

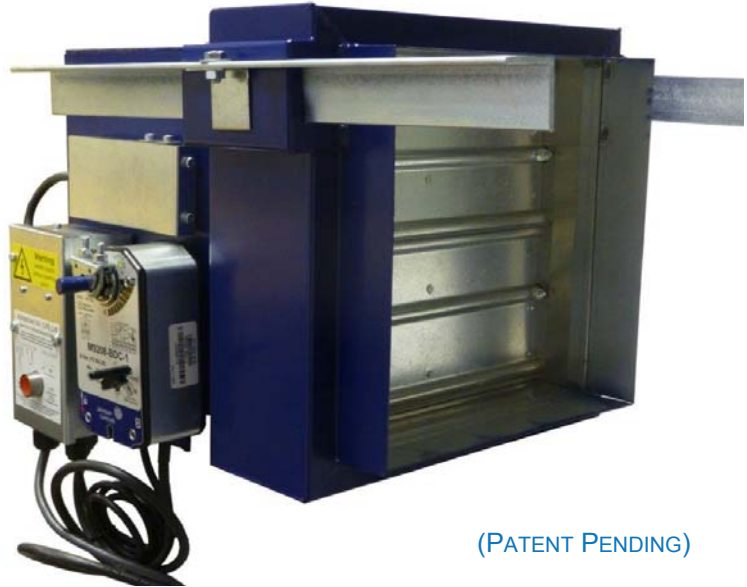
General Description

The model 2550 is designed to prevent the spread of fire and smoke through ventilation ductwork in walls and floors. From receiving an alarm the power to the damper actuator is removed releasing the actuator spring to release closing the damper. The dampers also include electrical thermal sensor and a secondary mechanical fusible link that prevent the damper from opening if the temperature has reached 72°C.

With the introduction of Construction Product Regulation on the 1st July 2013 all fire dampers are required to meet the product standard BS EN 15650. To achieve this standard the damper has to be tested to BS EN 1366-2 dynamic fire test. The dampers are then classified to BS EN 13501-3 that clearly states the integrity of the damper also in the way that damper was installed in the furnace. The standard also now included testing of fusible link to ISO 10294-4 that comprises of a dynamic release and holding tests.

The maximum single section unit tested was 1000mm x 1000mm for both the HEVAC and AFS frame. The damper has been tested both ways round in both wall and floor installation's so there is no issue in co-ordination caused by working out which side the fire will be on.

The damper is supplied complete with actuator pre-wired into a junction box complete with test button reducing time and work on site. The dampers can be supplied with long spigots for installing access doors (optional) or short to reduce on space.



(PATENT PENDING)

Construction Product Regulation

To meet the requirements of the Construction Products Regulation 1st July 2013 Advanced Air fire dampers meet the requirements of the Product Standard BS EN 15650 with a classification under BS EN 13501-3 as stated in our Declaration Of Performance that has been assessed by the notified certification body BRE who have issued a Certificate of Consistency of Performance No:0832-CPR-P0005.

Installation	Damper/Model	Classification
Blockwork Wall	2550- Motorised Fire Dampers	E120 (ve i<—>o) s
Drywall	2550- Motorised Fire Dampers	E120 (ve i<—>o) s
Floor	2550-Motorised Fire Damper	E120 (ho i<—>o) s



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2500 Series Fire Smoke Dampers



DECLARATION OF PERFORMANCE

Fire Smoke Damper
2500 series

Advanced Air (UK) Ltd
Burrell Way
Thetford
Norfolk IP24 3QU UK

The notified body 0832 – BRE carried out the initial inspection of the manufacturing plant and of the production control as well as the continuous surveillance and evaluation of the factory production control according to System 1 of the Construction Products Regulation. Certificate of Constancy of Performance 0832-CPR-P0005 was issued on 24th October 2013.

Essential Characteristics		Performance	Harmonised Technical Specification	
Nominal activation conditions/sensitivity according to BS ISO 10294-4: - Sensing element load bearing capacity - Sensing element response temperature		Passed	BS EN 15650:2010	
Response delay (response time) according to BS EN 1366-2: - Closure time		Passed		
Operational reliability according to BS EN 1366-2: - Cycling		Passed		
Durability of response delay according to BS ISO 10294-4: - Sensing element response to temperature and load bearing capacity		Passed		
Durability of operational reliability (opening and cycling) according to BS EN 15650-2010		Passed		
- Actuator M9208-BDC-1	10,000 cycles			
- Actuator M9208-BGC-1				
Fire resistance				
Size	Supporting Construction	Installation Method		Classification EN 15301-3
200 x 200 to 1000 x 1000[mm]	Concrete floor / ceiling slab	HEVAC		E120 (ho i←→o)s
	Block work wall	HEVAC	E120 (ve i←→o)s	
	Block Work Wall	AFS	E120 (ve i←→o)s	
	Partition wall	AFS	E120 (ve i←→o)s	

The performance of the product 2500 Fire Smoke Damper is in conformity with declared performance outlined above. This Declaration of Performance is issued under the sole responsibility of the manufacturer.

Signed on behalf of the manufacturer by:

Andrew Sargent
General Manager 29th October 2013

2500 CE DOP - 00 - New

Due to continuous product development Advanced Air (U.K.) Ltd reserves the right to change any information without prior notice.

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Product Details

Blades:	Double skin 1.0mm galvanised mild seal or option 430 stainless steel Centres 125.0mm
Casing:	1.2mm galvanised mild steel or option 430 stainless steel
Corners:	Welded mitre corners finish with aluminium aerosol spray
Linkage:	External, enclosure within frame, out of airstream, zinc electroplated mild steel
Bearings:	Oil filed sintered bronze up to 200°C
Axles:	12.7mm diameter zinc electroplated mild steel bolted directly through the blade
Jackshaft:	12.7mm diameter zinc electroplated mild steel
Side Jamb:	Cambered grade 430 stainless steel
Top & Bottom Jamb:	Profiled grade 430 stainless steel riveted to damper frame
Minimum Duct Size	Rectangular : 100mm x 100mm (case size 250mm x 250mm) Circular: 100mm diameter (case size 250mm x 250mm) Flat Oval: 100mm x 100mm (case size 250mm x 250mm)
Maximum Single Section Duct Size	Rectangular :1000mm x 1000mm Circular: 1000mm diameter Flat Oval : TBC

Operation Features

Hand Locking Quadrant – The HLQ will be riveted directly to the casing, to open the damper blades the handle is turned in an anti-clockwise direction, they can be locked in the required position by means of a wing nut on the quadrant assembly.

Actuator – The damper can be supplied with a 230V AC or 24V AC/DC factory fitted actuator. For wiring details refer to the wiring diagram fitted on the damper casing and also to the actuator manufacture instructions.

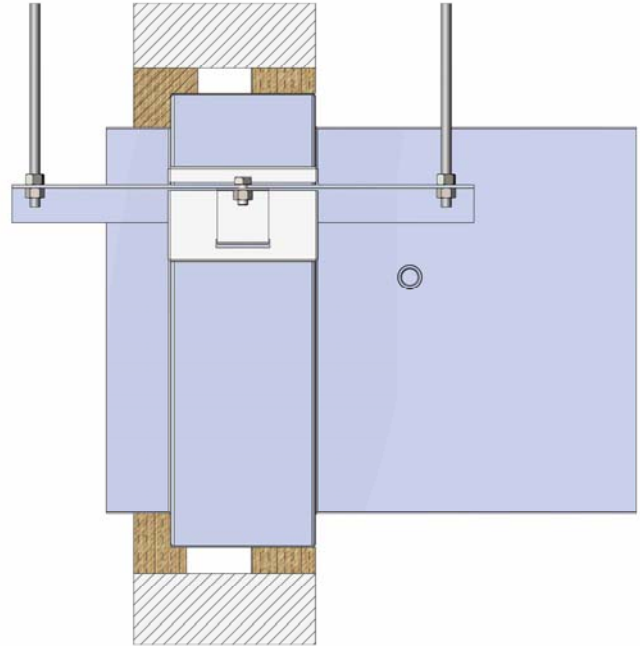
Switch Packs – The damper can be supplied with switch pack which will provide 'True Blade Indication'. The switch pack is suitable for 24V and 230V operation and has a rated current of 10A, for wiring details options refer to Advanced Air.

AFS - Adjustable Frame System (PATENT PENDING)

With the tighter requirements of the CPR and Building regulations with regard to CE labelling and that dampers have to be installed as tested Advanced Air through our design and development program are please to launch the AFS installation system that simplifies damper installations for customers.

This new system is unique to Advanced Air and offers one solution for fire smoke damper installation in walls. Using Firebatt that is the accepted standard on sites to finish damper installation. Our fire smoke dampers have been successfully tested to BS EN 1366-2 with the same method in both Blockwork and Drywalls.

The added benefit of this system it is adjustable allowing the drop rod supports to be positioned to suit the site conditions

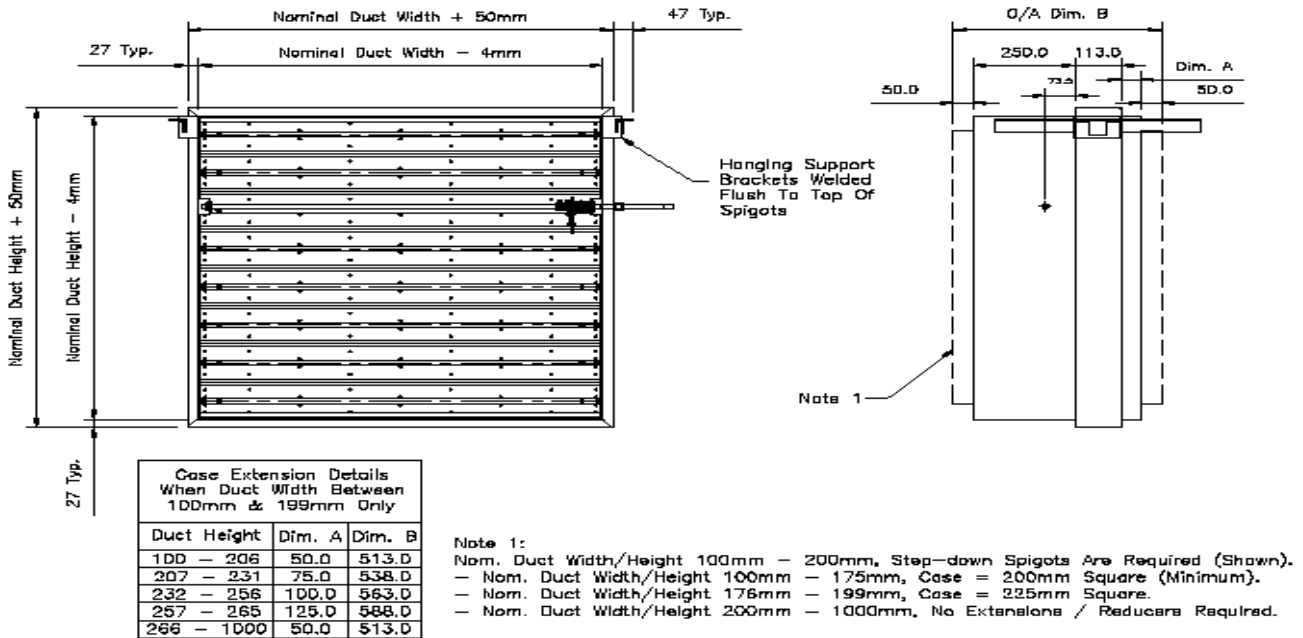


Fire Damper Testing Details

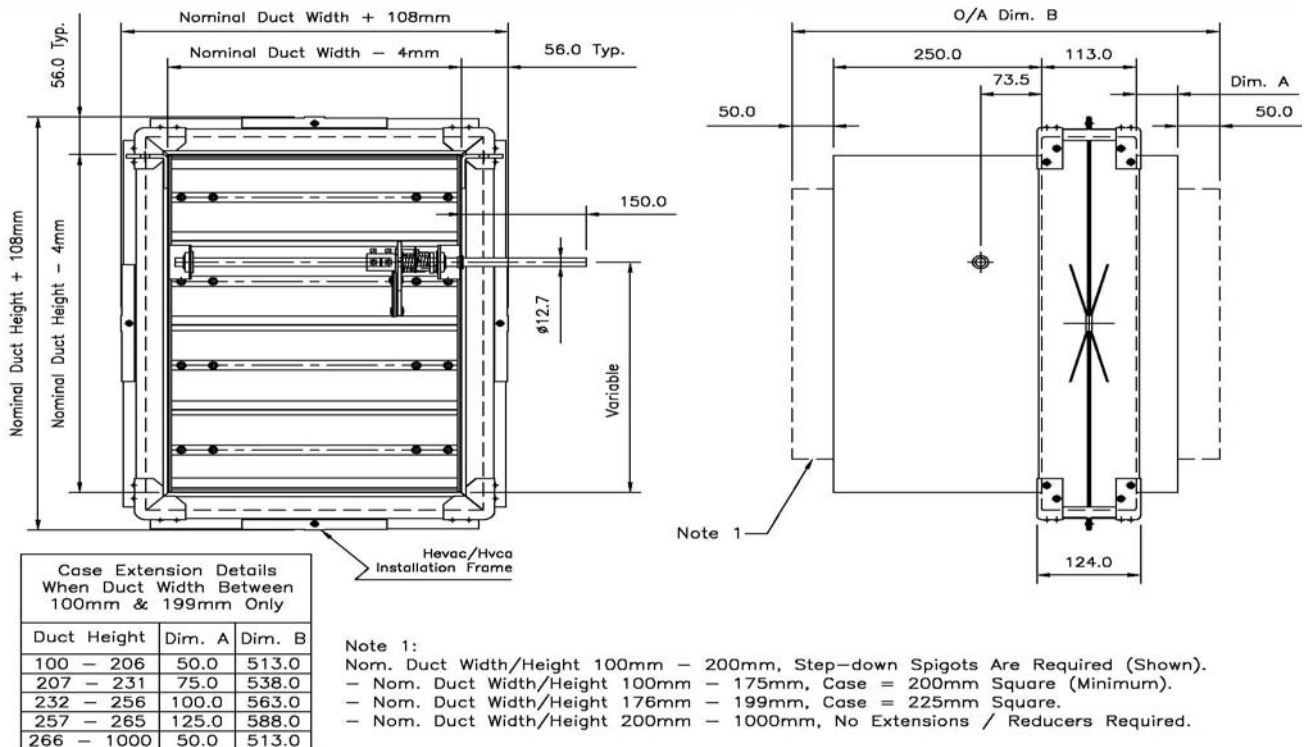
Test House & Test	Fire Test	Integrity	Classification BS EN 13501-3
BRE - 284807 Efectis No: R0261a HEVAC	BS EN 1366-2	120 min	E120 (ve i↔o) s
Efectis No: R0169b & R0169c HEVAC	BS EN 1366-2	120 min	E120 (ho i↔o) s
BRE - 284809 BRE - 284808 AFS - Partition Wall	BS EN 1366-2	120 min	E120 (ve i↔o) s
TBC AFS - Blockwork Wall	BS EN 1366-2	120 min	E120 (ve i↔o) s

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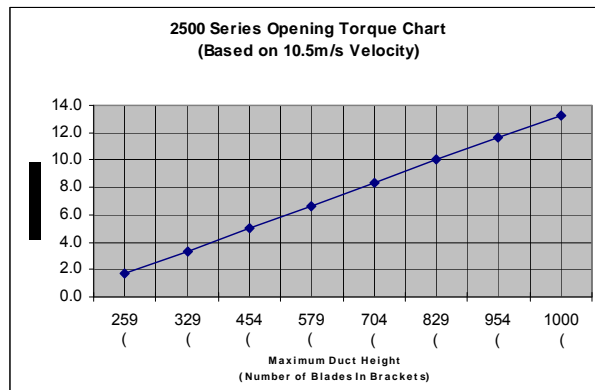
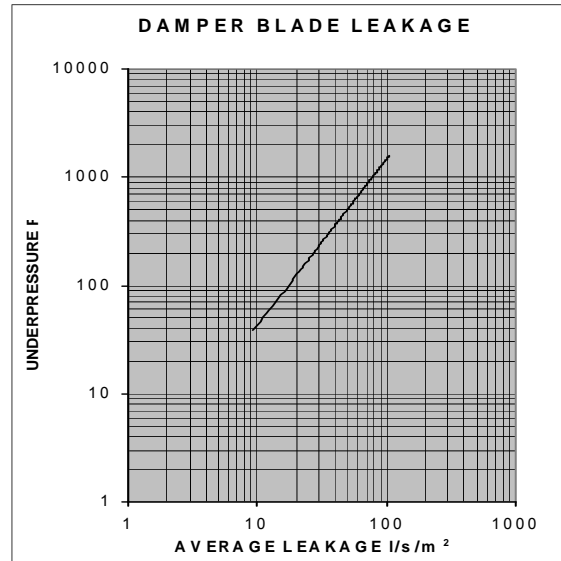
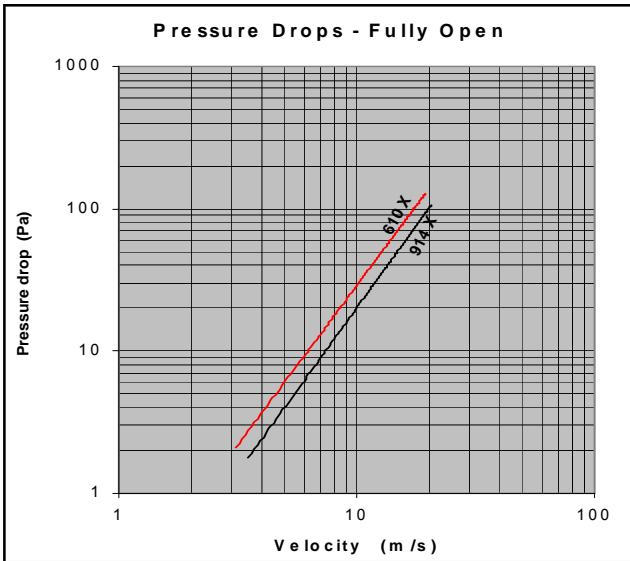
Sizing Information — 2550 Fire Smoke Damper With Rectangular Spigot & AFS Hanging System



Sizing Information — 2550 Fire Smoke Damper With Rectangular Spigot & HEVAC/HVCA Installation Frame



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For multi-section (joined) units multiply by 1.2

The results above were gained by experimentation using 750mm wide units, tests performed in a clean system at suitable pressures and are

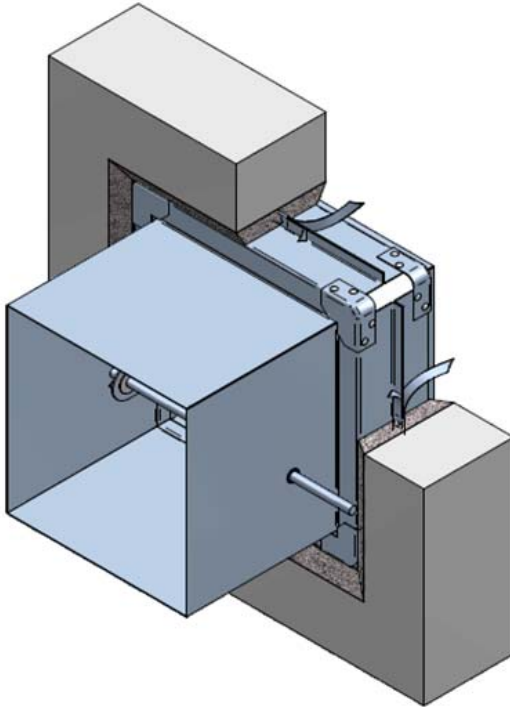
2500 Series Nett Weights							
Width							
(mm)	200	300	400	600	750	1000	
H e i g h t	150	8	10	11	15	17	19
	300	11	13	15	19	23	27
	450	14	16	19	24	28	32
	600	17	19	22	28	32	36
	750	20	23	26	32	37	41
	900	22	26	29	36	42	46
	1000	25	28	32	39	45	49

All weights are approximate and in Kilograms

- The weights stated are standard Rectangular Spigotted
- Hevac/Hvca frames + further 50% max
- Please note above weights do not include for actuators

Please note that the above figures are currently due for verification.

HEVAC Wall Installation - E120



Pre Installation Notes

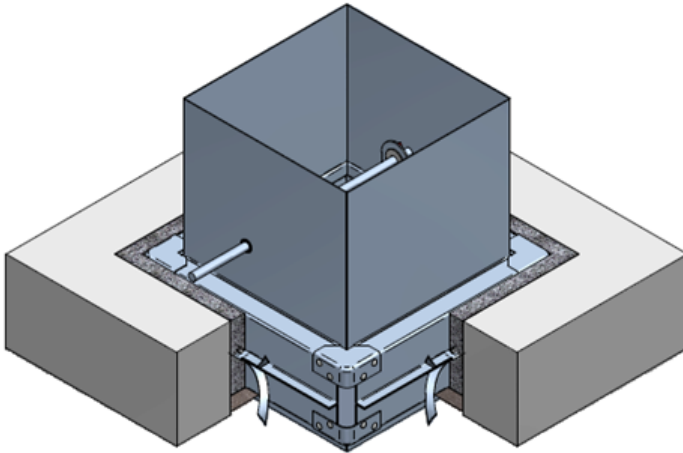
1. Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.
2. Remove all packaging and transit ties before installation.

Installation Procedure

1. Vertical builders work barrier to have an appropriately sized lintel to ensure an opening clearance for the expansion frame.
2. The opening in the wall must be cleaned, free of dust and any other contaminants which could impair the mortar adhesion. A clearance gap 25mm (min) to 50mm (max) must be maintained around the expansion frame of the fire damper (barrier contractor).
3. The damper shall be fitted centrally in the wall opening.
4. The tabs on the factory fitted galvanized steel expansion frame shall be bent out to tie the damper into the wall with the penetration seal.
5. The "Penetration Seal" must have a structural and fire rated compatibility with both the barrier and the damper and have sufficient strength to retain the fire damper within the wall in a fire situation. (4:1 Mortar Mix).
6. The Mortar Mix will be applied up to the installation frame face, take care not to leave any air pockets in the mix.
7. The ductwork connecting to the damper spigots must overlap by 40mm, leaving a 10mm clearance for any duct expansion in a fire situation.
8. All ductwork connections must be sealed with an approved ductwork sealer, and fixed with low resistance fixings such as: aluminium alloy rivets or nylon bolts.
9. All connecting ductwork must be independently supported within 1meter of the connections.
10. An Access cover should be fitted on the appropriate side of the barrier to enable inspections and maintenance work.

Maintenance Procedure

- These dampers are installed as a life-safe product and will require regular physical and visual examinations. It is essential that that the assembly is kept in a clean, dust free condition at all times.
- It is essential that an access door has been provided in the adjacent ductwork to facilitate the inspection and maintenance.
- Ensure that no physical restriction of the blades has occurred during the installation process.
- Remove any dirt or debris built up in the damper, apply a little WD lubricant or light oil, any excessive oils should be wiped away.
- Check the operation of any ancillary products that may be fitted.
- Examine the fusible link to ensure that no corrosion has occurred and that the plates are free from distortion and are in good condition to operate when required.
- Close the blade pack by manual operation and examine the blades to ensure;
 - They are in the fully closed position and have located in the ramps.
 - They are all position in the frame correctly i.e. square to the frame.
 - They are all in a clean condition.
- The period between maintenance checks can best be ascertained by system conditions or as directed by local regulations for ventilation plant and ancillaries, but should not exceed a maximum interval in excess of twelve months.
- The report should be completed following the Maintenance Procedure included within this document.



HEVAC Floor Installation - E120

Pre Installation Notes

1. Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.
2. Remove all packaging and transit ties before installation.

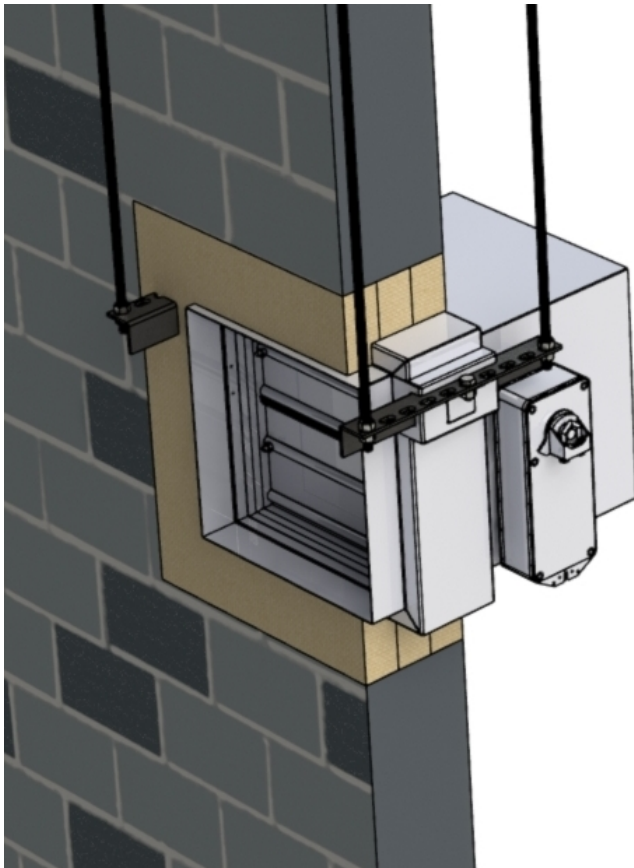
Installation Procedure

1. The opening in the floor slab must be cleaned, free of dust and any other contaminants which could impair the mortar adhesion. A clearance gap 25mm (min) to 50mm (max) must be maintained around the expansion frame of the fire damper (barrier contractor).
2. The tabs on the factory fitted galvanized steel expansion frame will be bent out to tie the damper into the floor with the penetration seal.
3. The damper should be fitted flush to the top edge of the opening.
4. The underside of the damper should be shuttered up with 25mm rigid rock wool firebatt Min Density 140kg/m³ cut to interference fit and supported from below, this must be left in situ.
5. The "Penetration Seal" must have a structural and fire rated compatibility with both the barrier and the damper and have sufficient strength to retain the fire damper within the floor slab in a fire situation. (4:1 Mortar Mix).
6. Pour the Mortar Mix into the gap between damper and floor slab to half way and ensure all the small gaps are filled, leaving no air pockets. Then pour the top layer up to the installation frame face smoothing off if necessary.
7. The ductwork connecting to the dampers long spigot must overlap by 40mm. The ductwork connecting to the short spigot must overlap the spigot by 40mm, leaving 10mm clearance for any duct expansion in a fire situation.
8. All ductwork connections must be sealed with an approved ductwork sealer, and fixed with low resistance fixings such as: aluminium alloy rivets or nylon bolts.
9. All connecting ductwork must be independently supported within 1meter of the connections.

Maintenance Procedure

- These dampers are installed as a life-safe product and will require regular physical and visual examinations. It is essential that that the assembly is kept in a clean, dust free condition at all times.
- It is essential that an access door has been provided in the adjacent ductwork to facilitate the inspection and maintenance.
- Ensure that no physical restriction of the blades has occurred during the installation process.
- Remove any dirt or debris built up in the damper, apply a little WD lubricant or light oil, any excessive oils should be wiped away.
- Check the operation of any ancillary products that may be fitted.
- Examine the fusible link to ensure that no corrosion has occurred and that the plates are free from distortion and are in good condition to operate when required.
- Close the blade pack by manual operation and examine the blades to ensure;
 - They are in the fully closed position and have located in the ramps.
 - They are all position in the frame correctly i.e. square to the frame.
 - They are all in a clean condition.
- The period between maintenance checks can best be ascertained by system conditions or as directed by local regulations for ventilation plant and ancillaries, but should not exceed a maximum interval in excess of twelve months.
- The report should be completed following the Maintenance Procedure included within this document.

AFS Blockwork Installation - E120 (PATENT PENDING)



Pre Installation Notes

1. Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.
2. Remove all packaging and transit ties before installation.

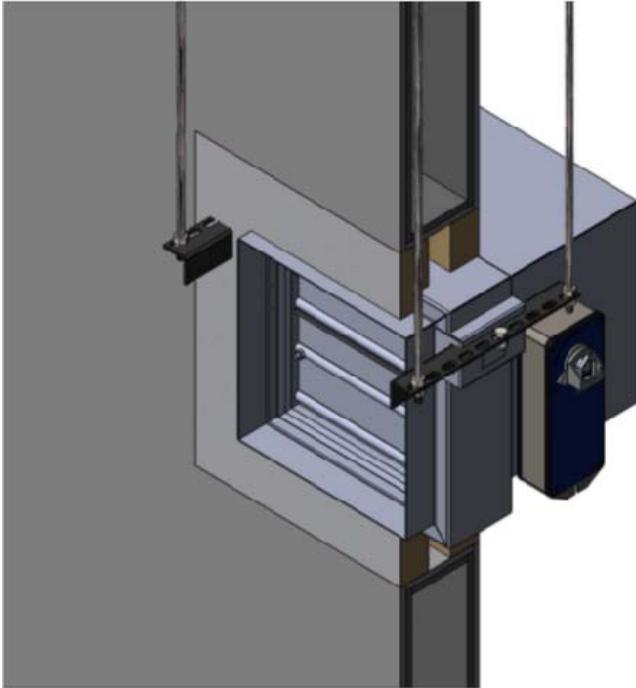
Installation Procedure

1. Vertical builders work barrier to have an appropriately sized lintel and opening clearance for the fire damper and Firebatt.
2. The opening in the wall must be cleaned, free of dust and any other contaminants which could impair the acrylic sealant. A clearance gap of 25mm (min) - 100mm (max) gap for the Firebatt must be maintained around the fire damper (barrier contractor).
3. The damper shall be mounted so that the supported side of the damper is flush with the wall opening. It shall be hung by M10 drop rods using the slotted rail and bolted tight to steel anchors in the slab or soffit above.
4. The gap between the damper and the wall opening will need filling in with 3 layers of 140kg/m³ 50mm Firebatt cut to interference fit and pushed in place.
5. All joints and gaps shall be sealed using intumescent Acrylic Sealant.
6. The ductwork connecting to the damper spigots must overlap by 40mm, leaving a 10mm clearance for any duct expansion in a fire situation.
7. All ductwork connections must be sealed with an approved ductwork sealer, and fixed with low resistance fixings such as: aluminium alloy rivets or nylon bolts.
8. All connecting ductwork must be independently supported within 1meter of the connections.
9. An Access cover should be fitted on the appropriate side of the barrier to enable inspections and maintenance work.

Maintenance Procedure

- These dampers are installed as a life-safe product and will require regular physical and visual examinations. It is essential that that the assembly is kept in a clean, dust free condition at all times.
- It is essential that an access door has been provided in the adjacent ductwork to facilitate the inspection and maintenance.
- Ensure that no physical restriction of the blades has occurred during the installation process.
- Remove any dirt or debris built up in the damper, apply a little WD lubricant or light oil, any excessive oils should be wiped away.
- Check the operation of any ancillary products that may be fitted.
- Examine the fusible link to ensure that no corrosion has occurred and that the plates are free from distortion and are in good condition to operate when required.
- Close the blade pack by manual operation and examine the blades to ensure;
 - They are in the fully closed position and have located in the ramps.
 - They are all position in the frame correctly i.e. square to the frame.
 - They are all in a clean condition.
- The period between maintenance checks can best be ascertained by system conditions or as directed by local regulations for ventilation plant and ancillaries, but should not exceed a maximum interval in excess of twelve months.
- The report should be completed following the Maintenance Procedure included within this document.

AFS Drywall 2 Hour - 120
(PATENT PENDING)



Pre Installation Notes

1. Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.
2. Remove all packaging and transit ties before installation.

Installation Procedure

1. The Drywall which will consist of two layers of 15mm plasterboard each side of steel studwork with a 50mm Rockwool insulation. The opening will be a letterbox construction with overlapping layers of plasterboard with an opening clearance of 25mm (min) - 100mm (max) all around the fire damper casing (barrier contractor).
2. Two M10 drop rods shall be fitted each side of the wall fixed by steel anchors into the slab or soffit above.
3. The access side of the damper (denoted by extended spigot with actuator) must always be installed flush with the surface of the dry wall.
4. The gap between the damper and the wall opening will need filling in with at least 2 layers of 140kg/m³ 50mm Firebatt cut to interference fit and pushed in place.
5. The ductwork connecting to the damper spigots must overlap by 40mm, leaving a 10mm clearance for any duct expansion in a fire situation.
6. All ductwork connections must be sealed with an approved ductwork sealer, and fixed with low resistance fixings such as: aluminium alloy rivets or nylon bolts.
7. All connecting ductwork must be independently supported within 1meter of the connections.

Maintenance Procedure

- These dampers are installed as a life-safe product and will require regular physical and visual examinations. It is essential that that the assembly is kept in a clean, dust free condition at all times.
- It is essential that an access door has been provided in the adjacent ductwork to facilitate the inspection and maintenance.
- Ensure that no physical restriction of the blades has occurred during the installation process.
- Remove any dirt or debris built up in the damper, apply a little WD lubricant or light oil, any excessive oils should be wiped away.
- Check the operation of any ancillary products that may be fitted.
- Examine the fusible link to ensure that no corrosion has occurred and that the plates are free from distortion and are in good condition to operate when required.
- Close the blade pack by manual operation and examine the blades to ensure;
- They are in the fully closed position and have located in the ramps.
- They are all position in the frame correctly i.e. square to the frame.
- They are all in a clean condition.
- The period between maintenance checks can best be ascertained by system conditions or as directed by local regulations for ventilation plant and ancillaries, but should not exceed a maximum interval in excess of twelve months.
- The report should be completed following the Maintenance Procedure included within this document.



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2500 Series Fire Smoke Dampers

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Installation Safety Information

The installation of Fire Dampers must be done by competent trained persons who are familiar with the type of product. They should follow the following essential safety practices:

- Wear appropriate PPE gloves, footwear, safety hat etc. comply with the safety policies of the particular site.
- Ensure that access to the installation position has been made safe and is suitable for the handling of the damper.
- Use correct manual handling techniques when moving the damper, use team lifting techniques when installing large dampers.
- If lifting equipment is used; inspect the condition of the equipment before using it.

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Advanced Air Fire Damper Certificate

DW 145 Inspection & Handover Check Sheet to be completed by the installer with a separate certificate for each damper.

No:	Question	Guidelines	Tick
1	Are the dampers the correct type	Fire Damper Model 0160 Fire Smoke Damper Model 2550	
2	Are the dampers correctly identified?	Identification label clearly shows the damper individual reference number.	
3	Are the dampers located correctly?	The damper position matches the position as detailed on the manufacturer's installation instructions.	
4	Have supports for both the damper and adjacent ductwork been installed in accordance with the approved method?		
5	Are the dampers fitted in the correct orientation?	The dampers are installed the correct way up relative to airflow and access.	
6	Is access, through the ductwork, to the damper unobstructed?	There is unobstructed space to allow safe access to damper, also through ceiling void and adjacent services	
7	Confirm the space around the damper has not been used for the passage of other services.	The presence of other services will invalidate the installation method	
8	Using the access opening provided, confirm that the damper has been left in the open position.		
9	Release damper catch to simulate the thermal release mechanism (damper drop test).	Ensure the blade operation is free from interference	
10	Check damper blades for damage.	With the damper in the closed position inspect for damage	
11	Re-set damper and replace access panel.	After resetting check that if supplied the visual position indicator is correct	
12	Is the fire barrier and penetration seal complete?	Confirm if at handover if installation is complete if no then other trades will be required to finish.	Yes
			No
13	Handover damper installation for commissioning.	Obtain relevant acceptance of the damper installation form the nominated person responsible.	

Project		Installer Name	
Damper Id No:		Company	
Location		Date	
Type	I hereby confirm the damper detailed has been installed and tested according to the manufacturer's recommendations		
Model No:		Signature	

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2500 Series Fire Smoke Dampers

PATENT APPLIED FOR

Maintenance Report

Operation / Task	Result
Damper reference	
Date of inspection	
Check actuator wiring for damage (where applicable)	
Check end-switch wiring for damage (where applicable)	
Check damper for cleanliness and clean where necessary	
Check the condition of the blades and seals, rectify and report where necessary	
Confirm the safety closure operation of the fire damper according to the manufacturer's instructions	
Confirm operation of the damper to OPEN and CLOSE by use of physical observation of the damper, rectify and report where necessary	
Confirm operation of OPEN and CLOSED end-switches, rectify and report (where necessary)	
Confirm that the damper fulfills its function as part of the control system (where necessary)	
Confirm that the damper is left in its normal working position	

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