

FIRE

DAMPERS



By passing through walls designed to provide a specific degree of fire-resistance in a building, the ventilation system creates a risk of propagation of fire and smoke. Fire dampers protect a building and its occupants from this risk by restoring the fire-resistance rating of the wall that has been penetrated.

RF-TECHNOLOGIES OFFERS A WIDE RANGE OF FIRE DAMPERS:

- **Certified for all types of walls.**
- **Compliant with the most stringent European standards.**
- **Easy to install and seal using standard materials.**
- **With superior air flow characteristics.**
- **That can be installed at a minimal distance from another fire damper or from an adjacent supporting construction.**



PRINCIPLE OF OPERATION

The fire damper blade is open when the ventilation system is working.

They close automatically thanks to the fusible link when the temperature in the duct exceeds a certain threshold: generally 72°C. In remote-controlled and motorised models, they can also close upon receiving a signal sent out by the fire safety system when it is activated by a smoke detector, for example. When closed, the fire damper maintains compartmentation during a guaranteed period.



The ventilation system is working and the fire damper is open.



A fire breaks out and the temperature reaches 72°C: the fusible link melts and the damper blade closes.



The intumescent material expands to create a seal that stops flames and smoke.

FIRE DAMPER CARTRIDGE

Fire damper cartridges constitute a compact solution for small-diameter circular ducts. They are perfectly suitable for residential buildings, for example, and are noted for being easy to install. Two versions are available: the standard SC+ fire damper cartridge and the SCV+ equipped with a ventilation valve.

The scope of this solution mainly depends on local regulations, because of the absence of an external resetting mechanism. A check must remain possible, and access to the fusible link must be guaranteed.



The fire damper cartridge is inserted into a metal ventilation duct of the same diameter, and is held in position by its rubber seal.

Both parts of the blade are held in the open position by the fusible link.



When the temperature in the duct reaches 72°C, the fusible link melts, and both parts of the blade close.



Two blocking hooks lock the blade in the closed position, and the intumescent material expands, providing a perfect seal to stop flames and smoke.

FIRE RESISTANCE

Fire resistance is an indication of a construction element's capacity to withstand exposure to fire and prevent fire propagation from one compartment to another, during a given period.

The fire resistance test determines the behaviour of a fire damper subject to specified temperature and pressure conditions, likely to arise during a fire. This test determines the fire resistance performance of a combination of elements: **the wall in which the opening was created, the fire damper, and the material used to seal the opening.**

Requirements concerning these elements must be observed in order to guarantee a fireproof installation.

CE MARKING

In accordance with the European Construction Products Regulation and the EN 15650:2010 standard, CE Marking has been mandatory for fire dampers since 1 September 2012. Rf-Technologies fire dampers have been tested and declared compliant with European standards, as certified by the CE Marking that all products carry since 1 February 2012.

The CE Marking includes technical information in the form of values declared for fire resistance criteria, durability, and air flow performance. With the standard, these declared performance characteristics provide all the information required by players in the construction market to objectively ascertain whether a product is suitable for its intended use, in compliance with the national legislation in force.

EXAMPLE OF A EUROPEAN CLASSIFICATION

EI 120 (v_e i ↔ o)S (300 Pa)

E

E – integrity

Prevents the propagation of a fire due to the passage of flames and hot gases from the side affected by fire to the non-exposed side.

I→O

(i→o) (o→i) (i↔o)

The tested elements satisfy the criteria for a fire originating from the inside of the compartment (i) towards the outside (o), in the other direction, or in both directions.

I

I – heat insulation

The temperature increase on the non-exposed side remains below a specific value. Thus, there is no risk of materials at the unexposed side catching fire.

S

S – smoke leakage

The passage of smoke and gases remains below specific values (at ambient temperature and throughout the test). This type of leakage could cause fire propagation through the ventilation network.

120

These criteria must be satisfied during a precise classification period of 60, 90, 120, or 240 minutes.

Pa

Pa – pressure measured in Pascals

The criteria are measured by applying a differential pressure of 300 Pa through the closed fire damper. This pressure level represents a working ventilation fan. Most Rf-Technologies fire dampers are tested at a higher pressure (500 or even 1500 Pa). This means that our product range is compliant with the most stringent European and local regulations.

v_e

v_e or h_o

Product suitable for vertical use (in a wall) or horizontal use (in a floor).

TECHNICAL SPECIFICATIONS

The table below will help you select the best fire damper for your application. For further information, consult the classification on our website, the declaration of performance, and the classification reports.

mm



CR60		Ø 100→250			→ EI60S			EI 60 (ve i↔o)S (500 Pa)	
		Ø 100→315	●		→ EI90S	EI 90 (ve i↔o)S (500 Pa)	EI 90 (ho i↔o)S (500 Pa)	EI 90 (ve i↔o)S (500 Pa)	EI 90 (ve i↔o)S (500 Pa)
						EI 90 (ve i↔o)S (300 Pa)	EI 90 (ho i↔o)S (300 Pa)	EI 90 (ve i↔o)S (300 Pa)	
	●		→ EI90S	EI 90 (ve i↔o)S (300 Pa)		EI 90 (ve i↔o)S (300 Pa)			
					EI 90 (ve i↔o)S (500 Pa)				
CR60-1s		Ø 100→315			→ EI60S	EI 60 (ve i↔o)S (500 Pa)	EI 60 (ho i↔o)S (500 Pa)	EI 60 (ve i↔o)S (500 Pa)	
CR120		Ø 100→250			→ EI60S			EI 60 (ve i↔o)S (500 Pa)	
		Ø 100→315	●		→ EI120S	EI 120 (ve i↔o)S (500 Pa)	EI 120 (ho i↔o)S (500 Pa)	EI 90 (ve i↔o)S (500 Pa)	EI 120 (ve i↔o)S (500 Pa)
						EI 120 (ve i↔o)S (300 Pa)	EI 120 (ho i↔o)S (300 Pa)	EI 120 (ve i↔o)S (300 Pa)	
	●		→ EI90S	EI 90 (ve i↔o)S (300 Pa)		EI 90 (ve i↔o)S (300 Pa)			
					EI 120 (ve i↔o)S (500 Pa)				
CR2		Ø 200→630	●		→ EI120S	EI 120 (ve i↔o)S (500 Pa)	EI 120 (ho i↔o)S (500 Pa)	EI 120 (ve i↔o)S (500 Pa)	EI 120 (ve i↔o)S (500 Pa)
						EI 90 (ve i↔o)S (300 Pa)	EI 120 (ho i↔o)S (300 Pa)	EI 90 (ve i↔o)S (300 Pa)	
CRE60		Ø 100→630	●		→ E60S	E 60 (ve i↔o)S (300 Pa)	E 60 (ho i↔o)S (300 Pa)	E 60 (ve i↔o)S (300 Pa)	
						E 60 (ve i↔o)S (300 Pa)	E 60 (ho i↔o)S (300 Pa)	E 60 (ve i↔o)S (300 Pa)	
CU-LT		Wn 200→800 Hn 100→600	●		→ EI120S	EI 120 (ve i↔o)S (500 Pa)	EI 120 (ho i↔o)S (500 Pa)	EI 90 (ve i↔o)S (500 Pa)	
						EI 120 (ve i↔o)S (300 Pa)	EI 120 (ho i↔o)S (300 Pa)	EI 120 (ve i↔o)S (300 Pa)	
						EI 90 (ve i↔o)S (300 Pa)		EI 90 (ve i↔o)S (300 Pa)	
					EI 120 (ve i↔o)S (500 Pa)				
CU-LT-1s		Wn 200→800 Hn 100→600	●		→ EI120S	EI 120 (ve i↔o)S (500 Pa)	EI 120 (ho i↔o)S (500 Pa)	EI 90 (ve i↔o)S (500 Pa)	EI 120 (ve i↔o)S (500 Pa)
						EI 120 (ve i↔o)S (500 Pa)			
CU2		Wn 200→1200/1500 Hn 200→800/1000	●		→ EI120S	EI 120 (ve i↔o)S (500 Pa)	EI 120 (ho i↔o)S (500 Pa)	EI 90 (ve i↔o)S (500 Pa)	EI 120 (ve i↔o)S (500 Pa)
						EI 90 (ve i↔o)S (300 Pa)	EI 90 (ho i↔o)S (300 Pa)	EI 90 (ve i↔o)S (300 Pa)	
CU2/B		→ Wn x Hn 2450x1650 3050x1650			→ EI120S	EI 120 (ve i↔o)S (500 Pa) EI 120 (ve i↔o)S (300 Pa)			
CA2		Wn 200→700 Hn 200→700			→ EI60S	EI 60 (ve i↔o)S (500 Pa)			
CU4		Wn 200→1200 Hn 200→800			→ EI240S	EI 240 (ve i↔o)S (500 Pa)			
CU2-15		Wn 200→1200 Hn 200→800			→ EI120S	EI 120 (ve i↔o)S (1500 Pa)			
SC(V)+		Ø100→200	●	SC(V)+90	→ EI120S	EI 60/90/120 (ve i↔o)S (300 Pa)	EI 60/90 (ho i↔o)S (300 Pa)	EI 60/90 (ve i↔o)S (300 Pa)	

Exceptional air flow characteristics guarantee the energy and acoustic performance of the network.

Fire dampers are a component of the ventilation system. That is why they must be perfectly integrated into the HVAC environment. The air flow properties of our dampers are therefore optimised to minimise both the air leakage through the tunnel and the pressure loss caused by the presence of the blade in the ventilation duct.

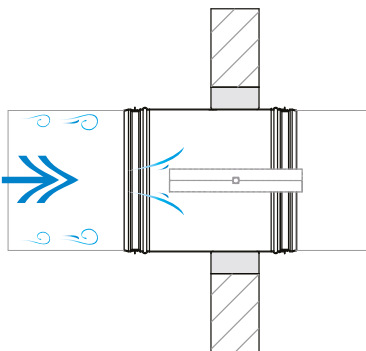


AIRTIGHTNESS

The EN 1751 standard defines different airtightness classes for fire dampers according to the extent of leakage. To go to the higher class, a product must have less leakage by a factor of 3; the leaks in a Class C system are three times smaller than those in a Class B system. Thanks to a versatile programme, we have optimised the production process for our fire dampers in order to satisfy the most stringent requirements on the market with regard to leakage:

- **Product optimisation**, by adding rubber seals.
- **Test environment**: investing in ultra-sensitive calibrated equipment.
- **Production processes**: random testing of individual dampers during production.

Rf-t fire dampers currently guarantee Class B or C airtightness (C being the highest class).



PRESSURE LOSS

The air passing through a fire damper encounters a certain amount of resistance due to the presence of the blade, the fusible link, and possibly the mechanical transmission in the damper tunnel.

The new range of Rf-Technologies fire dampers guarantees fire resistance during a period of up to 120 minutes, with blades no more than 20 mm thick for circular dampers or 25 mm thick for rectangular dampers. The fusible link is in the axis of the damper blade, and the mechanical transmission is located entirely outside the tunnel. These characteristics make this range one of the most energy-saving solutions currently available on the market.

As a supplier of cutting-edge solutions for the HVAC sector, Rf-Technologies willingly provides information concerning airtightness in line with the CE Marking.

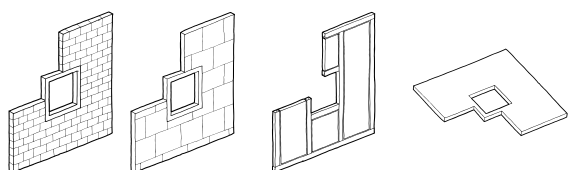
The air flow characteristics of Rf-t fire dampers are therefore tested during initial testing and all subsequent production checks. This deliberate choice is an additional guarantee of the air flow properties of our products and of your HVAC networks.

A wide range of certified dampers for all types of walls.

To ensure their compliance with the classification documents and to guarantee a specific fire resistance rating, fire dampers must be installed in accordance with the tested configuration. According to the type of wall, the installation and sealing procedures described in the classification report must always be observed.

But fire dampers are installed on construction sites, not in a laboratory. Our R&D team knows that many participants are involved in the installation of our fire dampers: engineers, bricklayers, carpenters, plasterboard installers, electricians, etc. All these professionals have an effect on whether the installation of the products is compliant.

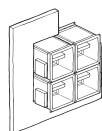
1 PRODUCT FOR ANY SUPPORTING CONSTRUCTION



We want to **simplify the job of everyone** involved in the construction chain. Engineers, installers, and distributors all benefit from our basic rule: having one product, which is tested and certified for all types of walls.

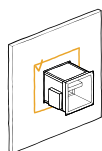
- The wall type can be chosen or modified at a later stage of the project.
- Installation is simplified and consistent, because the same solution can be applied to the various walls on the construction site.
- Stock management is simplified for our distribution partners, which guarantees fast delivery.

ALL DIMENSIONS



Our circular and rectangular dampers are available in an extensive range of sizes. Rectangular dampers are available up to 1500 x 1000 mm in increments of 50 mm. A battery assembly is available for the largest ducts, up to **3050 x 1650 mm**. Our smallest fire dampers (100 mm diameter or height) provide a **superior return on the construction volume**. Smaller ventilation ducts also provide **better long-term energy performance**, because ventilation systems can be appropriately sized.

SIMPLIFIED SEALING

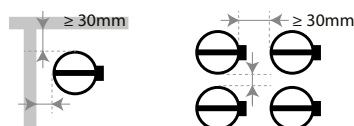


Standard sealing materials: we strive to simplify the installation of our fire dampers as much as possible whilst guaranteeing compliance with the classification document. To do so, we try to use **standard construction products to seal off openings:** mortar, plaster, rock wool, plasterboard, etc. This makes it much easier to ensure compliance with the tested situation, and thus guarantees a fireproof installation.

Dry mounted dampers: the CU-LT-1s and CR60-1s fire dampers are **surface-mounted with no need for additional sealing**. These dampers are really easy to install in any type of wall. They are especially suitable for renovation projects and building sites where access to the damper is difficult or impossible on one side of the wall (terminal damper).

Sealing with fire resistant stone wool: CR60, CR120, CR2, CU-LT and CU2 fire dampers have been successfully tested in combination with a sealing with **rigid panels of fire resistant stone wool and fire resistant coating**. This solution is certified in flexible and rigid walls and slabs.

"ZERO DISTANCE" INSTALLATION



In order to maximise the net construction volume, the dimensions of technical shafts

should be reduced to a minimum. To help you reach this target, Rf-Technologies fire dampers can be **installed at a minimal distance from a supporting construction or from another fire damper**.

OFFSET-MOUNTED DAMPERS



In closed position, the damper blade should be centred in the wall thickness in order to guarantee its fire-resistant properties. We have successfully tested the CU-LT, CR60 and CR120 fire dampers offset-mounted from a wall. The dampers

are connected to a **galvanised duct wrapped with rigid panels of fire resistant mineral wool or with staff**. In these configurations, they offer a fire resistance of **60 to 120 minutes**.

RF-T PARTICIPATES IN THE BIM APPROACH

The parametric data and models of Rf-t fire dampers are available on the MEPcontent website of Stabiplan. The products can thus easily be applied to Building Information Modelling (BIM).



RF-TECHNOLOGIES OOSTERZELE

RF-TECHNOLOGIES

Rf-Technologies is a leading European manufacturer of specialist solutions for compartmentation and smoke evacuation. The company sells its products via a vast network of partners in more than fifteen European countries. Rf-Technologies was founded in 1985. It employs 170 people on two sites; one in Belgium (where its company headquarters are located) and the other in Slovakia. Ongoing investment in research and development testifies to a desire to continually develop and improve the range of products.

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RF-TECHNOLOGIES

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