

Manufacturer's Installation Guidebook

Fire/Smoke Dampers



DW145 Inspection & Handover Check Sheet

Damper Installation Certificate

The installer must complete this installation certificate when installing fire and smoke dampers. A separate certificate must be completed for each individual fire and smoke damper.

No.	Question	Action	Tick
1	Are the dampers the correct type?	Confirm damper is correct type E.g. SmokeShield, CSS or Fire Shield	<input type="checkbox"/>
2	Are the dampers located correctly?	Damper location is to be checked against installation drawings & details	<input type="checkbox"/>
3	Are the dampers correctly identified?	Unique system ID to clearly indicate on damper or other agreed location.	<input type="checkbox"/>
4	Have supports for both the damper and the adjacent ductwork been installed in accordance with the approved manner?		<input type="checkbox"/>
5	Are the dampers fitted in the correct orientation?	Confirm the damper installed is correct way up and relative to airflow and or access.	<input type="checkbox"/>
6	Is access through the ductwork, to the damper unobstructed?	Unobstructed space should be provided for safe access to the damper. This must include access through ceiling voids and adjacent services. Damper installer to advise the system designer if problems are foreseen.	<input type="checkbox"/>
7	Has the space around the damper and within the opening been left clear and not been used for other services?	Other services within the installation opening will invalidate the installation method. Damper installer to advise the lead contractor if problems are foreseen.	<input type="checkbox"/>
8	Using the access opening provided, are the damper blades in the open position?	Check position of damper blades.	<input type="checkbox"/>
9	Has the damper been checked for internal cleanliness, free from damage and that vertical casings in particular are free from debris?	With the damper in the closed position, inspect for damage.	<input type="checkbox"/>
10	Has the damper been released to simulate operation of the thermal release? (Damper drop test)	Ensure damper operation is free from interference.	<input type="checkbox"/>
11	Have the damper blades been re-set following drop test and the access panel replaced?	After re-setting the damper, check the position shown on the blade position indicator is correct.	<input type="checkbox"/>
12	At the time of damper handover, is the fire barrier and penetration seal complete?	Damper installer to record on the handover register if any following trades are still to complete their activities.	<input type="checkbox"/>
13	Is the damper installation complete and available for handover prior to system commissioning?	Obtain the relevant acceptance of the damper installation from the CDM coordinator.	<input type="checkbox"/>
14	Is the completed handover register cross-referenced back to the identification codes listed in the system designer's damper schedule?		<input type="checkbox"/>

Damper Unique System I.D.

Name of Installation Location: _____

Address: _____

Installation Location Identification (section/floor/room): _____

Damper Product Type: _____

Release Fuse Temperature: _____

Notes/Considerations: _____

Installed by: _____

Company Name: _____

Address: _____

Company Telephone No: _____

Installers Name(s): _____

Installers Telephone No: _____

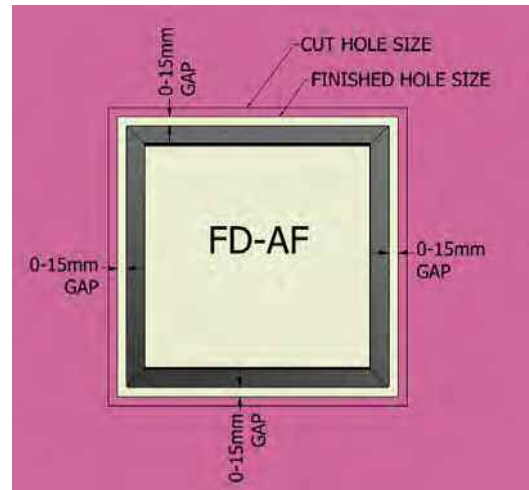
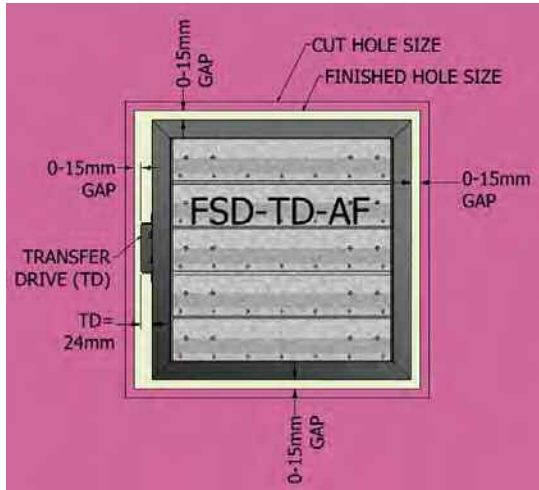
Date of installation: _____

It is hereby verified the damper detailed has been installed and tested according to the manufacturers recommendations

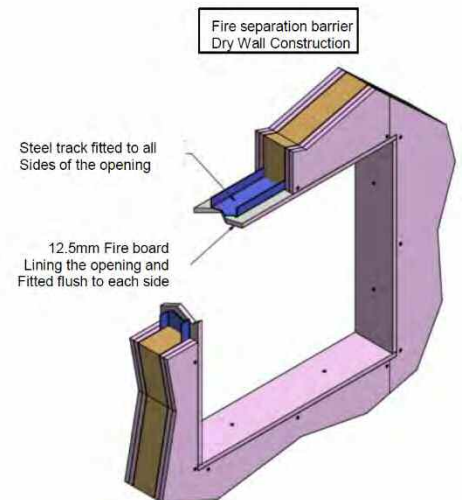
Installers Signature: _____ Date: _____

Angle Flange installation method into dry walls Fire (FD-AF) & Fire Smoke dampers (FSD-TD-AF)

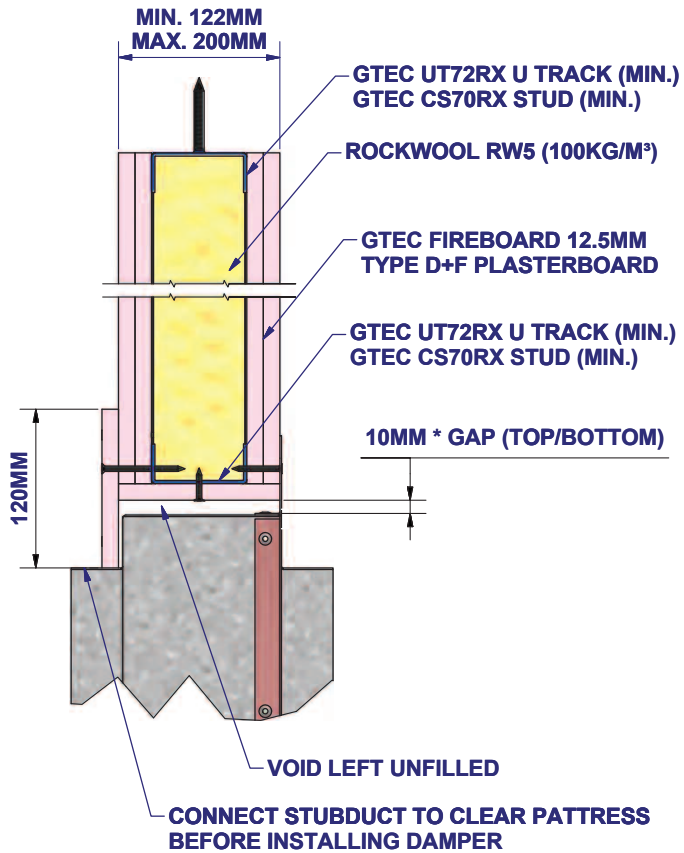
1. To calculate **finished hole size**, measure overall damper casing (not the angle flange)
Opening size = Damper casing size + 0mm → 30mm clearance around perimeter of outer casing as shown;
Important - this includes the transfer drive if installing the FSD-TD damper. See below.
2. Calculate the **cut hole size** by adding two board thicknesses to the finished hole width and height, because the cut hole needs lining with a single layer of plaster board.



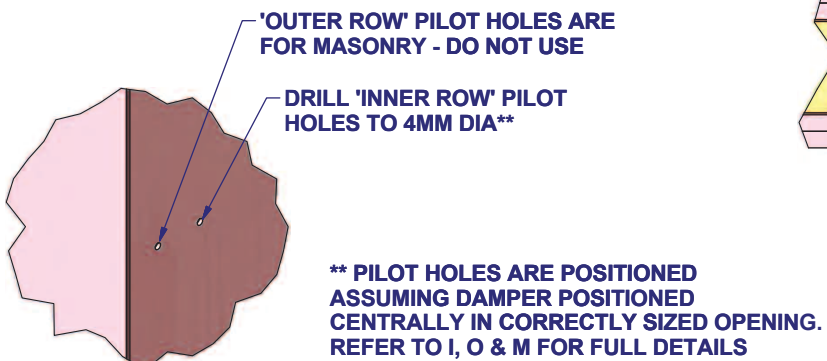
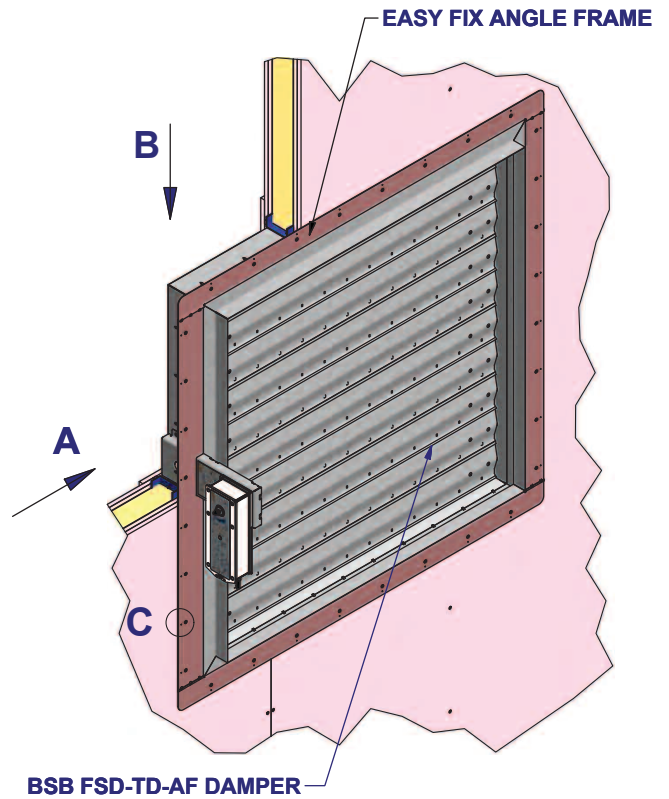
3. Mark the position and size of the hole on the partition wall and cut it out
4. Line the perimeter of aperture with steel track, securing in place with dry wall screws on both sides at 300mm (max) centers.
5. Cut 4 lengths of board to suit the aperture. Screw in place at 300mm (max) centers, ensuring boards are flush with both sides of the wall.
6. It is advisable to pre-drill 4mm diameter holes in the angle frame of the FD damper before fitting within opening. Note the position of the internal track in the wall and mark nominal hole fixing positions at 150mm maximum centers. FSD-TD-AF has 2 rows of pre-punched pilot holes, to aid this process. Use inner row of holes for dry wall installation. Position the damper centrally in wall opening (width/height), with blade pack at the top for FD dampers. To aid positioning vertically, position a pair of 10mm 'spacers' on the bottom of the opening 50mm from each corner to stand the damper on.
7. Position the damper centrally in wall opening (width/height), with blades running horizontally screw the angle frame to the wall using drywall screws.
8. For the FD damper it is not a necessity to fill the void behind the angle frame, but suitable fire rated infill may be used if considered required for insulation purposes
9. **Important:** Ensure the screws 'pick up' the track lining the hole, so that the proper fire integrity of the installation will not be compromised.
10. On the reverse side for FSD-TD only, fit a pattress around the damper spigot using drywall screws of appropriate length to screw into the steel tracking around the opening It is not a necessity to fill the void behind the angle frame or fit a pattress to the underside.
11. Ductwork to be fitted and connected in accordance with DW 144/145;
Break away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without disturbing the integrity of the fire damper. Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium, plastic etc.
12. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.



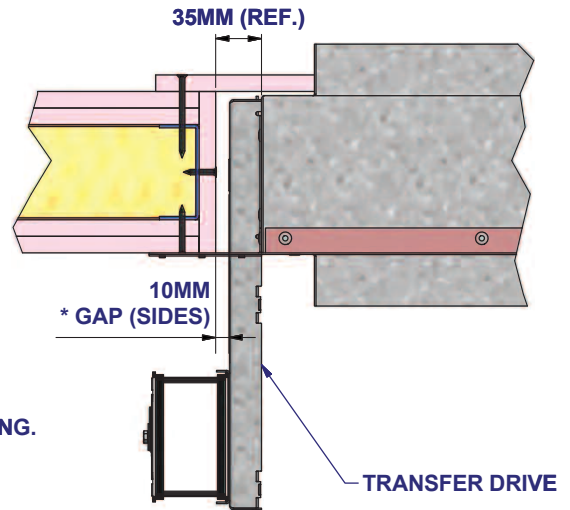
CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION
 * TOLERANCE FOR GAP BETWEEN DAMPER AND EDGE OF OPENING + 50% (RULE X.45 OF EN 15882-2)



VIEW A



VIEW C



VIEW B

TESTED FROM BOTH SIDES

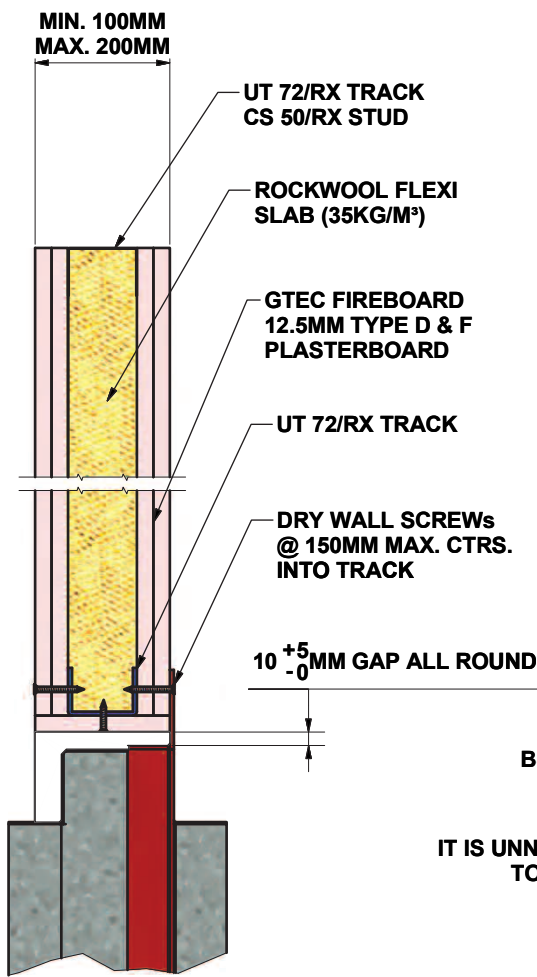
FOR LARGE HEAVY DAMPERS, ADDITIONAL DAMPER SUPPORT MAY BE NEEDED. CONSULT WITH DRY WALL MANUFACTURE FOR ADVICE. OPTIONAL SUPPORT CLEATS WELDED TO FLANGE ARE AVAILABLE.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

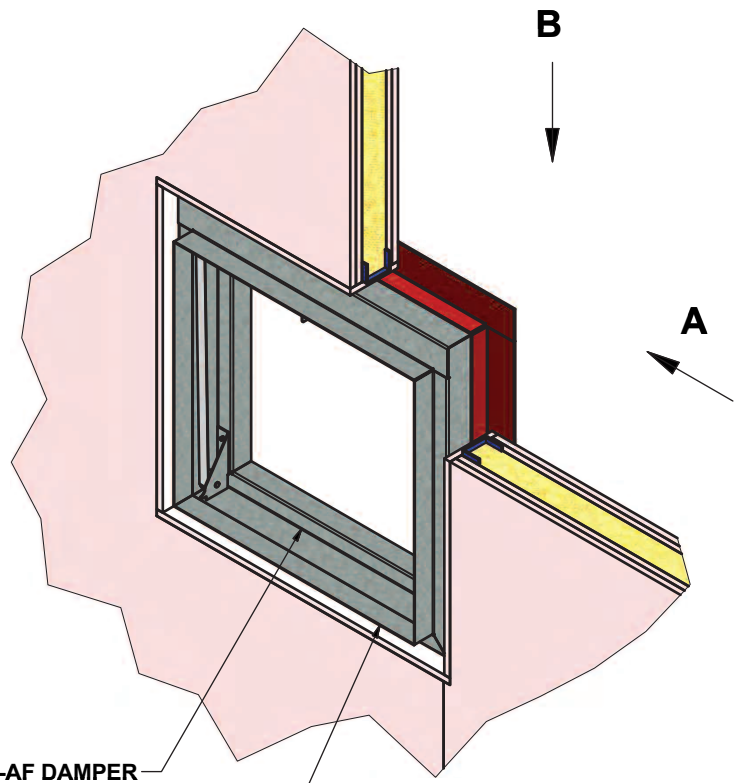
<p>DRY WALL</p> <p>BSB FSD-TD-AF ANGLE FRAME Fitted</p> <p>Single section sizes(mm) 100 x 100 to 1000 x 1000</p>		<p>CE 120 MINUTES FIRE RESISTANCE E 120 (ve i ↔ o) S</p> <p>TESTED TO EN1366-2 & CLASSIFIED TO EN13501-3</p>
<p>ECN: 0187</p>	<p>DATE: 02/08/2019</p>	
		<p>www.bsb-dampers.co.uk</p>

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR
DETAILED INFORMATION

FD M9-r3

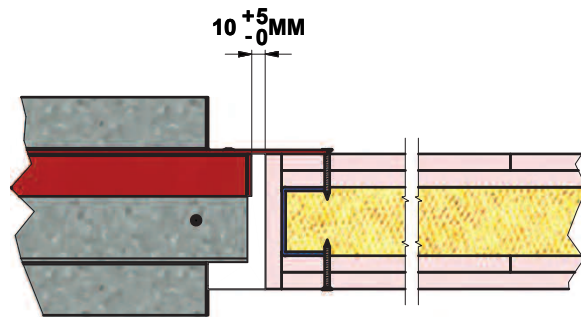


VIEW A



BSB FD-AF DAMPER

IT IS UNNECESSARY TO FIT PATRESS
TO NON-ACCESS SIDE OF WALL



VIEW B

TESTED FROM BOTH SIDES

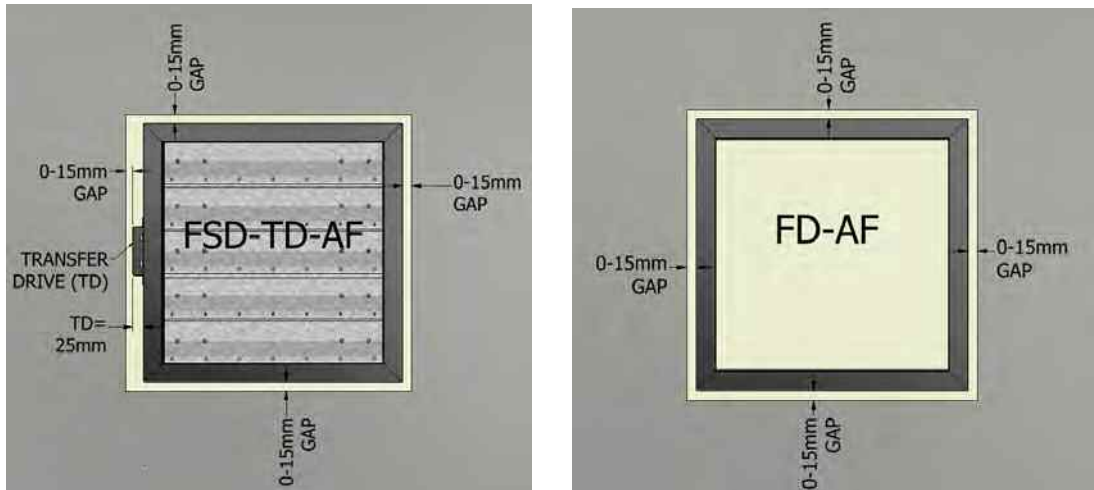
OPTIONAL SUPPORT CLEATS WELDED TO FLANGE ARE AVAILABLE.

TESTED/ASSESSED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

<p>DRY WALL</p>	<p>CE 120 MINUTES FIRE RESISTANCE</p>
<p>BSB FD-AF ANGLE FRAME Fitted</p>	<p>E 120 (ve i ↔ o)</p>
<p>Single section sizes(mm) 100 x 100 to 1200 x 1000</p>	<p>BS EN1366-2 TEST REFERENCE: 284776 AND 303868 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0006</p>

Angle Flange installation method in masonry & concrete walls Fire (FD-AF) & Fire Smoke dampers (FSD-TD-AF)

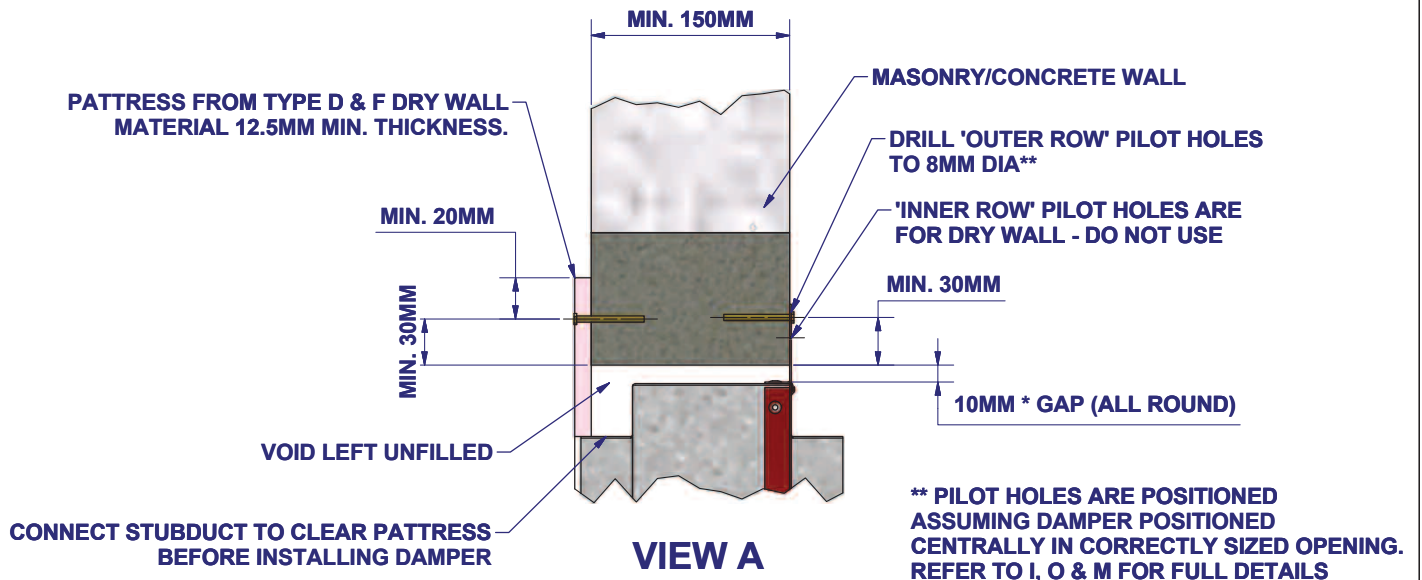
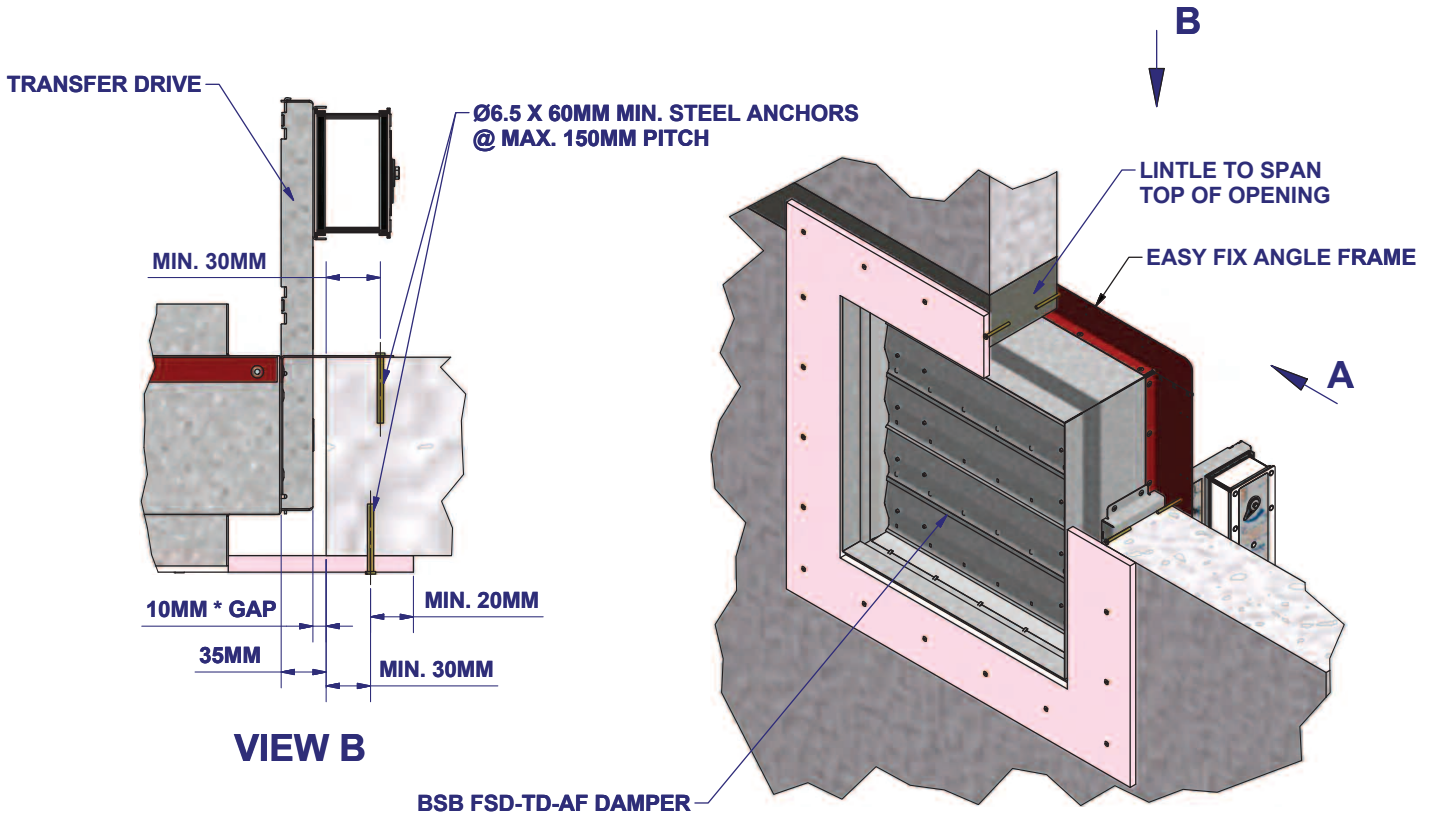
1. Preferably, correct sized holes should be cast / built into walls at construction stage. If not cut the correct sized aperture in the masonry / concrete wall.
2. To calculate aperture measure overall damper casing (not the angle flange)
Opening size = Damper casing size + 0mm → 30mm clearance around perimeter of outer casing as shown;
Important - this includes the transfer drive if installing a FSD-TD damper. See below.



3. The dampers are not load bearing so in walls lintel supports should be used where required.
4. Pre-drill fixing clearance holes in the angle flange of the damper before installing damper, 10mm in from the extremities and at 150mm max centers, before installing damper. FSD-TD-AF has 2 rows of pre-punched pilot holes, to aid this process. Use outer row of holes for masonry / concrete wall installations.
5. Position the damper centrally into the opening. Drill the required sized fixing holes into the concrete. Please note, to access fixing holes close to the actuator it is necessary to temporarily remove the actuator. Follow instructions shown within this manual to refit the actuator.
6. Using Ø6.5mm x 60mm (Minimum) fire resisting steel fixings, carefully fix damper flange to concrete floor, taking care not to crack the masonry or concrete wall.
7. For FSD-TD-AF dampers fix plasterboard pattress to rear as per drawing FSD-TD M10
8. For FD-AF dampers it is not a necessary to fit a pattress to the rear.
9. Ductwork to be fitted and connected in accordance with DW 144/145; Break away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without disturbing the integrity of the fire damper. Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium.
10. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION
 * TOLERANCE FOR GAP BETWEEN DAMPER AND EDGE OF OPENING + 50% (RULE X.45 OF EN 15882-2)

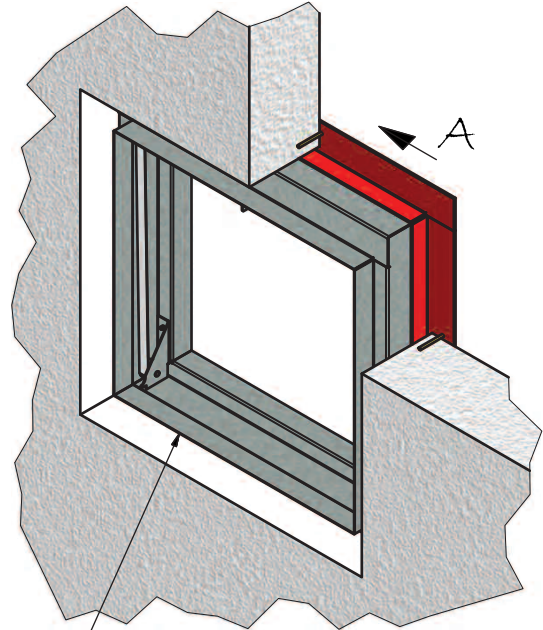
FSD-TD M10-r3



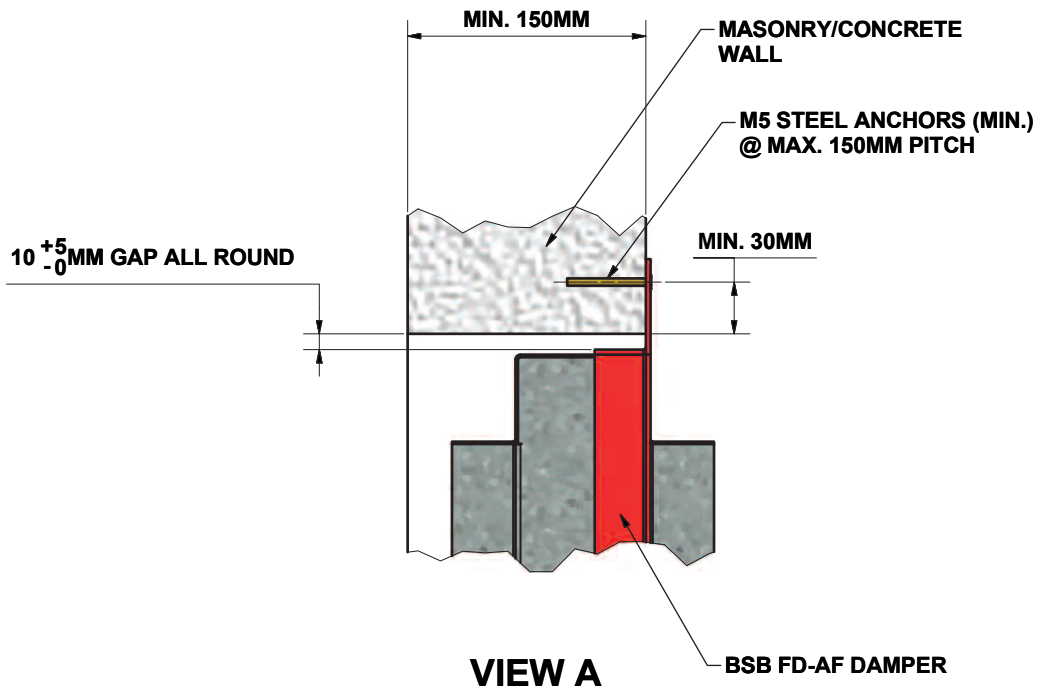
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

<p>MASONRY WALL</p>	<p>CE 120 MINUTES FIRE RESISTANCE</p>
<p>BSB FSD-TD-AF ANGLE FRAME Fitted</p>	<p>E 120 (ve i ↔ o) S</p>
<p>Single section sizes(mm) 100 x 100 to 1000 x 1000</p>	<p>TESTED TO EN1366-2 & CLASSIFIED TO EN13501-3</p>
<p>ECN: 0187</p>	<p>DATE: 02/08/2019</p> <p>www.bsb-dampers.co.uk</p>


CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR
DETAILED INFORMATION



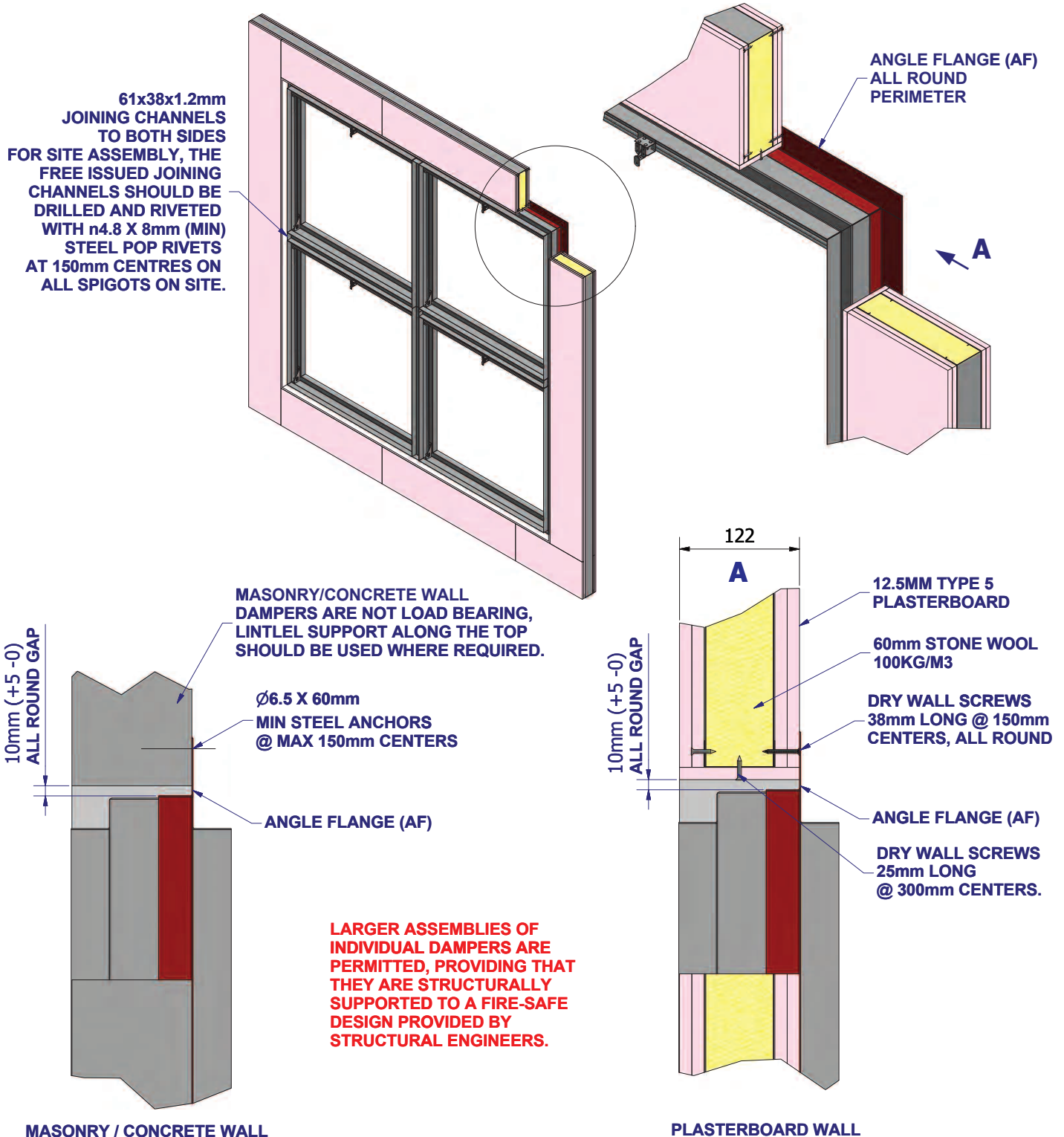
IT IS UNNECESSARY TO FIT PATRESS
TO NON-ACCESS SIDE OF WALL



TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

MASONRY WALL	 120 MINUTES FIRE RESISTANCE E 120 (ve i ↔ o)
BSB FD-AF ANGLE FRAME Fitted	
Single section sizes(mm) 100 x 100 to 1200 x 1000	BS EN1366-2 TEST REFERENCE: 284776 AND 303868 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0006

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION.
 * TOLERANCE FOR GAP BETWEEN DAMPER AND EDGE OF OPENING +50% (RULE X.45 OF EN15882-2)



TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

DRY WALL PARTITION AND MASONRY WALLS
BSB FD-AF MULTIPLE DAMPER ARRANGEMENTS
ANGLE FRAME

120 MINUTES FIRE RESISTANCE
E 120 (ve i ↔ o)

Single section sizes(mm)
 100 x 100 to 1200 x 1000

TESTED IN ACCORDANCE WITH EN 1588-2
 GENERALLY AS EN1366-2 & CLASSIFIED TO EN13501-3

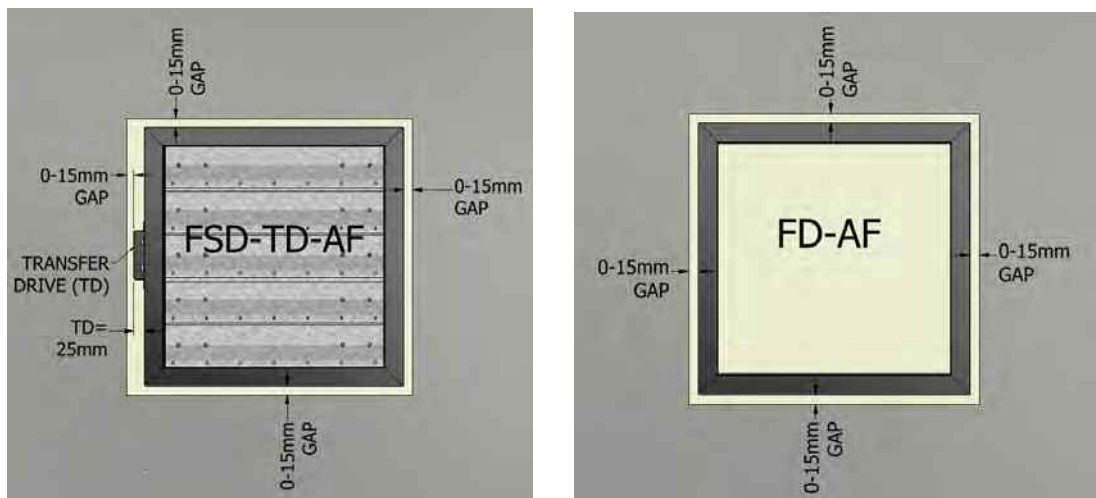
ECN: 0190

DATE: 19/09/2019

www.bsb-dampers.co.uk

Angle Flange, one side installation method into concrete floors Fire (FD-AF) & Fire Smoke dampers (FSD-TD-AF)

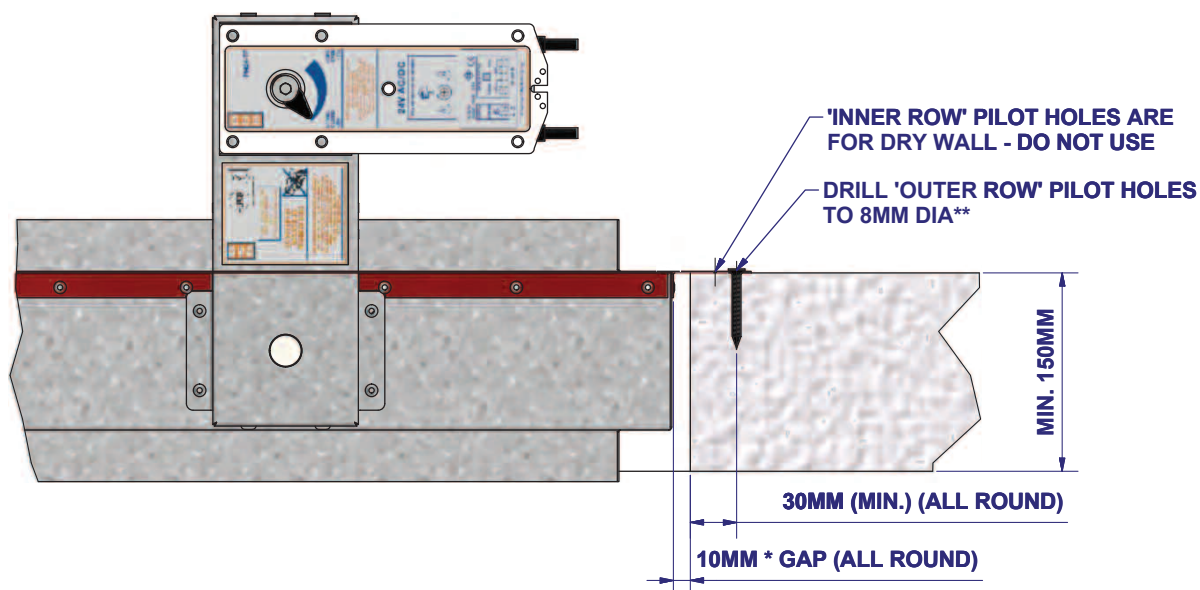
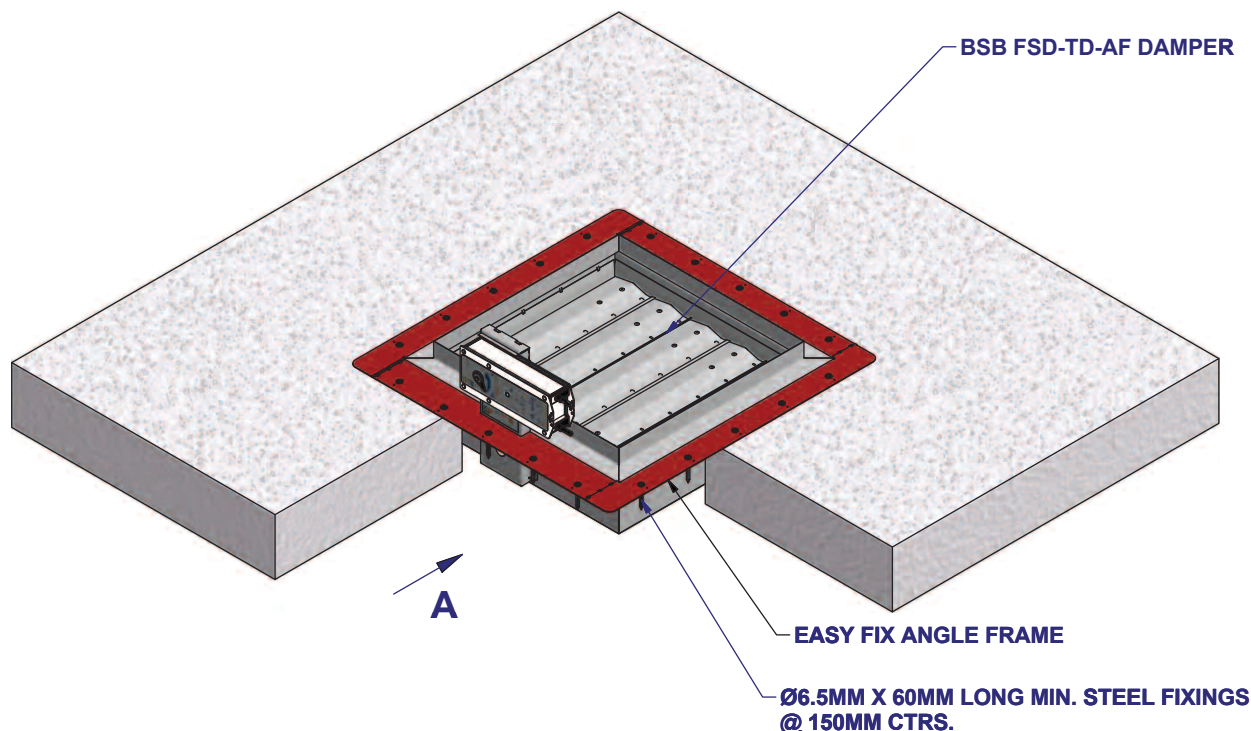
1. Preferably, correct sized holes should be cast into floors at construction stage. If not cut the correct sized aperture in the concrete floor.
2. To calculate aperture measure overall damper casing (not the angle flange)
Opening size = Damper casing size + 0mm → 30mm clearance around perimeter of outer casing as shown;
Important - this includes the transfer drive if installing the FSD-TD damper. See below.



3. Pre-drill fixing clearance holes in the outer set of pre-punched pilot holes on the angle flange of the damper 10mm in from the extremities at 150mm max centers, before installing damper.
4. Position the damper centrally into the opening. Drill the required sized fixing holes into the concrete. Please note, to access fixing holes close to the actuator it is necessary to temporarily remove the actuator. Follow instructions within this manual to remove & refit the actuator.
5. Using Ø6.5mm x 60mm (Minimum) fire resisting steel fixings, fix damper flange to concrete floor, taking care not to crack the concrete.
6. It is not a necessity to fill the void behind the angle flange or fit a pattress to the underside.
7. Ductwork to be fitted and connected in accordance with DW 144/145; Break-away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without affecting the integrity of the fire damper. Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium.
8. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION
 * TOLERANCE FOR GAP BETWEEN DAMPER AND EDGE OF OPENING + 50% (RULE X.45 OF EN 15882-2)

FSD-TD M11-r4



VIEW A

** PILOT HOLES ARE POSITIONED ASSUMING DAMPER POSITIONED CENTRALLY IN CORRECTLY SIZED OPENING. REFER TO I, O & M FOR FULL DETAILS

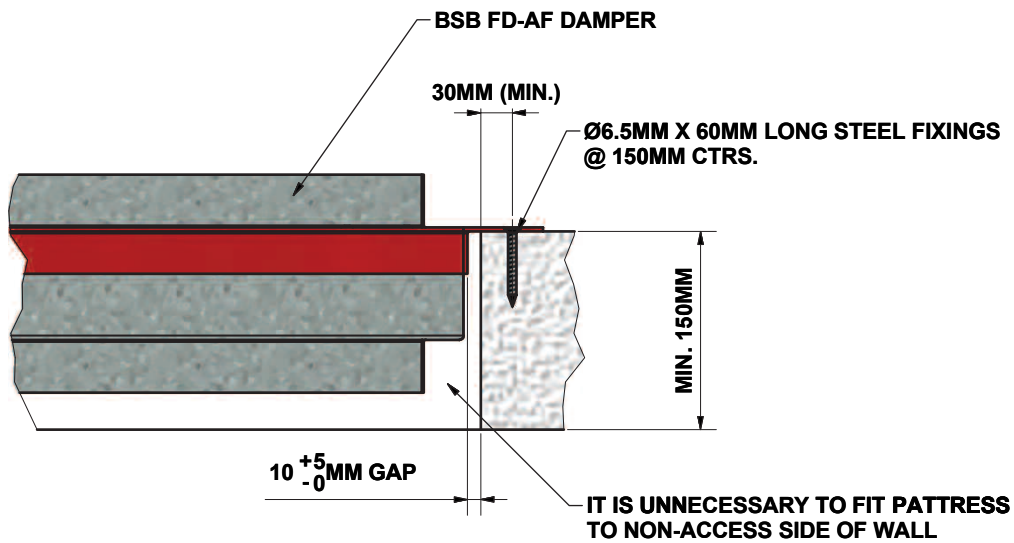
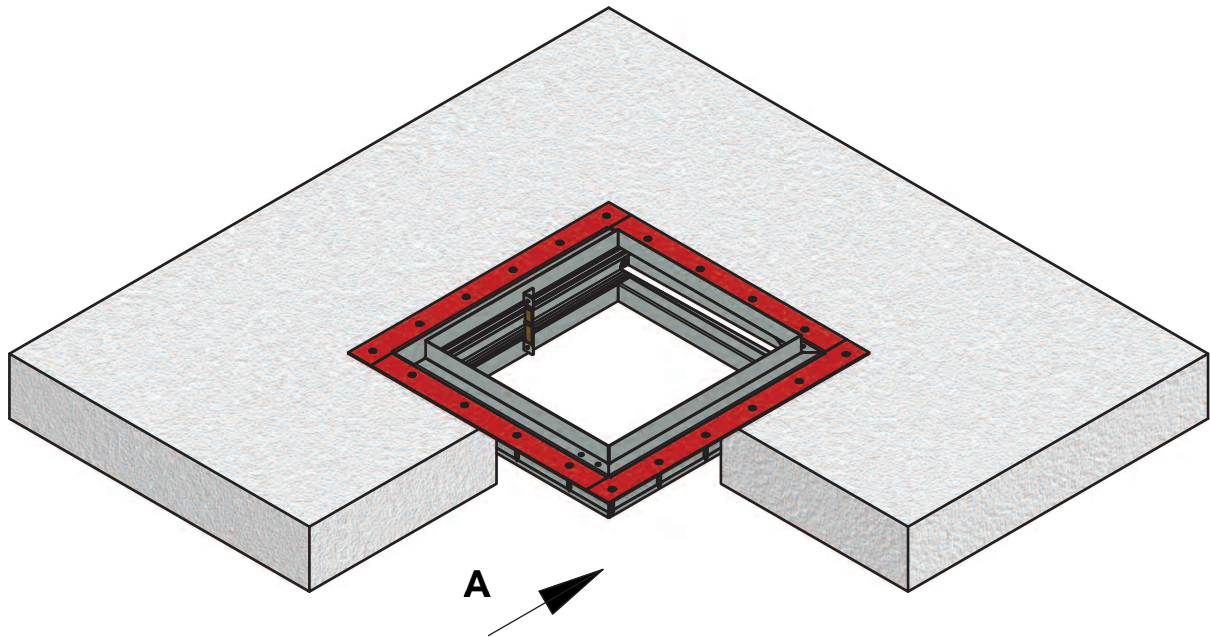
4 HOUR TESTED:
 EN13501-3 LIMITS ES RATING TO A MAXIMUM OF 120 MINUTES.
 HOWEVER, THIS INSTALLATION WAS SUCCESSFULLY TESTED FOR 4 HOURS.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

CONCRETE FLOOR	120 MINUTES FIRE RESISTANCE E 120 (ho i → o) S
BSB FSD-TD-AF ANGLE FRAME Fitted	
Single section sizes(mm) 100 x 100 to 1000 x 1000	TESTED TO EN1366-2 & CLASSIFIED TO EN13501-3
ECN: 0187	DATE: 02/08/2019
www.bsb-dampers.co.uk	

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR
DETAILED INFORMATION

FD M11



VIEW A

NOTE: THIS INSTALLATION WAS FIRE TESTED FOR 4 HOURS SUCCESSFULLY.

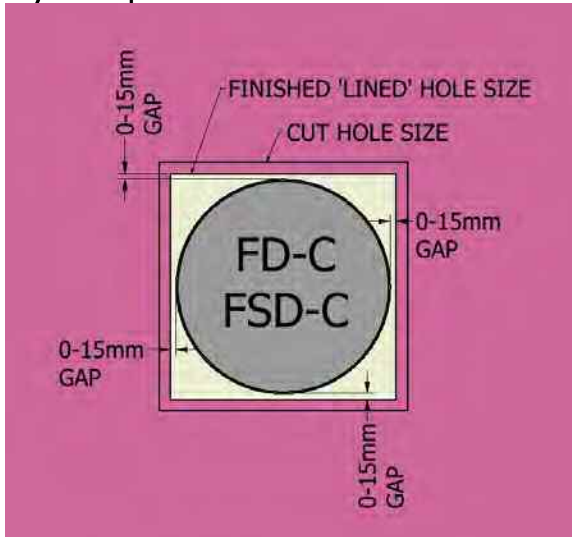
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

<p>CONCRETE FLOOR</p>	<p>CE 120 MINUTES FIRE RESISTANCE E 120 (ho i → o)</p>
<p>BSB FD-AF ANGLE FRAME Fitted</p>	
<p>Single section sizes(mm) 100 x 100 to 1200 x 1000</p>	<p>BS EN1366-2 TEST REFERENCE: 282572 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0006</p>

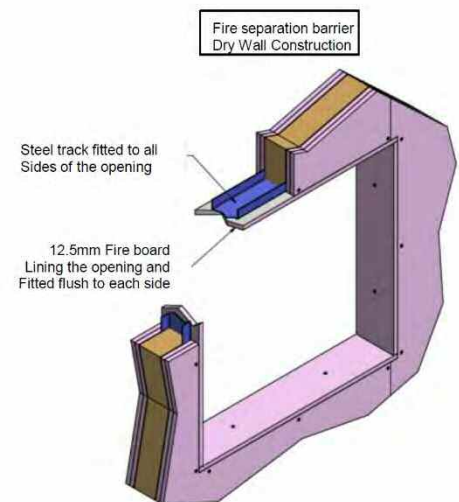
www.bsb-dampers.co.uk

FD-C & FSD-C one side installation method into dry walls Fire (FD_C) & Fire Smoke dampers (FSD-C)

1. Finished 'lined' hole size is square, and + 0mm → 30mm larger than the diameter damper casing
2. Calculate the cut hole size by adding two board thicknesses to the finished hole width and height, because the cut hole needs lining with a single layer of plaster board.



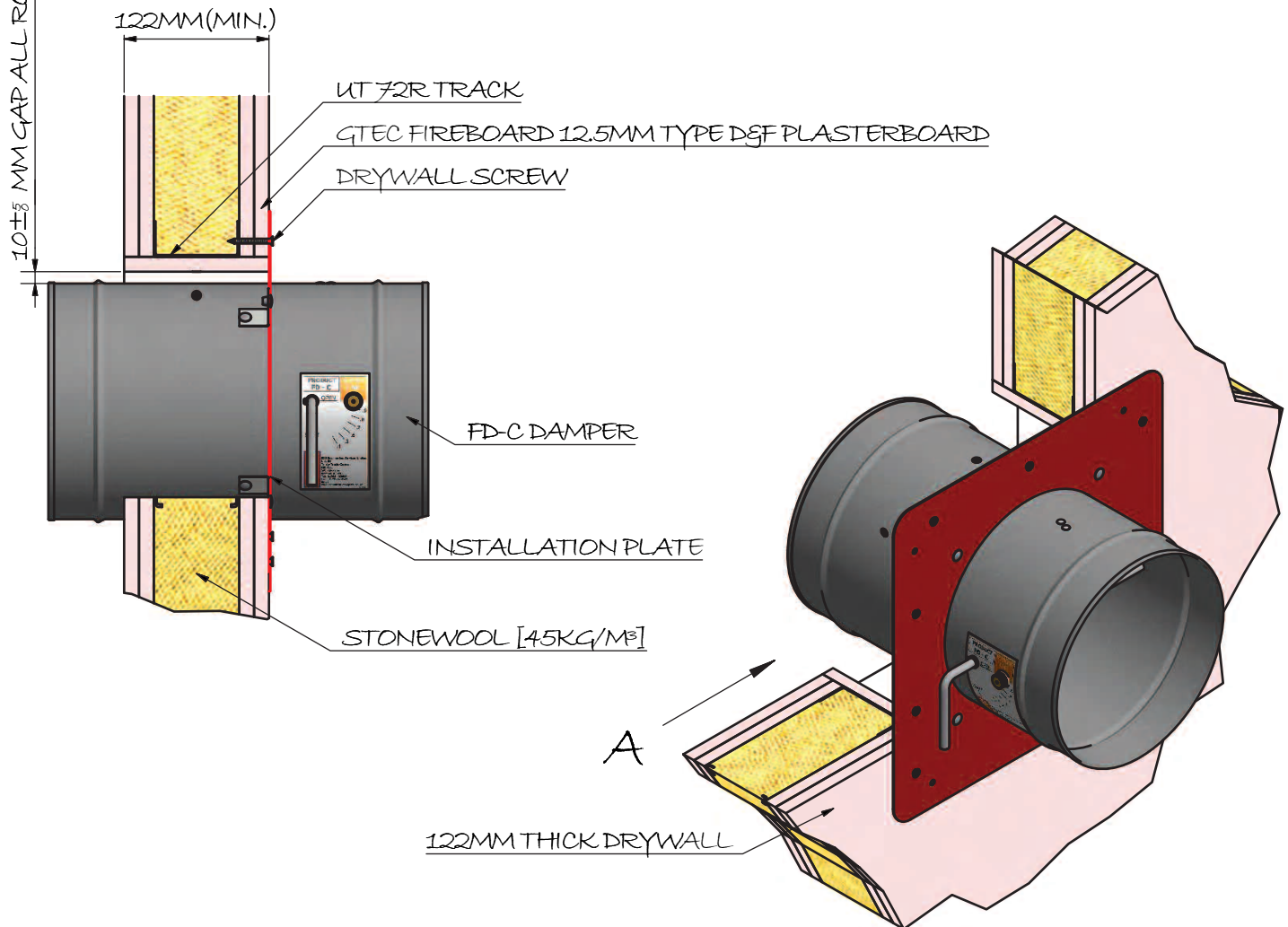
3. Mark the position and size of the hole on the partition wall and cut it out
4. Line the perimeter of aperture with steel track, securing in place with dry wall screws on both sides at 300mm (max) centers.
5. Cut 4 lengths of board to suit the aperture. Screw in place at 300mm (max) centers, ensuring boards are flush with both sides of the wall.
6. Position the damper centrally in wall opening (width/height), with blade running horizontally.
7. Using 38mm dry wall screws, fix the installation plate to the wall. **Important:** Ensure the screws 'pick up' the track lining the hole, so that the proper fire integrity of the installation will not be compromised.
8. There is a pair of fixing holes at each of the installation plate corners, but only one fixing is required per corner. On larger dampers, there are also midspan fixing holes that must be used. ALL Ø5mm fixing holes, except the 4 off unused corner fixings must be used.
9. It is not a necessity to fill the void behind the angle frame, but suitable fire rated infill may be used if considered required for insulation purposes.
10. Ductwork to be fitted and connected in accordance with DW 144/145; Break away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without disturbing the integrity of the fire damper. Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium, plastic etc.
11. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.



CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION.

10±3 MM GAP ALL ROUND DAMPER

VIEW A



SECURING INSTALLATION PLATE

THE OPENING IN THE WALL MUST BE SQUARE WITH A FINISHED OPENING SIDE LENGTH = DAMPER DIAMETER + 20± MM.

THE OPENING MUST BE LINED WITH A SINGLE LAYER OF FIREBOARD BACKED BY TRACK ALL WAY ROUND.

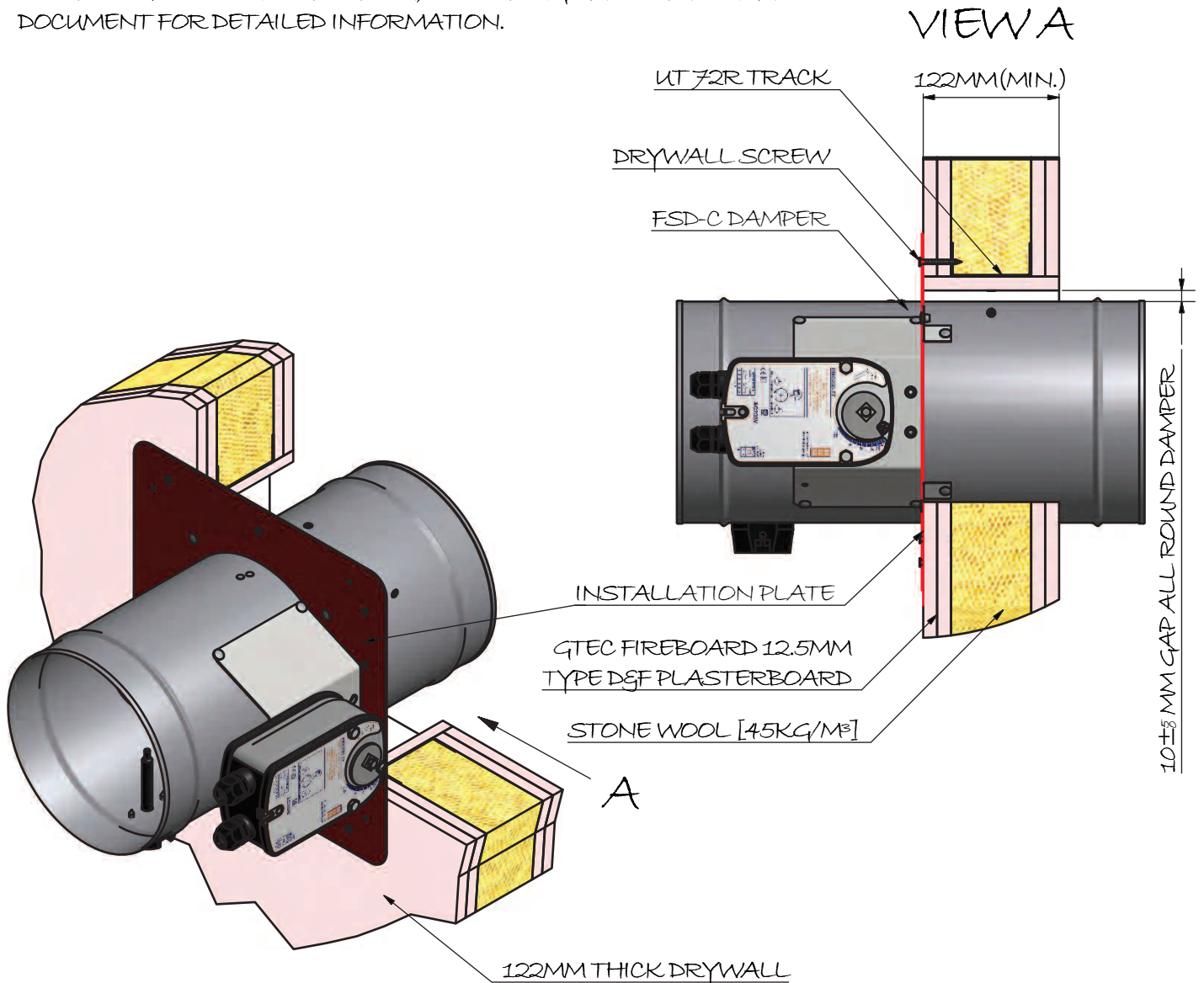
ONLY ONE FIXING IS REQUIRED PER CORNER. ALL INTERMEDIATE FIXING HOLES ARE TO BE USED. ALL FIXING SCREWS SHOULD BE SECURELY SCREWED TO THE TRACK LINING THE OPENING.

THERE IS NO NEED TO FILL THE CORNER VOIDS OF THE OPENING.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / ASSESSMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

DRYWALL	CE 120 MINUTES FIRE RESISTANCE E 90 (ve i ↔ o) S
FD-C	
Damper sizes (mm) Ø100 to Ø315	BS EN1366-2 TEST REFERENCE 276643 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0008


CONNECTING DUCTWORK AND CABLES HAVE BEEN OMITTED FOR CLARITY. PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION.



SECURING INSTALLATION PLATE

THE OPENING IN THE WALL MUST BE SQUARE WITH A FINISHED OPENING SIDE LENGTH = DAMPER DIAMETER + 20±%MM.
 THE OPENING MUST BE LINED WITH A SINGLE LAYER OF FIREBOARD BACKED BY TRACK ALL THE WAY ROUND.
 ONLY ONE FIXING IS REQUIRED PER CORNER. ALL INTERMEDIATE FIXING HOLES TO BE USED.
 ALL FIXING SCREWS SHOULD BE SECURELY SCREWED TO THE TRACK LINING OF THE OPENING.
 THERE IS NO NEED TO FILL THE CORNER VOIDS OF THE OPENING.

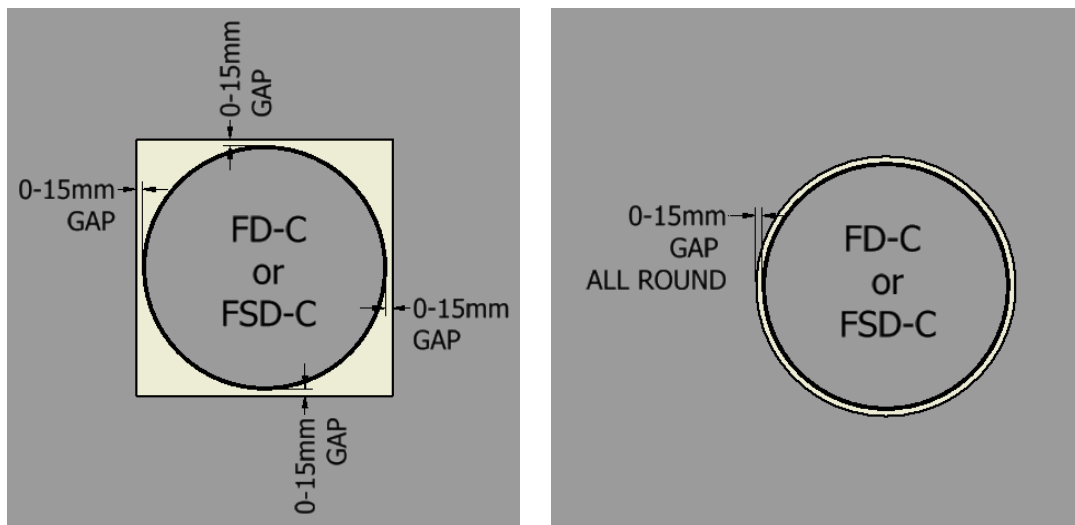
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / ASSESSMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

DRYWALL	 120 MINUTES FIRE RESISTANCE E 120 (ve i ↔ o) S
FSD-C	
Damper sizes (mm) Ø100 to Ø315	BS EN1366-2 TEST REFERENCE 279799 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0009

FD-C & FSD-C one side installation method into masonry/concrete walls and floors

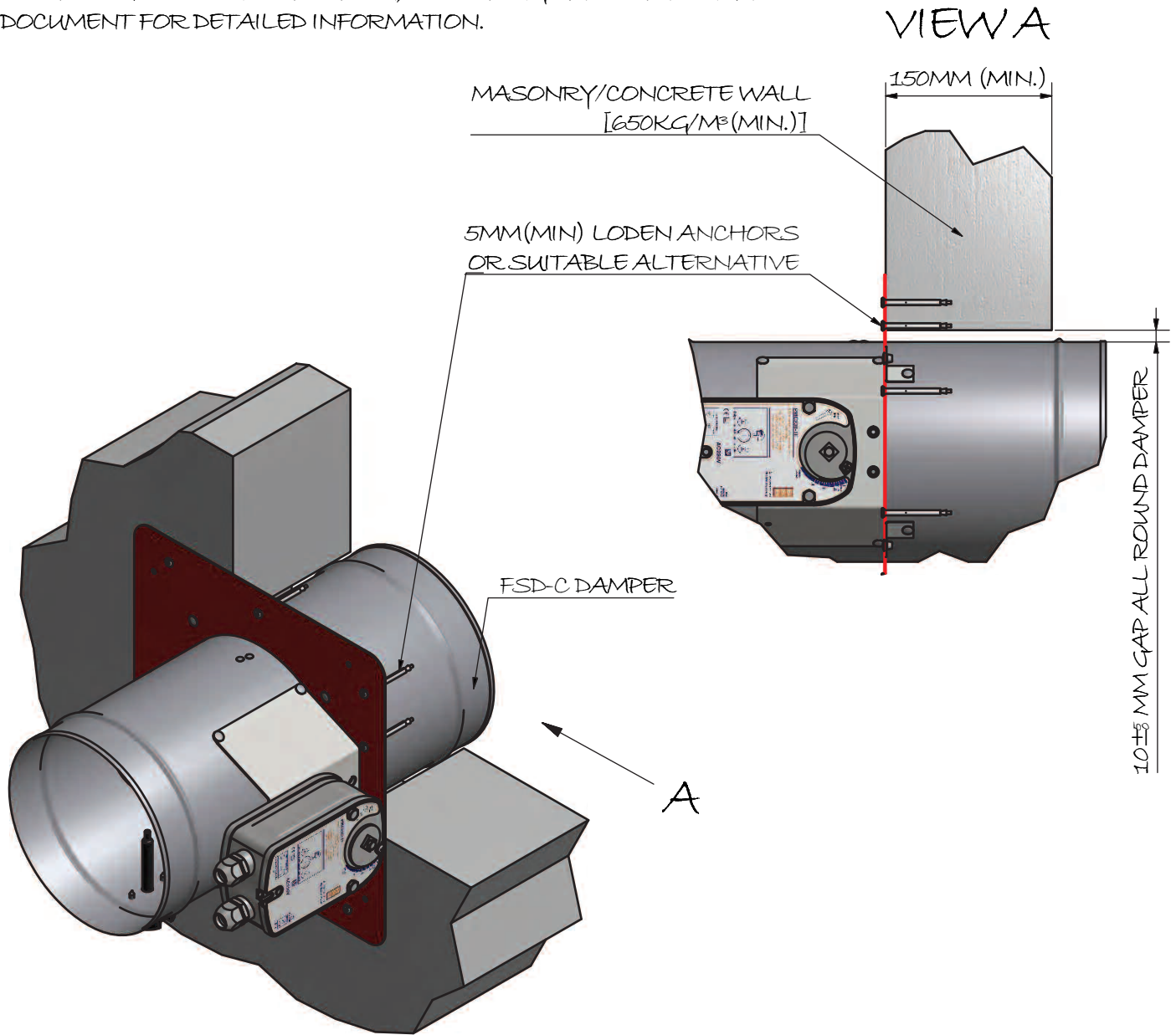
Fire (FD-C) & Fire Smoke dampers (FSD-C)

1. Preferably, correct sized holes should be cast / built into walls and floors at construction stage. If not cut the correct sized aperture, either a square aperture or a core drilled hole is acceptable.
2. To calculate aperture, measure the damper casing diameter (not the angle flange)
Opening size = Damper casing size + 0mm → 30mm clearance around perimeter of outer casing as shown;



3. The dampers are not load bearing so in walls lintel supports should be used where required.
4. Using Ø5mm x 50mm (Minimum) fire resisting steel fixings, carefully fix damper flange to concrete floor or wall, taking care not to crack the structure.
5. It is not a necessity to fill the void behind the angle frame or fit a pattress to the underside.
6. Ductwork to be fitted and connected in accordance with DW 144/145; Break away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without affecting the integrity of the fire damper. Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium.
7. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.

CONNECTING DUCTWORK AND CABLES HAVE BEEN OMITTED FOR CLARITY. PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION.



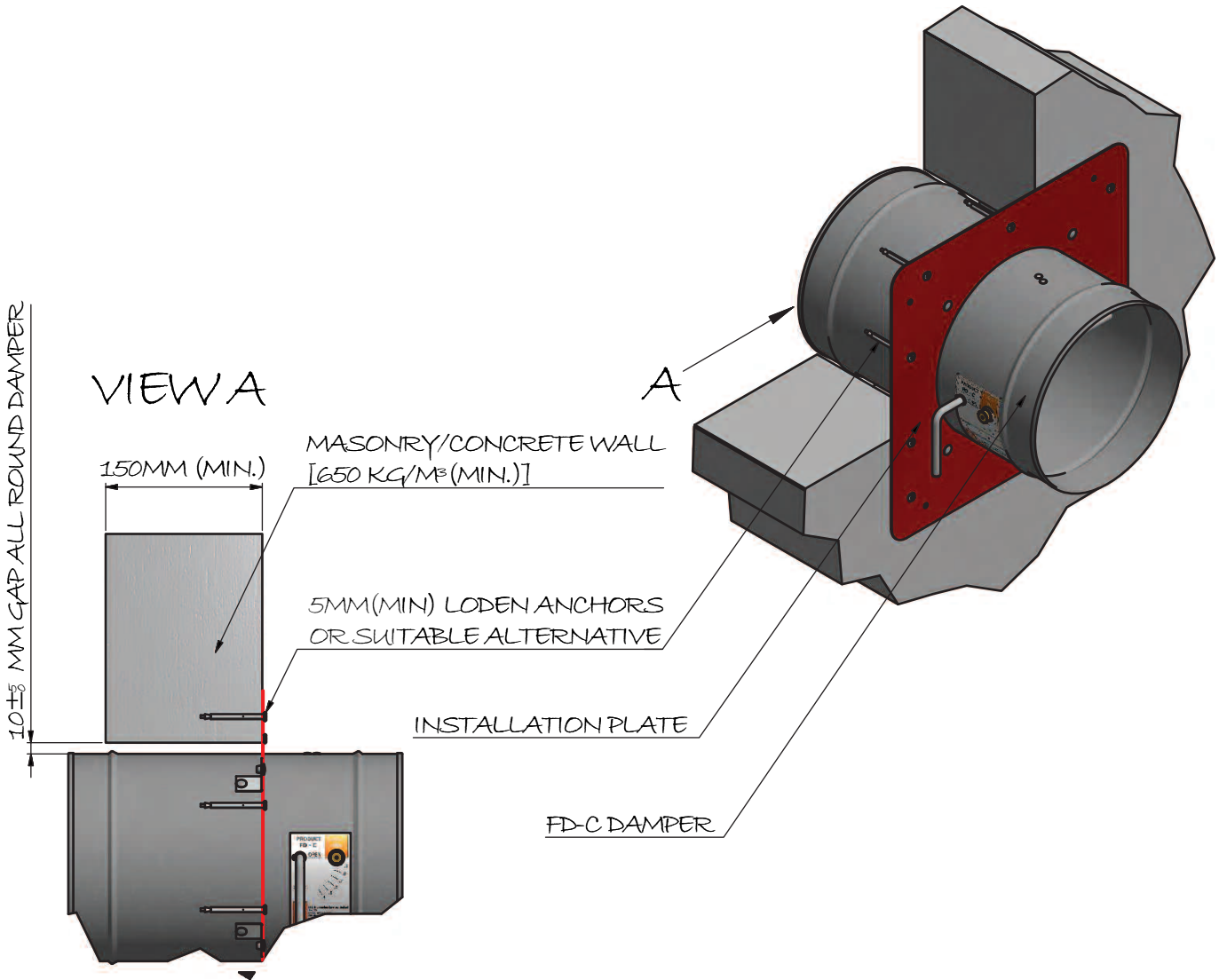
SECURING INSTALLATION PLATE

THE OPENING IN THE WALL MUST BE SQUARE WITH SIDE LENGTH = DAMPER DIAMETER + 20±10MM. ONLY ONE FIXING IS REQUIRED PER CORNER. ALL INTERMEDIATE FIXING HOLES TO BE USED. THERE IS NO NEED TO FILL THE CORNER VOIDS OF THE OPENING.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / ASSESSMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

MASONRY WALL	CE 120 MINUTES FIRE RESISTANCE E 120 (ve i ↔ o) S
FSD-C	
Damper sizes (mm) Ø100 to Ø315	BS EN1366-2 TEST REFERENCE 279799 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0009

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION.



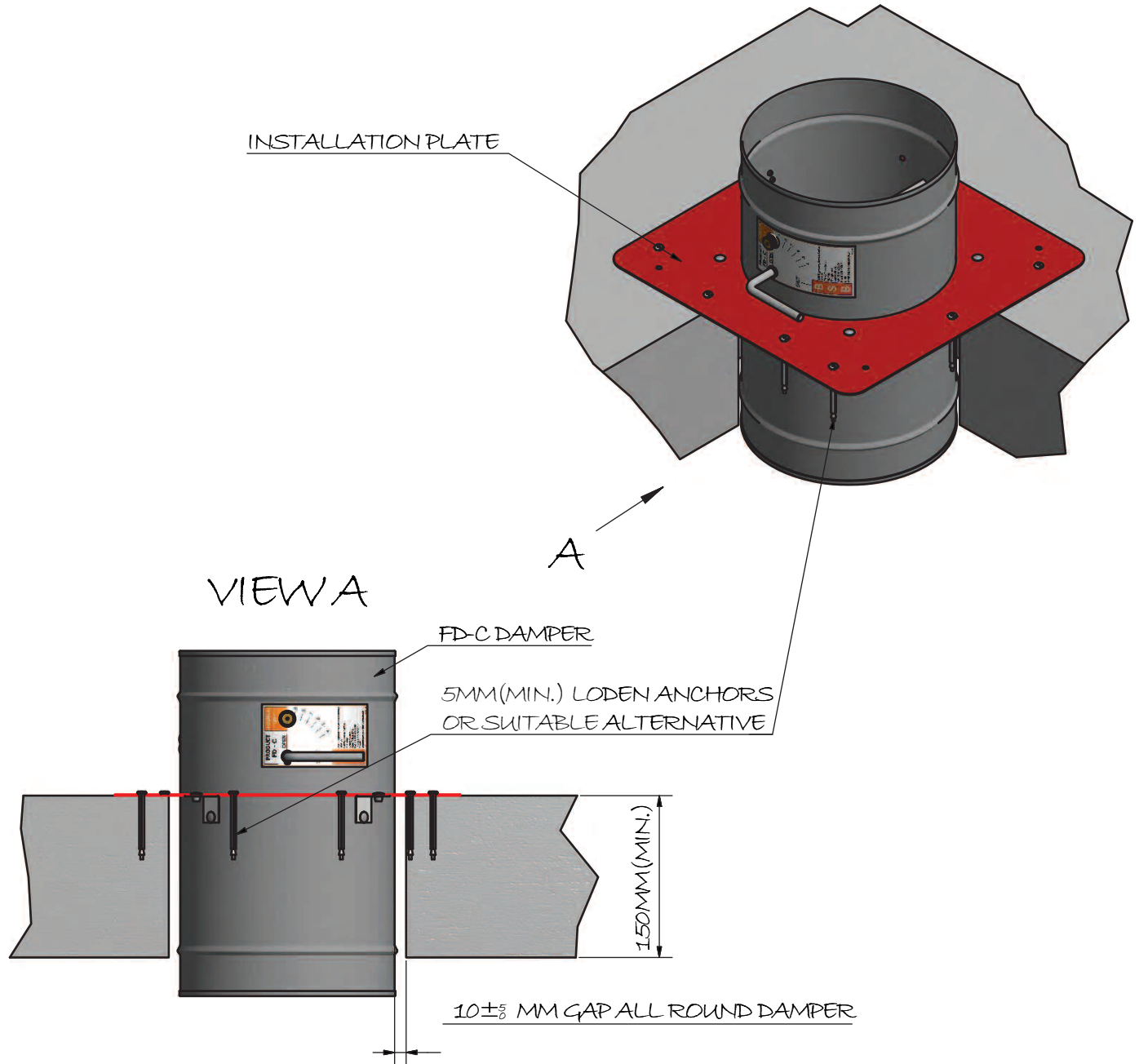
SECURING INSTALLATION PLATE

THE OPENING IN THE WALL MUST BE SQUARE WITH SIDE LENGTH = DAMPER DIAMETER + 20±5MM. ONLY ONE FIXING IS REQUIRED PER CORNER. ALL INTERMEDIATE FIXING HOLES ARE TO BE USED. THERE IS NO NEED TO FILL THE CORNER VOIDS OF THE OPENING.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / ASSESSMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

MASONRY WALL	CE 120 MINUTES FIRE RESISTANCE E 120 (ve i ↔ o) S
FD-C	
Damper sizes (mm) Ø100 to Ø315	BS EN1366-2 TEST REFERENCE 276065, 281585A BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0008

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION.



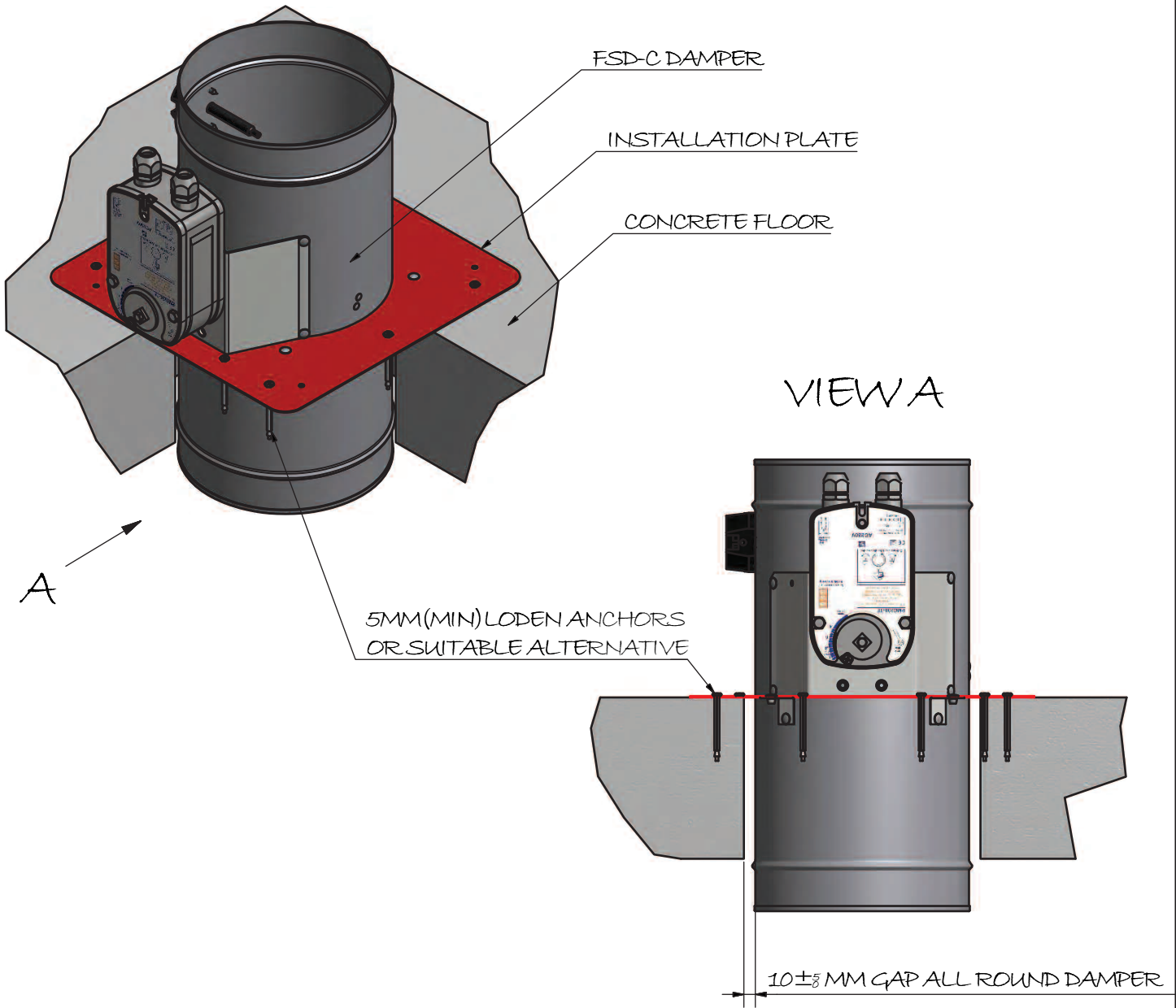
SECURING INSTALLATION PLATE

THE OPENING IN THE FLOOR MUST BE SQUARE WITH SIDE LENGTH = DAMPER DIAMETER + 20±5MM.
ONLY ONE FIXING IS REQUIRED PER CORNER. ALL INTERMEDIATE FIXING HOLES ARE TO BE USED.
THERE IS NO NEED TO FILL THE CORNER VOIDS OF THE OPENING.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / ASSESSMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

CONCRETE FLOOR	CE 120 MINUTES FIRE RESISTANCE E 120 (ho i → o) S
FD-C	
Damper sizes (mm) Ø100 to Ø315	BS EN1366-2 TEST REFERENCE 102289-1000 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0008

CONNECTING DUCTWORK AND CABLES HAVE BEEN OMITTED FOR CLARITY. PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION.



SECURING INSTALLATION PLATE

THE OPENING IN THE FLOOR MUST BE SQUARE WITH SIDE LENGTH = DAMPER DIAMETER + 20 ± 0.5MM. ONLY ONE FIXING IS REQUIRED PER CORNER. ALL INTERMEDIATE FIXING HOLES TO BE USED. THERE IS NO NEED TO FILL THE CORNER VOIDS OF THE OPENING.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / ASSESSMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

MASONRY WALL	CE 90 MINUTES FIRE RESISTANCE <i>E 90 (ho i → o) S</i>
FSD-C	
Damper sizes (mm) Ø100 to Ø315	BS EN1366-2 TEST REFERENCE 281585B BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0009

FD-C Externally resettable circular fire dampers Installation method into ablative BATT surround under slab & up against masonry wall.

****IMPORTANT****

The fire tested installation methods shown in drawings FD-C M8 sheets 1, 2 & 3 consider some of the common site installation issues faced on site;

- 1; Limited space – cutting down the installation plate size.
- 2; Limited space - Fixing direct to underside of slab by folding the installation plate.
- 3; Dampers installed close to each other - Overlapping installation plates.
- 4; Installing tight up into corners.
- 5; Reset handle positioned at the bottom of the duct for ease of access.
- 6; Large service penetrations / openings – filled by Ablative BATT firestopping materials.

With the above in mind the installation procedures below may change to suit site conditions and particular installation.

Differing & mixing a variety of installations other than that shown, require Building control, client, etc. approvals prior to installation.

Damper A with folded installation plate;

1. Position the damper up against the slab and mark and drill appropriately sizes fixing holes.
2. Using Ø5mm x 40mm (Minimum) fire resisting steel fixings, fix damper flange to concrete floor

Damper B with folded installation plate;

1. Position 40x40x2mm (min) mild steel angle (supplied by others) up against the slab and mark and drill appropriately sizes fixing holes.
2. Using Ø5mm x 40mm (Minimum) fire resisting steel fixings, fix angle up into soffit / concrete floor.
3. Using Ø3.2mm (Min) steel rivets fix the damper installation flange to the angle fitted to soffit.

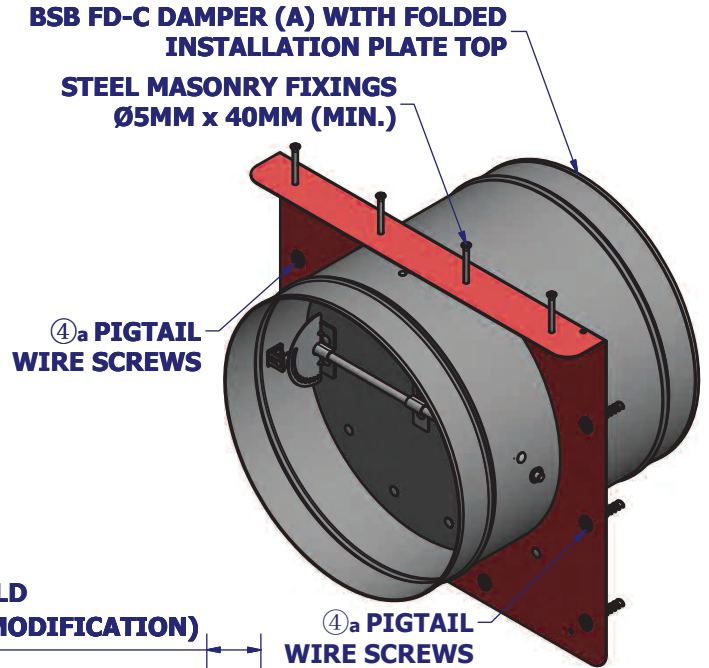
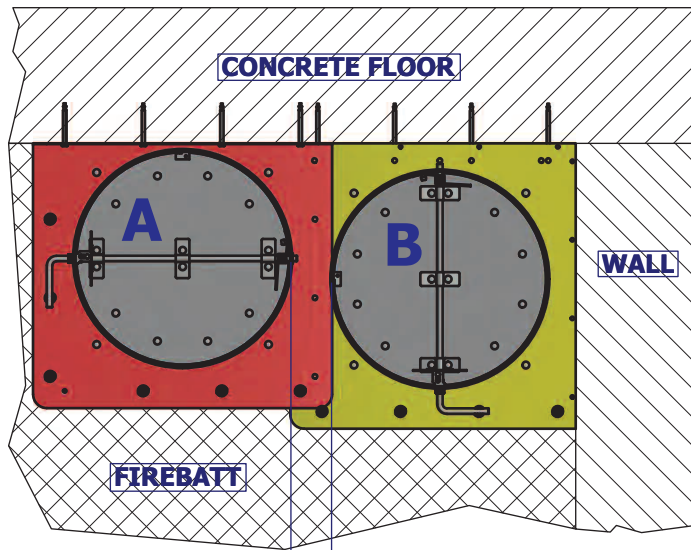
Damper A & B

4. If installation plates are overlapping, fix both plates together using Ø3.2mm (Min) steel rivets.
5. Tightly install two layers of 50mm thick Firetherm intubatt around dampers and into the opening, as shown, using the intumescent sealant behind the installation plates, batt to batt joints (if required) and around the perimeter of batt to wall interface.
6. Using Batt pigtail fixings secure installation plate to the Batt.
7. Ductwork to be fitted and connected in accordance with DW 144/145; Break away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without disturbing the integrity of the fire damper. Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium, plastic etc.
8. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.

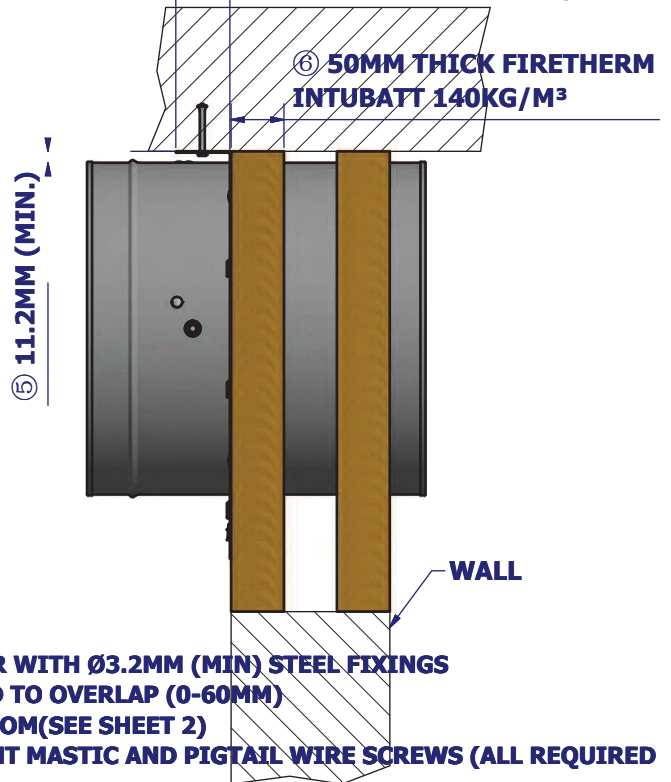
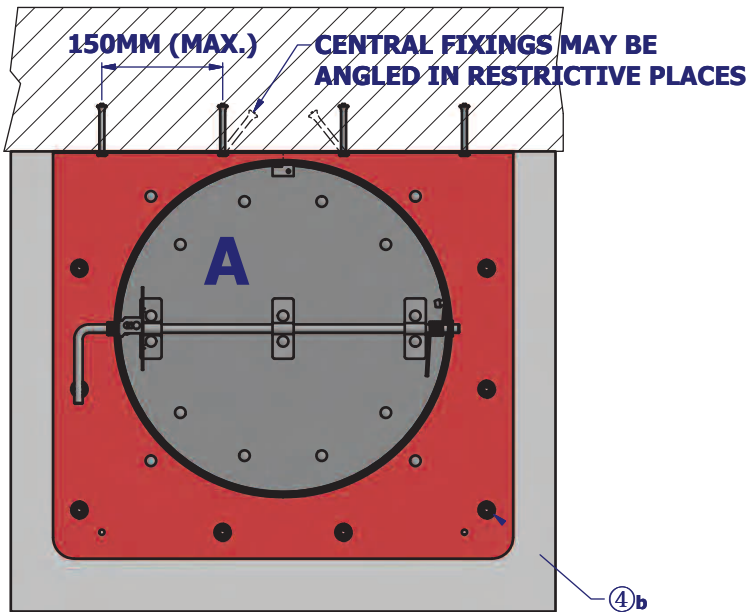
CONNECTING DUCTWORK AND FIREBATT HAVE BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS) ON CONNECTING DUCTWORK. PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION

FD-C M8

SHEET 1 OF 3



- ① OVERLAPPED INSTALLATION PLATES
- ⑤ 50MM INSIDE (MAX.) FOLD (PRE-ASSEMBLY FACTORY MODIFICATION)



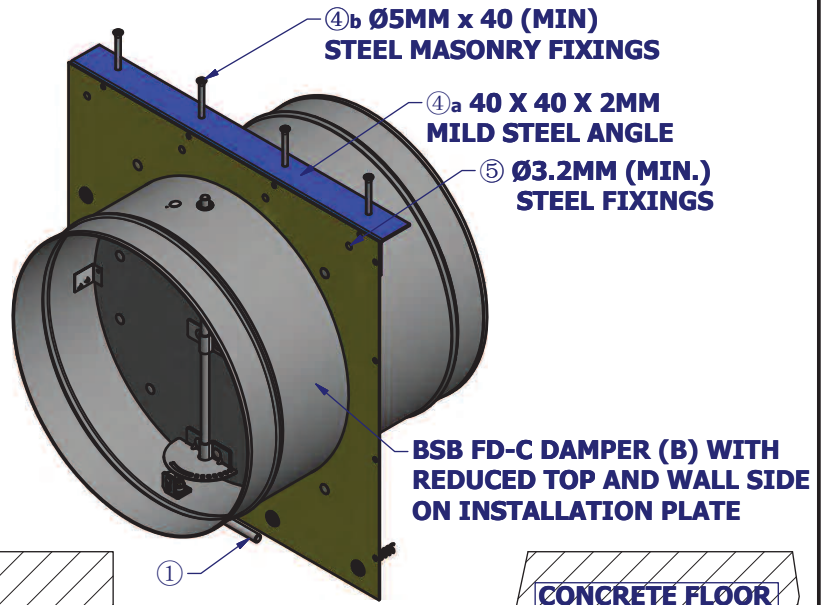
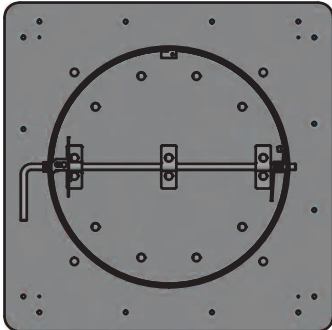
- ① OVERLAPPING INSTALLATION PLATES TO BE FIXED TOGETHER WITH Ø3.2MM (MIN) STEEL FIXINGS
- ② INSTALLATION PLATES OF MULTIPLE DAMPERS ARE ALLOWED TO OVERLAP (0-60MM)
- ③ DAMPER MAY BE INSTALLED WITH THE HANDLE ON THE BOTTOM(SEE SHEET 2)
- ④ INSTALLATION PLATE FIXED TO FIREBATT WITH INTUMESCENT MASTIC AND PIGTAIL WIRE SCREWS (ALL REQUIRED FIXING HOLES MUST HAVE FIXINGS)(SEE PAGE 3)
- ⑤ 50MM (MAX.) FOLD APPLIED TO TOP OF INSTALLATION PLATE FOR FIXING TO MASONRY CEILING
- ⑥ HOLES PRE-CUT IN FIREBATT TO SUIT DAMPER DIAMETER, BEFORE FITMENT OF FIREBATT

2 OFF FD-C DAMPERS TESTED WITH COMMON AND SPECIFIC SITE NUANCES, I.E. 1/ REDUCED INSTALLATION PLATE WIDTH/HEIGHT. 2/ FOLDED (TOP) INSTALLATION PLATE. 3/ OVERLAPPING INSTALLATION PLATES. 4/ VERTICAL BLADE-AXIS INSTALLATIONS. 5/ INSTALLATION INTO CORNERS OF CAVITIES. DIFFERING INSTALLATIONS WILL REQUIRE THE BCA TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS/DOCUMENTS CONTAINED HEREIN, IN ORDER TO CONSIDER APPROVAL.

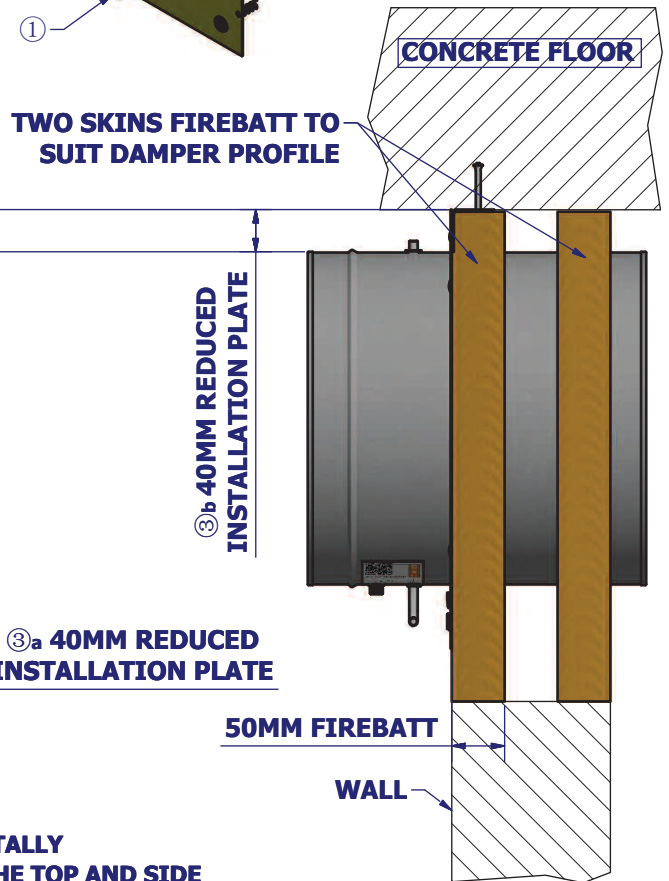
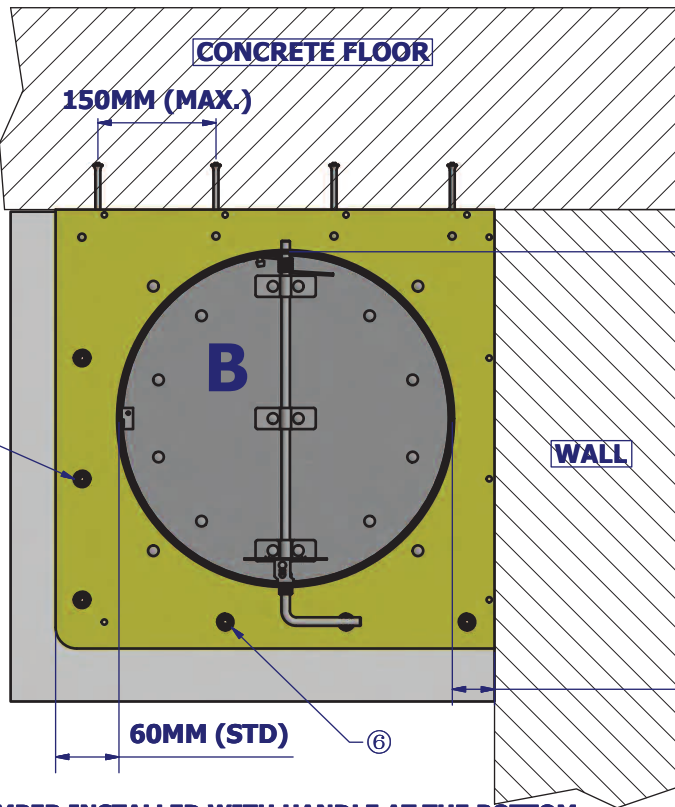
FIRE BATT BSB FD-C MODIFIED INSTALLATION PLATE Sizes(mm) Ø100mm to Ø315mm	120 MINUTES FIRE RESISTANCE E 120 (ve i → o) S BS EN1366-2 TEST REFERENCE 107602-1004 BRE CERTIFICATE OF CONSTANCY XXXX-XXX-XXXXX
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CONNECTING DUCTWORK AND FIREBATT HAVE BEEN LARGELY OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS) ON CONNECTING DUCTWORK. PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION

② STANDARD BLADE AXLE ORIENTATION



IF NO OVERLAPPING PLATE IS PRESENT THEN PIGTAIL SCREWS ARE REQUIRED



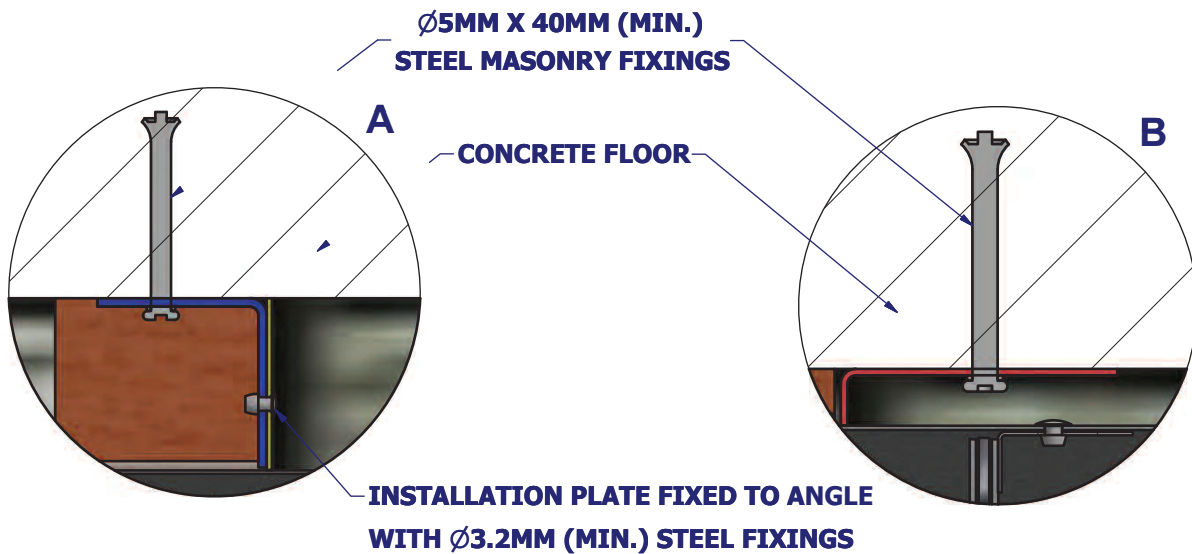
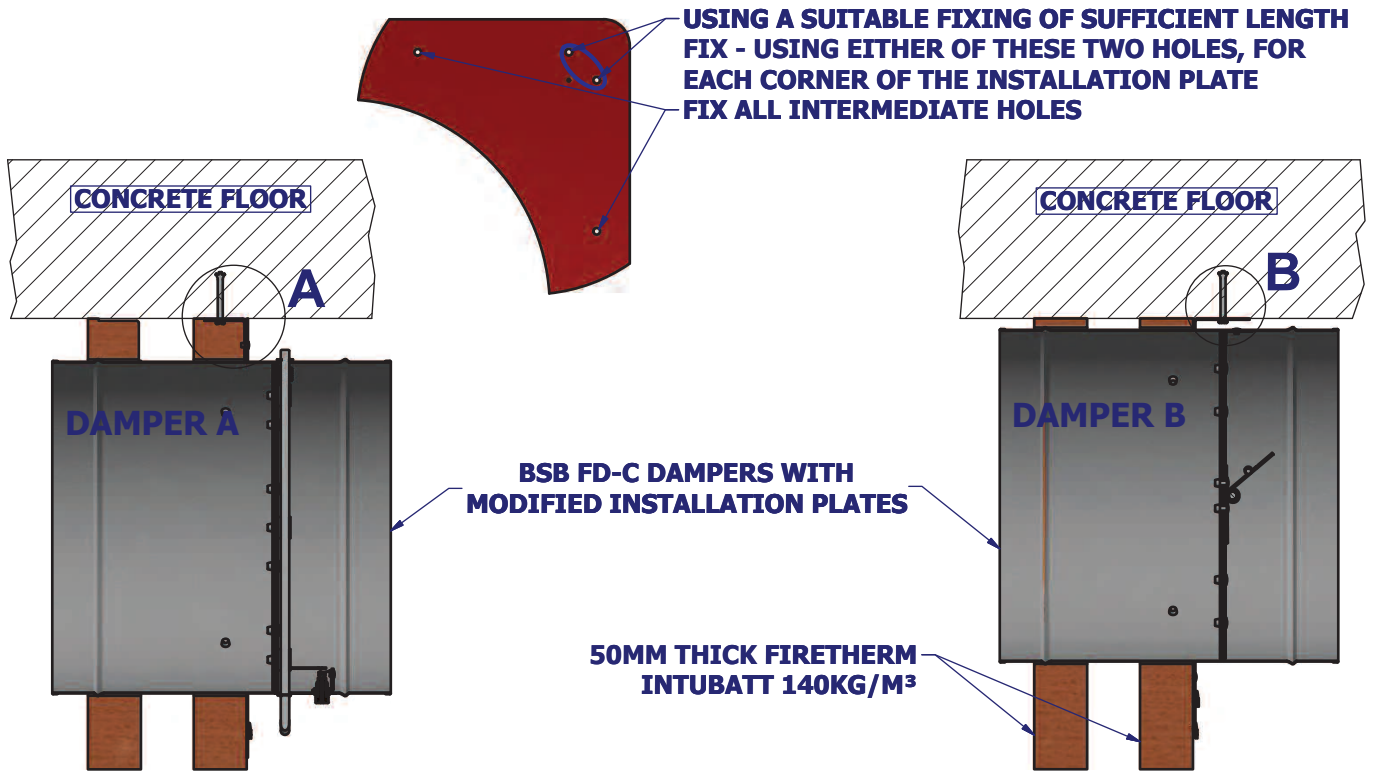
- ① DAMPER INSTALLED WITH HANDLE AT THE BOTTOM
- ② DAMPER MAY BE INSTALLED WITH THE BLADE AXLE HORIZONTALLY
- ③ INSTALLATION PLATE MAY BE TRIMMED DOWN TO 40MM AT THE TOP AND SIDE
- ④ ANGLE FIXED TO MASONRY USING Ø5 x 50MM DIA STEEL MASONRY FIXINGS
- ⑤ INSTALLATION PLATE FIXED TO MILD STEEL ANGLE USING 3.2MM DIA FIXINGS
- ⑥ INSTALLATION PLATE FIXED TO FIREBATT WITH INTUMESCENT MASTIC AND PIGTAIL WIRE SCREWS (ALL REQUIRED FIXING HOLES MUST HAVE FIXINGS)(HOLES NEXT TO SIDE WALL CAN BE LEFT UNFIXED)

2 OFF FD-C DAMPERS TESTED WITH COMMON AND SPECIFIC SITE NUANCES, I.E. 1/ REDUCED INSTALLATION PLATE WIDTH/HEIGHT. 2/ FOLDED (TOP) INSTALLATION PLATE. 3/ OVERLAPPING INSTALLATION PLATES. 4/ VERTICAL BLADE-AXIS INSTALLATIONS. 5/ INSTALLATION INTO CORNERS OF CAVITIES. DIFFERING INSTALLATIONS WILL REQUIRE THE BCA TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS/DOCUMENTS CONTAINED HEREIN, IN ORDER TO CONSIDER APPROVAL.

FIRE BATT	CE 120 MINUTES FIRE RESISTANCE E 120 (ve i → o) S
BSB FD-C MODIFIED INSTALLATION PLATE	
Sizes(mm) Ø100mm to Ø315mm	BS EN1366-2 TEST REFERENCE 107602-1004 BRE CERTIFICATE OF CONSTANCY XXXX-XXX-XXXXX

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLAITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION

FD-C M8
SHEET 3 OF 3



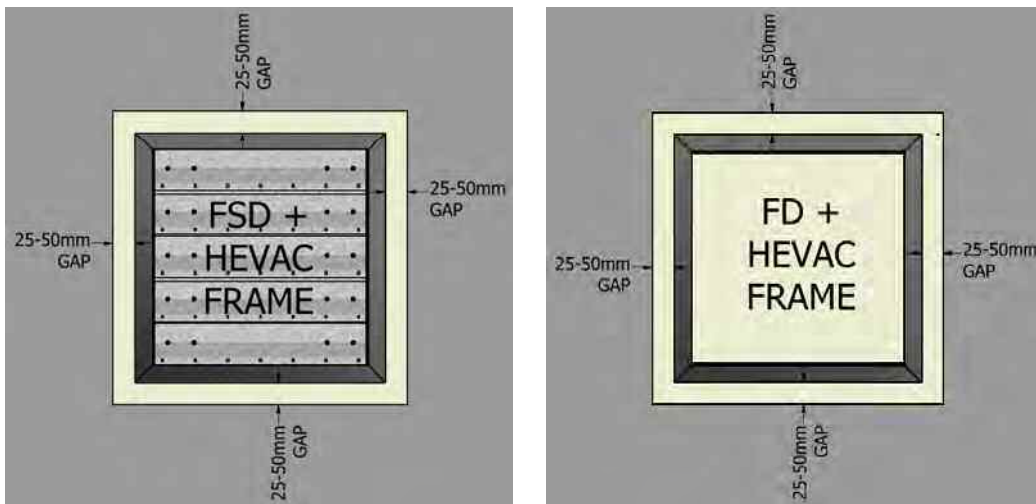
FIREBATT UNSUPPORTED BY FRAMEWORK - 1200MM X 1200MM (MAX)
FIREBATT SEALED WITH INTUMESCENT MASTIC AROUND ALL SEAMS, EDGES AND DAMPERS
FIREBATT'S SEAMS STAGGERED BETWEEN SKINS
INSTALLATION PLATES AND FIREBATT FIXED WITH INTUMESCENT MASTIC AND PIGTAIL WIRE SCREWS

2 OFF FD-C DAMPERS TESTED WITH COMMON AND SPECIFIC SITE NUANCES, I.E. 1/ REDUCED INSTALLATION PLATE WIDTH/HEIGHT. 2/ FOLDED (TOP) INSTALLATION PLATE. 3/ OVERLAPPING INSTALLATION PLATES. 4/ VERTICAL BLADE-AXIS INSTALLATIONS. 5/ INSTALLATION INTO CORNERS OF CAVITIES. DIFFERING INSTALLATIONS WILL REQUIRE THE BCA TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS/DOCUMENTS CONTAINED HEREIN, IN ORDER TO CONSIDER APPROVAL.

<p>FIRE BATT</p>	<p>CE 120 MINUTES FIRE RESISTANCE E 120 (ve i → o) S</p>
<p>BSB FD-C MODIFIED INSTALLATION PLATE</p>	
<p>Sizes(mm) Ø100mm to Ø315mm</p>	<p>BS EN1366-2 TEST REFERENCE 107602-1004 BRE CERTIFICATE OF CONSTANCY XXXX-XXX-XXXXX</p>

HEVAC Frame (HF) Installation into masonry or concrete walls and floors Fire (FD-HF) & Fire Smoke dampers (FSD-TD-HF)

1. Preferably, correct sized holes should be cast / built into walls or floors at construction stage. If not cut the correct sized aperture in the concrete wall or floor.
2. To calculate aperture measure overall HEVAC Frame sizes.
Opening size = HEVAC frame size + 50mm → 100mm clearance around perimeter of HEVAC frame as shown;

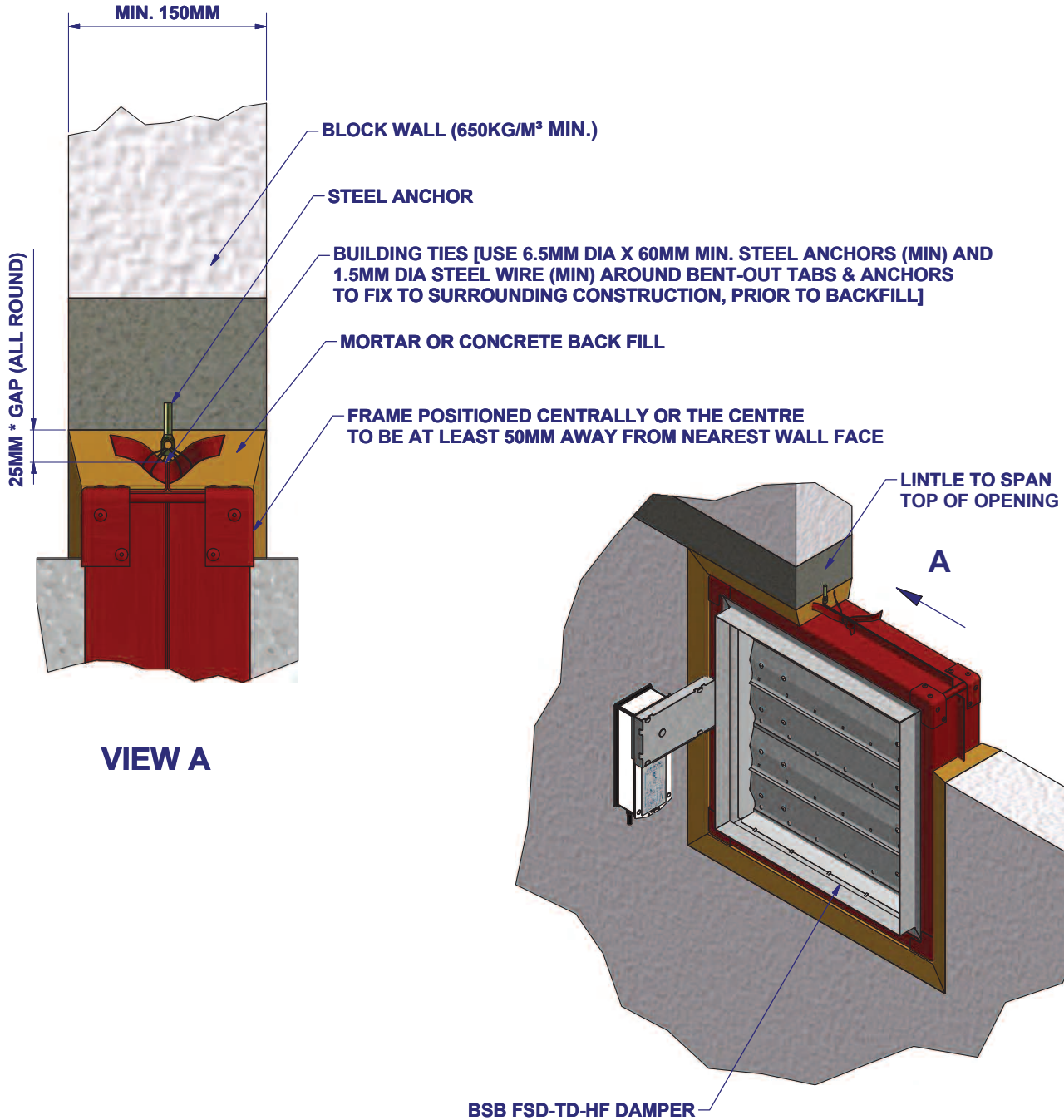


3. The dampers are not load bearing so in walls lintel supports should be used where required.
4. Fit looped fire resisting steel fixings, Ø6.5mm x 60mm (Minimum) inside the opening in corresponding positions to the HEVAC frame builder's ties.
5. Bend out the builder's ties.
6. For wall application place spacer blocks to centralize the damper in the opening.
7. While supporting the damper centrally in the opening, secure the builders ties to the looped wall anchors with 1.5mm galvanized steel wire. (The loops must be tight and a minimum of 3 loops is recommended).
8. Fill the gaps around with 4:1 sand cement mortar mix.
9. Ductwork to be fitted and connected in accordance with DW 144/145;
Break away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without affecting the integrity of the fire damper.
Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium.
10. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.



CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION
 * TOLERANCE FOR GAP BETWEEN DAMPER AND EDGE OF OPENING + 50% (RULE X.45 OF EN 15882-2)

FSD-TD M2-r8

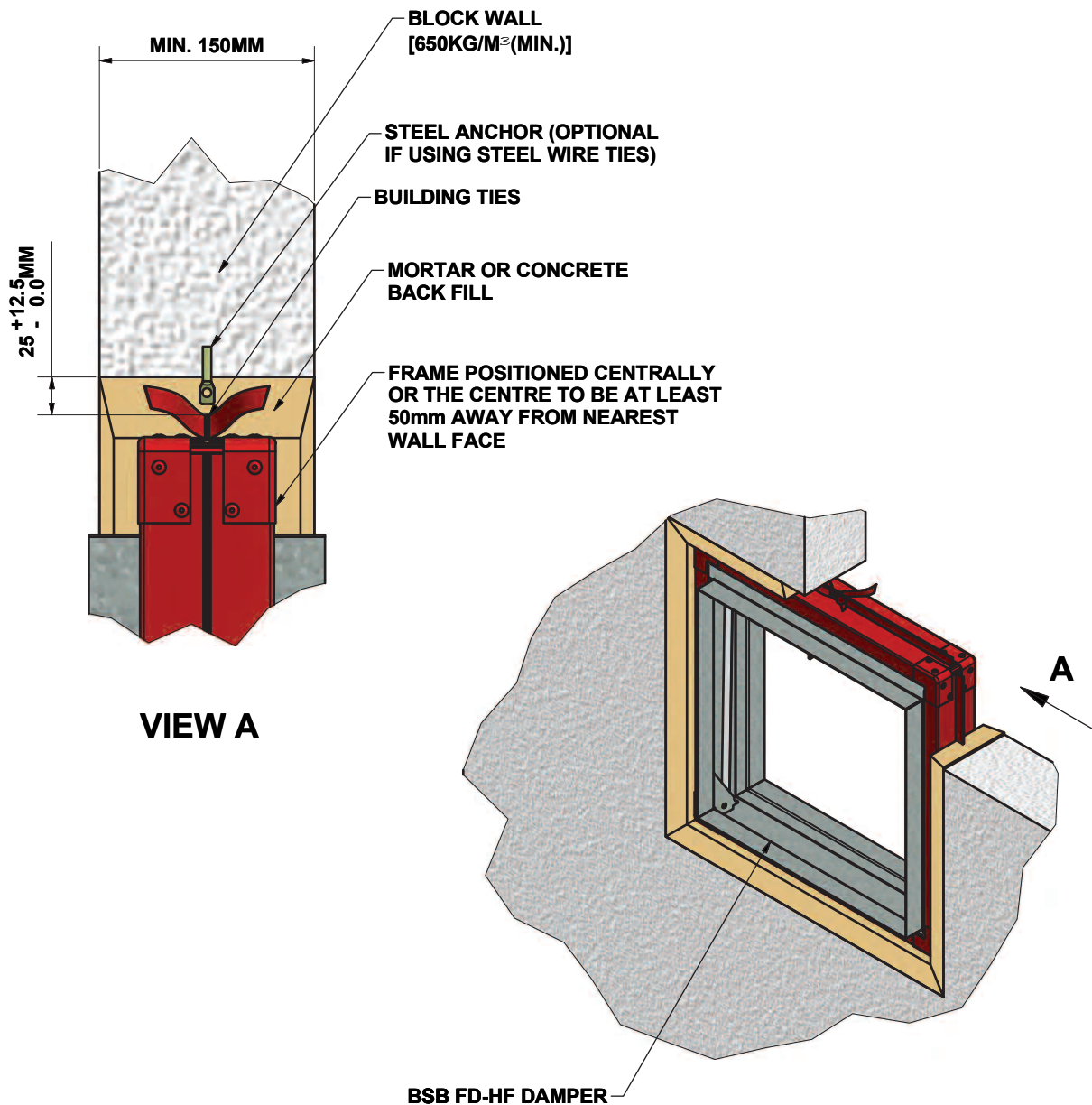


4 HOUR TESTED:
 EN13501-3 LIMITS ES RATING TO A MAXIMUM OF 120 MINUTES.
 HOWEVER, THIS INSTALLATION WAS SUCCESSFULLY TESTED FOR 4 HOURS.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

<p>MASONRY WALL</p>	<p>CE 120 MINUTES FIRE RESISTANCE E 120 (ve i → o) S</p>	
<p>BSB FSD-TD-HF HEVAC FRAME Fitted</p>		
<p>Single section sizes(mm) 100 x 100 to 1000 x 1000</p>	<p>TESTED TO EN1366-2 & CLASSIFIED TO EN13501-3</p>	
<p>ECN: 0176</p>	<p>DATE: 24/07/2019</p>	<p>www.bsb-dampers.co.uk</p>

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR
DETAILED INFORMATION



SECURING OF BUILDING TIES:

EITHER, CUT 150MM LONG X 50MM DEEP POCKETS INTO SURROUNDING CONSTRUCTION, BEND OUT TABS INTO POCKETS AND BACKFILL.

OR, USE 5MM DIA STEEL ANCHORS (MIN) AND 1.5MM DIA STEEL WIRE (MIN) AROUND BENT-OUT TABS & ANCHORS TO FIX TO SURROUNDING CONSTRUCTION, PRIOR TO BACKFILL.

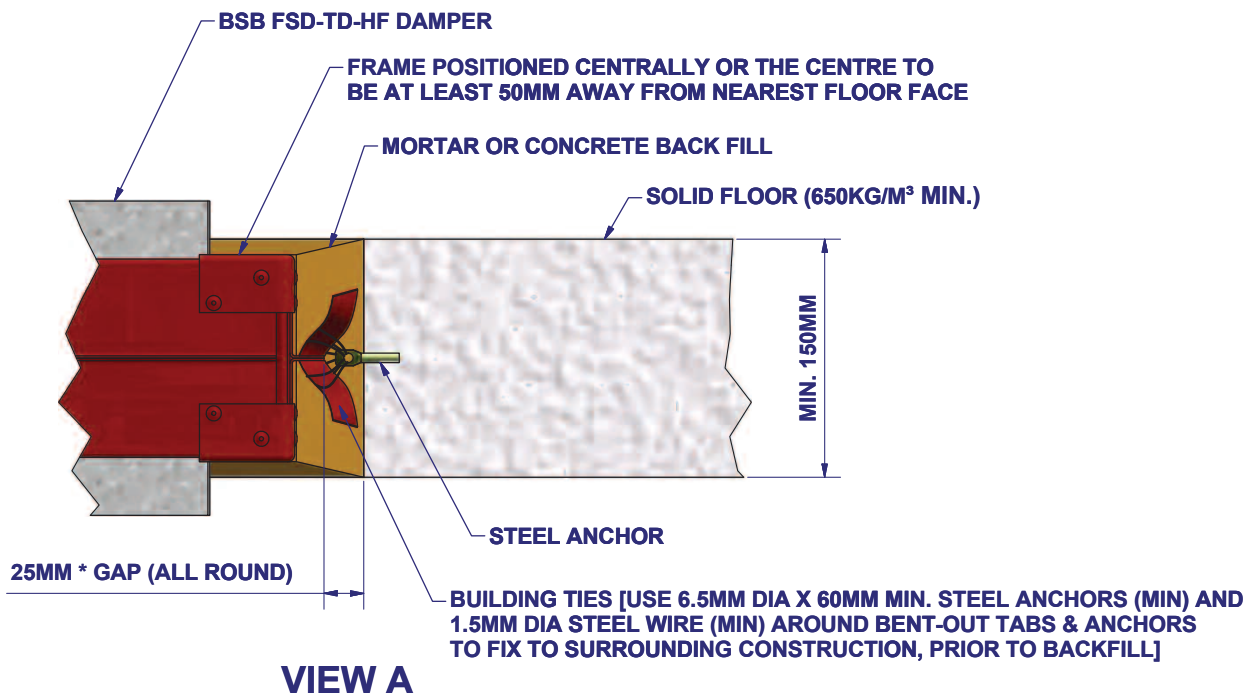
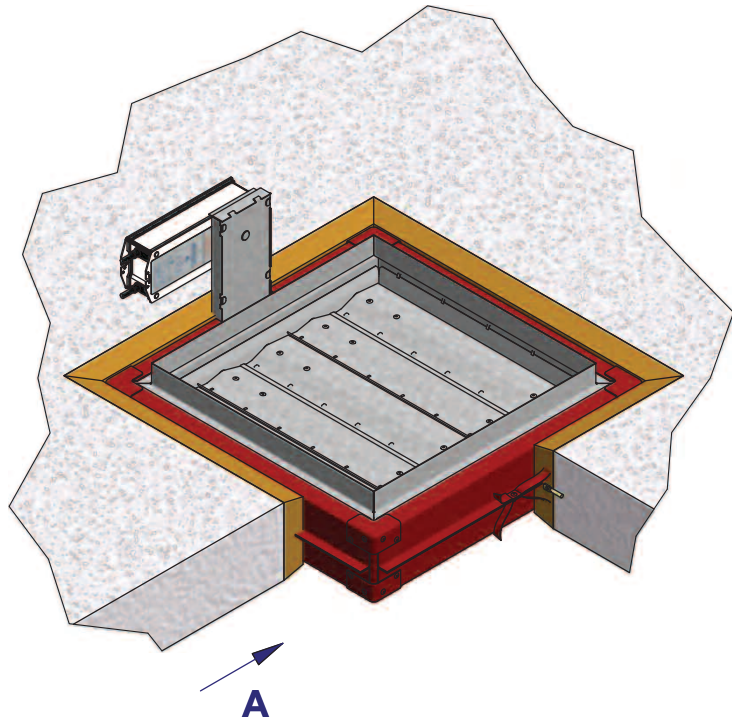
NOTE: THIS INSTALLATION WAS FIRE TESTED FOR 4 HOURS SUCCESSFULLY.

TESTED/ASSESSED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

MASONRY WALL	CE 120 MINUTES FIRE RESISTANCE E 120 (ve ho i ↔ o)
BSB FD-HF HEVAC FRAME Fitted	
Single section sizes(mm) 100 x 100 to 1200 x 1000	BS EN1366-2 TEST REFERENCE: 201633, 285321 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0006

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION
 * TOLERANCE FOR GAP BETWEEN DAMPER AND EDGE OF OPENING + 50% (RULE X.45 OF EN 15882-2)

FSD-TD M1-r8



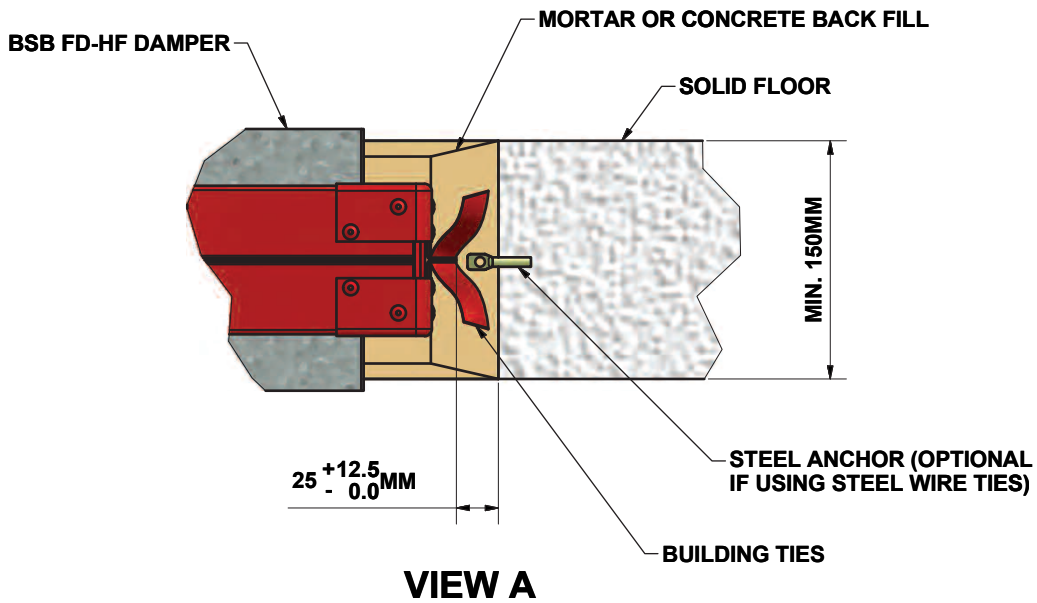
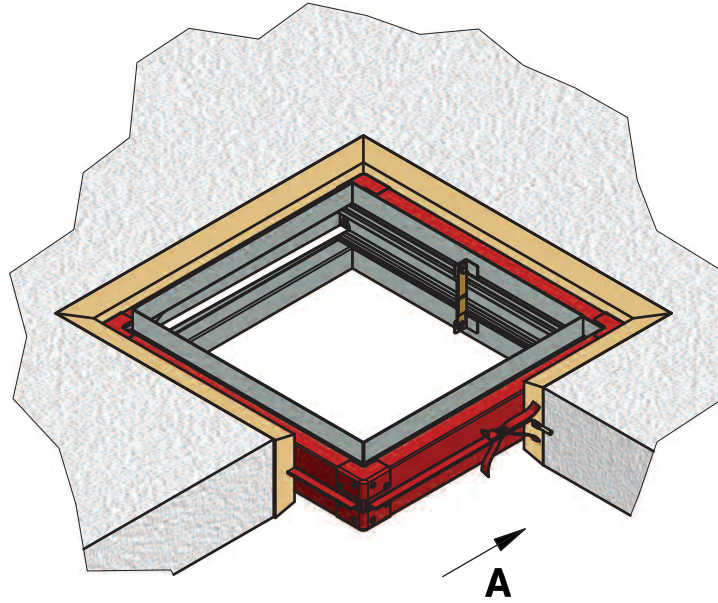
4 HOUR TESTED:
 EN13501-3 LIMITS ES RATING TO A MAXIMUM OF 120 MINUTES.
 HOWEVER, THIS INSTALLATION WAS SUCCESSFULLY TESTED FOR 4 HOURS.

TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

<p>CONCRETE/MASONRY FLOOR</p>	<p>CE 120 MINUTES FIRE RESISTANCE E 120 (ho i → o) S</p>	
<p>BSB FSD-TD-HF HEVAC FRAME Fitted</p>		
<p>Single section sizes(mm) 100 x 100 to 1000 x 1000</p>	<p>TESTED TO EN1366-2 & CLASSIFIED TO EN13501-3</p>	
<p>ECN: 0176</p>	<p>DATE: 24/07/2019</p>	<p>www.bsb-dampers.co.uk</p>

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR
DETAILED INFORMATION

FD M1-r4



SECURING OF BUILDING TIES:

EITHER, CUT 150MM LONG X 50MM DEEP POCKETS INTO SURROUNDING CONSTRUCTION, BEND OUT TABS INTO POCKETS AND BACKFILL.

OR, USE 5MM DIA STEEL ANCHORS (MIN) AND 1.5MM DIA STEEL WIRE (MIN) AROUND BENT-OUT TABS & ANCHORS TO FIX TO SURROUNDING CONSTRUCTION, PRIOR TO BACKFILL.

NOTE: THIS INSTALLATION WAS FIRE TESTED FOR 4 HOURS SUCCESSFULLY.

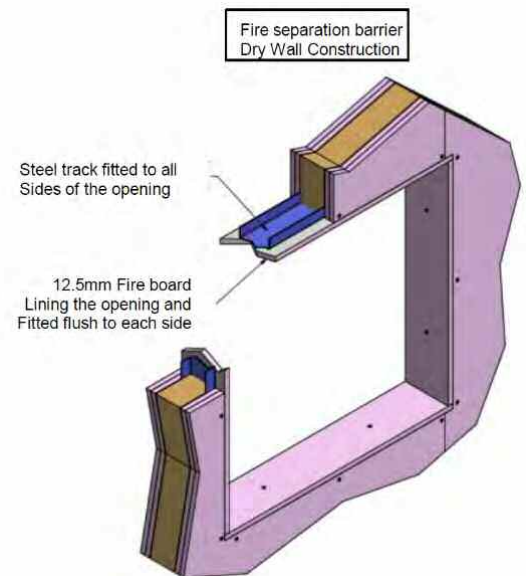
TESTED/ASSESSED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

<p>CONCRETE/MASONRY FLOOR</p>	<p>CE 120 MINUTES FIRE RESISTANCE E 120 (ve ho i → o)</p>
<p>BSB FD-HF HEVAC FRAME Fitted</p>	
<p>Single section sizes(mm) 100 x 100 to 1200 x 1000</p>	<p>BS EN1366-2 TEST REFERENCE: 201814 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0006</p>

www.bsb-dampers.co.uk

Cleated (CL) installation method installation into dry walls. Fire (FD-CL) & Fire Smoke (FSD-CL) dampers with cleats

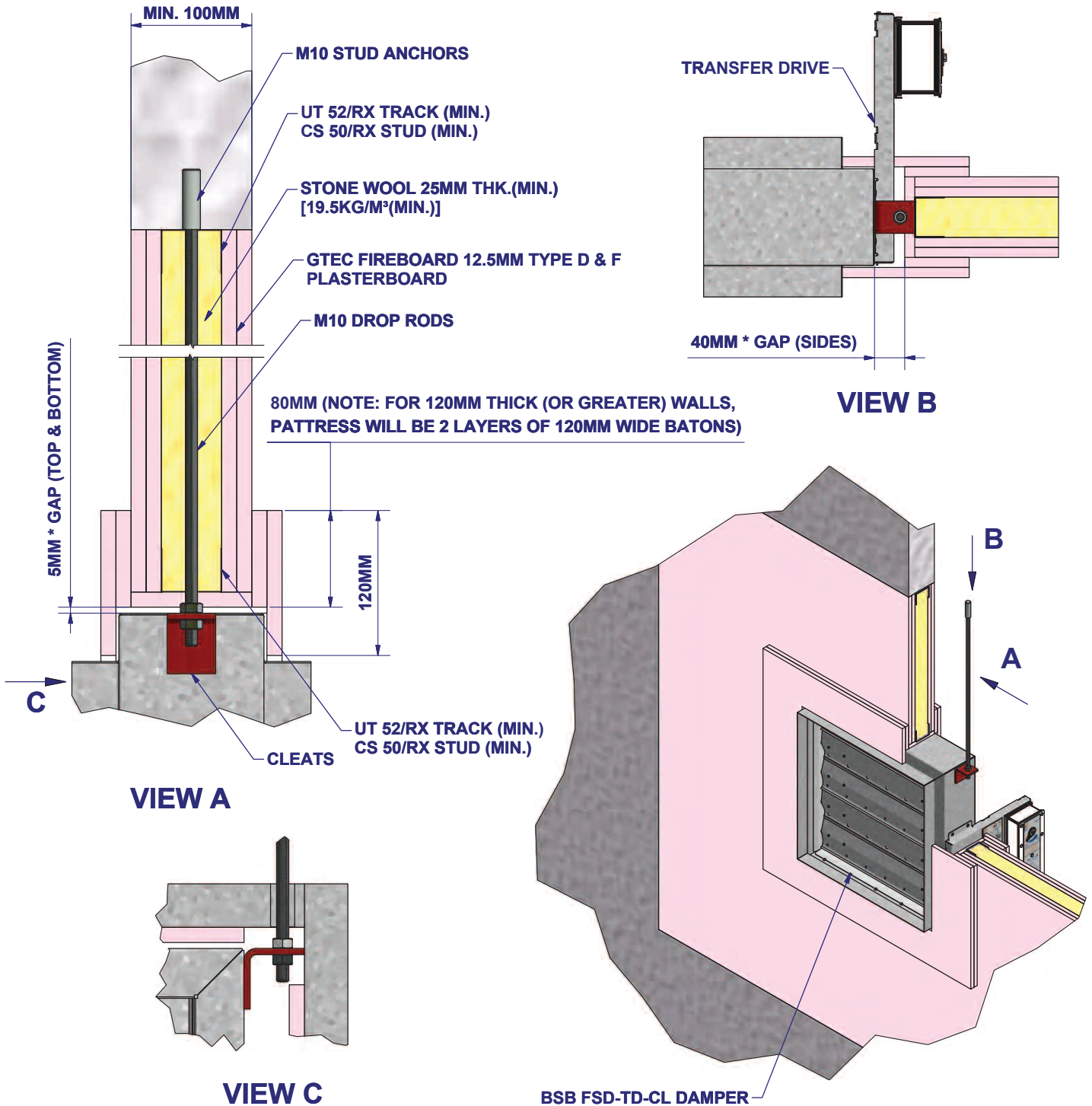
1. Preferably, prepare the opening whilst building the dry wall, or cut out an aperture if drywall already exists.
2. The finished aperture size must be 'lined out'.
3. Ensure drop rods are anchored/fastened into the top supporting structure.
4. Depending on wall thickness it may ease connection of ductwork, if connecting ductwork is attached to damper spigots prior to fabricating the wall.
5. Plasterboard pattress (16-off pieces on the same material as the main wall construction) should be sufficiently wide to butt up to the damper spigots/duct and overlap the outer edge of the track lining the opening by at least 10mm, and long enough to form neat corners.
6. Two layers of pattress are required each side of the wall. Corners should be staggered to form overlaps, between the first and second layers.
7. Apply intumescent sealant to the pattress parts and fit snugly up against the damper spigot.
8. It is not a necessity to fill the void between the pattresses, but it can be done for insulation purposes if desired.
9. It's **important** to ensure the drywall screws 'pick up' the tracking, lining the aperture to not to compromise fire integrity of the installation.
10. Ductwork to be fitted and connected in accordance with DW 144/145; Break away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without affecting the integrity of the fire damper. Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium, plastic etc.
11. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.



INSTALLATION METHOD

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION
 * TOLERANCE FOR GAP BETWEEN DAMPER AND EDGE OF OPENING + 50% (RULE X.45 OF EN 15882-2)

FSD-TD M6-r8

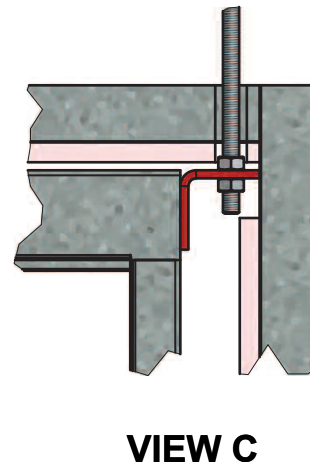
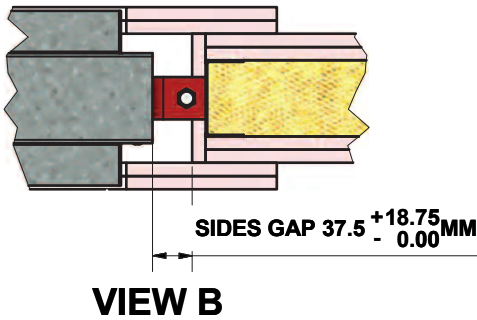
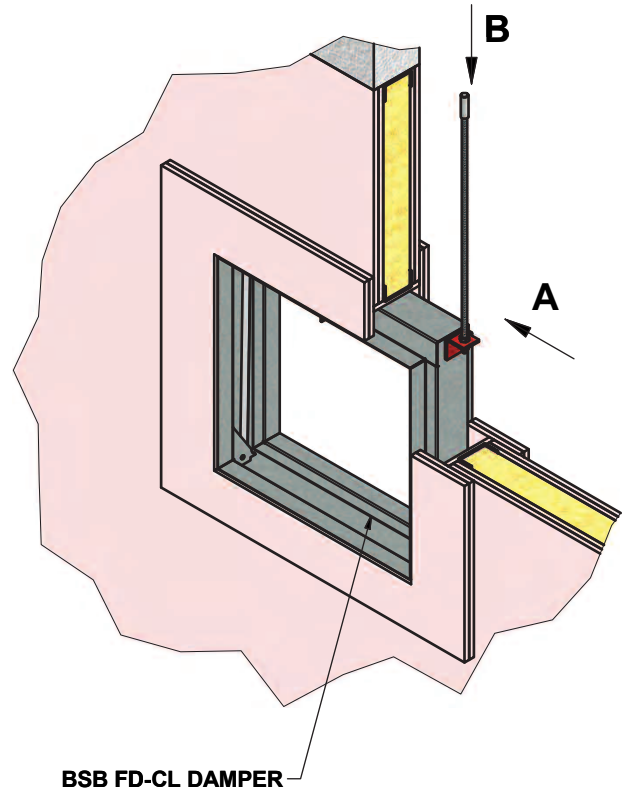
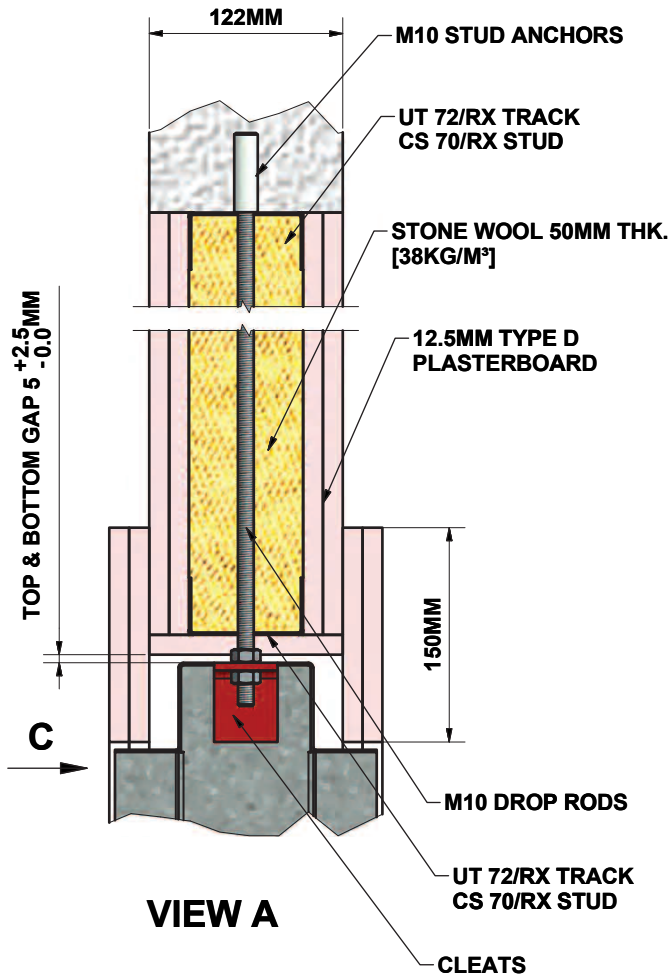


TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

<p>DRY WALL</p> <p>BSB FSD-TD-CL</p> <p>CLEATS Fitted</p>		<p>CE 120 MINUTES FIRE RESISTANCE</p> <p>E 120 (ve i → o) S</p>
<p>Single section sizes(mm)</p> <p>100 x 100 to 1000 x 1000</p>		
<p>ECN: 0176</p> <p>DATE: 24/07/2019</p>		<p>TESTED TO EN1366-2 & CLASSIFIED TO EN13501-3</p> <p>www.bsb-dampers.co.uk</p>

CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY.
PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR
DETAILED INFORMATION

FD M6-r5



CLEATS:
THE INSTALLATION SHOWN REFERS TO A PATRESS INSTALLATION METHOD WITH CLEATS FITTED AS AN ACCESSORY.

TESTED/ASSESSED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS, MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

DRY WALL	CE 120 MINUTES FIRE RESISTANCE E 120 (ve i → o)
BSB FD-CL	
Single section sizes(mm) 100 x 100 to 1200 x 1000	BS EN1366-2 TEST REFERENCE: 285320 BRE CERTIFICATE OF CONSTANCY 0832-CPR-P0006

BATT Frame installation method installation into masonry walls Fire Smoke dampers (FSD-TD-BF) dampers with BATT frame.

1. The opening perimeter needs to be doubly framed with angled steel (50x50x2mm) 40mm apart.
2. Extra steel angle support struts to be added if the gap between the damper and surrounding structure is over 600mm wide.
3. Ensure that M10 drop rods are correctly positioned between the steel angles and that they are securely anchored/fastened in the structure.
4. Fit the damper to the drop rods via the cleat lugs and secure at the required height.
5. Ensure that the cleat lugs at the bottom of the damper are engaged and fastened to the drop rods. (Top and bottom rods do not need to be one piece.) Bottom drop rods are secured in angled steel (50x50x2mm, 50mm long), fastened to the bottom frame via Tek screws or similar fixings.
6. Fix the ablative BATT to the steel angle (50x50x2) from both sides of the structure as per manufacturer's instructions.
7. Fit ductwork to damper spigots prior to fitting 150mm wide strips of fire batt to form a pattress, both sides around the damper.
8. Ductwork to be fitted and connected in accordance with DW 144/145; Break away duct joint connecting a fire damper spigot or sleeve to the attached ductwork which will allow collapse of the ductwork during a fire without disturbing the integrity of the fire damper. Breakaway and flexible joints incorporate materials, fixings, clamps etc. that are manufactured from a non – fire resistant material with a low melting point such as aluminium, plastic etc.
9. If connecting to fire resisting ductwork, use the fire tested fixings associated with the fire resisting ductwork system being used.

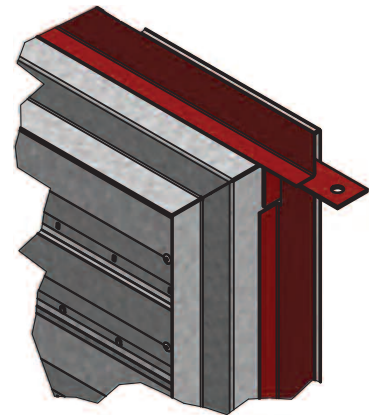
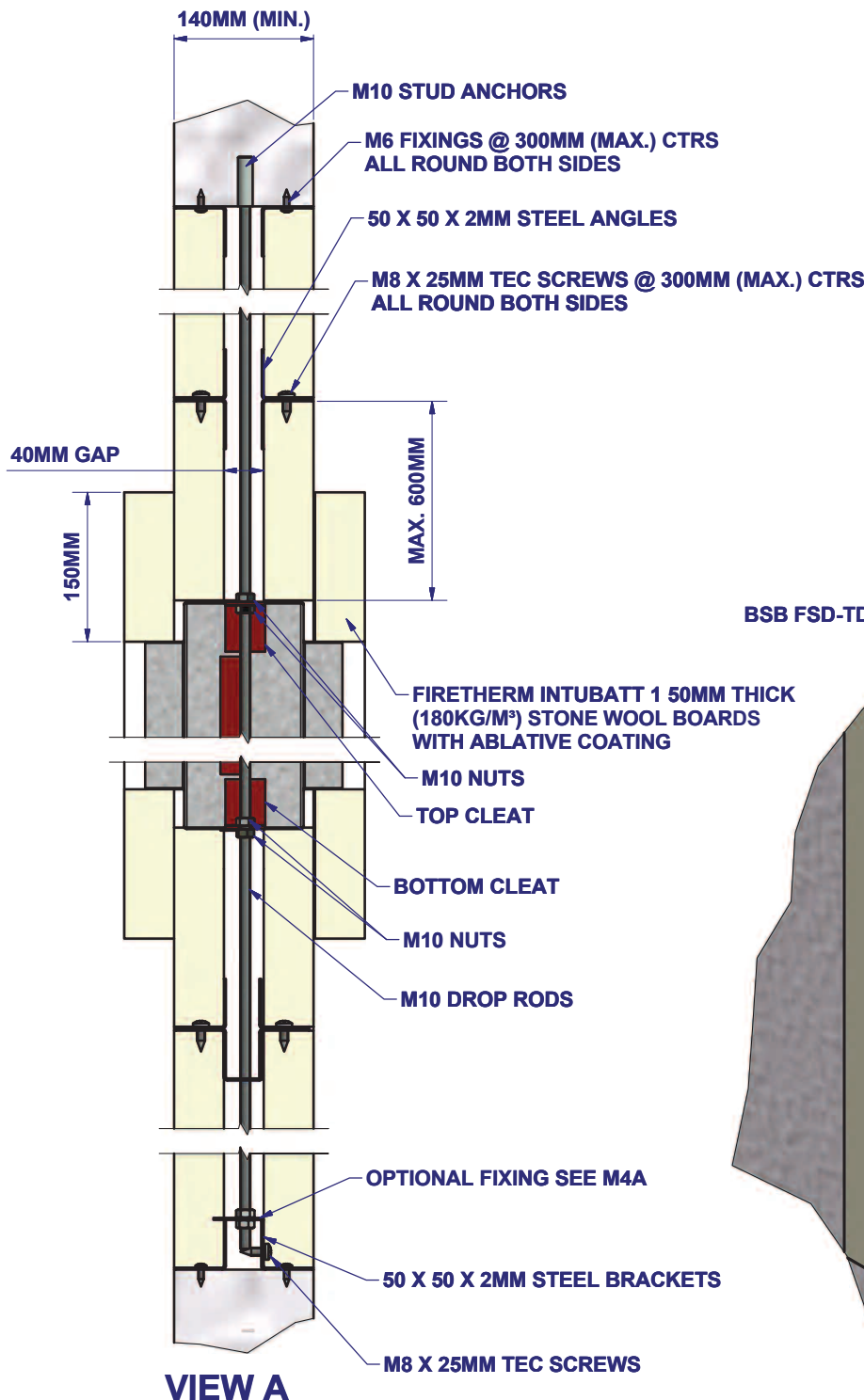


INSTALLATION METHOD

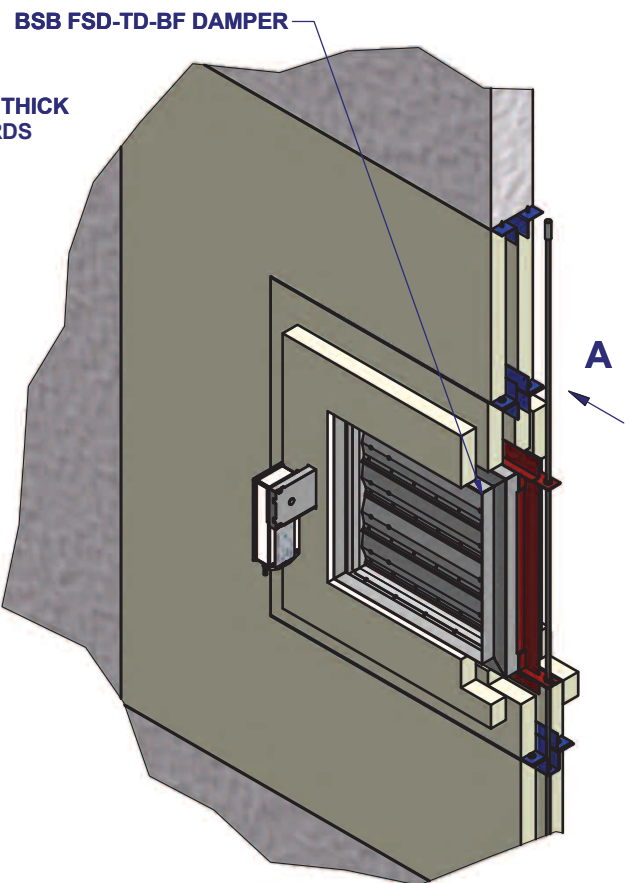


CONNECTING DUCTWORK HAS BEEN OMITTED FOR CLARITY. USE BREAK-AWAY JOINTS (ALUMINIUM RIVETS). PLEASE REFER TO INSTALLATION, OPERATING AND MAINTENANCE DOCUMENT FOR DETAILED INFORMATION

FSD-TD M4B-r8



BSB FSD-TD-BF DAMPER



TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING. THEY WILL NEED TO REFER TO THIS DOCUMENT AND ASSOCIATED FIRE TESTS / DOCUMENTS CONTAINED HEREIN IN ORDER TO CONSIDER APPROVAL.

MASONRY WALL - INFILL ABOVE 600MM

BSB FSD-TD-BF
BATT FRAME Fitted

Single section sizes(mm)
100 x 100 to 1000 x 1000



120 MINUTES FIRE RESISTANCE
E 120 (ve i → o) S

TESTED TO EN1366-2 & CLASSIFIED TO EN13501-3

ECN: 0176

DATE: 24/07/2019

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Additional actuator general information.

Please refer to comprehensive IO&M's on BSB website;

http://bsb-dampers.co/Home/installation_methods/installation.aspx

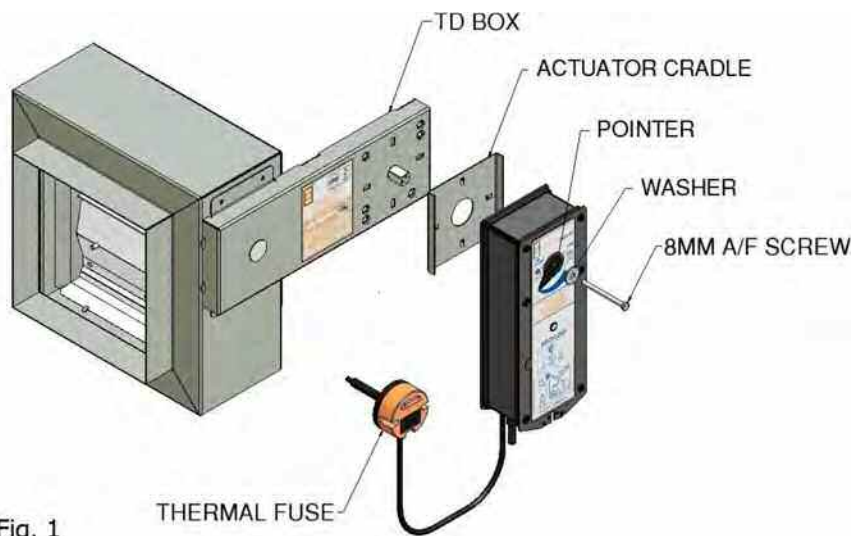


Fig. 1

Instructions for Fitting the FSD-TD actuator (fail-safe closed)

Actuators are normally factory fitted, but optionally may be assembled on site. When fitting the actuator for the first time, check the actuator voltage is correct and the required motor spring-return travel direction is known. Refer to the actuator label for spring/drive directions.

Ensure actuator is in 'spring closed' position by inserting crank handle (provided) as shown on label and 'unlocking' the mechanism. Then, manually wind and lock the actuator with the crank handle, 1.5 turns only to relieve the pre-set tension. Damper must be in closed position

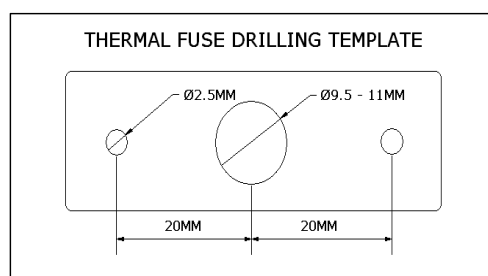
Fit actuator cradle in desired orientation and then slide actuator into position. Fit indication pointer, large washer and 8mm A/F screw (all provided) and tighten to 5Nm max torque

Instructions for fitting Thermal Fuse (TF)

Fix self-adhesive TF template (supplied) onto the duct and mark the holes with a marker. This should typically be above the actuator. For round ducts, the three drilled holes must be in-line with the duct axis. (For ductless installations, a TF bracket is available from BSB and can be fixed to the damper casing).

Drill holes in duct (sizes/positions are detailed on template label)

Remove burrs. Fit the TF to the duct with the two screws provided using Philips N°2 screwdriver / bit.



Actuators.

PM24-TF, PMC24-TF, PM230-TF & PMC230-TF Electrical connections

Spring return – fail safe close actuators

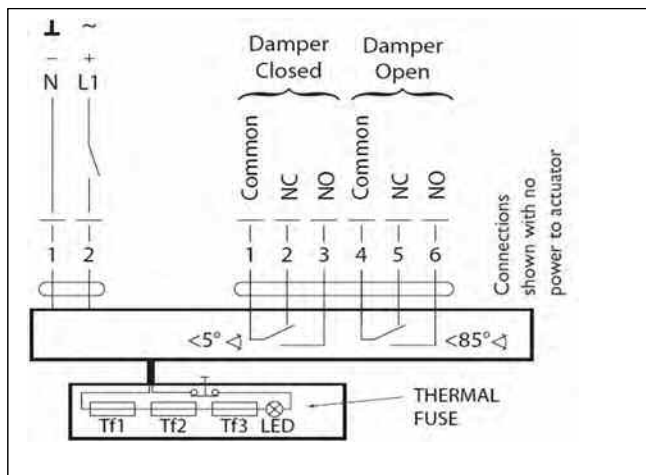
Wiring diagram shows switch positions based on no power to actuator

Damper normally open, spring closes on removal of power, or thermal fuse activates due to temperature in excess of 72°C.

Only 3 core cables are required on site for full indication.

24V AC/DC: Connect via safety isolation transformer.

230V A/C: For disconnection from the power supply, a separate device must be incorporated in the fixed wiring (at least 3mm contact gap in all poles).



For damper closed indication use terminals 1 & 2.

For damper open indication use terminals 4 & 6.

Terminals 1 & 4 can be linked where required as an option. Unused cores should be isolated.

Connecting cables need to be protected from sharp edges.

Commissioning

The damper cannot be commissioned unless it is fully installed and connected to mains power in compliance with regulations.

Dampers controlled by programmable panels need to be commissioned by a commissioning engineer.

Electro-mechanically operated dampers can be tested/commissioned by a locally appointed, competent person.

The installation needs to be inspected thoroughly, before the damper actuation is tested.

Installation Inspection and hand over check list;

Having established that all parties must be made aware of the intended final inspection and certification regime, the final inspection must be checked for compliance by the nominated CDM (construction Design & Management Regulations) coordinator or the system designer. The completed installation forms part of the building's life support strategy and nothing should be left to chance with every aspect of the installation being checked against the system designers project specific certified drawings, and damper manufacturers tested, and CE marked installation methods. All final inspections must be documented in a register that must be retained by both the system designer and the installation contractor.

DAMPER REFERENCE NO.:		DAMPER LOCATION:	
DAMPER SIZE:		✓	
WIDTH	HEIGHT		
WALL/FLOOR APERTURE SIZE ('OPENING SIZE')		✓	
WIDTH	HEIGHT		
DAMPER INSTALLED BY:			
<small>(Print name)</small>			
Signature:	Company:	Date:	
ACTUATOR ELECTRICALLY CONNECTED BY:			
.....			
<small>(print name)</small>			
Signature:	Company:	Date:	
THERMAL FUSE FITTED BY:			
<small>(Print name)</small>			
Signature:	Company:	Date:	
FINAL INSPECTION BY:			
<small>(Print name)</small>			
Signature:	Company:	Date:	

ASFP grey book - Fire & Fire Smoke resisting dampers;

Fire/smoke resisting dampers are used to prevent fire and smoke from passing from one compartment to another through Heating, Ventilation and Air Conditioning (HVAC) systems. It is important that such dampers are adequately fire tested and are installed in accordance with the damper manufacturer's instruction which must consider site conditions and the variable order of different trades from contract to contract. The 'Grey Book' document provides practical advice so that damper manufacturers, system designers and installers can consider the appropriate issues and at the design stage, to make the necessary decisions to ensure that dampers will function as intended by current regulations.

CDM regulations;

The Construction (Design and Management) Regulations 2015 (CDM 2015) came into force on 6 April 2015, replacing CDM 2007. The publication provides guidance on the legal requirements for CDM 2015 and is available to help anyone with duties under the Regulations. It describes:

- the law that applies to the whole construction process on all construction projects, from concept to completion
- what each duty holder must or should do to comply with the law to ensure projects are carried out in a way that secures health and safety.

DW145 – Guide to good practice for the installation of fire and smoke dampers

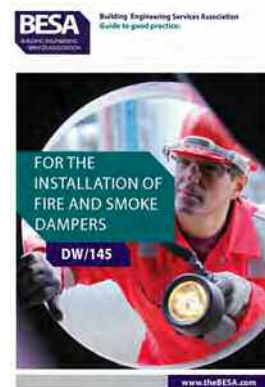
Highlighting the basic principles in the design and installation process, this guide also identifies the responsibilities of designers, builders, manufacturers, local authorities, mechanical services, ductwork and other specialist contractors. It identifies, clearly and concisely, the matters that must be addressed when fire and/or smoke dampers are to be installed within a building's ventilation ductwork system.

DW144 – Specification for sheet metal ductwork

DW/144 is the Standard Specification for ductwork manufacture and installation and is aligned to all current BS, BS EN ISO and other standards and regulations. It defines specifications for sheet metal ductwork for low, medium and high pressure/velocity air systems and covers ductwork application, materials, classification and air leakage.



clear reference tables.



1 Safety

1.1 General safety notes

Sharp edges, sharp corners and thin sheet metal parts

 **CAUTION!**

Danger of injury from sharp edges, sharp corners and thin sheet metal parts!

Sharp edges, sharp corners and thin sheet metal parts may cause cuts or grazes.

- Be careful when carrying out any work.
- Wear protective gloves, safety shoes and a hard hat.

Electrical voltage

 **DANGER!**

Danger of electric shock! Do not touch any live components! Electrical equipment carries a dangerous electrical voltage.

- Only skilled qualified electricians are allowed to work on the electrical system.
- Switch off the power supply before working on any electrical equipment.

1.2 Correct use

- The fire damper is used as an automatic shut-off device to prevent fire and smoke from spreading through ducting.
- The fire damper is suitable for supply and extract air in HVAC systems.
- Operation of the fire dampers is allowed only in compliance with installation regulations and the technical data in this installation and operating manual.
- Modifying the fire damper or using replacement parts that have not been approved by TROX is not permitted.

Additional provision:

For use

- in extract air systems in commercial kitchens
- as an air transfer damper,

the following regulations must be observed.

Incorrect use

 **WARNING!**

Danger due to incorrect use!

Incorrect use of the fire damper can lead to dangerous situations.

Never use the fire damper

- in areas with potentially explosive atmospheres
- as a smoke control damper
- outdoors without sufficient protection against the effects of weather
- in atmospheres where chemical reactions, whether planned or unplanned, may cause damage to the fire damper or lead to corrosion

1.3 Qualified staff

 **WARNING!**

Danger of injury due to insufficiently qualified individuals!

Incorrect use may cause considerable injury or damage to property.

- Only specialist personnel must carry out work.

Personnel:

- Skilled qualified electrician
- Specialist personnel

Skilled qualified electrician

Skilled qualified electricians are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to work on electrical systems, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

Specialist personnel

Specialist personnel are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to carry out their assigned duties, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

8 Functional test

General

During operation at normal temperatures, the damper blade is open. A functional test involves closing the damper blade and opening it again.

CAUTION!

Danger of injury when reaching into the fire damper while the damper blade is moving. Do not reach into the fire damper while actuating the release mechanism.

8.1 Fire damper with fusible link

8.1.1 Fusible link – size 1

Damper blade position indicator

The position of the damper blade (1.2) is indicated by the position of the handle (1.6).

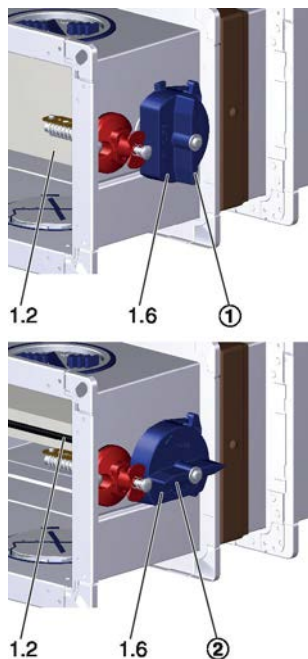


Fig. 88: Damper blade position indicator

1. ▶ Damper blade (1.2) is closed
2. ▶ Damper blade (1.2) is open

Close the fire damper

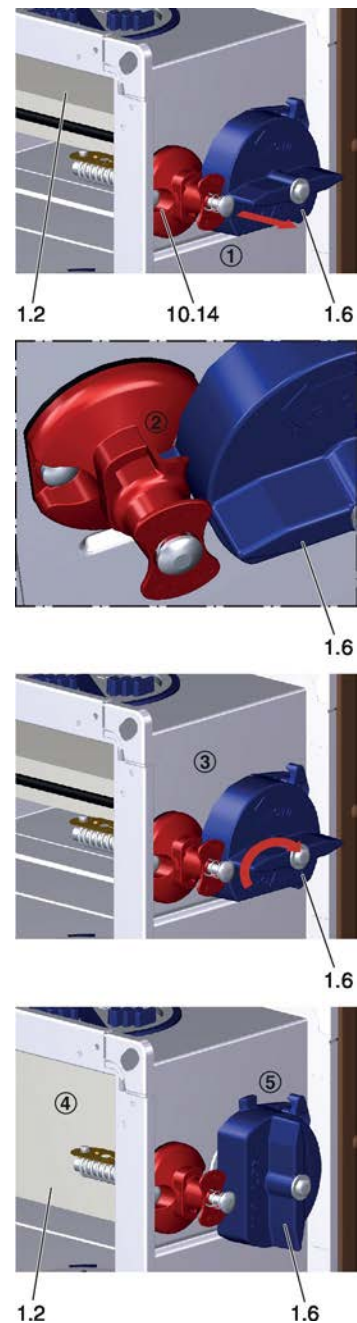


Fig. 89: Close the fire damper

Requirement

- The damper blade is open.
1. ▶ Pull the knob of the thermal release mechanism (10.14) forwards in the direction of the arrow to release
 2. ▶ the handle (1.6).
 3. ▶ The handle (1.6) swivels automatically in the direction of the arrow.
 4. ▶ The damper blade (1.2) is closed and
 5. ▶ the handle (1.6) shows that the damper blade (1.2) is closed.

Opening the damper blade

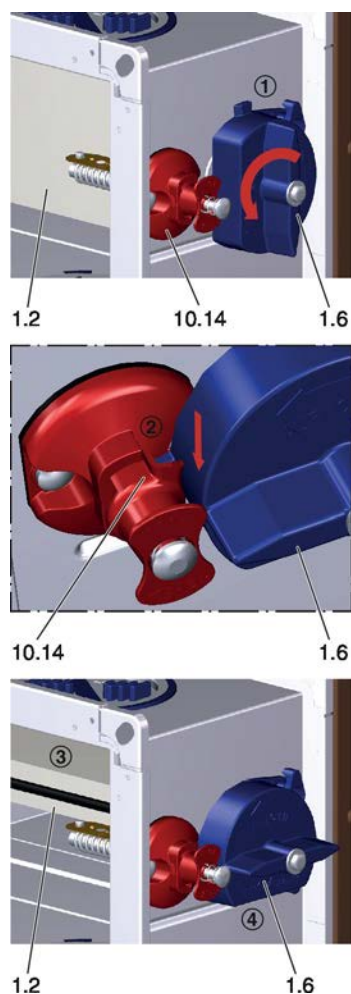


Fig. 90: Opening the damper blade

Requirement

- The damper blade is closed.
1. ▶ Turn the handle (1.6) in the direction of the arrow (counter-clockwise) until
 2. ▶ the handle (1.6) engages behind the knob of the thermal release mechanism (10.14).
 3. ▶ The damper blade (1.2) is open and
 4. ▶ the handle (1.6) indicates that the damper blade (1.2) is open.

8.1.2 Fusible link – size 2 and 3

Damper blade position indicator

The position of the damper blade (1.2) is indicated by the red arrow on the cover of the handle (1.6).

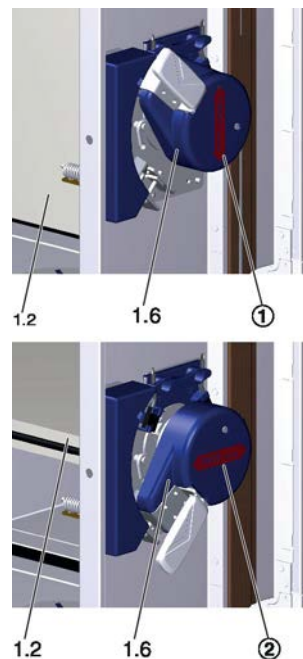
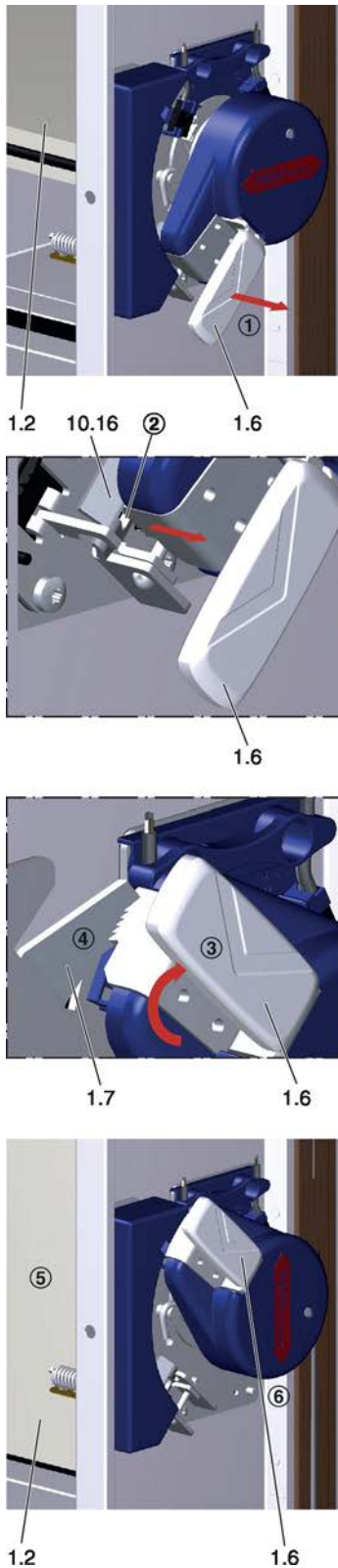


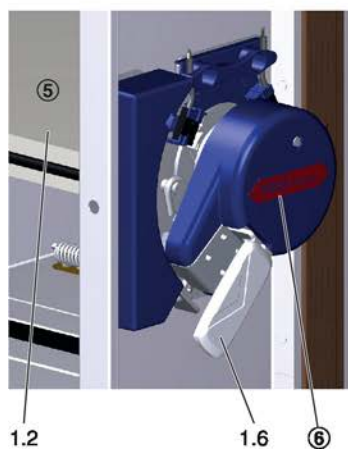
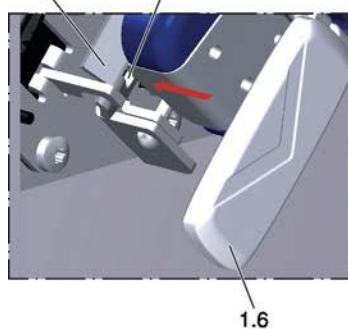
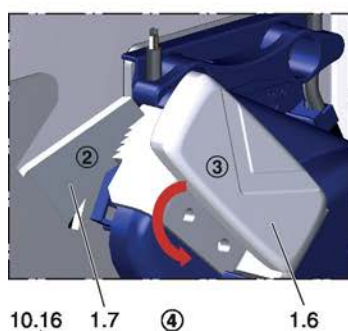
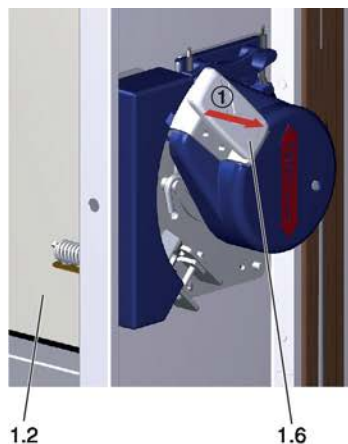
Fig. 91: Damper blade position indicator

1. ▶ Damper blade (1.2) is closed.
2. ▶ Damper blade (1.2) is open.

Close the fire damper*Fig. 92: Close the fire damper***Requirement**

- The damper blade is open.
1. ▶ Lift the handle (1.6) in the direction of the arrow so that
 2. ▶ handle (1.6) no longer protrudes into the opening of the fusible link holder rocker (10.16).
 3. ▶ The handle (1.6) swivels automatically in the direction of the arrow (clockwise)
 4. ▶ and clicks into the CLOSED position on the interlock (1.7).
 5. ▶ The damper blade (1.2) is closed and
 6. ▶ the red arrow on the cover of the handle (1.6) indicates that the damper blade (1.2) is closed.

Opening the damper blade



Requirement

- The damper blade is closed.
1. ▶ Lift the handle (1.6) in the direction of the arrow until
 2. ▶ the handle (1.6) is no longer engaged in the interlock (1.7).
 3. ▶ Do not lift the handle (1.6) anymore and turn in the direction of the arrow (counter-clockwise).
 4. ▶ The handle (1.6) clicks into the OPEN position in the opening of the fusible link holder rocker (10.16).
 5. ▶ The damper blade (1.2) is open and
 6. ▶ the red arrow on the cover of the handle (1.6) indicates that the damper blade (1.2) is open.

Fig. 93: Opening the damper blade

8.2 Fire damper with spring return actuator

8.2.1 Spring return actuator – BFL... / BFN...

Status indicator



Fig. 94: Thermoelectric release mechanism BAT

- 1 Push button for functional test
- 2 Indicator light

The indicator light (2) for the thermoelectric release mechanism is illuminated when all of the following conditions apply:

- Power is being supplied.
- The thermal fuses are intact.
- The push button is not being pushed.

Damper blade position indicator

The position of the damper blade is indicated by the pointer on the actuator.

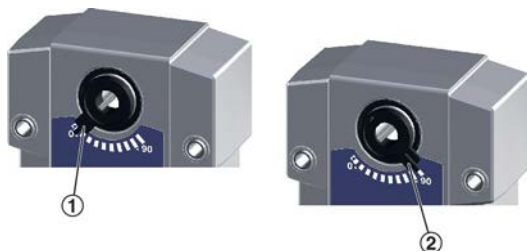


Fig. 95: Damper blade position indicator

- 1 Damper blade is closed
- 2 Damper blade is open

Closing/opening the damper blade with spring return actuator



Fig. 96: Functional test (FKA2-EU with BFN actuator shown in OPEN position)

⚠ CAUTION!

Danger of injury when reaching into the fire damper while the damper blade is moving. Do not reach into the fire damper while actuating the release mechanism.

Requirement

- Power is being supplied
1. ▶ Push the push button (1) and keep it pushed.
 - ⇒ This interrupts the power supply, and the damper blade closes.
 2. ▶ Check if the damper blade is CLOSED, check running time.
 3. ▶ Release the push button (1).
 - ⇒ Power is supplied again, and the damper blade opens.
 4. ▶ Check if the damper blade is OPEN, check running time.

Opening the damper blade using the crank handle



Fig. 97: Functional test (without power supply)


⚠ DANGER!

Danger due to malfunction of the fire damper.

If the damper blade has been opened by means of the crank handle (without power supply), it will no longer be triggered by a temperature increase, i.e. in the event of a fire. In other words, the damper blade will not close.

To re-establish its function, connect the power supply.

Requirement

- The damper blade is CLOSED
- 1. ▶ Insert the crank handle (1) into the opening for the spring winding mechanism.
- 2. ▶ Turn the crank handle in the direction of the arrow (2) to just short of the travel stop and hold it.
- 3. ▶ Set the interlock (3) to "Lock  closed"
 - ⇒ The damper blade remains in the OPEN position.
- 4. ▶ Remove the crank handle.

Close the fire damper




Fig. 98: Functional test (without power supply)

⚠ CAUTION!

Danger of injury when reaching into the fire damper while the damper blade is moving. Do not reach into the fire damper while actuating the release mechanism.

Requirement

- The damper blade is OPEN
 - ▶ Set the interlock (3) to "Lock  opened"
 - ⇒ The damper blade is released and closes.