FIRE DAMPERS
GENERAL INFORMATION

If you're trying to decide between a static fire damper or a dynamic fire damper, understanding what they do and why is an important part of determining what will work best for your HVAC system. While there is no right or wrong answer, both static and dynamic fire dampers address specific needs and concerns.

What are Fire Dampers?

Before we dive in on the differences between the two, it's good to understand what exactly a fire damper is and what it does. A fire damper is a part of your HVAC system that is installed within the air ducts. You will find fire dampers at the intersection of fire-rated barriers, where they can stop the spread of flames during a fire.

Fire dampers help detect excessive heat, such as you would experience during a fire — did you know a fire can cause a room to reach up to 2,000 degrees Fahrenheit? Once the temperature of the room reaches 165 degrees Fahrenheit, the fusible link attached to the damper melts, causing the damper to close. In rooms or buildings where higher temperatures are normal, there are specialty fusible links that melt at around 210 degrees Fahrenheit.

Once a fire damper detects excessive heat, it will cut off air distribution and oxygen supply to the parts of the building where a fire is present. This means there won't be oxygen pumping into the room feeding the fire, and it will ensure that smoke isn't circulated throughout the building.

Fire dampers also help to contain the fire to its origins, because fire dampers resist the passage of flames through them. All of these functions are crucial to containing a fire and keeping yourself and your employees safe.

Static Fire Dampers

Static fire dampers are designed to cut off airflow as soon as there is a fire. When a fire is detected by your building's fire system, it will automatically trigger your HVAC system, telling it to shut off. This causes the fans within your HVAC system to stop, which in turn causes your static fire dampers to close because there is no air pressure within the ducts. Once static fire dampers close, no air can pass through the ducts.

Static fire dampers are usually found within horizontal barriers and have a curtain-like design.

Dynamic Fire Dampers

Dynamic fire dampers also cut off airflow to a fire and protect your building from fire damage. However, the way they are triggered to shut, and where you typically find them, is different than static fire dampers.

Dynamic fire dampers are typically found within the vertical barriers of your HVAC system. Dynamic fire dampers are spring-loaded, which is how they shut. In the event of a fire, the HVAC system where the dynamic fire dampers are placed will continue to operate. Since a dynamic fire damper will need to shut against circulating air, they have built-in fans that turn on to activate the spring-loaded system.

Smoke Dampers

Although we're talking about fire dampers, it's important to understand what part smoke plays in the process as well. Smoke dampers help to slow the travel of smoke during a fire. They stop the air from circulating, trapping the smoke and allowing people to get out of the building. This also allows first responders to contain smoke and fire damage. Smoke dampers are usually triggered by your building's smoke detection system.

Combination Dampers

Combination dampers are just what they sound like; they combine smoke and fire dampers into one. Combination dampers close automatically once they detect extreme heat. Each combination damper also has its own smoke detection system, which will trigger the damper to shut in the event smoke is present.

Inspections and Safety

If you're in a new building, you probably feel pretty confident that there are fire dampers in place to protect your building and the people within it. But whether your building is new or old, you still need to make sure that your passive fire protection system is inspected regularly.

In fact, regular maintenance of fire dampers is required by the National Fire Protection Association (NFPA). According to the NFPA Code 80, these inspections should occur one year after the installation of the fire dampers and every four years after that. All dampers in your facility should also be inspected to verify that they can fully close.

The NFPA Code 80 regulates the installation, maintenance, and assembly of devices used to protect openings in the walls, floors, and ceilings from the spread of fire and smoke. It also mandates the inspection of fire doors, fire windows, glass block assemblies, fabric fire safety curtains, and other passive fire protections.

At Lloyd Industries, we ensure that all of our static and dynamic fire dampers are as safe as possible. We've even documented the testing of our products to show that each of our fire dampers can protect your building and the people in it against fires and extreme heat.

All of our static and dynamic fire dampers and other essential HVAC products are Underwriters Laboratory approved. Underwriters Laboratory is a global safety certification company with a presence in 46 countries. They are the industry standard in promoting safe, secure, and sustainable living and working environments. They support and inspect the production and use of products, ensuring they are physically and environmentally safe and are able to prevent or reduce the loss of life and property.

You can feel safe when Lloyd Industries products are installed in your building.

For over 35 years, we have been a manufacturer of HVAC products, including static and dynamic fire dampers. We are consistently developing new products and expanding our current product offerings and services to provide high-quality safety products to our customers.