

CU-LT

Optimised rectangular fire damper up to 120°



V K F AFAS



www.rft.be

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Explanation of the abbreviations and pictograms

Explanation of the abbreviations and pictograms

Wn = nominal width	E.TELE = power supply magnet	Sn = free air passage
Hn = nominal height	E.ALIM = power supply motor	$\zeta [-]$ = pressure loss coefficient
Dn = nominal diameter	V = volt	Q = airflow
E = integrity	W = watt	ΔP = static pressure drop
I = thermal insulation	Auto = automatic	v = air speed in the duct
S = smoke leakage	Tele = remote controlled	Lwa = A-weighted sound power level
Pa = pascal	Pnom = nominal capacity	Lw oct = sound power level per octave midband
ve = vertical wall penetration	Pmax = maximum capacity	dB(A) = A-weighted decibel value
ho = horizontal floor penetration	GKB (type A) / GKF (type F): "GKB" stands for standard plasterboards (type A according to EN 520) while "GKF" plasterboards offer a higher fire resistance for a similar plate thickness (type F according to EN 520)	ΔL = correction factor
o -> i = meets the criteria from the outside (o) to the inside (i)	Cal-Sil = calcium silicate	
i <-> o = fire side not important	OP = option (delivered with the product)	
V AC = Volt alternating current	KIT = kit (delivered separately for repair or upgrade)	
V DC = Volt direct current	PG = connection flange to the duct	

	air-tightness class C according to EN1751		higher net building volume through compact size
	optimal acoustic performance		optimal free air passage and minimal pressure loss
	Hygiene certificate (www.HYG.de)		suitable for built-in installation
	suitable for installation remote from the wall		intermediate dimensions on request
	minimal distance allowed		sealing with fire resistant stone wool boards allowed, also for asymmetric opening

Declaration of performance

DECLARATION OF PERFORMANCE

CE_DoP_Rf-t_C3_EN ■ K-08/2021

1. Unique identification code of the product-type:
 2. Intended use/es:

CU-LT
Rectangular fire damper to be used in conjunction with partitions to maintain fire compartments in heating, ventilating and air conditioning installations.

3. Manufacturer:
 4. System/s of NCP:

Rf-Techologies NV, Lange Ambachtstraat 40, B-2860 Oostende

System 1

5. Harmonised standard / European Assessment Document; notified body / European Technical Assessment, Technical Assessment Body, notified body; certificate of constancy of performance:

EN 13650:2010

(Fire resistance according to EN 1366-2 and classifications according to EN 13501-3)

6. Declared performance according to EN 13650:2010

Essential characteristics

Range	Wall type	Sealing	Performance
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	
		Mortar	1 EI 90 (v _e i ↔ o) S - (500 Pa)
		Gypsum	1 EI 120 (v _e i ↔ o) S - (500 Pa)
		Stone wool + coating ≥ 140 kg/m ³ + coated casing	1 EI 120 (v _e i ↔ o) S - (300 Pa)
		Stone wool + coating ≥ 140 kg/m ³	1 EI 90 (v _e i ↔ o) S - (300 Pa)
		Galvanised duct + stone wool + coating ≥ 150 kg/m ³ 1x60 mm + IFW installation kit	2 EI 60 (v _e i ↔ o) S - (300 Pa)
		Galvanised duct + stone wool + coating ≥ 140 kg/m ³ 1x80 mm + IFW installation kit	2 EI 90 (v _e i ↔ o) S - (300 Pa)
		Galvanised duct + stone wool + coating ≥ 140 kg/m ³ 2x50 mm + IFW installation kit	2 EI 90 (v _e i ↔ o) S - (300 Pa)
		Galvanised duct + GEOFLAM® F 15 mm + mortar	2 EI 120 (v _e i ↔ o) S - (500 Pa)
		Galvanised duct + GEOFLAM® Light 35 mm + mortar	2 EI 120 (v _e i ↔ o) S - (500 Pa)
		Installation kit	3 EI 60 (v _e i ↔ o) S - (500 Pa)
		Gypsum	1 EI 60 (v _e i ↔ o) S - (500 Pa)
		Stone wool + coating ≥ 140 kg/m ³	1 EI 60 (v _e i ↔ o) S - (300 Pa)
		Galvanised duct + stone wool + coating ≥ 150 kg/m ³ 1x60 mm + IFW installation kit	2 EI 60 (v _e i ↔ o) S - (300 Pa)
		Galvanised duct + stone wool + coating ≥ 140 kg/m ³ 2x50 mm + IFW installation kit	2 EI 90 (v _e i ↔ o) S - (500 Pa)
		Installation kit	3 EI 90 (v _e i ↔ o) S - (500 Pa)
		Gypsum	1 EI 90 (v _e i ↔ o) S - (500 Pa)
		Mortar	2 EI 90 (v _e i ↔ o) S - (300 Pa)
		Stone wool + coating ≥ 140 kg/m ³ + coated casing	1 EI 120 (v _e i ↔ o) S - (300 Pa)
		Stone wool + coating ≥ 140 kg/m ³	1 EI 90 (v _e i ↔ o) S - (300 Pa)
		Galvanised duct + stone wool + coating ≥ 140 kg/m ³ 2x50 mm + IFW installation kit	2 EI 90 (v _e i ↔ o) S - (300 Pa)
		Mortar	1 EI 90 (h _o i ↔ o) S - (500 Pa)
		Reinforced concrete ≥ 110 mm	2 EI 90 (v _e i ↔ o) S - (300 Pa)
		Aerated concrete ≥ 150 mm	1 EI 120 (h _o i ↔ o) S - (500 Pa)
		Rigid floor	1 EI 120 (h _o i ↔ o) S - (300 Pa)

- 1 Type of installation: built-in
0/90/180/270°. Minimal distances authorized.

- 2 Type of installation: remote from the wall, 0/180°. Minimal distances authorized.

- 3 Type of installation: built-in
0/90/180/270°

- Nominal activation conditions/sensitivity:
 Response delay (response time); closure time
 Operational reliability: cycling
 Durability of response delay:
 Protection against corrosion according to EN 1751:
 Damper casing leakage according to EN 1751:

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:
Mathieu Steenland, Technical Manager

Oostende, 08/2021

Product presentation CU-LT

Optimised rectangular fire damper with a fire resistance up to 120 minutes. A minimal pressure loss is guaranteed thanks to the thin blade and the transmission located outside the tunnel. The damper is available in small dimensions (starting from 100 mm height). A galvanised steel tunnel contributes to the light weight of the damper.

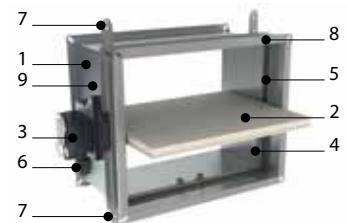
Fire dampers are installed where air ducts penetrate fire-resistant compartment walls. Their role is to restore the fire resistance grade of the penetrated wall and to prevent smoke propagation. Fire dampers are distinguished by their degree of fire resistance, by their aeraulic properties as well as by their installation ease. Rf-Technologies' fire dampers are all CE marked. They can be equipped with various types of mechanisms depending on the specific needs linked to the project or to the local regulations.

- easy to install
- optimal free air passage and minimal pressure loss
- optimal acoustic performance
- higher net building volume through compact size
- air-tightness class C according to EN1751



- Hygiene certificate (www.HYG.de)
- suitable for built-in installation
- suitable for installation remote from the wall
- minimal distance allowed
- suitable for rigid wall, rigid floor and light wall (metal stud gypsum plasterboard wall)
- sealing with fire resistant stone wool boards allowed, also for asymmetric opening
- tested according to EN 1366-2 up to 500 Pa
- operating mechanism outside the wall
- maintenance-free
- for indoor use
- intermediate dimensions on request
- operating temperature: max. 50°C

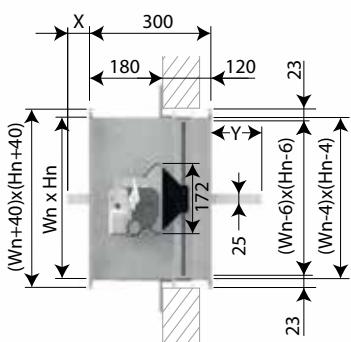
1. casing in galvanised steel
2. damper blade
3. operating mechanism
4. sealing cold smoke
5. intumescent strip
6. base plate for thermo-electrical fuse
7. positioning plate
8. connection flange PG20
9. product identification



Range and dimensions CU-LT

Transmission and mechanism exceed if $H_n \leq 150$ mm

Exceeding blade: X = on the mechanism side, Y = on the wall side



(W x H) mm	≥	≤
200x100		800x600

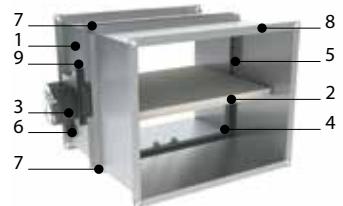
Hn [mm]	150	200	250	300	350	400	450	500	550	600
x	-	-	-	-	-	-	-	17	42	67
y	2	27	52	77	102	127	152	177	202	227

Range and dimensions CU-LT-L500

Variant CU-LT-L500

CU-LT damper with a tunnel casing extension at the wall side to facilitate the connection to the duct when the supporting construction is thicker than 100 mm. This version also ensures that the damper blade doesn't exceed the casing at the wall side (up to a height of 550 mm), which allows to connect a grill or a bend directly on the damper flange or to use a circular connection.

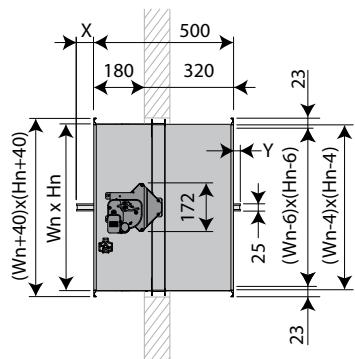
1. casing in galvanised steel
2. damper blade
3. operating mechanism
4. sealing cold smoke
5. intumescent strip
6. base plate for thermo-electrical fuse
7. positioning plate
8. connection flange PG20
9. product identification



Range and dimensions CU-LT-L500

Transmission and mechanism exceed if $H_n \leq 150$ mm

Exceeding blade: X = on the mechanism side, Y = on the wall side

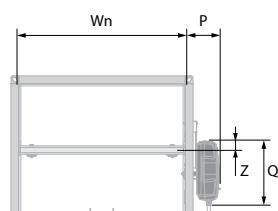
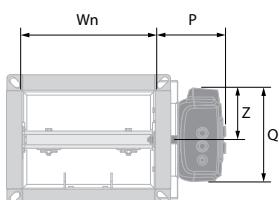


(W x H) mm	\geq	\leq
200x100		800x600

H_n [mm]	500	550	600
X	17	42	67
Y	-	2	27

$H_n < 400$ mm

$H_n \geq 400$ mm



	MFUSP	ONE (X)	BFL(T)
P	101	97	81
Q	122	136	80
Z	61	75	40

	MFUSP	ONE (X)	BFL(T)
P	101	97	81
Q	123	191	80
Z	28	27	40

Evolution - kits

KITS MFUSP	Automatic unlocking mechanism with fusible link
KITS ONE T 24 FDCB	Spring return actuator ONE 24V (with fusible link T) + bipolar beginning- and end-of-range switch
KITS ONE T 24 FDCU	Spring return actuator ONE 24V (with fusible link T) + unipolar beginning- and end-of-range switch
KITS ONE T 230 FDCU	Spring return actuator ONE 230V (with fusible link T) + unipolar beginning- and end-of-range switch
KITS ONE T 230 FDCB	Spring return actuator ONE 230V (with fusible link T) + bipolar beginning- and end-of-range switch
KIT ONE-X 24	Spring return actuator ONE-X 24V (with fusible link T)
KIT ONE-X 230	Spring return actuator ONE-X 230V (with fusible link T)
KITS BFL24	Spring return actuator BFL 24V
KITS BFL230	Spring return actuator BFL 230V

Evolution - kits

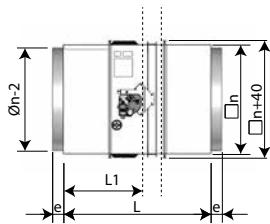
	KITS BFL24-ST	Spring return actuator BFL 24V with plug (ST)
	KITS BFLT24	Spring return actuator BFL 24V with thermo-electric fuse (T)
	KITS BFLT230	Spring return actuator BFL 230V with thermo-electric fuse (T)
	KITS BFLT24-ST	Spring return actuator BFL 24V with thermo-electric fuse (T) and plug (ST)
	KITS BFN24	Spring return actuator BFN 24V (BFN kits must be used instead of BFL kits for fire dampers produced before 1/7/2015)
	KITS FDCU MFUS(P)	Limit switch 'open/closed'
	KITS SN2 BFL/BFN	Auxiliary limit switch 'open/closed'
	KITS ZBAT72	Black spare part for thermo-electric fuse for BFLT/BFNT
	KITS FUS 72 MFUS(P)	Fusible link 72°C
	FUS72 ONE	Fusible link 72°C

	MECT	Testbox for mechanisms 24/48 V (magnet, motor, beginning and end of range switches)
	CU-LT IFW	Separate installation kit for flexible wall for CU-LT (800 x 600 mm, must be cut to size)

Options - at the time of order

	IFW	Pre-mounted installation kit for flexible wall
	UL	Inspection shutter (set of 2)
	ONE-X CN	Connectors for the bus cables and the power cable.

Flange types - at the time of order

	PG20	Connection to ducts with 20 mm flanges (either with sliding profile or with bolts). Elliptical holes Ø 9,5 x 16 mm.
	PRJ	Circular connection with rubber sealing ring on a rectangular damper with PG20 flange.

Storage and handling

Storage and handling

As this product is a safety element, it should be stored and handled with care.

Avoid:

- any kind of impact or damage
- contact with water
- deformation of the casing

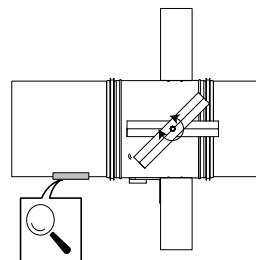
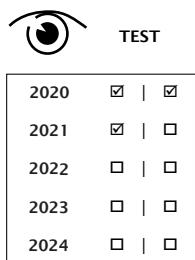
It is recommended:

- to unload in a dry area
- not to flip or roll the product to move it
- not to use the damper as a scaffold, working table, etc.
- not to store smaller dampers inside larger ones

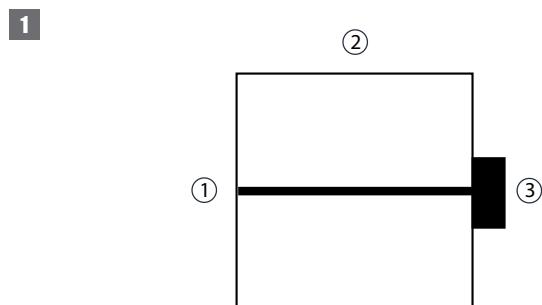
Installation

General points

- The installation must comply with the installation manual and the classification report.
- Axis orientation: see the declaration of performance.
- Avoid obstruction of adjoining ducts.
- Product installation: always with closed damper blade.
- Verify if the blade can move freely.
- Please observe safety distances with respect to other construction elements. The operating mechanism must also remain accessible: allow for a clearance of 200 mm around the housing.
- The air tightness class will be maintained if the damper is installed according to the installation manual.
- Rf-t fire dampers are always tested in standardised constructions according to EN 1366-2. The achieved results are valid for similar supporting constructions with a fire resistance, thickness and density equal or superior to the supporting construction used during the test.
- The damper must remain accessible for inspection and maintenance.
- Schedule at least 2 visual checks each year.



Position of the thermo-electric fuse (spring-return actuator BFLT)

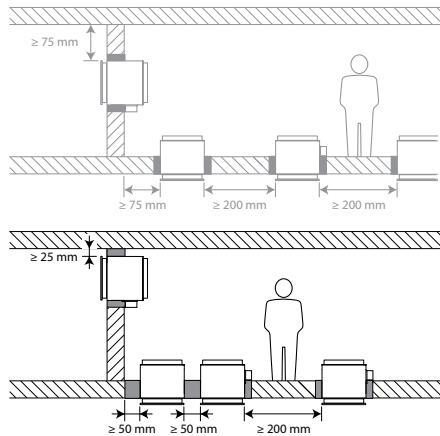


Position of the thermo-electric fuse on the damper casing:

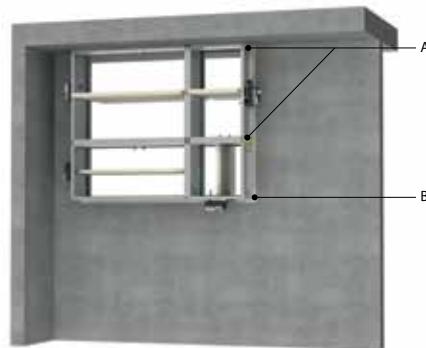
1. on opposite side of mechanism if $H < 250 \text{ mm}$ and $W < 250 \text{ mm}$;
2. on top if $H < 250 \text{ mm}$ and $W \geq 250 \text{ mm}$;
3. on mechanism side if $H \geq 250 \text{ mm}$.

Installation at a minimal distance from another damper or from an adjacent supporting construction

1



2



1. Principle

According to the European test standard, a fire damper must be installed at a minimum distance of 75 mm from an adjacent wall and 200 mm from another damper, unless the solution was tested at a shorter distance.

This range of Rf-t fire dampers has been successfully tested and can be installed in a vertical or horizontal supporting construction, at a distance below the minimum set by the standard.

For rectangular dampers, the minimal distance is set to 50 mm between 2 dampers or between a damper and a vertical wall, and to 25 mm between a damper and a floor/ceiling.

2. Certified solution

For the Rf-t fire dampers, the solution consists of the following elements: A: Universal sealing for minimal distance; B: Sealing compliant with existing classifications (Declaration of Performance).

A. Sealing of the opening at the side with minimal distances between damper and wall/ceiling or another fire damper: rigid stone wool panels (150 kg/m^3) are applied to a depth of min. 400 mm, of which 150 mm on the mechanism side of the wall. On the non-mechanism side of the wall, the stone wool panels must be at least flush with the wall.

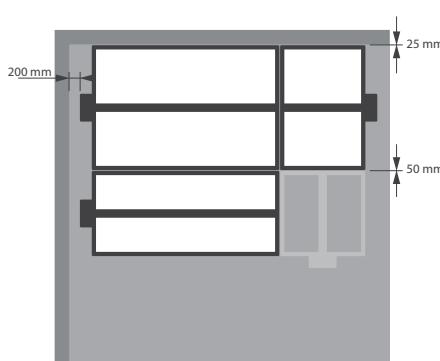
This sealing is applied over the whole width/height of the damper(s).

When the damper is installed at a distance of 25 mm from a floor/ceiling, the rigid high-density stone wool panels (A) may be replaced with standard 40 kg/m^3 stone wool, compressed by at least 40%.

B. Sealing of the rest of the opening according to the existing classifications for the fire damper (Declaration of Performance). Detailed information for each wall/sealing combination can be found in the respective installation methods.

The installer may choose the direction of the blade axis freely: horizontal or vertical axis.

3



3. Restrictions

A maximum of 2 rectangular dampers can be installed at a minimum distance from one another, both vertically and horizontally (maximum cluster of 4 dampers).

Note: when sealing the opening with panels of fire resistant stone wool, the maximum number of dampers also depends on the maximum "blank seal" allowed for the selected sealing material. Please refer to the manufacturer's instructions for this information.

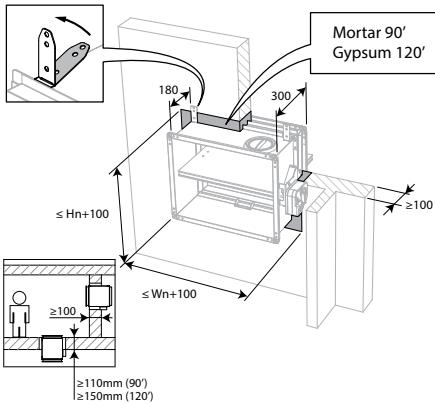
Installation

Installation in rigid wall and floor

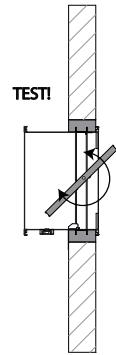
The product was tested and approved in:

Range	Wall type	Sealing	Classification
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Mortar EI 90 (v_e i ↔ o) S - (500 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Gypsum EI 120 (v_e i ↔ o) S - (500 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid floor	Reinforced concrete ≥ 110 mm	Mortar EI 90 (h_o i ↔ o) S - (500 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid floor	Reinforced concrete ≥ 150 mm	Gypsum EI 120 (h_o i ↔ o) S - (500 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid floor	Aerated concrete ≥ 150 mm	Gypsum EI 120 (h_o i ↔ o) S - (500 Pa)

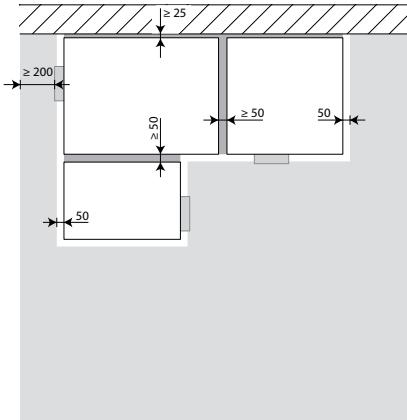
1



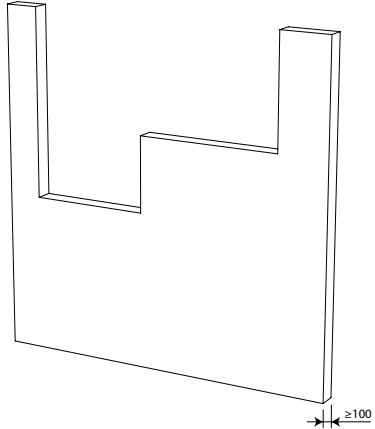
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3

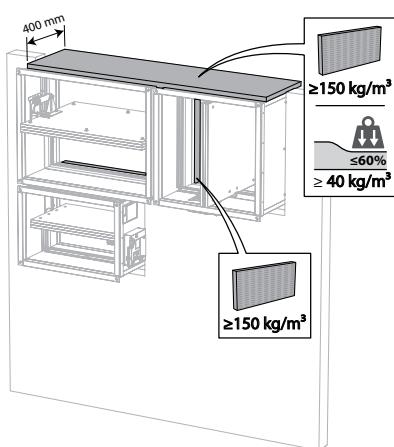


4



3. The dampers can be installed at a minimum distance from an adjacent floor/ceiling (≥ 25 mm), from an adjacent wall or from another damper (≥ 50 mm).

4. Make the necessary openings ($W_n + 100$ mm) x ($H_n + 100$ mm) in the wall.

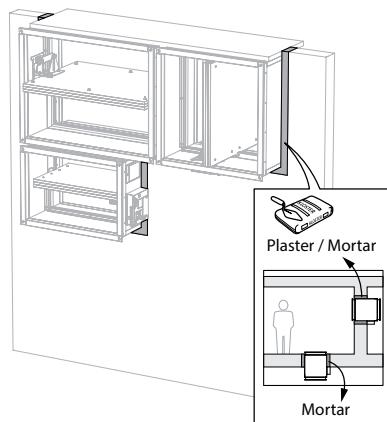
5

5. Mount the dampers in the opening.

Apply rigid stone wool panels ($\geq 150 \text{ kg/m}^3$) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.

This sealing is applied over the whole width/height of the damper(s).

When the damper is installed at a distance of 25 mm from a floor/ceiling, the rigid high-density stone wool panels may be replaced with standard $\geq 40 \text{ kg/m}^3$ stone wool (e.g. Rockfit 431), compressed by at least 40%.

6

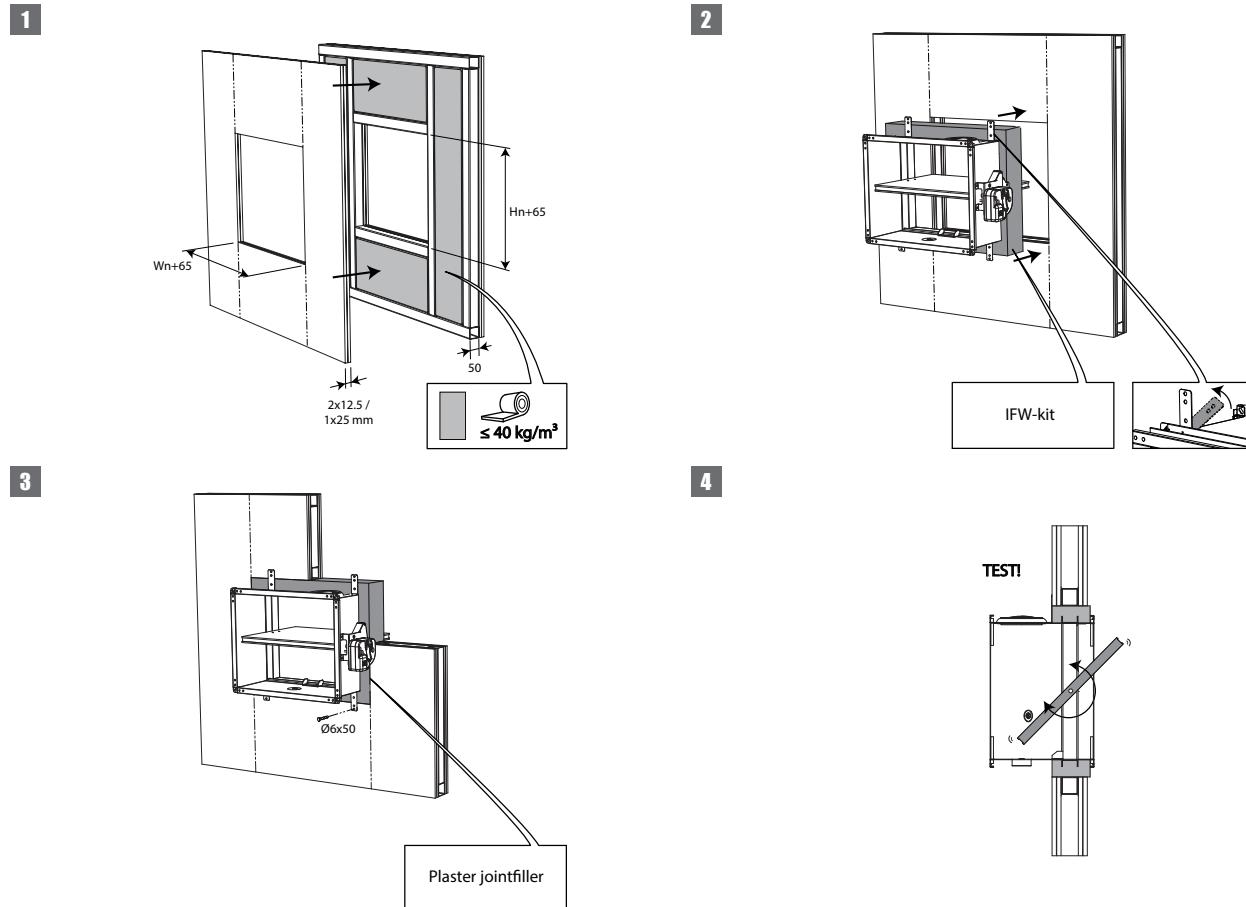
6. Seal the rest of the opening with standard mortar or gypsum.

Installation

Installation in flexible wall (metal stud gypsum plasterboard wall)

The product was tested and approved in:

Range	Wall type		Sealing	Classification
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	Installation kit	EI 60 (v_e i ↔ o) S - (500 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Installation kit	EI 90 (v_e i ↔ o) S - (500 Pa)

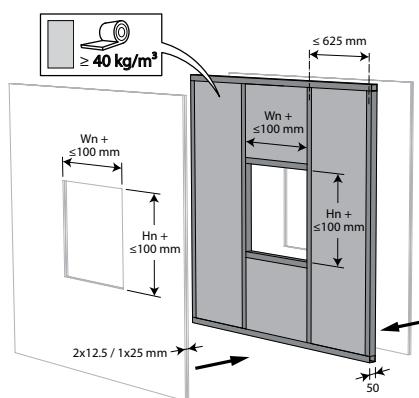


Installation in flexible wall (metal stud gypsum plasterboard wall), sealing with gypsum

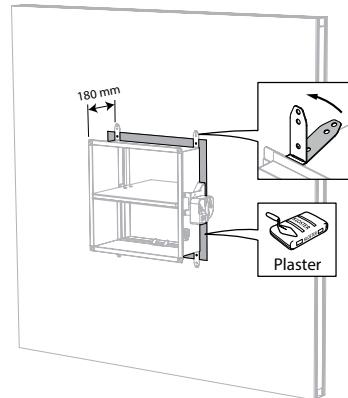
The product was tested and approved in:

Range	Wall type	Sealing	Classification	
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	Gypsum	EI 60 ($v_e i \leftrightarrow o$) S - (500 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Gypsum	EI 90 ($v_e i \leftrightarrow o$) S - (500 Pa)

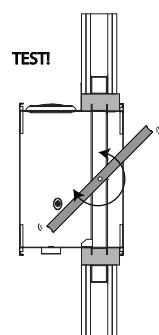
1



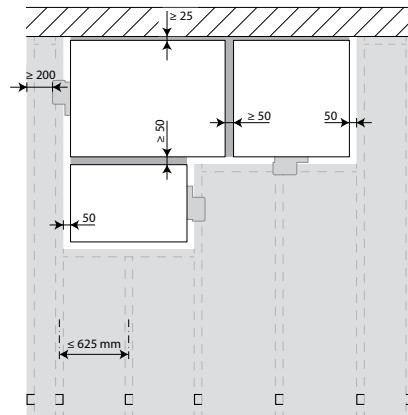
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3

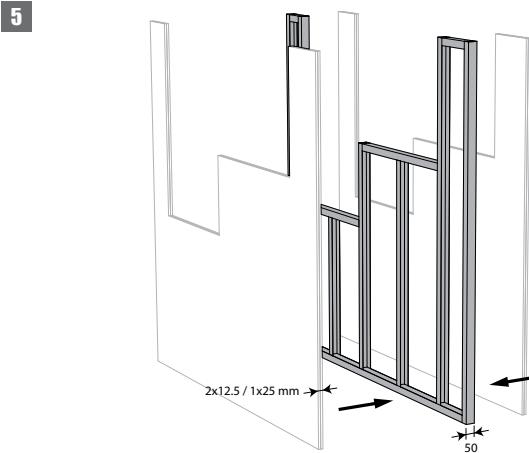


4

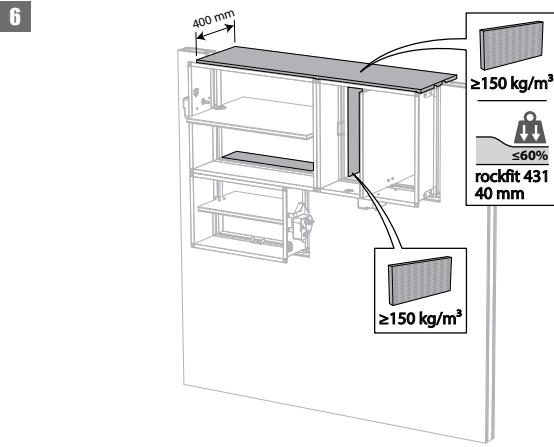


4. The dampers can be installed at a minimum distance from an adjacent floor/ceiling (≥ 25 mm), from an adjacent wall or from another damper (≥ 50 mm).

Installation



5. Build the drywall and foresee horizontal and vertical studs around the opening.

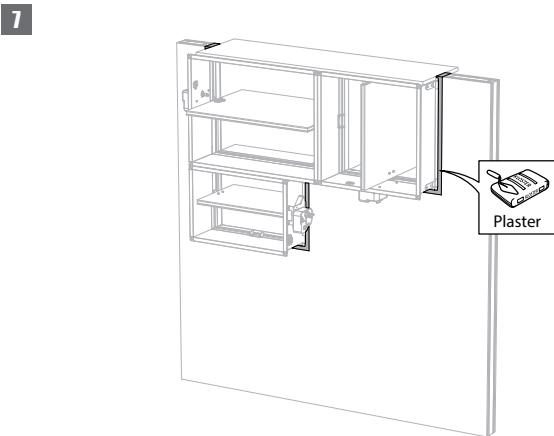


6. Mount the dampers in the opening.

Apply rigid stone wool panels ($\geq 150 \text{ kg/m}^3$) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.

This sealing is applied over the whole width/height of the damper(s).

When the damper is installed at a distance of 25 mm from a floor/ceiling, the rigid high-density stone wool panels may be replaced with standard $\geq 40 \text{ kg/m}^3$ stone wool (e.g. Rockfit 431), compressed by at least 40%.



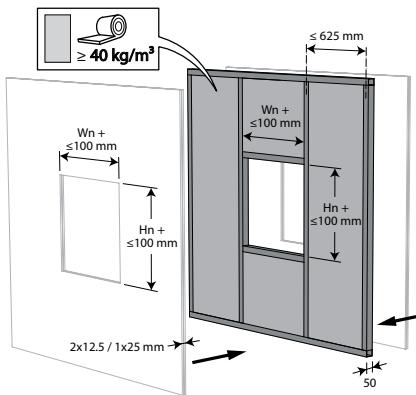
7. Seal the rest of the opening (50 mm) with standard gypsum across the entire wall thickness.

Installation in flexible wall (metal stud gypsum plasterboard wall), sealing with mortar

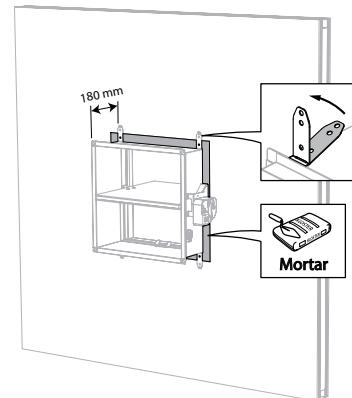
The product was tested and approved in:

Range	Wall type	Sealing	Classification
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	EI 90 (v_e i ⇔ o) S - (300 Pa)

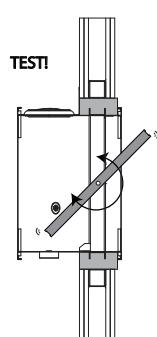
1



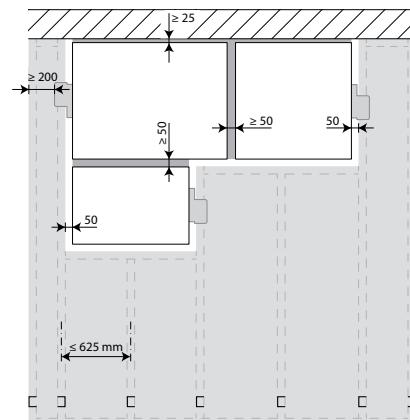
2



3

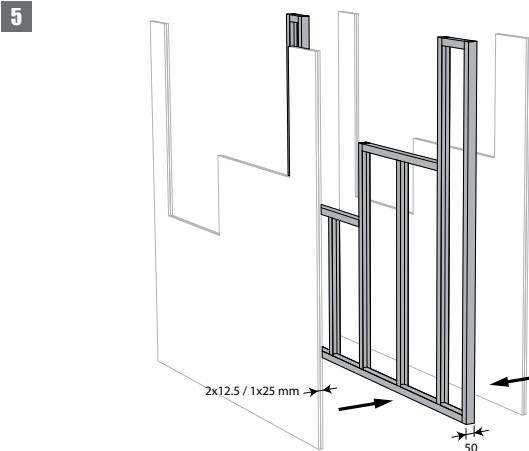


4

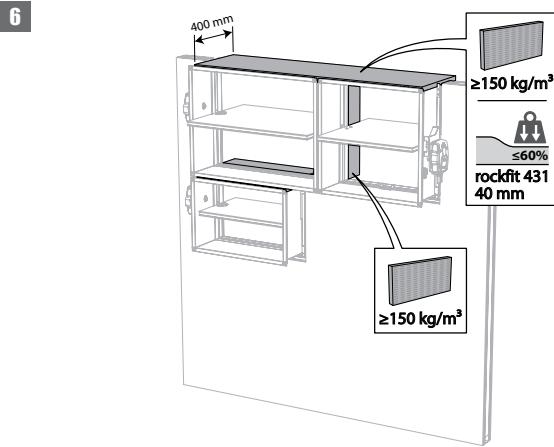


4. The dampers can be installed at a minimum distance from an adjacent floor/ceiling (≥ 25 mm), from an adjacent wall or from another damper (≥ 50 mm).

Installation



5. Build the drywall and foresee horizontal and vertical studs around the opening.

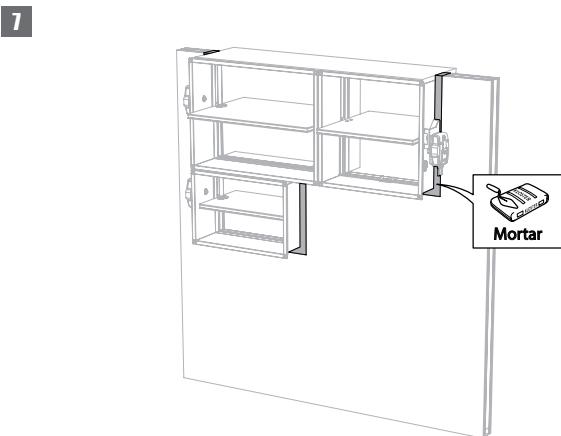


6. Mount the dampers in the opening.

Apply rigid stone wool panels ($\geq 150 \text{ kg/m}^3$) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.

This sealing is applied over the whole width/height of the damper(s).

When the damper is installed at a distance of 25 mm from a floor/ceiling, the rigid high-density stone wool panels may be replaced with standard $\geq 40 \text{ kg/m}^3$ stone wool (e.g. Rockfit 431), compressed by at least 40%.

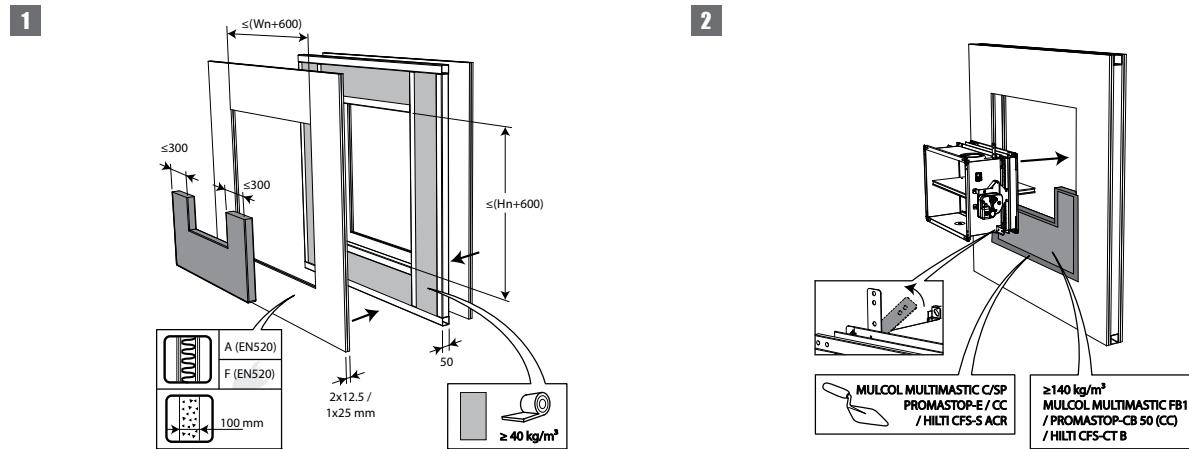


7. Seal the rest of the opening (50 mm) with standard mortar across the entire wall thickness.

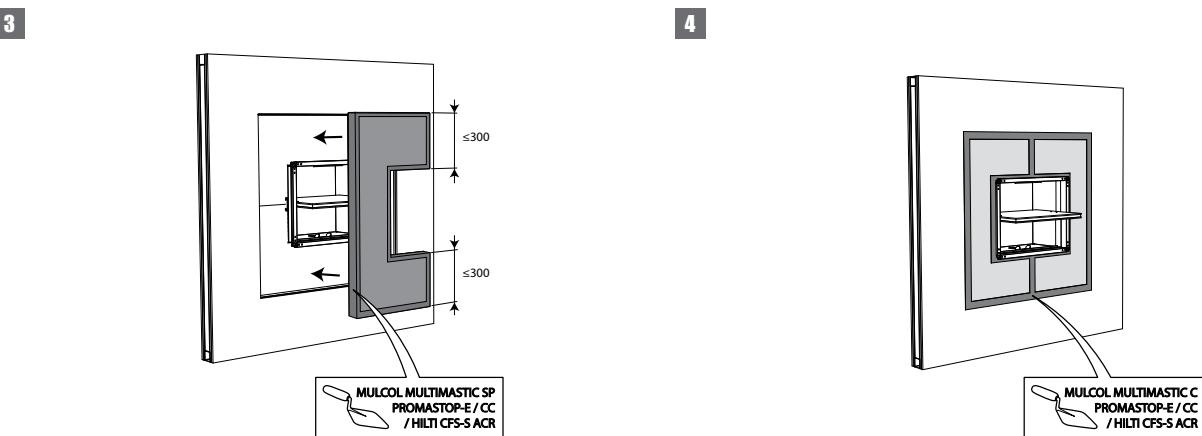
Installation in flexible and rigid wall, sealing with rigid rock wool boards with coating

The product was tested and approved in:

Range	Wall type	Sealing	Classification
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Stone wool + coating ≥ 140 kg/m ³ + coated casing EI 120 (v _e i ↔ o) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Stone wool + coating ≥ 140 kg/m ³ EI 90 (v _e i ↔ o) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	Stone wool + coating ≥ 140 kg/m ³ EI 60 (v _e i ↔ o) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Stone wool + coating ≥ 140 kg/m ³ + coated casing EI 120 (v _e i ↔ o) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	Stone wool + coating ≥ 140 kg/m ³ EI 90 (v _e i ↔ o) S - (300 Pa)



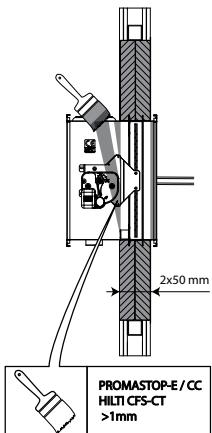
1. The opening around the damper is sealed with 2 layers of 50 mm-thick mineral wool panels with fire resistant coating on one side (type PROMASTOP-CB 50 / PROMASTOP-CB/CC 50 / HILTI CFS-CT B / Mulcol Multimastic FB1).



3. The joints on these 2 layers must be installed staggered and covered all around the edge with coating (type PROMASTOP-E / PROMASTOP-CC / HILTI CFS-S-ACR / Mulcol Multimastic SP).

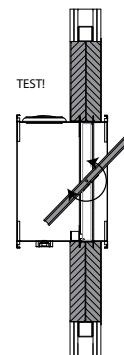
Installation

5

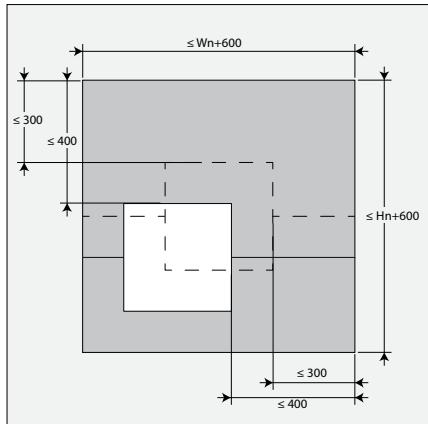


5. For EI 120 S, the casing of the fire damper must be covered with a layer ($> 1 \text{ mm}$) of coating (type PROMASTOP E / PROMASTOP CC / HILTI CFS-CT).

6

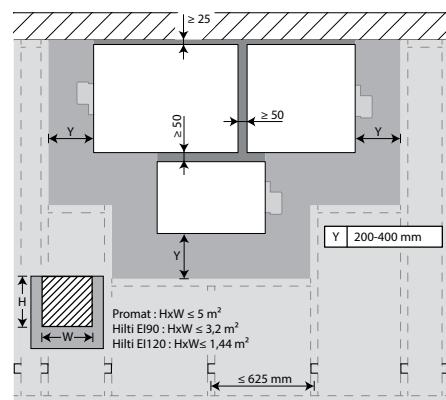


7



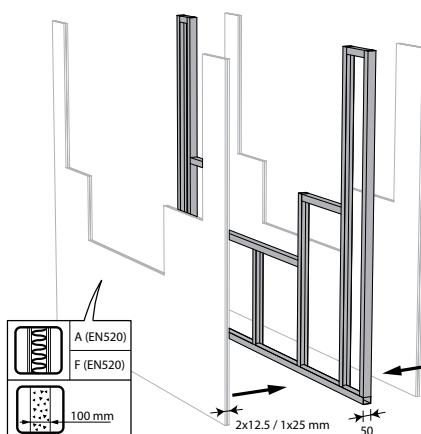
7. The damper does not need to be centered in the opening (with max dimensions fire damper + 600 mm). The maximal distance between the damper and the edge of the opening is 400 mm.

8



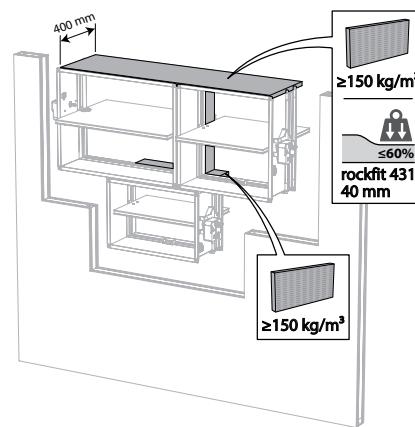
8. The dampers can be installed at a minimum distance from an adjacent floor/ceiling ($\geq 25 \text{ mm}$), from an adjacent wall or from another damper ($\geq 50 \text{ mm}$).

9



9. Build the drywall and foresee horizontal and vertical studs around the opening.

10



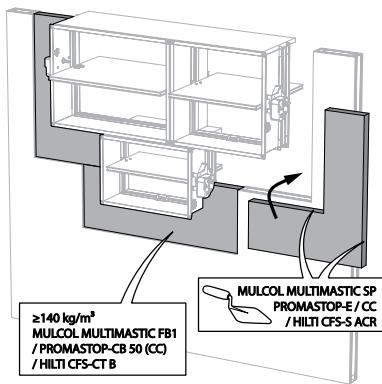
10. Mount the dampers in the opening.

Apply rigid stone wool panels ($\geq 150 \text{ kg/m}^3$) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.

This sealing is applied over the whole width/height of the damper(s).

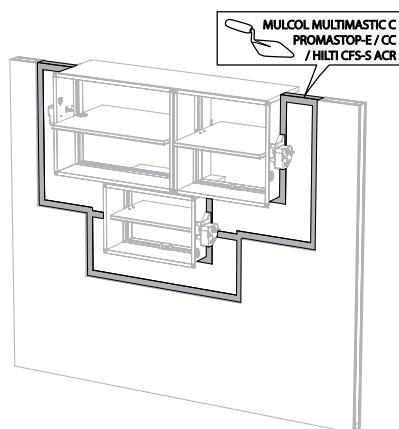
When the damper is installed at a distance of 25 mm from a floor/ceiling, the rigid high-density stone wool panels may be replaced with standard $\geq 40 \text{ kg/m}^3$ stone wool (e.g. Rockfit 431), compressed by at least 40%.

11



11. Seal the rest of the opening with 2 layers of 50 mm-thick coated rigid mineral wool panels (see above).

12



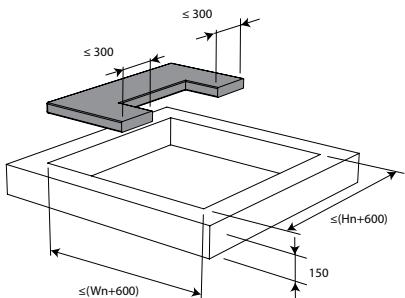
Installation

Installation in rigid floor, sealing with rigid rock wool boards with coating

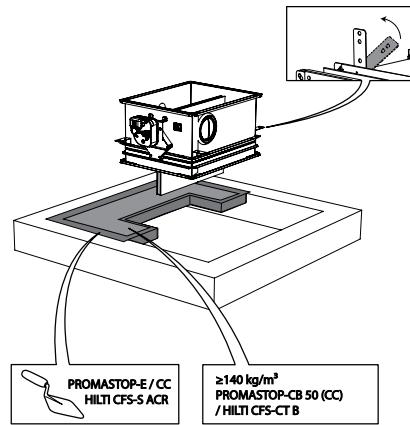
The product was tested and approved in:

Range	Wall type	Sealing	Classification
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid floor	Aerated concrete ≥ 150 mm Stone wool + coating ≥ 140 kg/m ³ + coated casing	EI 120 ($h_o \leftrightarrow o$) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid floor	Aerated concrete ≥ 150 mm Stone wool + coating ≥ 140 kg/m ³	EI 90 ($h_o \leftrightarrow o$) S - (300 Pa)

1

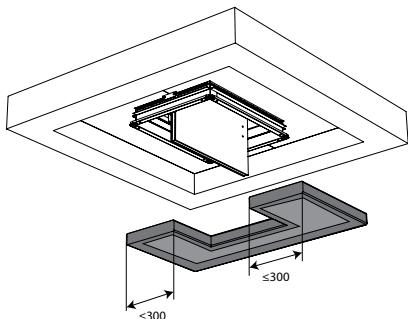


2

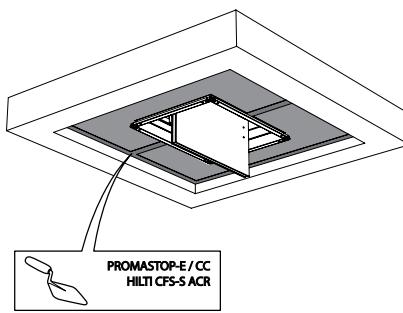


1. The opening around the damper is sealed with 2 layers of 50 mm-thick mineral wool panels with fire resistant coating on one side (type PROMASTOP-CB 50 / PROMASTOP-CB/CC 50 / HILTI CFS-CT B).

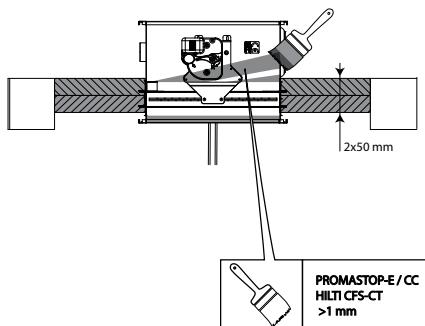
3



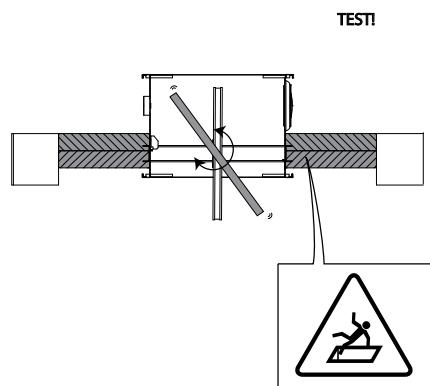
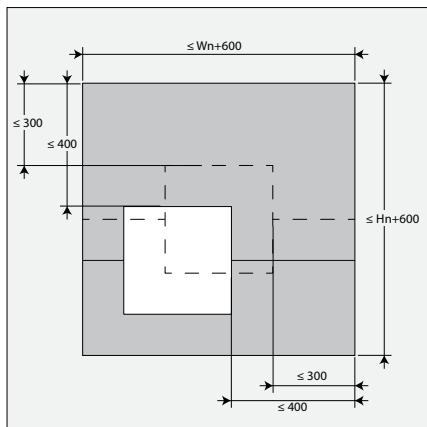
4



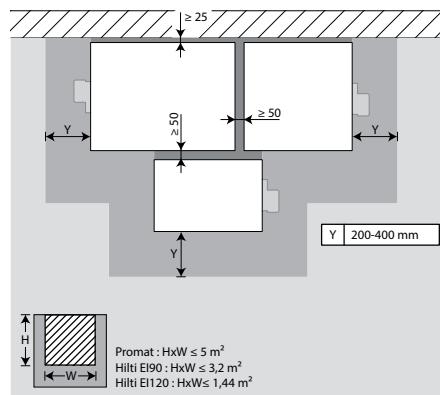
3. The joints on these 2 layers must be installed staggered and covered all around the edge with coating (type PROMASTOP-E / PROMASTOP-CC / HILTI CFS-S-ACR).

5

5. For EI 120 S, the casing of the fire damper must be covered with a layer (> 1 mm) of coating (type PROMASTOP E / PROMASTOP CC / HILTI CFS-CT).
(only for 120 minutes)

6**7**

7. The damper does not need to be centered in the opening (with max dimensions fire damper + 600 mm). The maximal distance between the damper and the edge of the opening is 400 mm.

8

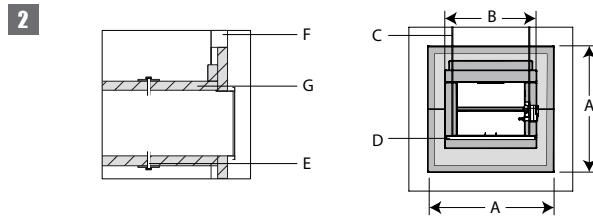
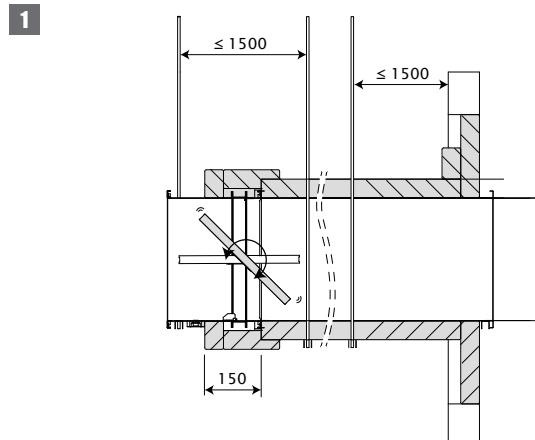
8. The dampers can be installed at a minimum distance from an adjacent wall or from another damper (≥ 50 mm).
For details, please refer to 'Installation in flexible and rigid wall, sealing with rigid rock wool boards with coating'

Installation

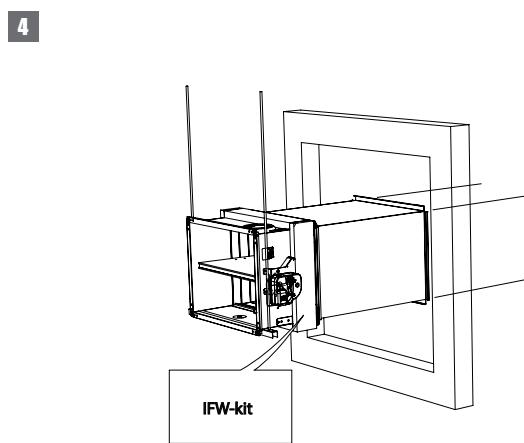
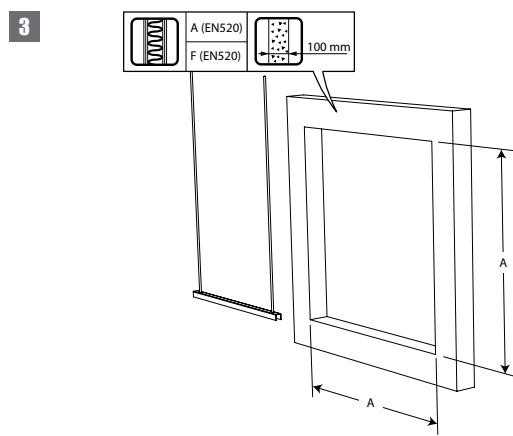
Installation remote from the wall, sealing and insulation with rigid rock wool boards with coating

The product was tested and approved in:

Range	Wall type	Sealing	Classification
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	El 60 ($v_e i \leftrightarrow o$) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	El 90 ($v_e i \leftrightarrow o$) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	El 90 ($v_e i \leftrightarrow o$) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type A (EN 520) ≥ 100 mm	El 60 ($v_e i \leftrightarrow o$) S - (300 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Flexible wall	Metal studs gypsum plasterboard Type F (EN 520) ≥ 100 mm	El 90 ($v_e i \leftrightarrow o$) S - (300 Pa)



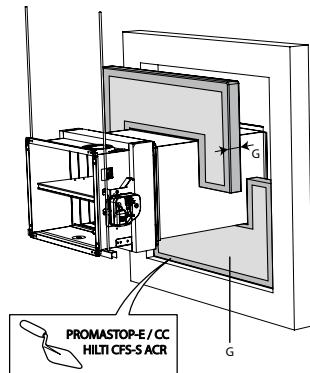
El60S	El90S	El90S
A $\leq (Hn+600) \times (Wn+600)$	$\leq (Hn+600) \times (Wn+600)$	$\leq (Hn+600) \times (Wn+600)$
B $(Hn+120) \times (Wn+120)$	$(Hn+200) \times (Wn+200)$	$(Hn+160) \times (Wn+160)$
C M8	M8	M8
D 35x35x2 mm	50x38x5 mm	50x38x5 mm
E $9 \times (\varnothing 5 \times 90 + M6 \times 44) / m^2$	$9 \times (\varnothing 5 \times 120 + M6 \times 44) / m^2$	$9 \times (\varnothing 5 \times 100 + M6 \times 44) / m^2$
F	A (EN520)	F (EN520)
G 1x60mm Promastop CB60 / 2x50mm Promastop CB-CC50 / Hilti CFS-CT B 10	2x50 mm Promastop CB50 (CC) / Hilti CFS-CT B	1x80 mm Promastop CB80 (CC) / Hilti CFS-CT B



3. An opening with maximal dimensions "A" is made in the wall. For a light partition wall, follow the wall assembly under "Installation in flexible or rigid wall - Sealing with fire resistant rigid panels of stone wool".

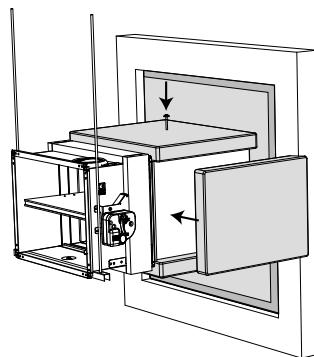
4. The fire damper is equipped with the IFW kit and mounted remote from the wall at the end of a metal duct. The duct is supported every 1500 mm as well as underneath the damper. The suspensions consist of threaded rods "C" and U-shaped steel profiles "D". A free space of maximum 25 mm is left between the threaded rods and the vertical walls of the stone wool casing "B".

5



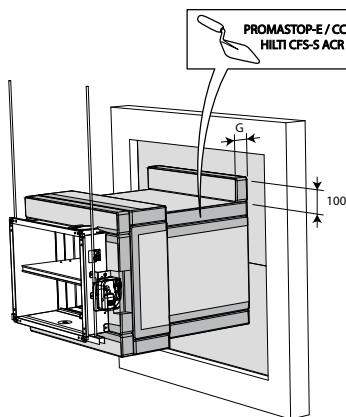
5. The opening around the duct is sealed with stone wool plates type Promastop CB(/CC) / Hilti CFS-CT B ("G"). The edges are sealed and maintained in place with PROMASTOP E / PROMASTOP CC / HILTI CFS-S ACR coating.

6



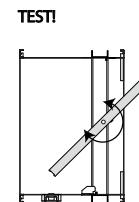
6. The duct is covered over its entire length with stone wool plates "G". To adhere to the duct, the plates are completely coated on one side with fire resistant coating and affixed to the duct with steel screws and washers "E". The damper casing is covered with stone wool plates "G" for 150 mm. A free space is left around the mechanism to allow access. The joints between the plates, between the wall and the plates as well as the screws and washers are filled with coating PROMASTOP E / PROMASTOP CC / HILTI CFS-S ACR.

7



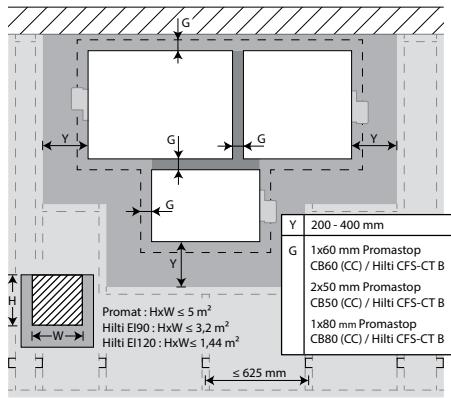
7. An additional mineral wool panel with width "B" and height 100 mm, coated with PROMASTOP E / PROMASTOP CC / HILTI CFS-S ACR, is applied where the stone wool casing meets the sealing of the wall opening.

8



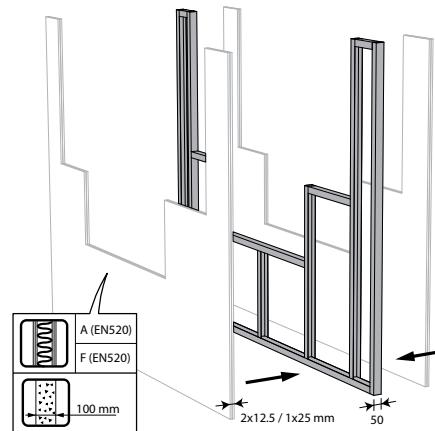
Installation

9

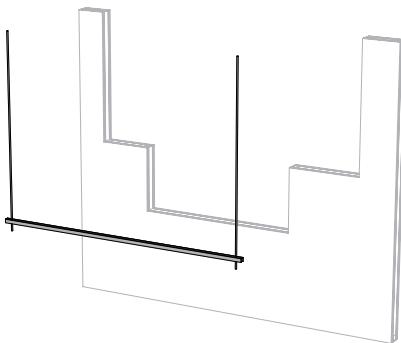


9. The dampers can be installed at a minimum distance from an adjacent floor/ceiling (≥ 25 mm), from an adjacent wall or from another damper (≥ 50 mm).

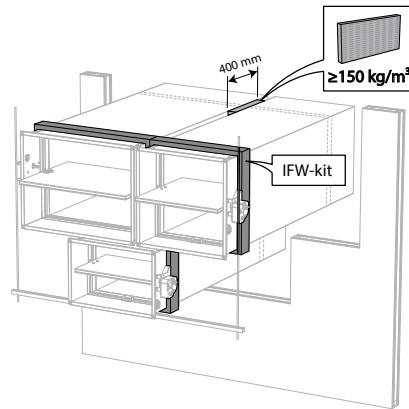
10



11

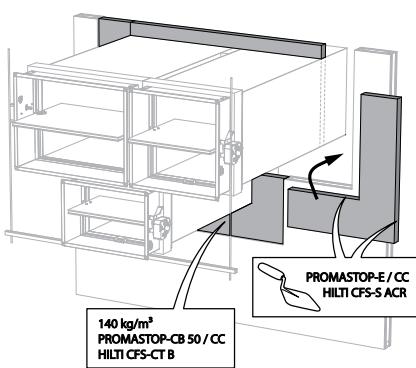


12

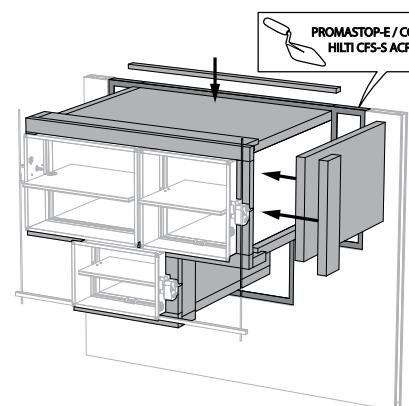


12. Apply rigid stone wool panels ($\geq 150 \text{ kg/m}^3$) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.
When the distance between the damper and the wall is greater than 75 mm, the sealing of the opening between the damper and the wall is carried out according to the pre-existing classification.

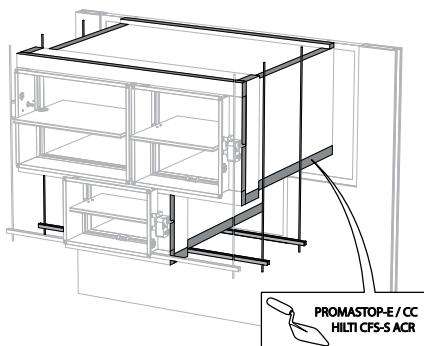
13



14



15

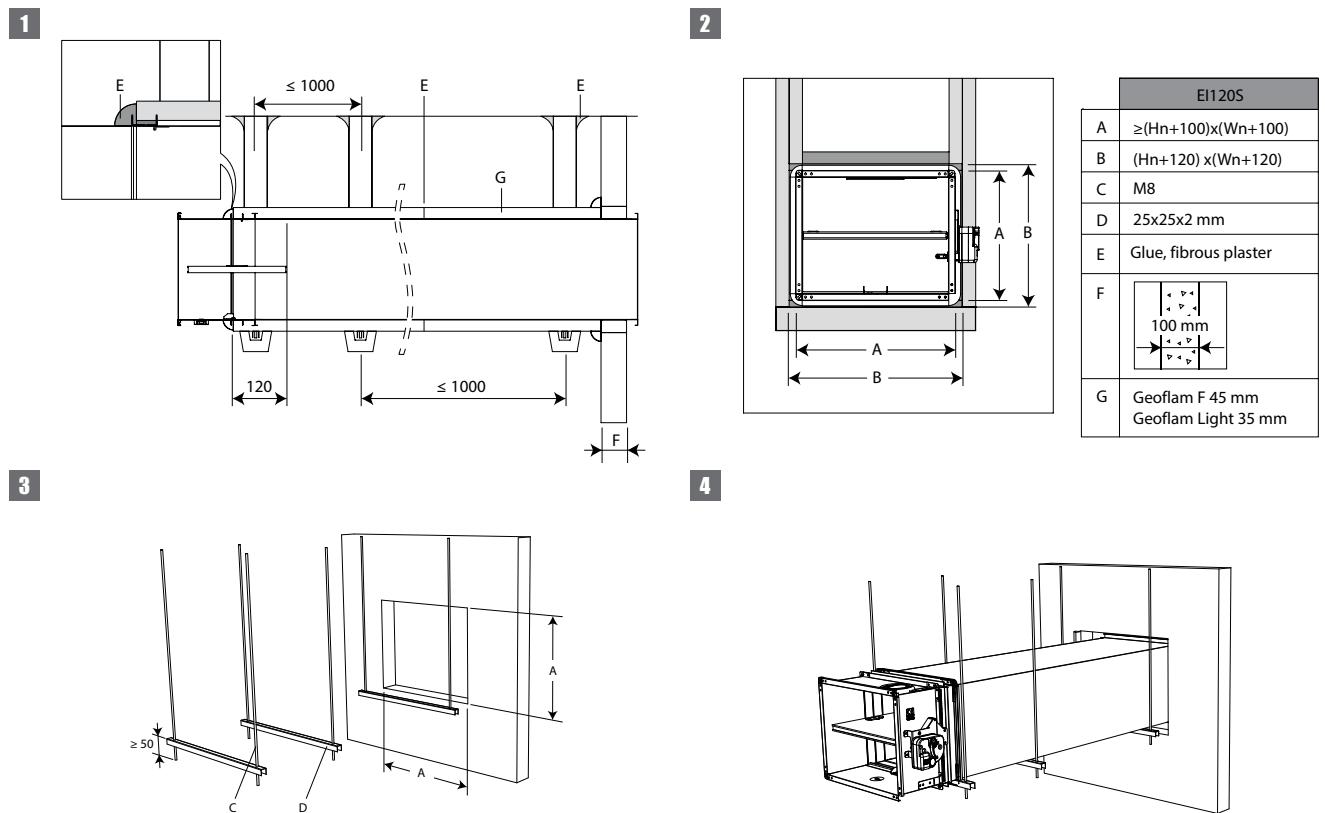


Installation

Installation remote from the wall + GEOFLAM

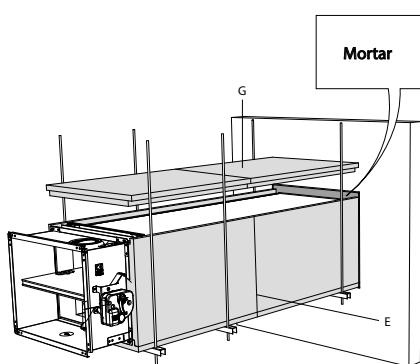
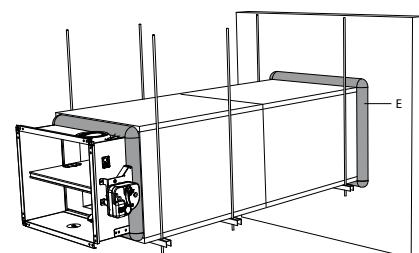
The product was tested and approved in:

Range	Wall type	Sealing	Classification
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Galvanised duct + GEOFLAM® F 45 mm + mortar EI 120 (v _e , i ↔ o) S - (500 Pa)
200x100 mm ≤ CU-LT ≤ 800x600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Galvanised duct + GEOFLAM® Light 35 mm + mortar EI 120 (v _e , i ↔ o) S - (500 Pa)



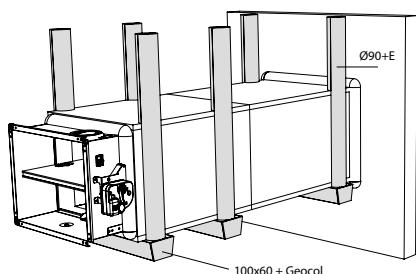
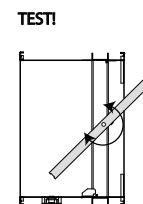
3. An opening with maximal dimensions "A" is made in the wall.

4. The fire damper is mounted remote from the wall at the end of a metal duct. The duct is supported every 1000 mm. The suspensions consist of threaded rods "C" and U-shaped steel profiles "D". A free space of maximum 25 mm is left between the threaded rods and the vertical walls of the casing "B".

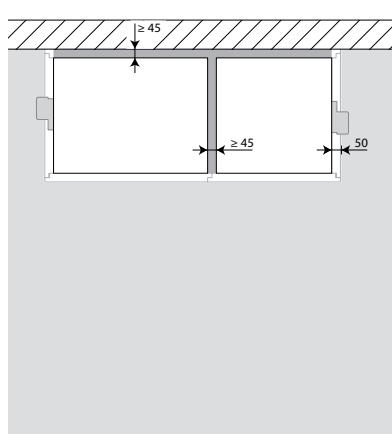
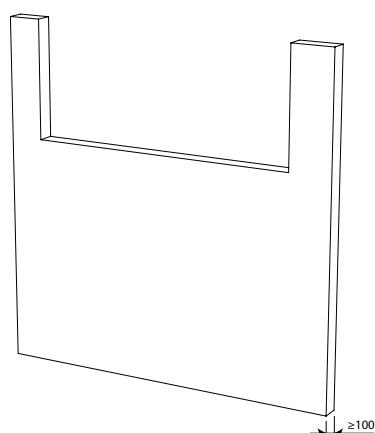
5**6**

5. The opening around the duct is sealed with standard mortar. The duct is covered with 45 mm thick GEOFLAM F plates or 35 mm thick GEOFLAM Light plates "G". The plates adhere to each other with glue and fibrous plaster "E". The damper casing is also covered on a length of 120 mm.

6. The GEOFLAM F plates stop at a distance of 15 mm from the wall. The free space is filled with fibrous plaster. The same filling is applied to seal off the connection between the GEOFLAM F plates and the damper casing.

7**8**

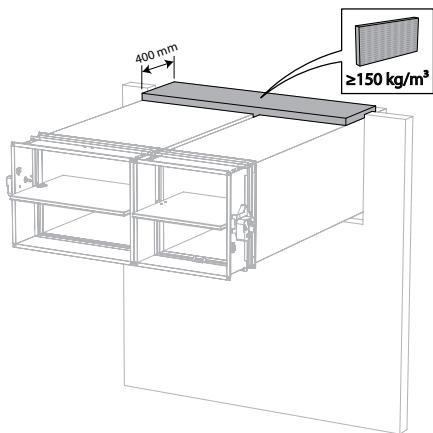
7. The threaded rods are covered with U-shaped plates of GEOFLAM (\varnothing 90 mm) and affixed with glue and fibrous plaster. The profiles are covered with U-shaped shells GEOFLAM 100 x 60 mm, which are affixed to the underside of the shaft with GEOCOL (GEOSTAFF) cement plaster.

9**10**

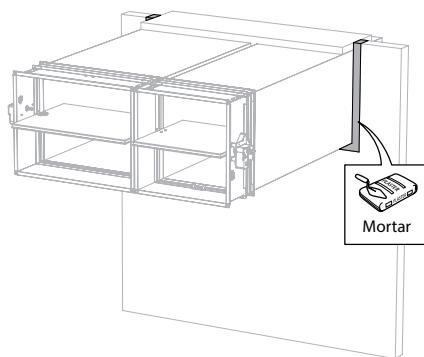
9. The dampers can be installed at a minimum distance from an adjacent floor/ceiling (\geq 25 mm), from an adjacent wall or from another damper (\geq 50 mm).

Installation

11

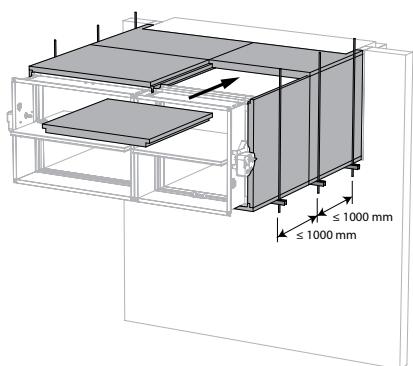


12

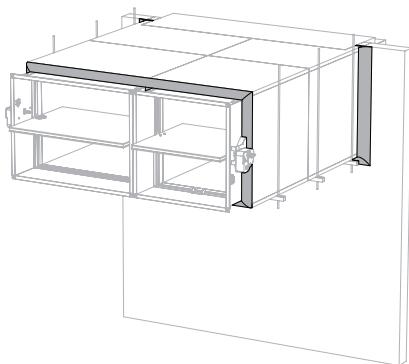


11. Apply rigid stone wool panels ($\geq 150 \text{ kg/m}^3$) to a depth of 400 mm (150 mm on the mechanism side of the wall) to seal the opening at the side with minimal distances.

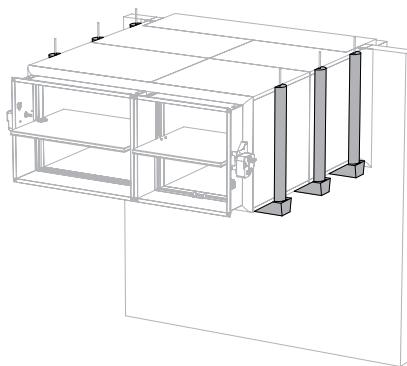
13



14



15



Maintenance

- No specific maintenance required.
- Schedule at least 2 visual checks each year.
- Remove dust and all other particles before use.
- Follow local maintenance regulations (i.e. BS9999 Annex V; NF S 61-933) and EN13306.
- Read the maintenance instructions on our website: https://www.rft.be/assets//PIM/DOCUMENTS/BROCHURE%20KITS/BRO_K139_MAINTENANCE_C.pdf
- Use the damper at up to 95% humidity, non-condensing.
- The fire damper can be cleaned with a dry or slightly damp cloth. It is forbidden to use abrasive cleaners or mechanical cleaning techniques (brush).

Operation and mechanisms

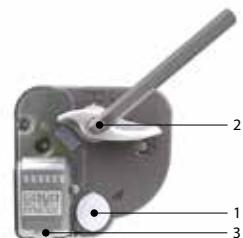
Operation and mechanisms



MFUS(P) Mechanism with fusible link

The operating mechanism MFUS(P) automatically unlocks the blade when the temperature in the duct exceeds 72°C. The damper can also be unlocked and reset manually.

1. unlocking button
2. resetting handle
3. cable entrance



Options - at the time of order

FDCU	Limit switch 'open/closed'
-------------	----------------------------

Unlocking

- **manual unlocking:** press the unlocking button (1).
- **automatic unlocking:** the fusible link melts when the temperature reaches 72°C in the duct.
- **remote unlocking:** n/a

Resetting

- **manual resetting:** turn the resetting handle (2) 90° clockwise (or use a 10 mm hex key).
- **motorised resetting:** n/a

Caution:

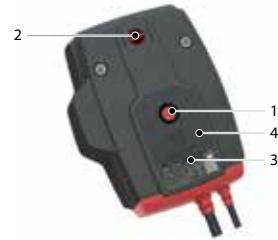
⚠ The mechanism may never be tested on its own, without being attached to the damper. Such a test might damage the mechanism or the operator might be injured.



ONE Spring return actuator for remote control

The spring-return actuator ONE is designed to easily operate Rf-t fire dampers of all sizes, automatically or remotely. Five models are available, 24 or 230 volt, with FDCU or FDDB position switches; and 24 volt with plug (ST).

1. unlocking button
2. blade position indicator
3. LED
4. battery compartment to reset motor
5. plug (ST)



Unlocking

- **manual unlocking:** shortly press the unlocking button (1) once.
- **automatic unlocking:** the fusible link reacts as soon as the temperature in the duct reaches 72°C.
- **remote unlocking:** by interrupting the power supply.

Resetting

- **manual resetting:** open the battery compartment (4) and press a 9V battery against the contact springs. Hold this position until the LED (3) emits a continuous light. Check whether the indicator (2) shows that the damper blade is in the open position. Remove the battery, the LED fades away. Close the battery compartment.
- **motorised resetting:** switch off the power supply for at least 5 sec. Power the actuator (respect the prescribed voltage) for at least 75 sec. The resetting stops automatically when the end of range is reached (damper open).

Caution:

- ⚠ If the LED (3) flickers fast (3x/sec.), the battery is discharged: use a new battery.
- ⚠ If the LED (3) flickers slowly (1x/sec), the resetting is in progress.
- ⚠ If the LED (3) is continuously on, the resetting is complete and the motor is powered.
- ⚠ If the actuator detects voltage on the power cable, a brief contact of the battery is enough to start the resetting process.
- ⚠ The power supply of this actuator cannot be individually replaced. If the cable is damaged, the whole unit must be discarded and replaced.
- ⚠ The housing of the mechanism contains a temperature sensor. When the temperature in the housing exceeds 72°C, the mechanism unlocks. The LED flashes twice per second. When the temperature drops below 72°C, the mechanism can only be reset in a motorised manner after a manual reset (with a battery).
- ⚠ The end of range switches need 1 second after operation to adopt a stable position.
- ⚠ Make sure the thermal trigger device is present in the actuator. The actuator might not function properly if this is not the case.

	prod. < 1/7/2015				prod. ≥ 1/7/2015			
	CR60(1s) CR120	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200	CR60(1s) CR120(1s)	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200
Kit ONE	●	●	●		●	●	●	●

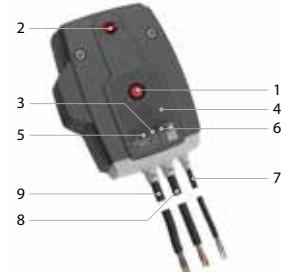
Operation and mechanisms



ONE-X Spring return actuator with integrated communication module.

The ONE-X is a spring return actuator with integrated communication module designed to simply operate Rf-t fire dampers of all sizes, automatically or remotely. The ONE-X is available in two versions: 24 V and 230 V.

1. unlocking button
2. blade position indicator
3. LED red: status
4. battery compartment
5. LED blue: communication
6. LED orange: error message
7. supply
8. bus cable



Options - at the time of order

ONE-X CN	Connectors for the bus cables and the power cable.
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Unlocking

- **manual unlocking:** shortly press the unlocking button (1) once.
- **automatic unlocking:** the fusible link reacts as soon as the temperature in the duct reaches 72°C.
- **remote unlocking:** via ZENiX controller

Resetting

- **manual resetting:** Open the battery compartment (4) and press a 9V battery against the contact springs. Hold this position until the red LED (3) emits a continuous light. Control whether the indicator (2) indicates that the damper blade is open. Remove the battery. Close the battery compartment.
- **motorised resetting:** via ZENiX controller. By applying voltage during first use.

Caution:

- ⚠ If the ONE-X detects voltage on the power cable, a brief contact of the battery is enough to start the resetting process, provided the ZENiX controller has sent the damper to open position or the ONE-X is being operated for the first time.
- ⚠ The power supply of this actuator cannot be individually replaced. If the cable is damaged, the whole unit must be discarded and replaced.
- ⚠ The housing of the mechanism contains a temperature sensor. When the temperature in the housing exceeds 72°C, the mechanism unlocks. The LED flashes twice per second. When the temperature drops below 72°C, the mechanism can only be reset in a motorised manner after a manual reset (with a battery).
- ⚠ The end of range switches need 1 second after operation to adopt a stable position.

Safety regulations:

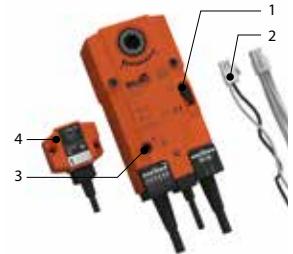
- ⚠ Do not use the ONE-X for any application other than the specified applications, in particular not in aircraft or other airborne vehicles.
- ⚠ The company that purchases and/or installs the ONE-X is fully responsible for the correct operation of the entire system. Only authorised specialists may perform the installation. All rules and regulations, including statutory regulations, must be observed during installation.
- ⚠ This device contains electrical or electronic components and must not be disposed of as household waste. All locally applicable regulations and requirements must be strictly observed.



BFL(T) Remotely controlled spring return actuator

The spring return actuator BFL(T) is specially designed to remotely control fire dampers. The BFL(T) model is intended for fire dampers with smaller dimensions ($\varnothing \leq 400$ mm or $W+H \leq 1200$ mm/1400 mm for CU-LT, CU-LT-1s).

1. locking button
2. plug (ST)
3. access for manual resetting
4. thermo-electric tripping device (T)



Options - at the time of order

SN2 BFL/BFN	Auxiliary limit switch 'open/closed'
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Unlocking

- **manual unlocking:** place the locking button on "unlock". (In case of BFLT: the damper can alternatively be unlocked by pushing the "test" button on the thermo-electric fuse)
- **automatic unlocking:** the thermo-electric fuse reacts as soon as the temperature reaches 72°C (type BFLT).
- **remote unlocking:** by interrupting the power supply.

Caution:

⚠ The thermo-electric fuse will not move the damper into its safety position (when the temperature reaches 72°C) if the motor is not powered.

Resetting

- **manual resetting:** turn the enclosed handle anti-clockwise. To block the motor, place the locking button on "lock"
- **motorised resetting:** switch off the power supply for at least 10 seconds. Supply the actuator (respect the prescribed voltage) for at least 75 seconds. The resetting stops automatically when the end of range is reached (damper open) - it takes about 60 seconds to reset the damper - or when the power supply is interrupted.

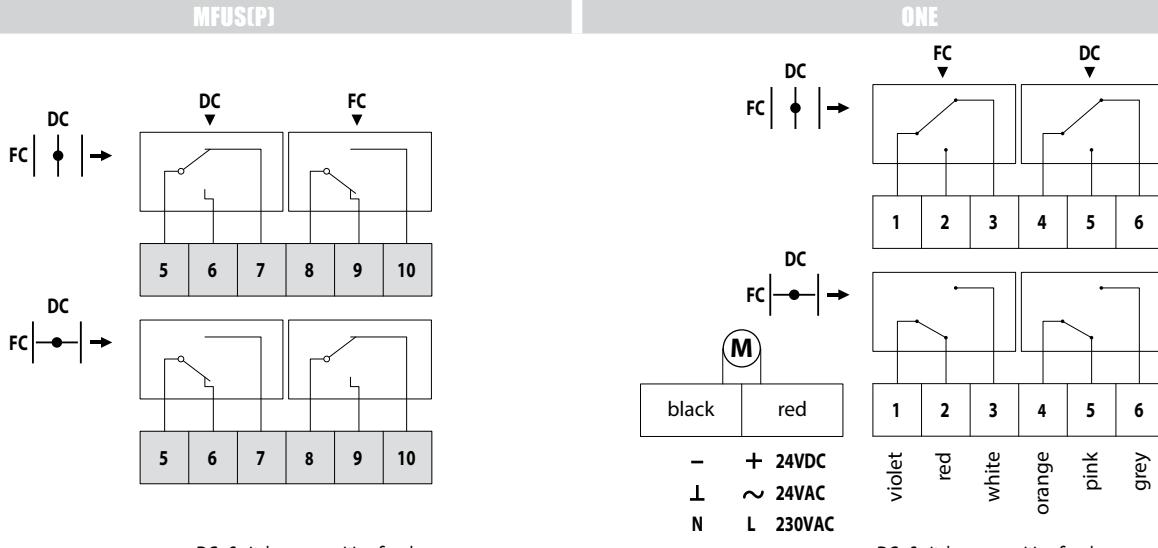
Caution:

⚠ Do not use a drill or powered screwdriver.
⚠ Stop as soon as the motor is completely rearmed (end of range).

	prod. < 1/7/2015				prod. ≥ 1/7/2015			
	CR60(1s) CR120	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200	CR60(1s) CR120 (1s)	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200
Kit BFL					●	●	●	
Kit BFN	●	●	●					●
Kit BF				●				

Electrical connection

Electrical connection



DC : Switch open position fire damper

FC : Switch closed position fire damper

DC

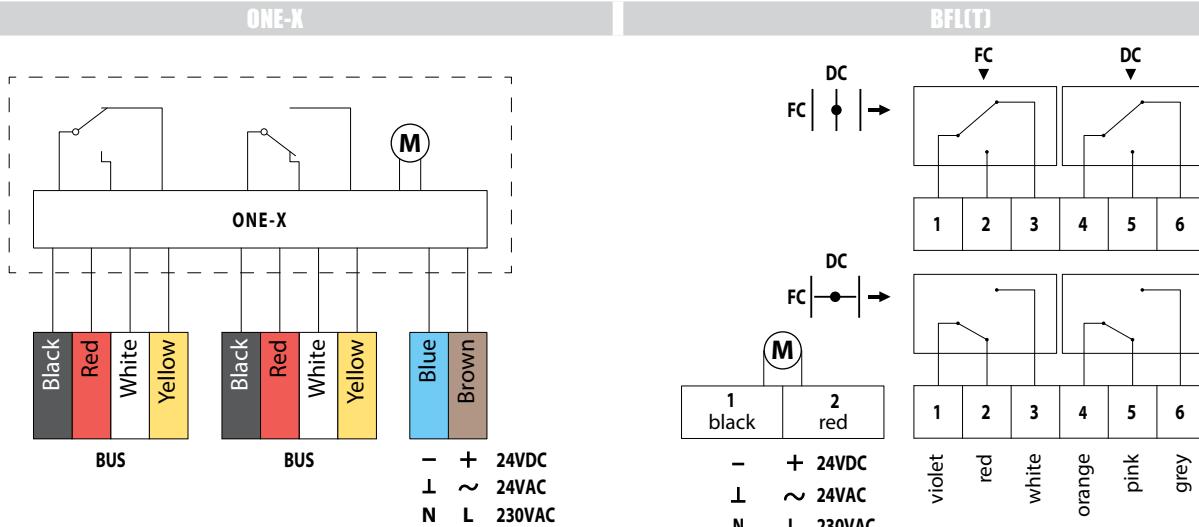
FC

DC

DC : Switch open position fire damper

FC : Switch closed position fire damper

MEC	Nominal voltage motor	Nominal voltage magnet	Power consumption (stand-by)	Power consumption (operating)	Standard switches
MFUSP	N/A	N/A	N/A	N/A	1mA...1A, DC 5V...AC 48V
ONET 24 FDCU	24 V AC/DC (-10/+20%)	N/A	0,28W	4,2W	1mA...1A 60V
ONET 230 FDCU	230 V AC (-15/+15%)	N/A	0,57W	4,2W	1mA...1A 60V
ONET 24 FDCU ST	24 V AC/DC (-10/+20%)	N/A	0,28W	4,2W	1mA...1A 60V
ONET 24 FDCB	24 V AC/DC (-10/+20%)	N/A	0,28W	4,2W	1mA...1A 60V
ONET 230 FDCB	230 V AC (-15/+15%)	N/A	0,57W	4,2W	1mA...1A 60V
ONE-X 24	24 V AC/DC (-10/+20%)	N/A	0,28W	4,2W	
ONE-X 230	230 V AC (-15/+15%)	N/A	0,57W	4,2W	
BFL24	24 V AC/DC	N/A	0,7W	2,5W	1mA...3A, AC 250V
BFL230	230 V AC	N/A	1,1W	3,5W	1mA...3A, AC 250V
BFL24-ST	24 V AC/DC	N/A	0,7W	2,5W	1mA...3A, AC 250V
BFLT24	24 V AC/DC	N/A	0,8W	2,5W	1mA...3A, AC 250V
BFLT230	230 V AC	N/A	1,4W	4W	1mA...3A, AC 250V
BFLT24-ST	24 V AC/DC	N/A	0,8W	2,5W	1mA...3A, AC 250V



DC : Switch open position fire damper
FC : Switch closed position fire damper

MEC	Resetting time motor	Running time spring	Noise level motor	Noise level spring	Cable supply / control	Cable auxiliary switch	Protection class
MFUSP	N/A	1 s	N/A	N/A			IP 42
ONET 24 FDCU	< 75 s (cabled) / <85 s (battery)	< 30 s	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm ²	1 m, 6 x 0.75 mm ²	IP 54
ONET 230 FDCU	< 75 s (cabled) / <85 s (battery)	< 30 s	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm ²	1 m, 6 x 0.75 mm ²	IP 54
ONET 24 FDCU ST	< 75 s (cabled) / <85 s (battery)	< 30 s	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm ²	1 m, 6 x 0.75 mm ²	IP 54
ONET 24 FDCA	< 75 s (cabled) / <85 s (battery)	< 30 s	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm ²	(2x) 1 m, 6 x 0.75 mm ²	IP 54
ONET 230 FDCA	< 75 s (cabled) / <85 s (battery)	< 30 s	< 64 dB (A)	< 67 dB (A)	1 m, 2 x 0.75 mm ²	(2x) 1 m, 6 x 0.75 mm ²	IP 54
ONE-X 24	< 75 s (cabled) / <85 s (battery)	< 30 s	< 64 dB (A)	< 67 dB (A)			IP 54
ONE-X 230	< 75 s (cabled) / <85 s (battery)	< 30 s	< 64 dB (A)	< 67 dB (A)			IP 54
BFL24	< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.34 mm ² (halogen-free)	1 m, 6 x 0.75 mm ² (halogen-free)	IP 54
BFL230	< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm ² (halogen-free)	1 m, 6 x 0.75 mm ² (halogen-free)	IP 54
BFL24-ST	< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm ² (halogen-free)	1 m, 6 x 0.75 mm ² (halogen-free)	IP 54
BFLT24	< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.34 mm ² (halogen-free)	1 m, 6 x 0.75 mm ² (halogen-free)	IP 54
BFLT230	< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm ² (halogen-free)	1 m, 6 x 0.75 mm ² (halogen-free)	IP 54
BFLT24-ST	< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm ² (halogen-free)	1 m, 6 x 0.75 mm ² (halogen-free)	IP 54

Weights

Weights

CU-LT + MFUSP

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 kg	3,6	4,0	4,4	4,7	5,1	5,5	5,9	6,2	6,6	7,0	7,3	7,7	8,1		
150 kg	4,1	4,5	5,0	5,4	5,8	6,2	6,7	7,1	7,5	8,0	8,4	8,8	9,2		
200 kg	4,6	5,1	5,6	6,0	6,5	7,0	7,5	8,0	8,5	8,9	9,4	9,9	10,4		
250 kg	5,1	5,6	6,1	6,7	7,2	7,8	8,3	8,8	9,4	9,9	10,5	11,0	11,5		
300 kg	5,6	6,1	6,7	7,3	7,9	8,5	9,1	9,7	10,3	10,9	11,5	12,1	12,7		
350 kg	6,0	6,7	7,3	8,0	8,6	9,3	9,9	10,6	11,2	11,9	12,5	13,2	13,8		
400 kg	6,5	7,2	7,9	8,6	9,3	10,1	10,8	11,5	12,2	12,9	13,6	14,3	15,0		
450 kg	7,0	7,8	8,5	9,3	10,1	10,8	11,6	12,3	13,1	13,9	14,6	15,4	16,2		
500 kg	7,5	8,3	9,1	9,9	10,8	11,6	12,4	13,2	14,0	14,8	15,7	16,5	17,3		
550 kg	8,0	8,8	9,7	10,6	11,5	12,3	13,2	14,1	15,0	15,8	16,7	17,6	18,5		
600 kg	8,5	9,4	10,3	11,2	12,2	13,1	14,0	15,0	15,9	16,8	17,7	18,7	19,6		

CU-LT + ONE (X)

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 kg	4,8	5,2	5,6	5,9	6,3	6,7	7,1	7,4	7,8	8,2	8,5	8,9	9,3		
150 kg	5,3	5,7	6,2	6,6	7,0	7,4	7,9	8,3	8,7	9,2	9,6	10,0	10,4		
200 kg	5,8	6,3	6,8	7,2	7,7	8,2	8,7	9,2	9,7	10,1	10,6	11,1	11,6		
250 kg	6,3	6,8	7,3	7,9	8,4	9,0	9,5	10,0	10,6	11,1	11,7	12,2	12,7		
300 kg	6,8	7,3	7,9	8,5	9,1	9,7	10,3	10,9	11,5	12,1	12,7	13,3	13,9		
350 kg	7,2	7,9	8,5	9,2	9,8	10,5	11,1	11,8	12,4	13,1	13,7	14,4	15,0		
400 kg	7,7	8,4	9,1	9,8	10,5	11,3	12,0	12,7	13,4	14,1	14,8	15,5	16,2		
450 kg	8,2	9,0	9,7	10,5	11,3	12,0	12,8	13,5	14,3	15,1	15,8	16,6	17,4		
500 kg	8,7	9,5	10,3	11,1	12,0	12,8	13,6	14,4	15,2	16,0	16,9	17,7	18,5		
550 kg	9,2	10,0	10,9	11,8	12,7	13,5	14,4	15,3	16,2	17,0	17,9	18,8	19,7		
600 kg	9,7	10,6	11,5	12,4	13,4	14,3	15,2	16,2	17,1	18,0	18,9	19,9	20,8		

CU-LT + BFL

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 kg	4,3	4,7	5,1	5,4	5,8	6,2	6,6	6,9	7,3	7,7	8,0	8,4	8,8		
150 kg	4,8	5,2	5,7	6,1	6,5	6,9	7,4	7,8	8,2	8,7	9,1	9,5	9,9		
200 kg	5,3	5,8	6,3	6,7	7,2	7,7	8,2	8,7	9,2	9,6	10,1	10,6	11,1		
250 kg	5,8	6,3	6,8	7,4	7,9	8,5	9,0	9,5	10,1	10,6	11,2	11,7	12,2		
300 kg	6,3	6,8	7,4	8,0	8,6	9,2	9,8	10,4	11,0	11,6	12,2	12,8	13,4		
350 kg	6,7	7,4	8,0	8,7	9,3	10,0	10,6	11,3	11,9	12,6	13,2	13,9	14,5		
400 kg	7,2	7,9	8,6	9,3	10,0	10,8	11,5	12,2	12,9	13,6	14,3	15,0	15,7		
450 kg	7,7	8,5	9,2	10,0	10,8	11,5	12,3	13,0	13,8	14,6	15,3	16,1	16,9		
500 kg	8,2	9,0	9,8	10,6	11,5	12,3	13,1	13,9	14,7	15,5	16,4	17,2	18,0		
550 kg	8,7	9,5	10,4	11,3	12,2	13,0	13,9	14,8	15,7	16,5	17,4	18,3	19,2		
600 kg	9,2	10,1	11,0	11,9	12,9	13,8	14,7	15,7	16,6	17,5	18,4	19,4	20,3		

CU-LT + BFLT

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 kg	4,4	4,8	5,2	5,5	5,9	6,3	6,7	7,0	7,4	7,8	8,1	8,5	8,9		
150 kg	4,9	5,3	5,8	6,2	6,6	7,0	7,5	7,9	8,3	8,8	9,2	9,6	10,0		
200 kg	5,4	5,9	6,4	6,8	7,3	7,8	8,3	8,8	9,3	9,7	10,2	10,7	11,2		
250 kg	5,9	6,4	6,9	7,5	8,0	8,6	9,1	9,6	10,2	10,7	11,3	11,8	12,3		
300 kg	6,4	6,9	7,5	8,1	8,7	9,3	9,9	10,5	11,1	11,7	12,3	12,9	13,5		
350 kg	6,8	7,5	8,1	8,8	9,4	10,1	10,7	11,4	12,0	12,7	13,3	14,0	14,6		
400 kg	7,3	8,0	8,7	9,4	10,1	10,9	11,6	12,3	13,0	13,7	14,4	15,1	15,8		
450 kg	7,8	8,6	9,3	10,1	10,9	11,6	12,4	13,1	13,9	14,7	15,4	16,2	17,0		
500 kg	8,3	9,1	9,9	10,7	11,6	12,4	13,2	14,0	14,8	15,6	16,5	17,3	18,1		
550 kg	8,8	9,6	10,5	11,4	12,3	13,1	14,0	14,9	15,8	16,6	17,5	18,4	19,3		
600 kg	9,3	10,2	11,1	12,0	13,0	13,9	14,8	15,8	16,7	17,6	18,5	19,5	20,4		

CU-LT-L500 + MFUSP

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 kg	4,4	4,9	5,4	5,9	6,4	6,9	7,4	7,9	8,3	8,8	9,3	9,8	10,3		
150 kg	5,0	5,5	6,1	6,6	7,2	7,7	8,3	8,8	9,4	10,0	10,5	11,1	11,6		
200 kg	5,6	6,2	6,8	7,4	8,0	8,6	9,2	9,8	10,5	11,1	11,7	12,3	12,9		
250 kg	6,2	6,9	7,5	8,2	8,9	9,5	10,2	10,8	11,5	12,2	12,8	13,5	14,2		
300 kg	6,8	7,5	8,2	9,0	9,7	10,4	11,1	11,8	12,6	13,3	14,0	14,7	15,4		
350 kg	7,4	8,2	9,0	9,7	10,5	11,3	12,1	12,8	13,6	14,4	15,2	15,9	16,7		
400 kg	8,0	8,9	9,7	10,5	11,3	12,2	13,0	13,8	14,7	15,5	16,3	17,2	18,0		
450 kg	8,6	9,5	10,4	11,3	12,2	13,1	14,0	14,8	15,7	16,6	17,5	18,4	19,3		
500 kg	9,2	10,2	11,1	12,1	13,0	14,0	14,9	15,8	16,8	17,7	18,7	19,6	20,5		
550 kg	9,8	10,8	11,8	12,8	13,8	14,8	15,8	16,8	17,8	18,8	19,8	20,8	21,8		
600 kg	10,5	11,5	12,6	13,6	14,7	15,7	16,8	17,8	18,9	19,9	21,0	22,0	23,1		

CU-LT-L500 + ONE (X)

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 kg	5,6	6,1	6,6	7,1	7,6	8,1	8,6	9,1	9,5	10,0	10,5	11,0	11,5		
150 kg	6,2	6,7	7,3	7,8	8,4	8,9	9,5	10,0	10,6	11,2	11,7	12,3	12,8		
200 kg	6,8	7,4	8,0	8,6	9,2	9,8	10,4	11,0	11,7	12,3	12,9	13,5	14,1		
250 kg	7,4	8,1	8,7	9,4	10,1	10,7	11,4	12,0	12,7	13,4	14,0	14,7	15,4		
300 kg	8,0	8,7	9,4	10,2	10,9	11,6	12,3	13,0	13,8	14,5	15,2	15,9	16,6		
350 kg	8,6	9,4	10,2	10,9	11,7	12,5	13,3	14,0	14,8	15,6	16,4	17,1	17,9		
400 kg	9,2	10,1	10,9	11,7	12,5	13,4	14,2	15,0	15,9	16,7	17,5	18,4	19,2		
450 kg	9,8	10,7	11,6	12,5	13,4	14,3	15,2	16,0	16,9	17,8	18,7	19,6	20,5		
500 kg	10,4	11,4	12,3	13,3	14,2	15,2	16,1	17,0	18,0	18,9	19,9	20,8	21,7		
550 kg	11,0	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0	20,0	21,0	22,0	23,0		
600 kg	11,7	12,7	13,8	14,8	15,9	16,9	18,0	19,0	20,1	21,1	22,2	23,2	24,3		

Selection data

CU-LT-L500 + BFL

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 kg	5,1	5,6	6,1	6,6	7,1	7,6	8,1	8,6	9,0	9,5	10,0	10,5	11,0		
150 kg	5,7	6,2	6,8	7,3	7,9	8,4	9,0	9,5	10,1	10,7	11,2	11,8	12,3		
200 kg	6,3	6,9	7,5	8,1	8,7	9,3	9,9	10,5	11,2	11,8	12,4	13,0	13,6		
250 kg	6,9	7,6	8,2	8,9	9,6	10,2	10,9	11,5	12,2	12,9	13,5	14,2	14,9		
300 kg	7,5	8,2	8,9	9,7	10,4	11,1	11,8	12,5	13,3	14,0	14,7	15,4	16,1		
350 kg	8,1	8,9	9,7	10,4	11,2	12,0	12,8	13,5	14,3	15,1	15,9	16,6	17,4		
400 kg	8,7	9,6	10,4	11,2	12,0	12,9	13,7	14,5	15,4	16,2	17,0	17,9	18,7		
450 kg	9,3	10,2	11,1	12,0	12,9	13,8	14,7	15,5	16,4	17,3	18,2	19,1	20,0		
500 kg	9,9	10,9	11,8	12,8	13,7	14,7	15,6	16,5	17,5	18,4	19,4	20,3	21,2		
550 kg	10,5	11,5	12,5	13,5	14,5	15,5	16,5	17,5	18,5	19,5	20,5	21,5	22,5		
600 kg	11,2	12,2	13,3	14,3	15,4	16,4	17,5	18,5	19,6	20,6	21,7	22,7	23,8		

CU-LT-L500 + BFLT

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 kg	5,2	5,7	6,2	6,7	7,2	7,7	8,2	8,7	9,1	9,6	10,1	10,6	11,1		
150 kg	5,8	6,3	6,9	7,4	8,0	8,5	9,1	9,6	10,2	10,8	11,3	11,9	12,4		
200 kg	6,4	7,0	7,6	8,2	8,8	9,4	10,0	10,6	11,3	11,9	12,5	13,1	13,7		
250 kg	7,0	7,7	8,3	9,0	9,7	10,3	11,0	11,6	12,3	13,0	13,6	14,3	15,0		
300 kg	7,6	8,3	9,0	9,8	10,5	11,2	11,9	12,6	13,4	14,1	14,8	15,5	16,2		
350 kg	8,2	9,0	9,8	10,5	11,3	12,1	12,9	13,6	14,4	15,2	16,0	16,7	17,5		
400 kg	8,8	9,7	10,5	11,3	12,1	13,0	13,8	14,6	15,5	16,3	17,1	18,0	18,8		
450 kg	9,4	10,3	11,2	12,1	13,0	13,9	14,8	15,6	16,5	17,4	18,3	19,2	20,1		
500 kg	10,0	11,0	11,9	12,9	13,8	14,8	15,7	16,6	17,6	18,5	19,5	20,4	21,3		
550 kg	10,6	11,6	12,6	13,6	14,6	15,6	16,6	17,6	18,6	19,6	20,6	21,6	22,6		
600 kg	11,3	12,3	13,4	14,4	15,5	16,5	17,6	18,6	19,7	20,7	21,8	22,8	23,9		

Selection data

$$\Delta p \text{ [Pa]} = \zeta^* v^2 * 0,6$$

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800		
100 $\zeta [-]$	1,69	1,65	1,62	1,60	1,59	1,58	1,57	1,56	1,55	1,55	1,54	1,54	1,54		
150 $\zeta [-]$	0,98	0,93	0,89	0,87	0,85	0,83	0,82	0,81	0,80	0,80	0,79	0,79	0,78		
200 $\zeta [-]$	0,69	0,63	0,60	0,57	0,55	0,54	0,52	0,51	0,51	0,50	0,49	0,49	0,49		
250 $\zeta [-]$	0,54	0,48	0,44	0,42	0,40	0,39	0,37	0,37	0,36	0,35	0,35	0,34	0,34		
300 $\zeta [-]$	0,45	0,39	0,35	0,33	0,31	0,30	0,29	0,28	0,27	0,26	0,26	0,26	0,25		
350 $\zeta [-]$	0,39	0,33	0,30	0,27	0,25	0,24	0,23	0,22	0,22	0,21	0,21	0,20	0,20		
400 $\zeta [-]$	0,34	0,29	0,26	0,23	0,22	0,20	0,19	0,18	0,18	0,17	0,17	0,16	0,16		
450 $\zeta [-]$	0,31	0,26	0,23	0,20	0,19	0,17	0,16	0,16	0,15	0,15	0,14	0,14	0,13		
500 $\zeta [-]$	0,29	0,24	0,20	0,18	0,17	0,15	0,14	0,14	0,13	0,13	0,12	0,12	0,12		
550 $\zeta [-]$	0,27	0,22	0,19	0,16	0,15	0,14	0,13	0,12	0,12	0,11	0,11	0,10	0,10		
600 $\zeta [-]$	0,25	0,20	0,17	0,15	0,14	0,12	0,12	0,11	0,10	0,10	0,10	0,09	0,09		

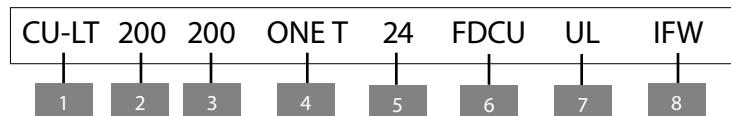
Correction factor ΔL

Correction factor ΔL

To obtain the sound power level for the octave midband: $LW_{oct} = \Delta L + L_{wa}$

[Hz]	63	125	250	500	1000	2000	4000	8000
2 - 4 m/s	22	9	-2	-11	-18	-21	-17	-8
6 - 8 m/s	17	10	1	-4	-8	-13	-19	-21
10 - 12 m/s	15	9	0	-4	-7	-10	-14	-20

Sample order



1. product
2. width
3. height
4. mechanism type
5. option: type voltage
6. option: uni/bipolar switches
7. option: inspection shutter
8. option: installation kit for flexible wall IFW

Approvals and certificates

All our dampers are submitted to a number of tests by official test institutes. Reports of these tests form the basis for the approvals of our dampers.



BCCA-0749-CPR-BC1-606-0464-15650.05-0464



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W-336769-20-Zd

The NF-label guarantees: conformity with the standard NF S 61-937 Parts 1 and 5: "Systèmes de Sécurité Incendie Dispositifs Actionnés de Sécurité"; conformity with the national decree of March 22, 2004, changed on 14 March 2011 for the classification of fire resistance; the values of the characteristics mentioned in this document. Organisme Certificateur: AFNOR Certification, 11 Rue Francis de Pressensé, F93571 La Plaine Saint-Denis Cedex; Website: <http://www.afnor.org> <http://www.marque-nf.com>; Phone: +33 (0)1.41.62.80.00, Fax: +33 (0)1.49.17.90.00, Email: certification@afnor.org