



DUST SPARES
dust control spare parts for industry
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FIRE DAMPERS



What is a fire damper and why might they be needed?

The FD Series Steel Curtain Fire Damper is designed to stop the spread of fire through ducts, walls, floors and ceilings. The product range has many features and options to meet the requirements of specifiers, contractors, local and national authorities. Dampers are available to suit both low/medium and high velocity applications.

What is the 'E' classification?

To achieve the classifications to EN13501-3, fire dampers and fire and smoke dampers shall be tested to EN1366-2 and a 300Pa pressure difference is applied across the damper.

During the fire test period, the integrity of the seal between the damper and the structure shall not have any gaps larger than 150mm x 6mm. There shall not be any sustained flaming. The largest size of damper to be manufactured for sale as a single section shall be fire tested.

E = Integrity

The maximum leakage permissible at 300Pa corrected to 20°C is 360m³/hr/m² (100 l/s/m²) throughout the fire test period. Fire dampers should be installed as tested. BSB have a policy of continued testing and product certification to try and provide as broad a number of installation methods as possible. BSB also follow regulation and standards development very carefully to provide input on changes and to be able to pass on relevant information to designers, specifiers, building control authorities (BCA's) and installers.

- Complies to BS EN 15650
- Tested installation methods in differing supporting constructions (BS EN 1366-2)
- Galvanised and stainless steel options
- Microswitch option for remote indication

Fusible Link Bracket
The Fusible Link Bracket is manufactured from galvanised steel as standard.

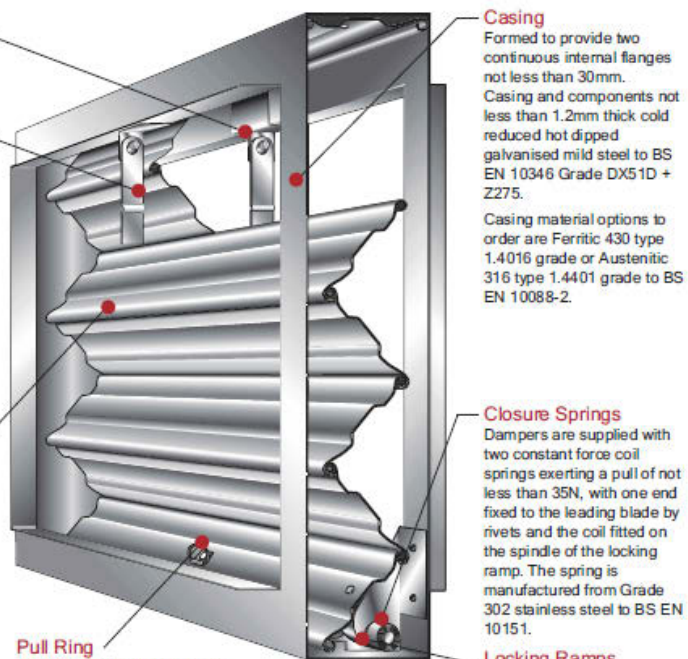
Fusible Link
Blades are held in the open position by a straight bar link (fitted as standard) rated at 72°C (162°F) with a formed reinforcing swage and two location holes.

Blades
Formed to provide a continuous interlocking hinge extending the full length with dual swages providing maximum strength and rigidity. Nominally 0.7mm (22swg) thick cold reduced hot dipped galvanised mild steel to BS EN 10346 Grade DX51D + Z275.

Blade material options to order are Ferritic 430 type 1.4016 grade or Austenitic 316 type 1.4401 grade to BS EN 10088-2.

Microswitches
All BSB FD Fire Dampers are available with factory fitted single pole microswitches as optional extras. (See page 13)

Mechanical Visual Indicator
Local visual indication of the blade status is available as an optional extra. (See page 13)



Pull Ring
To aid resetting of the damper blade pack, the bottom closing blade will be fitted with a single pull ring centrally to the width for dampers up to and including 500mm wide or 500mm diameter. For all dimensions above this, two equally spaced pull rings will be fitted.

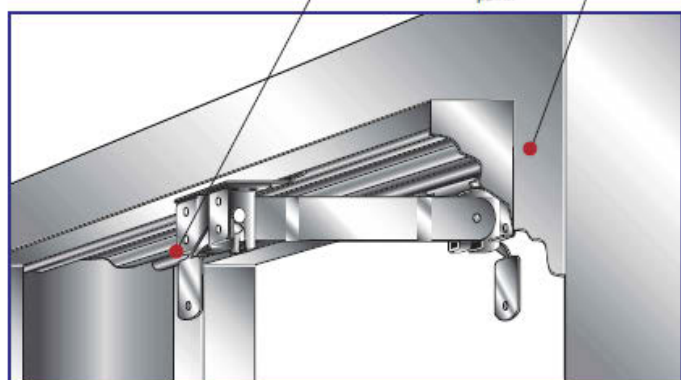
Gate Latch Release
Optional mechanism for electrical release when required. Rated 72°C (162°F).

Casing
Formed to provide two continuous internal flanges not less than 30mm. Casing and components not less than 1.2mm thick cold reduced hot dipped galvanised mild steel to BS EN 10346 Grade DX51D + Z275.
Casing material options to order are Ferritic 430 type 1.4016 grade or Austenitic 316 type 1.4401 grade to BS EN 10088-2.

Closure Springs
Dampers are supplied with two constant force coil springs exerting a pull of not less than 35N, with one end fixed to the leading blade by rivets and the coil fitted on the spindle of the locking ramp. The spring is manufactured from Grade 302 stainless steel to BS EN 10151.

Locking Ramps
Dual locking ramps ensure positive closing action of the blade pack in horizontal or vertical installations.

Paint
All welds are cleaned and sprayed with commercial grade water based protective paint.



Testing and Conformities



See installations section for full details.

E Classification (BS EN 1366-2/BS EN 13501-3)

- BSB FD fitted with HEVAC frame
 - E 120 - Blockwork/masonry wall
 - E 120 - Concrete floor
- BSB FD fitted with cleats
 - E 120 - Dry partition wall
- BSB FD fitted with angle frame
 - E 120 - Dry partition wall
 - E 120 - Concrete floor
 - E 120 - Masonry Wall

E Classification (BS ISO 21925-1)

- As BS EN 1366-2/BS EN 13501-3 above

Corrosion testing (ASTM B117)

- Tested and satisfies LPS 1162

FD Blade leakage (BS EN 1751)

- Class 2

Regulations and Standards

Approved Document B: Fire safety (ADB)

ADB is the UK government's guide to fulfilling the Building Regulations in terms of fire safety. It is available as a free download from the planning portal website.

It gives clear guidance on where fire dampers are to be used and what their performance or classification shall be. The FD fulfills the E classification and reference should be made to the installation method to confirm exact time periods. These will generally up to 120 minutes.

Health Technical Memo 05/02 (HTM05/02)

HTM05/02 is the Department of Health Fire code - fire safety in the NHS: Guidance in support of functional provisions for healthcare premises.

It basically underlines the requirements stated in ADB, requiring fire damper testing to BS EN 1366-2 and classification to BS EN 13501-3.

It supersedes HTM81 and should be read in conjunction with HTM2025: Ventilation in healthcare premises, as it gives guidance on maintenance and testing.

Building Bulletin 100

BB100 is the Department for Children, Schools and Families document on Fire safety in schools.

It basically underlines the requirements stated in ADB, requiring fire damper testing to BS EN 1366-2 and classification to BS EN 13501-3.

Regulatory Reform (Fire safety) Order (RRFSO)

This is the regulatory requirement that allows people to self fire certificate their buildings. There are requirements for keeping testing and maintenance records for all passive fire protection equipment, which includes fire dampers.

BS EN 15650

Fire Damper product standard. Ventilation for Buildings.

BS EN 1366-2

The fire resistance test standard for fire dampers.

BS EN 13501-3

Classification standard for fire dampers.

BS EN 1751

The standard for aerodynamically testing dampers. This includes casing leakage.

Other publications

DW 144 (HVCA)

This states the general requirements for HVAC ductwork, including the use of fire dampers. It also states ductwork leakage limits. Normal operating conditions - not exceeding 1000Pa, Classes A & B of DW 144 2016 Specification will apply.

DW 145 (HVCA)

This document will give guidance on the whole process of the selection and installation of fire dampers, with responsibilities and project planning etc.

The Grey Book (ASFP)

This gives further guidance on the application and installation of fire dampers.

Scotland

These are technical standards (AMD's). They give similar guidance to ADB. They already include direct references to the application of European standards. They are obtainable as a free download from the Scottish Executive website.

Typical Tender/Specification Text

Dampers to comply with EN15650.

For maintenance of the integrity of compartmentation the fire dampers shall have an E classification to EN 13501-3.

Folding blade (E class) fire dampers shall not be used for protection of escape routes and areas with sleeping risk.

Refer to Approved Document B (ADB).

The interlocking ribbed blades shall be held out of the airstream against constant force springs by a fusible link.

The fusible link shall have a melting temperature of 72°C. The link melting shall allow the springs to close the damper.

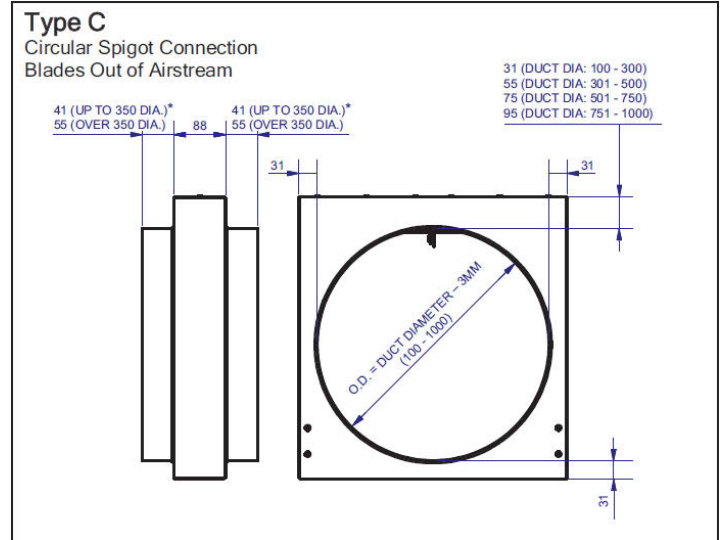
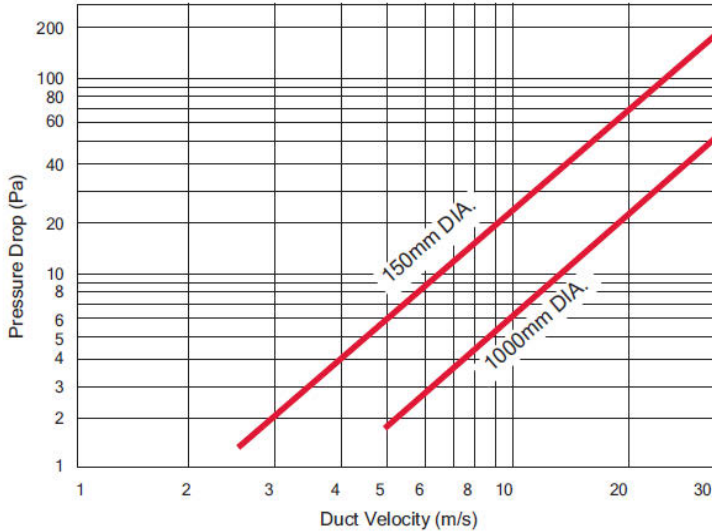
The fusible link assembly and bottom blade arrangement ring pull shall be installed so that test release may be made safely from either side of the damper.

The fire damper case shall be fully welded to meet the air tightness test requirements of HVCA. Normal operating conditions - not exceeding 1000Pa, Classes A & B of DW 144 2016 Specification will apply.



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Notes:

1. All dimensions are in mm.
2. Circular spigoted models are supplied with actual spigot dimensions nominal less 3mm + 1mm.

Fusible Link Release

Straight Bar Fusible Link (Standard). The standard fusible link will be supplied and rated at 72°C unless otherwise specified.

Standard Link (LS)

Supplied as standard, the BSB straight bar link has a formed reinforcing swage and two location holes (125mm long x 18mm wide, with 2 off 10mm diameter holes at 107mm centres).

FD Series dampers are designed for normal dry filtered air systems and should be included within a programme of planned inspections. Records of each damper installation and location are recommended and should include the condition of the dampers at each inspection with any action taken recorded and kept in an accessible location, as these products come under the requirements of the Regulatory Reform (Fire safety) Order (RRFSO). Inspection and maintenance programmes may need to be repeated more regularly if the dampers are exposed to inclement and dusty conditions or fresh air intakes where the frequency of such checks should be developed based on sit experience.

Special Note:

All fire damper installations should be carried out to the satisfaction of the appropriate district surveyor, fire officer, building control authority and/or specifying authority as other approved methods of installation may well be used.