

FNC1

Installation booklet
This is a 14 page installation booklet.
English
FIRE DAMPER
CIRCULAR SERIES FNC1 - 300 Pa
Cert. N° 1812-CPR-1639



1MUBFNC1EN-LIND rev 20-12



www.lindab.com - Fire dampers are manufactured by MP3 Srl 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

Rigid wall			
		El 60 S (300 Pa)	El 30 S (300 Pa)
El 60S Installation within vertical rigid wall hole Ø+30			
Wall minimum thickness 95 mm Wall minimum resistance class El 60 Mortar or plaster putty or rock wool 35 kg/m ³ density sealing ve (↔→)	D/W	Ø min 100 max 400	Ø min 100 max 400
El 60S Installation within vertical rigid wall hole Ø+10			
Wall minimum thickness 95 mm Minimum resistance class El 60 Acrylic sealant sealing ve (↔→)	D	Ø min 100 max 400	Ø min 100 max 400
Flexible wall			
		El 60 S (300 Pa)	El 30 S (300 Pa)
Installations within vertical light wall El 60 S hole Ø+30			
Wall minimum thickness 95 mm Wall rock wool density up to 35 kg/m ³ (optional) Studs made of steel or timber mortar or plaster putty or rock wool 35 kg/m ³ and acrylic sealant sealing ve (↔→)	D/W	Ø min 100 max 400	Ø min 100 max 400
Installations within vertical light wall El 60 S hole Ø+10			
Wall minimum thickness 95 mm Wall rock wool density up to 35 kg/m ³ (optional) Studs made of steel or timber Acrylic sealant sealing ve (↔→)	D	Ø min 100 max 400	Ø min 100 max 400
Floor			
		El 60 S (300 Pa)	El 30 S (300 Pa)
Installation within floor			
Floor minimum thickness 100 mm Floor minimum density 550 kg/m ³ Mortar or plaster putty or rock wool 35 kg/m ³ sealing ho (↔→)	D/W	Ø min 100 max 400	Ø min 100 max 400
<p>Ø is the minimum and maximum nominal diameter of fire dampers in mm</p> <p>ve Vertical installation</p> <p>ho Horizontal installation</p> <p>(↔→) Origin of fire irrelevant</p> <p>Pa Pascal of depression</p> <p>E Integrity</p> <p>I Thermal insulation</p> <p>S Smoke seal</p> <p>W Wet method sealing</p> <p>D Dry method sealing</p> <p>Cert. N° 1812-CPR-1639</p>			
■ Installation remote from construction support			
Rigid wall			
		El 60 S (300 Pa)	El 30 S (300 Pa)
El 60 S Installation remote from the vertical rigid wall hole Ø+30			
Wall minimum thickness 95 mm Wall minimum resistance class El 60 Mortar or plaster putty or rock wool 35 kg/m ³ density sealing ve (↔→)	D/W	Ø min 100 max 400	Ø min 100 max 400
El 60S Installation remote from the vertical rigid wall hole Ø+10			
Wall minimum thickness 95 mm Minimum resistance class El 60 Acrylic sealant sealing ve (↔→)	D	Ø min 100 max 400	Ø min 100 max 400

Flexible wall			
		EI 60 S (300 Pa)	EI 30 S (300 Pa)
EI 60 S Installation remote from the vertical light wall hole Ø+30			
Wall minimum thickness 95 mm Wall rock wool density up to 35 kg/m ³ (optional) Studs made of steel or timber mortar or plaster putty or rock wool 35 kg/m ³ and acrylic sealant sealing ve (↔→)			
	D/W	Ø min 100 max 400	Ø min 100 max 400
EI 60 S Installation remote from the vertical light wall hole Ø+10			
Wall minimum thickness 95 mm Wall rock wool density up to 35 kg/m ³ (optional) Studs made of steel or timber Acrylic sealant sealing ve (↔→)			
	D	Ø min 100 max 400	Ø min 100 max 400
Floor			
		EI 60 S (300 Pa)	EI 30 S (300 Pa)
Installations remote from the floor			
Floor minimum thickness 100 mm Floor minimum density 550 kg/m ³ Mortar or plaster putty or rock wool 35 kg/m ³ sealing ho (↔→)			
	D/W	Ø min 100 max 400	Ø min 100 max 400

Ø is the minimum and maximum nominal diameter of fire dampers in mm

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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
Cert. N° 1812-CPR-1639

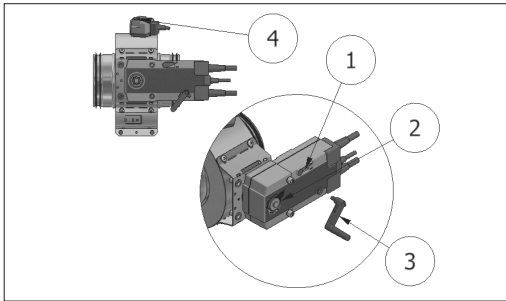
■ Mechanism type

■ Manual and compact manual

Not available

■ Belimo motorized version

1. Blade locking lever
2. Position indicator
3. Hex key for manual opening
4. Manual closing switch



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

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

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.

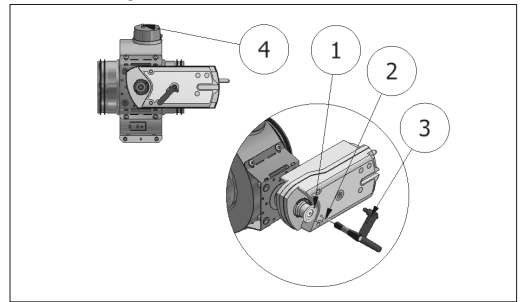
Temperature calibration of thermosensitive element for automatic damper closing

72 °C±7 °C (Standard)

95 °C±9 °C (On request).

■ Siemens motorized version

1. Position indicator
2. Screwdriver
3. Hex key for manual opening
4. Manual closing switch



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

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

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 °C 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

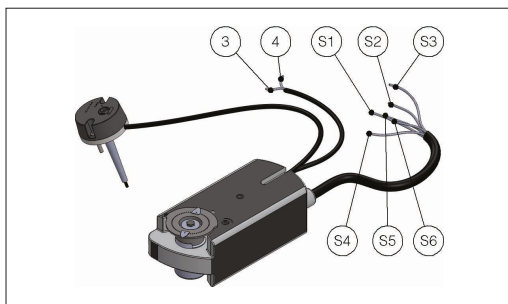
The motorized versions are supplied with two microswitches to show the blade's position (open or closed). Refer to the section Electrical connections for further information.

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).



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.

Electrical wiring for motorized version

24V AC/DC power supply

-/- Negative (DC) or neutral (AC) black wire

~/+ Positive (DC) or phase (AC) red wire

230V AC power supply

N Neutral blue wire

L Phase brown wire

Microswitches position contacts

S1 Common closed damper microswitch

S2 Normally closed, closed damper microswitch

S3 Normally opened, closed damper microswitch

S4 Common open damper microswitch

S5 Normally closed, open damper microswitch

S6 Normally opened, open damper microswitch

ELECTRICAL CONNECTIONS

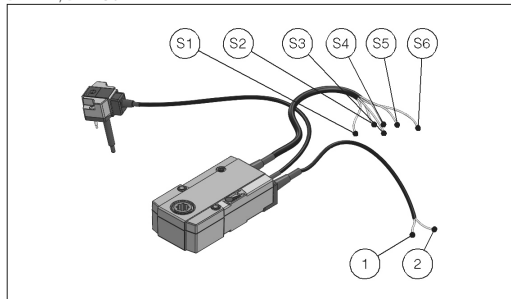
■ Electrical wiring

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.

■ Motorized version

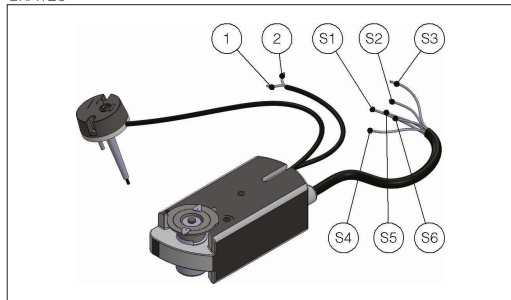
Belimo servomotor:

BFL24T, BFL230T



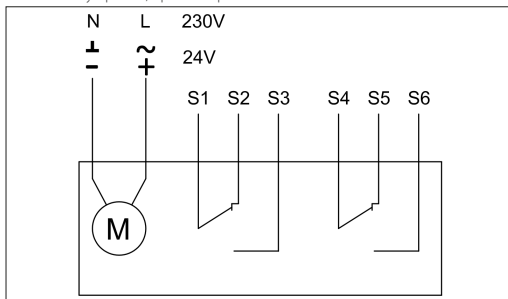
Siemens servomotor:

GRA126



Siemens servomotor:

GRA326



Electrical wiring for Belimo BFL24-SR-T modulating motorized version

24V AC/DC power supply

-/ - Negative (DC) or neutral (AC) black wire

~/+ Positive (DC) or phase (AC) red wire

3 Positioning signal Y

5 Positioning feedback U (max 0,5mA)

Microswitches position contacts

S1 Common closed damper microswitch

S2 Normally closed, closed damper microswitch

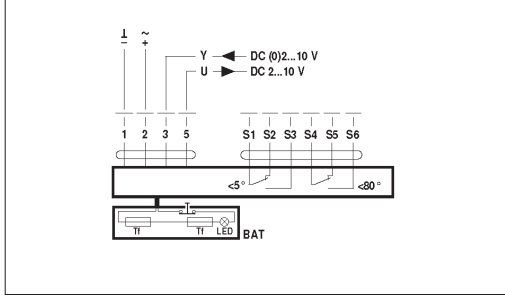
S3 Normally opened, closed damper microswitch

S4 Common open damper microswitch

S5 Normally closed, open damper microswitch

S6 Normally opened, open damper microswitch

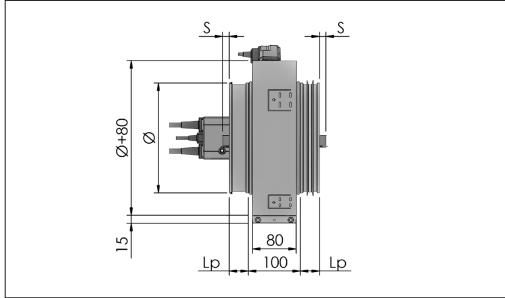
Tf Thermal fuse



TECHNICAL DATA

The sizes shown are in mm.

■ Dimension



Ø	mm	100	125	160	200	250	315	400
S blade exposition	mm	0	0	0	30	40	80	157
Lp	mm	40	40	40	40	60	60	80

Lp Overlap length between fire damper and duct

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.

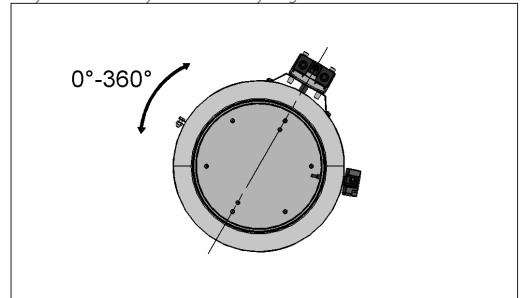
INSTALLATION

The sizes shown are in mm.

It is recommended to perform a functional test before installation to exclude possible damage during transport and another test immediately after installation to exclude accidental damage to the product and interference with mounting components.

■ Blade rotation axis positioning

The fire damper can be installed with the blade axis positioned vertically or horizontally or tilted at any angle.



- 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 disconnect 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.

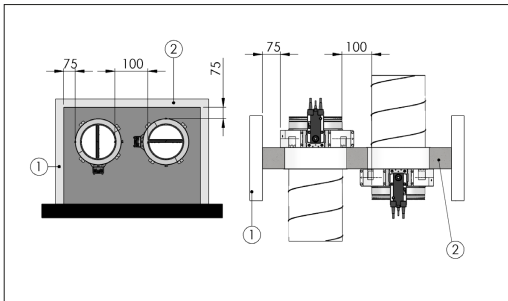
Refer to the section Technical data for blade exposition values.

■ 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.

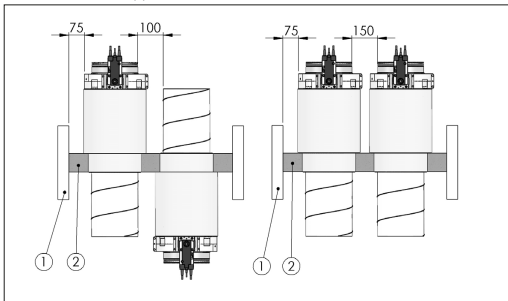
In accordance with Articles 7 and 13 of EN 1366-2 respect the minimum distances indicated below.

1. Vertical lateral wall
2. Floor



■ Minimum distances for remote installation from vertical wall/floor

1. Side wall/ floor
2. Construction supports (floor/ wall)



■ 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 wall/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 resistance classified according to the standards foreseen for the structure.

■ Rigid walls

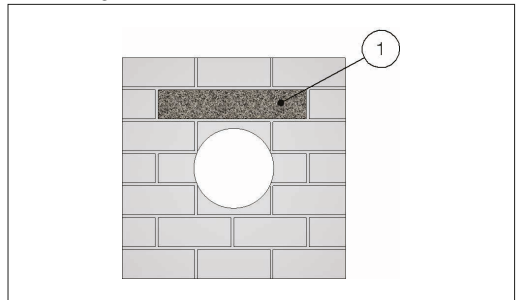
Can be made with aerated concrete blocks, poured concrete, concrete panels, perforated cell elements in concrete or brick in accordance with the following characteristics:

- minimum thickness 95 mm;
- Wall minimum resistance class EI 60.

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

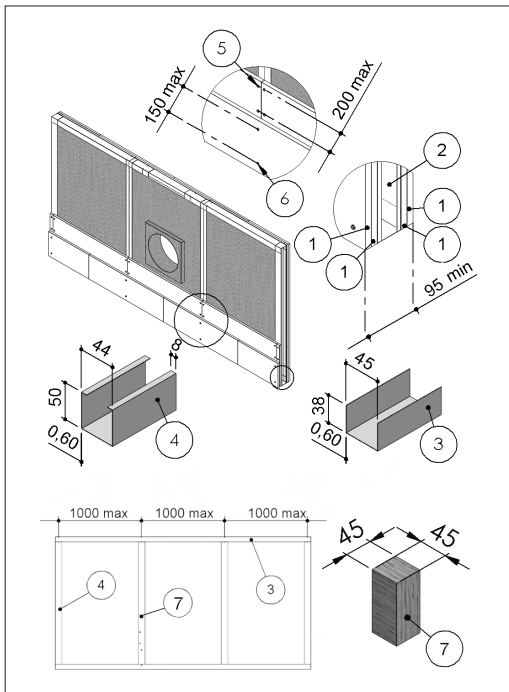
During testing, light plasterboard walls have been used with the following characteristics:

- U-shaped horizontal metal frame 45mm and C-shaped vertical frame 44mm made from 0,6 mm thick metal sheet, or timber 45x45mm;
- vertical profiles placed with a maximum spacing of 1000 mm;
- Filling made of rock wool with density up to 35 kg/m³ (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: 44 mm;
- metal profiles minimum thickness: 0,6 mm, or timber studs minimum section 45 x 45mm;
- 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.
- Filling made of rock wool with density up to 35 kg/m³ (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 35 kg/m³ (optional)
3. Horizontal U-shaped profile
4. Vertical C-shaped profile
5. Self-drilling screw Ø 3,5 X 25 mm
6. Self-drilling screw Ø 3,5 X 35 mm
7. Timber studs 45x45 mm or 44 mm "C" steel stud



■ 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 mm;
- minimum density 550 kg/m³.

■ 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

■ Damper positioning

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

Close the blade before installing the fire damper.

■ Filling

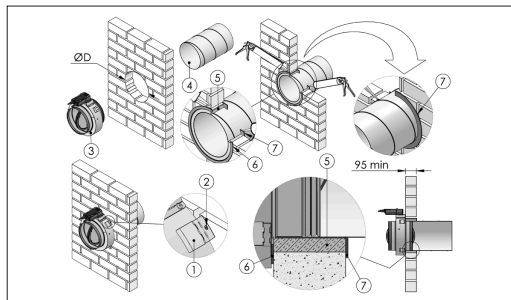
Fill the space between the wall and the damper as indicated in the table and in the drawing.

Sealing with concrete is not allowed.

Fire resistance classification		"D" hole size [mm]	Wall minimum thickness "S" [mm]	Sealing
Installations within vertical rigid wall EI 60 S				
Wall resistance class EI 60	EI 60 S (300 Pa)	From Ø + 30 to Ø + 55	95	Rock wool 35 kg/m ³ or mortar or plaster putty and fire stopping sealant (e.g. Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher)
Installations within vertical rigid wall EI 60 S				
Wall resistance class EI 60	EI 60 S (300 Pa)	Ø + 10	95	Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher)

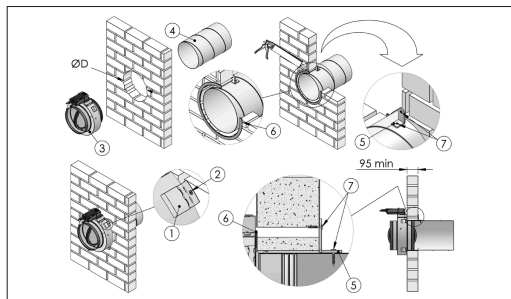
Installations within vertical rigid wall EI 60 S hole $\varnothing+30$

1. Positioning brackets
 2. Screw $\varnothing 3,5 \times 35$ mm or equivalent
 3. Fire damper
 4. Ventilation duct
 5. Rock wool 35 kg/m³, or mortar or plaster putty
 6. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between refractory ring and construction support
 7. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) to cover the sealing
- D Hole size: see table above



Installations within vertical rigid wall EI 60 S hole $\varnothing+10$

1. Positioning brackets
 2. Screw $\varnothing 3,5 \times 35$ mm or equivalent
 3. Fire damper
 4. Ventilation duct
 5. Corner support (es. TS11/TS12 Lindab)
 6. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between refractory ring and construction support
 7. Self-drilling screw $\varnothing 3,5 \times 25$ mm
- D Hole size: see table above



■ Installations 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

■ Damper positioning

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

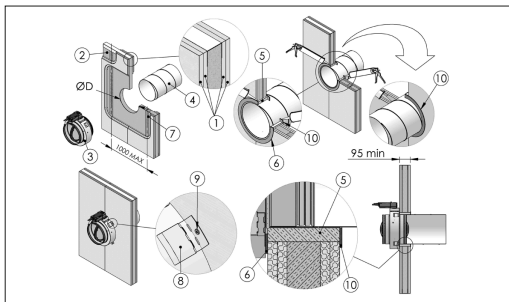
■ Filling

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	"D" hole size [mm]	Wall minimum thickness "S" [mm]	Sealing
Installations within vertical light wall EI 60 S				
Wall resistance class EI 60	EI 60 S (300 Pa)	From Ø + 30 to Ø + 55	95	Rock wool 35 kg/m ³ or mortar or plaster putty and fire stopping sealant (e.g. Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher)
Installations within vertical light wall EI 60 S				
Wall resistance class EI 60	EI 60 S (300 Pa)	Ø + 10	95	Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher)

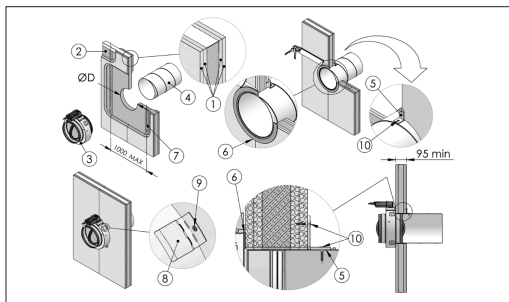
Installations within vertical light wall EI 60 S hole Ø+30

1. Plasterboard thickness 12,5 mm type A (EN 520) or higher
 2. Rock wool density 35 kg/m³ (optional)
 3. Fire damper
 4. Ventilation duct
 5. Rock wool 35 kg/m³, or mortar or plaster putty
 6. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between refractory ring and construction support
 7. Timber studs 45 x 45 mm or metal frame
 8. Positioning brackets
 9. Self-drilling screw Ø 3,5 X 35 mm
 10. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) to cover the sealing
- D Hole size: see table above



Installations within vertical light wall EI 60 S hole Ø+10

1. Plasterboard thickness 12,5 mm type A (EN 520) or higher
 2. Rock wool density 35 kg/m³ (optional)
 3. Fire damper
 4. Ventilation duct
 5. Corner support (es. TS11/TS12 Lindab)
 6. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between refractory ring and construction support
 7. Timber studs 45 x 45 mm or metal frame
 8. Positioning brackets
 9. Self-drilling screw Ø 3,5 X 35 mm
 10. Self-drilling screw Ø 3,5 X 35 mm
- D Hole size: see table above



■ 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 drawing. Close the blade before installing the fire damper.

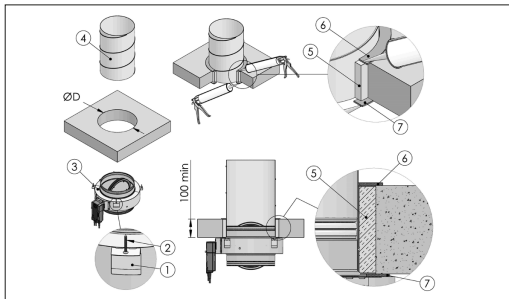
■ Filling

Fill the space between the floor and the damper as indicated in the drawing.

Sealing with concrete is not allowed.

1. Positioning brackets
2. Screw Ø 3,5 X 35 mm or equivalent
3. Fire damper
4. Ventilation duct
5. Rock wool 35 kg/m³, or mortar or plaster putty
6. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) to cover the sealing
7. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between refractory ring and construction support

D from nominal diameter min + 30 to nominal diameter max + 55



■ Installation remote from the 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

■ 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.

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

For distance between fire damper and wall less than or equal to 1m, only one support is enough as indicated in the drawing.

The support at 20 mm from the fire damper is always mandatory.

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.

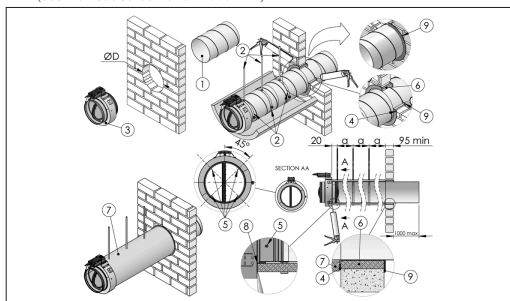
Cover the duct over its entire length and fire damper as indicated in the drawing wrapping it with insulation rock wool Pro Wired Mat 80 AL 1 Paroc with density of 80 kg/m³ and thickness 70 mm or equivalent.

A metallic mesh is installed around the rock wool. The junctions between the insulation and the damper are made by an acrylic fire stopping sealant (es. Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher), as indicated in the drawing.

	Fire resistance classification	"D" hole size [mm]	Wall minimum thickness "S" [mm]	Sealing
EI 60S Installation remote from the vertical rigid wall				
Wall resistance class EI 60	EI 60 S (300 Pa)	From Ø + 30 to Ø + 55	95	Rock wool 35 kg/m ³ or mortar or plaster putty and fire stopping sealant (e.g. Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher)
EI 60S Installation remote from the vertical rigid wall				
Wall resistance class EI 60	EI 60 S (300 Pa)	Ø + 10	95	Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher)

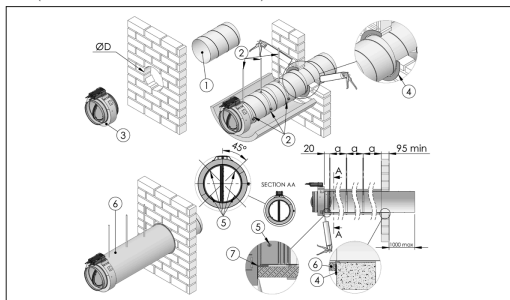
El 60 S Installation remote from the vertical rigid wall hole $\varnothing+30$

1. Ventilation duct in one piece
 2. M8 threaded rod and suspension rings
 3. Fire damper
 4. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between insulation and sealing
 5. Self-drilling screw $\varnothing 4,2 \times 13 \text{ mm} \times 4$
 6. Rock wool 35 kg/m³, or mortar or plaster putty
 7. Insulation rock wool Pro Wired Mat 80 AL 1 Paroc or equivalent: see Installation remote from the rigid wall
 8. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between insulation and refractory ring
 9. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) to cover the sealing
- D Hole size: see table above
- a 1000mm MAX, n° of threaded rods depending on the length of the duct (use 1 threaded bar for $a \leq 1000 \text{ mm}$)



El 60 S Installation remote from the vertical rigid wall hole $\varnothing+10$

1. Ventilation duct in one piece
 2. M8 threaded rod and suspension rings
 3. Fire damper
 4. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between insulation and construction support
 5. Self-drilling screw $\varnothing 4,2 \times 13 \text{ mm} \times 4$
 6. Insulation rock wool Pro Wired Mat 80 AL 1 Paroc or equivalent: see Installation remote from the rigid wall
 7. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between insulation and refractory ring
- D Hole size: see table above
- a 1000mm MAX, n° of threaded rods depending on the length of the duct (use 1 threaded bar for $a \leq 1000 \text{ mm}$)



■ 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.

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

For distance between fire damper and wall less than or equal to 1m, only one support is enough as indicated in the drawing.

The support at 20 mm from the fire damper is always mandatory. 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.

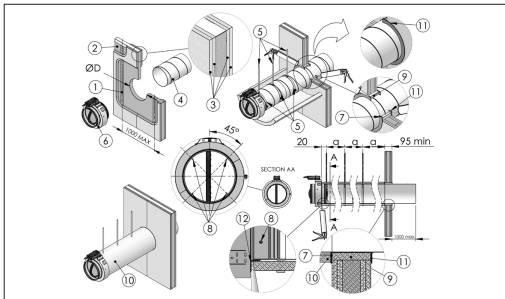
Cover the duct over its entire length and fire damper as indicated in the drawing wrapping it with insulation rock wool Pro Wired Mat 80 AL 1 Paroc with density of 80 kg/m³ and thickness 70 mm or equivalent.

A metallic mesh is installed around the rock wool. The junctions between the insulation and the damper are made by an acrylic fire stopping sealant (es. Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher), as indicated in the drawing.

Fire resistance classification	"D" hole size [mm]	Wall minimum thickness "S" [mm]	Sealing	
EI 60 S Installation remote from the vertical light wall				
Wall resistance class EI 60	EI 60 S (300 Pa)	From Ø + 30 to Ø + 55	95	Rock wool 35 kg/m ³ or mortar or plaster putty and fire stopping sealant (e.g. Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher)
EI 60 S Installation remote from the vertical light wall				
Wall resistance class EI 60	EI 60 S (300 Pa)	Ø + 10	95	Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher)

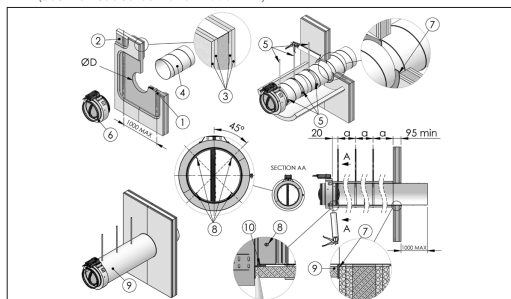
EI 60 S Installation remote from the vertical light wall hole Ø+30

1. Timber studs 45 x 45 mm or metal frame
 2. Rock wool density 35 kg/m³ (optional)
 3. Plasterboard thickness 12,5 mm type A (EN 520) or higher
 4. Ventilation duct in one piece
 5. M8 threaded rod and suspension rings
 6. Fire damper
 7. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between insulation and sealing
 8. Self-drilling screw Ø 4,2 X 13 mm x4
 9. Rock wool 35 kg/m³, or mortar or plaster putty
 10. Insulation rock wool Pro Wired Mat 80 AL 1 Paroc or equivalent: see Installation remote from vertical light wall (plasterboard)
 11. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) to cover the insulation
 12. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between insulation and refractory ring
- D Hole size: see table above
a 1000mm MAX, n° of threaded rods depending on the length of the duct (use 1 threaded bar for a≤1000 mm)



El 60 S Installation remote from the vertical light wall hole Ø+10

1. Timber studs 45 x 45 mm or metal frame
 2. Rock wool density 35 kg/m³ (optional)
 3. Plasterboard thickness 12,5 mm type A (EN 520) or higher
 4. Ventilation duct in one piece
 5. M8 threaded rod and suspension rings
 6. Fire damper
 7. Fire stopping sealant (reference Soudal Firecrl or equivalent with resistance and reaction to fire equal or higher) between insulation and construction support
 8. Self-drilling screw Ø 4,2 X 13 mm x4
 9. Insulation rock wool Pro Wired Mat 80 AL 1 Paroc or equivalent: see Installation remote from vertical light wall (plasterboard)
 10. Fire stopping sealant (reference Soudal Firecrl or equivalent with resistance and reaction to fire equal or higher) between insulation and refractory ring
- D Hole size: see table above
- a 1000mm MAX, n° of threaded rods depending on the length of the duct (use 1 threaded bar for a≤1000 mm)



■ 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 drawing.

■ Filling

Fill the space between the floor and the damper as indicated in the drawing.

Sealing with concrete is not allowed.

Cover the duct over its entire length and fire damper as indicated in the drawing wrapping it with insulation rock wool Pro Wired Mat 80 AL 1 Paroc with density of 80 kg/m³ and thickness 70 mm or equivalent.

A metallic mesh is installed around the rock wool. The junctions between the insulation and the damper are made by an acrylic fire stopping sealant (es. Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher), as indicated in the drawing.

1. Ventilation duct in one piece
2. Angular fixing plate x3. Each plate fixed with 3 screws 4,2x13 mm on the duct (2.1) and 1 screw M8x40 mm with flush anchors on the floor (2.2)
3. Fire damper
4. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) to cover the sealing
5. Self-drilling screw \varnothing 4,2 X 13 mm x4
6. Rock wool 35 kg/m³, or mortar or plaster putty
7. Insulation rock wool Pro Wired Mat 80 AL 1 Paroc or equivalent: see Installatons remote from the floor
8. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between insulation and sealing
9. Fire stopping sealant (reference Soudal Firecryl or equivalent with resistance and reaction to fire equal or higher) between insulation and refractory ring

D from nominal diameter min + 30 to nominal diameter max + 55

■ 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.

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

Close the blade before installing the fire damper.

