ALUMAVENT CONTROL DAMPERS & FIRE DAMPERS TechTalk December 2016

CURTAIN TYPE FIRE DAMPER BASICS

There are several basic criteria that you need to know when selecting or ordering fire dampers:
- Static *or* Dynamic
- Vertical Mount *or* Horizontal Mount
- 1-1/2 Hour Rated *or* 3 Hour Rated
- Style of Damper: Type A, Type B *or* Type C/CR/CO
- Closure (Fusible Link) Temperature
- Factory Installed Sleeve with Retaining Angles *or* Sleeve and Angles supplied/installed by Contractor
- Galvanized *or* Stainless Steel Construction

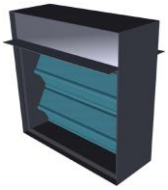
STATIC *or* DYNAMIC:
Static dampers are tested to close without any airflow passing through them. They are approved for use when the fans shut down in the event of a fire alarm. **Dynamic** dampers are tested to close under airflow conditions where fans may remain on during a fire. Dynamic dampers are tested under minimum airflow conditions of 2000 fpm (10.2 m/s) velocity and 4''w.g (1.0 kPa) static pressure (when damper is closed). Higher ratings may be available in increments of 1000 (5.1 m/s) fpm and 2''w.g (0.5 kPa) static pressure but damper sizes may be restricted.

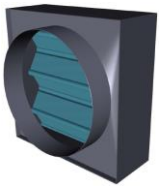
VERTICAL *or* HORIZONTAL MOUNT:
Vertical Mount dampers are for applications where ductwork passes through a wall. Damper will be standing up vertically when installed, and the blades will travel down towards the ground when the fusible link melts. Static Vertical Mount dampers do not have any springs and rely on gravity to close the blades. Dynamic Vertical Mount dampers have springs to assist with closure under airflow conditions. **Horizontal Mount** dampers are for applications where the ductwork passes through a floor. Damper will be lying down horizontally when installed, and the springs will pull the blades across to close (in direction parallel to the floor).
Alumavent also offers a **'dual mount'** damper which can be installed either way and is ideal for wholesalers and other stocking reps.

1-1/2 HOUR *or* 3 HOUR FIRE RATING:
Most building codes stipulate that a fire separation with a rating of 2 hours or less requires a fire damper with a minimum rating of 1-1/2 hours. A fire separation with a rating greater than 2 hours, up to a rating of 4 hours, requires a fire damper with a minimum rating of 3 hours.

TYPE A, B *or* C/CR/CO DAMPER STYLE:
Type A dampers are completely within the sleeve and airstream. **Type B** dampers have the blades out of the airstream for less airflow restriction especially on smaller damper sizes. **Type C/CR/CO** dampers have transition collars on each side of the damper for connecting to round (Type CR), oval (Type CO), or square/rectangular (Type C) ductwork. Blades and frame are out of the airstream providing no restriction to airflow.


TYPE A

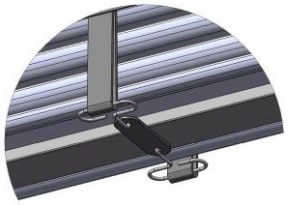

TYPE B


TYPE CR


TYPE CO


TYPE C

CLOSURE (FUSIBLE LINK) TEMPERATURE:
Standard fusible link temperature is 165°F (74C). This is the temperature that the fusible link melts and releases the damper blades so they can close. Alumavent fire dampers are also available with a 212°F (100C) fusible link for applications where the air temperature is higher than usual.



FUSIBLE LINK HOLDING BLADES OPEN

FACTORY INSTALLED SLEEVE:
All fire dampers must be installed in a steel sleeve, separate from the connecting ductwork, so that the duct can break away from the sleeve in the event of falling debris, etc., hopefully leaving the fire damper intact within the wall or floor. Alumavent can factory install the damper in a sleeve (with integral access door, if desired) and also provide "Quick-Fit" retaining angles for holding the damper/sleeve assembly in the wall or floor opening. Factory installed sleeves save the contractor time and money and allow the complete assembly to ship direct to the jobsite. Type A and B sleeved dampers up to 20" (508 mm) high can also be provided with factory hemmed ends for connecting to duct using 'S' and 'Drive' cleats. Sleeve length varies with wall or floor thickness and sleeves must not extend more than 6" (152 mm) from the face of the wall or floor. Minimum sleeve gauge is dependent on duct size but sleeve gauge must be as thick as or thicker than the connecting ductwork. The following chart shows the minimum required sleeve thickness per NFPA 80 and the SMACNA Fire Damper Installation Guide:

DUCT DIMENSION OR DIAMETER	MINIMUM SLEEVE GAUGE
12" (305 mm) or less	26 (0.55 mm)
13" – 30" (330 – 762 mm)	24 (0.70 mm)
31" – 54" (787 – 1372 mm)	22 (0.85 mm)
55" – 84" (1397 – 2134 mm)	20 (1.00 mm)
85" (2159 mm) or greater	18 (1.30 mm)

STANDARD GALVANIZED STEEL OR OPTIONAL STAINLESS STEEL CONSTRUCTION:
For most general applications a standard galvanized steel fire damper and sleeve is sufficient. For high humidity or corrosive atmosphere or process airflow applications Alumavent fire dampers and sleeves are available in Type 304 stainless steel, or Type 316 stainless steel for more extreme environments.

ALUMAVENT MODEL GUIDE:

APPLICATION	TYPE A	TYPE B	TYPE C/CR/CO
STATIC, 1-1/2 HR.	51AVS / 51AHS	51BVS / 51BHS	51C(CR,CO)VS / 51C(CR,CO)HS
STATIC, 1-1/2 HR. STAINLESS STEEL	51AVS-SS / 51AHS-SS	51BVS-SS / 51BHS-SS	51C(CR,CO)VS-SS / 51C(CR,CO)HS-SS
STATIC, 1-1/2 HR. THINLINE (vertical only)	52AVS	52BVS	52C(CR,CO)VS
STATIC, 3 HR. (vertical only)	53AVS	53BVS	53C(CR,CO)VS
DYNAMIC, 1-1/2 HR.	51AVD / 51AHD	51BVD / 51BHD	51C(CR,CO)VD / 51C(CR,CO)HD
DYNAMIC, 3 HR. (vertical only)	53AVD	53BVD	53C(CR,CO)VD

ALL FIRE DAMPERS MUST BE INSTALLED AS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS!
FOR MORE INFORMATION VISIT www.alumavent.com OR CONTACT YOUR ALUMAVENT REPRESENTATIVE!