# SECTION 15810

# DUCTWORK ACCESSORIES

## PART 1 - GENERAL

### 1.1 SECTION INCLUDES

A. Air turning devices/extractors.

B. Backdraft dampers.

C. Combination fire and smoke dampers.

D. Duct access doors.

E. Duct test holes.

F. Fire dampers.

G. Flexible duct connections.

H. Volume control dampers.

### 1.2 REFERENCES

A. NFPA 90A: Installation of Air Conditioning and Ventilating Systems.

B. NFPA 92A: Smoke Control Systems.

C. NFPA 70: National Electrical Code.

D. SMACNA: HVAC Duct Construction Standards: Metal and Flexible.

E. UL 33: Heat Responsive Links for Fire-Protection Service.

F. UL 555: Fire Dampers and Ceiling Dampers.

G. UL 555S: Leakage Rated Dampers for Use in Smoke Control Systems.

**1.3 QUALIFICATIONS:** Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

**1.4 REGULATORY REQUIREMENTS:** Products Requiring Electrical Connection: Listed and classified by Underwriters' Laboratories Inc.

**1.5 DELIVERY, STORAGE, AND HANDLING:** Deliver, store, protect and handle products to site under provisions of Section 01600. Protect dampers from damage to operating linkages and blades.

**1.6 EXTRA MATERIALS:** Furnish under provisions of Section 10700. Provide two of each size and type of fusible link.

## PART 2 - PRODUCTS

### 2.1 AIR TURNING DEVICES/EXTRACTORS

Multi-blade device with blades device aligned in short dimension; steel or aluminum construction; with individually adjustable blades, mounting straps.

### 2.2 DUCT TEST HOLES

A. Temporary Test Holes: Cut or drill in ducts as required. Cap with neat patches, neoprene plugs, threaded plugs, or threaded or twist-on metal caps.

B. Permanent Test Holes: Factory fabricated, airtight flanged fittings with screw cap. Provide extended neck fittings to clear insulation.

### 2.3 FIRE DAMPERS

A. Fabricate in accordance with NFPA 90A and UL 555, and as indicated.

B. Ceiling Dampers: Galvanized steel, 22 gage frame and 16 gage flap, two layers 0.125 inch ceramic fiber on top side, and one layer on bottom side for round flaps, with locking clip.

C. Horizontal Dampers: Galvanized steel, 22 gage frame, stainless steel closure spring, and lightweight, heat retardant non-asbestos fabric blanket.

D. Curtain Type Dampers: Galvanized steel with interlocking blades. Provide stainless steel closure springs and latches for closure under air flow conditions. Configure with blades out of air stream except of 1. inch pressure class ducts up to 12 inches in height.

E. Fabricate combination fire and balancing dampers with linkage readily adjustable with damper in open position.

F. Fusible Links: UL 33, separated at 160 degrees F with adjustable link straps for combination fire/balancing dampers.

### 2.4 FLEXIBLE DUCT CONNECTIONS

A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards: Metal and Flexible, and as indicated.

B. Connector: Fabric crimped into metal edging strip.

1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd

2. Net Fabric Width: Approximately 3 inches wide.

3. Metal: 3 inch wide, 24 gage galvanized steel.

## 2.5 VOLUME CONTROL DAMPERS

A. Fabricate of galvanized steel in accordance with SMACNA HVAC Duct Construction Standards: Metal and Flexible, and as indicated.

B. Splitter Dampers:

1. Material: Same gage as duct to 24 inches size in either direction, and two gages heavier for sizes over 24 inches.

2. Blade: Fabricate of [single] thickness sheet metal to streamline shape, secured with continuous hinge or rod.

3. Operator: Minimum 1/4 inch diameter rod in self aligning, universal joint action, flanged bushing with set screw.

C. Single Blade Dampers: Fabricate for duct sizes up to [6 x 30 inches].

D. Multi-Blade Dampers: Fabricate of opposed blade pattern with maximum blade sizes 6 inch x 72 inch. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.

E. Gravity Dampers: Fabricate multi-blade, parallel action gravity balanced backdraft dampers with blades of maximum of 6 inch width having felt or flexible vinyl sealing edges, linked together in rattle-free manner and with adjustment device to permit setting for varying differential static pressure.

F. End Bearings: Except in round ductwork 12 inches and smaller, provide end bearings. On multiple blade dampers, provide oil impregnated nylon or sintered bronze bearings.

G. Quadrants:

1. Provide locking, indicating quadrant regulators on single and multi-blade dampers quadrants or adjustment rod and lock screw.
2. On insulated ducts, mount quadrant regulators on stand-of f mounting brackets, bases, or adapters.
3. Where rod lengths exceed 30 inches, provide regulator at both ends.

# PART 3 - EXECUTION

**3.1 PREPARATION:** Verify that electric power is available and of the correct characteristics.

## 3.2 INSTALLATION

A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA HVAC Duct Construction Standards: Metal and Flexible. Refer to Section 15890: Ductwork for duct construction and pressure class.

B. Provide back draft dampers on exhaust fans or exhaust ducts nearest to outside and where indicated.

C. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, combination fire and smoke dampers, and elsewhere as indicated. Provide minimum 8 x 8 inch size for hand access, 18 x 18 inch size for shoulder access, and as indicated. Provide 4 x 4 inch for balancing dampers only. Review locations prior to fabrication.

D. Provide duct test holes where indicated and required for testing and balancing purposes.

E. Provide fire dampers at location indicated, where ducts and outlets pass through fire rated components, and where required by authorities having jurisdiction. Install with required perimeter mounting angles, sleeves, break away duct connections, corrosion resistant springs, bearings, bushings and hinges.

F. Demonstrate resetting of fire dampers to Owner's representative.

G. Provide flexible connections immediately adjacent to equipment in ducts associated with fans and motorized equipment.

H. Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Install minimum 2 duct widths from duct take-off.

I. Use splitter dampers only where indicated.

J. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

END OF SECTION