



## PRODUCT DESCRIPTION

iPASSIVE FR Dampers are used to fire proof ventilation ducts where they penetrate fire rated constructions such as fire compartments and fire walls, preventing the passage of fire and smoke both surrounding and inside the ventilation duct.

The product consists of a steel casing containing horizontal steel blades treated with a technically advanced heat expanding graphite which closes off the whole damper in a fire. The aperture surrounding the dampers are fire sealed with iPASSIVE FR Board in walls and iPASSIVE EX Mortar in floors.

The damper can be installed in the fire seal and the ventilation ducting attached or the damper can be connected to the ducting and then fire sealed.

The aperture where the ducts pass through can include one or multiple ventilation ducts. One can also pass through other technical services such as cables, cable trays and pipes within the same aperture.

## FEATURES

- Maintenance free and no electrical connections necessary.
- Suitable for both walls and floors.
- It seals against penetration of fire and smoke both surrounding and inside the ventilation duct.
- Closes in the area where the fire is located but not elsewhere, so the ventilation system can be used to extract smoke from areas that are not on fire.
- Keeps the temperature in the duct network lower than 120°C and will therefore protect fans and sensitive units in the system.
- Insulation of ducts is not necessary.
- Service life of more than 50 years; the damper will last the same life cycle as the ventilation system.
- Easy to fit.
- The dampers are attached to the inside of the ducts, giving the benefit of space saving.
- An aperture can include several dampers and in addition technical services such as cables, cable trays and pipes.
- The dampers are only 15 cm long and bends can be connected right behind the fire seal (can also be special ordered in other sizes).
- Can be attached to a vent on one side.

## SOUND INSULATION

Description	Sound reduction
iPASSIVE FR Board in wall	55 dB
iPASSIVE EX Mortar in floor	64 dB

The sound insulation value is only valid for the fire seal and the sound insulation values are valid for the fire seal only and not any other components in the construction, as for instance the ventilation ducts.

## TECHNICAL INFORMATION

<b>Appearance</b>	Ready manufactured in steel and graphite
<b>BREEAM</b>	Approved, EC1PLUS on all fire seals
<b>Interior climate, installed</b>	Z2: Relative air moisture up to 85% and temperatures between 5 and 40 °C
<b>Trigger-temperature in fire</b>	100 °C
<b>Temperature, full closure</b>	160 °C
<b>Time to full closure</b>	From 50 seconds to 2 minutes
<b>Expansion rate graphite</b>	15.5 to 17
<b>Density graphite</b>	2.6 kg per ltr
<b>Thickness graphite</b>	1.6 mm
<b>Leakage classification</b>	Class C according to EN 1751 (circular)
<b>Free air opening</b>	Between 84.2% and 85.4%
<b>Pressure in fire</b>	FR Damper resists minimum 300Pa
<b>Standard for connections</b>	EN 1506:2007
<b>Standard for fire testing</b>	EN 1366-12:2014 & EN 1363-1:2012
<b>Standard for aerodynamics</b>	EN 1751:2014
<b>Standard for sound levels</b>	EN ISO 5135:1998
<b>Flash point</b>	None
<b>Storage</b>	In temperatures between 5°C and 30°C
<b>Life span</b>	Under normal conditions; 50 years +
<b>Installation temperature</b>	+5 °C to +50 °C
<b>Colour</b>	Galvanized steel with section of red colour to identify placement of the fire seal
<b>Packaging</b>	1 damper per box

## CASING LEAKAGE CLASSIFICATION

iPASSIVE FR Dampers are fitted with high quality gaskets in circular ducts and are tested according to EN 1751 to the highest possible class C for all sizes. Testing was conducted at BRE's accredited laboratory and test reports can be provided upon request.

Case leakage classification for rectangular dampers is dependent on which locking mechanism is chosen, and the classification will be the same as the classification of the locking mechanism used

## DUST FORMATION AND GENERAL MAINTENANCE

Tests conducted on iPASSIVE FR Damper to determine dust formation inside the damper has shown that dust does not collect inside the damper, and no more than in any other components in the ventilation system. The dust tends to be blown through the dampers as long as the ventilation system is in constant operation and installed in normal indoor environments (Z2).

It is recommended that the ventilation system is designed and cleaned according to local regulations and building codes to provide access for inspections and cleaning, along with the frequency of these cleaning routines. iPASSIVE FR Damper can easily be cleaned using a vacuum cleaner if this should be needed. Ducts from kitchens and similar, where there is the risk of grease and high humidity, must be fitted with grease filters or similar that are cleaned at fixed frequencies.

## FIRE RESISTANCE RATINGS

Construction	Description	FRR
Flexible and rigid walls with thickness $\geq 100\text{mm}$	$\leq \varnothing 400\text{mm}$ FR Damper/duct with $\geq 200\text{mm}$ stone wool mat on both sides	-/120/120
	$\leq \varnothing 1250\text{mm}$ FR Damper/duct with $\geq 500\text{mm}$ stone wool mat on both sides	-/90/60
	$\leq 600\text{mm}$ high x $1000\text{mm}$ wide FR Damper/duct with $\geq 500\text{mm}$ stone wool mat on both sides	-/120/120
	$\leq 1200\text{mm}$ high x $1700\text{mm}$ wide FR Damper/duct with $\geq 500\text{mm}$ stone wool mat on both sides	-/90/90
Rigid floors with thickness $\geq 150\text{mm}$	$\leq \varnothing 400\text{mm}$ FR Damper/duct with $\geq 150\text{mm}$ stone wool mat on top side	-/180/120
	$\leq \varnothing 1000\text{mm}$ FR Damper/duct with $\geq 500\text{mm}$ stone wool mat on top side	-/90/90
	$\leq 600 \times 1000\text{mm}$ FR Damper/duct with $\geq 500\text{mm}$ stone wool mat on top side	-/90/60
	$\leq 1000 \times 1000\text{mm}$ FR Damper/duct with $\geq 500\text{mm}$ stone wool mat on top side	-/90/90

The stone wool mat described is with thickness  $\geq 30\text{mm}$  and density  $\geq 80\text{kg/m}^3$  with or without aluminium foil, attached according to the products installation instructions.

## DISCLAIMER

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