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Product Guide Specification

SECTION 15820

SMOKE DAMPERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Smoke dampers with blades using triple reinforcement grooves meeting the requirements of the latest edition of UL Standard 555S.

1.2 RELATED SECTIONS

- A. Section 15810 - Ducts.

1.3 REFERENCES

- A. AMCA 500 - Test Methods for Louvers, Dampers, and Shutters.
- B. AMCA 511 - Certified Ratings Program for Air Control Devices.
- C. BOCA – Building Officials and Code Administrators.
- D. ICBO – International Conference of Building Officials.
- E. SBCCI – Southern Building Code Congress International.
- F. IBC – International Building Code.
- G. CSFM - California State Fire Marshall Listing for Fire Damper and Smoke Damper.
- H. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
- I. NFPA 92A - Smoke-Control Systems.
- J. NFPA 92B – Smoke Control Systems in Atria, Covered Malls, and Large Areas.
- K. NFPA 101 – Life Safety Code.

- L. UL 555S - Standard for Safety; Leakage Rated Dampers for Use in Smoke Control Systems.

#### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product data.
  - 1. Include UL ratings, leakage, pressure drop, and maximum pressure data.
  - 2. Indicate materials, construction, dimensions, and installation details.
  - 3. Verify conformance to NFPA, UL, CSFM, and applicable building code.
  - 4. Include damper pressure drop data based on tests and procedures performed in accordance with AMCA 500.

#### 1.5 QUALITY ASSURANCE

- A. Dampers shall be warranted against manufacturing defects for a period of 5 years.
- B. Dampers shall be tested, rated, and labeled in accordance with the latest UL requirements.
- C. Damper pressure drop ratings shall be based on tests and procedures performed in accordance with AMCA 500 and certified by AMCA (if applicable).

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer and material.
- B. Storage: Store materials in a dry area indoor, protected from damage and in accordance with manufacturer's instructions.
- C. Handling: Handle and lift dampers in accordance with manufacturer's instructions. Protect materials and finishes during handling and installation to prevent damage.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURER

- A. Louvers & Dampers, P.O. Box 606, 7435 Industrial Road, Florence, Kentucky, 41042. Phone (859) 538-3450, Fax (859) 647-7810, Web Site [www.louvers-dampers.com](http://www.louvers-dampers.com)

#### 2.2 SMOKE DAMPERS

- A. Model: SR series smoke dampers.
- B. Ratings:
  - 1. Smoke Rating:

- KR - Leakage Class II Smoke Damper in accordance with UL555S. A Class II smoke damper leaks no more than 20 cubic feet per minute (.57 m<sup>3</sup>/min) at 4 in. wg. (1 kPa) differential pressure.

- KR - Leakage Class I Smoke Damper in accordance with UL555S. A Class I smoke damper leaks no more than 8 cubic feet per minute (.23 m<sup>3</sup>/min) at 4 in. wg. (1 kPa.) differential pressure.

2. Elevated Temperature Rating:

- 250°F (121°C) in accordance with UL555S.
- 350°F (177°C) in accordance with UL555S.

4. Air Flow Rating: 2000 fpm (10.2 m/s) in accordance with UL555S.

5. Differential Pressure Rating: 4 in. wg. in accordance with UL555S.

6. Pressure Drop: Pressure drop for a 12" x 12" (305 mm x 305 mm) unit at a face velocity of 2000 fpm (10.2 m/s) unit shall be no more than 0.164 in. wg. (40.9 Pa).

C. Construction:

1. Frame: Sizes 24" x 24" (610 mm x 610 mm) and smaller shall be constructed with an integral sleeve/frame design and use a single blade through 12" (304 mm) high for maximum free area. One set of perimeter mounting angles shall be factory attached to stiffen the frame design and to supply a fool-proof, user-friendly construction to reduce field installation labor. Dampers greater than 24" (610 mm) wide and 8" (203 mm) to 13" (330 mm) high use a flat head and sill design to maintain a high free area. Sizes larger than noted above shall be constructed with a 5 ½" x 7/8" x 16 gage (140 mm x 20 mm x 1.5 mm) galvanized steel, one piece hat channel frame with a factory attached sleeve (for floor or wall installation) and one set of factory attached perimeter mounting angles to supply a fool-proof, user- friendly construction to reduce field installation labor.

2. Blades:

- a. Style: Single skin with 3 longitudinal grooves.
- b. Action: Parallel.
- c. Material: Minimum 18 gage (1.6 mm) galvanized steel.
- d. Width: Maximum 11 ½" (152 mm).

3. Bearings: Self-lubricating oil impregnated bronze sleeve type, turning in an extruded hole in the damper frame.

4. Seals:

- a. Blade: Silicone material to maintain smoke leakage rating to a minimum of 350°F (177°C).
- b. Jamb: Stainless steel, flexible metal compression type.

5. Linkage: On blade through 24" x 24" (610 mm x 610 mm) and concealed in jamb or on blade when greater than 24" x 24" (610 mm x 610 mm).

6. Axles: Plated steel mechanically attached to the blade.
7. Mounting: Vertical and/or Horizontal.
8. Release Device: Signal-Actuated.
  - a. Close (in a controlled manner) and lock damper during test, smoke detection, or power failure through actuator closure spring. At no time shall actuator disengage from damper blades.
  - b. Allow damper to be automatically and remotely reset after test or power failure conditions.
  - c. Gradual closing and locking of damper in 7 to 15 seconds to allow duct pressure to equalize. Instantaneous closure is not acceptable.
9. Actuator:
  - a. Type:
    - Electric 120 V, 60 Hz, two-position, fail close.
    - Electric 24V, 60 Hz, two-position, fail close.
    - Pneumatic, 20-psi minimum control pressure, two-position, fail close.
  - b. Mounting:
    - External.
10. Finish: Mill galvanized.

## 2.3 ACCESSORIES

### A. Indicator or Auxiliary Switch Package:

- Switch Package – two-position indicator switches linked directly to damper to remotely indicate damper blade position.

### B. Duct Smoke Detector:

#### 1. Model:

- SM-501-P.
- 2151 (requires factory supplied remote test station).

#### 2. Mounting:

- Factory Mounted, unwired (SM-501-P only).
- Factory Mounted and wired.

Shipped Loose for Field Installation.

3. Type:

Photoelectronic.

C. Factory Sleeve:

1. 20 gage (1.0 mm) thickness; optional thickness to 16 gage (1.5 mm).
2. Standard sleeve depth is 16 inches (406 mm) long; optional depth to 20 inches (508 mm).
3. Silicone caulk is factory applied to sleeve and damper frame or jamb seal to comply with Class 1 and 2 leakage ratings.

E. Mounting Angles:

- a. 1 ½" x 7/8" x 16 gauge (38 mm x 20 mm x 1.5 mm) galvanized steel perimeter tab lock mounting angles; one set factory mounted.

## 2.4 SOURCE QUALITY CONTROL

A. Factory Tests: Factory cycle damper and actuator assembly to assure proper operation.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Inspect areas to receive dampers. Notify the Engineer of conditions that would adversely affect the installation or subsequent utilization of the dampers. Do not proceed with installation until unsatisfactory conditions are corrected.

### 3.2 INSTALLATION

- A. Install dampers at locations indicated on the drawings and in accordance with manufacturer's UL approved installation instructions.
- B. Install dampers square and free from racking with blades running horizontally.
- C. Do not compress or stretch damper frame into duct or opening.
- D. Handle damper using sleeve or frame. Do not lift damper using blades, actuator, or jackshaft.
- E. KR series smoke dampers are for single panel dampers only.

END OF SECTION