

ThermShield Standard Installation Method (Square/Rectangular)

Contents

Applies to.....	1
Health and safety	1
CE Installation Method Overview	2
Fire damper installation openings.....	3
Rigid wall installation (mortar sealing)	4
Rigid wall installation (mineral wool sealing)	5
Rigid wall installation (Fire Batt)	6
Flexible wall installation (mortar sealing)	7
Flexible wall installation (mineral wool sealing)	8
Flexible wall installation (Fire Batt)	9
Rigid floor/ceiling installation (mortar sealing)	10
Rigid floor/ceiling installation (Fire Batt)	11
Suspension for mortarless floor installation	12
Suspension for mortarless ceiling installation.....	13
Suspension for mortarless installation close to ceiling	14
Battery assembly installation up to 2x2 sections	15
Battery assembly installation (floor/ceiling)up to 2x2 sections.....	16
Battery assembly installation 1x2 or 2x1 sections	17
Minimal separation damper installation	18
Periodic maintenance.....	20
Actuators	21
Wiring Diagrams	24
Dimensional Data	26
Inspection and handover check sheet	28

Applies to...

- Actionair ThermShield FD

Health and safety

- This process must be undertaken by competent persons. More than one person may be required to ensure the safe handling of large dampers and other materials. Use must be made of access equipment to ensure unsafe practices are not used to approach walls or difficult access areas.
- Standard site PPE should be used (minimum steel toe cap boots, hard hat); together with any protective eyewear, gloves and masks, when drilling or cutting is being undertaken. The latter should also be used when handling the wall construction materials, as defined by the material suppliers. If loud equipment is being used, hearing protection should be used.
- All waste materials should be collected and disposed of as defined by the relevant supplier.
- Actuators: All wiring should be carried out in accordance with the wiring details provided by the IEE and BS regulations and by a competent person. Care must be taken when installing and inspecting dampers, as they are likely to close without warning due to loss of electrical power or a temperature rise in the ductwork. This is their prime function. Do not insert any items, fingers or limbs between the blades. Larger dampers must be handled in accordance with current regulations and good practice due to weight.

CE Installation Method Overview

Application	Installation Method
Rigid wall installation (mortar sealing)	Page 4
Rigid wall installation (mineral wool sealing)	Page 5
Rigid wall installation (Fire Batt)	Page 6
Flexible wall installation (mortar sealing)	Page 7
Flexible wall installation (mineral wool sealing)	Page 8
Flexible wall installation (Fire Batt)	Page 9
Rigid floor/ceiling installation (mortar sealing)	Page 10
Rigid floor/ceiling installation (Fire Batt)	Page 11
Suspension for rigid floor installation	Page 12
Suspension for rigid ceiling installation	Page 13
Minimal separation distance installation	Page 14

- For full classifications please refer to our Declaration of Performance (DoP), which can be found on our website.
- The methods in this manual should be followed to ensure a CE-marked installation.
- The instructions are based on the tested method using Actionair ThermShield fire dampers.
- Our ThermShield dampers are designed to be used with fire separating elements to maintain fire compartments. The ThermShield is an actuated failsafe close damper with low smoke leakage.
- Under the Fire Damper Product standard BS EN 15650 our Fire Damper products are tested to BS EN 1366-2 and classified under BS EN 13501-3.

Fire damper installation openings

The FD25 / FD40 fire damper is always tested in standardised support frames (both in a concrete wall and in a flexible wall) in accordance with EN 1366-2: 2015 table 3/4/5. The results obtained are valid for all similar support frames which have a thickness and / or density and / or fire resistance similar or greater than the one of the tests.

The duct connected to the fire damper must be supported or hung in such a way that the damper does not carry its weight. The damper must not support any part of the surrounding construction or wall which could cause damage and consequent damper failure. It is recommended to connect the damper to a flexible connection on either end of the duct.

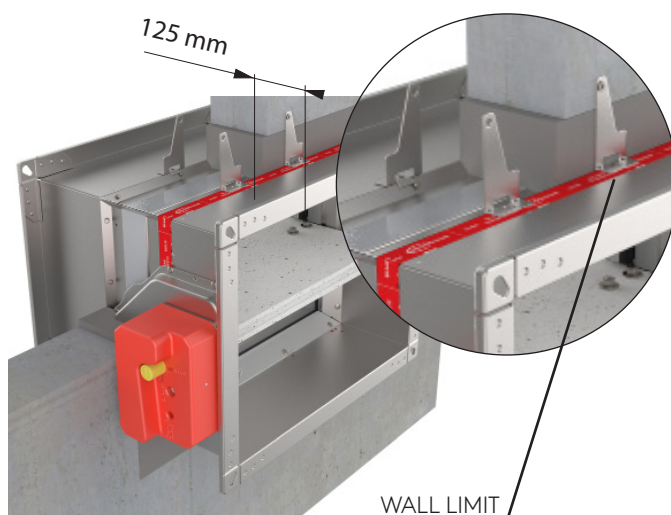
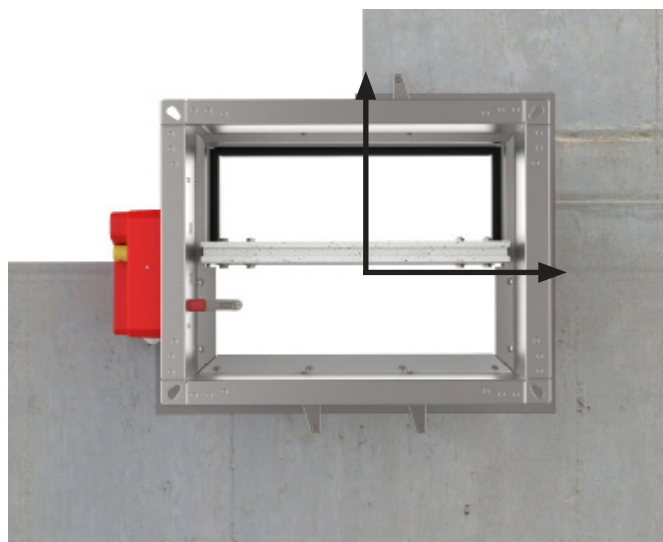
The damper driving mechanism can be placed on either side of the wall, however it needs to be placed so as to ensure easy access during inspection.

- The installation must comply with the tests that were performed during certification
- Avoid any obstruction of the moving blade by the connected ducts
- The class of air-tightness is maintained in case the installation of the damper is made in accordance with the technical manual
- General operating temperature: 50 °C max
- For indoor use only

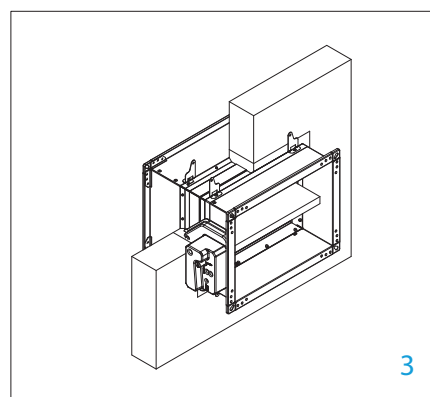
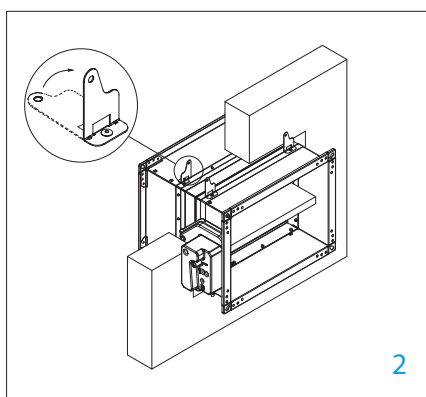
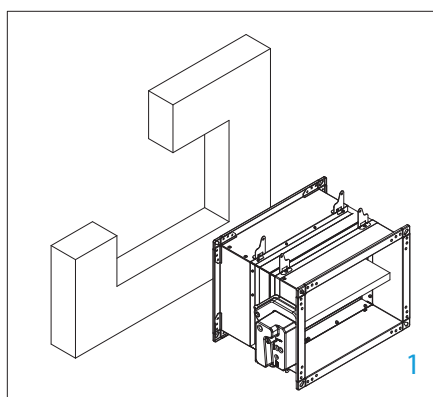
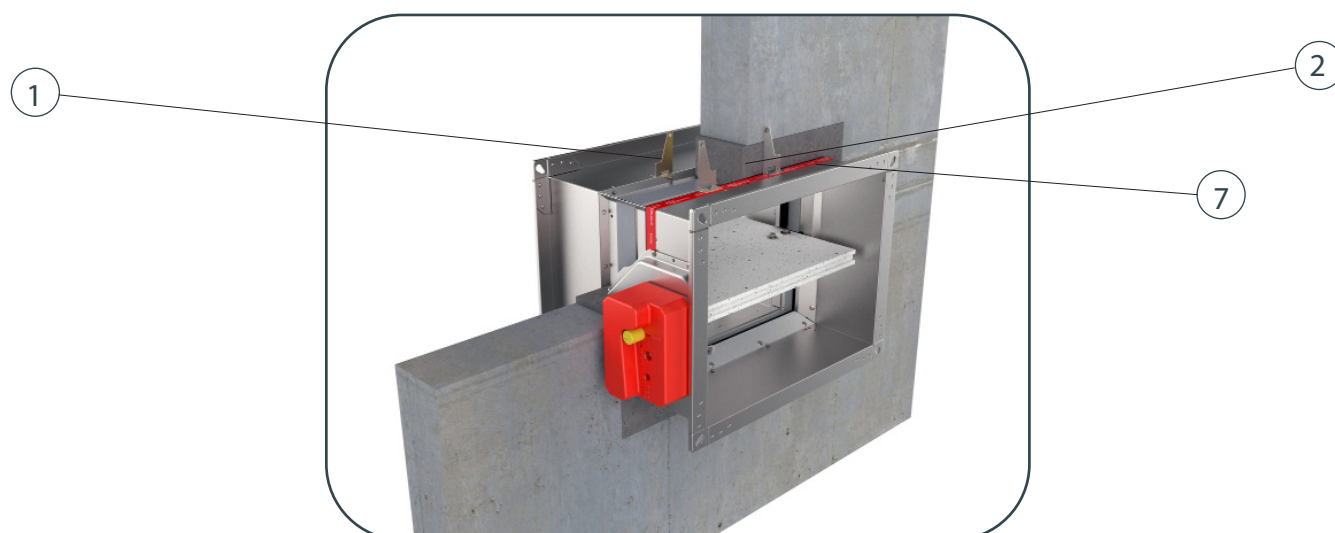
All dampers can be installed with the blade axis in a horizontal position or a vertical position in all installation types except installation remote from the wall and battery installation. The fire damper must be installed into a fire partition structure in such a way that the damper blade in its closed position is located inside this structure.

To help you find the suspension plane, a bendable fixing bracket is provided on the damper body and the red tape is placed on the casing to mark the location of the wall limit (distance from wall limit to the end of fire damper is 125mm). This does not apply for Applique / MF2 kit installations.

Check the operation of the fire damper before commencing the installation!



ThermShield Standard Square/Rectangular Installation Guide



Rigid wall installation (mortar sealing)

Damper blade must be closed during the installation!

The wall is composed of concrete blocks (minimum density of 550 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm. Installation material: mortar.

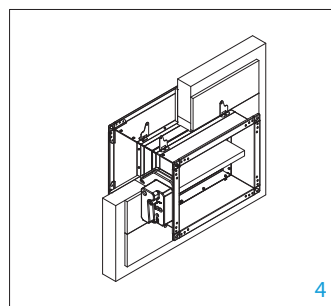
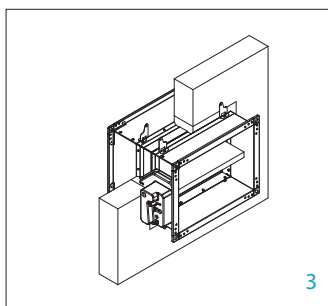
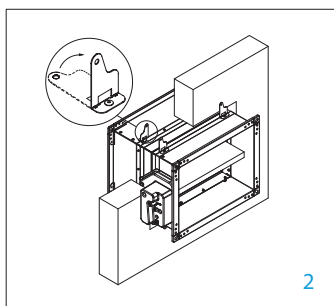
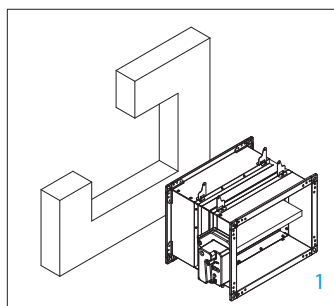
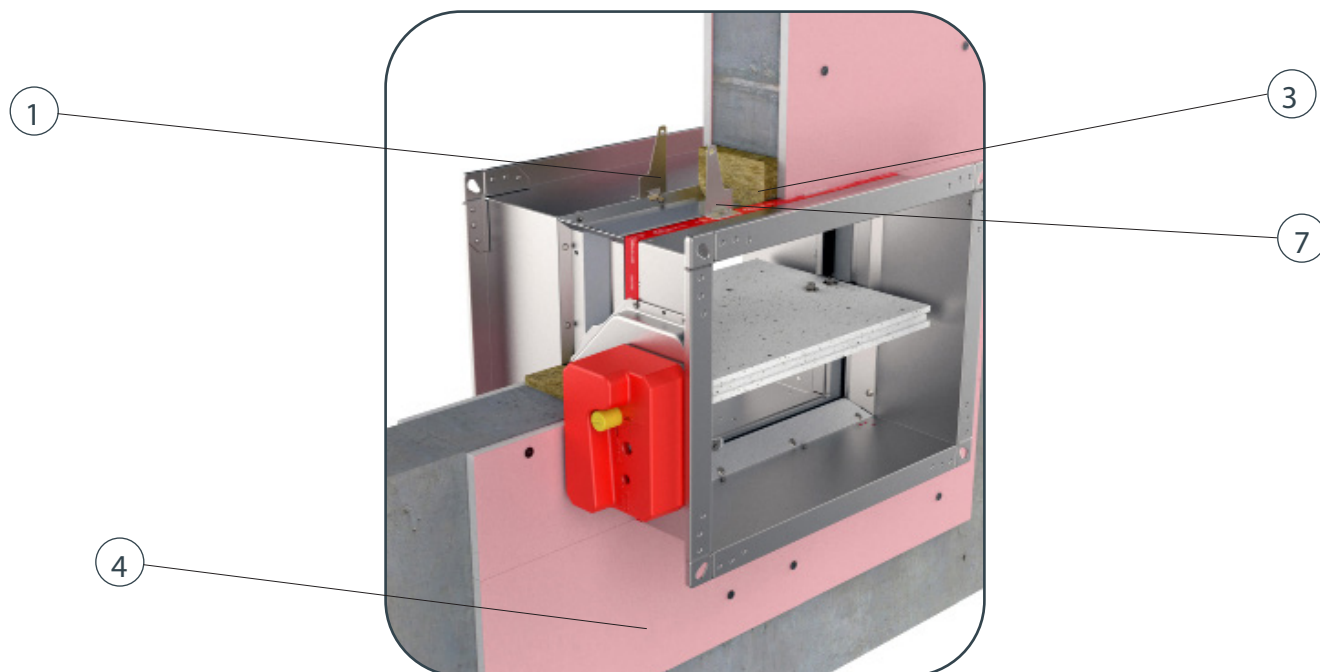
1. Prepare opening in the wall according to B (H) + 80 mm or more (up to 50% more). Insert fire damper into wall to the wall limit mark (7) on the damper and bend the fixing bracket (1) 90°.
2. Fix the fire damper to the wall with the screws. Bracket screw hole is 6 mm in diameter.
3. Fill the space between the damper and the wall with mortar. (2).

Minimum separation between fire dampers, either next to each other or ceiling/wall, should be 30 mm between them. See page 18.

* Build the support for installation according to the drawing

Test the operation of the damper blade!

Ensure that the damper is sufficiently supported!



Rigid wall installation (mineral wool sealing)

Damper blade must be closed during the installation!

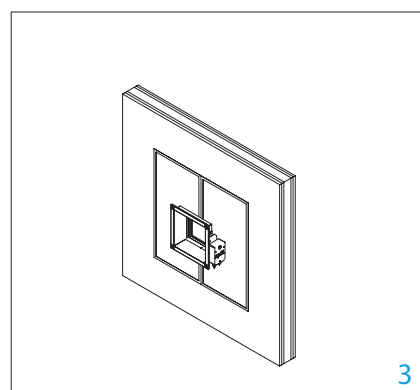
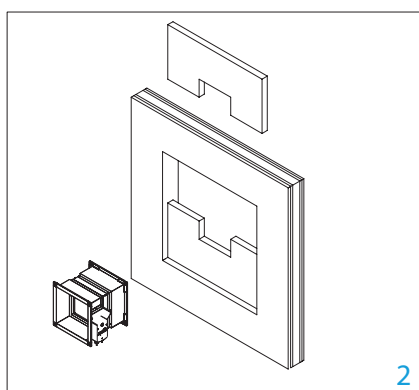
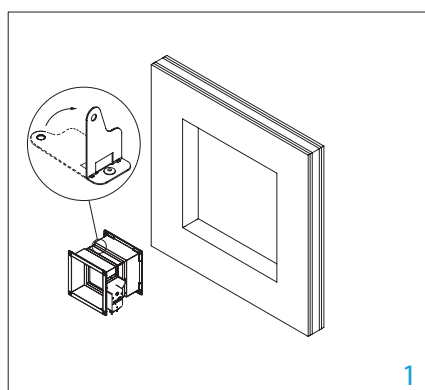
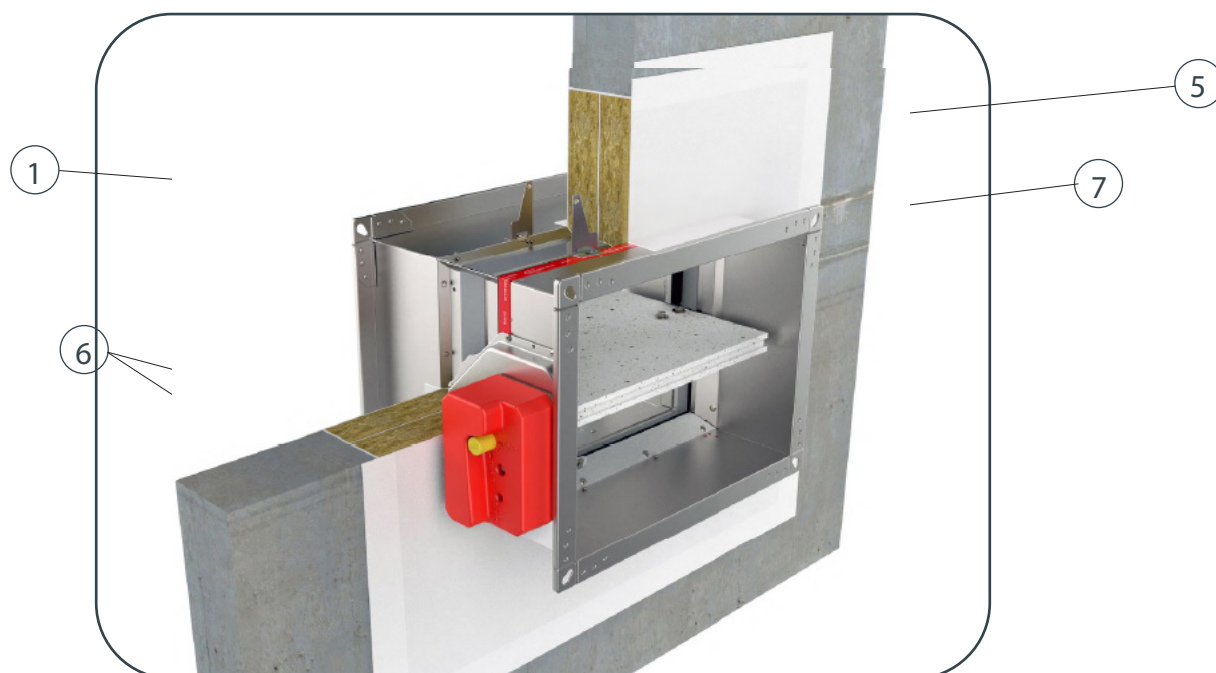
The wall is composed of concrete blocks (minimum density of 550 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm.

Installation material: mineral wool, covered with plasterboard cover boards.

1. Prepare opening in the wall according to B (H) + 80 mm or more (up to 50% more). Insert fire damper into wall to the wall limit mark (7) on the damper and bend the fixing bracket (1) 90° (bracket screw hole is 6 mm in diameter).
2. Fix the fire damper to the wall with the screws (refer to page 15).
3. Fill the space between casing and wall with mineral wool (3).
4. Cover the wool with gypsum boards (4) (12,5 mm thick).

Minimum separation between fire dampers, either next to each other or ceiling/wall, should be 30 mm between them. See page 18.

Ensure that the damper is sufficiently supported!



Rigid wall installation (Fire Batt)

Damper blade must be closed during installation!

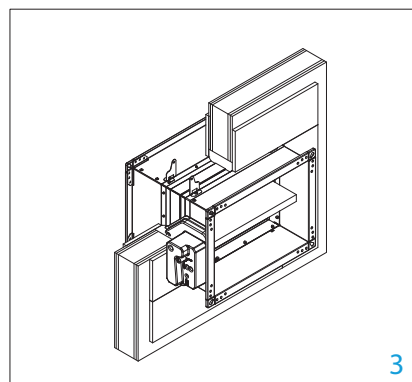
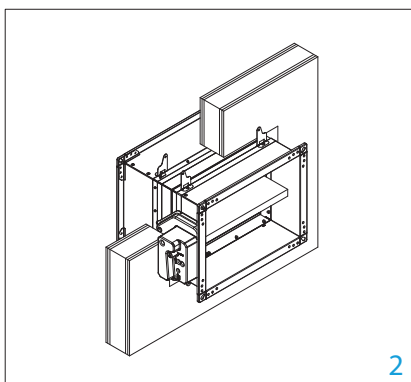
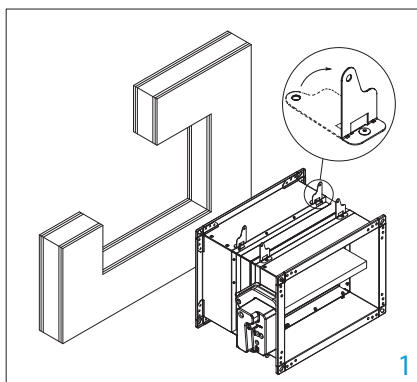
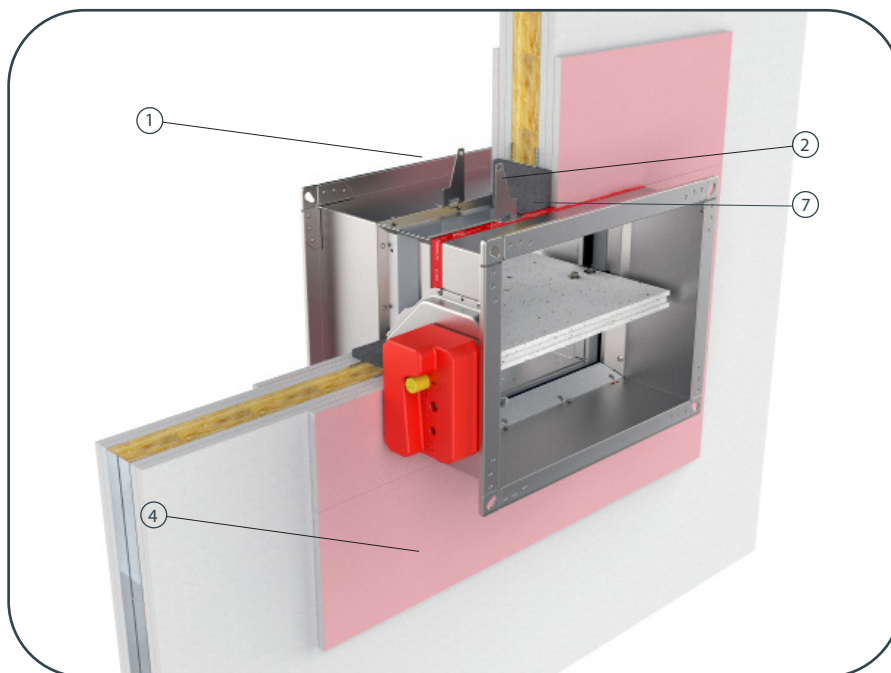
The wall is composed of concrete blocks (minimum density of 550 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100 mm.

Installation material: mineral wool ≥ 140 kg/m³, fire protection coating.

1. Recommended wall opening for fire damper installation is B(H) + 200 mm, but openings from B(H) +80 (min) to + 300(max) can also be used.
2. Insert fire damper into wall to the wall limit mark (7) on the damper and bend the fixing bracket (1) 90°. Close space between casing and wall with two layers of mineral wool (5) (density 140 kg/m³ or more, 50 mm thick, coated on one side). Seal the connections of mineral wool with wall and damper with intumescent (6) fire resistant sealant. Mineral

wool and damper casing must be coated with 2mm thick fire protection coating. Damper casing should be coated up to profile flanges.

Ensure that the damper is sufficiently supported!



Flexible wall installation (mortar sealing)

Damper blade must be closed during the installation!

The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. The interior of the wall is filled with mineral wool ($\geq 100 \text{ kg/m}^3$).

Installation material: gypsum plaster or mortar, covered with cover boards. The minimum thickness of the wall is 100 mm.

1. Prepare opening in the wall according to B (H) + 80 mm or more (up to 50% more), and build the subframe according to the drawing. Bend the fixing bracket (1) 90°. Place the damper in the opening up to the wall limit mark (7) on the damper.
2. Fix the damper to the wall using self-tapping screws Ø3,5x45 mm (bracket screw hole is 6 mm in diameter).

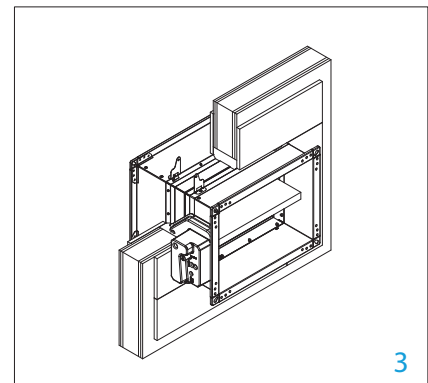
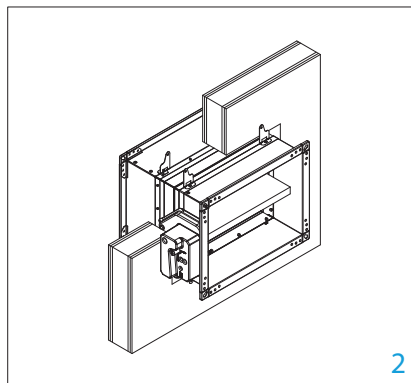
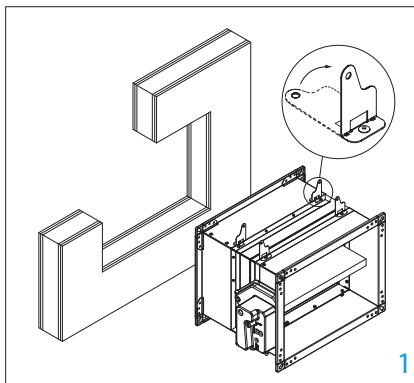
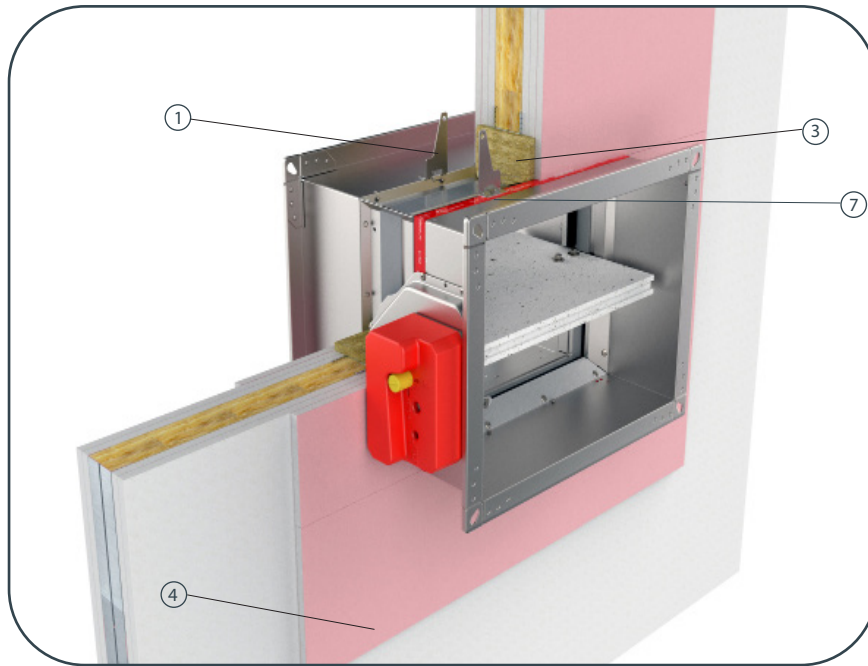
3. Fill the space between the damper and the wall with mortar sealing (2). Cover the mortar with (4) gypsum boards (12,5 mm thick).

* Build the support for mortar installation according to the drawing.

Test the operation of the damper blade!

Minimum separation between fire dampers, either next to each other or ceiling/wall, should be 30 mm between them. See page 18.

Ensure that the damper is sufficiently supported!



Flexible wall installation (mineral wool sealing)

Damper blade must be closed during the installation!

The wall is composed of 2x2 plasterboard boards, 12,5 mm thick, installed on a steel frame construction. The interior of the wall is filled with mineral wool ($\geq 100 \text{ kg/m}^3$).

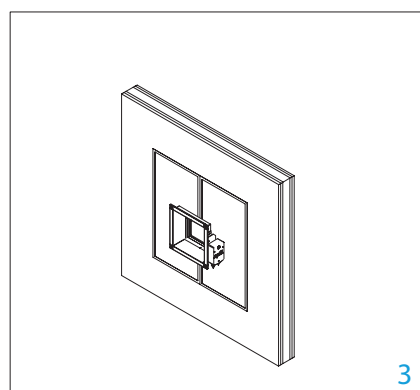
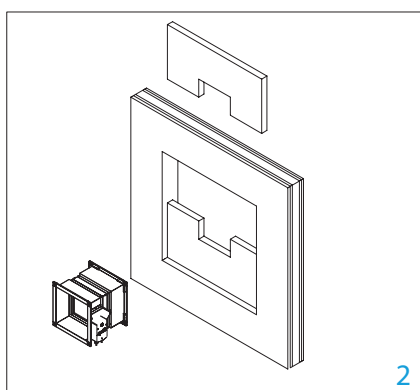
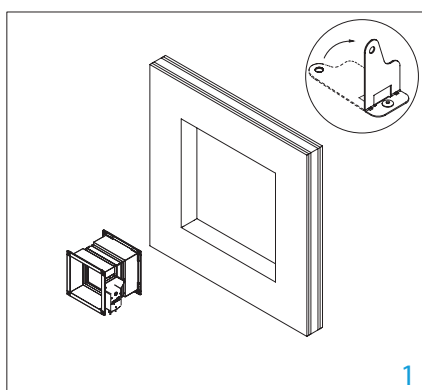
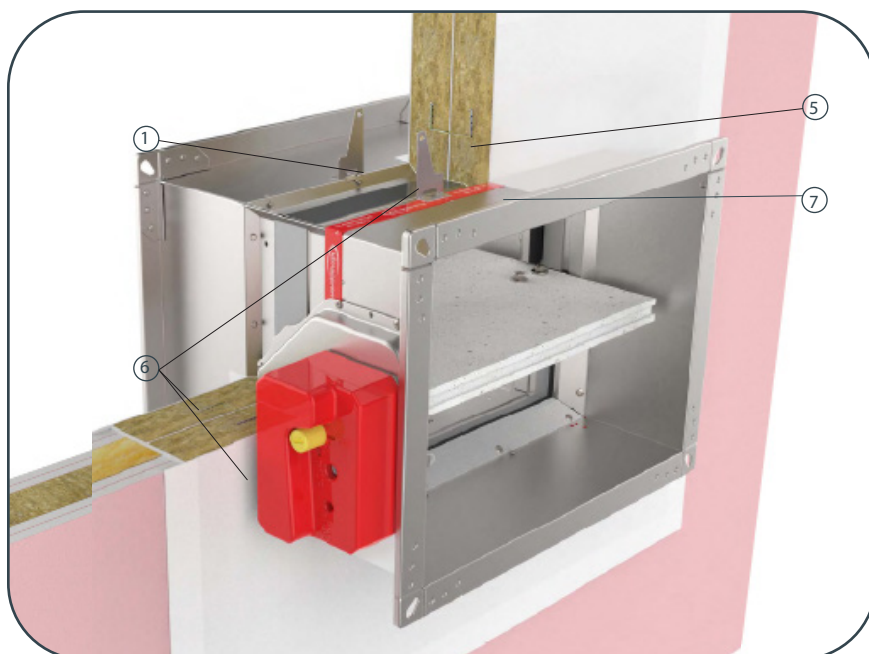
Installation material: mineral wool covered with cover boards. The minimum thickness of the wall is 100 mm.

1. Prepare opening in the wall according to B (H) + 80 mm or more (up to 50% more), and build the subframe according to the drawing. Bend the fixing bracket (1) 90°. Place the damper in the opening up to the wall limit mark (7) on the damper.
2. Fix the damper to the wall using self-tapping screws $\text{Ø}3,5 \times 45 \text{ mm}$ (bracket screw hole is 6 mm in diameter)

3. Fill the space between the damper and the wall with mineral wool ($\geq 100 \text{ kg/m}^3$) (3). Cover the mineral wool with gypsum boards (12,5 mm thick) (4) and fix them with self-tapping screws $\text{Ø}3,5 \times 45 \text{ mm}$.
4. Minimum separation between fire dampers, either next to each other or ceiling/wall, should be 30 mm between them. See page 18.

Test the operation of the damper blade!

Ensure that the damper is sufficiently supported!



Flexible wall installation (Fire Batt)

Damper blade must be closed during installation!

The wall is composed of 2x2 plasterboard boards, 12,5mm thick, installed on a steel frame construction. The interior of the wall is filled with mineral wool ($\geq 100 \text{ kg/m}^3$).

Installation material: mineral wool ($\geq 140 \text{ kg/m}^3$) and fire protection coating. The minimum thickness of the wall is 100mm.

1. Recommended wall opening for fire damper installation is $B(H) + 200\text{mm}$, but openings from $B(H) + 80$ (min) to $+ 300$ (max) can also be used.. Bend the fixing bracket (1) 90° .
2. Insert fire damper into wall to the wall limit mark (7) on the damper.

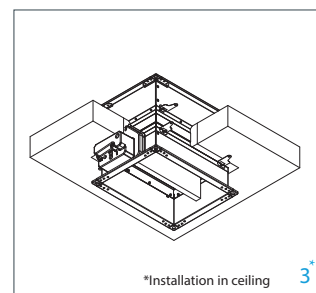
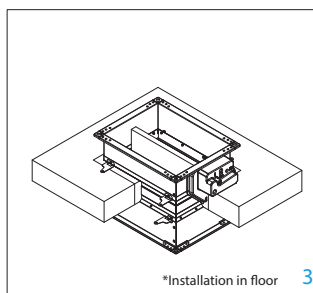
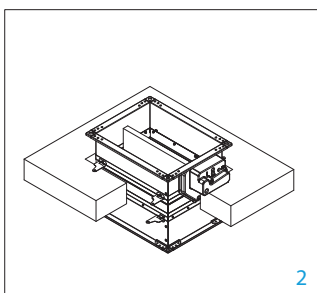
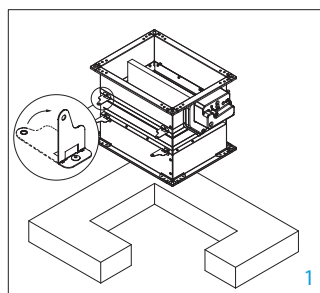
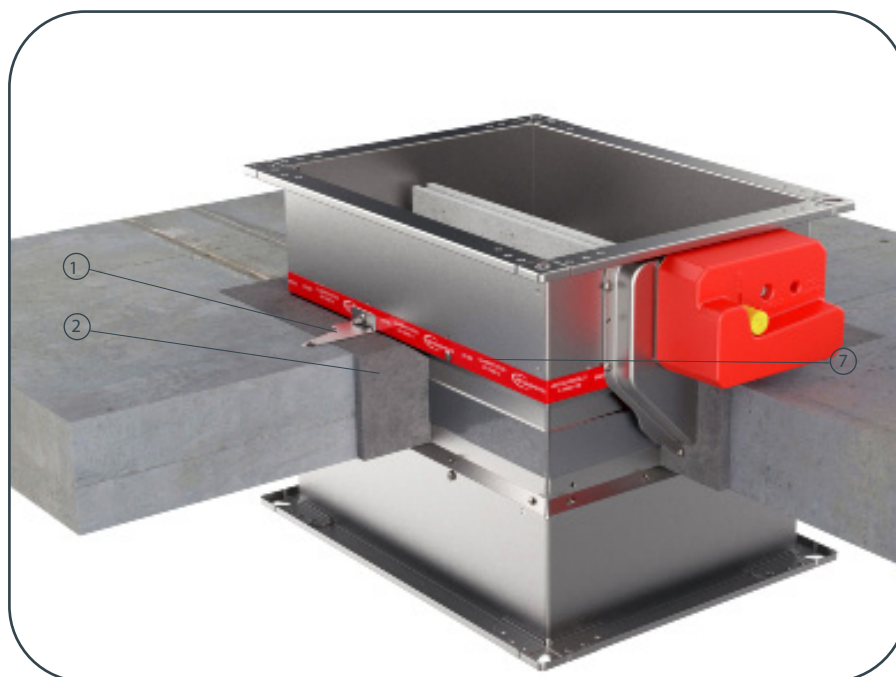
3. Fill the space between casing and wall, close with two layers of mineral wool (5) (density 140 kg/m^3 or more, 50 mm thick, coated on one side).

Seal the connections of mineral wool with intumescent (6) fire resistant sealant. Mineral wool and damper casing must be coated with 2mm thick fire protection coating. Damper casing should be coated up to profile flanges.

Minimum separation between fire dampers, either next to each other or ceiling/wall, should be 30 mm between them. See page 18.

Test the operation of the damper blade!

Ensure that the damper is sufficiently supported!



Rigid floor/ceiling installation (mortar sealing)

Damper blade must be closed during installation!

The floor/ceiling is composed of concrete blocks (minimum density of 550 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100mm.

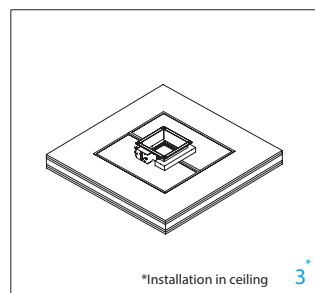
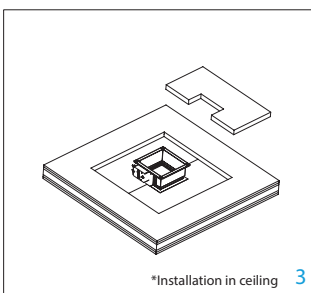
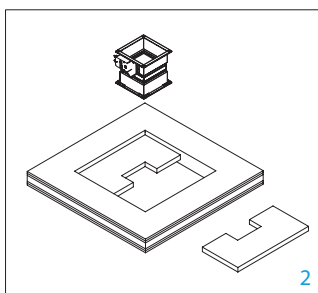
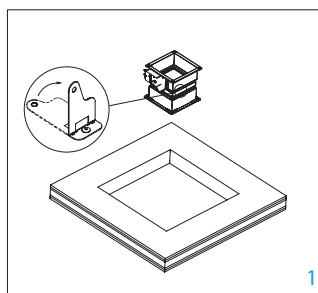
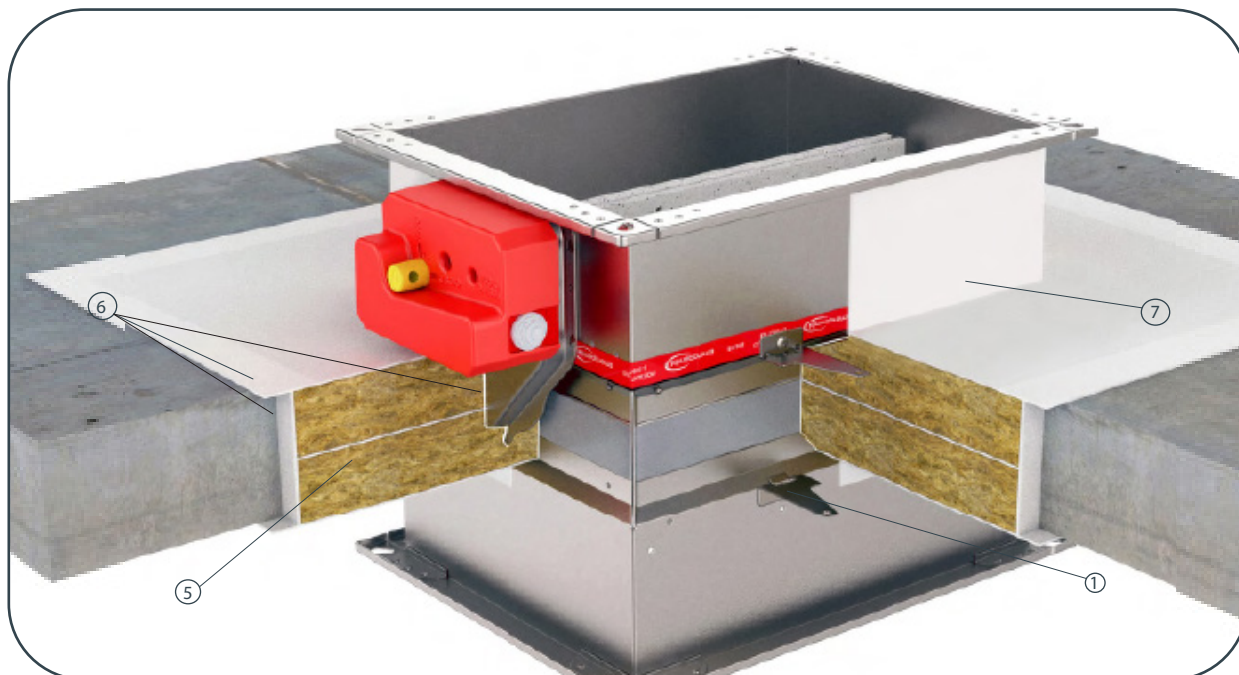
Installation material: gypsum plaster or mortar.

1. Prepare opening in the wall according to B (H) + 80mm or more (up to 50% more), insert the damper to the limit mark (7) on the damper and bend the fixing bracket (1) 90° (bracket screw hole is 6 mm in diameter).
2. Fix the damper to the floor/ceiling using screws.
- 3/3*. Fill the space between the damper and the floor/ceiling with mortar. (2)

Test the operation of the damper blade!

* Build the support for installation according to the drawing.

Ensure that the damper is sufficiently supported!



Rigid floor/ceiling installation (Fire Batt)

Damper blade must be closed during installation!

The floor/ceiling is composed of concrete blocks (minimum density of 550 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100mm.

Installation material: mineral wool ≥ 140 kg/m³, fire protection coating.

1. Recommended floor/ceiling opening for fire damper installation is B(H)+ 300mm, but openings from B(H)+80 (min) to + 400(max) can also be used.
2. Insert fire damper into ceiling to the wall limit mark (7) on the damper.

Fill the space between casing and ceiling with two layers of mineral wool (5) (density 140 kg/m³ or more,

50mm thick, coated on one side).

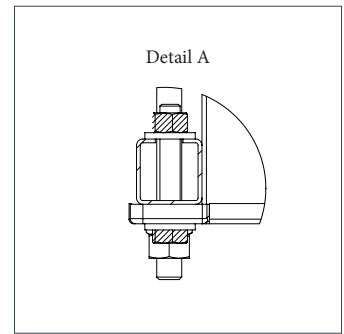
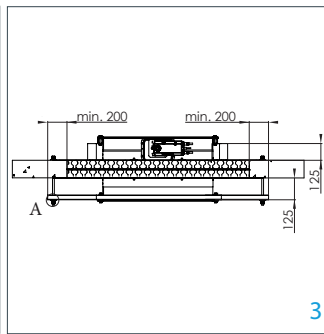
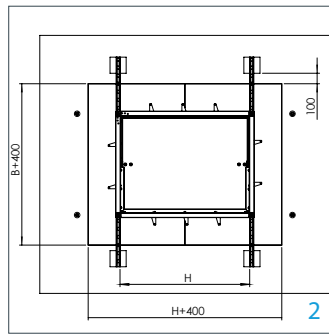
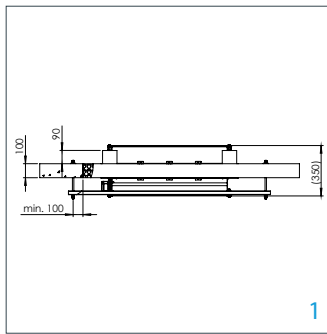
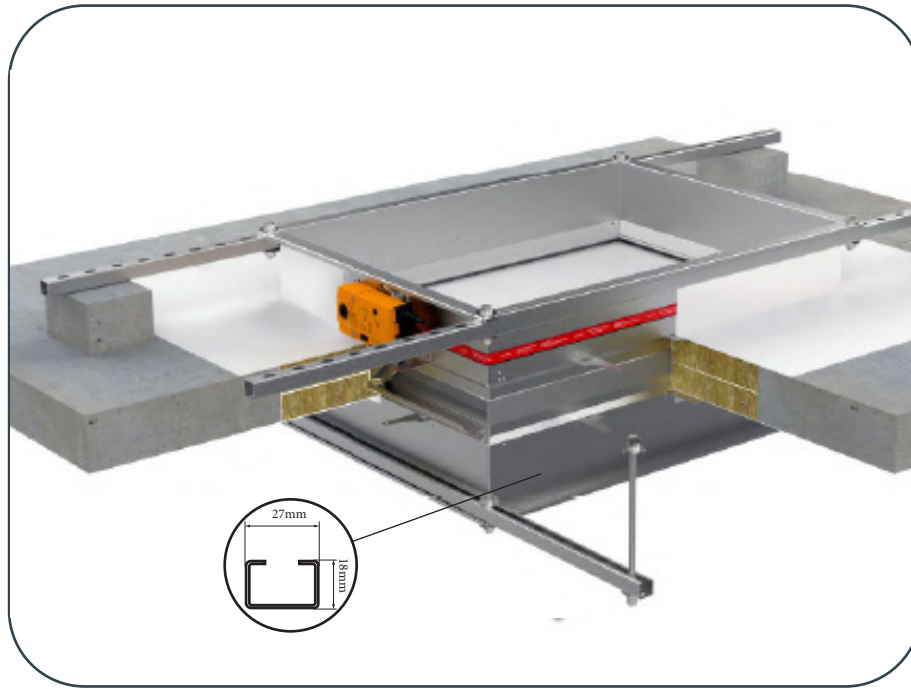
3/3*. Connections of mineral wool should be sealed with (6) intumescent fire resistant sealant. Mineral wool and damper casing must be coated with 2mm thick fire protection coating. Damper casing should be coated up to profile flanges.

* Fire Batt floor/ceiling installations require a suspension for the fire damper.

Test the operation of the damper blade!

Ensure that the damper is sufficiently supported!

ThermShield Standard Square/Rectangular Installation Guide



Suspension for mortarless floor installation

Damper blade must be closed during installation!

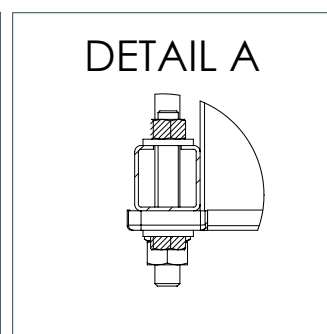
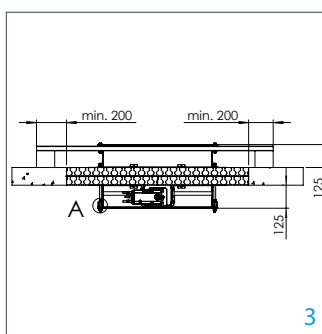
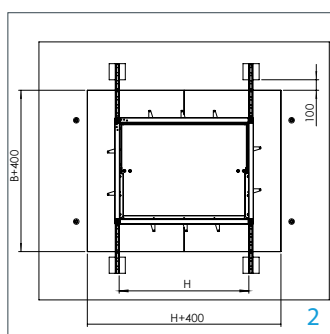
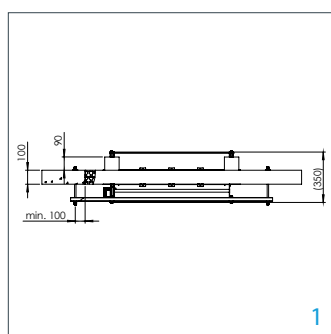
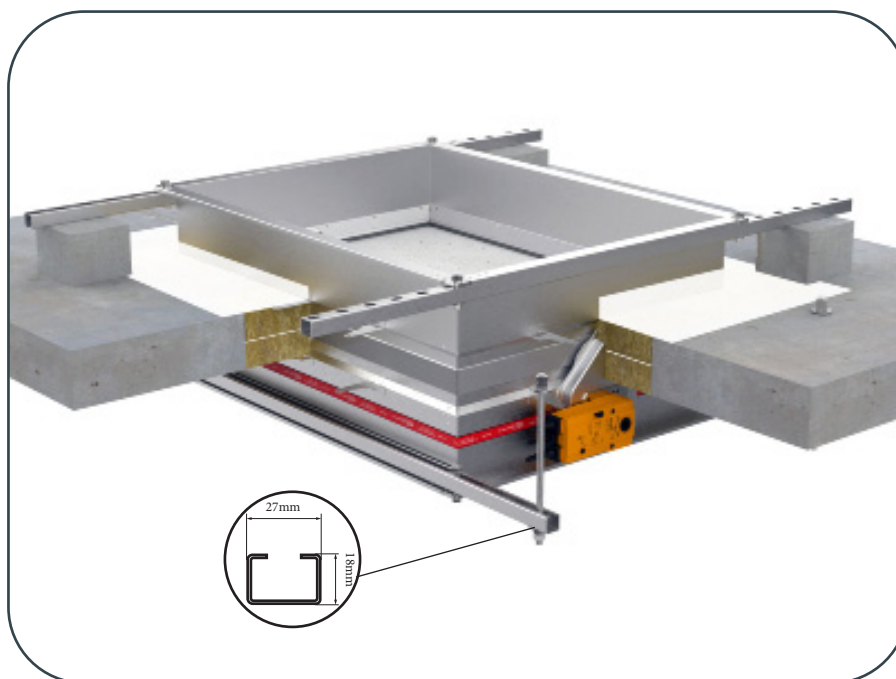
Suspension systems are required for the dry mortarless installation of the fire damper with mineral wool in floor slabs. Fire dampers can be suspended from solid floor slabs using adequately sized threaded rods. Load the suspension system only with the weight of the fire damper. Ducts must be suspended separately.

1. Suspension strut should be connected with drop rods (8/10mm) to the floor. It is used to support the damper and ease the installation.
2. Support steel C profiles by 90 mm high piece of aerated concrete or similar rigid material.
3. Suspend the fire damper to the steel C profiles.

Close the space between casing and floor with Firestop board (Firebatt) 2x50mm ($\geq 140 \text{ kg/m}^3$) and coat the damper casing.

Test the operation of the damper blade!

Ensure that the damper is sufficiently supported!



Suspension for mortarless ceiling installation

Damper blade must be closed during installation!

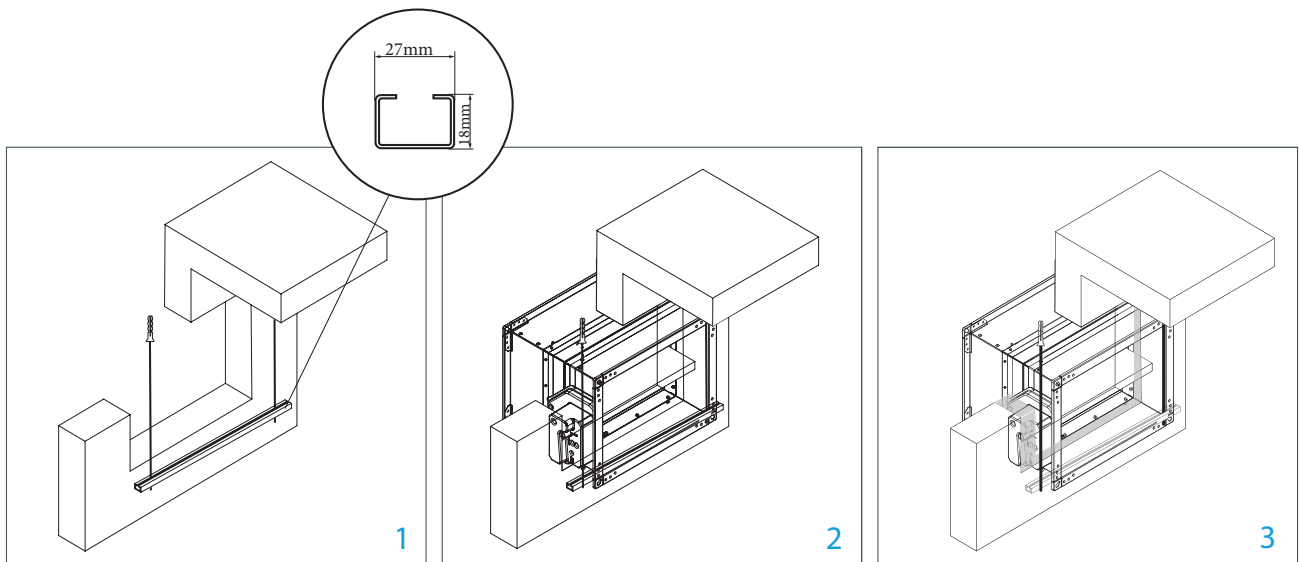
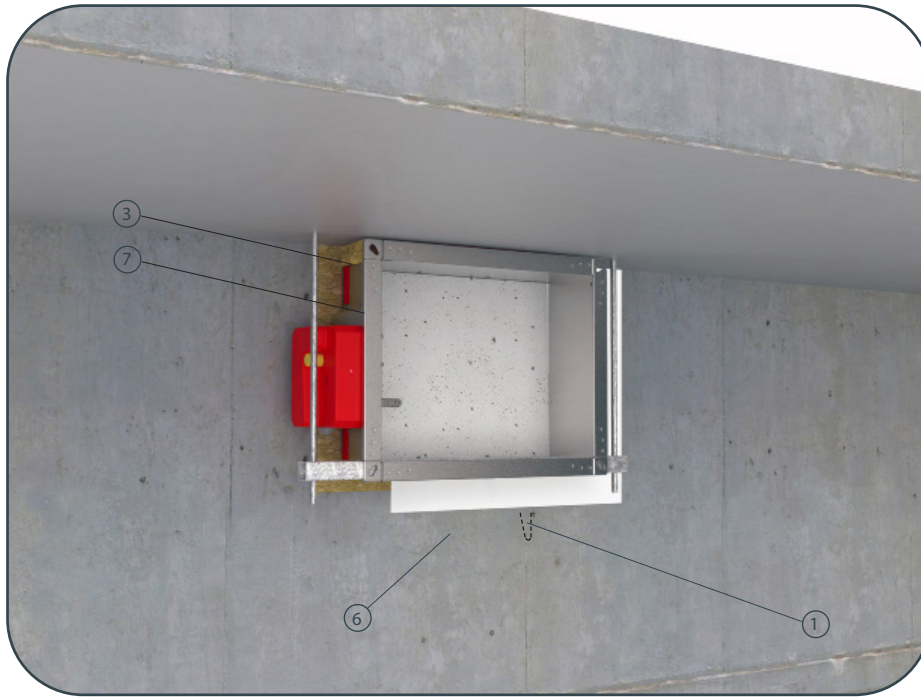
Suspension systems are required for the dry mortarless installation of the fire damper with mineral wool in ceiling slabs. Fire dampers can be suspended from solid ceiling slabs using adequately sized threaded rods. Load the suspension system only with the weight of the fire damper. Ducts must be suspended separately.

1. Suspension strut should be connected with drop rods (8/10mm) to the ceiling slab above. It is used to support the damper and ease the installation.
2. Support steel C profiles by 90mm high piece of aerated concrete or similar rigid material.
3. Suspend the fire damper to the steel C profiles.

Close the space between casing and floor/ceiling with Firestop board (Firebatt) 2x50mm ($\geq 140 \text{ kg/m}^3$) and coat the damper casing.

Test the operation of the damper blade!

Ensure that the damper is sufficiently supported!



Suspension for mortarless installation close to ceiling

Damper blade must be closed during installation!

Suspension systems are required for the dry mortarless installation of the fire damper with mineral wool in solid walls and flexible walls. Fire dampers can be suspended from solid ceiling slabs using adequately sized threaded rods. Load the suspension system only with the weight of the fire damper. Ducts must be suspended separately.

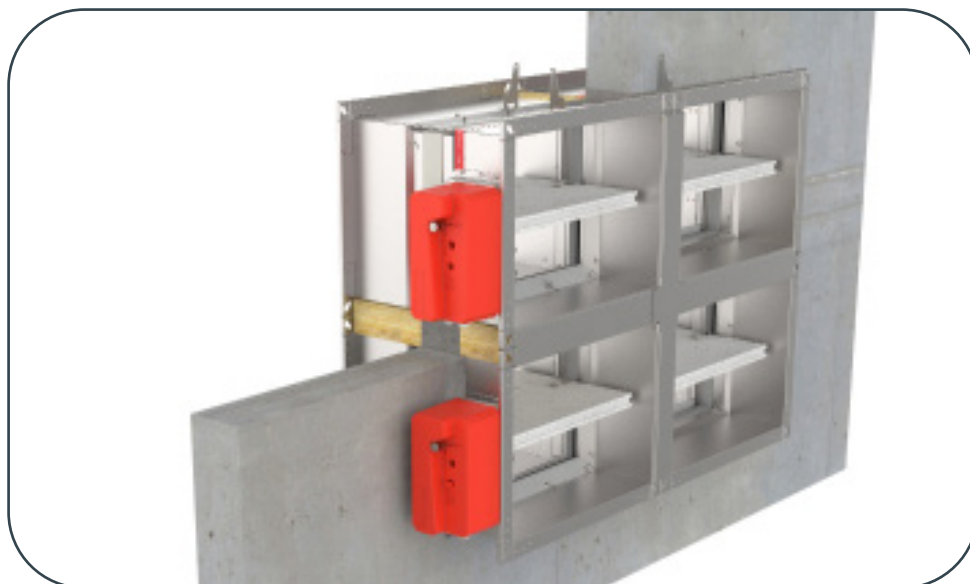
1. Prepare opening in the wall according to H + 130mm and B + 200mm or more and install threaded rods (8 mm) to the ceiling above.

2. Insert fire damper into wall to the wall limit mark (7) on the damper and bend the fixing bracket (1) 90°. (screw hole is 6mm in diameter). Fix the C profile on the drop rods using M8 screws.
3. Close the space between casing and wall with mineral wool ($\geq 140 \text{ kg/m}^3$) (3). Connections of mineral wool should be sealed with intumescent fire resistant sealant (6). Mineral wool and damper casing must be coated with 2mm.

Test the operation of the damper blade!

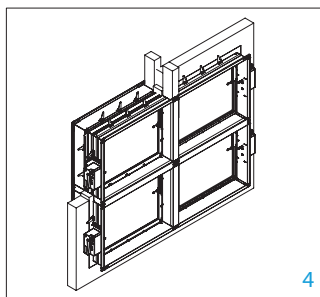
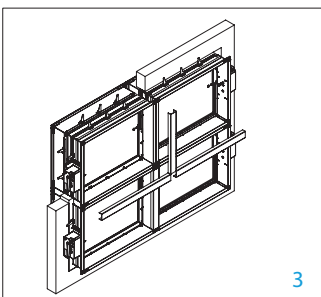
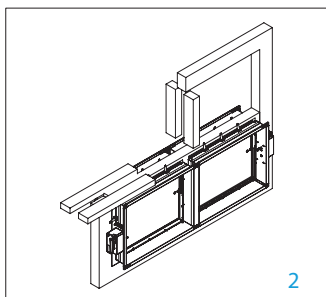
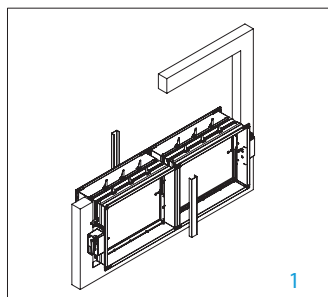
Ensure that the damper is sufficiently supported!

ThermShield Standard Square/Rectangular Installation Guide



(1) Accessories	(2) Type	(3) Length
FD-A	-	CF60
		800

(1) Fire damper accessories FD-A Type	(3) Connecting frame length 200 ... 1500[mm]
(2) CF60 - Connecting frame 60mm CF100 - Connecting frame 100mm CP60 - Connecting plate 60mm CP100 - Connecting plate 100mm	



Battery assembly installation up to 2x2 sections

Damper blade must be closed during installation!

The wall is composed of concrete blocks (minimum density of 550 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100mm.

Maximum dimension of a single unit in a 2 X 2 battery installation:

2X2 grid: 1500x800mm

*For battery installation 2x2 use 8x connecting frames and 2x connecting plate.

1. Prepare a hole of dimensions 2B + Connecting frame width (CF60/CF100) + 80 mm and 2H + Connecting frame width (CF60/CF100) + 80 mm.

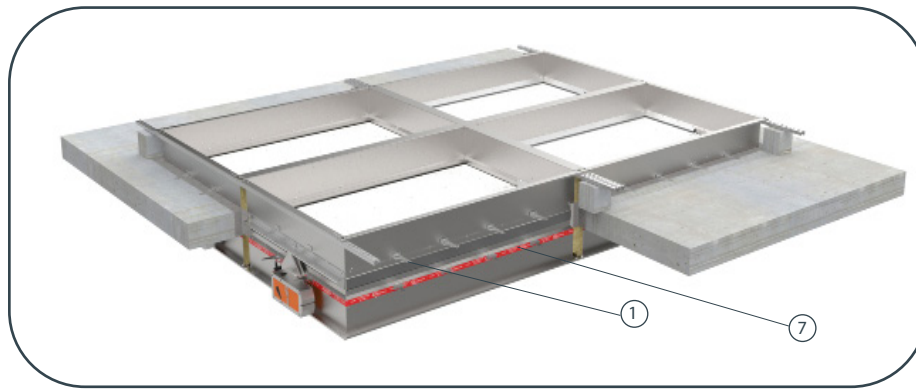
2. Place two lower dampers in the opening, and fix dampers to the wall using screws (only 2 sides facing aerated concrete). Place the vertical part from the installation kit to the dampers on both sides, and attach it using the self-tapping screws.
3. Fill the space between the dampers and the wall with mortar/gypsum, and fill the space between the dampers with mineral wool (100 kg/m³ of density or higher). Place two upper dampers and fix the dampers to the wall using the screws (only 2 sides facing aerated concrete).
4. Place the vertical part and two horizontal parts from the installation kit to the dampers on both sides, and attach it using the self-tapping screws every 150mm.

Fill the gap between dampers and wall on upper side with mortar/gypsum and the installation is complete.

Test the operation of the damper blade!

Ensure that the damper is sufficiently supported!

ThermShield Standard Square/Rectangular Installation Guide

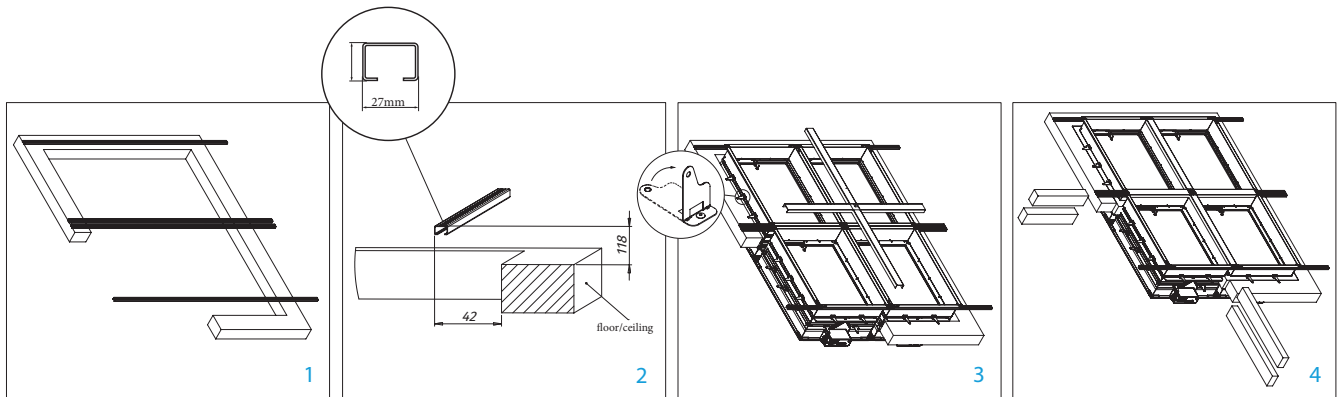


(1) Accessories	(2) Type	(3) Length
FFD-A	- CF60	- 800

(1) Fire damper accessories
FD-A

(3) Connecting frame length
200 ... 1500 [mm]

(2) Type
CF60 - Connecting frame 60mm
CF100 - Connecting frame 100mm
CP60- Connecting plate 60mm
CP100- Connecting plate 100mm



Battery assembly installation (floor/ceiling) up to 2x2 sections.x

Damper blade must be closed during installation!

The floor/ceiling is composed of concrete blocks (minimum density of 550 kg/m³) or reinforced concrete (minimum density of 2200 kg/m³) and with a minimum thickness of 100mm.

Maximum dimension of fire dampers:

2X2 grid: 1500x800mm

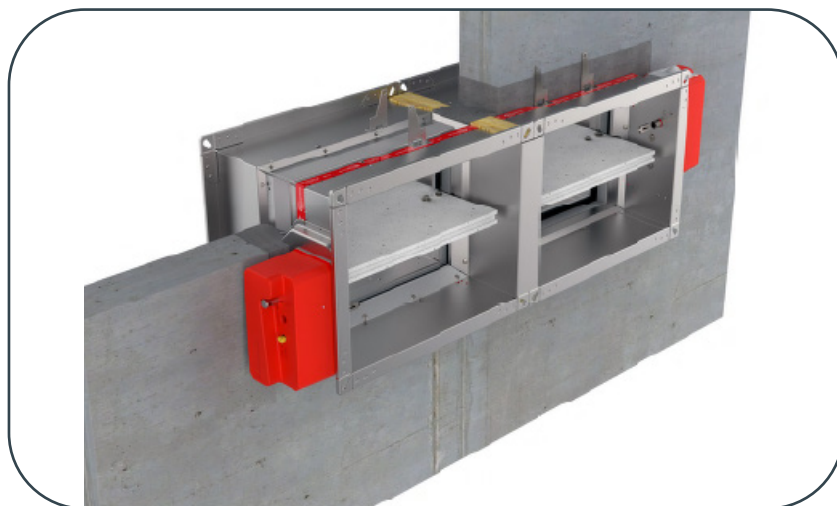
*For battery installation 2x2 use 8x connecting frame and 2x connecting plate.

1. Prepare a hole of dimensions 2B + Connecting frame width (CF60/CF100) + 80 mm and 2H + Connecting frame width (CF60/CF100) + 80 mm. Set all U profiles to a height of 118 mm (use blocks of aerated concrete to keep distance between ceiling and profiles).

2. Arrangement of steel C profiles (min 27x18mm).
3. Place the dampers in the openings to the wall limit mark (7) and bend the fixing bracket 90° (1). Put them on U profiles and fix using the self-tapping screws every 150mm. Fix the dampers and profiles to the ceiling using the screws for concrete. Place four connection profiles from the installation kit to the dampers on both sides and attach it using the self-tapping screws.
4. The space between fire dampers and the slab should be filled with mortar/gypsum to match the thickness of the concrete slab (min 100mm). The remaining free space between damper casings (above and below mortar filling) should be filled with mineral wool (density 100kg/m³ or higher). The recommended procedure is to install the lower mineral wool between casings and use it as formwork. Install additional wooden formwork around the perimeter of the installation between casing and concrete slab. Pour in the mortar up to the thickness of the concrete slab. When the mortar sets, fill the upper space between casings with the mineral wool.

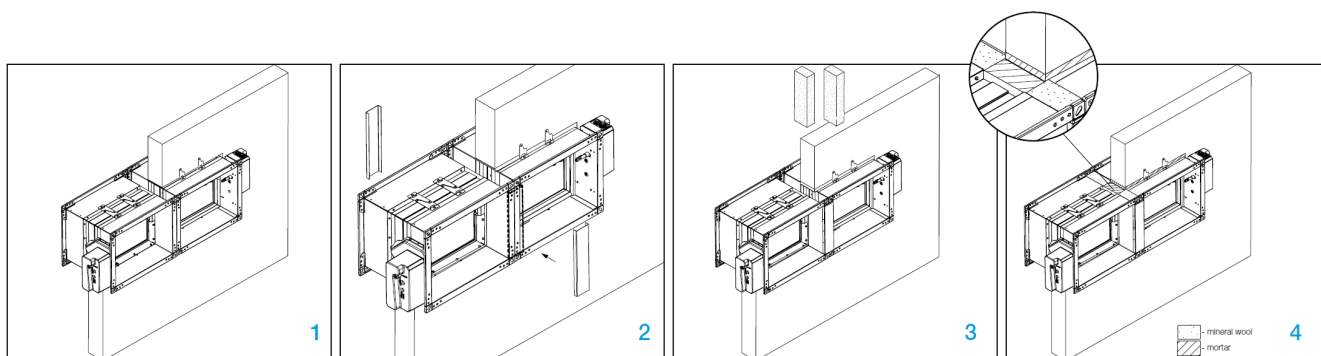
Ensure that the damper is sufficiently supported!

ThermShield Standard Square/Rectangular Installation Guide



(1) Accessories	(2) Type	(3) Length
FD-A	-	CF60 - 800

- | | |
|---|---|
| <p>(1) Fire damper accessories
FD-A</p> <p>(2) Type
 CF60 - Connecting frame 60mm
 CF100 - Connecting frame 100mm
 CP60- Connecting plate 60mm
 CP100- Connecting plate 100mm</p> | <p>Connecting frame length
200 ... 1500[mm]</p> |
|---|---|



Battery assembly installation 1x2 or 2x1 sections

Damper blade must be closed during installation!

The wall is composed of blocks of aerated concrete (minimum density 550 kg/m³) and with a minimum thickness of 100mm.

Maximum dimension of fire dampers:

1X2 grid: 1500x800mm

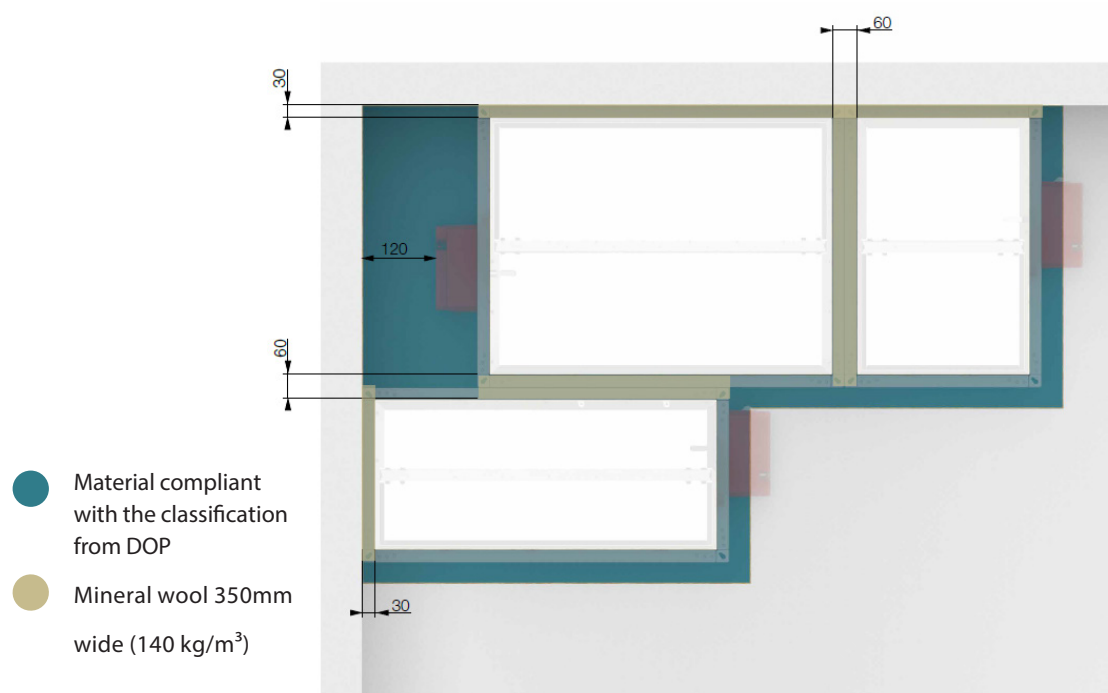
*For battery installation use 2x connecting frame.

- For 1x2 sections prepare a hole of dimensions B + 80 mm and 2H + Connecting frame width (CF60/CF100) + 80 mm. For 2x1 sections prepare a hole of dimensions 2B + Connecting frame width (CF60/CF100) + 80 mm and H + 80 mm. Fix the dampers to the wall using the screws.

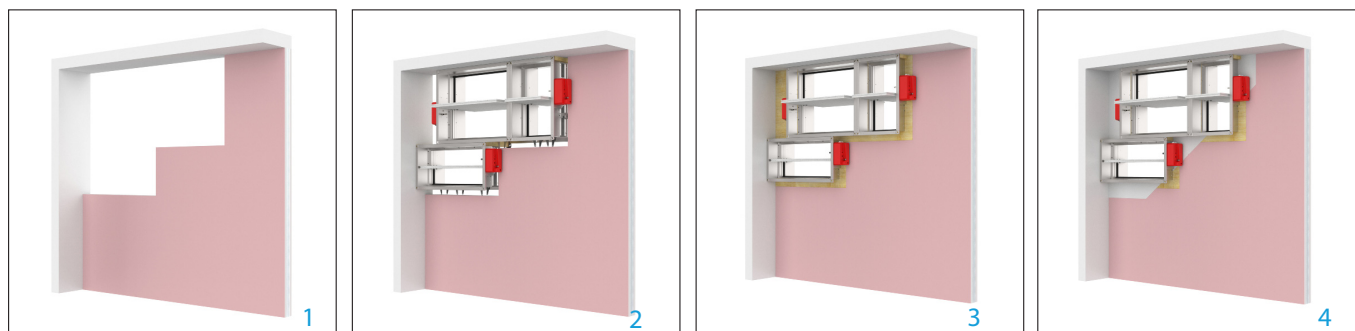
- Place the installation kit to the dampers.
- Attach the installation kit to the dampers using the self-tapping screws every 150mm.
- Fill the space between the dampers with mineral wool (100 kg/m³ of density).
- Fill the space between the dampers and the wall with mortar.

Ensure that the damper is sufficiently supported!

ThermShield Standard Square/Rectangular Installation Guide



* Minimal distances from another damper or wall/ceiling.



Minimal separation distance installation

Damper blade must be closed during installation!

1. Prepare opening in the wall according to B (H) + 80mm or 50% more (Firebatt installation- build the subframe according to the drawing. Fire damper can be installed with minimal distance of 30mm between wall/ceiling and 60mm from other dampers.
2. Insert the fire dampers into the wall and fill the space between the casings with mineral wool (140kg/m³) up to flanges. Fill the space between the wall/ceiling with mineral wool (140kg/m³) up to flanges.
3. Fill the rest of the wall openings in accordance with the relevant installation method.

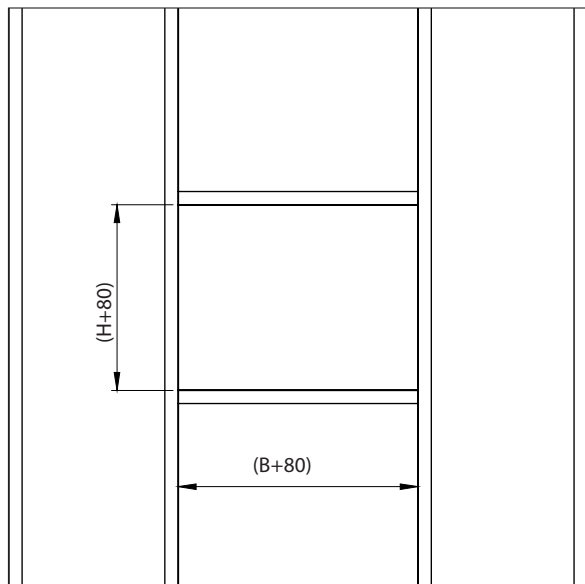
*Examples for Firebatt installation

Ensure that the damper is sufficiently supported!

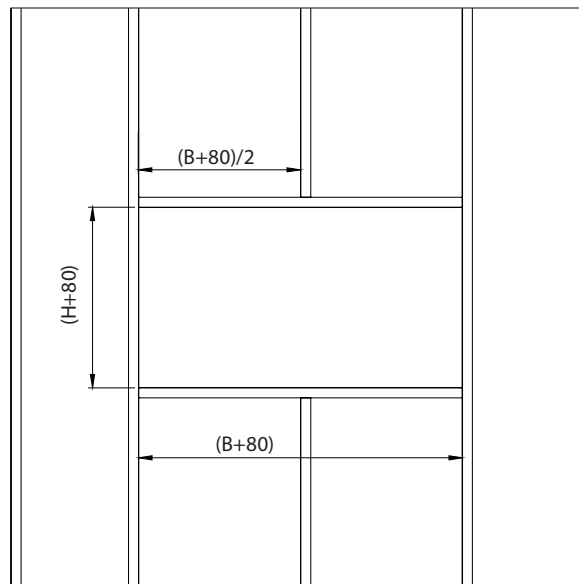
Flexible Wall Subframe

When installing the fire dampers in the flexible walls it is necessary to make a metal subframe onto which the damper will be fixed with screws. Subframe should be prepared according to the drawings below.

FD25



FD40



Support for Installation with Mortar

In fire damper installations with mortar, it may be necessary to use wooden supports to prevent the casing from deforming while mortar is setting.

Before filling the gap between wall and fire damper, close the damper blade and install the wooden supports as seen in the drawings below.

Place the wooden support as close as possible to the fire damper blade!

Ensure that the damper is sufficiently supported!



Periodic Maintenance

Manufacturer Recommended Service Intervals

- After commissioning and handover (see DW145 check sheet), in order to remain compliant with 15650:2010, we recommend that you follow a regular service and inspection programme to ensure correct operation of dampers in the event the damper is required to actuate.
- In addition to regular physical inspections (in accordance with 15650:2010) we recommend using a dedicated damper control panel with a digital reporting mechanism (such as an Actionpac LNS system) to frequently monitor and report on regular remote damper testing.
- Ensure maintenance is performed in line with the latest best practice and relevant local or specialist guidance.
- Our recommended service intervals for life safety products are as follows:

Interval	Action	Competence
6 Months	Check Actuator Wiring (if applicable) for Damage	Specialist Persons
6 Months	Check Limit Switch Wiring (if applicable) for Damage	Specialist Persons
6 Months	Check Damper Cleanliness, Clean and Lubricate if necessary.	Specialist Persons
6 Months	Check Condition of Blades and Seals, report and rectify if necessary.	Specialist Persons
6 Months	Check for blade obstructions	Specialist Persons
6 Months	Check Damper Release Mechanism (through activation or release of the ETR or Thermal Fuse Device)	Specialist Persons
6 Months	Check damper is left in normal operational position after inspection.	Specialist Persons
Monthly	Complete actuation of damper from control panel (if installed) and check all faults. Consult specialist persons to investigate any reported faults.	Facility Manager

- *Specialist Persons: A recognised and experienced person with prior experience in the inspection and assessment of the functional safety of smoke and fire damper products. If in doubt, please consult with our technical support team for advice. To talk about our OEM maintenance inspections, contact our nationwide service team.

BS EN 15650:2010 - Ventilation for Buildings

- Fire Dampers

- Section 8.3 states regular testing/ inspection should be undertaken to meet regulatory requirements, or at intervals not exceeding six months.
- A comprehensive example of the maintenance procedure is given in Annex D of the standard. Some

automatic systems may allow more frequent testing (48hr or less) and this may be required by a national standard.

Approved Document B, Volume 2

- Clause 10.12 states adequate means of access must be provided to allow inspection, testing and maintenance of both fire damper and its actuating mechanism.

BS 9999:2017 - Code of Practice for the Fire Safety in the Design, Management and Use of Buildings - Annex I

Smoke Control Systems

- For means of escape states actuation of the system should be simulated once a week. It should be ensured that any fans and powered exhaust ventilators operate correctly, smoke dampers close (or open in some systems), natural exhaust ventilators open, automatic smoke curtains move into position, etc.

Three Monthly

- In addition to the checks recommended in V.2, V.3 and V.4, the actuation of all smoke control systems should be simulated once every three months. All zones should be separately tested and it should be ensured that any fans and powered exhaust ventilators operate correctly, smoke dampers close (or open in some systems) etc.

Yearly

- In addition to the following checks should be made for annual inspections and tests of the following to be carried out by competent persons, for any defects to be logged and the necessary action taken, and for certificates of testing to be obtained.
 - Fire detection and fire alarm systems;
 - Self-contained luminaires with sealed batteries, if more than 3 years old;
 - Sprinkler, drencher and watermist systems;
 - Smoke ventilators and smoke control systems;
 - Fire dampers

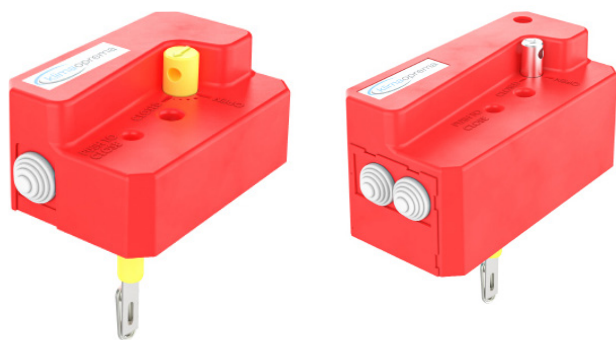
BS 9999:2017 - Code of Practice for the Fire Safety in the Design, Management and Use of Buildings - Annex W

- Maintenance of air conditioning and ventilation equipment including air filters, motors, fire dampers and their controls, smoke detectors and alarms is of paramount importance both in preventing fire and in ensuring that measures taken to mitigate its consequences are effective when needed. Arrangements should be made for all fire dampers to be tested by a competent person on completion of the installation and at regular intervals not exceeding 2 years. They are to be repaired or replaced immediately if found to be faulty. Spring operated fire dampers should be tested annually and fire dampers in dust laden and similar atmospheres should be tested much more frequently, at periods suited to the degree of pollution.

Actuators

Manual Actuators R, R-S

Manual operating mechanism, optionally with end switches (R-S). In case of fire, the fire damper closes automatically. Damper closing can be initiated either by thermal fuse melting, or by manual activation on the operating mechanism. Upon closure, damper blade is locked in closed position and can only be opened manually. Thermal fuse melting point is 72 °C.



R25

R25 (left) manual actuator is installed on FD25 fire dampers range from 100x200 to 800x600. It is available in version with (R-S) and without (R) end switches. End switches and thermal fuse are easily replaceable and available as service parts.

R40

R40 (right) manual actuator is installed on FD40 fire dampers from 800x600 to 1500x800. It is available in version with (R-S) and without (R) end switches. End switches and thermal fuse are easily replaceable and available as service parts.

Technical Specifications

Nominal voltage	N/A
Power	N/A
Switching capacity	1mA...500mA, 5VDC...48VDC
Blade closing time	Spring: 1 sec
Blade opening time	Manual
Manual activation	Release button on the casing
Degree of protection	IP 42
Ambient temperature range	min. -30 °C, max. 50 °C
Ambient humidity	95% r.h., non-condensing
Service life	Min. 30,000 cycles
Maintenance	Maintenance-free (see page 20)
Weight R25/R40	0,5 kg / 1,7 kg

ThermShield Standard Square/Rectangular Installation Guide

Electric Actuators M24-S & M230-S

Damper is delivered in closed position. When electric actuator is connected to the power supply damper will open. When the damper reaches the end position (damper open), the electro motor will stop. Closing fire damper takes place automatically when a power failure occurs. Thermal tripping device that comes with fire damper causes power circuit break at a temperature of 72 °C, optional 95 °C (inside or outside duct). If checking is needed for proper functioning of fire damper, pushing the switch on the thermal tripping device will close damper.

When switch on tripping device is released, the damper will open. Damper can be opened without connecting to a voltage with enclosed handle turning in the direction of the arrow on electric actuator (clockwise). Damper can be locked in the desired position by fast turning back handle a quarter of a turn (counter clockwise) for Belimo BF, and by pulling brake on Belimo BFL and BFN.

To unlock the electro motor, turn handle clockwise for a quarter of a turn for Belimo BF, or release brake for Belimo BFL and BFN. After release, damper will be closed by return spring. When damper is opened manually, electric actuator will not move the damper into closed position in case of power failure.



Technical Specifications		BF24-T	BFN24-T	BFL230-T	BFN230-T	BF24-T	BF230-T
Nominal voltage / power consumption	voltage	AC/DC 24 V, 50/60 Hz	AC 24 V, 50/60 Hz	AC 230 V, 50/60 Hz	AC 230 V, 50/60 Hz	AC/DC 24 V, 50/60 Hz	AC 230 V, 50/60 Hz
	opening	2,5 W	4 W	3,5 W	5 W	7 W	8.5 W
	holding	0,8 W	1,4 W	1,1 W	2,1 W	2 W	3 W
	for wire sizing	4 VA	6 VA	6,5 VA	10 VA	10 VA	11 VA
End switch		1 mA...3 A (0,5 A), DC 5 V... AC 250V	1 mA...3 A (0,5 A), DC 5 V... AC 250 V	1 mA...3 A (0,5 A), DC 5 V... AC 250 V	1 mA...3 A (0,5 A), DC 5 V... AC 250 V	1 mA...6 A (3 A), DC 5 V... AC 250 V	1 mA...3 A (0,5 A), DC 5 V... AC 250 V
Running time	motor	< 60 s	< 60 s	< 60 s	< 60 s	< 120 s	< 120 s
	spring return	~ 20 s	~ 20 s	~ 20 s	~ 20 s	~16 s	~16 s
Ambient temperature range		min. -30 °C, max. 50 °C					

Electric Actuator Schischek ExMax

Damper is delivered in closed position. When electric actuator is connected to the power supply damper will open. When the damper reaches the end position(damper open), in which is it blocked, the electric actuator will stop. Closing fire damper takes place automatically when a power failure occurs. Thermal tripping device that comes with fire damper causes power circuit break at a temperature of 72 °C (inside or outside duct).

If checking is needed for proper functioning of fire damper, pushing the switch on the thermal tripping device will close damper. When switch on tripping device is released, the damper will open.

Damper can be opened without connecting to a voltage with enclosed Allen key, by turning in the direction of the arrow on electric actuator (clockwise). After release of Allen key, damper will go to closed position.

Type Examination Certificate Number: EXA 14 ATEX0064X Equipment complies with the essential health and safety requirements relating to the design and construction of equipment intended to use in potentially explosive atmospheres given in annex II of the directive 94/9/EC.

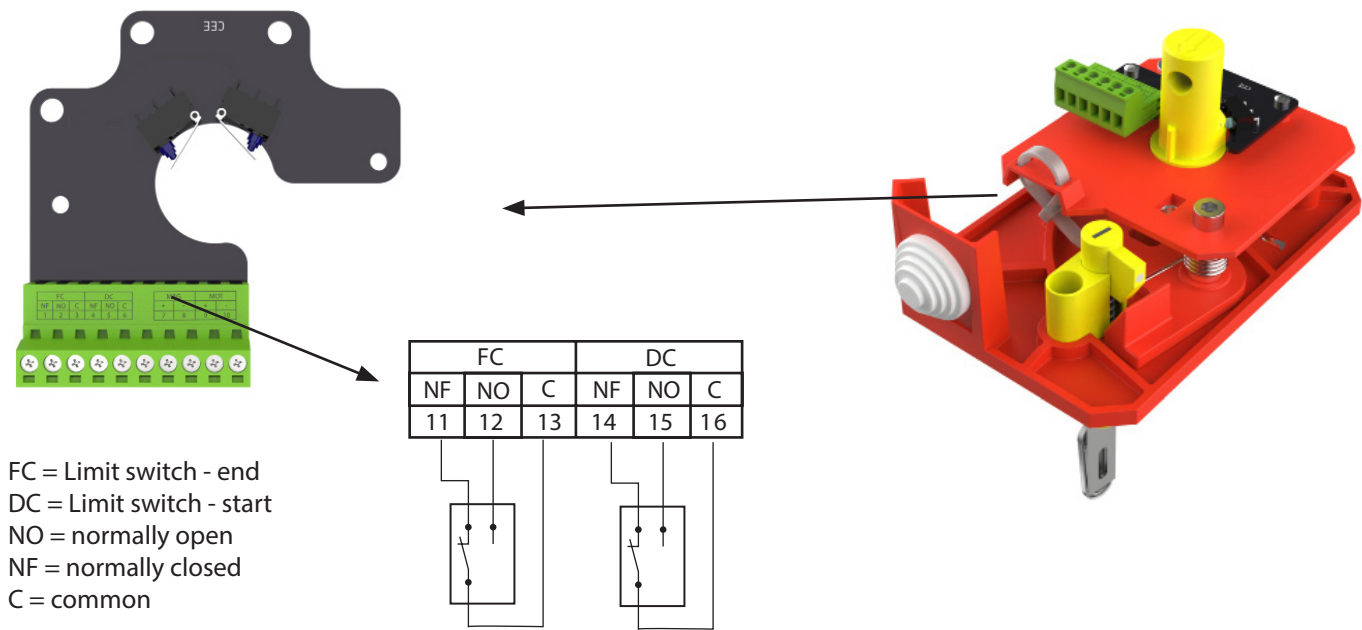


Technical Specifications

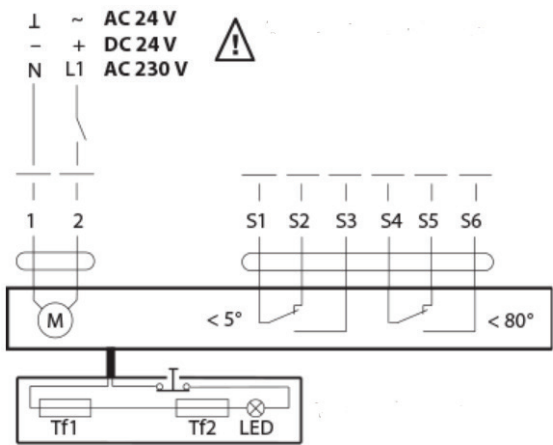
Type	ExMax -5.10-BF	ExMax -15-BF
Torque	5/10 Nm	15 Nm
Power Supply	24-230 V AC/DC	24-230 V AC/DC
Running time	3/15/30/60/120 s / 90°	3/15/30/60/120 s / 90°
Spring return	3 or 10s / 90°	3 or 10s / 90°
Control mode	On-Off, 3 position	On-Off, 3 position
Feedback	2 x aux switches + Ex. tripping device	2 x aux switches + Ex. tripping device
Ambient temperature range	min. -40 °C, max. 40 °C	min. -40 °C, max. 40 °C
Ambient humidity	0-90% r.h., non-condensing	0-90% r.h., non-condensing
Service life	Min. 10,000 cycles @ 10 s, min 1000 cycles @ 1s	Min. 10,000 cycles @ 10 s, min 1000 cycles @ 1s
Maintenance	Maintenance-free	Maintenance-free
Weight	3,5 kg	3,5 kg

Wiring Diagrams

Manual Actuators R, R-S



Electric Actuator M24-S & M230-S



1	negative (direct-current) or neutral (alternating current)
2	positive (direct-current) or faze (alternating current)
S1	common micro switch closed damper
S2	normally closed micro switch closed damper
S3	normally open micro switch closed damper
S4	common micro switch open damper
S5	normally closed micro switch open damper
S6	normally open micro switch open damper
Tf	temperature sensor on the outer side of the duct (ambient temperature) max. 72 °C

ThermShield Standard Square/Rectangular Installation Guide

$H < 300$

Thermal fuse is located on the underside of the fire damper.



Bottom View

$300 \leq H \leq 450$

Thermal fuse is located on the same side as Belimo actuator.



Side view

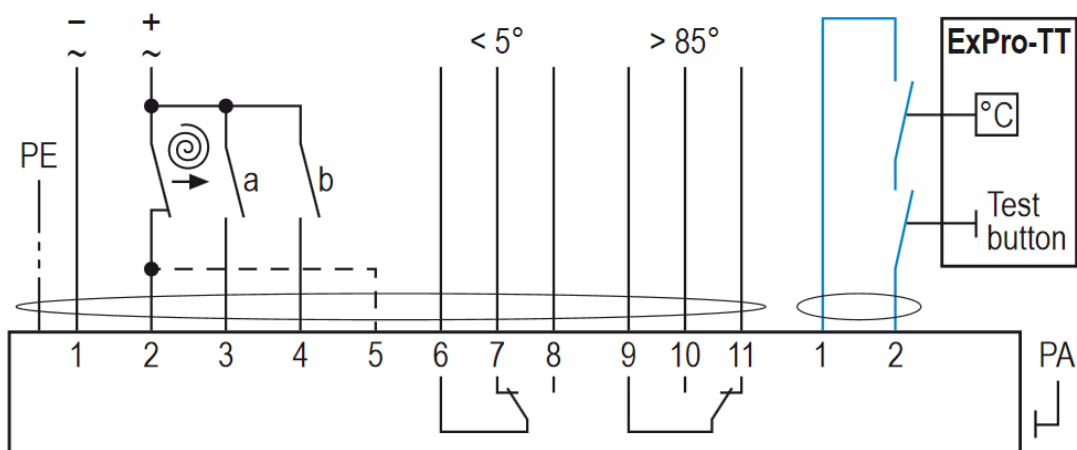
$H > 450$

Thermal fuse is located on the same side as Belimo actuator (below).



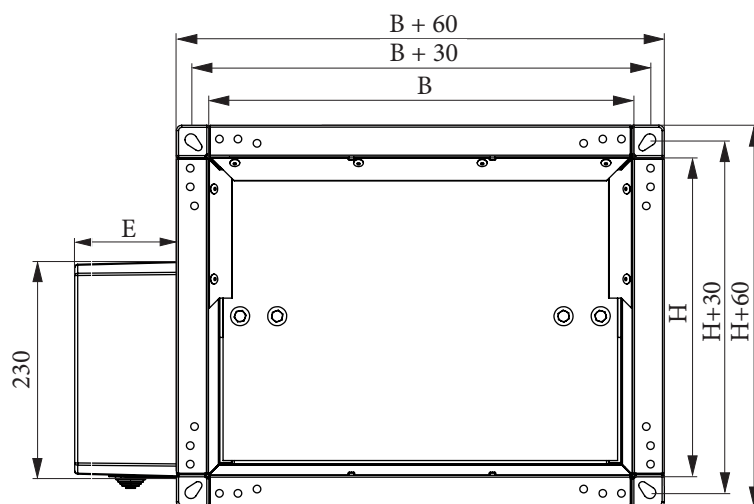
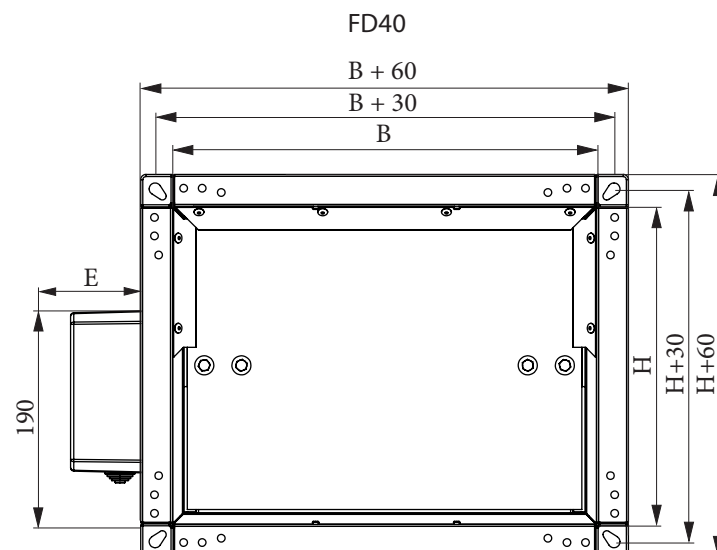
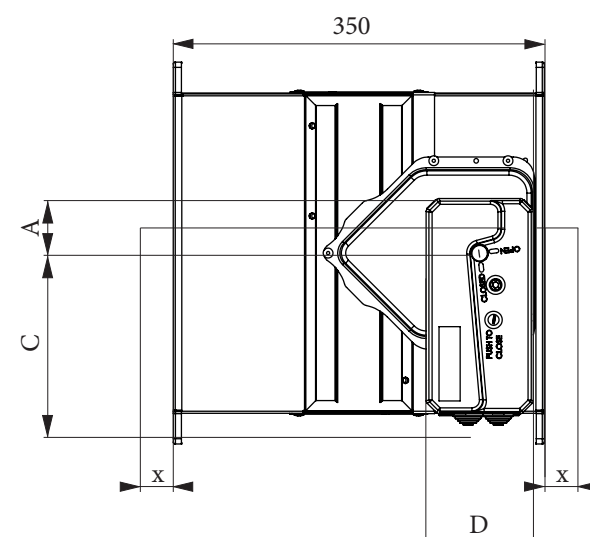
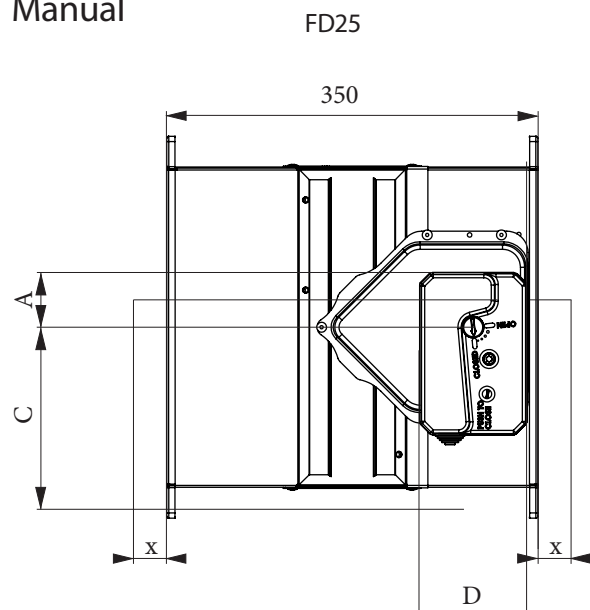
Side view

Electric Actuator Schischek ExMax



Dimensional Data

Manual



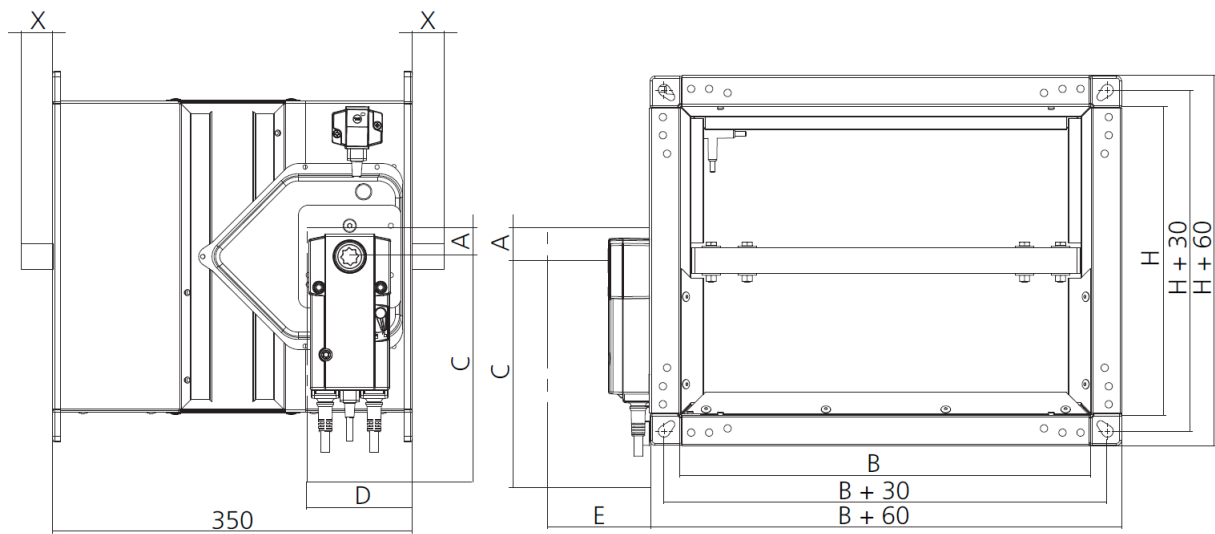
Product	A [mm]	C [mm]	D [mm]	E [mm]
FD 25	55	150	105	150
FD 40	55	200	105	200

Length of damper blade outside of casing:

$$X = (H/2) - 175 \text{ [mm]}$$

ThermShield Standard Square/Rectangular Installation Guide

Automatic



Actuator	A [mm]	C [mm]	D [mm]	E [mm]
BFL (M)	25	200	90	120
BFN (M)	25	225	100	120
BF (M)*	50	250	100	120

Length of damper blade outside of casing:

$$X = (H/2) - 175 \text{ [mm]}$$

Inspection and handover check sheet

This certificate applies only to Swegon Fire Dampers. 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.

	Question	Action	
1	Are the dampers the correct type?	Confirm damper is correct type for the application	
2	Are the dampers located correctly?	The damper location is to be checked against the installation drawings/details	
3	Are the dampers correctly identified?	Unique system ID to be clearly indicated on the damper or other agreed location.	
4	Have supports for both the damper and the adjacent ductwork been installed in accordance with the approved manner?		
5	Are the dampers fitted in the correct orientation?	Confirm the damper is installed with any actuators (if applicable) on the left or right hand side. Not on the top or the bottom (i.e. blade pivot running vertically).	
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.	
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.	
8	Using the access opening provided, check that blades open and close.	Check position of damper blades.	
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.	
10	Has the damper been released to simulate operation of the thermal release? (Damper drop test)	Ensure damper operation is free from interference.	
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.	
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.	
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 (or equivalent).	
14	Is the completed handover register cross-referenced back to the identification codes listed in the system designers damper schedule?		

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:

Installers Telephone No:

Date of installation:

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

Installers signature: Date: