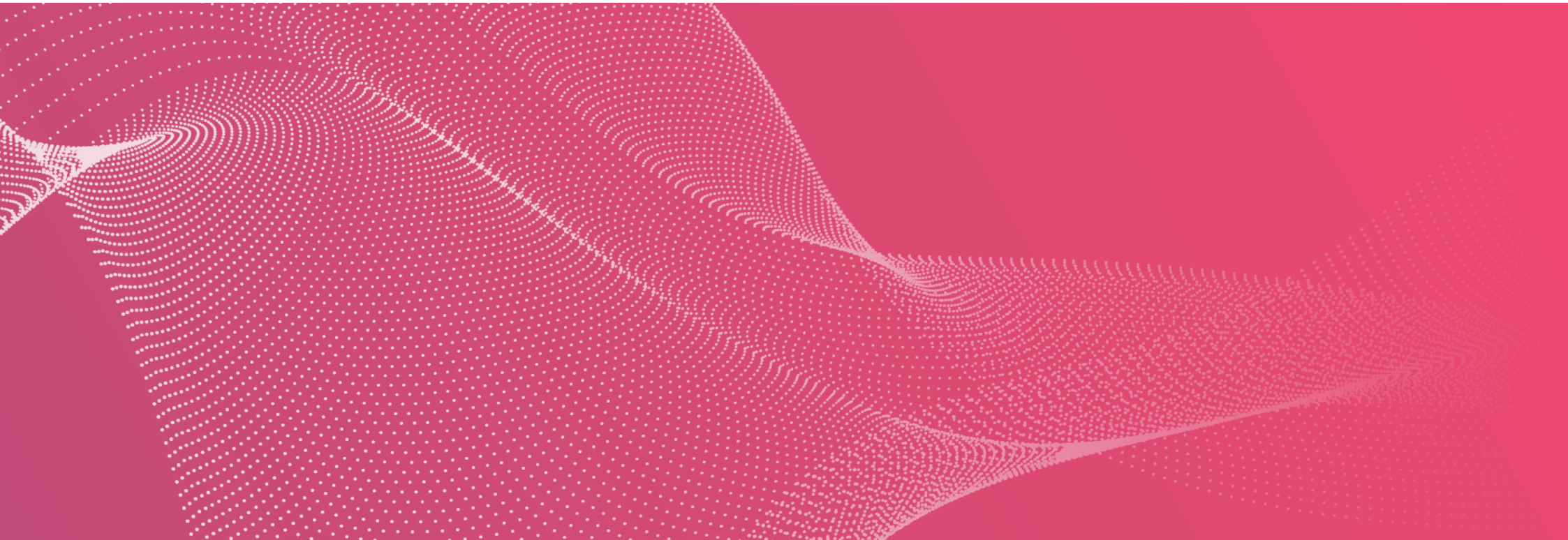
INSTALLATION, OPERATION AND MAINTENANCE

2530
Motorised Fire Damper



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Introduction

Advanced Air (UK) Ltd have been manufacturing a comprehensive range of fire dampers and motorised fire dampers since 1975. We have always taken pride in our products and tested to the highest standards, originally to BS476 and now more stringent testing to CE labelling under the Construction Product Regulation which was introduced 1st July 2013.

All our fire, motorised fire and smoke control dampers have been tested to BS EN 1366-2 and BS EN 1366-10. This is to cover a variety of installations used on sites today. Under CE labelling all dampers must follow the Product Standards BS EN 15650 and BS EN 12101-8 which ensures the product is consistent and supplied to the same specification and standard as tested. Any deviation or changes from the installations in this manual would require the dampers to be subject to a new test or approval sought from Local Building Control.

In line with product standards we are pleased to offer this installation manual covering installation, operation and maintenance instructions together with Health and Safety information. We have also included within this manual an example of the Fire Damper Checklist DW145 Inspection and Handover Check Sheet which is to be completed by the installer. A separate certificate is required per damper.

The installations contained in this manual cover most installations on site. However, there are still installations which Advanced Air (UK) Ltd have not yet tested. We are continually reviewing requirements and continuously developing the products. As additional installation tests are carried out and classified, installations will be added to this manual, and the Declaration of Performance (DoP) updated accordingly.

Health and Safety

Any instruction contained within this manual must be undertaken by competent trained personnel. When completing the installation standard PPE should be used, steel toe cap boots, hard hat, gloves, protective eyewear along with any other specific site or material instructions.

The size and weight of dampers vary, and it may require two or more persons to safely handle and move them. Do not lift the dampers by the blades or the actuator.

For the installation of dampers at high level, the correct lifting equipment shall be used in accordance with the Work at Height Regulations 2005 and specific site rules.

All waste materials should be collected and disposed of defined by the suppliers.

Specification and Ordering

This document is intended to provide technical information only – for specification and ordering advice, please contact our Sales Team on 01842 765 657.

Quick reference summary of installs

2530 Series with AFS

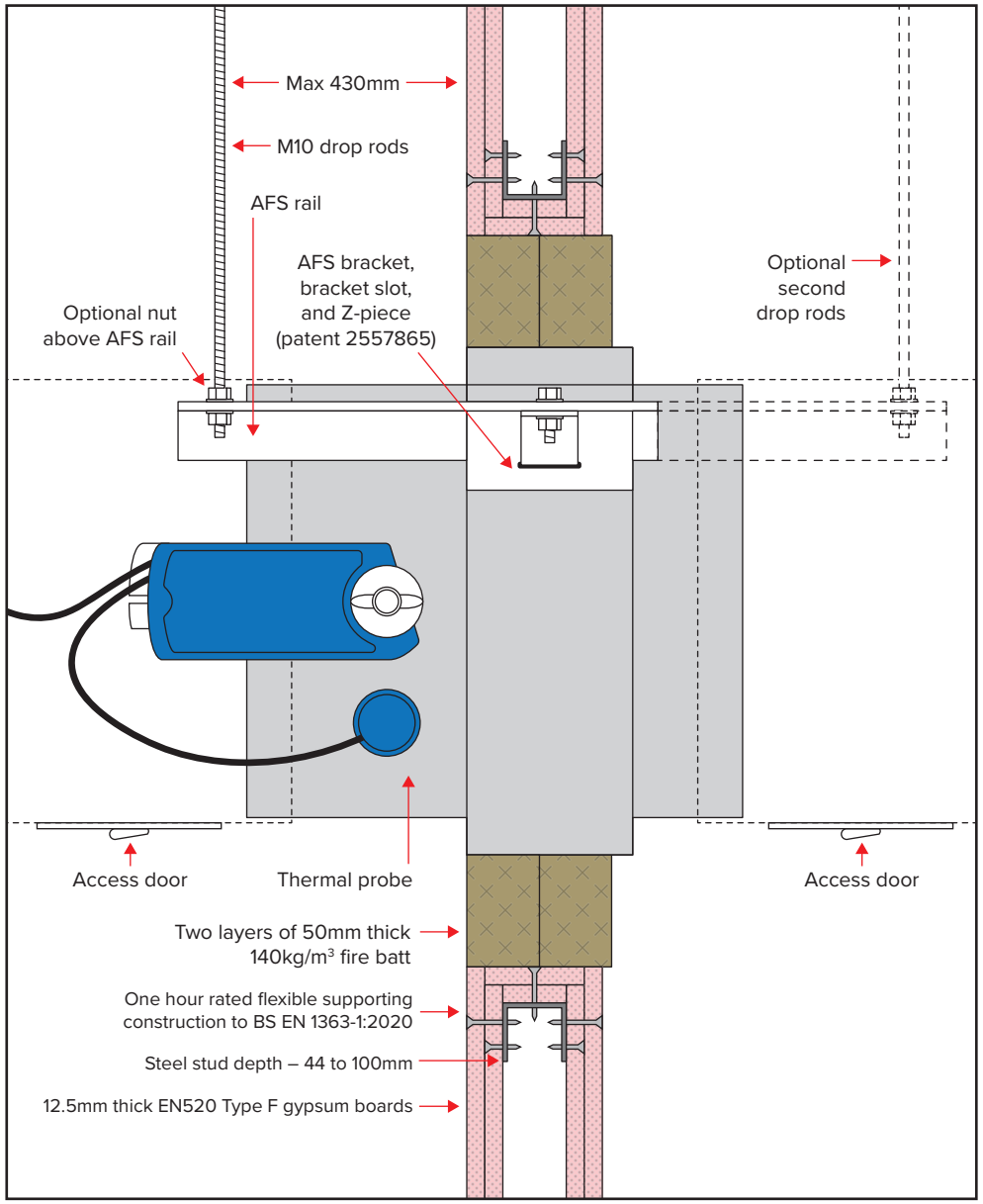
Wall type	Duration (mins)	Wall thickness
Rigid construction (blockwork / concrete / masonry walls)	120	Minimum 122mm (minimum 150mm if multi-section)
	90	**NO** test data available
	60	Minimum 94mm
	30	**NO** test data available
Flexible construction (Plasterboard walls)	120	Minimum 122mm (minimum 150mm if multi-section)
	90	**NO** test data available
	60	Minimum 94mm
	30	**NO** test data available
Rigid construction (Concrete floors)	120	Minimum 150mm
	90	**NO** test data available

2530 Series with HEVAC

Wall type	Duration (mins)	Wall thickness
Rigid construction (blockwork / concrete / masonry walls)	120	Minimum 150mm
	90	**NO** test data available
	60	**NO** test data available
	30	**NO** test data available
Flexible construction (Plasterboard walls)	120	**NO** test data available
	90	**NO** test data available
	60	**NO** test data available
	30	**NO** test data available
Rigid construction (Concrete floors)	120	**NO** test data available
	90	**NO** test data available

2530 Series with non-standard supporting constructions

Wall type	Duration (mins)	Wall thickness
Trimoterm sandwich panel	120	Minimum 120mm
British Gypsum Shaftwall A306035 (A) (EN), A306044 (A) (EN), A306036 (A) (EN), A306033 (A) (EN)	120	Minimum 107mm
Corrugated steel reinforced concrete floor with upstand	120	Minimum 150mm



Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +194mm	Nom. duct +310mm	Nom. duct +100mm	Nom. duct +310mm
175 x 175mm to 199 x 199mm	Nom. duct +219mm	Nom. duct +335mm	Nom. duct +125mm	Nom. duct +335mm
Below 175 x 175mm	394mm	510mm	300mm	510mm
Circular duct 175mm and above	Nom. duct +219mm	Nom. duct +375mm	Nom. duct +125mm	Nom. duct +375mm
Circular duct under 175mm	394mm	550mm	300mm	550mm

Installation sequence

4 The drywall will consist of two layers of 12.5mm plasterboard each side of steel studwork with an optional 50mm mineral wool insulation. The opening will be a letterbox construction with overlapping layers of plasterboard with an opening clearance around the damper casing in line with the table above.

5 Two M10 drop rods shall be fitted on the side of the drywall to which the access side of the damper will be positioned. These should be securely installed in line with the manufacturer's fixing instructions in a position to match the AFS rail.

6 We recommend a nut screwed above the AFS rail for stability, however our installations are fire tested without this nut, and it can be omitted to allow for slab deflection if desired.

7 Slide the AFS rails on each side of the damper into the brackets and insert the "Z" piece into the bracket slot pushing it up against the underside of the rail. Insert the 8mm bolt from above into the slot through the "Z" piece fitting the nut until tight to secure the rail.

8 The damper should be mounted centrally in the opening with the access side flush with the wall, as detailed in the drawing. The drop rods are to slide through the slots in the rail and a nut screwed on to take the support of the damper rail. The damper must then be levelled and when in the correct position the nut above the rail (if fitted) should be tightened against the rail.

9 The galvanised mild steel ductwork connecting to the damper spigots must overlap by up to 40mm, leaving a minimum 10mm clearance for any duct expansion in a fire situation.

10 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without affecting the integrity of the installation.

11 The connecting galvanised mild steel ductwork must be independently supported within one metre of the connections and have been installed in accordance with DW144.

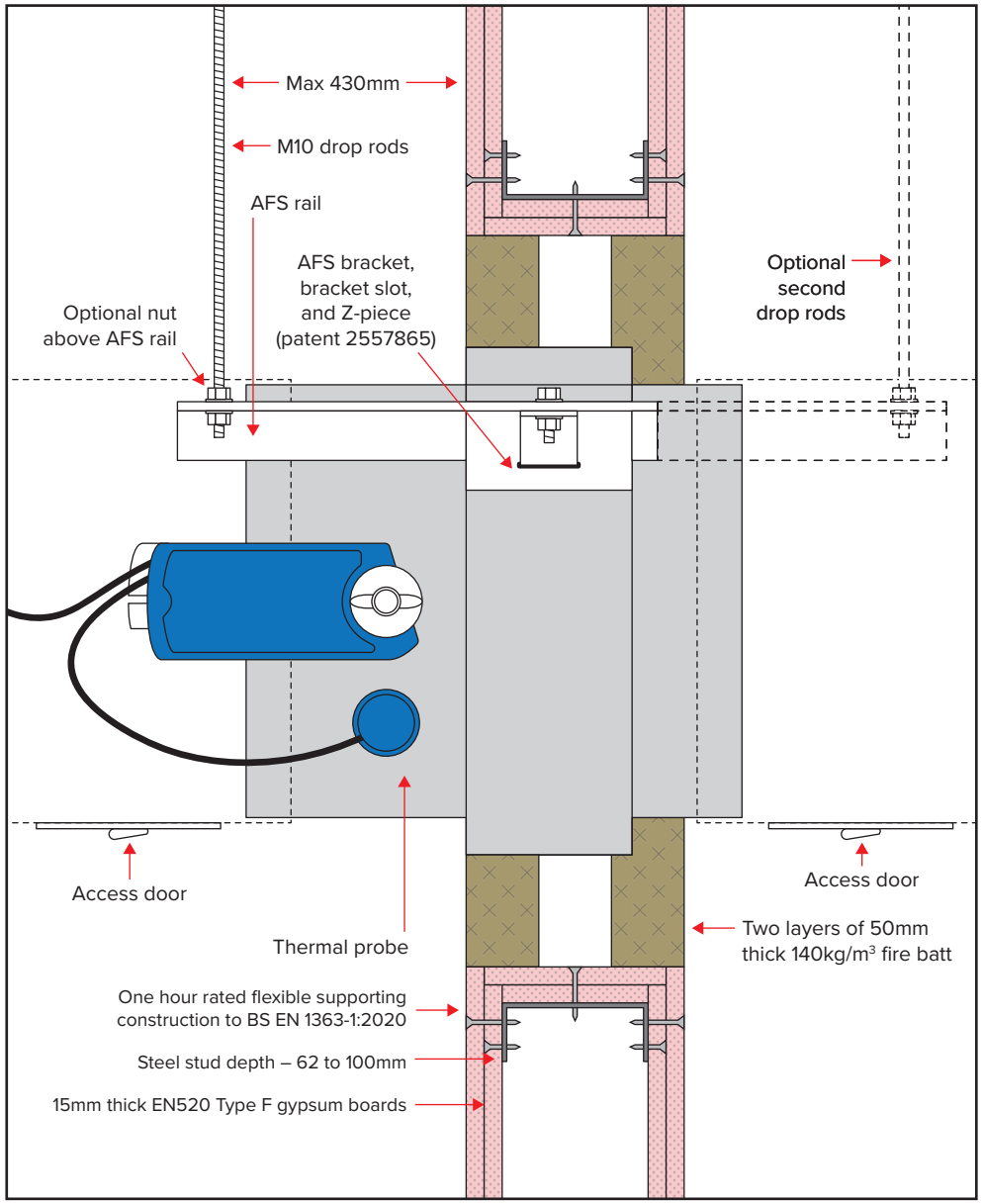
12 The gap between the damper and the wall opening will need filling with two layers of 50mm thick 140kg/m³ fire batt cut to an interference fit and pushed in to place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint.

13 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

14 When the damper installation has been completed checks should be made to ensure the AFS rails are secure and there is no movement, operation of the damper should be checked.

15 Complete DW145 Fire Damper Checklist.

PRODUCT **2530 WITH AFS RAIL (WALL)**	APPLICATION **FLEXIBLE SUPPORTING CONSTRUCTION**
CLASSIFICATION REPORT NO. **EFR-21-001847**	CLASSIFICATION **E90 (ve i ←→ o) s**
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING.	



Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +194mm	Nom. duct +310mm	Nom. duct +100mm	Nom. duct +310mm
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Below 175 x 175mm	394mm	510mm	300mm	510mm
Circular duct 175mm and above	Nom. duct +219mm	Nom. duct +375mm	Nom. duct +125mm	Nom. duct +375mm
Circular duct under 175mm	394mm	550mm	300mm	550mm

Installation sequence

4 The drywall will consist of two layers of 15mm plasterboard each side of steel studwork with an optional 50mm mineral wool insulation. The opening will be a letterbox construction with overlapping layers of plasterboard with an opening clearance around the damper casing in line with the table above.

5 Two M10 drop rods shall be fitted on the side of the drywall to which the access side of the damper will be positioned. These should be securely installed in line with the manufacturer's fixing instructions in a position to match the AFS rail.

6 We recommend a nut screwed above the AFS rail for stability, however our installations are fire tested without this nut, and it can be omitted to allow for slab deflection if desired.

7 Slide the AFS rails on each side of the damper into the brackets and insert the "Z" piece into the bracket slot pushing it up against the underside of the rail. Insert the 8mm bolt from above into the slot through the "Z" piece fitting the nut until tight to secure the rail.

8 The damper should be mounted centrally in the opening with the access side flush with the wall, as detailed in the drawing. The drop rods are to slide through the slots in the rail and a nut screwed on to take the support of the damper rail. The damper must then be levelled and when in the correct position the nut above the rail (if fitted) should be tightened against the rail.

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10 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without affecting the integrity of the installation.

11 The connecting galvanised mild steel ductwork must be independently supported within one metre of the connections and have been installed in accordance with DW144.

12 The gap between the damper and the wall opening will need filling with two layers of 50mm thick 140kg/m³ fire batt cut to an interference fit and pushed in to place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint.

13 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

14 When the damper installation has been completed checks should be made to ensure the AFS rails are secure and there is no movement, operation of the damper should be checked.

15 Complete DW145 Fire Damper Checklist.

PRODUCT **2530 WITH AFS RAIL (WALL)**	APPLICATION **FLEXIBLE SUPPORTING CONSTRUCTION**
CLASSIFICATION REPORT NO. **EFR-21-001847**	CLASSIFICATION **E120 (ve i ←→ o) s**
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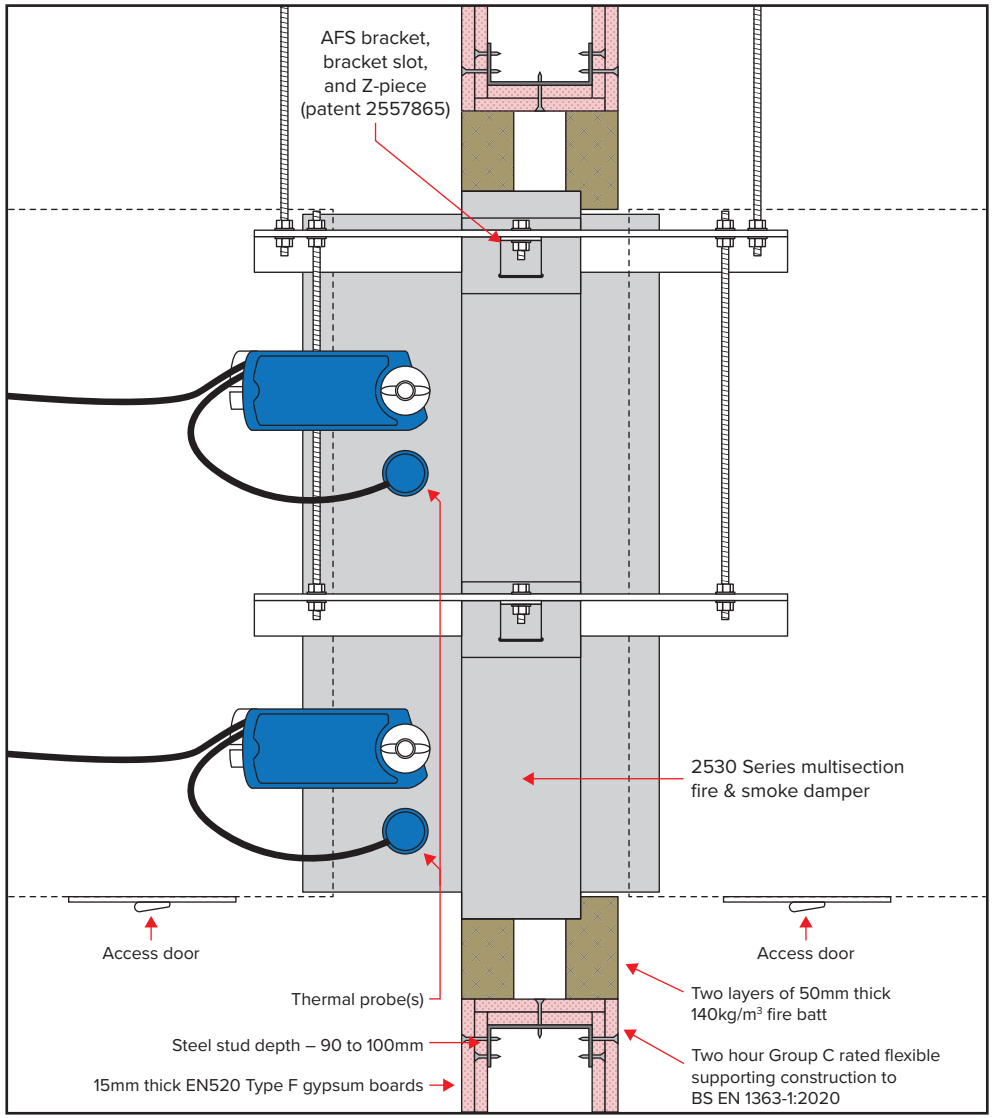

While we have tested a damper 2,000 x 2,000mm, larger sizes can be supplied in sections but the installation will need to be checked by a competent structural engineer as stated in the Extended Fields of Applications BS EN 15882-2:2015. With all larger sizes there should be a risk assessment carried out and a full method statement documented to ensure the correct lifting gear and safety precautions are in place prior to the installation being carried out.

Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
1,001 x 1,001mm and above	Nom. duct +194mm	Nom. duct. +350mm	Nom. duct +100mm	Nom. duct +350mm
Circular duct over 950mm	Nom. dia. +219mm	Nom. dia. +375mm	Nom. dia. +125mm	Nom. dia. +375mm

NOTE – The multi-section damper will be supplied enclosed in one large casing up to a maximum spigot size of 2,000mm.

Installation sequence

4 The drywall will consist of two layers of 15mm plasterboard each side of steel studwork with an optional 50mm mineral wool insulation. The opening will be a letterbox construction with overlapping layers of plasterboard with an opening clearance around the damper casing in line with the table above.

5 Two M10 drop rods shall be fitted on either side of the drywall. These should be securely installed in line with the manufacturer's fixing instructions in a position to match the AFS rail.

6 The drop rods should have a nut screwed on for clamping the rail from above.

7 Slide the AFS rails on each side of the damper into the brackets and insert the "Z" piece into the bracket slot pushing it up against the underside of the rail. Insert the 8mm bolt from above into the slot through the "Z" piece fitting the nut until tight to secure the rail.

8 Additional drop rods should then be passed through the top and bottom rails and fully tightened.

9 The damper should be mounted centrally in the opening with the access side flush with the wall, as detailed in the drawing. The drop rods are to slide through the slots in the rail and a nut screwed on to take the support of the damper rail. The damper must then be levelled and when in the correct position the nut above the rail should be tightened against the rail.

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11 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without affecting the integrity of the installation.

12 The connecting galvanised mild steel ductwork must be independently supported within one metre of the connections and have been installed in accordance with DW144.

13 The gap between the damper and the wall opening will need filling with two layers of 50mm thick 140kg/m³ fire batt cut to an interference fit and pushed in to place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint.

14 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

15 When the damper installation has been completed checks should be made to ensure the AFS rails are secure and there is no movement, operation of the damper should be checked.

16 Complete DW145 Fire Damper Checklist.

PRODUCT **2530 MULTI-SECTION WITH AFS RAIL (WALL)**	APPLICATION **FLEXIBLE SUPPORTING CONSTRUCTION**
CLASSIFICATION REPORT NO. **BRE 287810A**	CLASSIFICATION **E120 (ve i ←→ o) s**
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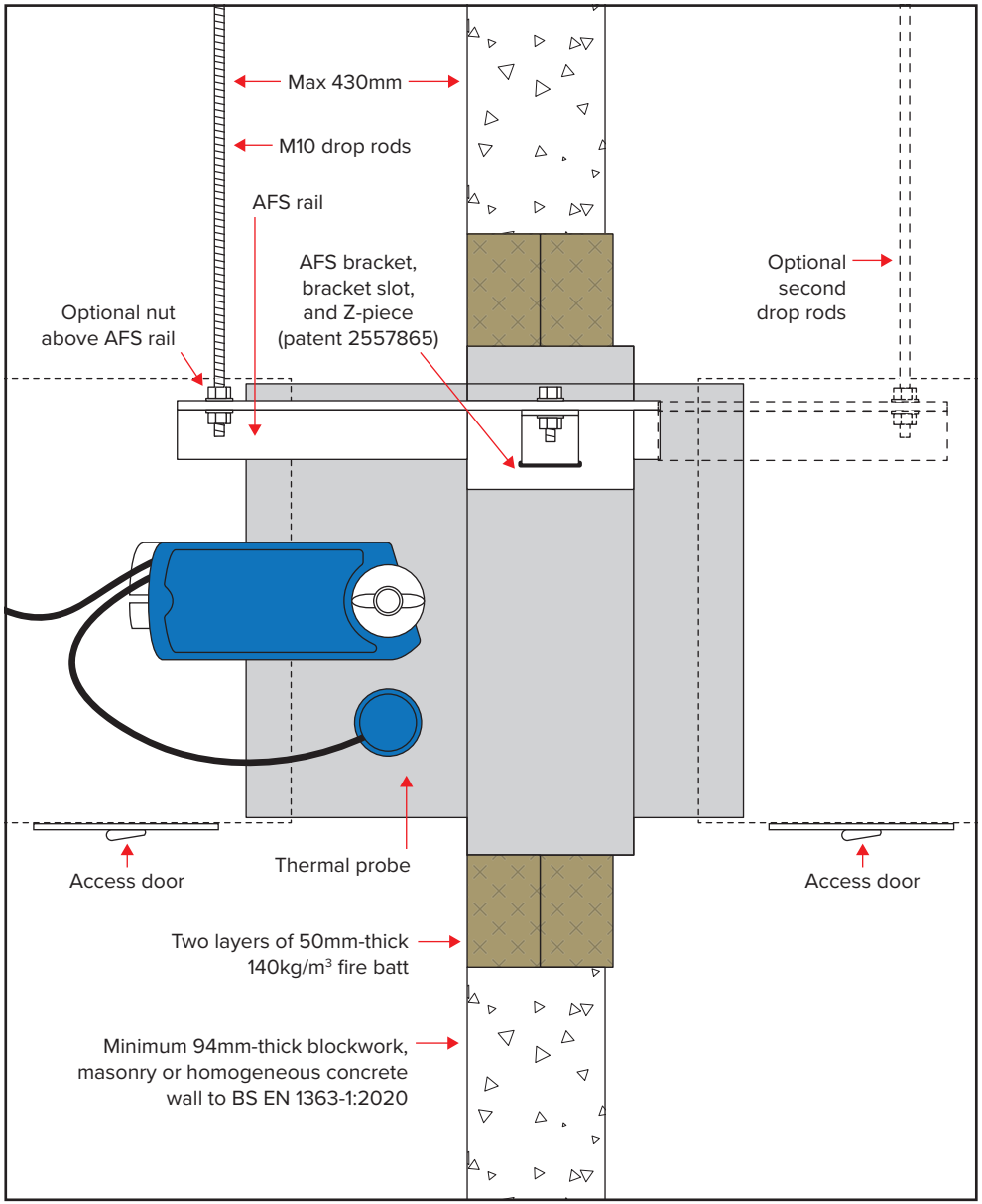

Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +194mm	Nom. duct +310mm	Nom. duct +100mm	Nom. duct +310mm
175 x 175mm to 199 x 199mm	Nom. duct +219mm	Nom. duct +335mm	Nom. duct +125mm	Nom. duct +335mm
Below 175 x 175mm	394mm	510mm	300mm	510mm
Circular duct 175mm and above	Nom. duct +219mm	Nom. duct +375mm	Nom. duct +125mm	Nom. duct +375mm
Circular duct under 175mm	394mm	550mm	300mm	550mm

Installation sequence

4 Two M10 drop rods per fire damper shall be fitted on one side of the drywall. These should be securely installed in line with the manufacturer's fixing instructions in a position to match the AFS rail.

5 We recommend a nut screwed above the AFS rail for stability, however our installations are fire tested without this nut, and it can be omitted to allow for slab deflection if desired.

6 Slide the AFS rails on each side of the damper into the brackets and insert the "Z" piece into the bracket slot pushing it up against the underside of the rail. Insert the 8mm bolt from above into the slot through the "Z" piece fitting the nut until tight to secure the rail.

7 The damper should be centrally positioned in the opening with the access side flush with the wall, as detailed in the drawing. The drop rods are to slide through the slots in the rail and a nut screwed on to take the support of the damper rail. The damper must then be levelled and when in the correct position the nut above the rail (if fitted) should be tightened against the rail.

8 The galvanised mild steel ductwork connecting to the damper spigots must overlap by up to 40mm, leaving a minimum 10mm clearance for any duct expansion in a fire situation.

9 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without affecting the integrity of the installation.

10 The connecting galvanised mild steel ductwork must be independently supported within one metre of the connections and have been installed in accordance with DW144.

11 The gap between the damper and the wall opening will need filling with two layers of 50mm thick 140kg/m³ fire batt cut to an interference fit and pushed in to place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint.

12 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

13 When the damper installation has been completed checks should be made to ensure the AFS rails are secure and there is no movement, operation of the damper should be checked.

14 Complete DW145 Fire Damper Checklist.

PRODUCT **2530 WITH AFS RAIL (WALL)**	APPLICATION **RIGID SUPPORTING CONSTRUCTION**
CLASSIFICATION REPORT NO. **EFR-21-001847**	CLASSIFICATION **E90 (ve i ←→ o) s**
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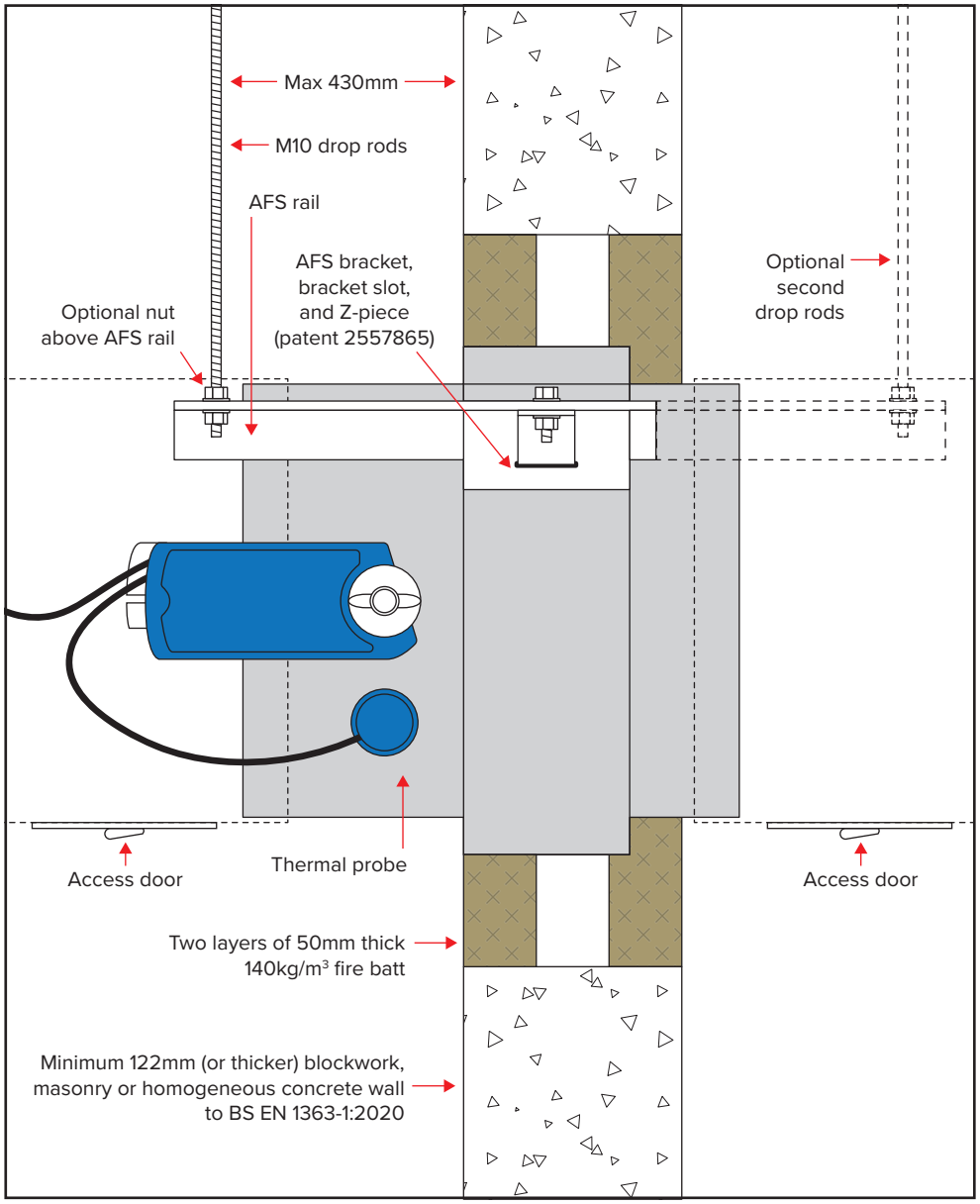

Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +194mm	Nom. duct +310mm	Nom. duct +100mm	Nom. duct +310mm
175 x 175mm to 199 x 199mm	Nom. duct +219mm	Nom. duct +335mm	Nom. duct +125mm	Nom. duct +335mm
Below 175 x 175mm	394mm	510mm	300mm	510mm
Circular duct 175mm and above	Nom. duct +219mm	Nom. duct +375mm	Nom. duct +125mm	Nom. duct +375mm
Circular duct under 175mm	394mm	550mm	300mm	550mm

Installation sequence

4 Two M10 drop rods per fire damper shall be fitted on one side of the drywall. These should be securely installed in line with the manufacturer's fixing instructions in a position to match the AFS rail.

5 We recommend a nut screwed above the AFS rail for stability, however our installations are fire tested without this nut, and it can be omitted to allow for slab deflection if desired.

6 Slide the AFS rails on each side of the damper into the brackets and insert the "Z" piece into the bracket slot pushing it up against the underside of the rail. Insert the 8mm bolt from above into the slot through the "Z" piece fitting the nut until tight to secure the rail.

7 The damper should be centrally positioned in the opening with the access side flush with the wall, as detailed in the drawing. The drop rods are to slide through the slots in the rail and a nut screwed on to take the support of the damper rail. The damper must then be levelled and when in the correct position the nut above the rail (if fitted) should be tightened against the rail.

8 The galvanised mild steel ductwork connecting to the damper spigots must overlap by up to 40mm, leaving a minimum 10mm clearance for any duct expansion in a fire situation.

9 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without affecting the integrity of the installation.

10 The connecting galvanised mild steel ductwork must be independently supported within one metre of the connections and have been installed in accordance with DW144.

11 The gap between the damper and the wall opening will need filling with two layers of 50mm thick 140kg/m³ fire batt cut to an interference fit and pushed in to place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint.

12 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

13 When the damper installation has been completed checks should be made to ensure the AFS rails are secure and there is no movement, operation of the damper should be checked.

14 Complete DW145 Fire Damper Checklist.

PRODUCT **2530 WITH AFS RAIL (WALL)**	APPLICATION **RIGID SUPPORTING CONSTRUCTION**
CLASSIFICATION REPORT NO. **EFR-21-001847**	CLASSIFICATION **E120 (ve i ←→ o) s**
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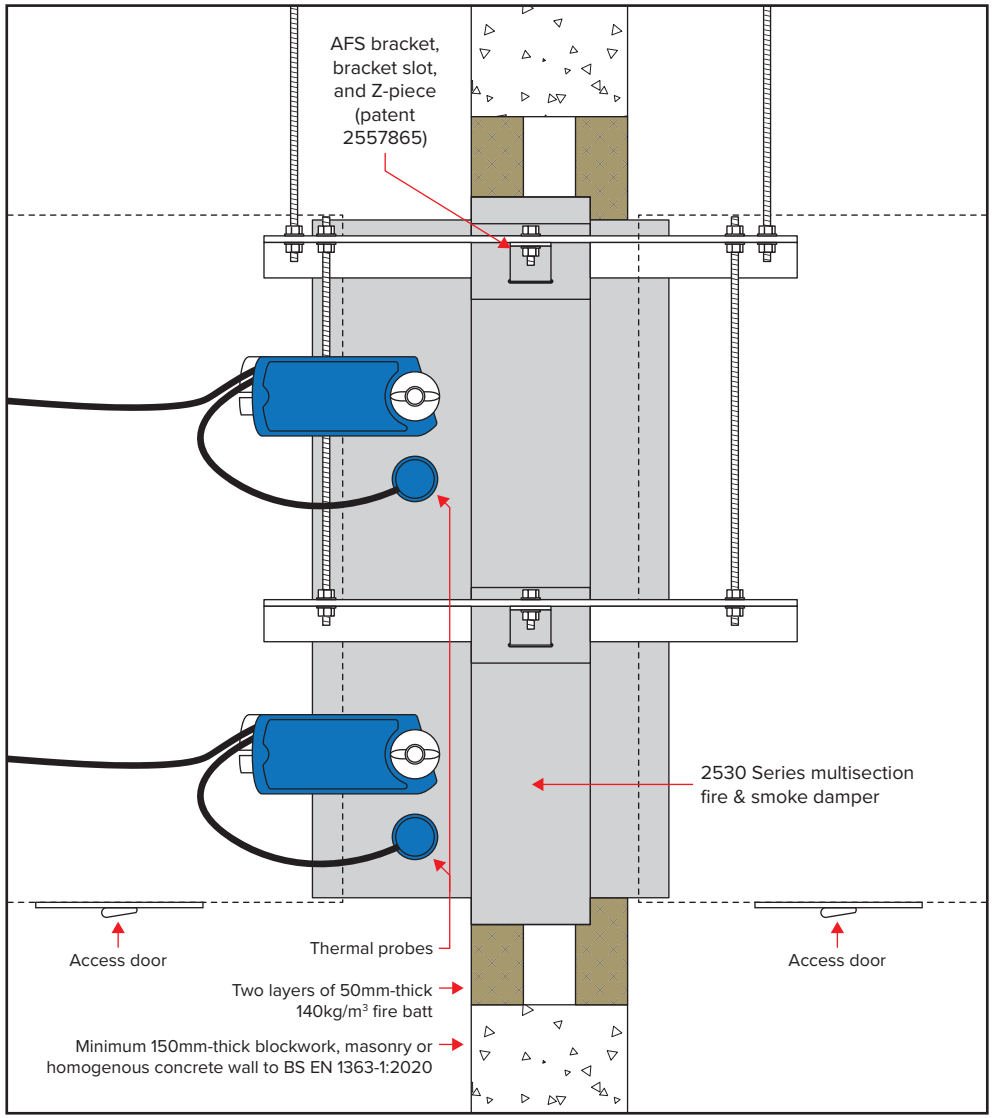

While we have tested a damper 2,000 x 2,000mm, larger sizes can be supplied in sections but the installation will need to be checked by a competent structural engineer as stated in the Extended Fields of Applications BS EN 15882-2:2015. With all larger sizes there should be a risk assessment carried out and a full method statement documented to ensure the correct lifting gear and safety precautions are in place prior to the installation being carried out.

Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
1,001 x 1,001mm and above	Nom. duct +194mm	Nom. duct. +350mm	Nom. duct +100mm	Nom. duct +350mm
Circular duct over 950mm	Nom. dia. +219mm	Nom. dia. +375mm	Nom. dia. +125mm	Nom. dia. +375mm

NOTE

The multi-section damper will be supplied enclosed in one large casing up to a maximum spigot size of 2,000mm.

Installation sequence

4 Two M10 drop rods shall be fitted on either side of the drywall. These should be securely installed in line with the manufacturer's fixing instructions in a position to match the AFS rail.

5 The drop rods should have a nut screwed on for clamping the rail from above.

6 Slide the AFS rails on each side of the damper into the brackets and insert the "Z" piece into the bracket slot pushing it up against the underside of the rail. Insert the 8mm bolt from above into the slot through the "Z" piece fitting the nut until tight to secure the rail.

7 Additional drop rods should then be passed through the top and bottom rails and fully tightened.

8 The damper should be mounted centrally in the opening with the access side flush with the wall, as detailed in the drawing. The drop rods are to slide through the slots in the rail and a nut screwed on to take the support of the damper rail. The damper must then be levelled and when in the correct position the nut above the rail should be tightened against the rail.

9 The galvanised mild steel ductwork connecting to the damper spigots must overlap by up to 40mm, leaving a minimum 10mm clearance for any duct expansion in a fire situation.

10 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without affecting the integrity of the installation.

11 The connecting galvanised mild steel ductwork must be independently supported within one metre of the connections and have been installed in accordance with DW144.

12 The gap between the damper and the wall opening will need filling with two layers of 50mm thick 140kg/m³ fire batt cut to an interference fit and pushed in to place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint.

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14 When the damper installation has been completed checks should be made to ensure the AFS rails are secure and there is no movement, operation of the damper should be checked.

15 Complete DW145 Fire Damper Checklist.

PRODUCT **2530 MULTI-SECTION WITH AFS RAIL (WALL)**	APPLICATION **FLEXIBLE SUPPORTING CONSTRUCTION**
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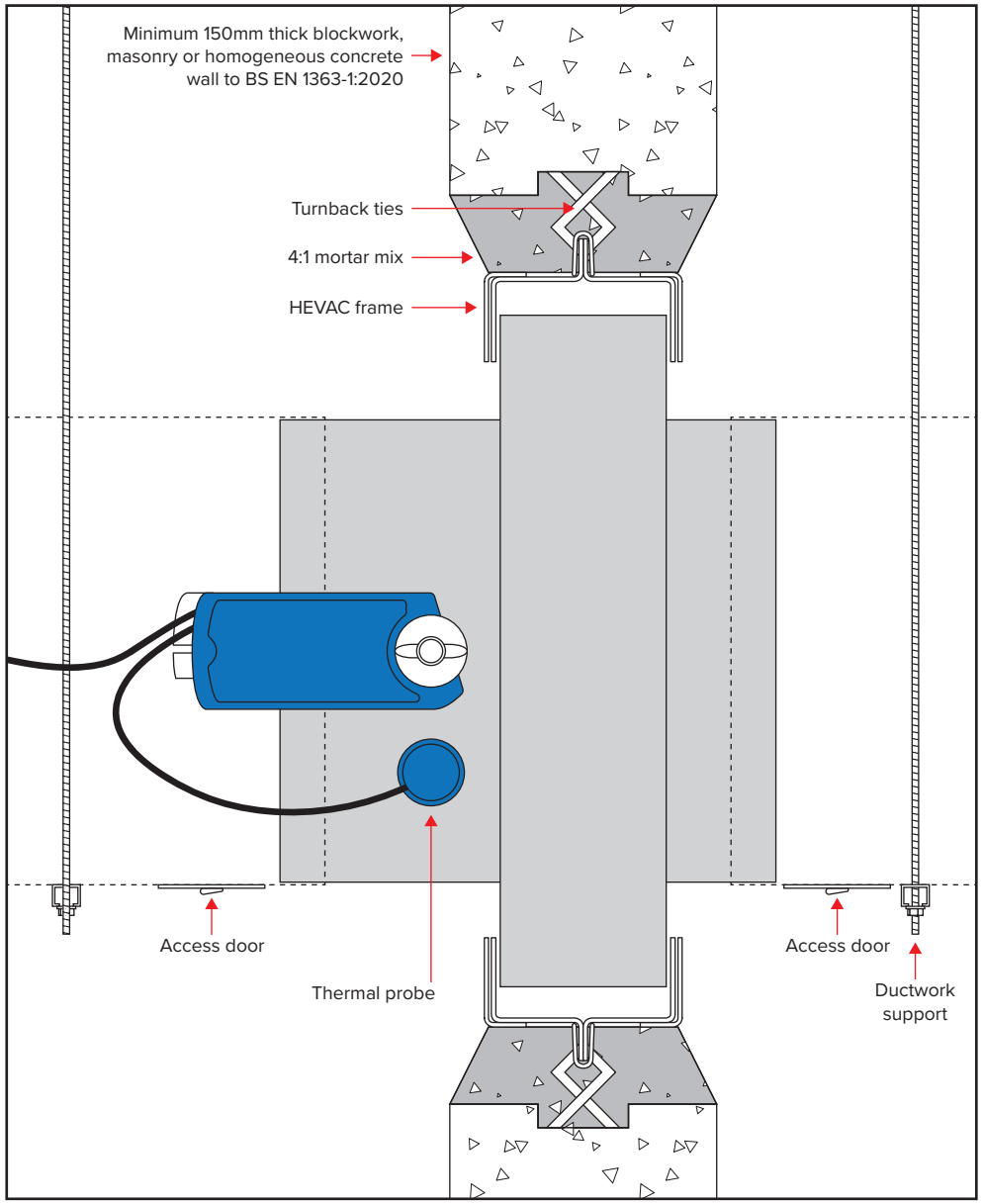


Preparing the opening

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging and transit ties before installation.

3 Work out the opening size to be cut using the table adjacent.

Nom. duct	Opening width / height min.	Opening width / height max.
200 x 200mm and above	Nom. duct +170mm	Nom. duct +200mm
199 x 199mm and below	370 x 370mm	400 x 400mm
Circular duct	**Opening width / height min.**	**Opening width / height max.**
175mm and over	Nom. duct +195mm	Nom. duct +225mm
174mm and under	395mm	425mm

Installation sequence

4 In the opening, mark the positions for the turnback tabs on the HEVAC frame.

5 Create 20mm deep pockets for the HEVAC tabs to be located in. The pockets should be approximately 30mm wide and 50mm long.

6 Offer up the damper into the opening and support from the bottom of the damper so that it sits centrally within the opening and has an even space on all four sides.

7 Bend the HEVAC tabs so that they lock into the pockets.

8 A 4:1 mortar mix can then be gradually applied between the wall and the damper, ensuring the mortar is only filled up to the HEVAC frame and not the damper spigots. This ensures the damper can move within the HEVAC frame.

9 The galvanised mild steel ductwork connecting to the damper spigots must overlap by up to 40mm, leaving minimum 10mm clearance for any duct expansion in a fire situation.

10 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without affecting the integrity of the installation.

11 The connecting galvanised mild steel ductwork must be independently supported within one metre of the connections and have been installed in accordance with DW144.

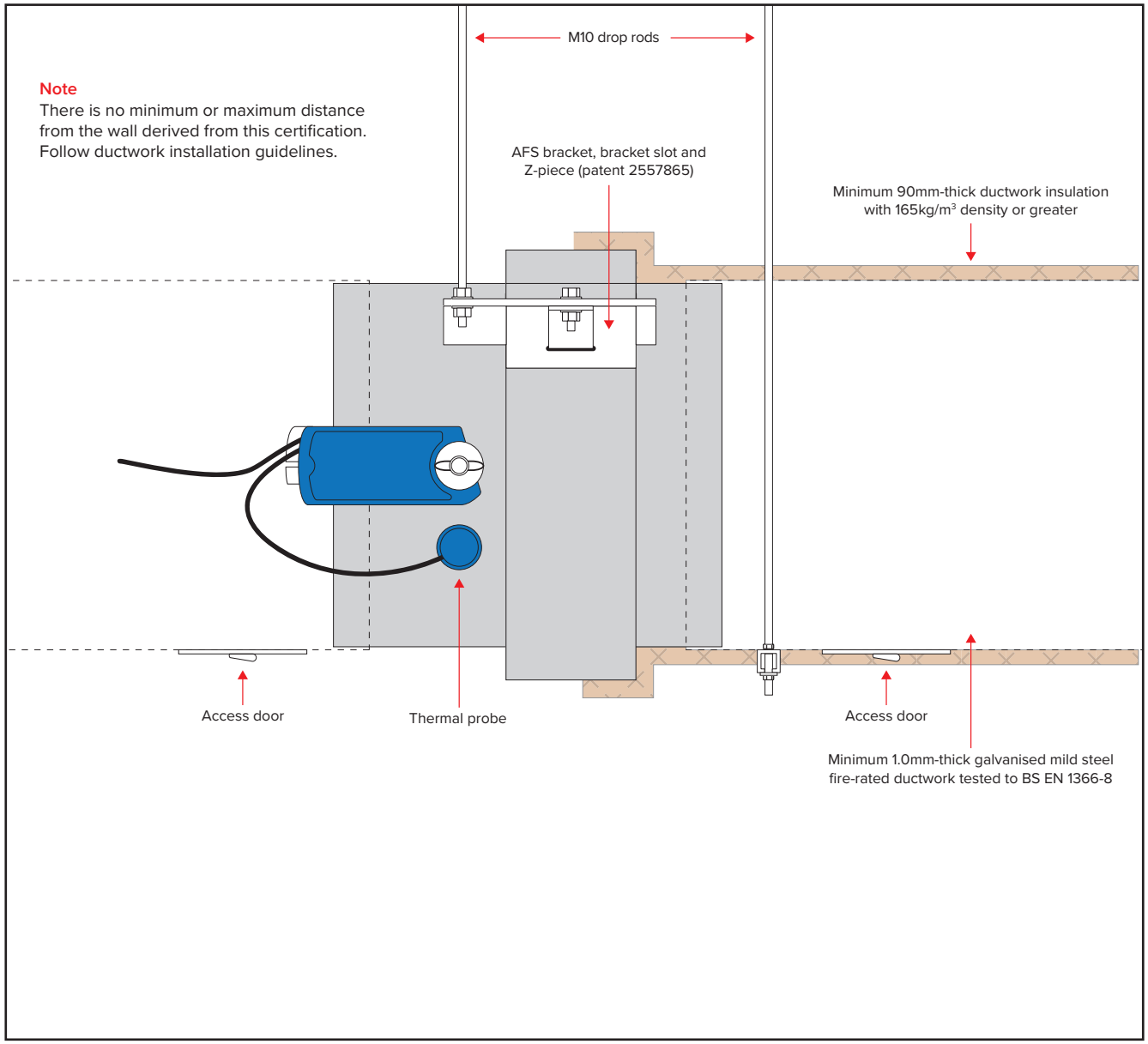
12 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

13 When the damper installation has been completed, checks should be made to ensure the damper is secure and there is no movement, operation of the damper should be checked.

14 Complete DW145 Fire Damper Checklist.

PRODUCT **2530 WITH HEVAC FRAME (WALL)**	APPLICATION **RIGID SUPPORTING CONSTRUCTION**
CLASSIFICATION REPORT NO. **BRE 287810B**	CLASSIFICATION **E120 (ve i ←→ o) s**
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING.	

MOTORISED FIRE – 2530 TWO HOUR REMOTE FROM SUPPORTING CONSTRUCTION



Preparation

1 Work out the opening size to be cut 120mm larger than the nominal duct width/height, at a tolerance of ±5mm (for example a 1,000 x 1,000mm duct requires a 1,120 x 1,120mm opening).

Installation sequence

2 The damper is mounted to the duct using self tapping fixings, at 150mm centres. When the duct is slid over the damper spigot, an overlap of up to 40mm is permitted, allowing for 10mm for duct expansion.

3 Support the damper case using a single piece of Unistrut, hung on M10 drop rods.

4 Galvanised mild steel ductwork and sealing of the duct should be in accordance with DW144.

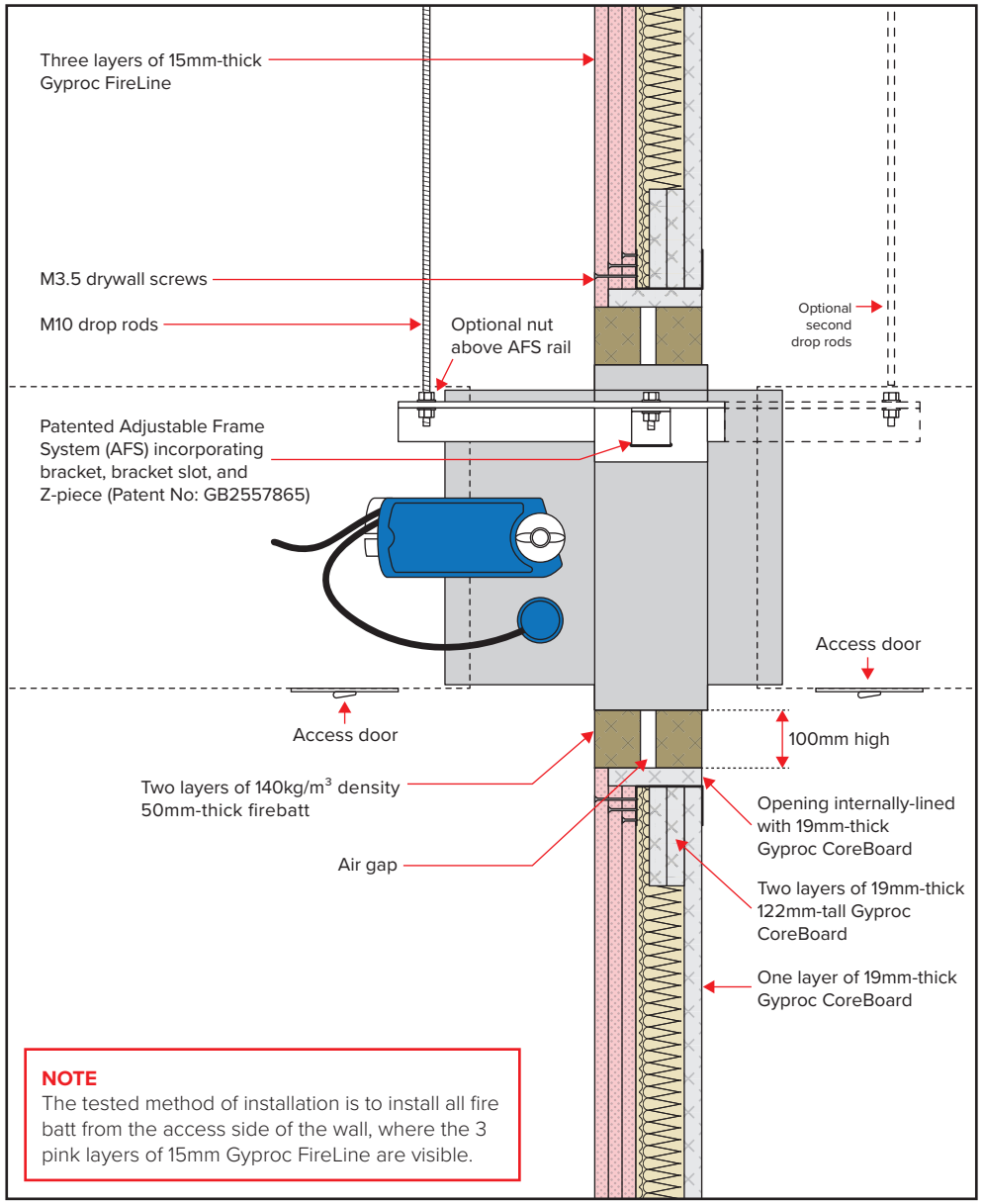
5 The damper operation should be checked to ensure that it fully opens and closes.

6 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

7 When the damper installation has been completed, checks should be made to ensure the installation is secure, and there is no movement.

8 Complete DW145 Fire Damper Checklist.

PRODUCT **2530 WITH AFS RAIL (WALL)**	APPLICATION **DUCT MOUNTED, TWO HOUR REMOTE FROM WALL**
CLASSIFICATION REPORT NO. **2021-EFECTIS-R000927**	CLASSIFICATION **E120 (ve i → o) • E30 (ve i → o) s**
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING.	



NOTE
The tested method of installation is to install all fire batt from the access side of the wall, where the 3 pink layers of 15mm Gyproc FireLine are visible.

Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +194mm	Nom. duct +310mm	Nom. duct +100mm	Nom. duct +310mm
175 x 175mm to 199 x 199mm	Nom. duct +219mm	Nom. duct +335mm	Nom. duct +125mm	Nom. duct +335mm
Below 175 x 175mm	394mm	510mm	300mm	510mm
Circular duct 175mm and above	Nom. duct +219mm	Nom. duct +375mm	Nom. duct +125mm	Nom. duct +375mm
Circular duct under 175mm	394mm	550mm	300mm	550mm

Installation sequence

4 A minimum 107mm-thick 2 hour British Gypsum shaft wall must be erected to the manufacturer's instructions (the certified walls are British Gypsum ref A306035 (A) (EN), A306044 (A) (EN), A306036 (A) EN), A306033 (A) (EN)) . The opening will be a letterbox construction with a single layer of plasterboard lining it, which is covered over by the outer 15mm thick board on the visible side of the wall.

5 Two M10 drop rods per fire damper shall be fitted on one side of the drywall. These should be securely installed in line with the manufacturer's fixing instructions in a position to match the AFS rail.

6 We recommend a nut screwed above the AFS rail for stability, however our installations are fire tested without this nut, and it can be omitted to allow for slab deflection if desired.

7 Slide the AFS rails on each side of the damper into the brackets and insert the "Z" piece into the bracket slot pushing it up against the underside of the rail. Insert the 8mm bolt from above into the slot through the "Z" piece fitting the nut until tight to secure the rail.

8 The damper should be mounted in the opening flush with the wall on the side with the drop rods, as detailed in the drawing. The drop rods are to slide through the slots in the rail and a nut screwed on to take the support of the damper rail. The damper must then be levelled and when in the correct position the nut above the rail (if fitted) should be tightened against the rail.

9 The galvanised mild steel ductwork connecting to the damper spigots must overlap by up to 40mm, leaving a minimum 10mm clearance for any duct expansion in a fire situation.

10 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without effecting the integrity of the installation.

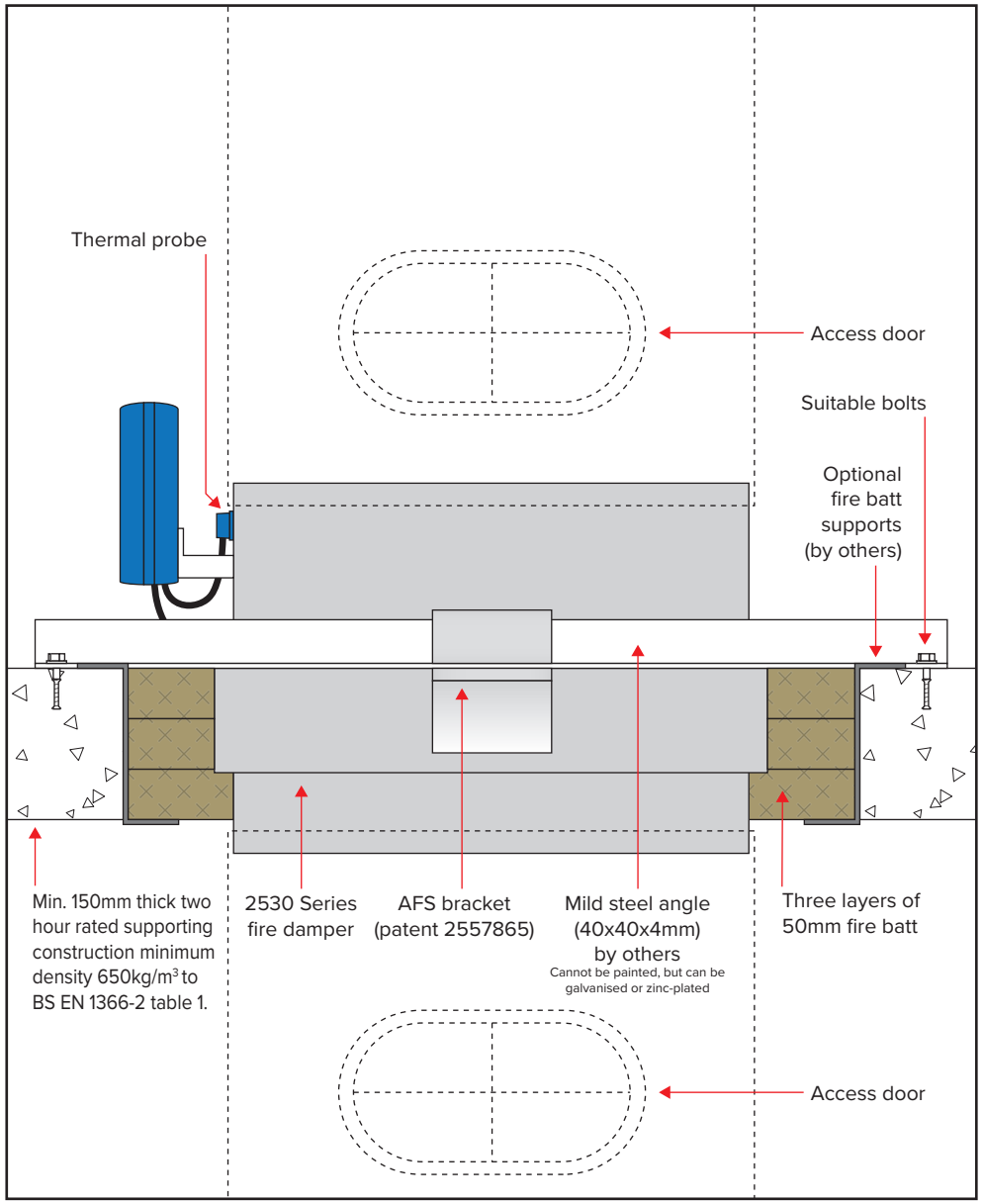
11 The connecting galvanised mild steel ductwork must be independently supported in accordance with DW144, we recommend the first duct support is within one metre of the connections.

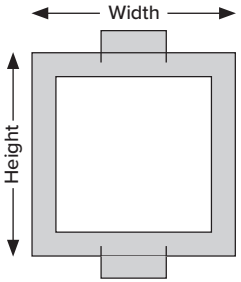
12 The gap between the damper and the wall opening will need filling with two layers of 50mm thick 140kg/m³ fire batt cut to an interference fit and pushed in to place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint. The fire batt installation can be carried out from one side of the wall.

13 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

14 When the damper installation has been completed checks should be made to ensure the AFS rails are secure and there is no movement, operation of the damper should be checked. 15 Complete DW145 Fire Damper Certificate.

PRODUCT **2530 WITH AFS RAIL**	APPLICATION **BRITISH GYPSUM SHAFTWALL – 2 HOUR 107MM THICK**
CLASSIFICATION REPORT NO. **EFR-21-001847_RC**	CLASSIFICATION **E120 (ve i ←→ o)s**
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING.	





Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +100mm	Nom. duct +310mm	Nom. duct +130mm	Nom. duct +310mm
175 x 175mm to 199 x 199mm	Nom. duct +125mm	Nom. duct +335mm	Nom. duct +155mm	Nom. duct +335mm
Below 175 x 175mm	300mm	510mm	330mm	510mm
Circular duct 175mm and above	Nom. duct +125mm	Nom. duct +375mm	Nom. duct +155mm	Nom. duct +375mm
Circular duct under 175mm	300mm	550mm	330mm	550mm

Preparation

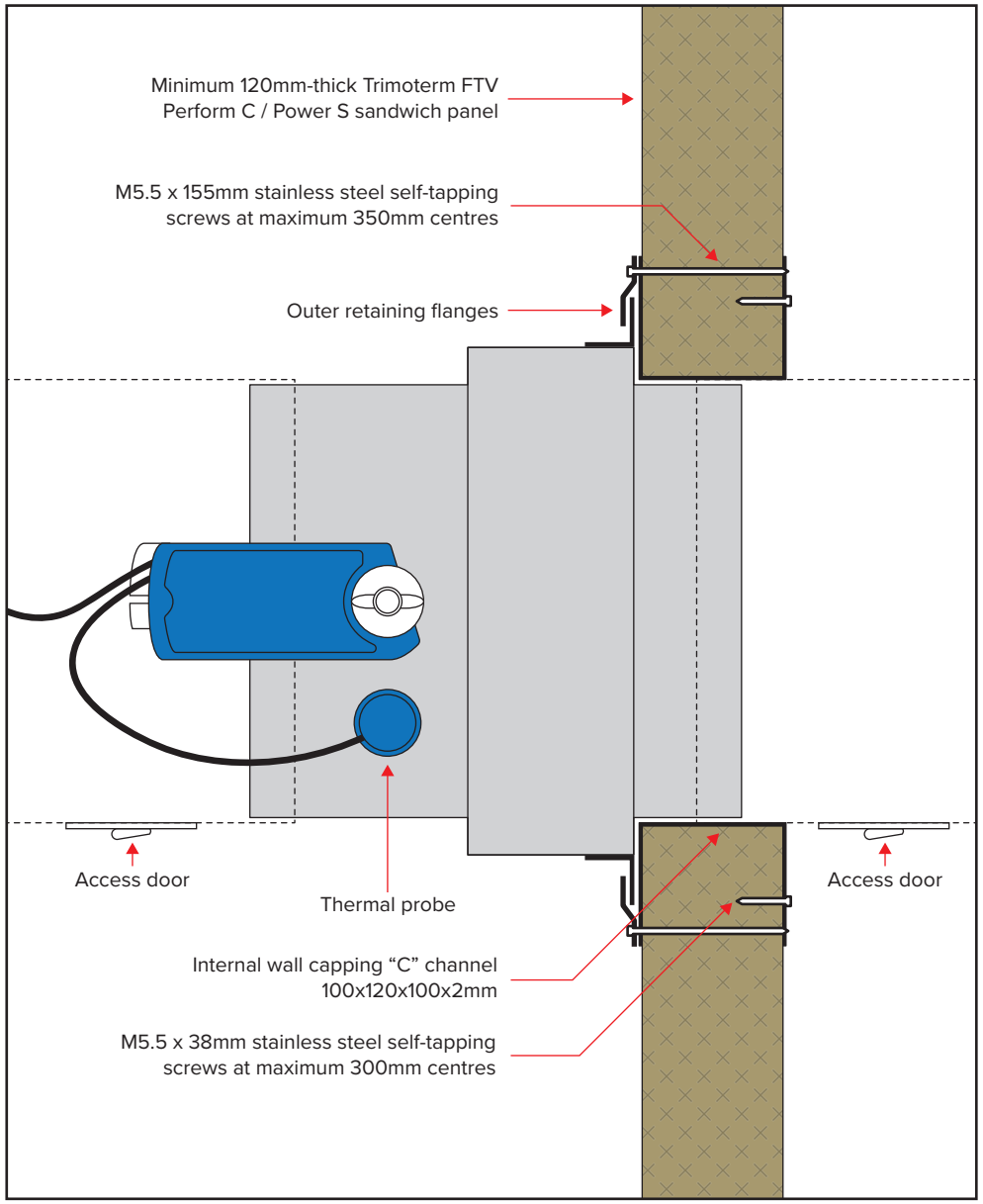
1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.
2 Remove all the packaging before installation.
3 Work out the opening size to be cut using the adjacent table.

Installation sequence

4 Install 40mm x 40mm x 4mm angle through the AFS brackets ensuring they are of enough length to extend past the opening on each side by 100mm.
5 Position the damper evenly in the centre of the opening.
6 Secure the angles to the floor. Mark the hole positions on the angle at least 50mm away from the opening and install M8 steel anchors and bolt the angle to the floor.
7 Fire batt supports (by others) can be installed to support the first layer of fire batt. These measure 50mm x 150mm x 50mm by 100mm wide and 1.6mm thick – they are folded into a 'Z'-shape and to be positioned on all fire batt joints on the bottom layer and evenly spaced on a 500mm maximum pitch.
8 The gap between the damper and the wall opening will need filling with three layers of 50mm thick 140kg/m³ fire batt cut to an interference fit and pushed into place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint.
9 The galvanised mild steel ductwork connecting to the damper spigot must overlap by 40mm, leaving a 10mm clearance for any duct expansion in a fire situation.
10 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets that will melt at high temperature allowing the duct to break away without affecting the integrity of the installation.
11 The connecting galvanised mild steel ductwork must be independently supported and have been installed in accordance with DW144.
12 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).
13 When the damper installation is complete the operation of the damper should be checked.
14 Complete DW145 Fire Damper Checklist.

IMPORTANT NOTE
It is not possible for a damper to be tested with fire from above. Therefore as per BS EN 1366-2 clause 13.5, this installation is suitable for fire in both directions despite a single direction classification, but the damper must be installed in the orientation shown.

PRODUCT **2530 WITH AFS RAIL (FLOOR)**	APPLICATION **CONCRETE FLOOR**
CLASSIFICATION REPORT NO. **EFR-21-001847**	CLASSIFICATION **E120 (ho i ← o) s**
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING.	



Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Nom. duct size	Width / Height	
	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +40mm	Nom. duct +60mm
175 x 175mm to 199 x 199mm	Nom. duct +45mm	Nom. duct +65mm
Below 175 x 175mm	240mm x 240mm	260mm x 260mm
Circular duct 175mm and above	Nom. duct +65mm	Nom. duct +85mm
Circular duct under 175mm	240mm x 240mm	260mm x 260mm

Installation sequence

4 Erect the Trimoterm wall to the manufacturer’s instructions.

5 Cut the opening for the damper, making the opening 4mm larger than those shown in the table above. This is to allow for the thickness of the wall opening capping.

6 Install the 100x120x100x2mm thick galvanized mild steel capping around the inside edge of the opening. Secure with M5.5x38mm self tapping screws at a maximum of 300mm between centres on the reverse of the wall (the opposite side to which the damper will be located).

7 Offer the damper up against the opening, pressing the damper flange tight against the wall face. The actuator must be outside the wall opening, and only the short spigot of the damper protrudes into the opening.

8 The damper will require support for the remainder of the installation.

9 Secure the damper into place by fitting the outer flange sections (supplied with damper). Use a ceramic sealant rated at 1,250 °C (such as Fortafix Ceramix TC) between all mating faces of the wall, damper flange, and outer flange sections. The outer flange sections are secured by M5.5x155mm stainless steel self tapping screws at maximum of 150mm centres.

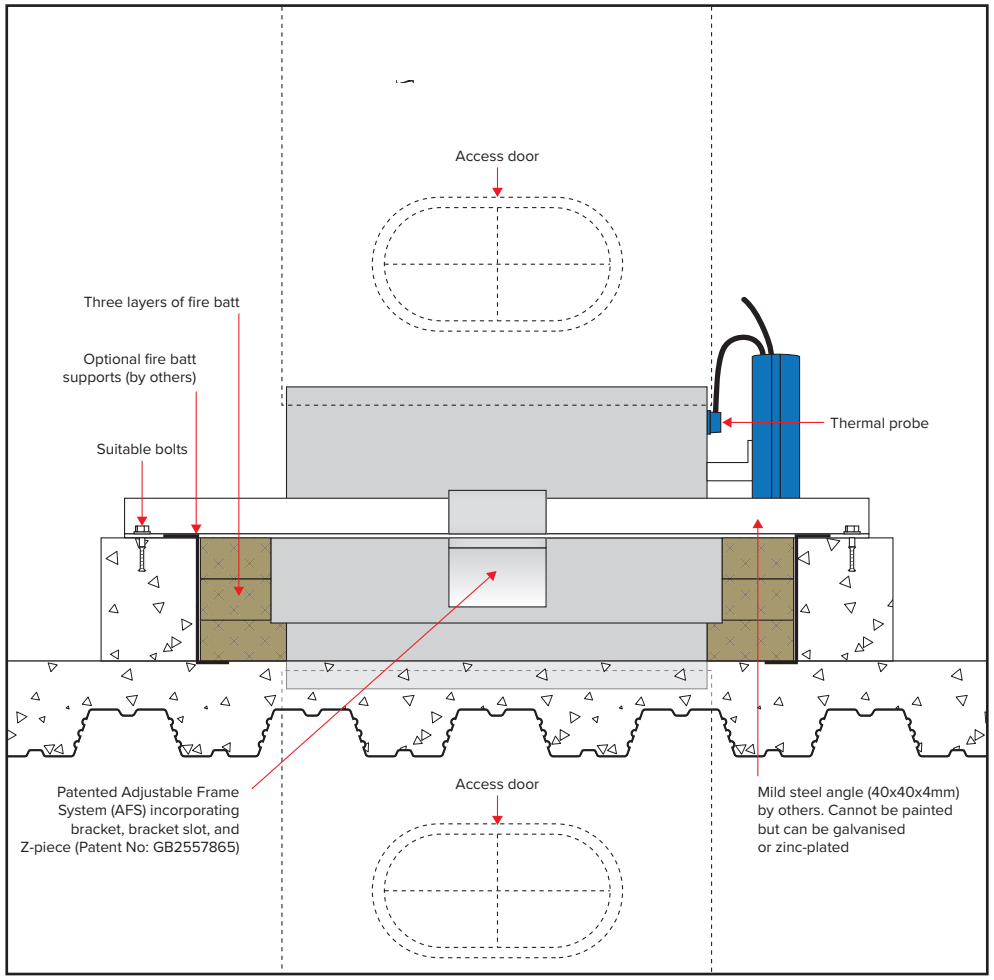
10 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

11 Complete DW145 Fire Damper Checklist.

NOTE

Advanced Air drawing LTOAA0150 IN001 gives additional information on this complex installation, and is available on request.

PRODUCT **2530 IN TWO HOUR TRIMOTERM WALL**	APPLICATION **TRIMOTERM WALL (FLANGE AND CAPPING)**
CLASSIFICATION REPORT NO. **2022-EFECTIS-R000301**	CLASSIFICATION **E90 (ve i ←→ o) s • E120 (ve i ←→ o)**
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING.	



Preparation

1 Ensure that the damper is kept in a clean dry environment and that there is no damage to the damper.

2 Remove all the packaging before installation.

3 Work out the opening size to be cut using the adjacent table.

Installation sequence

4 The steel reinforced floor shall be constructed, and the upstand formed over the floor opening. See the next page for full instructions on the construction of the floor and upstand.

5 Install 40mm x 40mm x 4mm angle through the AFS brackets ensuring they are long enough to extend past the inside edge of the upstand opening on each side by 100mm.

6 Position the damper evenly in the centre of the opening.

7 Secure the angles to the upper faces of the concrete upstand as shown. Mark the positions of the fixings at least 50mm away from the edges of the opening, and install M8 steel anchors and bolt to the upper face of the upstand.

8 Optional fire batt supports (Advanced Air can supply these upon request) can be used to support the fire batt as it is installed. If used, we recommend they are positioned centrally with one on each side of the damper.

9 The gap between the damper and the opening of the upstand shall be filled with three layers of 50mm thick 140kg/m³ (or greater) density mineral wool fire batt, cut to an interference fit, and pushed into place. All cut edges must be sealed with a fire batt sealant to BS EN 13501-2. A fire rated intumescent mastic to BS EN 13501-2 shall be applied to each joint.

10 The galvanised mild steel ductwork connecting to the damper spigot must overlap by 40mm, leaving a 10mm clearance for any duct expansion in a fire situation.

11 The galvanised mild steel ductwork connections must be sealed with an approved galvanised mild steel ductwork sealer and fixed with low resistance fixings such as aluminium rivets, that will melt at high temperature allowing the ductwork to break away without affecting the integrity of the installation.

12 The connecting galvanised mild steel ductwork must be independently supported and have been installed in accordance with DW144.

13 For full adherence to DW145, an access door should be fitted on both sides of the damper for inspection and maintenance of the damper (DW145 clause 9.7).

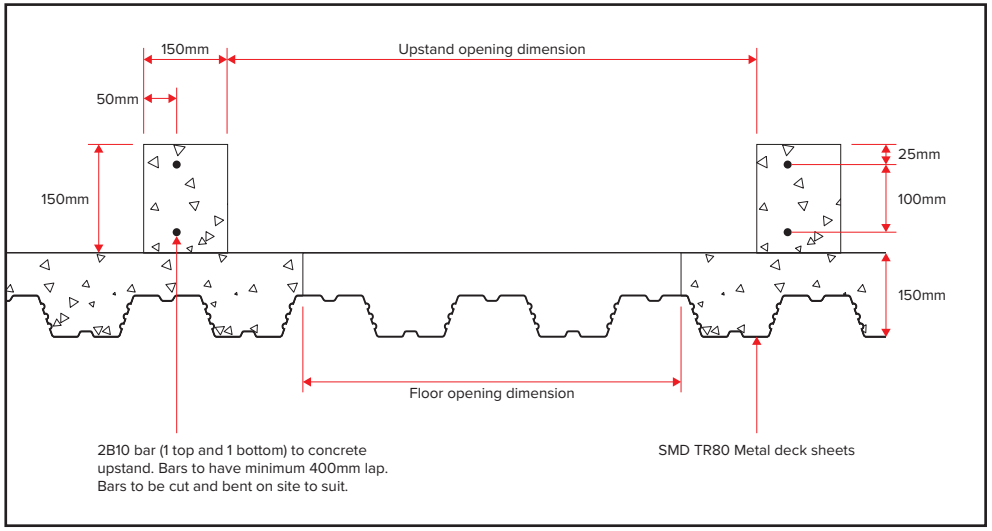
14 When the damper installation is complete the operation of the damper should be checked.

15 Complete a DW145 Fire Damper Checklist.

PRODUCT **2530 WITH AFS RAIL (FLOOR)**	APPLICATION **CORRUGATED STEEL REINFORCED FLOOR WITH CONCRETE UPSTAND**
CLASSIFICATION REPORT NO. **LBO-1756-K_24E**	CLASSIFICATION **E120 (ho i ← o) s**
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING.	

Steps to create the supporting construction

1. The SMD TR80 metal decking shall be installed in accordance with SMD installation instructions. The resultant floor must be at least 150mm thick, or greater when completed. The concrete mix shall be a C30/37 mix or stronger.
2. An opening shall be cut into the floor slab, to the dimensions shown in our Floor opening table.
3. The size of the upstand shall be to the dimensions shown below, or alternatively a thicker upstand can be produced and will also be compliant as it represents a stronger structure and is acceptable under a direct field of application in BS EN 1366-2.
4. Shuttering for the upstand shall be setup on the surface of the SMD steel reinforced floor, to allow the concrete upstand to be poured and formed.
5. Before pouring the concrete for the upstand, the 200mm long (or greater) B10 dowels shall be fixed into place in the SMD steel reinforced floor, and fixed using Hilti HY200 resin in a 100mm or greater embedment. There shall be at least 100mm of each dowel protruding upwards for encasement in the upstand. Hilti literature on installation shall be observed.
6. 2 B10 Bars shall be laid in place to reinforce the upstand. The bars will be laid in the upstand in a square fashion, with bends at 90 degrees allowing a 400mm overlap. These bars will be positioned at least 50mm from the edges of the upstand, and at a spacing of 25mm from the top and bottom of the upstand.
7. The concrete mix for the upstand shall be to the same specification as the SMD floor, and shall be poured to produce the upstand.

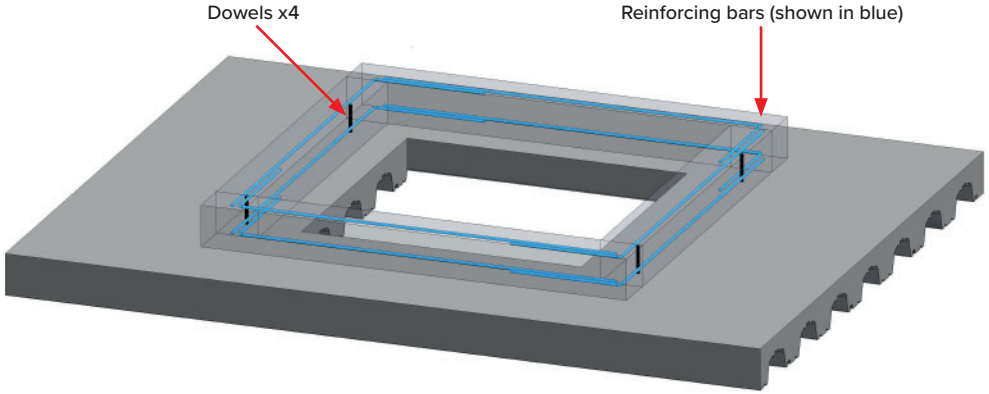


Floor opening dimensions

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +5mm	Nom. duct +25mm	Nom. duct +5mm	Nom. duct +25mm
175 x 175mm to 199 x 199mm	Nom. duct +30mm	Nom. duct +50mm	Nom. duct +30mm	Nom. duct +50mm
Below 175 x 175mm	205mm	220mm	205mm	220mm
Circular duct 175mm and above	Nom. duct +5mm	Nom. duct +20mm	Nom. duct +5mm	Nom. duct +20mm
Circular duct under 175mm	205mm	220mm	205mm	220mm

Upstand opening dimensions

Nom. duct size	Width		Height	
	Opening min.	Opening max.	Opening min.	Opening max.
200 x 200mm and above	Nom. duct +194mm	Nom. duct +310mm	Nom. duct +100mm	Nom. duct +310mm
175 x 175mm to 199 x 199mm	Nom. duct +219mm	Nom. duct +335mm	Nom. duct +125mm	Nom. duct +335mm
Below 175 x 175mm	394mm	510mm	300mm	510mm
Circular duct 175mm and above	Nom. duct +219mm	Nom. duct +375mm	Nom. duct +125mm	Nom. duct +375mm
Circular duct under 175mm	394mm	550mm	300mm	550mm



PRODUCT **2530 WITH AFS RAIL (FLOOR)**	APPLICATION **CORRUGATED STEEL REINFORCED FLOOR WITH CONCRETE UPSTAND**
CLASSIFICATION REPORT NO. **LBO-1756-K_24E**	CLASSIFICATION **E120 (ho i ← o) s**
TESTED INSTALLATION METHOD SHOWN. DIFFERING INSTALLATION METHODS TO THIS MUST BE APPROVED BY THE BUILDING CONTROL AUTHORITY (BCA) BEFORE PROCEEDING.	

ADDITIONAL NOTES FOR ADVANCED AIR AFS FIRE BATT INSTALLATIONS

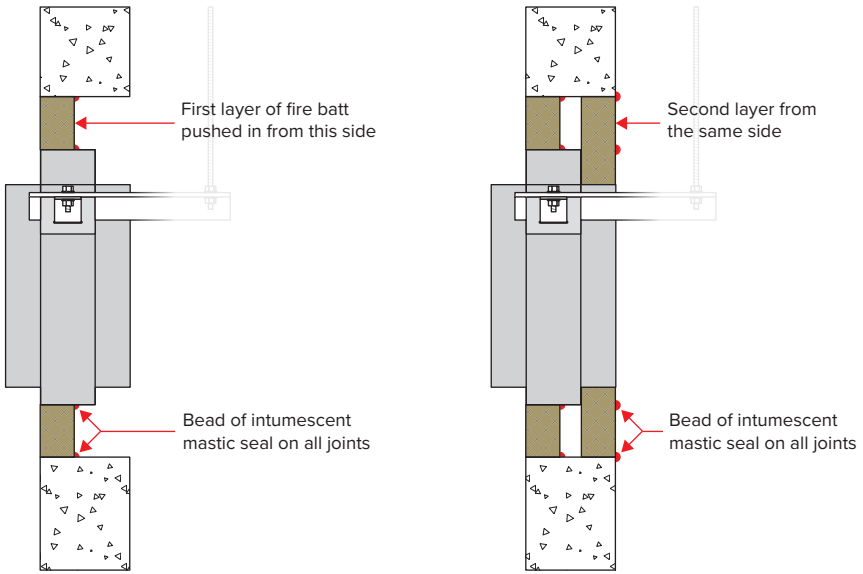
Fire batt

The fire batt used in Advanced Air fire testing is AstroFlame Astro Batt, which we seal with Astroflame INTU Mastic (Trowel grade for sealing cut edges, and Mastic tube for applying to finished joins), with is an Intumescent Ablative Batt sealant. This is a CE certified product tested to EN1366-3, classified to EN 13501- 2, and comprises of a 50mm thick 140kg/m^3 density mineral wool sheet with a ablative Batt coating. The batt should be installed in the number of layers shown on our relevant installation pages.

We recommend the use of these products to ensure compliance with our certified installations, however EN 15882-2:2022 clause 6.3 states that the tested ablative batt may be substituted by an alternative batt, providing it is of at least the same density and thickness, and has the same or better fire resisting characteristics supported by EN 1366-3 fire testing.

Installations from one side of the wall

Installations with drop rods on only one side of the wall can be installed without the need to access the opposite side of the wall, including the fire batt



Drop rods

All Advanced Air AFS fire tests are carried out using non-insulated (bare) mild steel M10 threaded drop rods at a length of 1.5 metres or less. Because the majority of fire dampers are installed close to the slab ceiling, and the AFS fixing points are located at the top of the damper, most drop rods for real life applications are likely to be shorter than this tested length.

When installations require drop rod lengths exceeding 1.5 metres, we recommend that they are insulated, and/or oversized, and in these cases we recommend the support is assessed by a structural engineer.

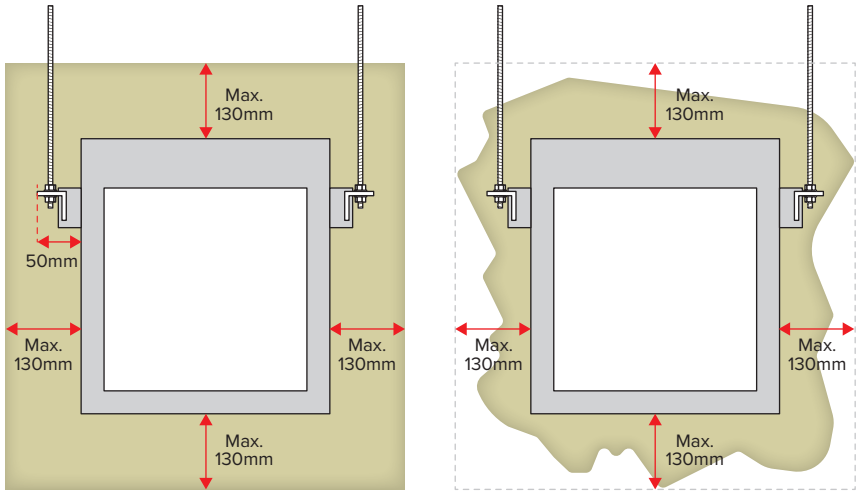
Opening size constraints

The AFS (Adjustable Frame System) installations all use a common opening size based on the overall outer frame size of the damper. We provide some easy to use opening size calculation tables based on the nominal duct size of the damper, and these tables can be found on each corresponding page in this manual. However the following is a more detailed description of what the allowances and limitations are when creating an opening for an AFS damper.

A damper does not have to be centralised within an opening. The maximum permissible distance between the damper case and the inside edge of the opening is 130mm, and there is no lower limit to the minimum permissible size, the only requirement being that there must be adequate room for the installation of the fire batt penetration seal (Advanced Air recommend a minimum of 25mm).

Opening sizes are traditionally rectangular, but the shape of the hole does not actually matter, and unconventional shapes are acceptable providing the maximum constraints of the opening fall within the maximum of 130mm, and there is fire batt installed all around the perimeter of the damper.

NOTE – The AFS brackets and rails stick out nearly 50mm from either side of the damper case, so space must be for these when sizing the opening.



Wall thicknesses

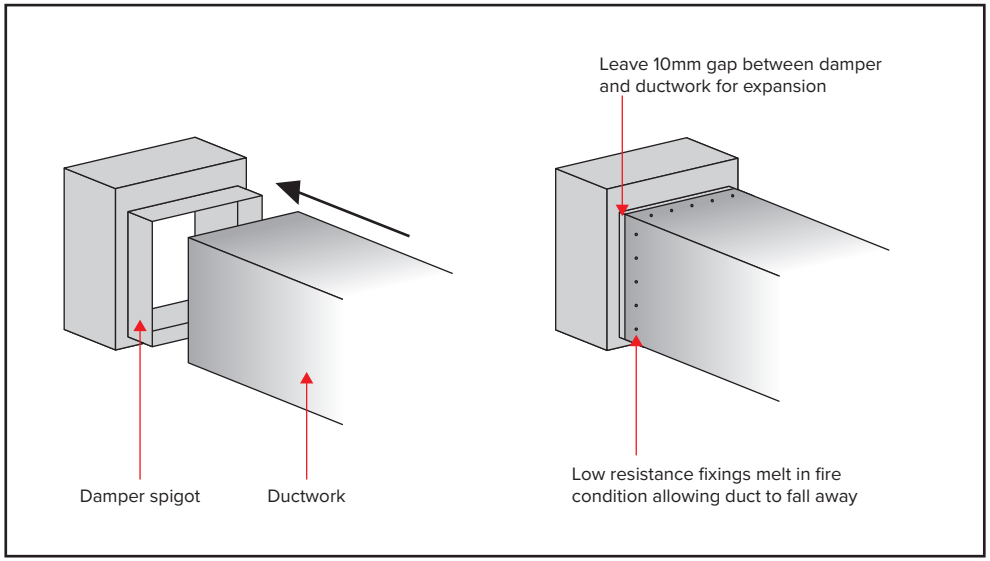
The wall for a given installation must meet the minimum thickness shown, however a thicker wall is also permitted. Where the wall is thicker than stated it is important to ensure that the access side of the damper is flush with one side of the wall to provide access for maintenance. The fire batt should be installed in a manner so that the penetration seal thickness is the same as the minimum “as tested” or greater. Installing the fire batt from the same side of the wall (see notes on Installations from one side of the wall on the previous page) may help in these situations.

Spigots for slip joints

Most Advanced Air products come with a duct connection “spigot” which is designed for a slip joint with the mating ductwork.

The connection is made by sliding the ductwork over the damper spigot, and fixing with low resistance fixings (those which will melt in the case of a fire) so that in the event of a fire condition, the ductwork can fall away without causing stress on the damper installation.

A 10mm gap should be left between the damper case and the edge of the ductwork, which prevents the ductwork applying pressure on the damper when it expands in a fire condition.

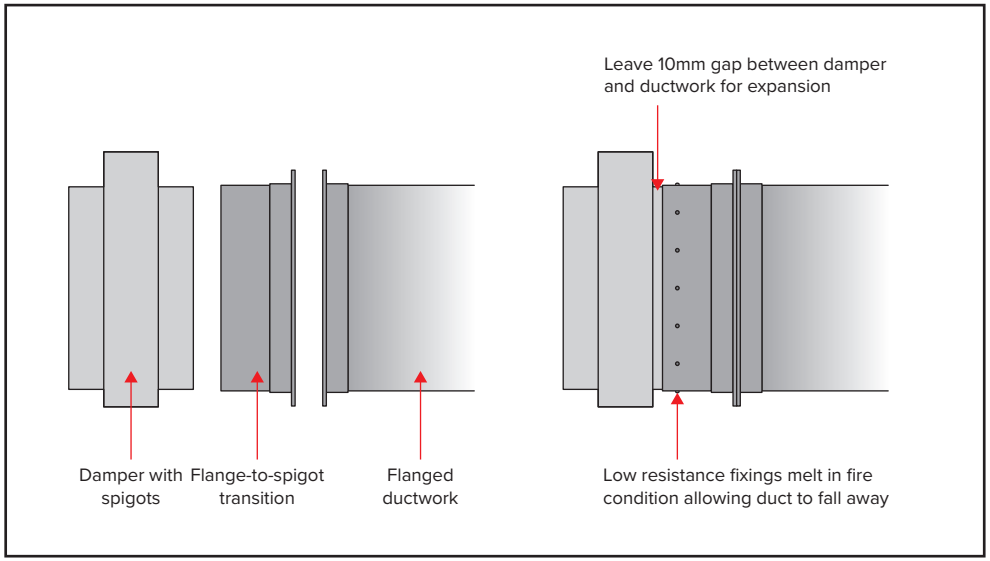


Flange connections

A CE compliant flange connection is possible with Advanced Air products, however Advanced Air products themselves cannot be supplied with a flange connection.

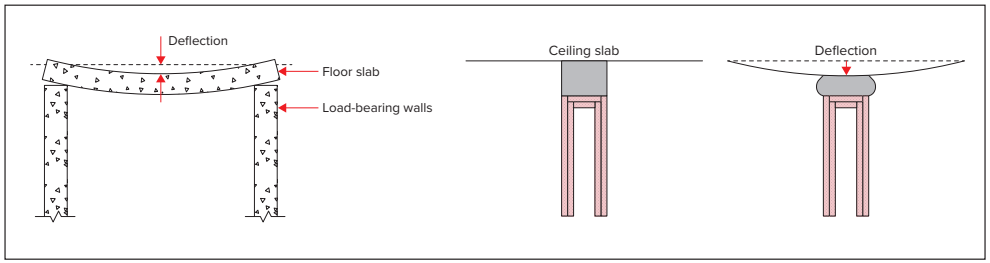
In order to utilise a flange connection with Advanced Air products, a flange to spigot transition piece must be used. The transition goes between the damper spigot and the ductwork, creating a fully CE compliant installation.

The spigot side of the transition should be installed in the same way a duct spigot would be installed (see opposite).



What is slab deflection?

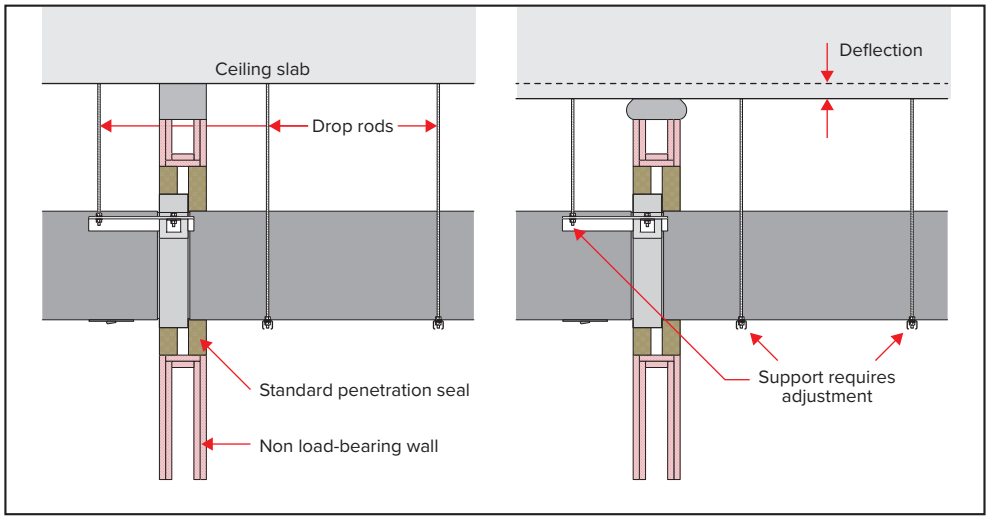
Slab deflection is when the slab layers of a building between each level settle after construction, which can sometimes cause them to deflect, causing the slab to bend and drop. The result is that any services connected to the ceiling slab (such as cable trays, ductwork, or even dampers) will lower too. If these services are also penetrating walls, which are unlikely to suffer any movement, the penetration seal around where these services pass through the wall may become damaged. This is a serious issue if the walls, and therefore the penetrations, are fire rated.



To add further complication to the issue, the join between non load bearing walls and slabs are typically lined with what is referred to as a deflection head, which is a layer of soft material that absorbs the movement of the slab without causing damage to the wall. However it is only recently that contractors and designers have started to think about the effects of deflection for other services, so there are few well known solutions for other services.

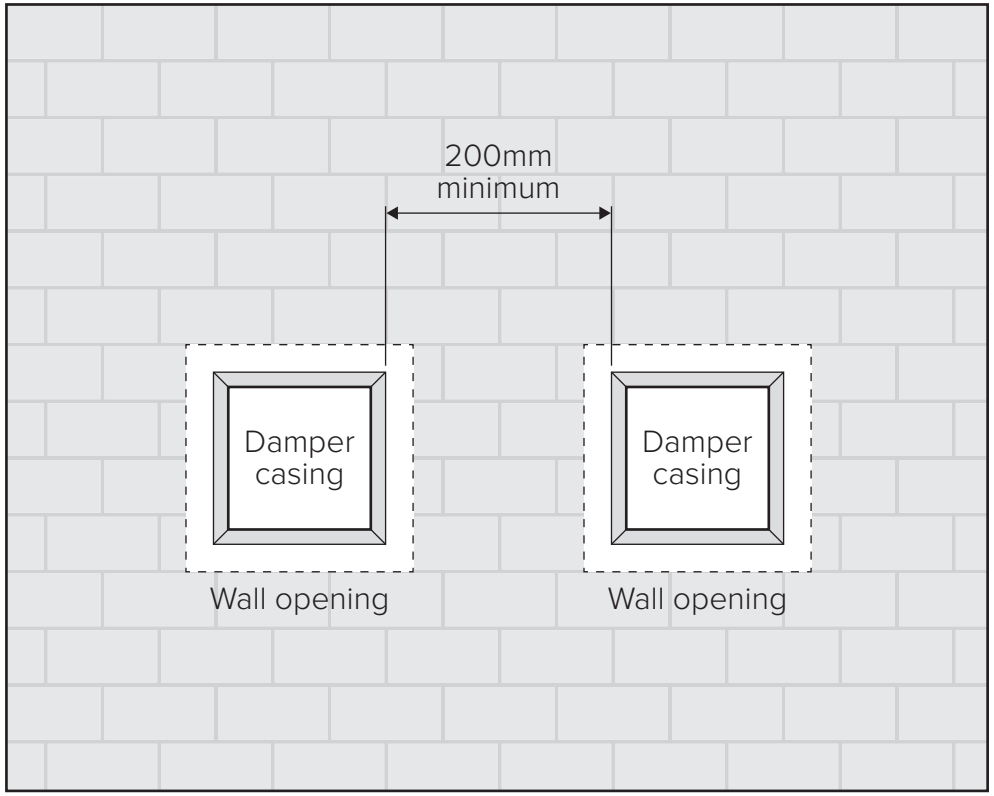
Are there any solutions?

There are various solutions on the market place, and the most common solution customers have used with damper and duct products is to install the drop rods that support the ductwork or dampers in a manner that allows these drop rods to pass through the damper and duct fixing points in the event of deflection. Dampers and ductwork should be inspected at regular intervals, and if the securing nuts underneath the mounting points on a damper or ductwork have dropped, due to slab deflection, they can be re-tightened. This restores the support that the drop rods are giving to the products.



Supporting construction

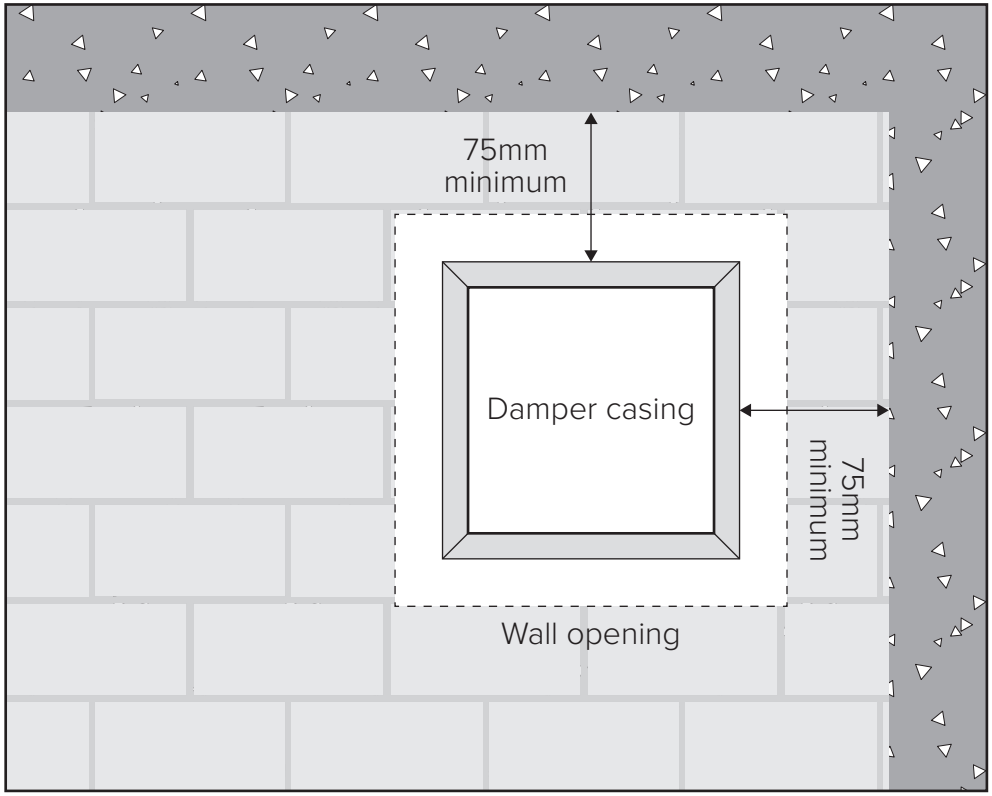
BS EN 1366-2:2015 section 7.3 states “the distance between the fire dampers shall not be less the 200mm.” Specific wall manufacturers may require a larger distance between dampers due to the nature of their wall.



Multiple ducts in one large opening is not currently included in a harmonised standard, but this is being investigated by standards committees.

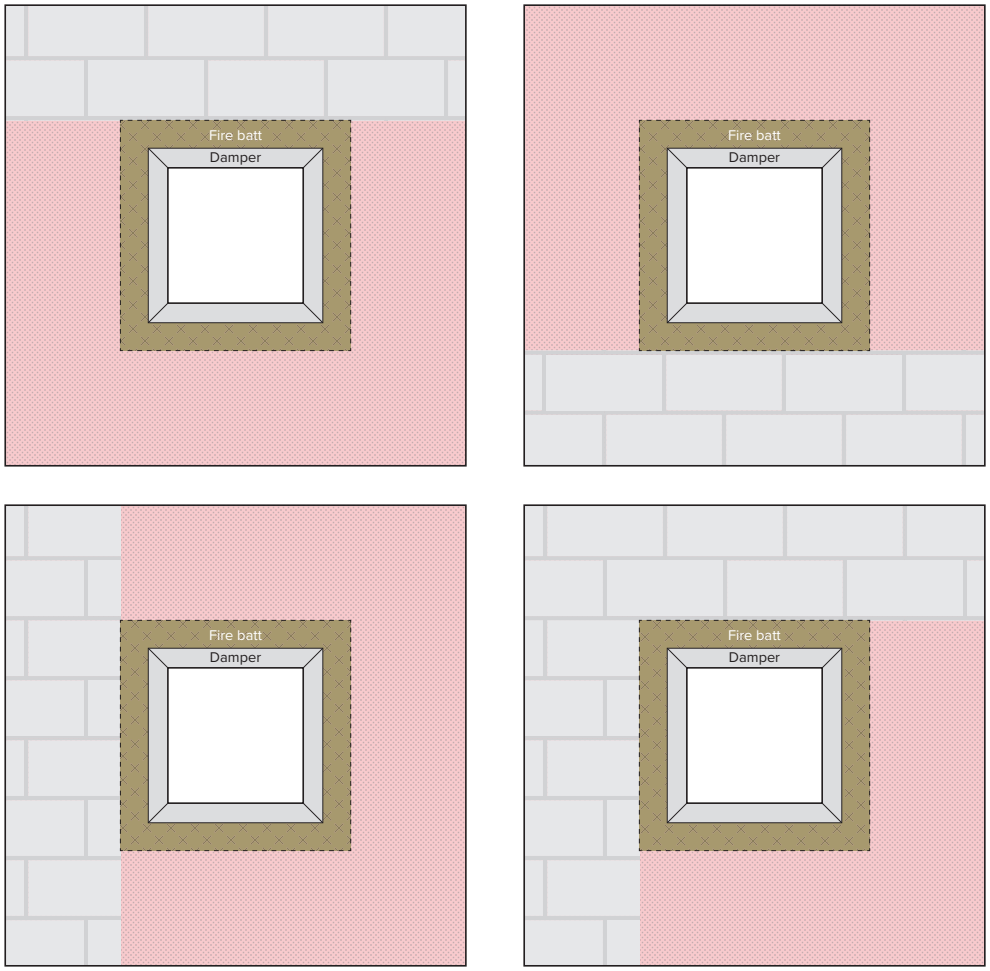
Surrounding construction

BS EN 1366-2:2015 section 13.6 states “minimum separation of 75mm between fire damper and a construction element (wall / floor).”



Acceptability of mixed construction walls

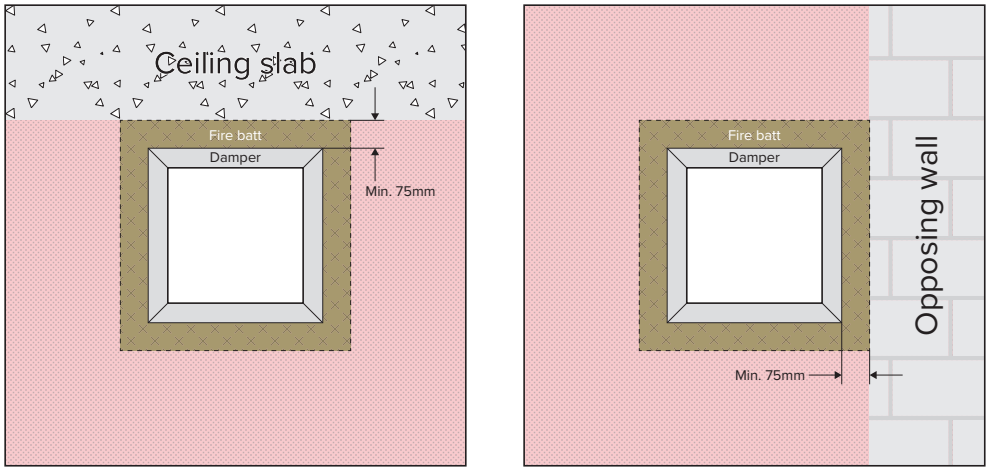
The question of whether “mixed construction” walls are acceptable is regularly discussed on projects – this is where a wall is made from both plasterboard (Flexible) and blockwork/concrete (Rigid) elements which mean that the sides of the damper opening are different. A few examples are shown below and the Rigid element could be another continuation of the wall, or even an opposing wall or slab.



Compliance with BS EN 1366-2

The direct field of application in BS EN 1366-2 states that products tested in Flexible walls are also suitable for installation into Rigid supporting constructions. It is therefore reasonable to assume that a mixed construction would be acceptable on the same basis. For further clarification we contacted our notified body, the BRE, who were able to provide a written statement that mixed constructions are acceptable. A copy of this correspondence is available upon request.

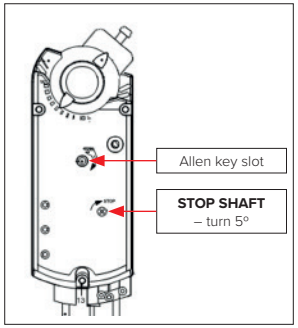
It is important to remember that where a given side of the opening is an opposing wall or floor/ceiling slab, rule BS EN 1366-2 clause 13.6 should be observed, which requires a gap of at least 75mm between the damper case and any opposing wall or floor/ceiling slab as shown below:

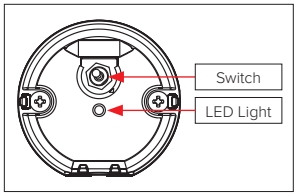


Initial operating check

The 2530 damper should only be commissioned once it is fully installed and connected to electrical power. The damper installation should be inspected thoroughly to ensure that it is clean and free of any internal debris before the damper actuation is tested as per the following instructions:

- Isolate the power.
- Remove the access door.
- Test the damper manually by using the Allen key provided and turning it clockwise until the damper is fully opened, mechanically lock the actuator by using a screwdriver to turn the **STOP SHAFT** 5^0.
- Visually inspect the damper checking that the damper is in its fully opened position.
- Close the damper by turning the Allen key clockwise and releasing it, the spring action of the actuator will wind the damper to its fully closed position.
- Visually inspect through the access door that the blades are fully closed.
- Reapply power to the actuator. The actuator will start to travel, and a **GREEN** light will be lit on the Thermal Release housing, it will take 90 seconds to fully open.
- The switch on the Thermal Release housing can be pressed to simulate activation of the thermal release, the LED light will turn **RED** and the actuator will spring return to its unpowered position, it should take 15 seconds to complete this cycle.
- Release the switch and the damper will return to its fully opened position.
- Visually inspect through the access door that the blades are fully open and then re-fit the access door.
- Damper not fully opening or closing?
  - Obstruction to the blades – remove the obstruction.
  - Incorrect set up of the actuator – the actuator has been adjusted by others from the Factory Set position.
  - For other faults contact Advanced Air Sales Office.
- Complete any relevant reports.



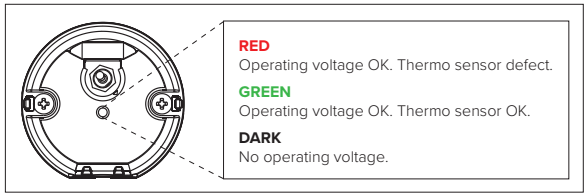


Maintenance

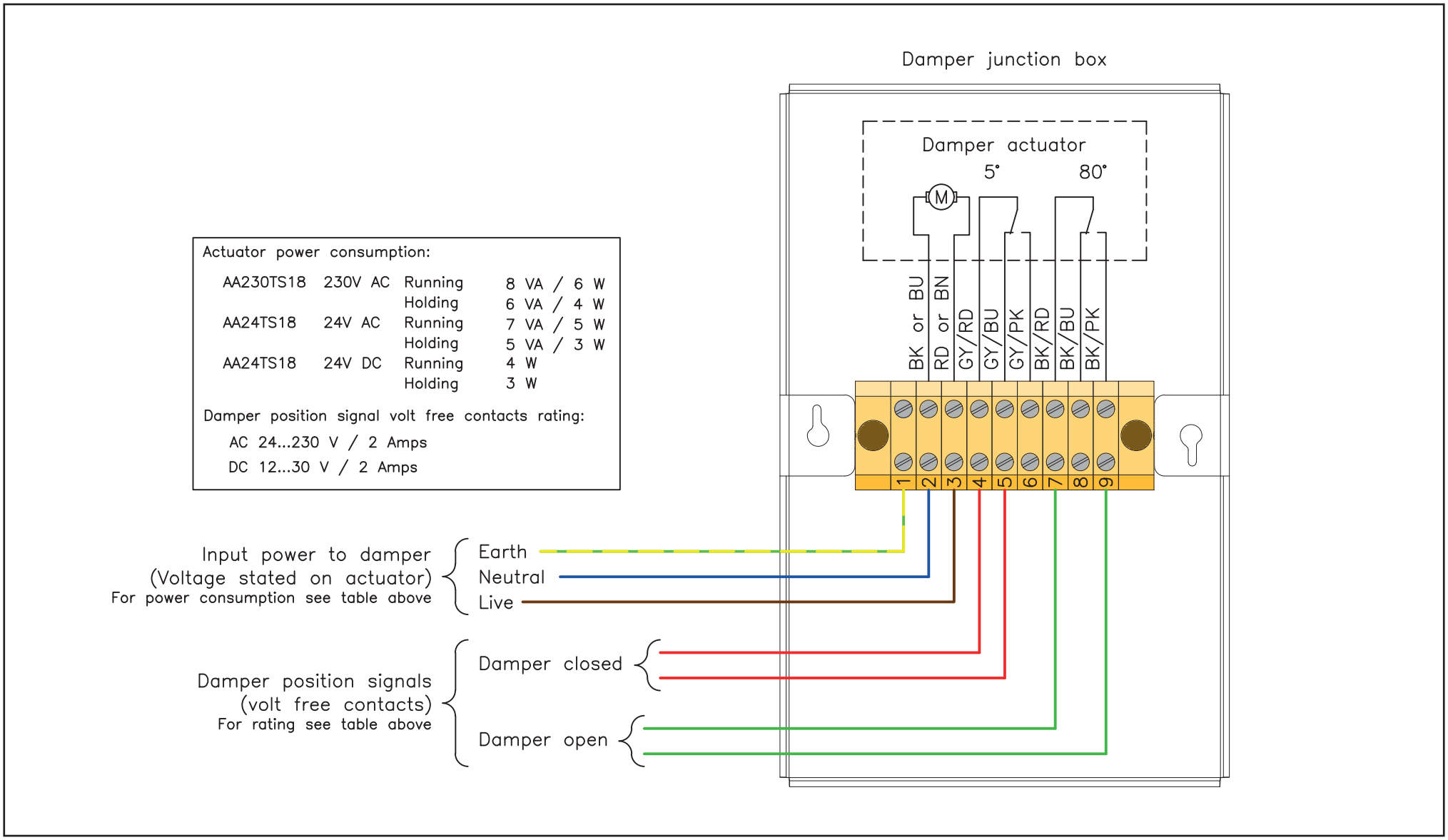
2530 dampers are installed as a life safety product and it is essential that they are always maintained so they are in a good, clean working condition. In accordance with BS9999 Annex W.1 maintenance and inspection should be undertaken annually.

Maintain the dampers as follows;

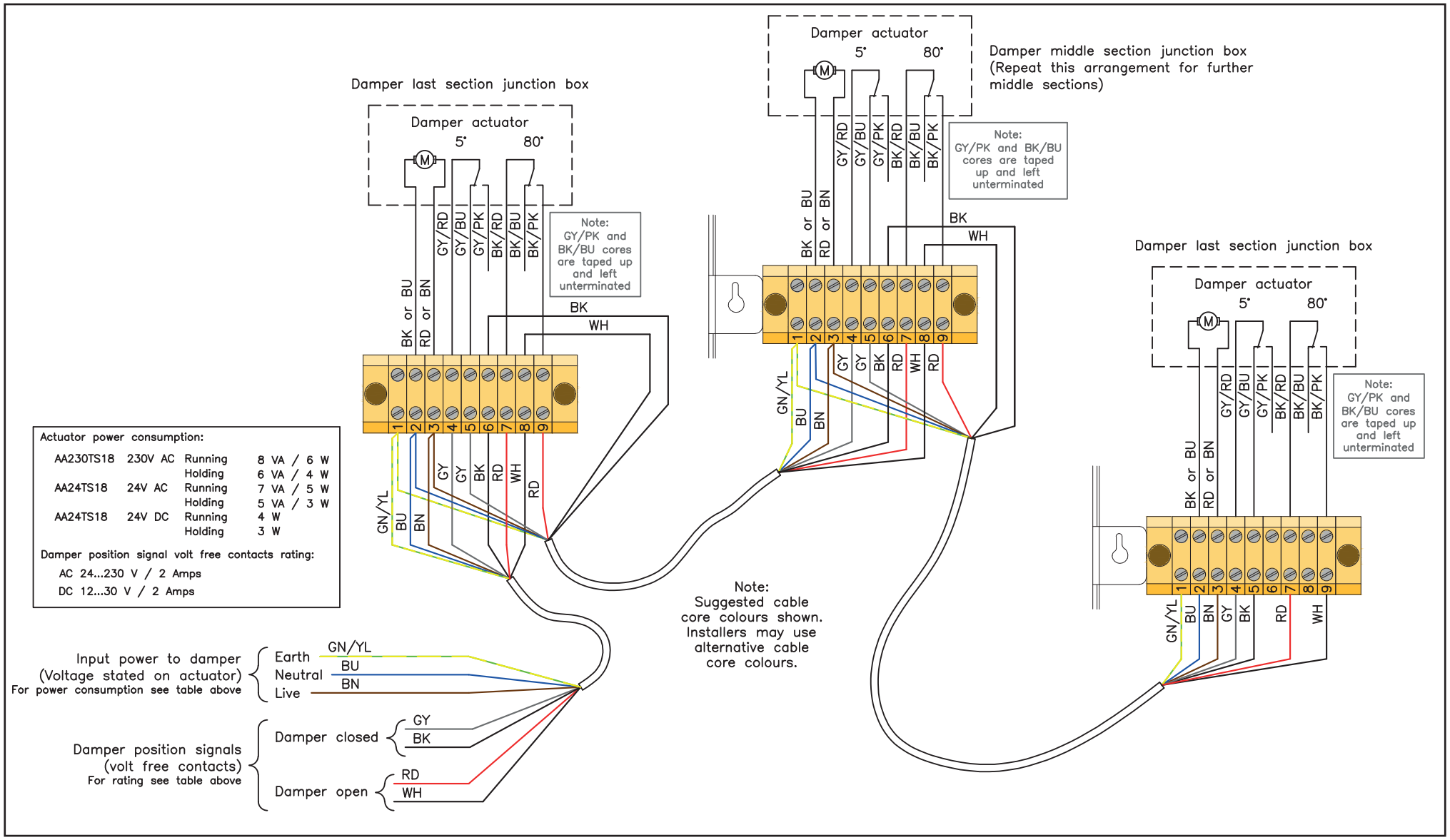
- Remove the access door to internally inspect the damper.
- Visually inspect all damper components for signs of corrosion, obstructions and build-up of dirt/dust.
- Remove any obstructions, wipe away all dirt and dust from the damper blades, sides seals and duct surfaces.
- The damper blades are fitted to sintered metal, self-lubricated bearings which do not normally require any attention.
- Check that the thermal release probe is intact and does not show signs of damage.
- After internal inspections are complete a functional check of the damper should be made.
- The 2530 damper is fitted with an electrical thermal release probe and its housing has a LED light and an On/Off toggle switch.
  - A **GREEN** light indicates that there is a power supply and that the thermo sensor is OK.
  - A **RED** light indicates a power supply but there is a fault.
  - No light indicates that there is no power supply.



- Push and hold the toggle switch to simulate over-temperature. This simulates the response of the release, enabling the proper functioning test of the actuator and damper. It should take 15 seconds for the damper to close and during the test the LED light will turn **RED**.
- After checking that the blades on the damper are fully closed, release the switch and the actuator will power to its open position and the light will turn **GREEN**, check that the blades are in the open position.
- Refit the access door and complete maintenance reports as appropriate.


Damper junction box
Damper actuator
5°
80°
M
BK or BU
RD or BN
GY/RD
GY/BU
GY/PK
BK/RD
BK/BU
BK/PK
1
2
3
4
5
6
7
8
9
Actuator power consumption:
AA230TS18 230V AC Running 8 VA / 6 W
Holding 6 VA / 4 W
AA24TS18 24V AC Running 7 VA / 5 W
Holding 5 VA / 3 W
AA24TS18 24V DC Running 4 W
Holding 3 W
Damper position signal volt free contacts rating:
AC 24...230 V / 2 Amps
DC 12...30 V / 2 Amps
Input power to damper
(Voltage stated on actuator)
For power consumption see table above
Earth
Neutral
Live
Damper position signals
(volt free contacts)
For rating see table above
Damper closed
Damper open

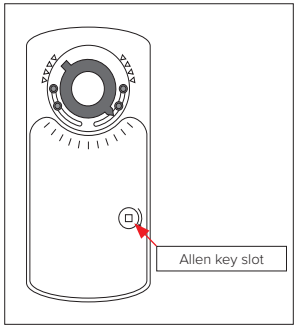
WIRING INSTRUCTIONS – 2530 MULTI-SECTION WITH AA230TS18 OR AA24TS18 ACTUATORS

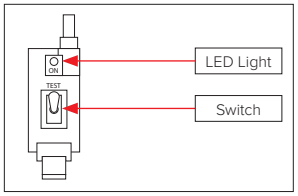


Initial operating check

The 2530 damper should only be commissioned once it is fully installed and connected to electrical power. The damper installation should be inspected thoroughly to ensure that it is clean and free of any internal debris before the damper actuation is tested as per the following instructions:

- Isolate the power.
- Remove the access door.
- Test the damper manually by using the Allen key provided. Push down and turn it clockwise until the damper is fully opened, mechanically lock the actuator by making a reverse turn until you hear a click.
- Visually inspect the damper checking that the damper is in its fully opened position.
- Close the damper by turning the Allen key clockwise and releasing it, the spring action of the actuator will wind the damper to its fully closed position.
- Visually inspect through the access door that the blades are fully closed.
- Reapply power to the actuator. The actuator will start to travel, and a **GREEN** light will be lit on the Thermal Release housing, it will take 120 seconds to fully open.
- The switch on the Thermal Release housing can be pressed to simulate activation of the thermal release, the LED light will turn **RED** and the actuator will spring return to its unpowered position, it should take 10 seconds to complete this cycle.
- Release the switch and the damper will return to its fully opened position.
- Visually inspect through the access door that the blades are fully open and then re-fit the access door.
- Damper not fully opening or closing?
  - Obstruction to the blades – remove the obstruction.
  - Incorrect set up of the actuator – the actuator has been adjusted by others from the Factory Set position.
  - For other faults contact Advanced Air Sales Office.
- Complete any relevant reports.



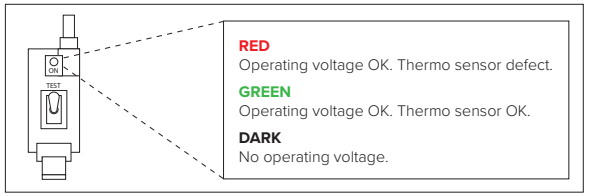


Maintenance

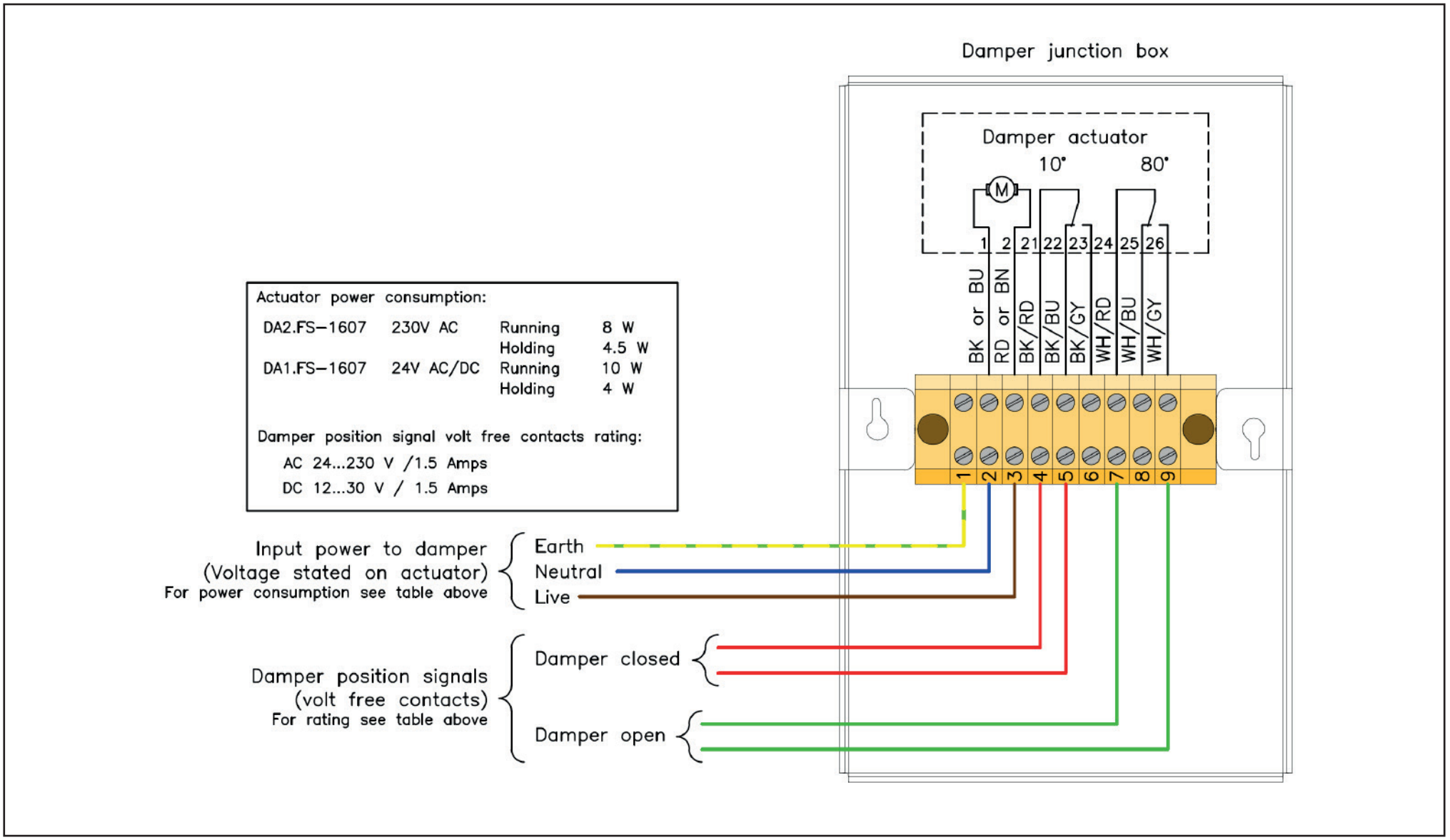
2530 dampers are installed as a life safety product and it is essential that they are always maintained so they are in a good, clean working condition. In accordance with BS9999 Annex W.1 maintenance and inspection should be undertaken annually.

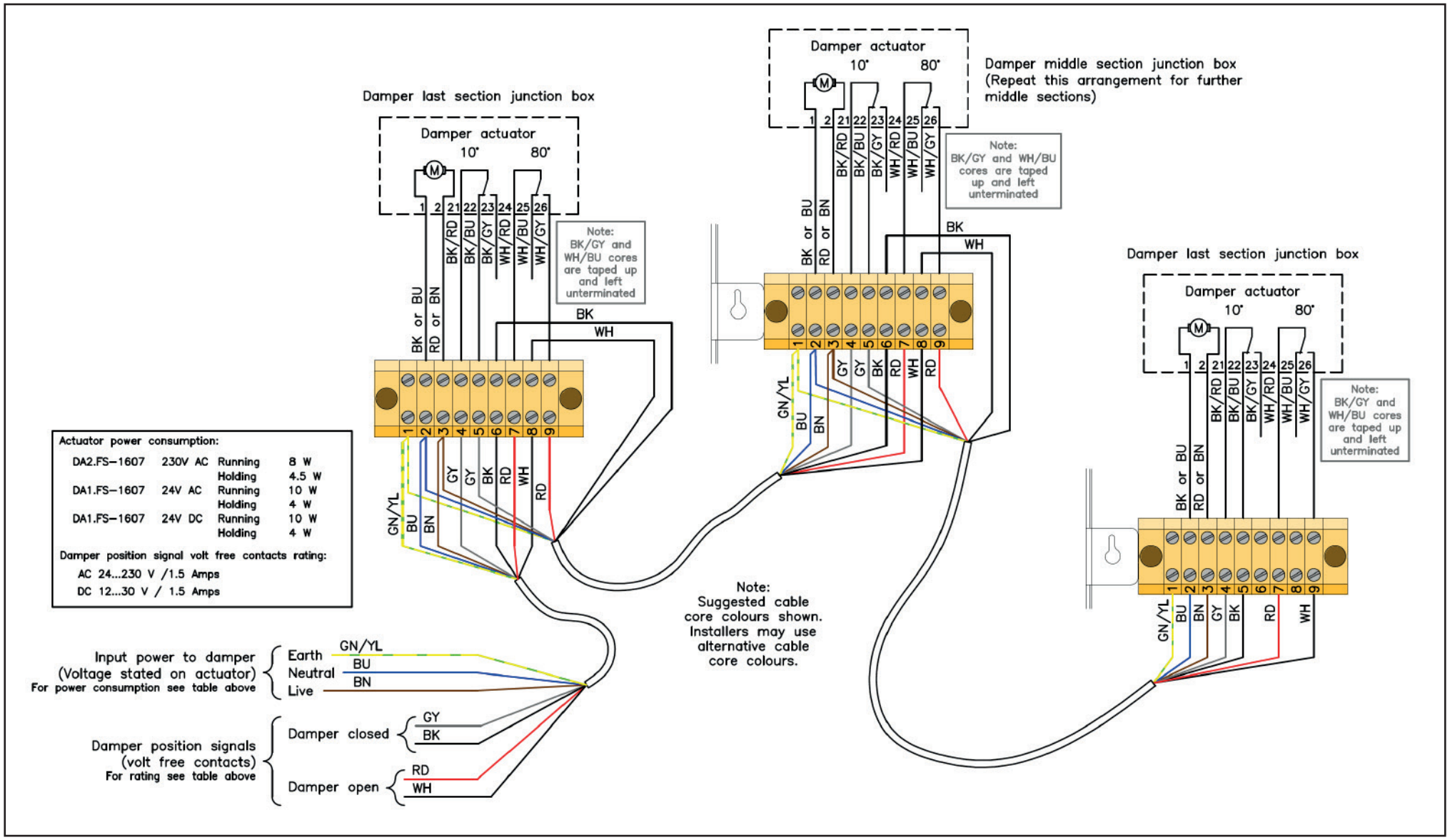
Maintain the dampers as follows;

- Remove the access door to internally inspect the damper.
- Visually inspect all damper components for signs of corrosion, obstructions and build-up of dirt/dust.
- Remove any obstructions, wipe away all dirt and dust from the damper blades, sides seals and duct surfaces.
- The damper blades are fitted to sintered metal, self-lubricated bearings which do not normally require any attention.
- Check that the thermal release probe is intact and does not show signs of damage.
- After internal inspections are complete a functional check of the damper should be made.
- The 2530 damper is fitted with an electrical thermal release probe and its housing has a LED light and an On/Off toggle switch.
  - A **GREEN** light indicates that there is a power supply and that the thermo sensor is OK.
  - A **RED** light indicates a power supply but there is a fault.
  - No light indicates that there is no power supply.



- Push and hold the toggle switch to simulate over-temperature. This simulates the response of the release, enabling the proper functioning test of the actuator and damper. It should take 10 seconds for the damper to close and during the test the LED light will turn **RED**.
- After checking that the blades on the damper are fully closed, release the switch and the actuator will power to its open position and the light will turn **GREEN**, check that the blades are in the open position.
- Refit the access door and complete maintenance reports as appropriate.


Damper junction box
Damper actuator
10°
80°
M
1 2 21 22 23 24 25 26
BK or BU
RD or BN
BK/RD
BK/BU
BK/GY
WH/RD
WH/BU
WH/GY
1 2 3 4 5 6 7 8 9
Actuator power consumption:
DA2.FS–1607 230V AC Running 8 W
Holding 4.5 W
DA1.FS–1607 24V AC/DC Running 10 W
Holding 4 W
Damper position signal volt free contacts rating:
AC 24...230 V /1.5 Amps
DC 12...30 V / 1.5 Amps
Input power to damper
(Voltage stated on actuator)
For power consumption see table above
Earth
Neutral
Live
Damper position signals
(volt free contacts)
For rating see table above
Damper closed
Damper open


Damper last section junction box
Damper actuator
10°
80°
1 2 21 22 23 24 25 26
BK/RD BK/BU BK/GY WH/RD WH/BU WH/GY
BK or BU
RD or BN
BK
WH
Note: BK/GY and WH/BU cores are taped up and left unterminated
GN/YL BU BN GY GY BK RD WH RD
Damper middle section junction box (Repeat this arrangement for further middle sections)
Note: BK/GY and WH/BU cores are taped up and left unterminated
1 2 3 4 5 6 7 8 9
Damper last section junction box
Damper actuator
10°
80°
Note: BK/GY and WH/BU cores are taped up and left unterminated
Actuator power consumption:
DA2.FS–1607 230V AC Running 8 W
Holding 4.5 W
DA1.FS–1607 24V AC Running 10 W
Holding 4 W
DA1.FS–1607 24V DC Running 10 W
Holding 4 W
Damper position signal volt free contacts rating:
AC 24...230 V /1.5 Amps
DC 12...30 V / 1.5 Amps
Note: Suggested cable core colours shown. Installers may use alternative cable core colours.
Input power to damper (Voltage stated on actuator)
For power consumption see table above
Earth GN/YL
Neutral BU
Live BN
Damper position signals (volt free contacts)
For rating see table above
Damper closed GY BK
Damper open RD WH

Fire Damper Checklist

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

No.	Question	Guidelines	Tick
1	Are the dampers the correct type?	Fire Damper Model 0160, 0400MAN Fire Damper Model 2550, 2530, 26SCD and 0400FME	
2	Are the dampers correctly identified?	Identification label clearly shows the damper individual reference number	
3	Are the dampers located correctly?	The damper position matches the position as detailed on the manufactures installation instructions	
4	Have supports for both the damper and the adjacent ductwork been installed in accordance with the approved method?		
5	Are the dampers fitted in the correct orientations?	The dampers are installed the correct way up relative to airflow and access	
6	Is access, through the ductwork to the damper unobstructed?	There is unobstructed space to allow safe access to damper, also through ceiling void and adjacent services	
7	Confirm the space around the damper has not been used for the passage of other services	The presence of other services will invalidate the installation method	
8	Using the access opening provided, confirm that the damper has been left in the open position		
9	Release the damper catch to simulate the thermal release mechanism (damper drop test)	Ensure the blade operation is free from interference	
10	Check damper blades for damage	With the damper in the closed position inspect for damage	
11	Re-set damper and replace access panel	After resetting check that if supplied the visual position indicator is correct	
12	Is the fire barrier and penetration seal complete?	Confirm at handover if installation is complete and if no then other trades will be required to finish	
13	Handover damper installation for commissioning	Obtain relevant acceptance of the damper installation from the nominated person responsible	

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