FIRE DAMPERS

warrington certification

HEVAC Member

CE marked

FETA Member

Exova FPC

AJS, Units 2 & 3,Bull Ring Trading Estate, Green Street, Digbeth, Birmingham, B12 0NB.

Tel: 0121 766 8126 Fax: 0121 766 7239

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AJS FIRE DAMPERS RANGE

MODEL RANGE

TYPE	CODE	DESCRIPTION
A	FDA	Blades in airstream (Rectangular Duct).
B	FDB	Blades out of airstream (Rectangular Duct).
C	FDC	Blades out of airstream (Spiral/Circular Duct).
E	MFD	Single Blade (Spiral/Circular Duct).
F	FOFD	Blades out of airstream (Flat Oval Duct).

Factory Fitted Installation Options

- C Hanging Cleats.
- DWF Drywall or Blockwork Angle Plate Frame.
- DWC Drywall Angle Plate Frame & Hanging Cleats.
- HF HEVAC Frame.

Material Options

- Galvanised steel.
- Stainless steel.

Description / Full Features:

The AJS curtain type fire damper range is designed for low - medium & high air velocity ductwork systems. Manufactured completely by AJS in the UK, we are able to provide a fire damper designed specifically to prevent the spread of flames through ductwork systems should a fire occur.

What is a fire damper?

- A **fire damper** is a passive fire protection product (a life saving device), utilised within the HVAC industry (heating, ventilation and air conditioning), to prevent the spread of fire through ductwork systems, fire-resistant / rated walls, floor / compartment.

How does it work?

- A **fire damper** blade / curtain should close / be activated in the event of a rise in temperature occurring that exceeds the specific temperature rating (normally 72ºC).

Mechanics

- The **fire damper** will activate / close via a thermal element / fusible link that melts at temperatures higher than the ambient but low enough to indicate the presence of a fire.
    - This will allow the blades / curtain to close and lock in place with the assistance of high tension springs powering the closure of the fire damper blades.
    - Fire dampers can also close following receipt of an electrical signal.

Activation

The **fire damper** is activated via a fusible link element set to trigger @ 72ºC. (normally)

Tests

Operation of the fusible link can be manually tested, allowing the blade pack to close instantly under spring tension, locked in place via radius locking ramps providing a solid barrier to flames.

Certification

- Independently tested by Warrington Fire Research Centre.
- BS EN 1362-2:1999
- CE Marked

CE

DOP - AJS - FD - 01

EC DECLARATION OF PERFORMANCE

Curtain Type Fire Dampers

Types: A,B,C & F

In compliance with Regulation: 305/2011/EU : of the European Parliament and of the council of 9th March 2011 (the Construction Products Regulation or CPR)

AJS (Midlands) Ltd
AJ Services, Units 2 & 3, Bull Ring Trading Estate
Green Street, Digbeth
Birmingham, B12 0NB

System 1

Warrington Certification Ltd

Certificate of constancy of conformity of the factory production control issued.

Ref: 121-CPR-NB5000

Based on:-

Type testing, sampling, inspection of manufacturing plant and equipment, production control, continued assessment & evaluation.

Required performances to comply with BS EN 15650:2010

SIZE RANGE	PRODUCT CODE	INSTALLATION FRAME TYPE	SUPPORTING CONSTRUCTION	WCL TEST REF	CLASSIFICATION (BS EN 13501-3) :2005 + A1:2009
100x100 up to 1250x1000	FD(TYPE)(SIZE)C	HANGING CLEATS	ENCLOSURE BY DRYWALL	355530	E 60 (ve I → o)
100x100 up to 1250x1000	FD(TYPE)(SIZE)DWF	ANGLE PLATE FRAME	DRYWALL	355535	E 90 (ve I → o)
100x100 up to 1250x1000	FD(TYPE)(SIZE)DWF	ANGLE PLATE FRAME	MASONARY WALL	354986	E 90 (ve I → o)
100x100 up to 1250x1000	FD(TYPE)(SIZE)HF	HEVAC FRAME	MASONARY WALL	338620	E 120 (ve-ho I → o)
100x100 up to 1250x1000	FD(TYPE)(SIZE)HF	HEVAC FRAME	CONCRETE FLOOR	354985	E 120 (ve-ho I → o)

Nominal activation conditions/sensitivity according to ISO 10294-4: • Sensing element load bearing capacity pass	PASS
Response delay (response time) according to EN 1366-2: • Closure time	PASS <30 SECS
Response delay (response time) according to EN 1366-2: • Cycling	PASS (50 CYCLES)
Durability of response delay according to ISO 10294-4: • Sensing element response temperature and load bearing capacity	PASS

Signed for and on behalf of AJS by:

Date: 30th March 2016
Jason King
Managing Director
AJS (Midlands) Ltd

Pre-installation Guide

Prior to installation

- If damper is to be stored on site, ensure it is stored in a clean and dry environment.
- Immediately prior to installation, remove all packaging from the unit. Take particular care inspecting the inside of the unit for any packing materials which may disrupt damper operation.

Installation

- Fire damper installation should only be carried out by competent persons. As life safety devices, correct operation is reliant on correct installation.
- Damper edges can be sharp. PPE should be used when handling.
- Larger dampers can be very heavy, ensure suitable lifting methods are used to help prevent injury.
- Adjacent dampers should be positioned not less than 200mm apart at their extremities.
- Remove the safety cable tie around the fusible link. Failure to remove this will render the damper inoperable.
- It is advised to perform a drop test, ensuring the damper functions correctly prior to installation.
- For detailed installation instructions see the following pages.

Operation

- Fusible link fire dampers are designed to operate without any command from an operator or building maintenance system (unless equipped with an electromagnet or solenoid).
- Fusible links will release at the temperature embossed onto the link body.
- The use of electromagnets and solenoids enables the damper to be operated remotely, even when the damper itself is not being exposed to elevated temperatures.
- The activation command may originate from an automated command or a human operator through the building maintenance system.
- Once the damper has been shut, it can only be opened by hand.
- Once exposed to elevated temperatures/flames resulting in the damper closing, the damper must be replaced.

Spares

- A spare amount of replacement fusible links should be kept on site.

Health and safety

- This process must be undertaken by competent persons. More than one person may be required to ensure the safe handling of large dampers and other materials.
- Use must be made of access equipment to ensure unsafe practices are not used to approach walls or difficult access areas.
- Standard site PPE should be used (minimum steel toe cap boots, hard hat). together with any protective eyewear, gloves and masks, when drilling or cutting is being undertaken. The latter should also be used when handing the wall construction materials, as defined by the material suppliers. If loud equipment is being used, hearing protection should be used.
- All waste materials should be collected and disposed of as defined by the relevant supplier.

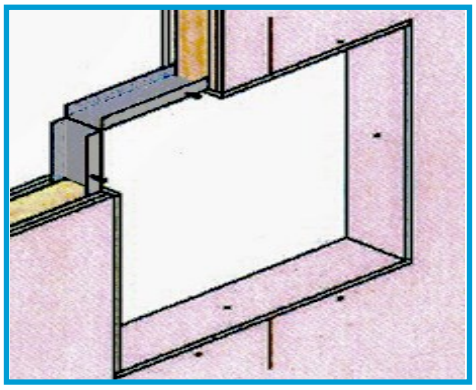
Drywall Installation Procedures

Drywall Preparation Guide

It is recommended that the preparation is incorporated whilst the partition wall construction is in progress.

- If hanging / cleated fire dampers are required.
  - Drop rods will be required to be installed prior to the wall construction.
- Note the position of the track within the prepared aperture.
- Pre-drill the Drywall frame of the damper.
- Use spacers to maintain the central location.
  - However, remove spacers once the damper is secured in place.

Existing Drywall Preparation (by others)



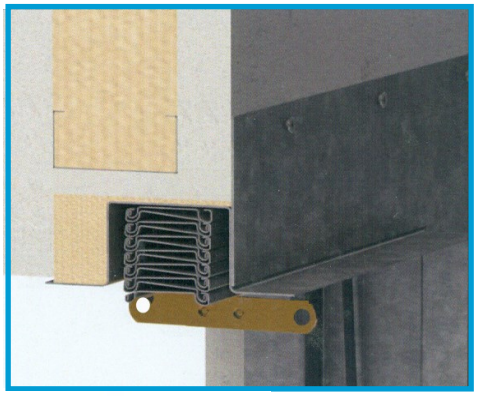
Using the measurement guide below:-

1) Outline / mark the position and dimensions of required hole on the wall.
2) Utilising the appropriate means / tools (e.g. saw), cut into the wall board using your prepared outlined position for the hole and remove each layer and also any infill present.
3) Cut 2 pieces of steel track equal to the opening width.
4) Insert the track into position for both the top and bottom of the opening.
5) Utilising drywall screws, fix into position from both sides of the wall at each end of the track at max 300mm centres.
6) Cut another 2 pieces of steel track equal to the opening height.
7) Insert the track to both sides of opening.
8) Secure in position as described above (see No.5).
9) Prepare / cut 4 pieces of wall board to suit opening.
10) Insert the prepared pieces of wall board into the opening, ensuring that each piece remains flush to the wall surface.
11) Secure to the track with 25mm dry wall screws at maximum pitch of 300mm.

DWF / Angle Frame Installation - Existing Drywall - Measurement Guide

1) Measure the size of the overall damper casing.
2) The hole must be 'lined out' with wall board c/w 1mm clearance per 100mm height and width (minimum of 3mm clearance for dampers smaller than 300mm x 300mm overall).
3) The hole cut out size must include the overall damper case measurement, together with the recommended clearance plus twice the wall board thickness.
   - E.g.1) For a 200mm W x 200mm H overall case sized damper with 12.5mm wall board, the cut size should be 228mm W x 228mm H (W+(2x12.5)+(min clearance of 3mm x1) by (H+(2x12.5)+(min clearance of 3mm x1).
   - E.g.2) For a 1000mm W x 1000mm H overall case sized damper with 12.5mm wall board, the cut size should be 1035mm W x 1035mm H (W+(2x12.5)+(Wx1) by (H+(2x12.5)+(Hx1).

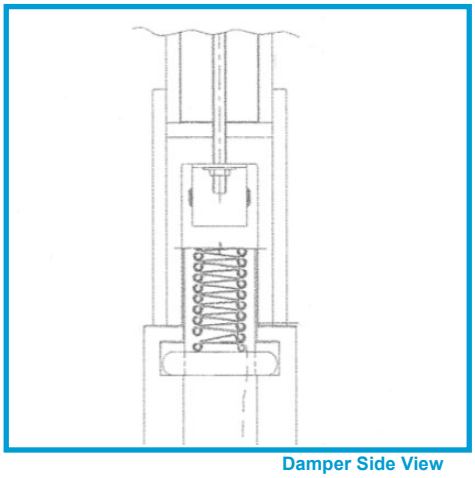
DWF / Angle Frame Installation for Existing Drywall Partition



1) Refer to dry wall preparation instructions.
2) Pre-drill clearance hole in the damper drywall plate frame at no more than 150mm centres ensuring the positions will allow the screws to pull into the track around the hole.
3) Ensuring the blade pack is in the correct orientation. (at the top)
4) Position the damper centrally in the wall opening. (The use of spacers will assist in maintaining a central location)
5) Fasten the frame to the wall using drywall screws, ensuring that they pick up the track lining the hole, so that the proper fire integrity of the installation will not be compromised.
6) Remove the spacers (if used in No.4)
7) Back fill all cavities with mineral wool (Rockwool RW5, Knauf RS100 or equivalent) and pattress over.

warrington certification No. 355535

DWC / Angle Cleat Installation for Enclosure by Drywall Partition



Damper Side View

warrington certification No. 355530

1) Fit the tract of the intended partition to the ceiling.
2) Using 10mm studding drop rods, suspend the fire damper from the centre of the partition ceiling track.
3) Create frame around the outside of the damper with track and studs lined with wall board as close as possible using the following method:-
4) Fit a piece of track lined with wall board above the fire damper crossing between the nearest two full vertical studs.
5) Fit two vertical (one either side) lined studs from the cross track (No.4) to the floor as close as possible to the outside of the fire damper angle cleats.
6) Fit a piece track lined with wall board below the fire damper crossing between the two vertical studs (No.5).
7) As close as possible to the fire damper, build the partition to the track and stud framework.
8) Insulate the wall and back fill all cavities with mineral wool (Rockwool RW5, Knauf RS100 or equivalent).
9) Using intumescent sealant, seal the damper to the partition.
10) Pattress both sides down the fire damper spigot and seal the spigots using intumescent sealant.

Masonry Installation Procedures

DWF / Angle Frame Installation for Masonry

warrington certification No. 354986

1) Refer to measurement guide below for hole dimensions.
2) Pre-drill clearance hole in the damper plate frame at no more than 150mm centres.
3) Ensuring the blade pack is in the correct orientation. (at the top)
4) Position the damper centrally in the wall opening. (The use of spacers will assist in maintaining a central location)
5) Fasten the frame to the wall using steel anchors. (minimum 6.5mm Ø)
6) Remove the spacers (if used in No.4).
7) Back fill all cavities with mineral wool (Rockwool RW5, Knauf RS100 or equivalent).

HF / HEVAC Frame Installation for Masonry Wall

warrington certification No. 338620

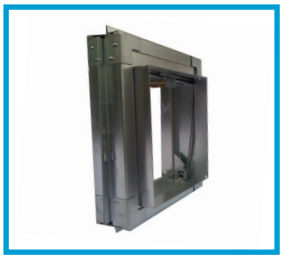
1) Measure the positions of the building ties on the HEVAC frame.
2) Mark up the lintel at the top of the hole in the wall to give positions that match to the building ties.
3) Drill Into the lintel and fit stud anchors or similar steel fixings (min 6.5mm x 60mm).
4) Turn out the building ties on the damper and offer the damper into position, supporting from underneath with a block of wood or board, which will need to be removed when the mortar is in position.
5) Using a steel wire, wrap this around the building ties and the stud anchors in the lintel at the top, to hold the damper in position. (Note: This will also maintain the quality of the link between the damper, the infill mortar and the wall should a fire occur)

HF / HEVAC Frame Installation for Masonry (Vertical)

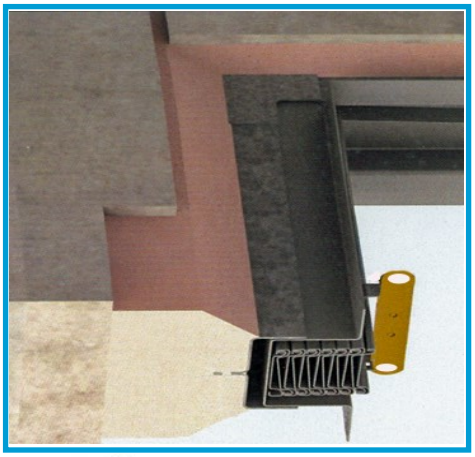
warrington certification No. 338620

Continued

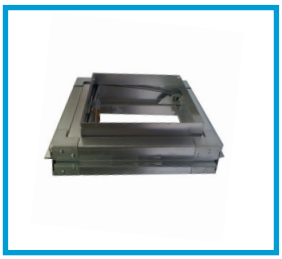
7) Add mortar from both sides of the damper and infill to the HEVAC frame. Take care not to infill past the line on the interface shroud.



HF / HEVAC Frame Installation for Masonry (Horizontal)



warrington certification No. 354985



1) Measure the positions of the building ties on the HEVAC frame.
2) Mark up the inside edges of the hole in the slab to give positions that match to the building ties. Drill into the floor slab and fit stud anchors (or similar) – leaving them protruding into the opening
3) Turn out the building ties on the damper and offer the damper into position.
4) Using steel wire (min 1.5mm Ø), wrap this around the building ties and the stud anchors to hold the damper in position. (Note: This will also maintain the quality of the link between the damper, the infill mortar and the floor slab should a fire occur)
5) Shutter beneath the damper (if required) and add mortar from the top of the slab and infill to the HEVAC frame. Take care not to infill past the line on the interface shroud if the motor is to be fitted above the slab.
6) When the mortar is firm remove the shuttering (if applied) and infill with more mortar to the HEVAC frame from below the slab. Take care not to infill past the line on the interface shroud if the motor is to be fitted below the slab.

For maintenance AJS recommend the use of our range of access doors.

Certification - BSRIA Quality approved pressure tested.

BSRIA

The AJS range of access doors have been designed for both strength and to gain easy and safe access to all in-duct equipment for inspection, maintenance and duct cleaning.

Our range offers suitability for low to medium and high pressure systems for use on rectangular and spiral / circular ductwork.

Range Includes

- Insulated double skin tabbed access door.
- Insulated double skin pressed access door.
- Un-insulated double skin pressed curved access door.
- Un-insulated double skin pressed flat oval access door.

Available Options

- 25mm Deep.
- 50mm Deep.
- Factory fitted safety retaining chain.
- Factory fitted hinge.

Material Options

- Galvanised steel.
- Stainless steel (grade 304 or 316).

AJS FIRE DAMPER INSTALLATION CERTIFICATE

The installer must complete this installation certificate when installing fire dampers.

A separate certificate must be completed for each fire damper.

CHECK LIST	YES/NO
1) Is the damper the correct type?	
2) Is the damper identified correctly?	
3) Is the damper located correctly?	
4) Is the damper installed in the correct orientation?	
5) Are there sufficient access routes installed?	
6) Is access to the damper unobstructed through the ductwork?	
7) Has the space around the damper and within the opening been left clear and not been used for other services?	
8) Using the access opening provided, are the damper blades in the open position?	
9) Has a check of the damper been carried out for internal cleanliness, damage or obstructing debris?	
10) Has a blade drop test been carried out on the damper?	
11) Has the access door / panel been replaced correctly?	
12) At the time of handover, is the fire barrier and penetration seal complete?	

DAMPER UNIQUE SYSTEM	
DAMPER LOCATION	
INSTALLATION ADDRESS	
PRODUCT CODE / DAMPER	
PRODUCT CODE LINK Rat-	
NOTES	
INSTALLERS FULL NAME	
COMPANY NAME	
COMPANY ADDRESS	
INSTALLATION DATE	

It is herby verified that the damper detailed above has been installed and tested according to the manufactures recommendations:

Installers signature:_____ **Date:**_____