

Part 1 General

1.1 GENERAL REQUIREMENTS

- .1 The Contractor shall be responsible to carry out all the Work set out or referred to in this Section 23 33 16.

1.2 SUMMARY

- .1 Section Includes:
 - .1 Fire and smoke dampers, and fire stop flaps.

1.3 REFERENCES

- .1 American National Standards Institute/National Fire Protection Association (ANSI/NFPA):
 - .1 ANSI/NFPA 90A-2002, 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-M1990, Fire Test of Fire Damper Assemblies.
 - .2 CAN4-S112.2-M84, Standard Method of Fire Test of Ceiling Firestop Flap Assemblies.
 - .3 ULC-S505-1974, Fusible Links for Fire Protection Service.

1.4 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed Shop Drawings, Product Literature, Specifications and Datasheet in accordance with Division 01 - General Requirements. Include product characteristics, performance criteria, and limitations.
 - .1 Submit required copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Division 01- General Requirements. Indicate VOC's for adhesives and solvents during application and curing.
 - .2 Indicate the following:
 - .1 Fire dampers.
 - .2 Operators.
 - .3 Fusible links.
 - .4 Design details of break-away joints.
- .2 Quality assurance submittals: submit following in accordance with Division 01- General Requirements.
 - .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 in accordance with Division 01- General Requirements.

1.5 QUALITY ASSURANCE

- .1 Health and Safety Requirements: do construction occupational health and safety in accordance with Division 01- General 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 signifying adherence to codes and standards.

1.6 MAINTENANCE

- .1 Extra Materials:
 - .1 Provide maintenance materials in accordance with Division 01- General Requirements.
 - .2 Provide following:
 - .1 6 fusible links of each type.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Packing, shipping, handling and unloading:
 - .1 Deliver, store and handle in accordance with Division 01- General 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 Division 01- General Requirements.

Part 2 Products

2.1 FIRE DAMPERS

- .1 Fire dampers: Dynamic fire dampers shall be furnished and installed where shown on plans and/or as described on schedules. Dampers shall meet the requirements of NFPA80, 90A and 101, bear label of ULC meet requirements of provincial fire authority Fire Commissioner of Canada (FCC) ANSI/NFPA 90A and authorities having jurisdiction and further shall be tested, rated and labelled in accordance with the latest edition of UL Standard 555.
- .2 Mild steel, factory fabricated for fire rating requirement to maintain integrity of fire wall and/or fire separation:

- .1 Fire dampers shall have a UL555 fire rating of 1 1/2 hours 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; sized to maintain full duct cross section as indicated.
- .4 Dampers shall have a minimum UL555 differential pressure rating of 1000 Pa and minimum velocity rating of 10.16 m/s
- .5 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.
- .6 40 x 40 x 3mm retaining angle iron frame, on full perimeter of fire damper, on both sides of fire separation being pierced.
- .7 Equip fire dampers with steel sleeve or frame installed disruption ductwork or impair damper operation.
- .8 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.
- .9 Design and construct dampers to not reduce duct or air transfer opening cross-sectional area. The damper blades shall be out of the air stream.
- .10 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.
- .11 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 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.

3.3 FIELD QUALITY CONTROL

- .1 Verification requirements in accordance with Division 01- General Requirements.

3.4 CLEANING

- .1 Proceed in accordance with Division 01- General Requirements.
- .2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION