A-2012, Standard for the Installation of Air Conditioning and Ventilating Systems.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .3 Underwriters Laboratories of Canada (ULC)
  - .1 CAN4-S112-10, Fire Test of Fire Damper Assemblies.
  - .2 ULC-S505-1974, Fusible Links for Fire Protection Service.

#### **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 Fire dampers.
      - .2 Operators.
      - .3 Fusible links.
  - .2 Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures.

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- .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 Contractor will make available 1 copy of systems supplier's installation instructions.
- .3 Closeout Submittals:
  - .1 Provide maintenance data for incorporation into Operating and Maintenance Manual as specified in Section 01 33 00 - Submittal Procedures.

### **1.4 Quality Assurance**

- .1 Certificates:
  - .1 Catalogue or published ratings those obtained from tests carried out by manufacturer or those ordered by manufacturer from independent testing agency signifying adherence to codes and standards.

### **1.5 Maintenance**

- .1 Extra Materials:
  - .1 Provide maintenance materials in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide following:
  - .1 2 fusible links of each type.

## **2. PRODUCTS**

### **2.1 Fire Dampers**

- .1 Fire dampers: arrangement Type C, listed and bear label of ULC/UL, meet requirements of provincial fire authority, Fire Commissioner of Canada (FCC), ANSI/NFPA 90A, and the Authorities Having Jurisdiction. Fire damper assemblies' fire tested in accordance with CAN4-S112.
- .2 Mild steel, factory fabricated for fire rating requirement to maintain integrity of fire wall and/or fire separation.
  - .1 Fire dampers: 1-1/2 hour fire rated unless otherwise indicated.
  - .2 Fire dampers: automatic operating type and have dynamic rating suitable for maximum air velocity and pressure differential to which it will be subjected.
- .3 Top hinged: offset guillotine type sized to maintain full duct cross section as indicated.

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- .4 Fusible link actuated, weighted to close and lock in closed position when released or having negator-spring-closing operator for multi-leaf type or roll door type in horizontal position with vertical air flow.
- .5 40 x 40 x 3 mm retaining angle iron frame, on full perimeter of fire damper, on both sides of fire separation being pierced.
- .6 Equip fire dampers with steel sleeve or frame installed to avoid disruption of ductwork or impair damper operation.
- .7 Equip sleeves or frames with perimeter mounting angles attached on both sides of wall or floor opening. Construct ductwork in fire-rated floor-ceiling or roof-ceiling assembly systems with air ducts that pierce ceiling to conform with ULC.
- .8 Design and construct dampers to not reduce duct or air transfer opening cross-sectional area.
- .9 Dampers shall be installed so that the centerline of the damper depth or thickness is located in the centerline of the wall, partition of floor slab depth or thickness.
- .10 Unless otherwise indicated, the installation details given in SMACNA Install Fire Damper HVAC and in manufacturer's instructions for fire dampers shall be followed.

### **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 in accordance with ANSI/NFPA 90A and in accordance with conditions of ULC listing.
- .2 Maintain integrity of fire separation.
- .3 After completion and prior to concealment obtain approvals of complete installation from authority having jurisdiction.
- .4 Install access door adjacent to each damper. See Section 23 33 00 - Air Duct Accessories.
- .5 Co-ordinate with installer of firestopping.
- .6 Ensure access doors/panels, fusible links, damper operators are easily observed and accessible.
- .7 Install break-away joints of approved design on each side of fire separation.

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**3.3 Cleaning**

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

**END OF SECTION**