

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