

# actionair

## Fireshield



**CE Marked 'E' Rated Curtain Bladed  
Fire Dampers used to prevent  
the spread of fire maintaining  
compartmentation**



## Content

CE Marking/Fireshield/The Range/Specification.....	3
Selection Guide .....	4
Features/Details .....	5
Self Latching Removable Release Mechanism Cassette .....	6
Remote Electrical Fail-Safe Releases/Acoustic Data .....	7 - 8
Fireshield and I/F Installation .....	9 - 12
Fireshield and DWFX-C Installation .....	13 - 14
Fireshield and DWFX-F Installation .....	15 - 19
Fireshield Ordering Information .....	20
Customer Service/Approvals .....	21
Application/Quality Assurance .....	22
Swegon R&D Academy.....	23

## CE Marking

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Following the introduction of the new Construction Products Regulation (CPR) on the 1st July 2013, Actionair, a brand of Swegon Air Management, offer a comprehensive range of CE marked fire dampers together with approved installation methods.

Under the CPR, manufacturers of construction products which are covered by harmonised European standards (hENs) are required to affix the CE mark and make a Declaration of Performance (DoP) for their products. CE marked fire dampers must fully comply with the product standards: EN 15650:2010 Ventilation for Buildings - Fire Dampers and compliance is verified through assessment by a "Notified Body".

The full and intensive assessment process includes;

- Fire testing to the latest European standards - EN 1366-2
- Classified to EN 13501-3
- Corrosion testing to EN 60068-2-52
- Thermal fuse testing to ISO 10294-4
- Factory production control which includes a continuous program of cyclic and leakage testing of production dampers to ensure full compliance of every product

Companies must also be ISO 9001:2008 accredited and every product must be CE marked with all known characteristics. It must be supplied with comprehensive installation, operation and maintenance instructions.

Greater legal responsibility for ensuring compliance with the harmonised standards will also be imposed on importers, distributors, specifiers and builders.

## FireShield

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The FireShield range of CE Marked 'E' Rated Fire Dampers are used to prevent the spread of fire.

The Stainless Steel folding blade curtain is housed in a galvanised steel fully welded spigotted casing suitable for square, rectangular, circular and flat oval connections.

They are supplied with a choice of various successfully tested installation methods;

Installation Frame (I/F)

DWFX-C (Dry Wall Fix Cleats)

DWFX-F (Dry Wall Fix Flange)

Specifically for inclusion into concrete / masonry walls and floors or dry wall partitions.

Optional 230V AC or 24V AC and DC Electro Magnet fail-safe releases and Micro Switches are available.

## The Range

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The Actionair FireShield range of quality engineered dampers are suitable for air conditioning and ventilation systems requiring up to 4 hour fire protection.

These stainless steel bladed Actionair FireShield Dampers fail-safe closed and are supplied with the innovative, easy Single-Handed Reset Self Latching Removable Release Mechanism Cassette.

Ordinary steel curtain fire dampers involve a complex pull and lift curtain opening operation, further complicated by having to hold the curtain in the fully open position against the constant tension of closure springs whilst attempting to reset or replace the fusible link unsighted.

## Specification

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### FireShield

The Actionair FireShield curtain fire dampers comprise of a stainless steel folding curtain having unbroken movable joints with stainless steel constant tension closure springs for positive closure.

The Self Resettable, Latching Removable Release Mechanism Cassette, shall ensure the closure of the stainless steel curtain under full fire conditions. All housed in a galvanised steel fully welded spigotted type casing suitable for square, rectangular, circular or flat oval connections.

A Fire Rated Damper in accordance with British Standard BS9999:2008 should be held in the Open Position by means of a Thermally Actuated Device set to operate at approximately 74 °C. All FireShield Stainless Steel Curtain Fire Dampers are Fire Rated Dampers as they are held in the Open Position by a Thermally Actuated cassette operating at a temperature of approximately 72 °C ± 4 °C.

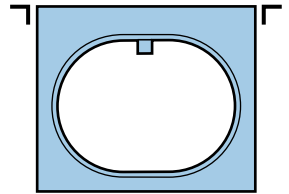
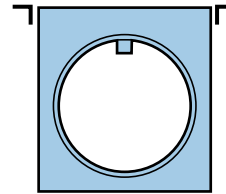
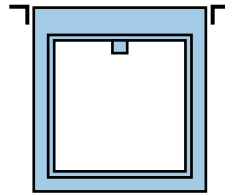
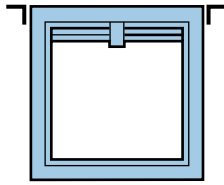
# Selection Guide

## SPIGOT CONNECTIONS

Square / Rectangular

Circular

Flat Oval



Series

FS101

FS201

FS301

FS401

Blades partly in air-stream

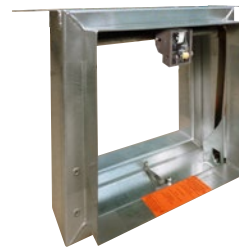
Blades effectively out of airstream

## INSTALLATION METHOD

I/F

DWFX-C

DWFX-F



Concrete / Masonry Wall

Page 9

Concrete / Masonry Floors

Page 10

Dry Wall fix Cleats (typically fixed prior to encasement by the dry wall partition)

Page 13

Dry Wall fix Flange and Cleats (typically fixed into existing dry wall partition)

Page 15

Dry Wall

Page 13

Page 15

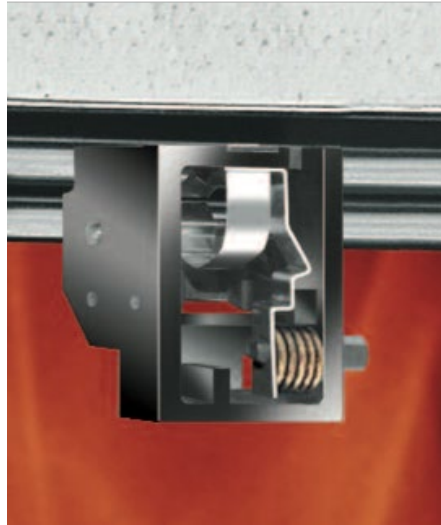
## Blade Features

The Type 1.4016 (430) Ferritic Stainless Steel folding blade curtain, providing maximum strength, forms a fire shield. The wide profile blades maximise the damper free area and ensure compact grouping to minimise blade stacking height.

### Stainless Steel Closure Springs

Stainless Steel constant tension springs are fitted and positioned out of the airstream to close and latch the damper, regardless of vertical or horizontal operation.

## Cassette Details



### Features

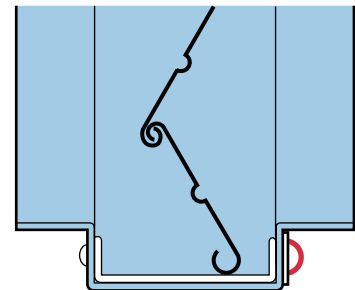
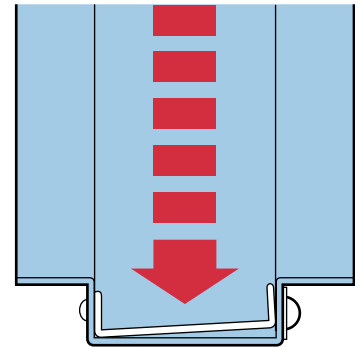
- Patented design.
- Made of Polyphenylene sulphide (PPS) resin reinforced with 40% glass (GF-PPS).
- Technically advanced engineering polymer.
- PPS is stable at temperatures up to 200 °C.
- Cassette construction is of very high strength and has excellent creep and fatigue resistance.
- Low smoke and toxic emissions in fire conditions.
- Halogen free.
- PPS has a very low moisture absorption.
- PPS is corrosion resistant.
- The Cassette construction is environmentally friendly (recyclable material).
- The new Cassette is retrofittable to existing FireShield Dampers (by use of a simple optional adaption bracket). Part Number: CNNN01981
- One Cassette to suit all damper material options.

## External Visual Blade Position Indication

An external indicator is factory fitted to the access (cassette) side of the damper casing giving visual indication of damper blade position.

A spring steel actuator ensures automatic resetting of the external indicator in either horizontal or vertical applications.

The external indicator is especially beneficial at the system balancing and commissioning stage eliminating the necessity of internal duct inspection to determine the fire damper open or closed position.



### Fluorescent Red Display

Indicating damper blades in closed position.



Note: External visual blade position indication is not available with certain multiple assemblies, miscellaneous Damper configurations and due to physical size limitations is not available below 125mm dia. on Series 301 Dampers.

## Casing Features

### Spigotted Casing

The spigotted casing with continuously welded corners and spigot connections, makes these dampers suitable for inclusion into air distribution systems to the test methods of Eurovent Class A, B & C and HVCA Ductwork specification DW144.

These galvanised casings are manufactured with either Square, Rectangular, Circular or Flat Oval duct connections.



# Self Latching Removable Release Mechanism Cassette

The cassette mechanism is completely removable from the FireShield Damper by manually releasing the retaining clip

This allows replacement of the cassette without the use of tools

Simple hand operation enables the damper curtain to be reset and latched in the fully Open Position.

This increases the ease and speed with which the FireShield Damper can be reset following periodic functional testing in accordance with British Standard BS9999:2008 Code of Practice for fire safety.

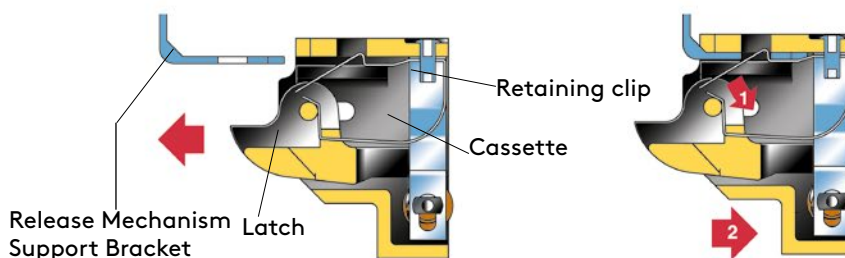
The thermal actuator in the form of a helical memory metal compression spring is produced from a special Cu-Zn-Al brass alloy.

On temperature rise this expands and at 72 °C, causes the FireShield damper blades to release.

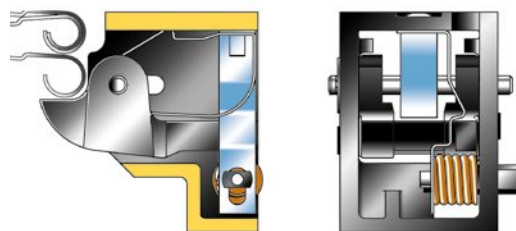
On cooling, the spring reverts to the close-coiled state offering the significant advantage of repeated operation, unless it has reached temperatures in excess of 170 °C, where it will remain extended, preventing reset.

Cassettes are only available for 72 °C. For Dampers where alternative thermal link temperatures are required a chain-link can be offered in place of a cassette. Electrical release is only available with a cassette i.e. 72 °C. Please refer to Actionair Sales Office.

Please note: For dampers with dimensions of 150mm and below ensure that there is adequate access to enable re-setting.

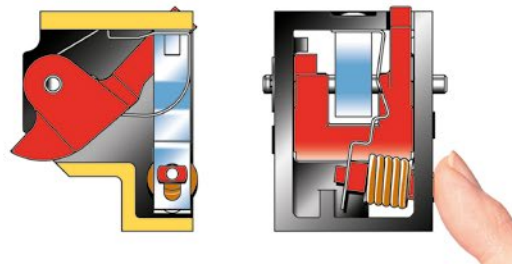


## Set Position



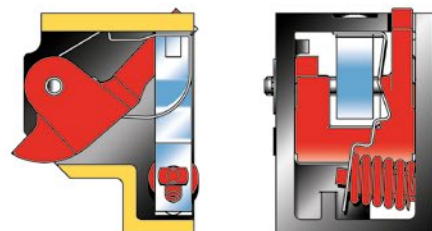
## Manual Operation

Manual Operation for periodic functional testing in accordance with BS9999:2008 Code of Practice for Ventilation and Air Conditioning Ductwork.



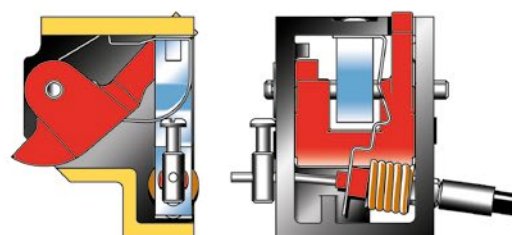
## Thermal Actuator Operation

Memory metal coil springs, specially designed to fully expand at 72 °C and actuate damper closure.



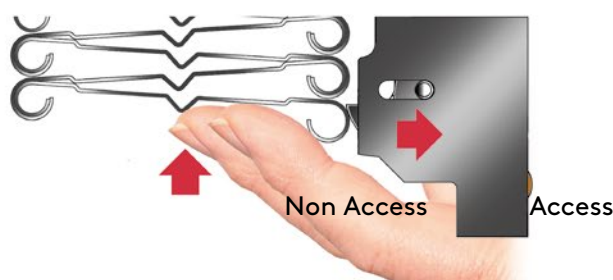
## Remote Release Operation

Remote release operation to close the FireShield Damper is by Bowden cable with Manual action or Electrical 230V AC or 24V AC and DC Electro Magnet fail-safe action and independent of the thermal actuator. Bowden outer sleeve can be fitted from either side of cassette.



## Reset Operation

Single hand operation. Each blade pushes the latch back under spring tension. On full blade reset the latch springs out to secure.

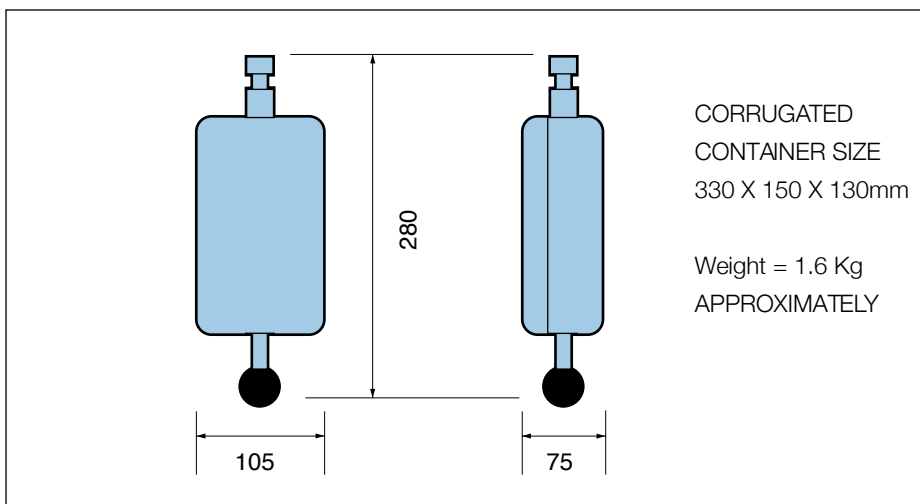
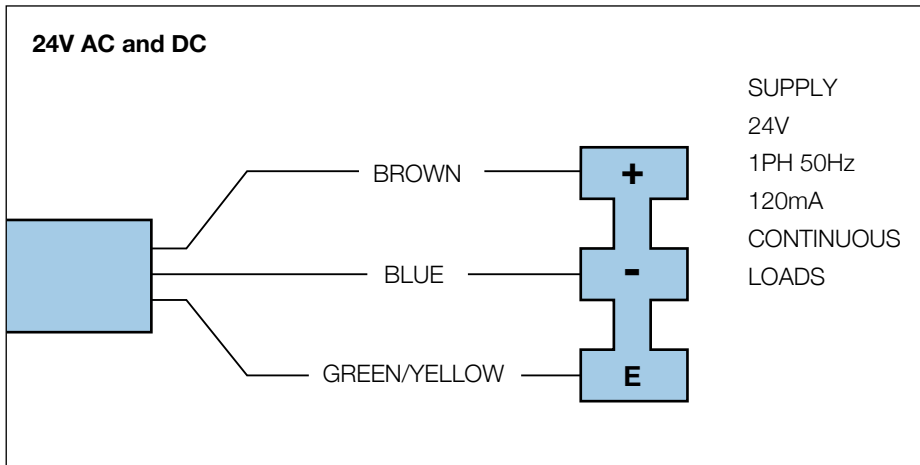
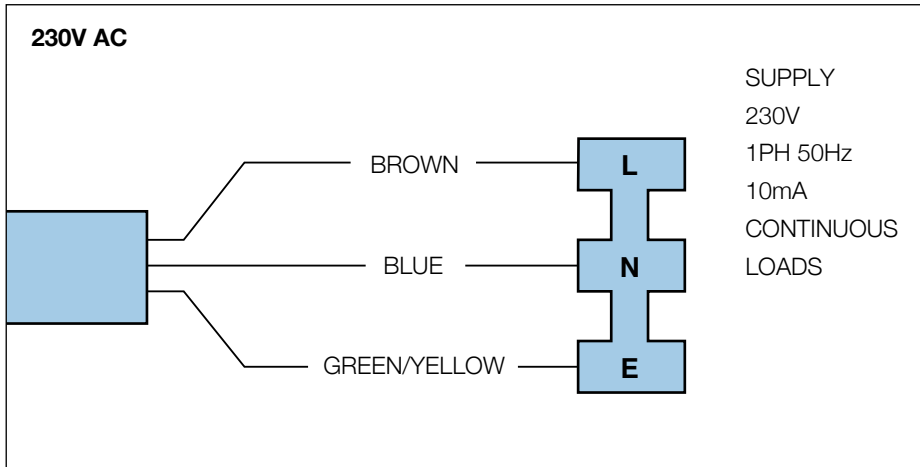


# Remote Electrical Fail-Safe Releases

# Indication Micro Switches

## Electro Magnet Releases

230V AC and 24V AC and DC Electro magnet releases are available.



Terminal blocks supplied by others.

All FireShield CE Marked 'E' Rated Curtain Fire Dampers are available with factory fitted single or double pole micro switches as optional extras to provide remote electrical indication of damper status and / or controls interface.

Micro Switch options include:

### C Type

Cassette Single Pole 230V Micro Switch

### MSSP Type M

Single Pole 230V Micro Switch

### MSSP Type T

Heavy Duty Single Pole 230V Micro Switch

### MSDP Type T

Heavy Duty Double Pole 230V Micro Switch

Please contact our Sales Office on 01227 276100 for further details.

# Acoustic Data

The data presented is from the Laboratory Determination of Acoustic and Aerodynamic Performance of FireShield Stainless Steel Curtain Fire Dampers.

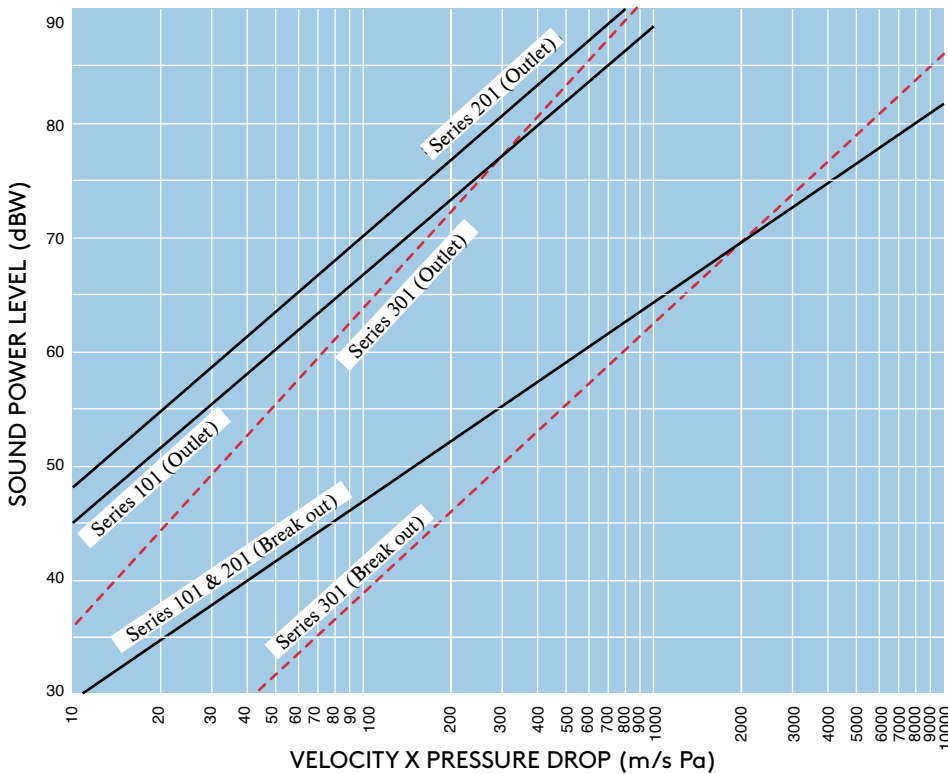
A programme of extensive tests was carried out in the Reverberation Chamber and North Transmission Chamber of Sound Research Laboratories Limited, Holbrook Hall, Sudbury, Suffolk, generally in accordance with BRITISH STANDARDS Nos., 4196, 4773, 4856, 4857 and 4954.

This independent test facility is approved under the NAMAS Scheme.

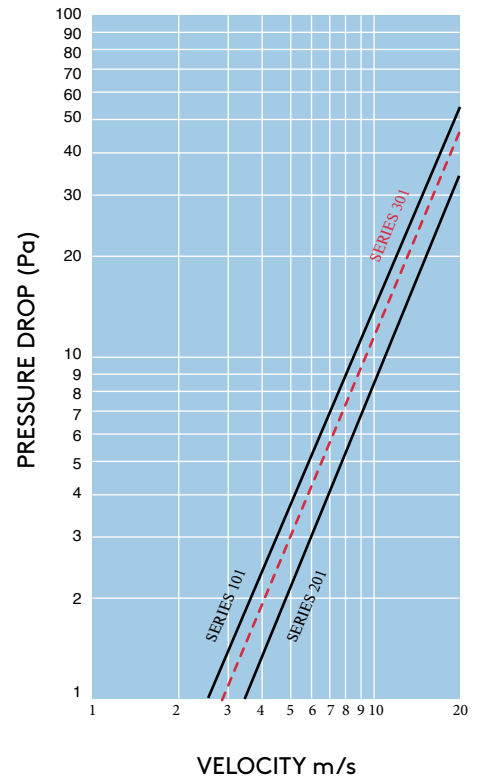
For a selection of duct velocity within the operational parameters of the dampers a resultant pressure drop can be determined and the sum of these two components applied to the Velocity X Pressure Drop Vs Sound Power Level Graph. The Sound Power Level Graphs are a result of a full range of acoustic tests on FireShield Series 101, 201 and 301 dampers. The Spectrum Correction Data is applied to the number obtained from the graph and a complete Sound

Spectrum of Flow Generated Noise for both Breakout (casing radiated) and Outlet (in duct) is obtained.

Velocity (m/s) X Pressure Drop (Pa) Vs Sound Power Level (dBW)



Pressure Drop Vs Velocity



## FireShield Breakout Spectrum Correction

Octave band	63	125	250	500	1K	2K	4K	8K	Hz
Series 101	-10	-7	-3	-9	-13	-20	-30	-33	dB
Series 201	-10	-7	-3	-9	-13	-20	-30	-33	-dB
Series 301	-13	-10	-3	-7	-11	-12	-26	-42	-dB

## FireShield Outlet (Induct) Spectrum Correction

Octave band	63	125	250	500	1K	2K	4K	8K	Hz
Series 101	-4	-12	-16	-18	-22	-29	-32	-38	dB
Series 201	-4	-11	-17	-19	-22	-30	-33	-40	dB
Series 301	-4	-10	-16	-18	-21	-24	-30	-38	dB



# FireShield

I/F

CE Marked 'E' Rated Fire Dampers c/w HEVAC/HVCA Installation Frame. Typically installed into concrete/masonry walls and floors

- HEVAC/HVCA Installation frame (I/F)
- CE marked to EN 15650
- Classified to EN 13501-3: E 120 (Ho Ve i ← →o) S
- Fire tested to EN 1366-2
- LPCB Type approved
- Successfully fire tested up to 4 hours integrity



FireShield FS201 with I/F Installation Fixing Method

# FireShield and I/F Installation (Vertical)

## Vertical in block work/Masonry wall HEVAC/HVCA Installation frame (I/F)

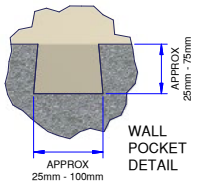
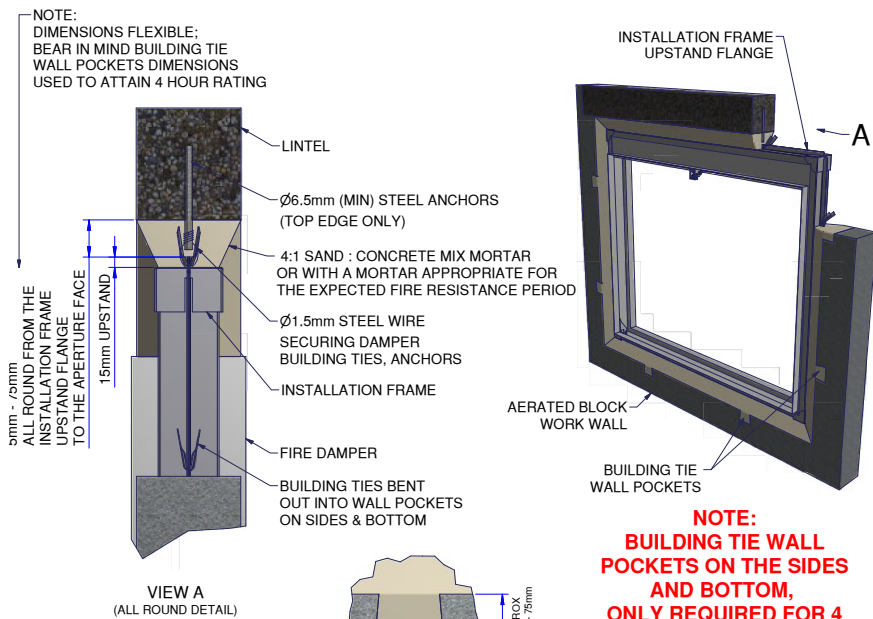
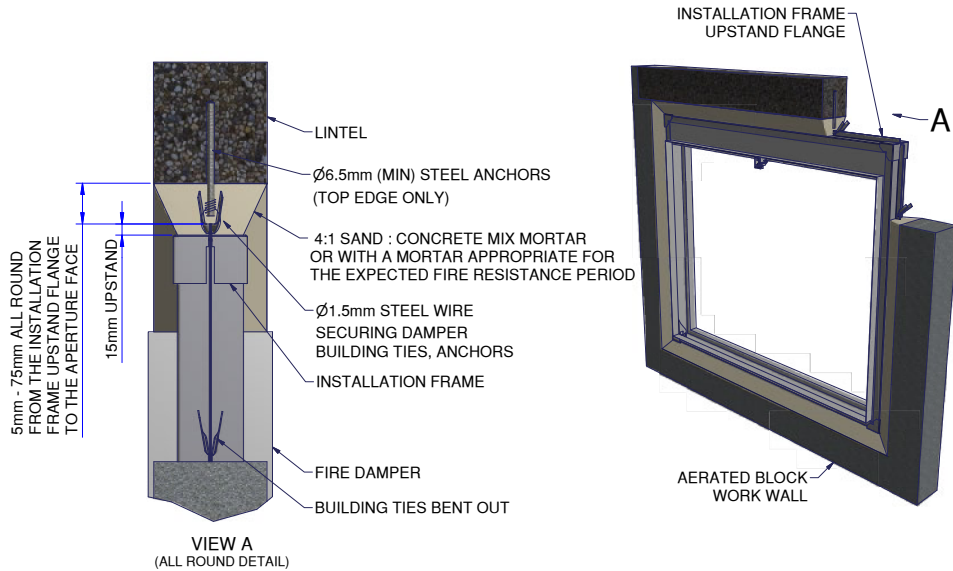
1. Measure the positions of the building ties on the HEVAC frame.
2. Mark up the lintel at the top of the hole in the wall to give positions that match to the building ties. Drill into the lintel and fit stud anchors or similar steel fixings (min diameter 6.5mm x 60mm).
3. Turn out the building ties 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. If 4 hour Integrity is required pockets in the wall will be required and wall ties turned out into them.

4. Using a steel wire, wrap this round 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).

5. Add mortar from both sides of the damper and infill to the HEVAC frame.

6. In accordance with EN 1366-2 Minimum masonry between builders hole cutouts for installation frames is 200mm. Minimum masonry between wall, floor or slab and builders hole cutout is 75mm.



**NOTE: BUILDING TIE WALL POCKETS ON THE SIDES AND BOTTOM, ONLY REQUIRED FOR 4 HOUR INTEGRITY**

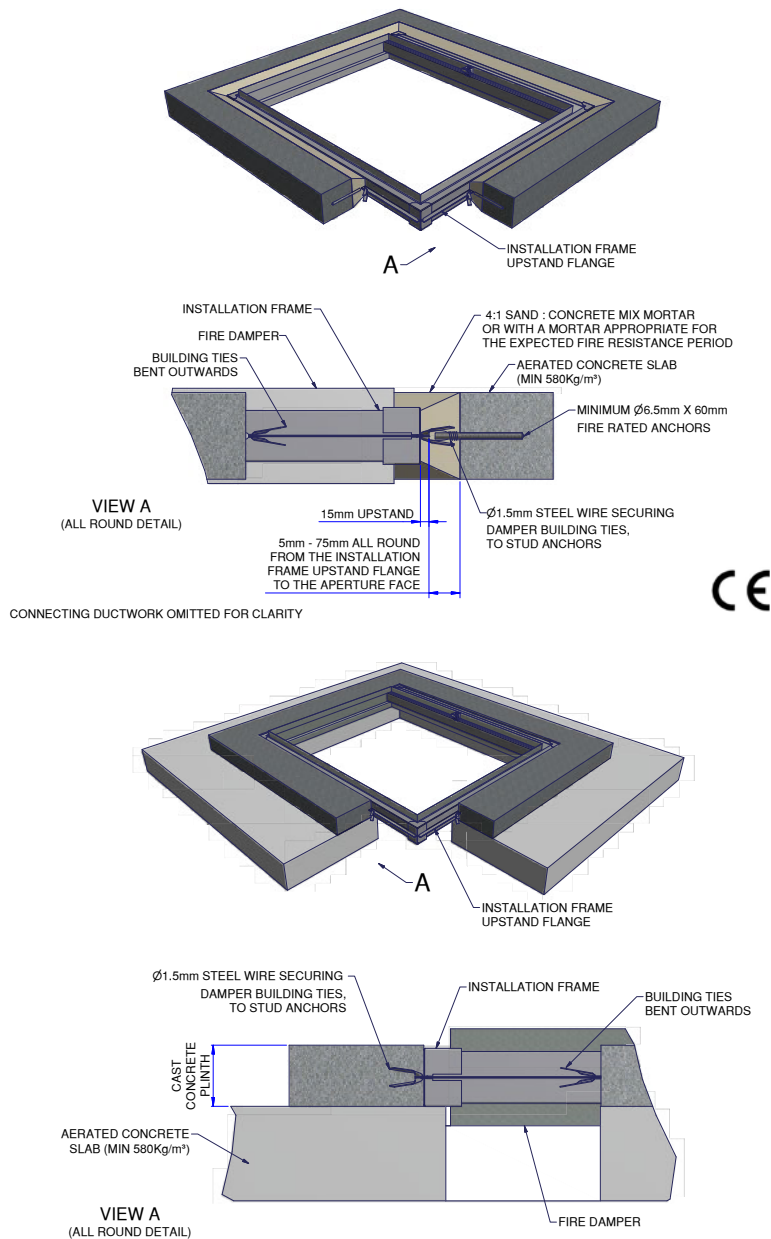


INJECTING DUCTWORK OMITTED FOR CLARITY

# FireShield and I/F Installation (Horizontal)

## Horizontal in floor slab HEVAC / HVCA Installation frame (I/F)

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 diameter 1.5mm), wrap this round 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.
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.
7. In accordance with EN 1366-2 Minimum masonry between builders hole cutouts for installation frames is 200mm. Minimum masonry between wall, floor or slab and builders hole cutout is 75mm.



# FireShield and I/F Installation Dimensional Data

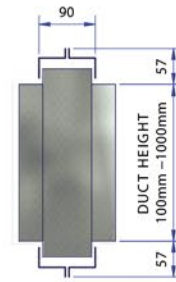
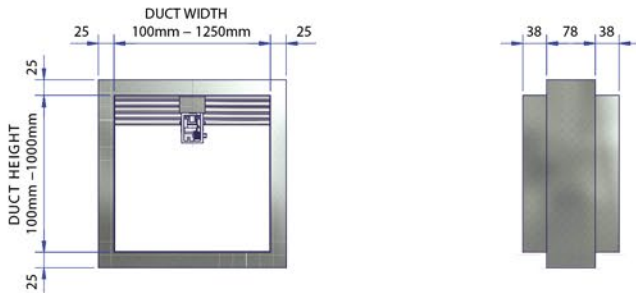
## Base Dampers

## HEVAC / HVCA I/F

### Series 101

FireShield Dampers with blades partly in airstream (Damper spigots 5mm under duct size) 100 - 249 high, blades effectively outside airstream

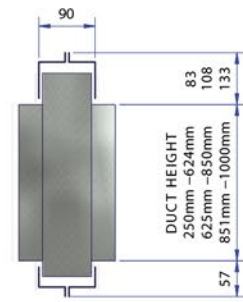
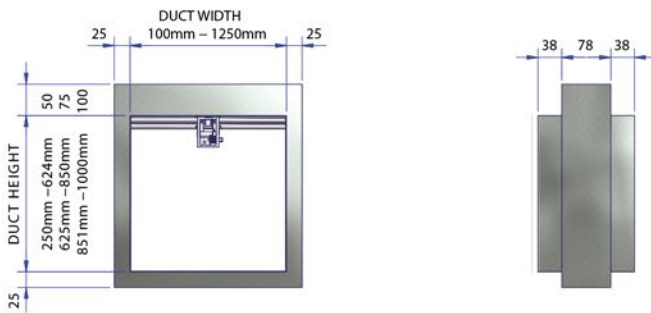
OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 114



### Series 201

FireShield Dampers with blades effectively outside airstream (Damper spigots 5mm under duct size) 100 - 249 high, use Series 101 Damper as blades effectively outside airstream

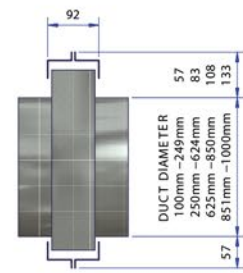
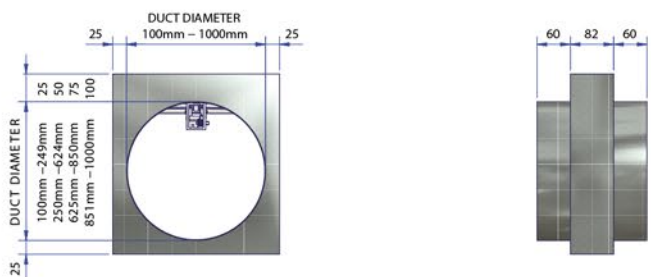
OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 114



### Series 301

FireShield Dampers with blades effectively outside airstream (Damper spigots 3mm under duct size)

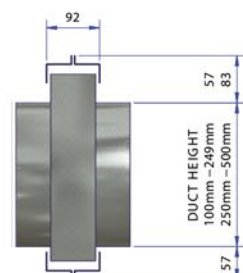
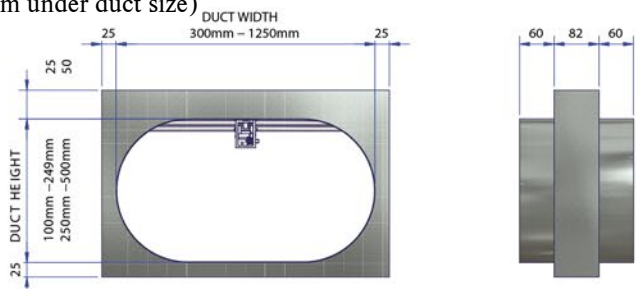
OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 114



### Series 401

FireShield Dampers with blades effectively outside airstream (Damper spigots 3mm under duct size)

OVERALL WIDTH OF INSTALLATION FRAME IS DUCT WIDTH + 114



# FireShield

## DWFX-C

CE Marked 'E' Rated Fire Dampers c/w Dry Wall Fix Cleats. Typically installed prior to encasement by the dry wall partition

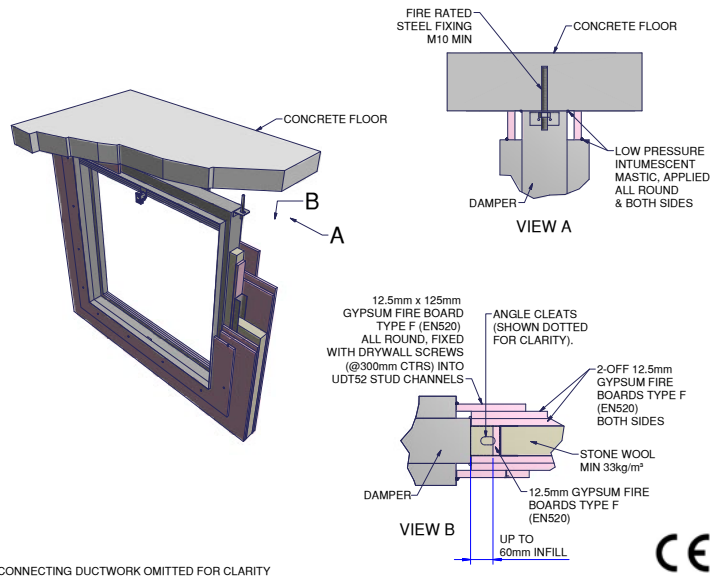
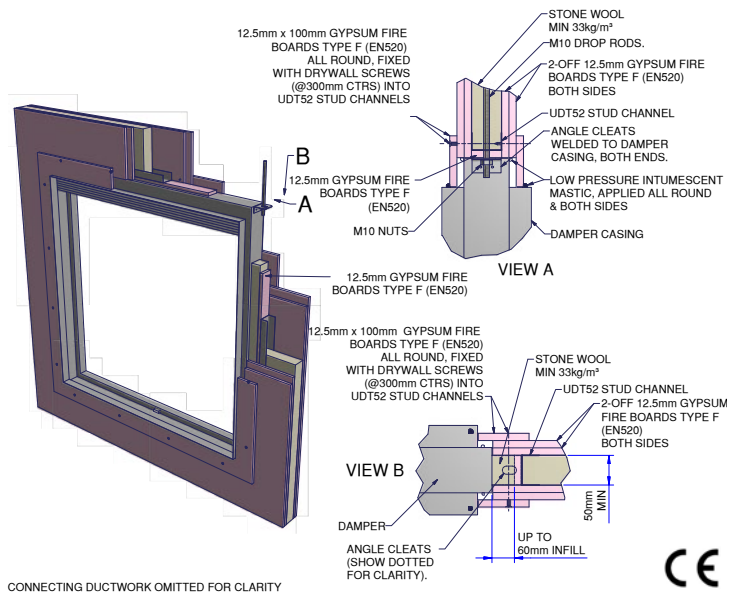
- Dry wall fix 'Cleats' Typically fixed prior to encasement by the dry wall partition
- CE marked to EN 15650
- Classified to EN 13501-3: E 120 (Ve i ← →o)
- Fire tested to EN 1366-2
- LPCB Type approved



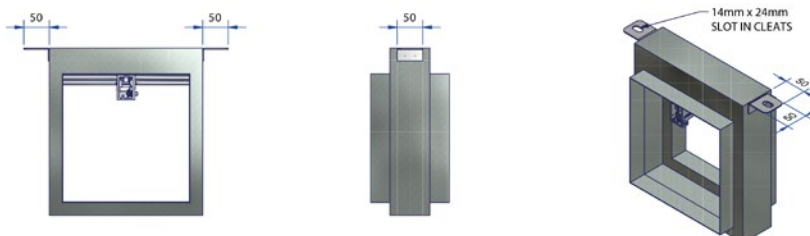
# FireShield and DWFX-C Installation

## Enclosure by drywall partition (DWFX-C)

1. Fit track (of partition) to the ceiling.
2. Suspend the damper from the ceiling through the centre of the partition ceiling track using 10mm studding drop rods.
3. Frame out the damper using tracks and studs lined with board. This is done with a lined track above the damper crossing between the nearest two full height studs, two vertical lined studs as close to the damper as possible (outside the cleats)
4. Build the partition to the track and stud framework, coming as close to the damper as possible.
5. Insulate the wall with mineral/stone wool.
6. Seal the damper to the partition with intumescent sealant and add patresses to both sides down to the damper spigot. Seal these to the damper spigot with intumescent sealant.
7. Finish the wall as standard practice.
8. In accordance with EN 1366-2 Minimum partition between builders hole cutouts for dampers is 200mm. Minimum partition between wall, floor or slab and builders hole cutout is 75mm.



### Dimensional Data





# FireShield

## DWFX-F

CE Marked 'E' Rated Fire Dampers c/w Dry Wall Fix Flange and Cleats Typically installed into existing dry wall partition

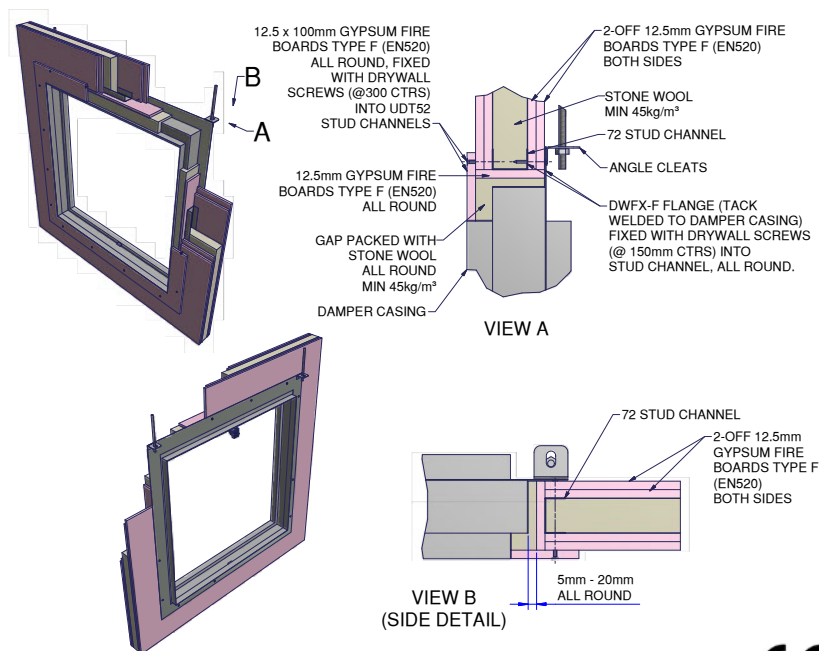
- Dry wall fix 'Flange & Cleats' Typically fixed into existing dry wall partition
- CE marked to EN 15650
- Classified to EN 13501-3: E 120 (Ve i ← →o)
- Fire tested to EN 1366-2
- LPCB Type approved



# FireShield and DWFX-F Installation

## Existing drywall partition (DWFX-F)

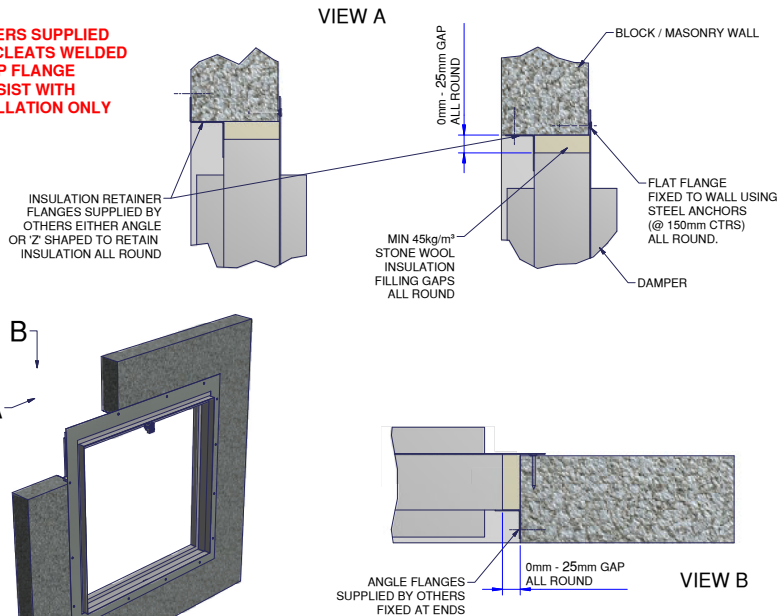
1. Measure the overall damper casing size, but do not include the peripheral flange.
2. Calculate the finished hole size by adding 25mm ± 5mm to both width and height.
3. Calculate the hole to cut size by adding two board thicknesses to the finished hole width and height.
4. Mark out the hole on the partition and cut it out, cutting the top and bottom edges first to maintain stability.
5. Frame out the hole with stud and line the hole with one layer of board. Finish edges with joint filler.
6. Drill clearance holes in the damper flange at 150mm centres and such that they will allow screws to pull into the stud and track around the hole.
7. Install the damper and fasten.
8. Back fill with mineral/stone wool and patress over this down to the spigot.
9. In accordance with EN 1366-2 Minimum partition between builders hole cutouts for installation frames is 200mm. Minimum partition between wall, floor or slab and builders hole cutout is 75mm.



CONNECTING DUCTWORK OMITTED FOR CLARITY



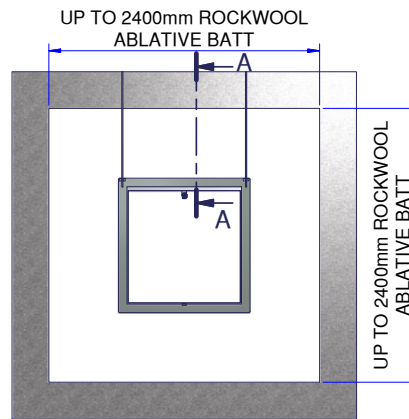
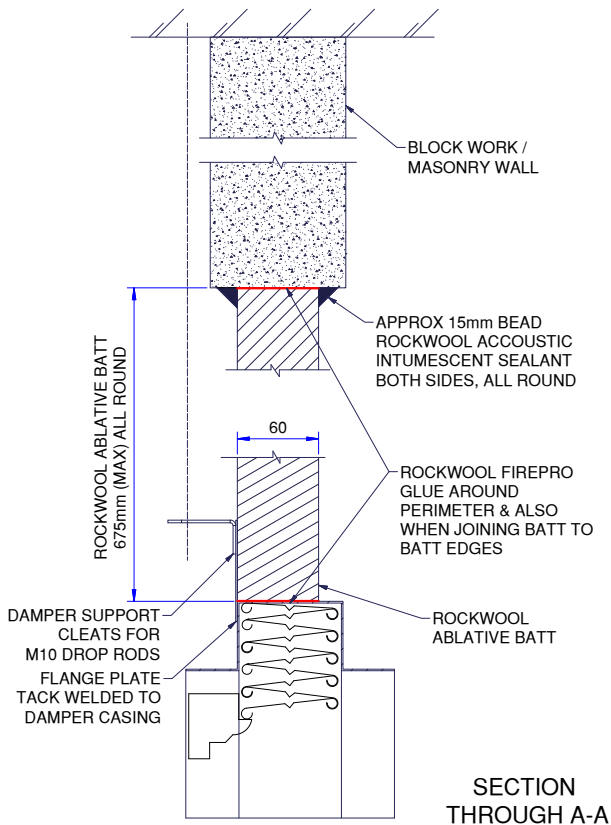
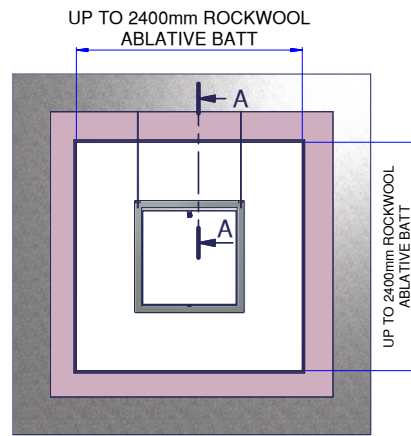
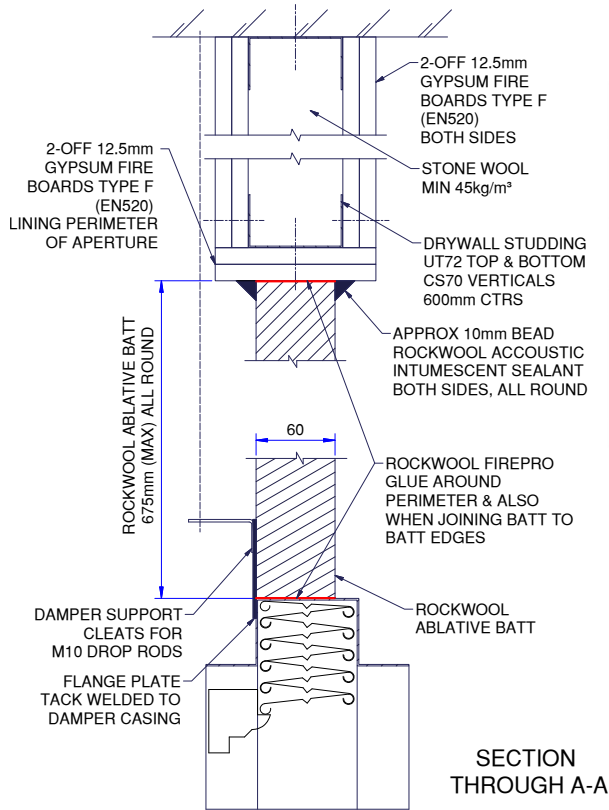
**NOTE:**  
DAMPERS SUPPLIED WITH CLEATS WELDED TO TOP FLANGE TO ASSIST WITH INSTALLATION ONLY



CONNECTING DUCTWORK OMITTED FOR CLARITY



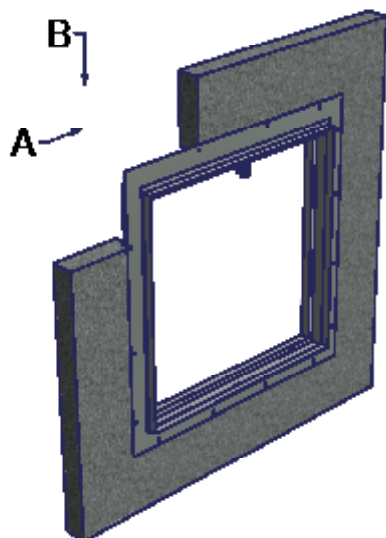
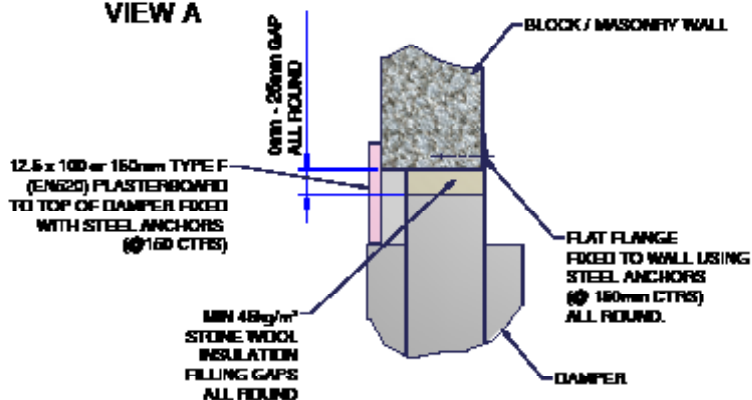
# FireShield and DWFX-F Installation



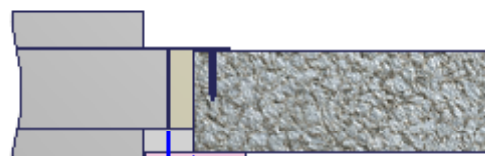
# FireShield and DWFX-F Installation

**NOTE:  
DAMPERS SUPPLIED  
WITH CLEATS WELDED  
TO TOP FLANGE  
TO ASSIST WITH  
INSTALLATION ONLY**

**VIEW A**



CONNECTING DUCTWORK OMITTED FOR CLARITY



0mm - 25mm GAP ALL ROUND

12.5 x 100mm GYPSUM FIRE BOARDS TYPE F (ENG20) SIDES & BOTTOM, FIXED WITH SUITABLE STEEL WALL SCREWS (Ø300 CTRS) ANCHORS MIN Ø16

**VIEW B**



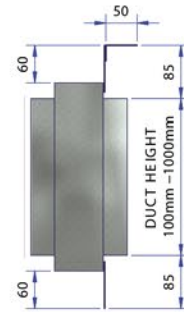
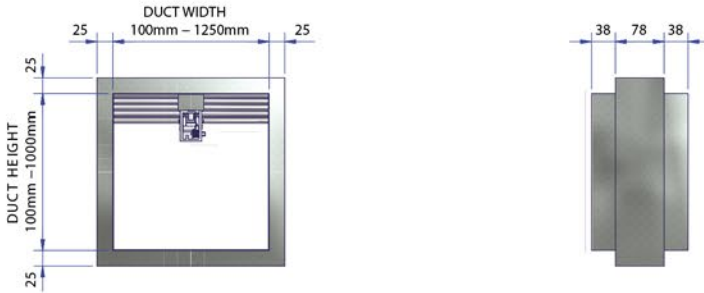
# FireShield and DWFX-F Installation Dimensional Data

## Base Dampers

## Dampers with DWFX-F

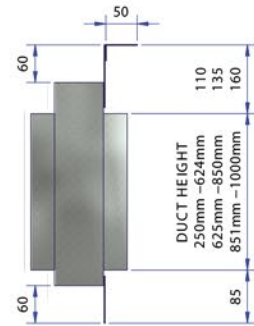
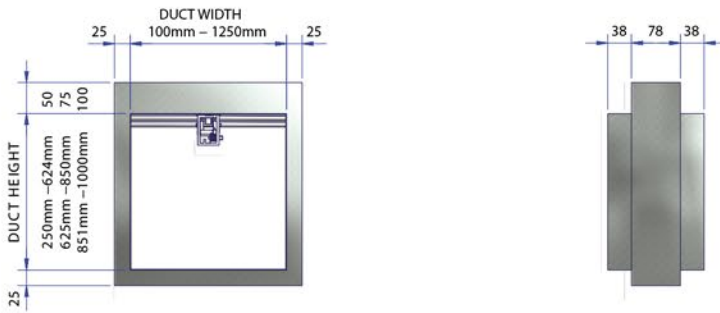
### Series 101

FireShield Dampers with blades partly in airstream (Damper spigots 5mm under duct size) 100 – 249 high, blades effectively outside airstream



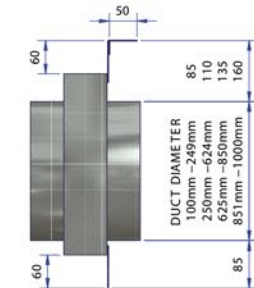
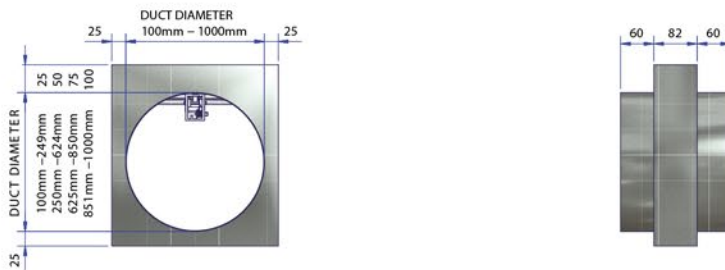
### Series 201

FireShield Dampers with blades effectively outside airstream (Damper spigots 5mm under duct size) 100 – 249 high, use Series 101 Damper as blades effectively outside airstream



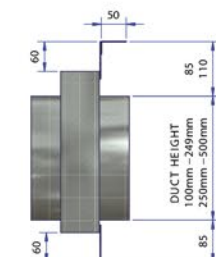
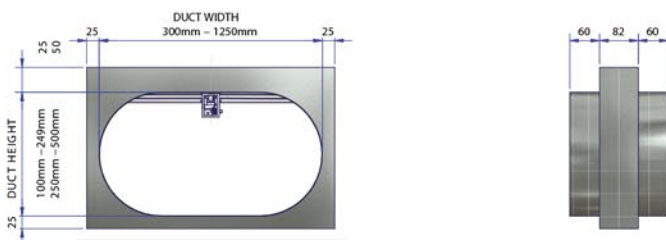
### Series 301

FireShield Dampers with blades effectively outside airstream (Damper spigots 3mm under duct size)



### Series 401

FireShield Dampers with blades effectively outside airstream (Damper spigots 3mm under duct size)



# FireShield Ordering Information

## Example

Quantity	Series	Blade Construction	Casing Construction	Duct Size	Installation Option	Visual Blade Position Indicator	Accessories
2	FS201	430 Stainless Steel	Galvanised	100 (w) x 600 (h)	IF	YES	EM230
<b>Number of units required</b>	<b>FS101</b> Square/Rectangular (blades partly in airstream)  <b>FS201</b> Square/Rectangular (blades outside airstream)  <b>FS301</b> Circular (blades outside airstream)  <b>FS401</b> Flat Oval (blades outside airstream)	<b>Galvanised</b> Steel Casing (supplied as standard)  <b>430</b> Ferritic Stainless Steel Casing  <b>316</b> Austenic Stainless Steel	<b>IF</b> Installation Frame  <b>DWFX-C™</b> Drywall Fix Cleat  <b>DWFX-F™</b> Drywall Fix Flange plus Cleats	<b>EM230</b> 230V AC Electromagnet release  <b>EM24</b> 24V AC and DC Electromagnet release  <b>C Type</b> Single Pole Cassette Microswitch  <b>MSSP</b> "M" Type Single Pole Microswitch "T" Type Heavy Duty Single Pole Microswitch  <b>MSDP</b> "T" Type Heavy Duty Double Pole Microswitch			
		<b>430</b> Ferritic Stainless Steel Blades (supplied as standard)  <b>316</b> Austenic Stainless Steel Blades  <b>Galvanised</b> Steel Blades	Nominal Damper Spigot Size	Yes (fitted as standard)	No		

**Please Note:** FireShield Curtain Dampers will be Supplied with Standard 430 Ferritic Stainless Steel Blades, Galvanised Steel Casings, with DWFX-F Drywall Fix Flange plus Cleats installation method and Visual Indicators as standard/if no options are advised.

**Please ensure the ordering information is completed in full so that your requirements along with along with any options are met in full.**



## Customer Service

Actionair provides quality products backed by a dedicated team committed to providing the very best in customer service. Offering experienced technical backup, comprehensive sales and administrative customer support, product commissioning and maintenance service.

## Maintenance

The FireShield Dampers are designed for applications in normal dry filtered air systems.

Adequate access must be provided to fire dampers to enable inspection, maintenance and cleaning. This would normally be in the form of access panels/doors. At least one access point is required for access, but access both sides may be required for cleaning (refer to the relevant ductwork cleaning standards) Dampers require cleaning and light oil lubrication.

Regular testing/inspection by suitably qualified personnel shall be undertaken. The requirements in BS 9999 should be checked, as these products may form some part of a controlled system that Responds to alarms. Some automatic systems may allow more frequent testing (48 hours or less), but physical inspection is still required at the prescribed intervals. Some systems, where cleanliness is an issue due to site conditions, may require more frequent inspection, testing and cleaning. All such inspections should be recorded.

For further application, technical and pricing information, please refer to Actionair Sales Office.

## Approvals

Fire Shield Approvals:  
CE marked to Product Standard EN 15650:2010  
Fire tested to EN 1366-2  
Classified to EN13501-3 - E Rated  
Thermal fuse tested to ISO 10294-4  
Factory Production Control to EN15650  
This includes: Daily blade and casing leakage testing  
Corrosion tested to EN 60068-2-52: 1996

Classified 'E' in vertical and horizontal test installations.  
An LPCB approved product, compliant to the new Loss Prevention Council Design Guide for Fire Protection of Buildings.  
Fire tested in vertical and horizontal applications under dynamic conditions by The Loss Prevention Council. Complies with the latest DW 144 casing leakage specification.



### EC DECLARATION OF PERFORMANCE

RAM-F-024 B

Fire Shield DWFX-F fire damper  
Fire Shield DWFX-C fire damper  
Fire Shield I/F fire damper

Complying with the following EU Regulation:  
305/2011/EEC : Construction Products Regulation

Swegon Air Management LTD  
Actionair, South Street, Whitstable, Kent CT5 3DU

System 1

BRE Global Limited - NB0832

Performed the determination of the product type on the basis of type testing (including sampling), and the initial inspection of the manufacturing plant and of factory production control and continuous surveillance, assessment and evaluation of factory control under system 1 and issued the certificate of constancy of conformity of the factory production control (0832-CPR-P0001)

Declared performance according to:  
BS EN 15650 'Ventilation for buildings: Fire Dampers'

actionair | air diffusion | airfilterra | airolution | naco

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Registered in England No 738495  
Registered Office - Swegon Air Management Ltd,  
Stourbridge Rd, Bridgnorth, WV15 5BB, Shropshire, UK

Please refer to [www.actionair.co.uk](http://www.actionair.co.uk) for full current DoP containing all essential performance characteristics.

## Application Parameters

FireShield Dampers are designed for application in normal dry filtered air systems. If exposed to fresh air intakes and/or inclement conditions the damper should be subject to a planned inspection programme.

Any specialists and/or aggressive applications (e.g. swimming pools) may invalidate our warranty, please refer to Actionair Sales Office.

## Quality Assurance

Swegon Air Management Ltd is proud to be ISO 9001 & 14001 accredited

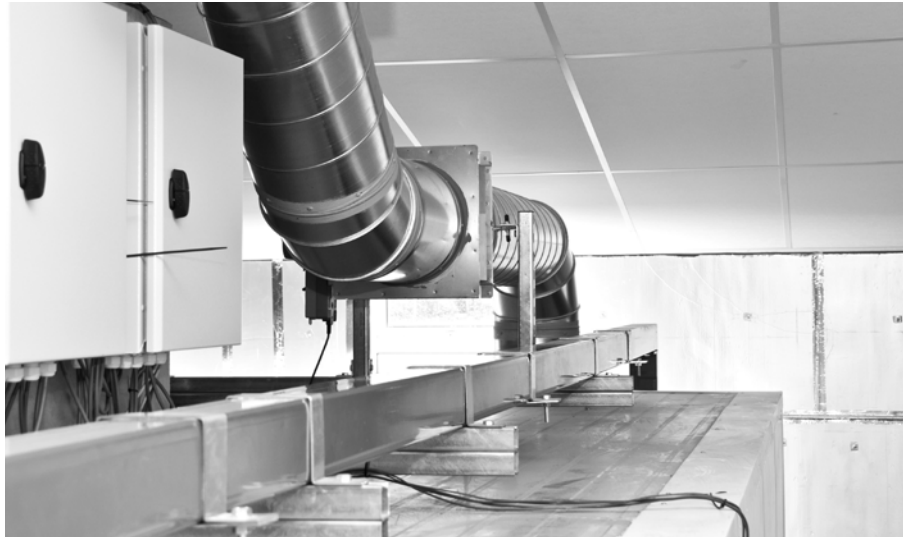
## Approximate Weights (Kg)

Square or Circular Duct Size (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Series 101	1.6	2.1	2.8	3.5	4.2	5.0	5.7	6.9	7.5	8.6	9.5	10.9	12.0	13.1	13.8	15.2	16.7	18.1	19.0
Series 101+ I/F	3.8	4.6	5.7	6.8	8.0	9.2	10.7	11.8	12.9	14.1	15.8	17.9	19.1	20.2	21.3	23.3	25.2	27.4	29.2
Series 201	Please use series 101 dampers for duct heights below 250mm			4.1	4.6	5.4	6.0	7.1	8.0	9.3	10.5	12.1	12.7	14.4	16.0	17.5	19.0	20.5	22.0
Series 201 + I/F				7.4	8.5	9.6	10.4	12.6	13.8	15.3	16.8	18.0	20.3	21.7	23.6	25.5	27.6	29.8	32.0
Series 301	2.3	3.0	4.0	5.4	6.5	7.6	8.8	10.2	11.7	13.2	14.9	16.9	18.7	20.5	22.4	24.5	26.7	28.8	31.0
Series 301 + I/F	4.4	5.5	6.9	9.0	10.4	11.7	13.6	15.5	16.5	18.5	20.3	22.2	42.5	27.8	30.4	32.8	35.2	38.9	42.0

## Swegon R&D Academy

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The Swegon research and development academy at Whitstable provides state of the art facilities for testing a complete range of products. It was designed in accordance with BSRIA recommendations and benefits from third party annual assessment. It has a well equipped demonstration area where tests can be witnessed by contractors, consultants and end clients. Third part witnessing by BSRIA is available if required.



The test facility is fitted with the latest equipment and exceeds the requirements of BS EN 12238:2001 (for air terminal devices aerodynamic testing and rating for mixed flow applications) with a test room size of 7.5m long x 5.6m wide x 2.8m high. Ceiling heights and floor voids can also be adjustable depending on the test regime required.

A purpose designed air handling system is able to supply conditioned air across a wide temperature range in both heating and cooling modes with volumes up to the equivalent of 20 air changes per hour being available.



Sophisticated measuring and logging equipment is able to monitor air volumes, velocities, pressures and temperatures as well as airflow pattern visualisation via the use of smoke generation within the test laboratory.

**actionair | air diffusion | airfiltrera | airovolution | naco**

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Website: [actionair.co.uk](http://actionair.co.uk)

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Due to policy of continuous product development the specification and details contained herein are subject to alteration without prior notice.