

## WK25

Installation booklet

This is a 24 page installation booklet.

English

FIRE DAMPER

RECTANGULAR SERIES WK25 - 500 Pa

Cert. N° 1812-CPR-1045 EN 15650

\*1MUBWK25EN-LIND\* rev 20-10



www.lindab.com - Fire dampers are manufactured by MP3 Srl [www.mp3-italia.it](http://www.mp3-italia.it)  
For further information please refer to the Technical Manual.

As the manufacturer is constantly improving its products, the aesthetic or dimensional features, the technical data, the equipment and accessories indicated could be subject to variations.

# OVERVIEW

■ Fire resistance classification according to EN 13501-3-2009

		EI 180 S (500 Pa)	EI 120 S (500 Pa)	EI 90 S (500 Pa)	EI 60 S (500 Pa)	EI 30 S (500 Pa)	
Rigid wall	EI 120 S Installation within vertical rigid wall						
	Wall minimum thickness 100 mm Wall minimum density 550 kg/m <sup>3</sup> Mortar or plaster putty sealing ve (i↔o)	W	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
Rigid wall	EI 120S Installation within vertical rigid wall						
	Wall minimum thickness 100 mm Wall minimum density 550 kg/m <sup>3</sup> Plasterboard and rock wool 100 kg/m <sup>3</sup> sealing ve (i↔o)	D	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
Flexible wall	EI 120 S Installation within vertical light wall (plasterboard)						
	Wall minimum thickness 100 mm Wall rock wool density up to 100 kg/m <sup>3</sup> (optional) Plasterboard and rock wool 100 kg/m <sup>3</sup> sealing ve (i↔o)	D	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation within vertical light wall (plasterboard)						
	Wall minimum thickness 100 mm Wall rock wool density up to 100 kg/m <sup>3</sup> (optional) Mortar or plaster putty sealing ve (i↔o)	W	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation within vertical light wall (gypsum blocks wall)						
Wall minimum thickness 100 mm Wall minimum density 995 kg/m <sup>3</sup> Plasterboard sealing ve (i↔o)	D	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	
Flexible wall	EI 90 S Installation within vertical light wall (gypsum blocks wall)						
	Wall minimum thickness 70 mm Wall minimum density 995 kg/m <sup>3</sup> Plasterboard sealing ve (i↔o)	D	-	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
Floor	EI 180 S Installation within floor						
	Floor minimum thickness 150 mm Floor minimum density 2200 kg/m <sup>3</sup> Mortar sealing ho (i↔o)	W	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation within floor						
	Floor minimum thickness 150 mm Floor minimum density 650 kg/m <sup>3</sup> Mortar sealing ho (i↔o)	W	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
Floor	EI 90 S Installation within floor						
	Floor minimum thickness 100 mm Floor minimum density 650 kg/m <sup>3</sup> Mortar sealing ho (i↔o)	W	-	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600

B X H are fire damper minimum and maximum nominal dimensions (base x height) in mm

ve Vertical installation  
ho Horizontal installation  
(i↔o) Origin of fire irrelevant  
Pa Pascal of depression  
E Integrity  
I Thermal insulation  
S Smoke seal  
W Wet method sealing  
D Dry method sealing  
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■ Fire Batt (Weichschott) sealings

		El 120 S (300 Pa)	El 90 S (300 Pa)	El 60 S (300 Pa)	El 30 S (300 Pa)	
Rigid wall	El 120 S Installation within vertical rigid wall with Fire Batt (Weichschott) sealing					
	Wall minimum thickness 100 mm Wall minimum density 550 kg/m <sup>3</sup> Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing ve (↔→)	W	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600
	El 120 S Installation within vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing					
Flexible wall	Wall minimum thickness 100 mm Wall rock wool density up to 100 kg/m <sup>3</sup> (optional) Rock wool density 140 kg/m <sup>3</sup> and endothermic varnish sealing ve (↔→)	W	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600
	El 120 S Installation within vertical light wall (gypsum blocks wall) with Fire Batt (Weichschott) sealing					
	Wall minimum thickness 100 mm Wall minimum density 995 kg/m <sup>3</sup> Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing ve (↔→)	W	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600
Floor	El 120 S Installation within floor with Fire Batt (Weichschott) sealing					
	Floor minimum thickness 150 mm Floor minimum density 650 kg/m <sup>3</sup> Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing ho (↔→)	W	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600	B X H min 100 X 200 max 800 X 600

■ Installation remote from construction support

			EI 120 S (300 Pa)	EI 90 S (500 Pa)	EI 60 S (500 Pa)	EI 30 S (500 Pa)
Rigid wall	EI 120 S Installation remote from the vertical rigid wall					
	Wall minimum thickness 100 mm Wall minimum density 550 kg/m <sup>3</sup> Mortar or plaster putty sealing ve (↔→)	W	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation remote from the vertical rigid wall with Fire Batt (Weichschott) sealing					
	Wall minimum thickness 100 mm Wall minimum density 550 kg/m <sup>3</sup> Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing ve (↔→)	D	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
Flexible wall	EI 120 S Installation remote from the vertical light wall (plasterboard)					
	Wall minimum thickness 100 mm Wall rock wool density up to 100 kg/m <sup>3</sup> (optional) Plasterboard and rock wool 100 kg/m <sup>3</sup> or mortar or plaster putty sealing ve (↔→)	D/W	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation remote from the vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing					
	Wall minimum thickness 100 mm Wall rock wool density up to 100 kg/m <sup>3</sup> (optional) Rock wool density 140 kg/m <sup>3</sup> and endothermic varnish sealing ve (↔→)	D	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 120 S Installation remote from the vertical light wall (gypsum blocks wall)					
	Wall minimum thickness 100 mm Wall minimum density 995 kg/m <sup>3</sup> Mortar or plaster putty sealing ve (↔→)	W	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
Floor	EI 120 S Installation remote from the floor					
	Floor minimum thickness 150 mm Floor minimum density 650 kg/m <sup>3</sup> Mortar or plaster putty sealing ho (↔→)	W	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600
	EI 90 S Installation remote from the floor					
	Floor minimum thickness 100 mm Floor minimum density 650 kg/m <sup>3</sup> Mortar or plaster putty sealing ho (↔→)	W	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600

B x H are fire damper minimum and maximum nominal dimensions (base x height) in mm

ve Vertical installation  
ho Horizontal installation  
(↔→) Origin of fire irrelevant  
Pa Pascal of depression  
E Integrity  
I Thermal insulation  
S Smoke seal  
W Wet method sealing  
D Dry method sealing

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■ Installations within vertical light wall (Shaft wall)

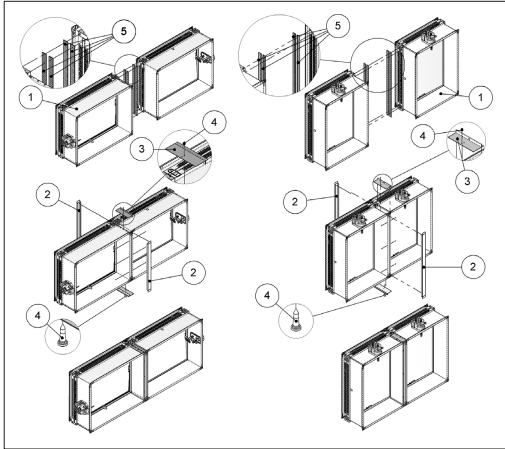
			EI 90 S (300 Pa)	EI 60 S (300 Pa)	EI 30 S (300 Pa)
Flexible wall	EI 60 S Installation within vertical light wall (Shaft wall)				
	Wall minimum thickness 90 mm Plasterboard and mortar or plaster putty sealing ve (↔→)	W	-	B x H min 100 x 200 max 800 x 600	B x H min 100 x 200 max 800 x 600

■ Fire dampers pairing

The patented WK25 rectangular fire dampers can be paired side-by-side or vertically (not more than two) using the custom connection kit (see section Accessories and spare parts) which includes an intumescent gasket to be placed between the two dampers.

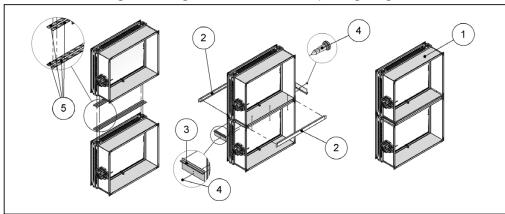
The pair of dampers, may be installed in vertical wall in the same way as a single damper.

1. WK25 Fire damper
2. Steel profile designed as a function of the pairing length
3. Steel plate
4. Fixing screws
5. Intumescent gasket long as a function of the pairing length



- It is forbidden to pair three or more fire dampers.

1. WK25 Fire damper
2. Steel profile designed as a function of the pairing length
3. Steel plate
4. Fixing screws
5. Intumescent gasket long as a function of the pairing length

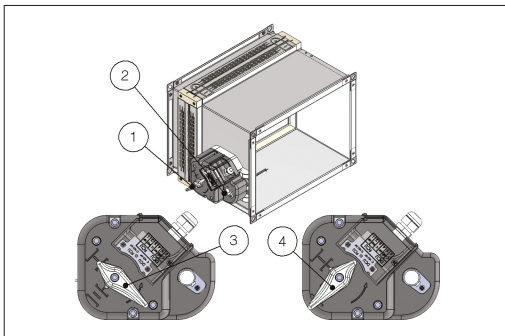


- It is forbidden to pair three or more fire dampers.
- It is forbidden to vertically pair two fire dampers with vertical axis.

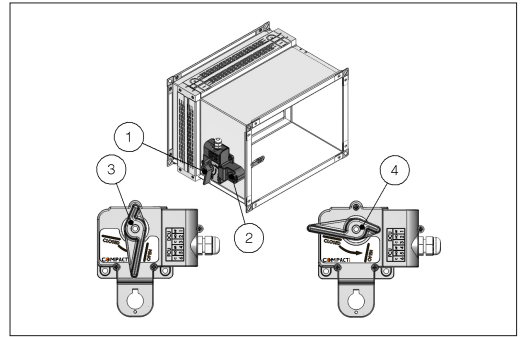
■ Mechanism type

■ Manual and compact manual

#### Manual



#### Compact manual



1. Manual opening lever
2. Manual closing button
3. Lever position when the blade is open
4. Lever position when the blade is closed

#### Blade closing mode

Automatic closing with thermal fuse.

The control mechanism has a thermosensitive element that automatically closes the blade when the temperature in the duct exceeds 70°C (or 95°C for the fire damper with 95°C thermal fuse).

It is possible to close the damper by pressing the indicated button.

#### Blade opening mode

Make sure that the damper is open before the ventilation system start-up, otherwise there is a risk of product malfunction.

It is possible to open the damper blade by rotating the lever anticlockwise.

In case of closed damper as a result of the action of the thermosensitive element, it is possible to manually reopen the damper by rotating the lever counterclockwise once the element has been replaced.

#### Position indication microswitches

On request, the fire damper can be supplied with position microswitches (S2 optional) that signal the blade position (open or closed). Refer to the section Electrical connections for more details.

#### Closing by remote control

Not available

#### Temperature calibration of thermosensitive element for automatic damper closing

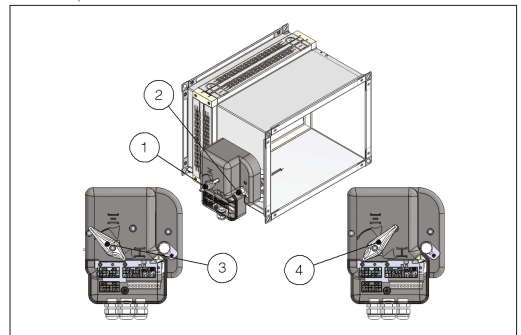
70 °C±7 °C (Standard)

95 °C±9 °C (On request).

**CAUTION: The compact mechanism is not interchangeable with other types of manual mechanism.**

■ Manual with magnet

1. Manual opening lever
2. Manual closing button
3. Lever position when the blade is open
4. Lever position when the blade is closed



### Blade closing mode

Automatic closing with thermal fuse.

The control mechanism has a thermosensitive element that automatically closes the blade when the temperature in the duct exceeds 70°C (or 95°C for the fire damper with 95°C thermal fuse).

It is possible to close the damper by pressing the indicated button.

It is possible to remotely close the fire damper.

The manual command mechanism with magnet is equipped with an electromagnet which, in case power is interrupted (interruption magnet version) or when power is supplied (input magnet version), commands the closing of the damper.

### Blade opening mode

Make sure that the damper is open before the ventilation system start-up, otherwise there is a risk of product malfunction.

In case of closed damper by pressing the closing button or remotely by electromagnet, it is possible to manually open the fire damper blade by rotating the lever anticlockwise.

In case of closed damper as a result of the action of the thermosensitive element, it is possible to manually reopen the damper by rotating the lever counterclockwise once the element has been replaced.

### Position indication microswitches

It is advisable to install the fire damper with position microswitches (S2 optional) which signal the position of the blade (open or closed). Refer to the section Electrical connections for more details.

### Closing by remote control

With power supply input or interruption magnet.

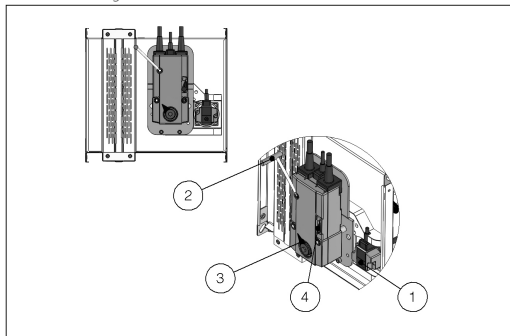
### Temperature calibration of thermosensitive element for automatic damper closing

70 °C±7 °C (Standard)

95 °C±9 °C (On request).

#### ■ Belimo motorized version

1. Manual closing switch
2. Manual opening lever
3. Position indicator
4. Blade locking lever



### Blade closing mode

Automatic closing with thermal fuse.

The control mechanism has a thermosensitive element that automatically closes the blade when the temperature in the duct or in the room exceeds 72°C (or 95°C for the 95°C version).

To close the damper when the motor is connected, press the switch on the temperature sensor or cut off the power supply.

### Blade opening mode

To open the damper with the electric motor driven actuator, provide power supply to the motor. Refer to the section Electrical connections for further information.

To manually open the damper, use the handle supplied and carefully rotate clockwise to the 90° indicator. To hold the damper in open position operate on the lever indicated in figure.

During the manual opening of the damper, power must not be supplied to the motor.

### Position indication microswitches

The motorized versions are supplied with two microswitches to show the blade's position (open or closed). Refer to the section Electrical connections for further information.

### Closing by remote control

If power to the motor is cut off, the blade will close.

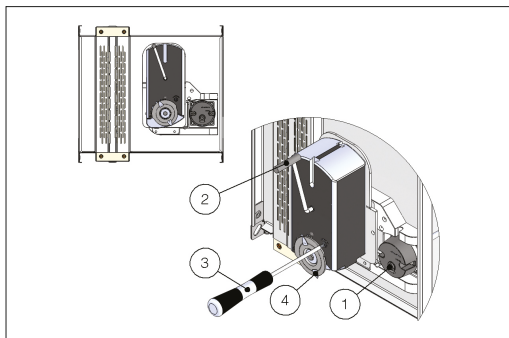
### Temperature calibration of thermosensitive element for automatic damper closing

72 °C±7 °C (Standard)

95 °C±9 °C (On request).

#### ■ Siemens motorized version

1. Manual closing switch
2. Manual opening lever
3. Screwdriver
4. Position indicator



### Blade closing mode

Automatic closing with thermal fuse.

The control mechanism has a thermosensitive element that automatically closes the blade when the temperature in the duct or in the room exceeds 72°C (or 95°C for the 95°C version).

To close the damper when the motor is connected, press the switch on the temperature sensor or cut off the power supply.

### Blade opening mode

To open the damper with the electric motor driven actuator, provide power supply to the motor. Refer to the section Electrical connections for further information.

To manually open the damper, use the handle supplied and carefully rotate counterclockwise to the 90° indicator. To hold the damper in open position, rotate the screw anticlockwise as shown in the picture.

During the manual opening of the damper, power must not be supplied to the motor.

### Position indication microswitches

The motorized versions are supplied with two microswitches to show the blade's position (open or closed). Refer to the section Electrical connections for further information.

### Closing by remote control

If power to the motor is cut off, the blade will close.

### Temperature calibration of thermosensitive element for automatic damper closing

72 °C±7 °C (Standard)

95 °C±9 °C (On request).

## ELECTRICAL CONNECTIONS

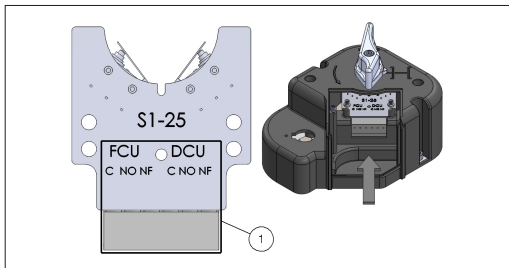
### ■ Electrical wiring

Electrical connections must be done by qualified and trained people.

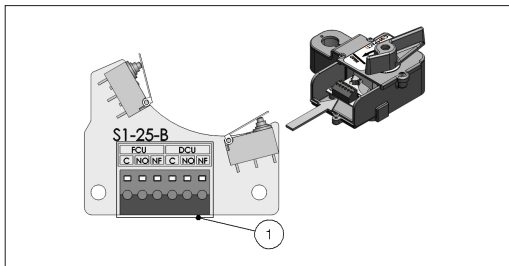
Switch off the power supply before starting any work on the electric elements. Never switch on the power supply during electrical connections.

Manual and compact manual

**S1-25 electric board (S2 optional) for blade position microswitches (manual)**



**S1-25-B electric board (S2 optional) for blade position microswitches (compact manual)**



1 Microswitch contacts for blade position

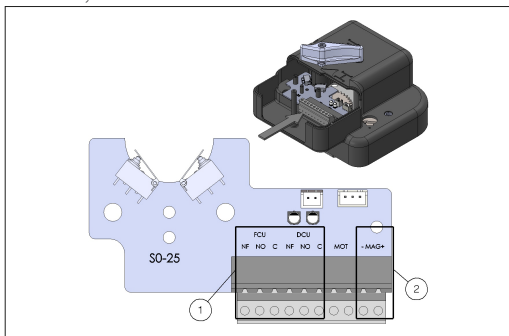
- FCU Closed blade contact
- DCU Open blade contact
- NO Normally open
- C Common
- NF Normally closed

Manual with magnet - MR/MI version (the magnet is powered using 24 V DC/48 V DC through S0-25 electric board)

**S0-25 electronic board (S2 optional) for 24V DC / 48V DC power supply. Blade position microswitches included**

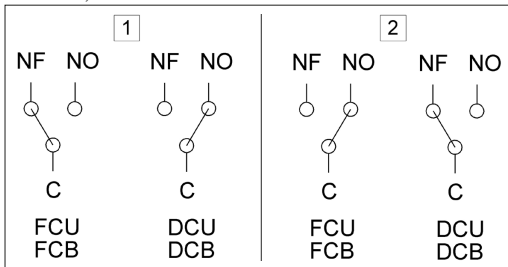
- 1 Microswitch contacts for blade position
- 2 Magnet power supply contacts. 24V DC or 48V DC. Keep to the polarity for input magnet

- MAG Magnet power supply
- FCU Closed blade contact
- DCU Open blade contact
- NO Normally open
- C Common
- NF Normally closed



S2 microswitches position for manual control and magnetic control

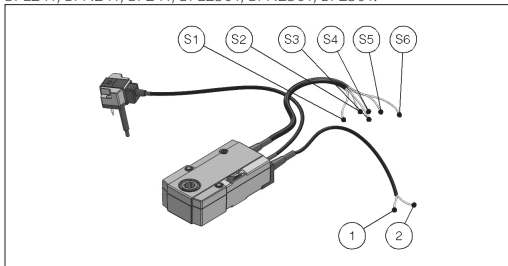
1. The fire damper's blade is open (the air flow is allowed)
  2. The fire damper's blade is closed (the air flow is not allowed)
- FCU Closed blade contact  
DCU Open blade contact  
NO Normally open  
C Common  
NF Normally closed



Motorized version

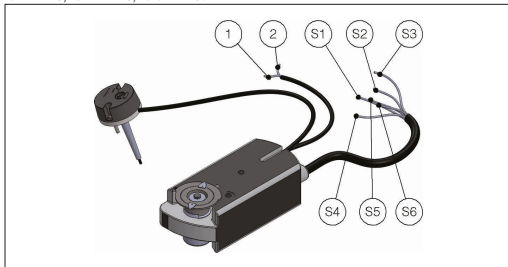
**Belimo servomotor:**

BFL24T, BFN24T, BF24T, BFL230T, BFN230T, BF230T.



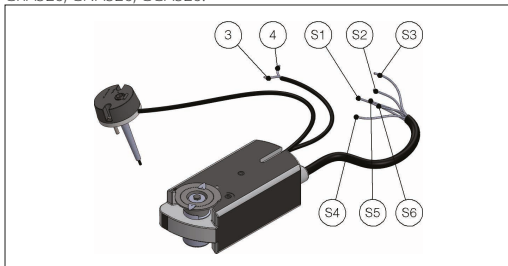
**Siemens servomotor:**

GRA126, GNA126, GGA126.



**Siemens servomotor:**

GRA326, GNA326, GGA326.



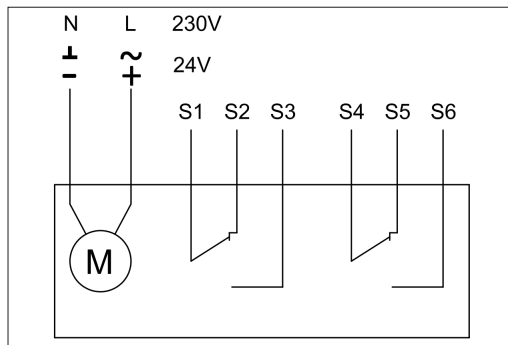
### Motorized fire dampers electrical wiring

To connect the dampers to the power supply, proceed as follows:

- Check that the voltage and electrical frequency are equivalent to those of the motor of the servomotor (check the motor's information label);
- Make the connections as shown in the below diagram.

### Microswitches position for motorized version

- |   |   |
|---|---|
| 1 Negative (DC) or neutral (AC)               | S3 Normally opened, closed damper microswitch |
| 2 Positive (DC) or phase (AC)                 | S4 Common open damper microswitch             |
| 3 Phase                                       | S5 Normally closed, open damper microswitch   |
| 4 Neutral                                     | S6 Normally opened, open damper microswitch   |
| S1 Common closed damper microswitch           |   |
| S2 Normally closed, closed damper microswitch |   |



### Electrical specifications

	Manual and compact manual	Manual with magnet Belimo motorized version Siemens motorized version
Voltage and power consumption		Magnet (WK25MR/MI): 24/48 V DC (automatic voltage switching on SO-25 electric board for 24V magnet) Power interruption magnet (MR): P = 1,6 W Power input magnet (MI): P = 3,4 W
		Motor 24 V AC/DC (WK25VSB): Belimo BFL24T Opening: 2,5 W In stand-by: 0,8 W Motor 24 V AC/DC (WK25VSS): Siemens GRA126 Opening: 3,5 W In stand-by: 2 W
		Motor 230 V AC (WK25DSB): Belimo BFL230T: Opening: 3,5 W In stand-by: 1,1 W Motor 230 V AC (WK25DSS): Siemens GRA326 Opening: 4,5 W In stand-by: 3,5 W
Microswitches position contacts	Manual control version: 12VDC / 2A 125VAC / 0,1A	Motorized version: Siemens: AC 24V...230V / 6 (2)A Belimo: DC 5V...AC 250V / 1mA...3A (0,5A)
Blade closing time	Spring: 1 s	motor: < 30 s
Protection degree	IP42	IP42 MAGNETIC VERSION IP54 MOTORIZED VERSION

## MAINTENANCE AND INSPECTIONS

Fire dampers and control mechanisms do not require routine maintenance.

Extraordinary maintenance (repairs) and periodic inspection operations are the responsibility of the ventilation system operator.

It is recommended to keep enough space (about 200mm) for using or replacing the control mechanism or for maintenance. Also provide the necessary space to remove the ventilation duct from the damper whenever necessary.

It is recommended to provide inspection hatches on both sides of the ducts connected to the fire damper.

The implementation of a periodic inspection plan allows to guarantee the efficiency and functionality of the fire dampers for the fire safety of the building.

### Periodic inspection and cleaning

Periodic inspection shall be performed in accordance with the requirements of the law or by the building regulations or other local regulations.

In the absence of specific regulations (or to their complement), in accordance with point 8.3 of the EN 1560 standard, it is recommended to carry out the following control activities at intervals of no more than 12 months:

- Check the servomotor electrical wiring for damage (where applicable);
- Check end-switch wiring for damage (where applicable);
- Check damper cleanliness and clean where necessary;
- Check the condition of blades and seals, rectify and report where necessary;
- Check the correct opening and closing of the fire damper by manual operation according to the instructions in the technical manual of the fire damper;
- Check the opening and closing operation of the damper controlled by the fire alarm system (if present);
- Check the operation of the end switches in open and closed state, adjust and report if necessary;



- Confirm that the damper fulfils its function as part of the control system (where necessary);
- Check that the damper is left in its normal operating position, which usually corresponds to the open position.

#### ■ Repair

For safety reasons, repair activities involving fire-fighting components must be carried out only by qualified personnel.

Only original spare parts supplied by the fire damper manufacturer must be used.

A functional test must be performed after each repair.

At the end of the inspection, cleaning or repair operations, check that the fire damper is in the normal operating position.

Keep records of all inspections, repair activities, any problems encountered and their resolution.

This practice, even when not mandatory, is very useful in practice.

#### ■ Disposal

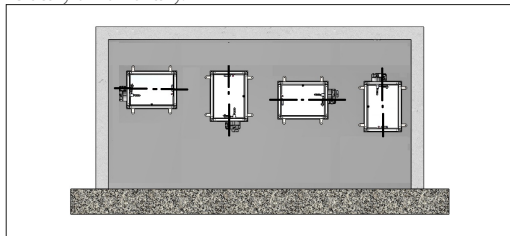
Disposal in case of destruction must be carried out in accordance with national legislation. For electrical and electronic parts also refer to EU Directive 2011/65.

## INSTALLATION

The sizes shown are in mm.

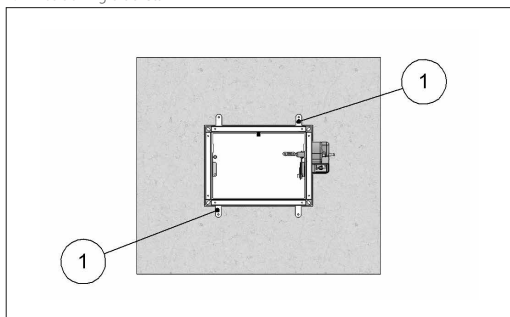
#### ■ Blade rotation axis positioning

The fire damper can be installed both with the blade axis positioned vertically or horizontally.



#### ■ Positioning brackets before fixing

1. Positioning brackets



#### ■ Installation of flexible connectors in order to balance out the ventilation ducts expansion

**ATTENTION: the following indications must be considered binding only if legislation or local regulation where the fire dampers are installed require the use of flexible connectors.**

Flexible connectors compensate any duct thermal expansion and wall bending in case of fire.

Flexible connectors are used to limit fire damper stresses due to external forces in case of fire and to preserve fire resistance class.

In general it is always appropriate the use of flexible connectors for the followings installations:

- light walls;
- Plasterboard and rock wool or Fire Batt (Weichschott) sealing;
- Applique fixing system.

Flexible connector must be normal flammability and in case of fire the grounding bonding should disconnet to guarantee the complete separation between fire damper and connected air duct.

When flexible connectors made of conductive material (e.g. aluminum) are used, no additional grounding bonding is required.

Despite flexible connector installation, the fire damper must be installed in the construction support so that its weight does not affect

damper's installation position both during normal operation and in case of fire.

It is recommended not to compress flexible connectors in the installation phase.

Flexible connector must be at least 100mm long and in order that possible duct thermal expansions are balanced.

Take care that the flexible connector does not interfere with opening / closing movement of the blade.

#### ■ Transfer Application (application not connected to air ducts on one or both sides)

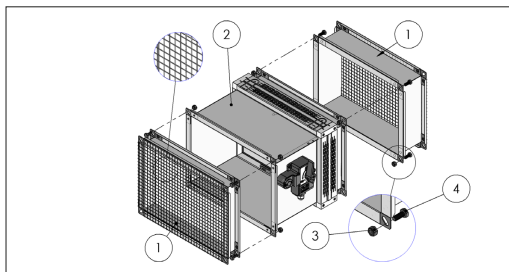
Note: For this application please refer to national legislation to verify if any specific obligation is required.

Following tests performed as per EN 1366-2, section 6.3.6 Standard, it is possible to install the fire damper free from air duct from one or both sides.

- Attention: fire resistance classification for transfer application is conform to section Fire resistance classification according to EN 13501-3-2009 limited to EI 120S if the ducted classification is higher.
- End cap with mesh shall be mounted on the side not connected to air duct.
- End cap with mesh is made from galvanized steel sheet and includes nuts and screws for fixing on fire damper.
- End cap with mesh is supplied not installed on the fire damper.

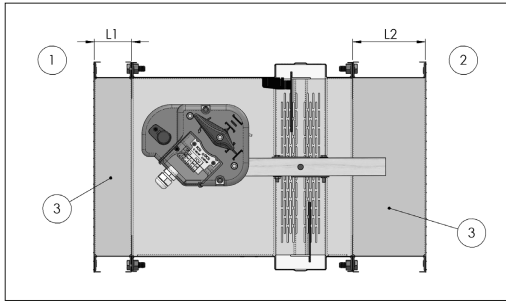
#### ■ Components (Transfer Application)

1. End cap with mesh
2. Fire damper
3. M8 nut
4. M8 screw



■ Technical data (Transfer Application)

- |                                  |   |
|----------------------------------|---|
| 1. Mechanism side                | L2 End cap length mechanism opposite side |
| 2. Mechanism opposite side       |   |
| 3. End cap with mesh             | H Nominal height of fire damper           |
| L1 End cap length mechanism side |   |



Length of end cap with mesh depending on fire damper height H.

H	L1	L2
200	50	50
250	50	100
300	50	100
350	50	150
400	50	150
450	50	200
500	50	200
550	50	250
600	100	250

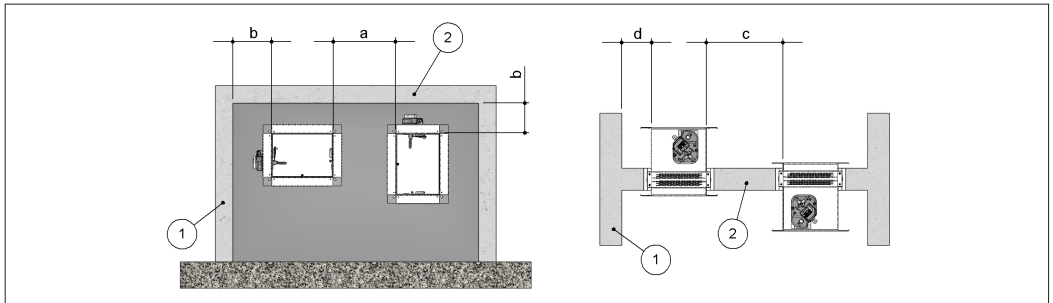
- H Nominal height of fire damper  
 L1 End cap length mechanism side  
 L2 End cap length mechanism opposite side

■ Minimum distances

It is recommended to keep enough space (about 200mm) for using or replacing the control mechanism or for maintenance. Also provide the necessary space to remove the ventilation duct from the damper whenever necessary.  
 In accordance with Articles 7 and 13 of EN 1366-2 respect the minimum distances indicated below.

Minimum distances

- |   |   |
|---|---|
| 1. Side vertical wall   | b. Distance between fire damper and vertical lateral wall / floor |
| 2. Floor  | c. Distance between fire dampers installed within floor           |
| a. Distance between fire dampers installed within vertical wall | d. Distance between fire damper and vertical lateral wall         |



		Fire dampers installed within vertical wall		Fire dampers installed within floor		Paired installation
Installation		a [mm]	b [mm]	c [mm]	d [mm]	
Rigid wall	EI 120 S Installation within vertical rigid wall Mortar or plaster putty sealing	44	75	-	-	Yes. One air duct or separated air ducts
	EI 120S Installation within vertical rigid wall Plasterboard and rock wool 100 kg/m <sup>3</sup> sealing	44	75	-	-	Yes. One air duct or separated air ducts
Flexible wall	EI 120 S Installation within vertical light wall (plasterboard) Plasterboard and rock wool 100 kg/m <sup>3</sup> sealing	44	75	-	-	Yes. One air duct or separated air ducts
	EI 120 S Installation within vertical light wall (plasterboard) Mortar or plaster putty sealing	44	75	-	-	Yes. One air duct or separated air ducts
	EI 120 S Installation within vertical light wall (gypsum blocks wall) Plasterboard sealing	44	75	-	-	Yes. One air duct or separated air ducts
	EI 90 S Installation within vertical light wall (gypsum blocks wall) Plasterboard sealing	200	75	-	-	No
Floor	EI 180 S Installation within floor Mortar sealing	-	-	44	75	Yes. Separate air duct
	EI 120 S Installation within floor Mortar sealing	-	-	44	75	Yes. Separate air duct
	EI 90 S Installation within floor Mortar sealing	-	-	44	75	Yes. Separate air duct

The minimum distance between two or more paired installations is 200 mm.  
It is forbidden to pair three or more fire dampers.

■ Fire Batt (Weichschott) sealings

		Fire dampers installed within vertical wall		Fire dampers installed within floor		Paired installation
Installation		a [mm]	b [mm]	c [mm]	d [mm]	
Rigid wall	EI 120 S Installation within vertical rigid wall with Fire Batt (Weichschott) sealing Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing	44	50	-	-	Yes. One air duct
Flexible wall	EI 120 S Installation within vertical light wall (gypsum blocks wall) with Fire Batt (Weichschott) sealing Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing	44	50	-	-	Yes. One air duct
	EI 120 S Installation within vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing	44	50	-	-	Yes. One air duct
Floor	EI 120 S Installation within floor with Fire Batt (Weichschott) sealing Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing	-	-	200	75	No

The minimum distance between two or more paired installations is 200 mm.  
It is forbidden to pair three or more fire dampers.

■ Installation remote from construction support

Installation	Fire dampers installed within vertical wall		Fire dampers installed within floor		Paired installation	
	a [mm]	b [mm]	c [mm]	d [mm]		
Rigid wall	Installation remote from the vertical rigid wall Mortar or plaster putty sealing	200	110 *	-	-	No
	Installation remote from the vertical rigid wall with Fire Batt (Weichschott) sealing Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing	200	110 *	-	-	No
Flexible wall	Installation remote from the vertical light wall (plasterboard) Plasterboard and rock wool 100 kg/m <sup>3</sup> or mortar or plaster putty sealing	200	110 *	-	-	No
	Installation remote from the vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing	200	110 *	-	-	No
	Installation remote from the vertical light wall (gypsum blocks wall) Mortar or plaster putty sealing	200	110 *	-	-	No
Floor	Installation remote from vertical light wall (gypsum blocks) with Fire Batt (Weichschott) sealing Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing	200	110 *	-	-	No
	EI 120 S Installation remote from the floor Mortar or plaster putty sealing	-	-	200	110 *	No
	EI 90 S Installation remote from the floor Mortar or plaster putty sealing	-	-	200	110 *	No

\* Due to rock wool panels thickness. See installation details.

■ Installations within vertical light wall (Shaft wall)

Installation	Fire dampers installed within vertical wall		Fire dampers installed within floor		
	a [mm]	b [mm]	c [mm]	d [mm]	
Flexible wall	EI 60 S Installation within vertical light wall (Shaft wall)	200	75	-	-
	Plasterboard and mortar or plaster putty sealing				

■ Construction supports characteristics

The European standard for fire dampers foresees a precise correlation between the wall/floor characteristics and the fire resistance class obtained, as well as the correlation between wall/floor used for the test and wall/floor used for the actual installation.

The test results obtained on a type of wall/floor are valid also for walls/floors of the same type but with greater thickness and/or density than those used in the test.

For plasterboard walls, the test results are also valid for walls with a greater number of plasterboard layers on each side.

As a result, the indicated thickness and density characteristics are to be considered as minimum values.

The wall/floor in which the fire dampers are installed must be fire class certified according to the standards foreseen for the structure.

■ Rigid walls

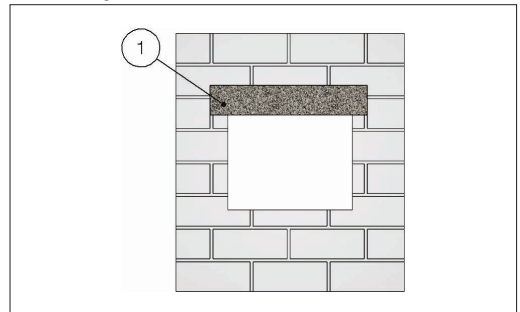
Can be made with aerated concrete blocks, poured concrete, concrete panels, perforated cell elements in concrete or brick in accordance with the following characteristics:

- minimum thickness 100 mm;
- minimum density 550 kg/m<sup>3</sup>.

The use of a reinforcing beam above the opening is recommended for walls made from concrete blocks, bricks or in concrete cell elements.

For walls built with perforated elements, it is also recommended that the area of the opening be made from full elements (for example aerated concrete blocks) to guarantee the correct adhesion of the mortar.

1. Reinforcing beam



■ Light plasterboard vertical walls

During testing, light plasterboard walls have been used with the following characteristics:

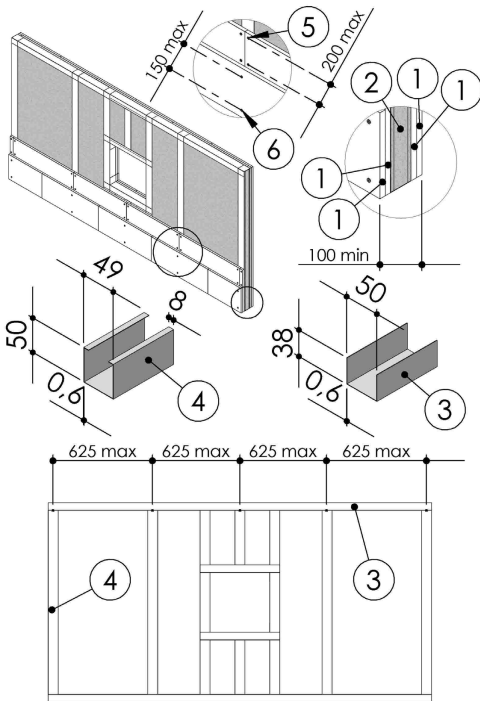
- U-shaped horizontal metal frame (50 mm) and C-shaped vertical frame (49 mm) made from 0,6 mm thick sheet metal;
- Vertical profiles placed with a maximum spacing of 625 mm between each other;
- Filling made of rock wool with density up to 100 kg/m<sup>3</sup> (optional);
- Each side is made from two plasterboard layers 12,5 mm thick, unaligned to avoid alignment between the joints of the layer above and below.

The following indications are given for the installation walls:

- metal profiles minimum width: 49 mm;
- metal profiles minimum thickness: 0,6 mm;

- vertical profiles placed with a maximum spacing of 625 mm between each other;
- vertical profile fixing with selfthreading screws or by clinching to the bottom horizontal profile and insertion in the top horizontal profile;
- profiles fixed using self-threading screws or by clinching on every intersection.
- installation of a frame around the damper with base and height where shown in the installation instructions;
- Filling made of rock wool with density up to  $100 \text{ kg/m}^3$  (optional);
- each side is made from two plasterboard layers 12,5 mm minimum thick, unalined to avoid alignment between the joints of the layer above and below.
- the front plasterboards layers are fixed using long enough screws to pass through the lower plasterboard and attach to the steel profile underneath.

1. Plasterboard thickness 12,5 mm
2. Rock wool density up to  $80 \text{ kg/m}^3$  (optional)
3. Horizontal U-shaped profile
4. Vertical C-shaped profile
5. Self-drilling screw  $\varnothing 3,5 \times 25 \text{ mm}$
6. Self-drilling screw  $\varnothing 3,5 \times 35 \text{ mm}$



#### ■ Light plasterboard vertical walls with steel reinforcement

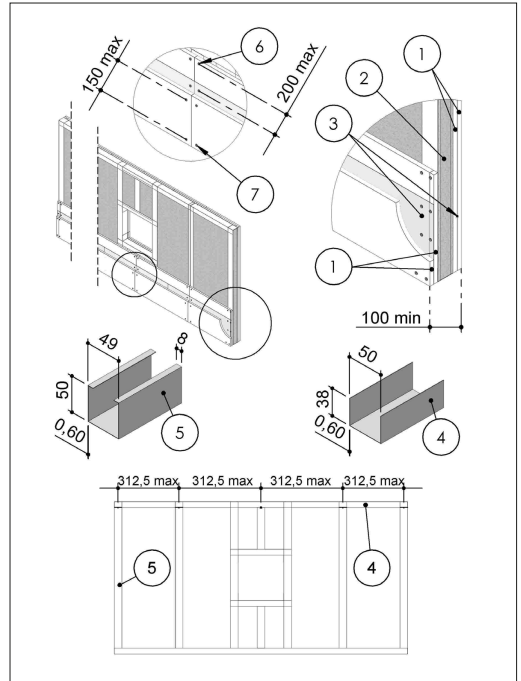
During testing, light plasterboard walls have been used with the following characteristics:

- U-shaped horizontal metal frame (50 mm) and C-shaped vertical frame (49 mm) made from 0,6 mm thick sheet metal;
- Vertical profiles placed with a maximum spacing of 312,5 mm between each other;
- reinforcement sheet;
- Filling made of rock wool with density up to  $100 \text{ kg/m}^3$  (optional);
- Each side is made from two plasterboard layers 12,5 mm thick, unalined to avoid alignment between the joints of the layer above and below.

The following indications are given for the installation walls:

- metal profiles minimum width: 49 mm;
- metal profiles minimum thickness: 0,6 mm;
- vertical profiles placed with a maximum spacing of 312,5 mm between each other;
- vertical profile fixing with selfthreading screws or by clinching to the bottom horizontal profile and insertion in the top horizontal profile;
- profiles fixed using self-threading screws or by clinching on every intersection.
- installation of a frame around the damper with base and height where shown in the installation instructions;
- Filling made of rock wool with density up to  $100 \text{ kg/m}^3$  (optional);
- each side is made from two plasterboard layers 12,5 mm minimum thick, unalined to avoid alignment between the joints of the layer above and below.
- the front plasterboards layers are fixed using long enough screws to pass through the lower plasterboard and attach to the steel profile underneath.

1. Plasterboard thickness 12,5 mm
2. Rock wool density up to  $100 \text{ kg/m}^3$  (optional)
3. Reinforcement sheet
4. Horizontal U-shaped profile
5. Vertical C-shaped profile
6. Self-drilling screw  $\varnothing 3,5 \times 25 \text{ mm}$
7. Self-drilling screw  $\varnothing 3,5 \times 35 \text{ mm}$



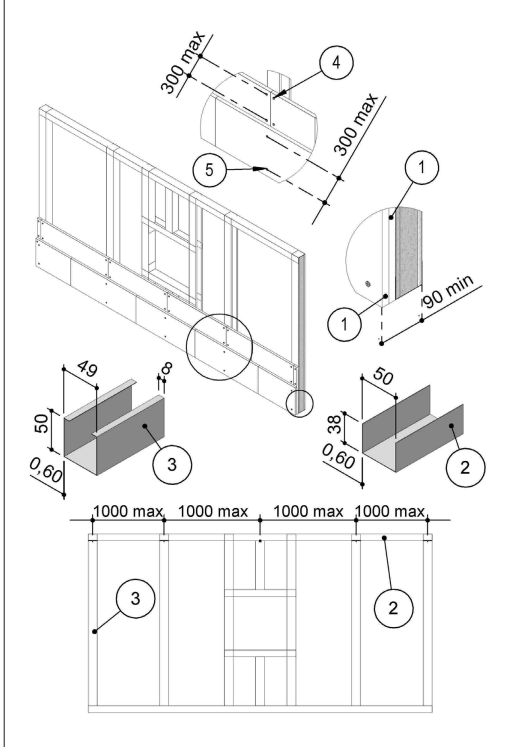
#### ■ Light plasterboard vertical walls (Shaft wall)

The following indications are given for the installation walls:

- U-shaped horizontal metal frame (minimum width 50 mm) and C-shaped vertical frame (minimum width 49 mm) made from sheet metal (minimum thickness 0,6 mm);
- vertical profiles placed with a maximum spacing of 1000 mm between each other;
- vertical profile fixing with selfthreading screws or by clinching to the bottom horizontal profile and insertion in the top horizontal profile;
- profiles fixed using self-threading screws or by clinching on every intersection.

- installation of a frame around the damper with base and height where shown in the installation instructions;
- one side is made from two plasterboard layers 20 mm minimum thick, unaligned to avoid alignment between the joints of the layer above and below;
- the front plasterboards layers are fixed using long enough screws to pass through the lower plasterboard and attach to the steel profile underneath.

1. Plasterboard thickness 20 mm
2. Horizontal U-shaped profile
3. Vertical C-shaped profile
4. Self-drilling screw  $\varnothing$  3,5 X 35 mm
5. Self-drilling screw  $\varnothing$  3,5 X 55 mm



#### ■ Installations within vertical rigid wall

Refer to the section Construction supports characteristics for further information.

Comply with the minimum distances indicated on section Minimum distances .

Before and after installation please perform a functional test. Refer to section Mechanism type for further information .

#### ■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

In case of paired installation refer to the section Fire dampers pairing for further information

#### ■ Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing. Close the blade before installing the fire damper.

#### ■ Filling

Fill the space between the wall and the damper as indicated in the table and in the drawing.

Sealing with concrete is not allowed.

#### ■ Gypsum blocks light walls

Gypsum blocks wall can be built with special solid gypsum blocks with interlocking shaped edges as indicated in the supplier's instructions and according to the following characteristics:

- minimum thickness 70 or 100 mm according to the type and resistance class required;
- minimum density 995 kg/m<sup>3</sup>.

It is generally advisable to first build the wall and then provide the opening for the fire damper.

#### ■ Aerated concrete floors

Aerated concrete floors can be built during installation or with pre-formed slabs with interlocking shaped edges according to the following characteristics:

- minimum thickness 100 or 150 mm according to the type and resistance class required;
- minimum density 650 kg/m<sup>3</sup>

#### ■ Poured concrete floors

Poured concrete floors can be built during installation or with pre-formed slabs with interlocking shaped edges according to the following characteristics:

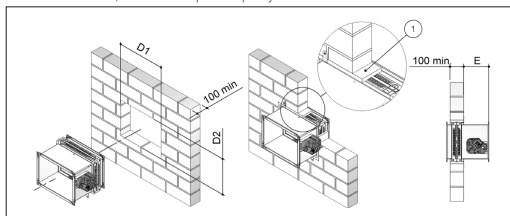
- minimum thickness 100 or 150 mm according to the resistance class required;
- minimum density 2200 kg/m<sup>3</sup>.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
<b>EI 120 S Installation within vertical rigid wall</b>					
Wall minimum density 550 kg/m <sup>3</sup>	EI 120 S (500 Pa)	From (B+70) x (H+70) to (B+440) x (H+440)	185	100	Mortar or plaster putty sealing
Wall minimum density 550 kg/m <sup>3</sup>	EI 120 S (500 Pa)	From (B+50) x (H+50) to (B+70) x (H+70)	185	100	Plasterboard and rock wool 100 kg/m <sup>3</sup> sealing

B Nominal base of the damper  
H Nominal height of the damper

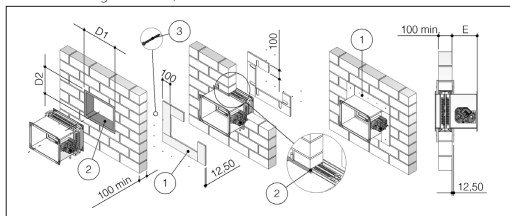
### EI 120 S Installation within vertical rigid wall

- D1 Hole base: see table above  
D2 Hole height: see table above  
E Damper protrusion from the wall: see table above  
1. Mortar M-10, EN998-2 or plaster putty



### EI 120 S Installation within vertical rigid wall

- D1 Hole base: see table above  
D2 Hole height: see table above  
E Damper protrusion from the wall: see table above  
1. Plasterboard infill panel, thickness 12,5 mm  
2. Rock wool, 100 kg/m<sup>3</sup>  
3. Self-drilling screw Ø 3,5 X 45 mm



#### ■ Installation within vertical light wall (plasterboard)

Refer to the section Construction supports characteristics for further information.

Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

#### ■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

In case of paired installation refer to the section Fire dampers pairing for further information

#### ■ Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing. Close the blade before installing the fire damper.

#### ■ Filling

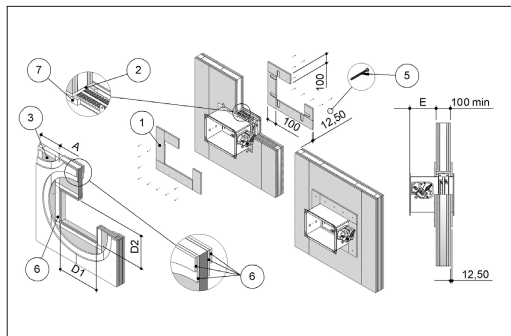
Fill the space between the wall and the damper as indicated in the table and in the drawing.

Sealing with concrete is not allowed.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
<b>EI 120 S Installation within vertical light wall (plasterboard)</b>					
Wall rock wool density up to 100 kg/m <sup>3</sup> (optional)	EI 120 S (500 Pa)	Da (B+75) x (H+75) a (B+95) x (H+95)	185	100	Rock wool 100 kg/m <sup>3</sup> with infill plasterboard (thickness 12.5 mm)
Wall rock wool density up to 100 kg/m <sup>3</sup> (optional)	EI 120 S (500 Pa)	Da (B+75) x (H+75) to (B+440) x (H+440)	185	100	Mortar or plaster putty

B Nominal base of the damper  
H Nominal height of the damper

- D1 Hole base: see table above
  - D2 Hole height: see table above
  - E Damper protrusion from the wall: see table above
  - 1. Plasterboard infill panel, thickness 12,5 mm, for rock wool sealing
  - 2. Plasterboard infill panel, thickness 12,5 mm, for rock wool sealing
  - 3. Rock wool density up to 100 kg/m<sup>3</sup> (optional)
  - 4. Plasterboard thickness 12,5 mm
  - 5. Self-drilling screw Ø 3,5 X 45 mm
  - 6. Metal frame
  - 7. Rock wool 100 kg/m<sup>3</sup> or mortar M-10 EN998-2 or plaster putty (for sealing)
- A Distance between vertical profiles: 625 mm see section Light plasterboard vertical walls or 312,5 mm see section Light plasterboard vertical walls with steel reinforcement



**■ Installation within vertical light wall (gypsum blocks wall)**

Refer to the section Construction supports characteristics for further information.

Comply with the minimum distances indicated on section Minimum distances .

Before and after installation please perform a functional test. Refer to section Mechanism type for further information .

**■ Wall opening**

A opening must be provided in the wall as indicated in the table and in the drawing

In case of paired installation refer to the section Fire dampers pairing for further information

**■ Damper positioning**

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing. Close the blade before installing the fire damper.

**■ Filling**

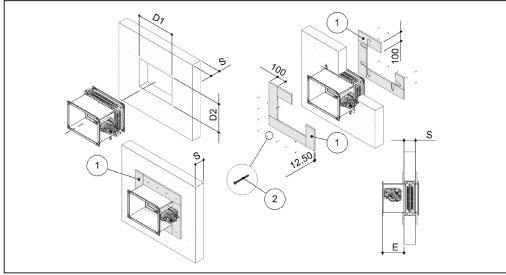
It is not necessary to insert any material, but simply cover the gap between the damper and the wall by applying on both faces of the wall a layer of plasterboard, to a total minimum thickness of 12,5 mm per side, to make a frame 100 mm wide. Sealing with concrete is not allowed.

Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing	
<b>EI 90 S Installation within vertical light wall (gypsum blocks wall)</b> (paired installation not available)					
Wall minimum density 995 kg/m <sup>3</sup>	EI 90 S (500 Pa)	From (B+50) x (H+50) to (B+70) x (H+70)	202	70	Plasterboard sealing
<b>EI 120 S Installation within vertical light wall (gypsum blocks wall)</b>					
Wall minimum density 995 kg/m <sup>3</sup>	EI 120 S (500 Pa)	From (B+50) x (H+50) to (B+70) x (H+70)	185	100	Plasterboard sealing

- B Nominal base of the damper
- H Nominal height of the damper



- D1 Hole base: see table above
  - D2 Hole height: see table above
  - E Damper protrusion from the wall: see table above
  - S Wall minimum thickness: see table above
1. Plasterboard infill panel, thickness 12,5 mm
  2. Self-drilling screw Ø 3,5 X 45 mm



#### ■ Installations within floor

Refer to the section Construction supports characteristics for further information.  
Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

#### ■ Floor opening

A opening must be provided in the floor as indicated in the table and in the drawing

#### ■ Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing. Close the blade before installing the fire damper.

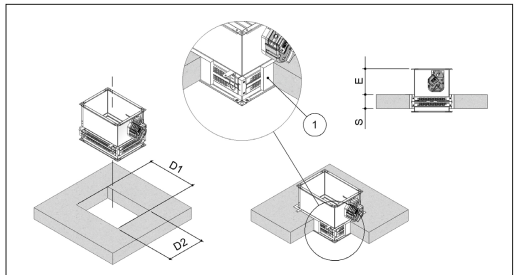
#### ■ Filling

Fill the space between the floor and the damper as indicated in the table and in the drawing.  
Sealing with concrete is not allowed.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the floor "E" [mm]	Floor minimum thickness "S" [mm]	Sealing
<b>EI 90 S Installation within floor</b>					
Floor minimum density 650 kg/m <sup>3</sup>	EI 90 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	185	100	Mortar sealing
<b>EI 120 S Installation within floor</b>					
Floor minimum density 650 kg/m <sup>3</sup>	EI 120 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	170	150	Mortar sealing
<b>EI 180 S Installation within floor</b>					
Floor minimum density 2200 kg/m <sup>3</sup>	EI 180 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	170	150	Mortar sealing

- B Nominal base of the damper
- H Nominal height of the damper

- D1 Hole base: see table above
- D2 Hole height: see table above
- E Damper protrusion from the floor: see table above
- S Floor minimum thickness: see table above
- 1. Mortar M-10, EN998-2



#### ■ Installations within vertical wall with Fire Batt (Weichschott) sealing

Refer to the section Construction supports characteristics for further information.  
Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

#### ■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing  
In case of paired installation refer to the section Fire dampers pairing for further information

#### ■ Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing. The fire damper has to be fixed at the bottom and suspended from the ceiling.

Close the blade before installing the fire damper.

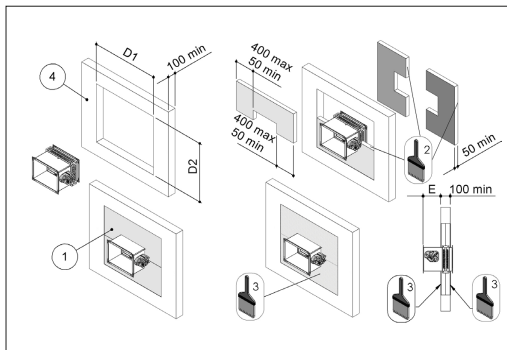
#### ■ Filling

Fill the space between the damper and the wall using Fire Batt (Weichschott) sealing made from two rock wool panels with minimum thickness of 50 mm and minimum density of 140 kg/m<sup>3</sup>. The panels must be covered on both faces of the wall with endothermic varnish type PROMASTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMASTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
Rigid wall	<b>EI 120 S Installation within rigid vertical wall with Fire Batt (Weichschott) sealing</b>				
	Wall minimum density 550 kg/m <sup>3</sup>	EI 120 S (300 Pa)	(B+800 max) x (H+800 max)	185	100
Flexible wall	<b>EI 120 S Installation within vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing</b>				
	Wall rock wool density up to 100 kg/m <sup>3</sup> (optional)	EI 120 S (300 Pa)	(B+800 max) x (H+800 max)	185	100
Flexible wall	<b>EI 120 S Installation within vertical light wall (gypsum blocks wall) with Fire Batt (Weichschott) sealing</b>				
	Wall minimum density 995 kg/m <sup>3</sup>	EI 120 S (300 Pa)	(B+800 max) x (H+800 max)	185	100

B Nominal base of the damper  
H Nominal height of the damper

D1 Hole base: see table above  
D2 Hole height: see table above  
E Damper protrusion from the wall: see table above  
1. Rock wool panel 50 mm thick with 140 kg/m<sup>3</sup> density.  
2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant  
3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish  
4. Wall indicated in the table



#### ■ Installation within floor with Fire Batt (Weichschott) sealing

Refer to the section Construction supports characteristics for further information.

Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

#### ■ Floor opening

A opening must be provided in the floor as indicated in the table and in the drawing

#### ■ Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing.

Close the blade before installing the fire damper.

#### ■ Filling

Fill the space between the damper and the floor using Fire Batt (Weichschott) sealing made from two rock wool panels with minimum thickness of 50 mm and minimum density of 140 kg/m<sup>3</sup>.

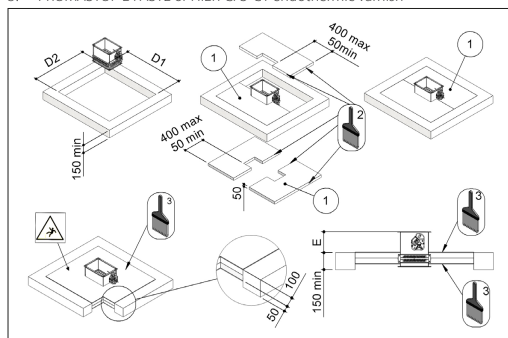
The panels must be covered on both faces of the wall with endothermic varnish type PROMASTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant

type PROMASTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the floor "E" [mm]	Floor minimum thickness "S" [mm]	Sealing
<b>EI 120 S Installation within floor and Fire Batt (Weichschott) sealing</b>					
Fire minimum density 650 kg/m <sup>3</sup>	EI 120 S (300 Pa)	(B+800 max) x (H+800 max)	185	150	Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing

B Nominal base of the damper  
H Nominal height of the damper

D1 Hole base: see table above  
D2 Hole height: see table above  
E Damper protrusion from the floor: see table above  
1. Rock wool panel 50 mm thick with 140 kg/m<sup>3</sup> density.  
2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant  
3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish



■ Installations remote from the vertical rigid wall and the vertical light wall (gypsum blocks wall)

Refer to the section Construction supports characteristics for further information.

Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

■ Damper positioning

Connect fire damper to the galvanized steel duct as indicated in the drawing.

Install the damper with the mechanism facing away from the wall as indicated in the drawing.

Between fire damper and wall the maximum distance is 1000 mm.

The maximum length of the part of duct connected to the damper is 2100 mm

The fire damper has to be fixed and suspended from the ceiling as indicated in the drawing.

The hanging structure is composed by:

- 2 C-shaped steel profiles 10x41x41x41x10 mm
- 2 M10 threaded rods
- 4 M10 nuts

Position the threaded rods 135 mm from the connection between fire damper and duct and at a distance of 50 mm from the side of the damper.

Close the blade before installing the fire damper.

■ Filling

Fill the space between the wall and the damper using mortar suitable for use in fire resistant constructions, M10 class or higher or plaster putty.

Sealing with concrete is not allowed.

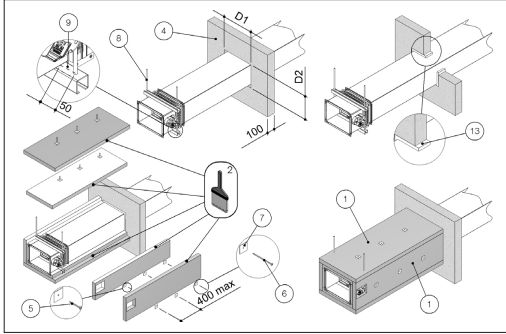
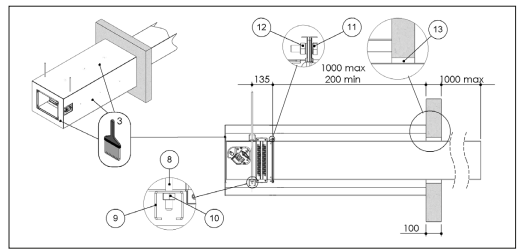
Cover the duct over its entire length and fire damper with 2 rock wool panels 50 mm thick and with a density of 140 kg/m<sup>3</sup>.

The panels must be covered externally with endothermic varnish type PROSTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMASTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

Fix first layer of rock wool panel to the duct with screws Ø5 X 60 mm and washers 40 X 40 mm, and the second one with screws Ø5 X 120 mm and washers 40 X 40 mm.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Wall minimum thickness "S" [mm]	Sealing
<b>Installation remote from the vertical rigid wall</b>				
Rigid wall	EI 120 S (300 Pa) EI 90 S (500 Pa)	From (B+70) x (H+70) to (B+440) x (H+440)	100	Mortar or plaster putty sealing
<b>Installation remote from the vertical light wall (gypsum blocks wall)</b>				
Flexible wall	EI 120 S (300 Pa) EI 90 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	100	Mortar or plaster putty sealing

- D1 Hole base: see table above  
 D2 Hole height: see table above  
 1. Rock wool panel 50 mm thick with 140 kg/m<sup>3</sup> density.  
 2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant  
 3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish  
 4. Vertical wall  
 5. Self-drilling screw Ø 5 X 60 mm  
 6. Self-drilling screw Ø 5 X 120 mm  
 7. Washer 40 x 40 mm  
 8. M10 threaded rod  
 9. C-shaped steel profile 10x41x41x10 mm  
 10. M10 nut  
 11. Screw Ø 6 X 20 mm  
 12. M6 nut  
 13. Mortar M-10, EN998-2 or plaster putty



#### ■ Installation remote from the vertical light wall (plasterboard)

Refer to the section Construction supports characteristics for further information. Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

#### ■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

#### ■ Damper positioning

Connect fire damper to the galvanized steel duct as indicated in the drawing.

Install the damper with the mechanism facing away from the wall as indicated in the drawing.

Between fire damper and wall the maximum distance is 1000 mm.

The maximum length of the part of duct connected to the damper is 2100 mm

The fire damper has to be fixed and suspended from the ceiling as indicated in the drawing.

The hanging structure is composed by:

- 2 C-shaped steel profiles 10x41x41x10 mm
- 2 M10 threaded rods
- 4 M10 nuts

Position the threaded rods 135 mm from the connection between fire damper and duct and at a distance of 50 mm from the side of the damper.

Close the blade before installing the fire damper.

#### ■ Filling

Fill the space between the wall and the fire damper using rock wool which has density of 100 kg/m<sup>3</sup>.

Sealing with concrete is not allowed.

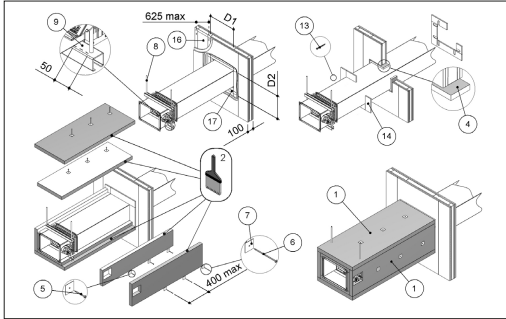
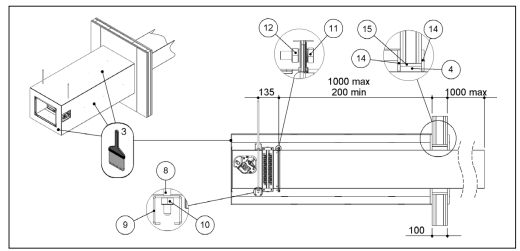
Cover the duct over its entire length and fire damper with 2 rock wool panels 50 mm thick and with a density of 140 kg/m<sup>3</sup>.

The panels must be covered externally with endothermic varnish type PROSTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMOSTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

Fix first layer of rock wool panel to the duct with screws Ø5 X 60 mm and washers 40 X 40 mm, and the second one with screws Ø5 X 120 mm and washers 40 X 40 mm.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Wall minimum thickness "S" [mm]	Sealing
<b>Installation remote from the vertical light wall (plasterboard)</b>				
Wall rock wool density up to 100 kg/m <sup>3</sup> (optional)	EI 120 S (300 Pa) EI 90 S (500 Pa)	Da (B+75) x (H+75) a (B+95) x (H+95)	100	Rock wool 100 kg/m <sup>3</sup> with infill plasterboard (thickness 12.5 mm)
Wall rock wool density up to 100 kg/m <sup>3</sup> (optional)	EI 120 S (300 Pa) EI 90 S (500 Pa)	Da (B+75) x (H+75) to (B+440) x (H+440)	100	Mortar or plaster putty

- D1 Hole base: see table above  
 D2 Hole height: see table above
1. Rock wool panel 50 mm thick with 140 kg/m<sup>3</sup> density.
  2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant
  3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish
  4. Rock wool, 100 kg/m<sup>3</sup> or mortar M-10, EN998-2 or plaster putty
  5. Self-drilling screw Ø 5 X 60 mm
  6. Self-drilling screw Ø 5 X 120 mm
  7. Washer 40 x 40 mm
  8. M10 threaded rod
  9. C-shaped steel profile 10x41x41x10 mm
  10. M10 nut
  11. Screw Ø 6 X 20 mm
  12. M6 nut
  13. Self-drilling screw Ø 3,5 X 45 mm
  14. Plasterboard infill panel, thickness 12,5 mm, for rock wool sealing
  15. Plasterboard infill panel, thickness 12,5 mm, for rock wool sealing
  16. Rock wool density up to 100 kg/m<sup>3</sup> (optional)
  17. Metal frame



#### ■ Installations remote from the vertical wall with Fire Batt (Weichschott) sealing

Refer to the section Construction supports characteristics for further information.

Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

Fix first layer of rock wool panel to the duct with screws Ø5 X 60 mm and washers 40 X 40 mm, and the second one with screws Ø5 X 120 mm and washers 40 X 40 mm.

#### ■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing.

#### ■ Damper positioning

Connect fire damper to the galvanized steel duct as indicated in the drawing.

Install the damper with the mechanism facing away from the wall as indicated in the drawing.

Between fire damper and wall the maximum distance is 1000 mm.

The maximum length of the part of duct connected to the damper is 2100 mm

The fire damper has to be fixed and suspended from the ceiling as indicated in the drawing.

The hanging structure is composed by:

- 2 C-shaped steel profiles 10x41x41x10 mm
- 2 M10 threaded rods
- 4 M10 nuts

Position the threaded rods 135 mm from the connection between fire damper and duct and at a distance of 50 mm from the side of the damper.

Close the blade before installing the fire damper.

#### ■ Filling

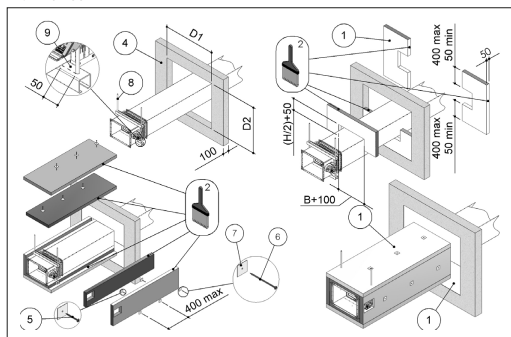
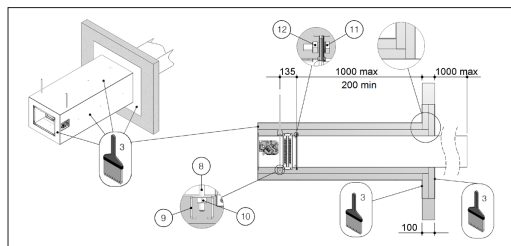
Fill the space between the damper and the wall using Fire Batt (Weichschott) sealing made from two rock wool panels with minimum thickness of 50 mm and minimum density of 140 kg/m<sup>3</sup>.

Cover the duct over its entire length and fire damper with 2 rock wool panels 50 mm thick and with a density of 140 kg/m<sup>3</sup>.

The panels must be covered externally with endothermic varnish type PROSTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMOSTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

	Fire resistance classification	Hole size "D1 x D2" [mm]	Wall minimum thickness "S" [mm]	Sealing	
Rigid wall	Installation remote from the vertical rigid wall with Fire Batt (Weichschott) sealing				
	Wall minimum density 550 kg/m <sup>3</sup>	EI 120 S (300 Pa) EI 90 S (500 Pa)	(B+800 max) x (H+800 max)	100	Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing
Flexible wall	Installation remote from vertical light wall (plasterboard) with Fire Batt (Weichschott) sealing				
	Wall rock wool density up to 100 kg/m <sup>3</sup> (optional)	EI 120 S (300 Pa) EI 90 S (500 Pa)	(B+800 max) x (H+800 max)	100	Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing
	Installation remote from vertical light wall (gypsum blocks) with Fire Batt (Weichschott) sealing				
	Wall minimum density 995 kg/m <sup>3</sup>	EI 120 S (300 Pa) EI 90 S (500 Pa)	(B+800 max) x (H+800 max)	100	Rock wool 140 kg/m <sup>3</sup> and endothermic varnish sealing

- D1 Hole base: see table above  
D2 Hole height: see table above  
1. Rock wool panel 50 mm thick with 140 kg/m<sup>3</sup> density.  
2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant  
3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish  
4. Vertical wall  
5. Self-drilling screw Ø 5 X 60 mm  
6. Self-drilling screw Ø 5 X 120 mm  
7. Washer 40 x 40 mm  
8. M10 threaded rod  
9. C-shaped steel profile 10x41x41x10 mm  
10. M10 nut  
11. Screw Ø 6 X 20 mm  
12. M6 nut



#### ■ Installations remote from the floor

Refer to the section Construction supports characteristics for further information.

Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

#### ■ Floor opening

A opening must be provided in the floor as indicated in the table and in the drawing

#### ■ Damper positioning

Connect fire damper to the galvanized steel duct as indicated in the drawing.

Install the damper with the mechanism facing away from the floor as indicated in the drawing.

Between fire damper and floor the maximum distance is 1000 mm. The maximum length of the part of duct connected to the damper is 2150 mm

The fire damper has to be fixed and suspended from the ceiling as indicated in the drawing.

The fire damper must be positioned just above the floor as indicated in the drawing.

The hanging structure is composed by:

- 4 Angle connectors 105x105x90 mm

- Screws M8 x 40 mm

- Washers 15 x 9 mm

- Flush anchors M8 x 40 mm

Close the blade before installing the fire damper.

#### ■ Filling

Fill the space between the floor and the damper using mortar suitable for use in fire resistant constructions, M10 class or higher or plaster putty.

Sealing with concrete is not allowed.

Cover the duct over its entire length and fire damper with 2 rock wool panels 50 mm thick and with a density of 140 kg/m<sup>3</sup>.

Fix first layer of rock wool panel to the duct with screws Ø5 X 60 mm and washers 40 X 40 mm, and the second one with screws Ø5 X 120 mm and washers 40 X 40 mm.

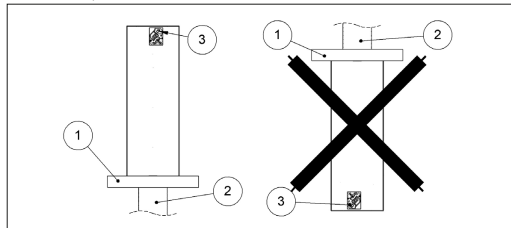
Fill the space between rock wool panels and the the damper with one rock wool panel with minimum thickness of 50 mm and minimum density of 140 kg/m<sup>3</sup>.

The panels must be covered externally with endothermic varnish type PROSTOP E PASTE or HILTI CFS-CT (minimum thickness of 1 mm) and with an internal perimeter sealant type PROMOSTOP E PASTE or HILTI CFS-S ACR (minimum thickness of 1 mm).

	Fire resistance classification	Hole size "D1 x D2" [mm]	Wall minimum thickness "S" [mm]	Sealing
<b>EI 90 S Installation remote from the floor</b>	EI 90 S (500 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	100	Mortar or plaster putty sealing
<b>EI 120 S Installation remote from the floor</b>	EI 120 S (300 Pa)	From (B+70) x (H+70) to (B+90) x (H+90)	150	Mortar or plaster putty sealing

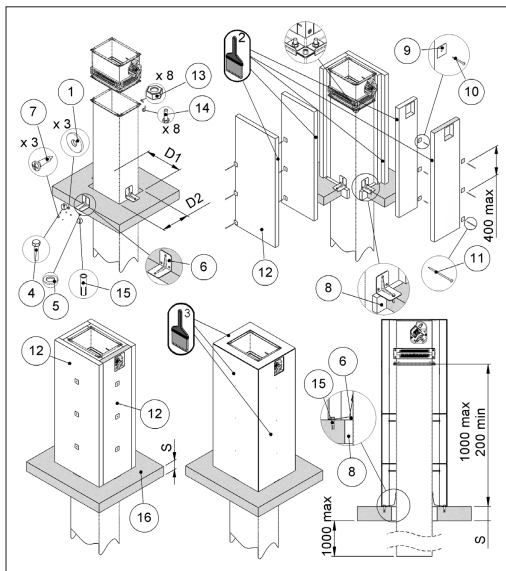
**The fire damper must be positioned just above the floor as indicated in the drawing.**

1. Floor
2. Duct
3. Fire damper



- D1 Hole base: see table above
- D2 Hole height: see table above
- S Wall minimum thickness: see table above

  1. Washers 15 x 5 mm
  2. PROMASTOP E PASTE or HILTI CFS-S ACR type sealant
  3. PROMASTOP E PASTE or HILTI CFS-CT endothermic varnish
  4. Screws M8 x 40 mm
  5. Washers 15 x 9 mm
  6. Angle connector 105 X 105 X 90 mm
  7. Self-drilling screw Ø 4,2 X 13 mm
  8. Mortar M-10, EN998-2 or plaster putty
  9. Washer 40 x 40 mm
  10. Self-drilling screw Ø 5 X 60 mm
  11. Self-drilling screw Ø 5 X 120 mm
  12. Rock wool panel 50 mm thick with 140 kg/m<sup>3</sup> density.
  13. M6 nut
  14. Screw M6 X 20 mm
  15. Flush anchors M8 x 40 mm
  16. Floor



#### ■ Installation within vertical light wall (Shaft wall)

Refer to the section Construction supports characteristics for further information. Comply with the minimum distances indicated on section Minimum distances.

Before and after installation please perform a functional test. Refer to section Mechanism type for further information.

#### ■ Wall opening

A opening must be provided in the wall as indicated in the table and in the drawing

#### ■ Damper positioning

Position the damper in the opening so that the side of the closing mechanism extends as indicated in the table and in the drawing. Close the blade before installing the fire damper.

#### ■ Filling

Fill the space between the wall and the damper as indicated in the table and in the drawing. Sealing with concrete is not allowed.

Sealing with concrete is not allowed. Cover the sealing by applying on face of the wall mechanism side a layer of plasterboard, to a total minimum thickness of 20 mm per side, to make a frame 75 mm wide.

	Fire resistance classification	Hole size "D1 x D2" [mm]	Damper protrusion from the wall "E" [mm]	Wall minimum thickness "S" [mm]	Sealing
<b>EI 60 S Installation within vertical light wall (Shaft wall)</b>					
	EI 60 S (300 Pa)	From (B+80) x (H+80) to (B+110) x (H+110)	185	90	Mortar or plaster putty with infill plasterboard (thickness 20 mm)

B Nominal base of the damper  
H Nominal height of the damper

1. Plasterboard thickness 20 mm
2. Plasterboard infill panel, thickness 20 mm
3. Mortar M-10, EN998-2 or plaster putty
4. Metal frame
5. Self-drilling screw Ø 3,5 X 70 mm

D1 Hole base: see table above  
D2 Hole height: see table above

E Damper protrusion from the wall: see table above

