

7/S1
v 3.3 (en)

FIRE DAMPER

FD25/40, FDC25/40





FIRE DAMPER FDC25/40

- Used for the isolation of duct penetrations between fire compartments
- Fire dampers consist of housing, fire-resistant damper blade and release mechanism
- Casing made of galvanized sheet steel, damper blade made of special insulating material, damper blade shaft and push rod made of galvanized steel, bearings made of brass, seals made of polyurethane and elastomer
- Closed blade air leakage according to EN 1751, class 2
- Casing air leakage to EN 1751, class C
- Fire damper can be equipped with thermic fuse with 72°C or for warm air ventilation systems 95°C release temperature
- Fire damper casing is manufactured from galvanized steel, but on demand can be made from:

- Galvanized steel and powder coated
- Stainless steel
- Stainless steel and powder coated
- Fire damper for areas with potentially explosive atmospheres are also available (for additional information see FD-Ex catalog)

Dimensions

Ø _n [mm]	FDC25						FDC40							
	100	125	160	200	250	300	315	355	400	450	500	630	710	800
	Applique compatible dimensions													

FIRE CLASSIFICATION (according to EN 13501-3)

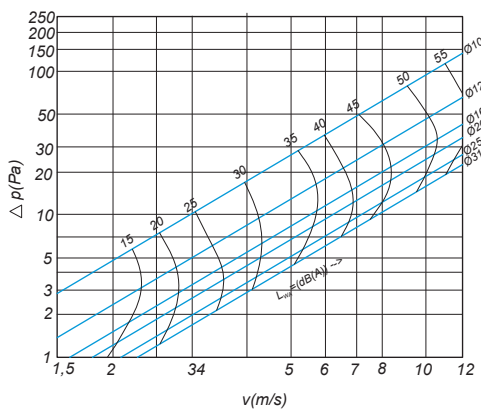
Fire resistance of fire damper depends on classification of walls or ceilings. It is allowed to install products to walls or ceilings only according to products Declaration of Performance. Walls or ceilings with greater fire resistance can also be used. Fire damper should be installed according installation manual which can be found within this document.

Please consult latest Declaration of Performance on our website: www.klimaoprema.hr

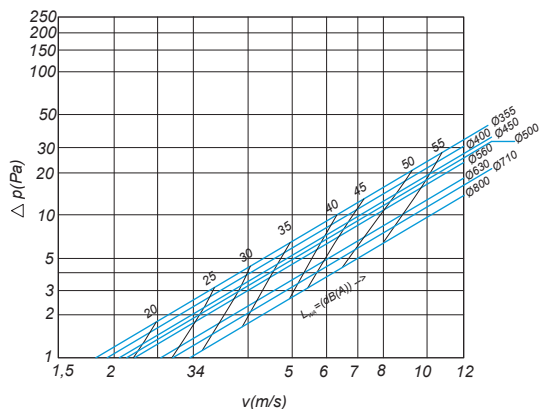
SELECTION DIAGRAM

Symbol:

- v - air velocity in the duct [m/s]
- Δp_t - total pressure loss [Pa]
- L_{WA} - sound power level [dB(A)]



FDC25



FDC40

ORDERING KEY

Damper type: FDC25 FDC40 **FDC25 - Applique - Ø250 - M230-S**

Applique

Damper dimensions

Ø [mm]

Mechanism type:

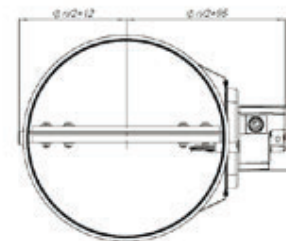
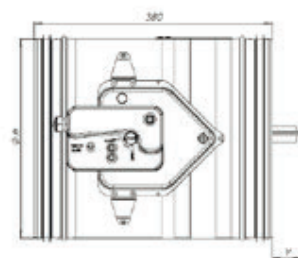
- R** - manual drive
- R-S** - manual drive with limit switches
- M230-S** - electric actuator AC230V
- M24-S** - electric actuator AC/DC 24V
- M24-S-ST** - electric actuator AC/DC 24V with connection plug
- EMS-S** - electromagnetic drive, permanent
- EMP-S** - electromagnetic drive, interruptive

* Applique is compatible up to dimension Ø315 and damper size 25 mm

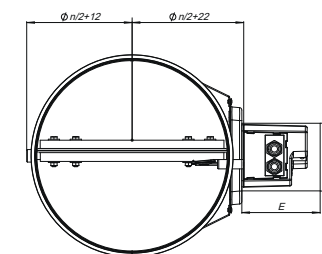
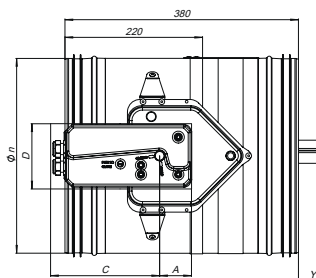
DAMPER MODELS

FDC25 / FDC40 -R (manual mechanism)

- automatic closure when the temperature in the duct exceed 72°C
- manual rearmation with handle
- manual unlocking possible for periodical test of fire damper



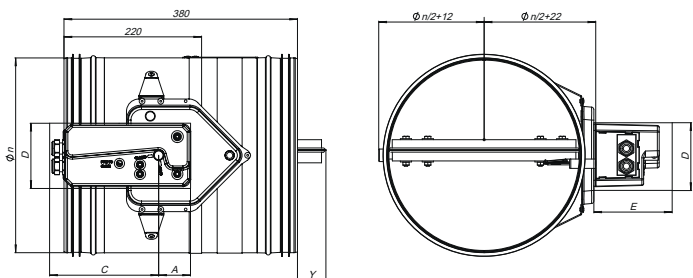
FDC25



FDC40

FDC25 / FDC40 -EMS/EMP (solenoid actuator)

- spring return actuator with integrated limit switches and thermoelectric release mechanism (72°C)
- manual rearmation with handle
- possible closing with solenoid
- manual closing possible

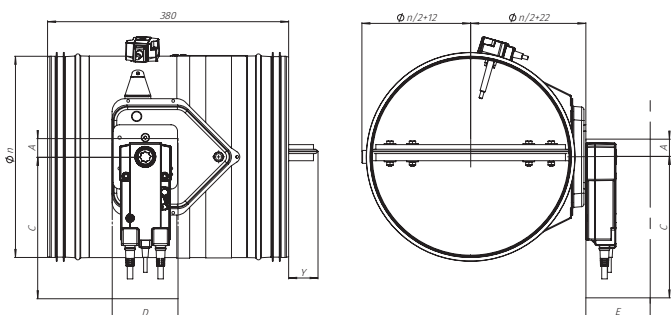


FDC25 / FDC40 -M (electric actuator)

- Thermoelectric activation (72°C) with electric actuator and return spring
- Integrated end switches
- Fully automatic operation

Options:

- M230 – electric actuator AC 230V
- M24 – electric actuator AC/DC 24V



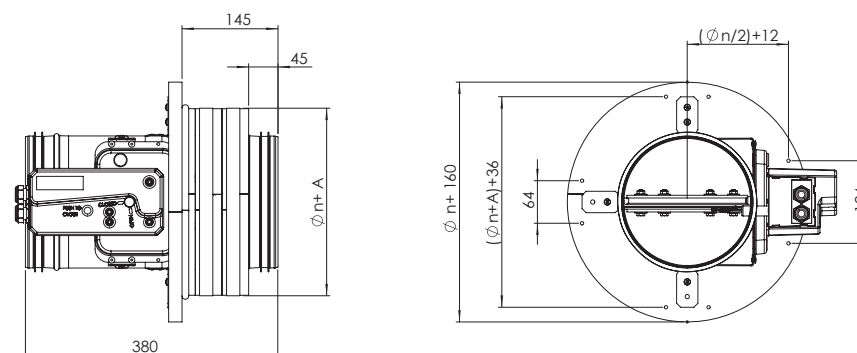
Length of damper blade outside of casing (Y dimension on front side and X dimension on back side)

$X = (Dn/2) - 270$ (mm)
 $Y = (Dn/2) - 110$ (mm)

Product		A	C	D	E
Belimo	BFL (M)	25	200	90	120
	BFN (M)	25	225	100	120
	BF (M)*	50	250	100	120
Klimaoprema	-R (FD25 / FDC 25)	55	150	105	150
	-R (FD 40 & FDC 40)*	55	200	105	200
	-EMS/EMP (FD 25/40 & FDC 25/40)	55	200	105	200

* Not compatible with Applique

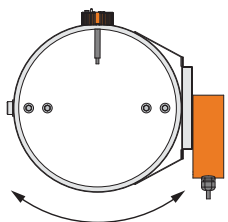
Applique dimensions



	A
Øn = 100	105
Øn = 125-180	95
Øn = 200-315	80

All installation opportunities are valid for:

- Installation onto duct in any shaft axis angle position



- Airflow and fire protection in both sides

INSTALLATION AND IMPLEMENTATION

INSTALLATION:

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

The FDC25 / FDC40 fire damper is always tested in standardized support frames (both in a concrete wall and in a flexible wall) in accordance with EN 1366-2: 1999 table 3/4/5. The results obtained are valid for all similar support frames which have a thickness and / or density and / or fire resistance similar or greater than the one of the test.

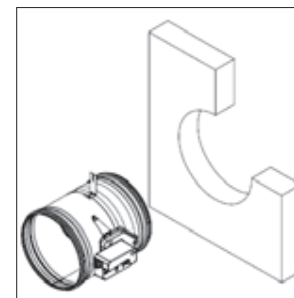
Examples of similar constructions:

Aerated concrete wall 100 mm + density 550 kg/m ³ + fire resistance ≤ 120'	Wall made of hollow or solid bricks, reinforced concrete, cellular concrete, light concrete, ... + Fire resistance ≥ 120'
Cellular concrete slab 100 mm + density 550 kg/m ³ + fire resistance 90'	Concrete parts, pre-stressed concrete, reinforced concrete, cellular concrete ... + fire resistance ≥ 120'

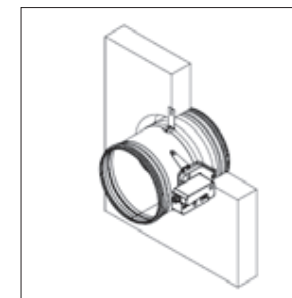
INSTALLATIONS AND SEALING:

Concrete wall and reinforced concrete wall installation

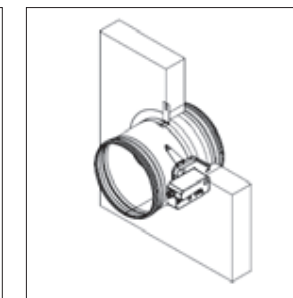
The wall is composed of concrete blocks (minimum density of 550 kg/m³) and with a minimum thickness of 100 mm.



Place the damper in an opening of $\varnothing + 70$ mm or more



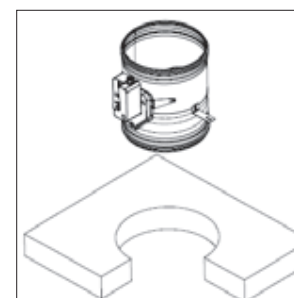
Fix the damper to the wall using screws



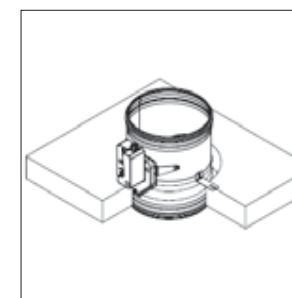
Fill the space between the damper and the wall with mortar

Aerated concrete ceiling installation and reinforced concrete ceiling installation

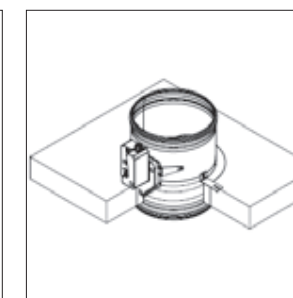
The ceiling is made of aerated concrete with a minimum density of 550 kg/m³ and a minimum thickness of 100 mm.



Place the damper in an opening of $\varnothing + 70$ mm or more



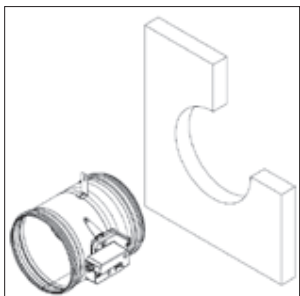
Fix the damper to the slab using screws



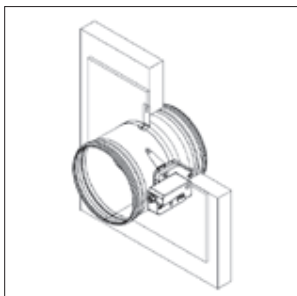
Fill the space between the damper and the slab with mortar

Gypsum blocks wall mounting 70mm

The wall is composed of gypsum blocks (minimum density of 995kg/m³), and with minimum thickness of 70mm.



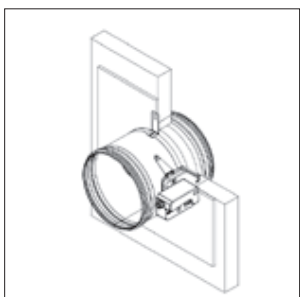
Place the damper in an opening of $\varnothing + 70$ mm or more



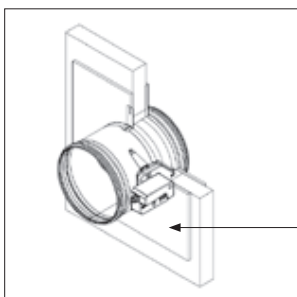
Fix damper and GKF gypsum boards (12,5mm thick) to wall with screws

Diameter of the damper (mm)	Mounting kit
100	60061429
125	60061430
160	60061431
200	60061432
250	60061433
315	60061435
355	60061436
400	60061437
450	60061438
500	60061439
560	60061440
630	60061441
710	60061442
800	60061443

* The Kit is universal for all dimensions and must be cut to fit the specific dimensions of the damper



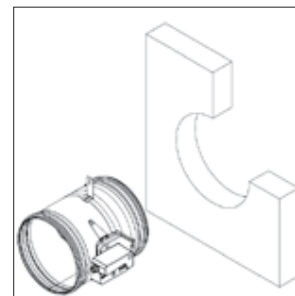
Fill the space between the damper and the wall with mortar



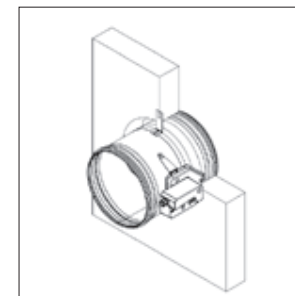
Cover the mortar with GKF gypsum boards (12,5 mm thick)

Gypsum blocks wall mounting 100mm

The wall is composed of gypsum blocks (minimum density of 995kg/m³), and with minimum thickness of 100mm.



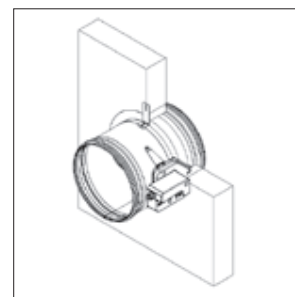
Place the damper in an opening of $\varnothing + 70$ mm or more



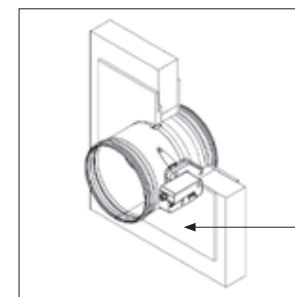
Fix the damper to the wall using screws

Diameter of the damper (mm)	Mounting kit
100	60061429
125	60061430
160	60061431
200	60061432
250	60061433
315	60061435
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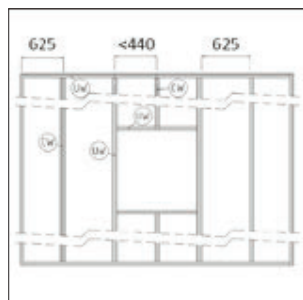
Fill the space between the damper and the wall with mortar



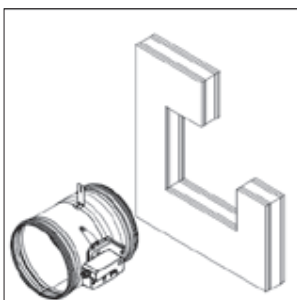
Cover the mortar with GKF gypsum boards (12,5 mm thick)

Flexible wall mounting

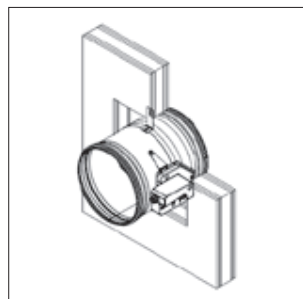
The wall is composed of 2x2 GKF plates, 12,5 mm thick, installed on a 48 mm wide steel construction. The interior of the wall is filled with mineral wool of 100 kg / m3 density.



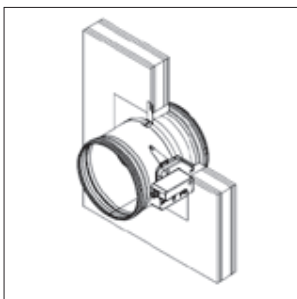
Realization of the steel construction



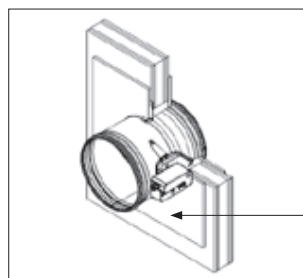
Place the damper in an opening of $\varnothing + 70$ mm or more



Fix the damper to the wall using screws



Fill the space between the damper and the wall with mineral wool (100 kg/m3 of density)



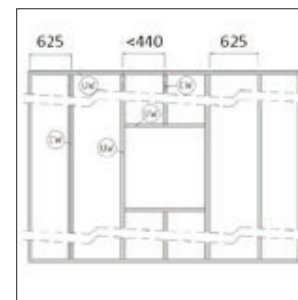
Cover the mineral wool with GKF gypsum boards (12,5 mm thick)

Diameter of the damper (mm)	Mounting kit
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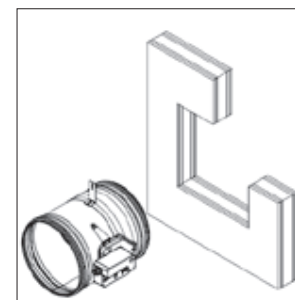
* The Kit is universal for all dimensions and must be cut to fit the specific dimensions of the damper

Flexible wall mounting

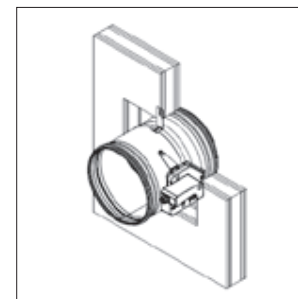
The wall is composed of 2x2 GKF plates (example PROMATECT 100, 12,5 mm thick), installed on a steel construction of 48 mm width.



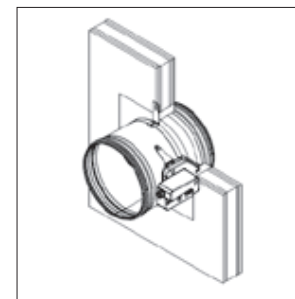
Realization of the steel construction



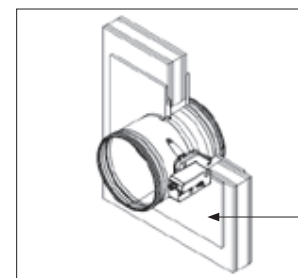
Place the damper in an opening of $\varnothing + 70$ mm or more



Fix the damper to the wall using screws



Fill the space between the damper and the wall with mortar



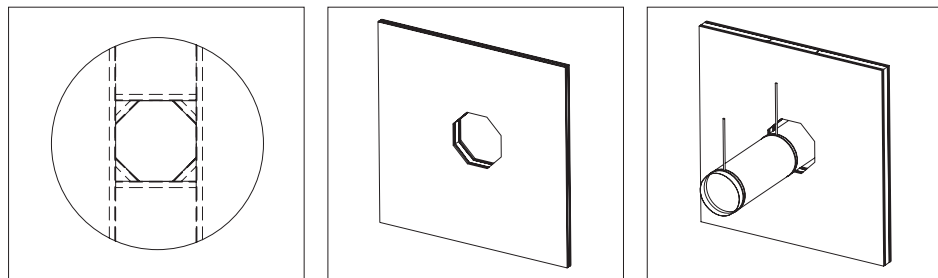
Cover the mortar with GKF gypsum boards (12,5 mm thick)

Diameter of the damper (mm)	Mounting kit
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560	60061440
630	60061441
710	60061442
800	60061443

* The Kit is universal for all dimensions and must be cut to fit the specific dimensions of the damper

Installation remote from flexible/rigid wall

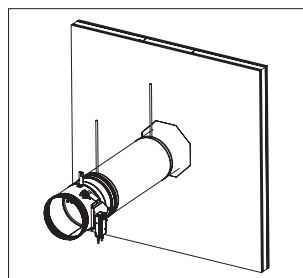
The wall is composed of 2x2 GFK plates, 12.5 mm thick, installed on a 48 mm wide steel construction. The interior of the wall is filled with mineral wool of 100 kg / m³ density.



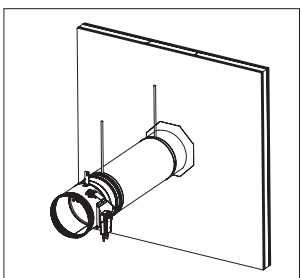
Arrangement of steel profiles.

Recommended wall opening is $\varnothing n + 70\text{mm}$ (wall cover with gypsum plates)

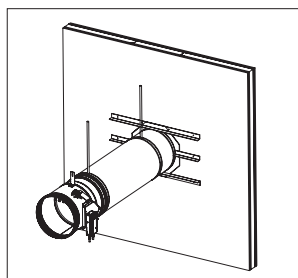
Place ventilation duct trough wall



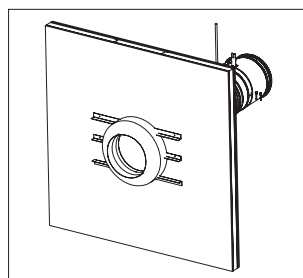
Install fire damper and secure it with self-tapping screws 4,3x10 to duct



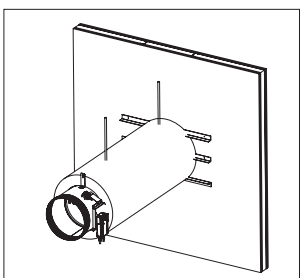
Fill space between duct and wall with mineral wool (Isover U protect). Additionally paint wool with Isover BSF in thickness of 1mm



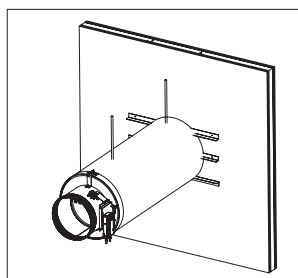
Close installation with L profiles 30x30x3mm. Additionally fix profiles to duct with self-tapping screws, and screw them to wall with 4,5x50 screws.



Repeat the same procedure on the other side. Place the wool on ventilation duct in length of 80m.



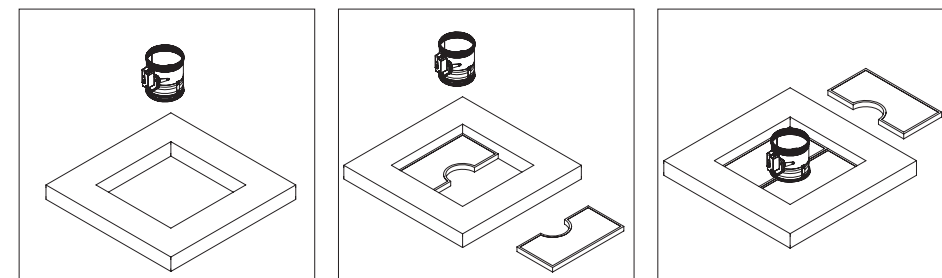
On connection wool-wall apply glue Isover BSK in thickness of 2mm.



Additionally place steel protection on place where insulation on damper ends.

Installation in ceiling (Weichschott)

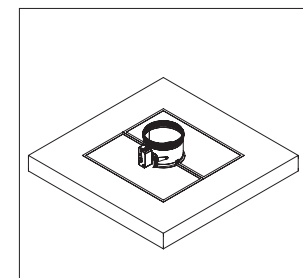
Installation material: Fire damper FDC, Mineral wool > 140kg/m³, Fire protection coating, (HILTI weichschott system)



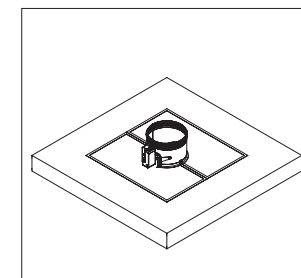
Recommended ceiling opening for fire damper installation is $\varnothing + 400\text{mm}$, but openings from $\varnothing + 80 \dots 600\text{ mm}$ can also be used

Insert fire damper into ceiling
Damper blade must be closed during installation!

Space between casing and ceiling close with three layers of mineral wool (density 140 kg/m³ or more, coated on one side)



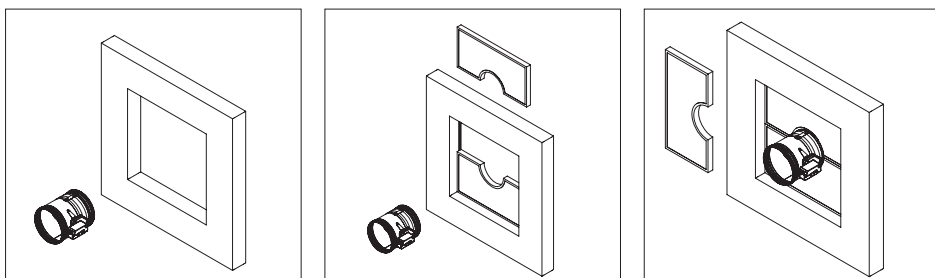
Connections of mineral wool should be sealed with intumescent fire resistant sealant. Mineral wool and damper casing must be coated with 2 mm thick fire protection coating



Cut additional 50 mm thick rings to cover fire damper perimeter from both sides

Installation in flexible wall (Weichschott)

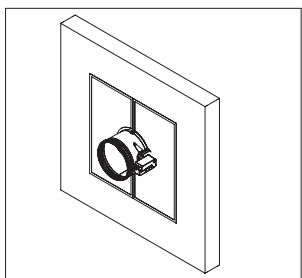
Installation material: Fire damper FDC, Mineral wool > 140kg/m³, Fire protection coating, (HILTI weichschott system)



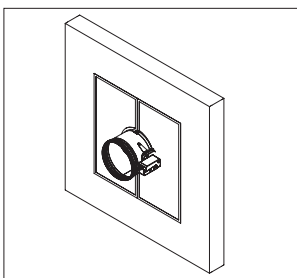
Recommended wall opening for fire damper installation is $\varnothing + 400\text{mm}$, but openings from $\varnothing + 80 \dots 600\text{ mm}$ can also be used

Insert fire damper into wall
Damper blade must be closed during installation!

Space between casing and wall close with three layers of mineral wool (density 140 kg/m³ or more, coated on one side)



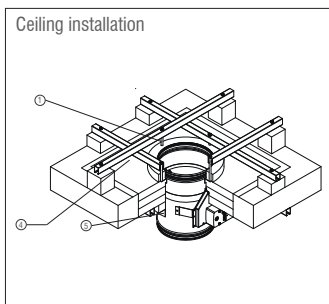
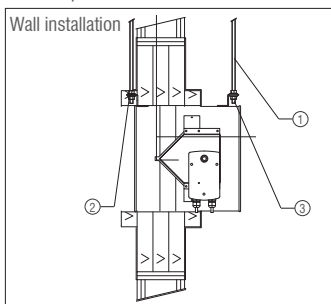
Connections of mineral wool seal with intumescent fire resistant sealant. Mineral wool and damper casing must be coated with 2 mm thick fire protection coating



Cut additional 50 mm thick rings to cover fire damper perimeter from both sides

Suspension for mortarless installation

Suspension systems are required for the dry mortarless installation of the fire damper with mineral wool in solid walls, flexible walls and ceiling slabs. Fire dampers can be suspended from solid ceiling slabs using adequately sized threaded rods. Load the suspension system only with the weight of the fire damper. Ducts must be suspended separately. Suspension systems longer than 1.5 m require fire-resistant insulation.

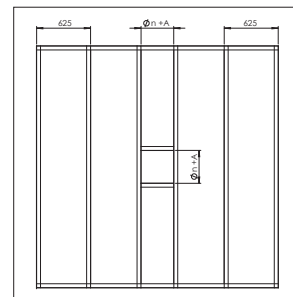


- ① Threaded rod (M10), galvanized steel
- ② Washer, galvanized steel
- ③ Nut, galvanized steel
- ④ Bracket, 45x30x1,5 mm, galvanized steel
- ⑤ L shaped profile (50x50x1) secured with self tapping screw to damper housing

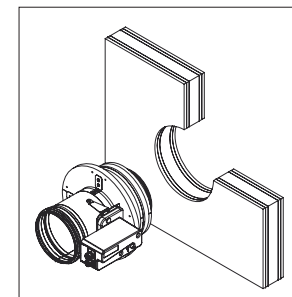
INSTALLATIONS AND SEALING FOR APPLIQUE:

Concrete wall and reinforced concrete wall installation

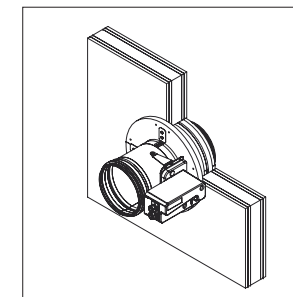
The wall is composed of 2x2 GKF plates, 12.5 mm thick, installed on a 48 mm wide steel construction. The interior of the wall is filled with mineral wool of 100 kg / m³ density.



Arrangement of steel profiles.



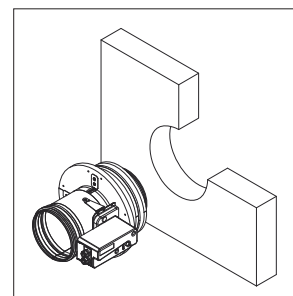
Installation hole is $\varnothing n + A + 10\text{ mm}$



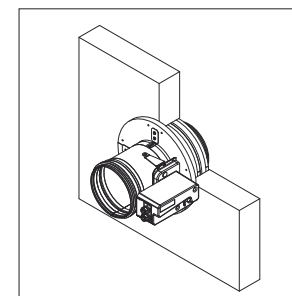
Insert fire damper into wall and fasten with screws (8 pcs, 4.8x60 mm)

Flexible wall installation

The wall is made of aerated concrete with a minimum density of 550 kg/m³ and a minimum thickness of 100 mm.



Installation hole is $\varnothing n + A + 10\text{ mm}$ (max)



Insert fire damper into wall and fasten with screws (8 pcs, 4.8x60 mm)