

FIRE DAMPER

D653 RANGE

FROM



APPLICATION

Fire dampers provide automatic shut off of the air flow in ducts in case of fire.

Type D653A are held open by a fusible link which breaks to allow a spring loaded mechanism to close the damper and lock it shut when the temperature exceeds a pre-determined limit. These dampers are equipped with a link which fuses at approximately 72°C. 100, 141 and 182°C links are also available.

D653M are operated by a spring return actuator or a pneumatic actuator. Motor operation allows the closing of the fire damper to be triggered by a remote detector which need not be temperature sensitive; e.g., it could respond to smoke or ionisation instead of or as well as temperature. Failure of the electric or pneumatic power supply causes the damper to close.



CONSTRUCTION

A) Frame

All dampers have frames of 'top hat' section (see fig. 1.2.), 75 mm wide overall x 19 mm deep x 2.5 mm thick. This frame is intended for mounting inside the duct. For flanged connections an additional 'picture frame' casing is supplied, inside which is bolted the standard damper. The flanged casing size is 250mm wide x 50mm deep x 1.5mm thick mild steel channel. All frames are manufactured from zinc coated sheet steel. This gives a finish which is extremely resistant to corrosion due to atmospheric conditions.

B) Blades

Blades are made of 1.5mm zinc coated steel sheet with interlocking edges. The grain of the material runs across the narrow section of the blade. Two different blade widths are used, 150 mm and 200 mm, which are used in combination as required to build up the preferred sizes of damper (See Specification). Blade axles and interlinking push rods are zinc plated mild steel.

Interblade linkage is located internally. Blades have parallel action. The motorised fire dampers D653M have a full length axle on the middle blade which takes the motor drive.

C) Bearings

The axles bearings and cross-connecting bracket bearings are plain brass type.

D) Air Sealing Feature

Air leakage in the closed position is reduced by side seals of spring loaded zero clearance stainless steel located between the end edges of the blades and the frame.

E) Mounting Provisions

The standard frame for mounting inside the duct has two 7.5 mm holes on 63.5 mm centres at 100 mm intervals along the length of each of the four members. The flanged casing sides are deliberately supplied blank for the installer to drill to site requirements.

SPECIFICATIONS

Fire dampers have preferred nominal heights and widths of 200 mm, 250, 300, 400, 500, 600, 675, 800, 850, 900, 950, 1000, 1050, 1100 or 1200 mm. The sizes stated are the internal dimensions of the duct. The actual damper dimensions are slightly smaller to allow adequate clearance for insertion in the duct. Flanged dampers have the flanges factory fitted.

VELOCITY AND PRESSURE RATINGS

Fire dampers are suitable for differential pressure and velocities up to the ratings shown in Table 1.

Table 1 Velocity and Pressure Ratings

Damper Width (mm)	Max Face Velocity in open position (m/min)	Max Differential Pressure in Closed position (mm W.G)
1200	500	100
800	1000	200
400	2000	400

IMPORTANT NOTE

Dampers must always be installed with the blade axes horizontal.

HOW TO SPECIFY FIRE DAMPERS

Fire dampers are specified by an order specification (O.S) Number consisting of a sequence of several letters and digits. The O.S. Number is built up as shown below where each X represents a space to be filled in by a selection of one of the alternative letters or digits indicated.

Damper Type	D653	X	XXXX	XXXX
Operator	Fusible Link A electric or M pneumatic motor			
Size	Internal duct height in mm		0200 0250 0300 0400 0500 0600 0675 0800 0850 0900 1000 1050 1100 1200	0200 0250 0300 0500 0600 0675 0800 0850 0900 1000 1050 1100 1200
	Internal duct width in mm			

For example D653A 09001050 represents:-

Type D653 Fusible Link fire damper to fit an internal duct size 900 mm high x 1050 mm wide.

Note that in specifying the size the height is stated first, followed by the width. If the damper is required with flanged connections, then the words:- with flanged casing should be included.

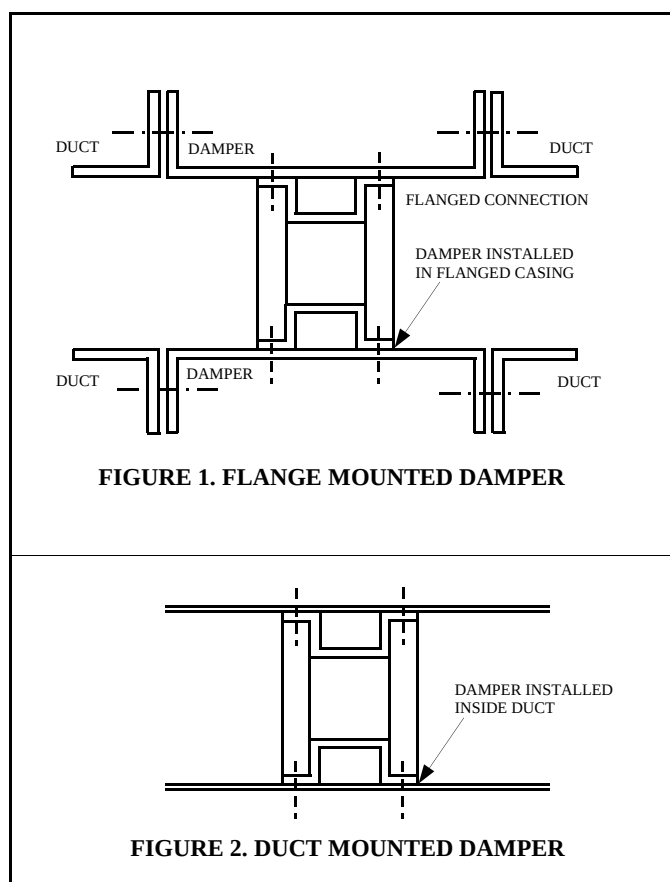
INDEPENDENT TESTS

A D653A fire damper, size 600 mm x 600 mm, which fusible link has been tested to B.S 476: Part 8: 1972 by the Fire Insurers Research and Testing Organisation. There was no loss of stability or integrity after the 2 hour heating period.

A D653M fire damper, size 600 mm x 600 mm and operated by a M645 electric spring return motor has been tested to B.S 476: Part 8: 1972 by the Department of the Environment and Fire Offices' Committee Joint Fire Research Organisation. The integrity of the damper was maintained through-out the 2 hour heating period.

SPECIAL VERSIONS

Dampers can be supplied in other than the preferred sizes at extra cost. Special construction and/or finish of fire dampers can be considered for special applications.



ALTERNATIVE METHODS OF MOUNTING D653 DAMPER