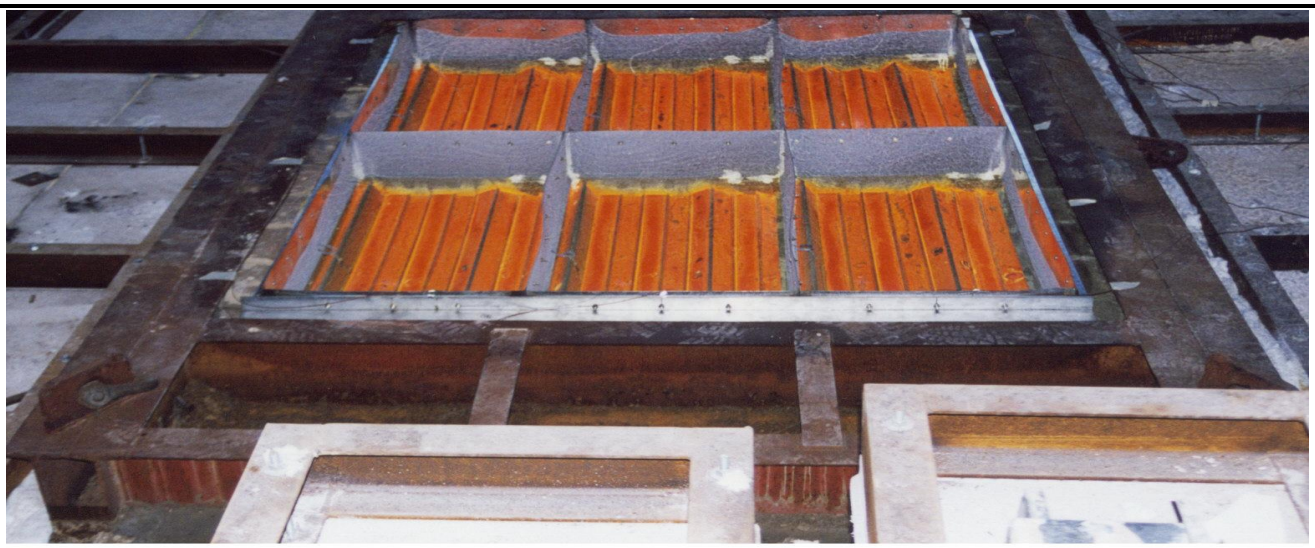
Airwise Engineering

Horizontally Mounted Curtain Fire Damper

4 Hours Fire Integrity Rating

For Vertical airflow application

SPECIFICATION DATA



General

The Blendair Horizontally Mounted Curtain Fire Damper is a simple and effective damper, designed to impede the spread of fire and/or combustible products (eg. smoke) through a slab or vertical opening to other fire compartments of an air-handling system.

This Fire Damper finds it's application in commercial building construction where ventilation, heating, cooling or air-conditioning systems are employed.

The design principle is based on an integral, interlocking stack of blades that closes by the release of a spring coil when a fusible thermal link breaks at a set temperature.
At the close position the unfolded blades form a tightly sealed barrier .

Blendair Horizontally Mounted Curtain Fire Dampers are tested to AS1530 as required to comply with AS1682 and ASNZ1668. They have been tested to SS.333 for closing reliability.

Features

- **Simplicity in design**
- **Tight manufacturing tolerances**
- **High strength and repeatable quality of roll-formed blades**
- **Integral interlocking blade linkages**

- **Blade stack re-settable from both sides of damper**
- **Suitable Vertical airflow application**
- **Adjustable mounting angles**
- **Suitable for multi-module installation**

Horizontally mounted Curtain Fire Damper

DESCRIPTION

The Blendair Horizontal Curtain Fire Damper is designed to impede the spread of fire and or combustible products (e.g. smoke) to other fire compartments of an air-handling system. The design principle is based on the use of an interlocking stack of galvanised steel blades which will - by spring coil - unfold and form a sealed curtain wall. A fusible thermal link, set at a specific temperature, initiates the closing of the curtain. The curtain is housed and guided in a press-formed and welded galvanised steel frame. The solid construction will ensure minimum distortion during transit, installation and operation. Adjustable mounting flanges hold the complete damper assembly securely in the opening, with appropriate insulating material packed into the clearance space to meet installation Standards. Horizontal Curtain Dampers are certified by Standards Australia and meet AS 1682 and AS 1530 requirements.

- Horizontal Curtain Fire Dampers for **Slab & Vertical airflow** Application and **4 Hours Fire Integrity Rating**

GUIDE SPECIFICATION (for the Engineer)

Fire Dampers installed shall be of design and construction as supplied by Blendair which meet the requirements of Australian Standards AS 1682 - Part 1 & 2 and AS 1530 - Part 4.

The damper frame shall be of press-formed and welded galvanised steel construction to minimise distortion during transit, installation and operation. The interlocking damper blades shall be of roll-formed galvanised steel construction to guarantee accuracy and consistent closing operation.

DAMPER SIZING SPECIFICATIONS

Modules are supplied in the following standard sizes:

Single Module: from 300mm x 300mm (min)
to 1220mm x 636mm (max)

Size Increment: as required

Multi Modules: max size 2440mm x 1910mm

Important Notes:

1. When specifying damper sizes (width and height), quote duct size/dimensions.

2. When specifying slab opening sizes to the installer/contractor, allow sufficient space for insulation and expansion, use the following formulae:

External damper size + 10 mm + 1% of linear length (width/height)

SHIPPING WEIGHTS (Kg)

Height (mm)	Width (mm) 200	400	600	800	1000	1200
200	9	13	17	21	25	29
400	12	17	22	27	32	36
600	16	22	27	32	38	43
800	20	26	32	38	43	49
1000	24	30	36	43	49	56
1200	28	34	41	48	55	62

Note: *For weights of Multi-Modules, add total weights by interpolating with above Weight Table.*

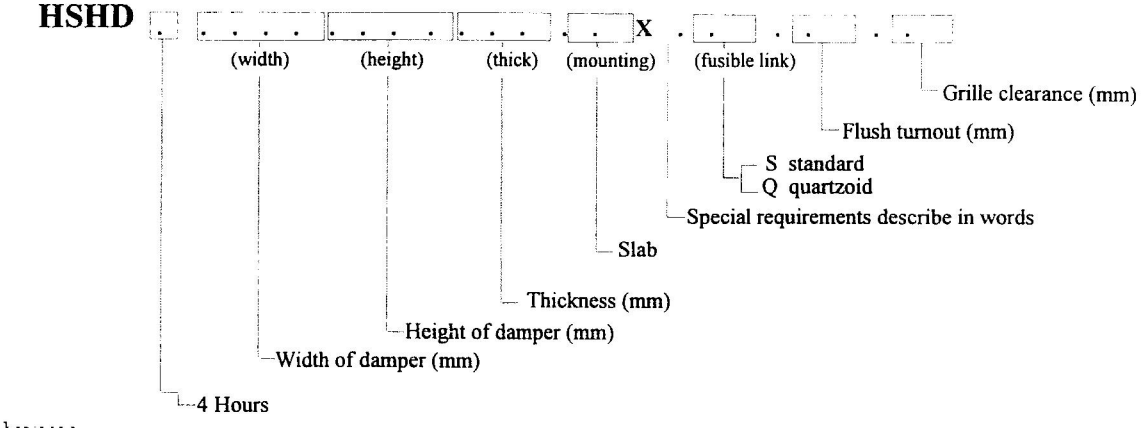
SPECIFICATIONS - Construction

Materials & Finishes:

- Damper frame, blades and mounting angles made of zinc-coated ("galvanised") steel sheet, complying with AS 1397 with a coating class not less than Z275.

- Damage to the zinc-coating, e.g. through welding, is remedied by appropriate cleaning method and application of special 'galvanising' paint.

DAMPER ORDERING SPECIFICATION



HORIZONTALLY MOUNTED CURTAIN FIRE DAMPERS

Damper Frame:
Press-formed 1.6 mm galvanised steel, fully welded at all four corners with 6x12 mm slots to allow for variations in slab thickness.

Damper Blades:
Roll-formed 1.0 mm (nominal) galvanised steel with special interlocking blades performing the blade pivoting function.

Blade Orientation/Location:
Horizontal: Blade stack held at side of damper by thermo-link assembly. Blade closing by spring coil, initiated by thermo-link.

Mounting Angles:
Roll-formed 2.0 mm or 2.5 mm 'right-angle' brackets with 6x12 mm rounded slots at 150 mm pitch to allow for variations in slab thickness.

Bearings:
Blade "bearings" are roll-formed into blades, the blades interlock into each other, forming a concertina-type blade stack (curtain).

Thermo-Link:
The thermo-link is a 'once only' used link.

- Standard: Fusible Solder Link (74 degree C)
- Optional: Quarzoid Bulb (68 degree C)

Access to Thermo-Link:
From both sides of damper - for blade stack re-setting purposes or re-fitting of Thermo-Link.

Mounting Hardware:
Zinc plated 1/4 inch cup head bolts, nut and washer for each set of slotted mounting holes in frame & mounting angles.

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SPECIFICATIONS - Technical

Operation:
Damper closing is initiated by the breaking of the thermal fire link, when temperature in the air stream reaches rated thermal limit. The blade stack will consequently unfold and form a curtain, impeding the spread of fire and/or combustible products to other compartments of the air-handling system.

Damper Closing Temperature:
Standard 'Solder' Fire Link: 70 degree C (nominal)
Quartzoid Bulb: 68 degree C (nominal)
Special Thermal Links or Closing Actuation Devices could be fitted, providing compliance with Standards.

Standards Approval Listing:
Horizontally Mounted Curtain Dampers have passed the test to meet the Leakage and Fire Integrity requirements of AS 1530-Part x and AS 1682-Part 1, with the dampers exposed to ~ 1100 degree Celsius for 4 hours periods.

Copies of SA Certificates may be supplied on request.

HORIZONTALLY MOUNTED CURTAIN FIRE DAMPERS

INSTALLATION

IMPORTANT: The installation of Fire Dampers must comply with the requirements of AS 1682, Part 2. Deviation from any Clause of the Standards must be approved by a Regulatory Authority!

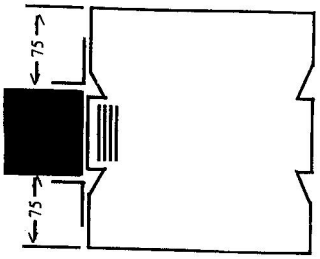
Basic Regulations:

1. Dampers shall be installed in the fully open position only! No intermediate blade position is allowed!
2. Damper frame (casing) must fully penetrate the slab opening.
3. Curtain of damper blades must be fully contained within the penetrated slab element.
4. Clearance between slab opening and damper body (frame) must be such to allow adequate insulating material, PLUS expansion factor for fire situation.
   Recommended **clearance formulae:**
   5 mm + ½% of linear length dimension (width/height)
5. The clearance space between the damper and the penetrated wall opening must be fully packed with approved insulating material to prevent free flow of combustible materials (e.g. smoke). Material must maintain fire integrity up to 1000 degree C.
6. Mounting Flanges must cover the clearance (2x clearance). Contractor may have to fit larger flanges if clearance exceeds recommended sizes.
7. Ensure that access to damper is provided for maintenance purposes (e.g. access panel in duct).
8. Horizontal mounted should have the duct work above the damper protected to prevent combustibles coming in contact with it (AS/NZ 1668.1 C3.4)

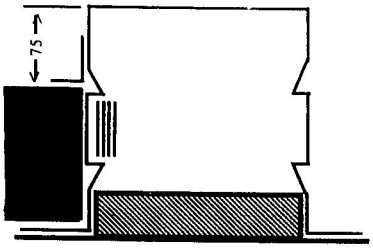
Other Installation Hints:

1. Remove one set of mounting flanges from one side of damper.
2. Insert damper into Horizontal opening.
3. Pack clearance space between damper casing and slab opening with insulating material to meet above requirements.
4. Re-fit mounting flanges, nuts & bolts to damper and tighten, ensuring that flanges are butting tight against the slab and that damper is fitted squarely.
5. Ensure that damper closure is not impeded by any obstruction, incorrect installation (e.g. twisted, out of square), damage to damper or contamination to blade bearings (e.g. building dust).
6. Check proper closing operation.
7. When fitting duct ensure that appropriate damper sleeve connections are used to allow proper duct 'breakaway' in a fire situation (refer AS 1682, part 2 - Appendix B: Examples).
8. Ensure that adequate access panel is fitted to duct to allow easy maintenance to damper.

Installation Examples:



Standard Horizontal Mounting



Horizontal Mounting with Grille

OTHER DAMPER PRODUCTS

- **Fire Dampers:**

Multi-Blade Fire Damper, Single Blade Fire Damper, Circular Fire Damper, 'Volume-Fire Damper, Ceiling Fire Damper

- **Volume Control Dampers:**

Low Leakage Volume Damper (standard), Ultra Low Leakage Volume Damper, High Performance Volume Damper, Min/Max Damper, Face & Bypass Damper, Zone Damper, Non-Return & Barometric Damper

- **Sub Ducts**