

## **PART 1        GENERAL**

### **1.1            REFERENCE STANDARDS**

- .1    National Fire Protection Association (NFPA)
  - .1        NFPA 90A (Latest Edition), Standard for the Installation of Air Conditioning and Ventilating Systems.
- .2    Underwriters Laboratories of Canada (ULC)
  - .1        CAN/ULC-S112 (Latest Edition), Standard Test Method of Fire Test of Fire Damper Assemblies.
  - .2        CAN/ULC-S112.2 (Latest Edition), Standard Method of Fire Test of Ceiling Fire Stop Flap Assemblies.
  - .3        ULC-S505 (Latest Edition), Standard for Fusible Links for Fire Protection Service.

### **1.2            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 fire and smoke dampers and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2        Indicate the following:
    - .1            Fire dampers.
    - .2            Smoke dampers.
    - .3            Fire stop flaps.
    - .4            Operators.
    - .5            Fusible links.
    - .6            Design details of break-away joints.
- .3    Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

### **1.3            CLOSEOUT SUBMITTALS**

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

### **1.4            MAINTENANCE MATERIAL SUBMITTALS**

- .1    Extra Materials:

- .1      Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- .2      Provide:
  - .1      Six (6) fusible links of each type.

## **1.5                      DELIVERY, STORAGE, AND HANDLING**

- .1      Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and 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 in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2      Store and protect fire and smoke dampers from nicks, scratches, and blemishes.
  - .3      Replace defective or damaged materials with new.

## **PART 2                PRODUCTS**

### **2.1                      FIRE DAMPERS**

- .1      Fire dampers: arrangement Type B and C Dynamic rated and meet requirements of ANSI/NFPA 90A. 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 single damper, round or square; multi-blade hinged or interlocking type; roll door type; guillotine type; sized to maintain full duct cross section as indicated.
- .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 3mm 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 prevent disruption 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 or floor slab depth or thickness.
- .10     Unless otherwise indicated, the installation details given in SMACNA Install Fire Damp HVAC and in manufacturer's instructions for fire dampers shall be followed.

### **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 fire and smoke 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 in accordance with 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 fire stopping.
- .6      Ensure access doors/panels, fusible links, and damper operators are easily observed and accessible.
- .7      Install break-away joints of approved design on each side of fire separation.

#### **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.

**END OF SECTION**