FIREFIGHTING SYSTEMS
FIREFIGHTING SYSTEMS

FIREFIGHTING SYSTEMS

CF - FD - SV - CI SERIES

CFDM	Fire damper
CFDM-V	Fire damper with dish valve
FDMB	Fire damper
FDMR	Fire damper
SV	Rectangular fire rated intumescent air transfer grilles
SVC	Circular fire rated intumescent air transfer grilles
CI	Intumescent collar

SAMOVENT®
TECHNIK

DIFUSIÓN Y VENTILACIÓN

SAMOVENT®
TECHNIK

CFDM

CFDM-V

FDMR

FDMB

SV
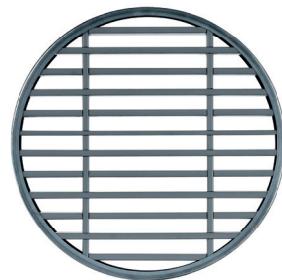
SVC

CI

CF SERIES
CFDM - CFDM-V
FIRE DAMPER
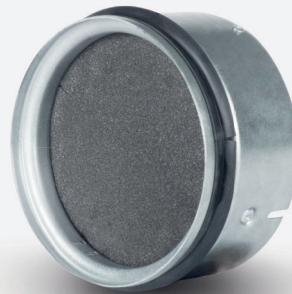
Model **CFDM.**   Fire damper. Model EI60, EI90, EI120.
Model **CFDM-V.**   Fire damper with dish valve. Model EI60, EI90, EI120.

The CFDM Fire Dampers are shutters in the duct systems of air conditioning devices, which prevent the spread of combustion and fire products from one segment to another by closing the air duct at the points of the fire separation constructions. Both in horizontal as well as vertical, depending on the model.

Characteristics:
Mechanically operated damper.
CE certified acc. to EN 15650.
Tested in accordance with EN 1366-2 .
Classified acc. to EN 13501-3+A1.
Fire resistance EI60, EI90, EI120.
Internal leakage class 2 acc. to EN 1751.
Corrosion resistant acc. to EN 15650.

Working conditions:
Maximum air circulation speed: 12 m.s. Maximum pressure difference: 1500 Pa.

The air circulation in the whole damper section must be secured as steady on whole   surface.

Operation of the damper does not depend on the direction of air circulation. Dampers are suitable for ventilation systems, where air does not content any abrasive, chemical or adhesive particles.

Designed for macroclimatic areas with mild climate according to EN 60 621-3-3. Temperature in the place of installation is can go from -30°C to +50°C.

CFDM

ØD	C
100	15,5
125	28
160	45,5
200	72,5
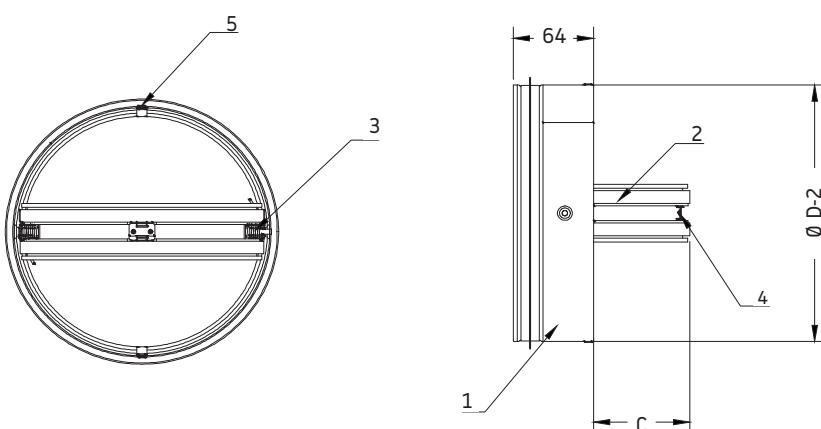
CFDM-V

1. Damper casing
2. Damper blade
3. Shutting spring
4. Thermal fuse
5. C-Clip

FIREFIGHTING SYSTEMS
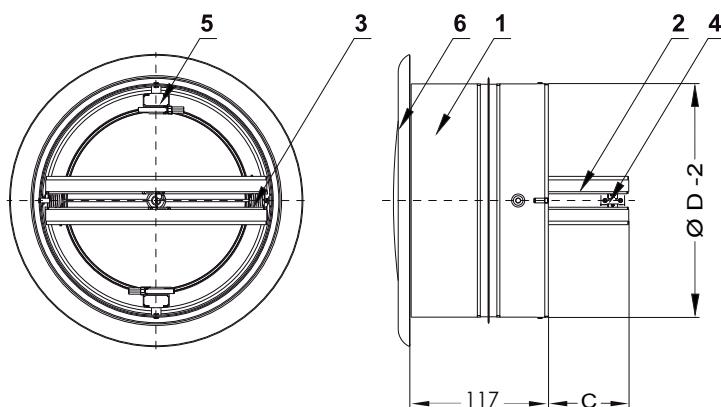
CF SERIES
CFDM - CFDM-V
FIRE DAMPER

Model **CFDM - CFDM-V**
.01 Thermal with internal mechanical control.
.11 Thermal with internal mechanical control and limit switch.
.15 Thermal with internal mechanical control and two limit switches.

CFDM
Dimensions of the installation duct opening
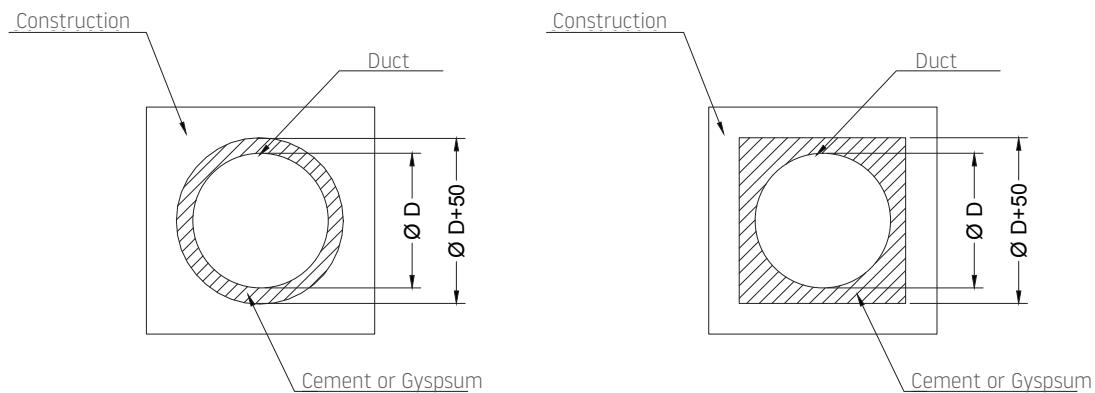
CFDM
Distribution between fire dampers
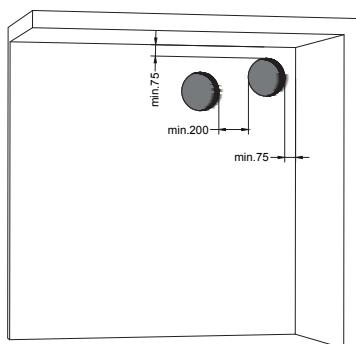
CFDM
Damper clasification

Fire separating construction	Fire resistance
Solid ceiling construction **min. 110 mm Concrete** **min. 125 mm Aerated Concrete**	EI 90 (h_o - i←→o) S EI 60 (h_o - i←→o) S
Solid wall construction. **min. 100 mm**	EI 120 (v_e - i←→o) S EI 90 (v_e - i←→o) S EI 60 (v_e - i←→o) S
Gypsum wall construction. **100 mm**	EI 120 (v_e - i←→o) S EI 90 (v_e - i←→o) S EI 60 (v_e - i←→o) S

1. Fire damper
2. Solid ceiling construction
3. Solid wall construction
4. Gypsum wall construction
5. Mortar or gypsum
6. Duct
7. Mineral rock wool with fire protection coating
8. Dish valve

Solid ceiling construction
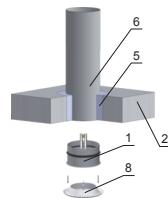
Solid wall construction
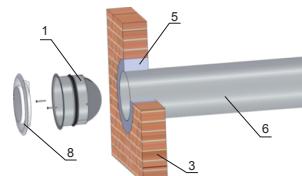
Gypsum wall construction
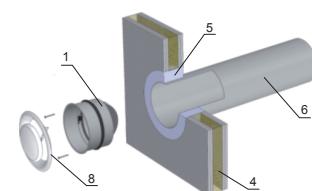
CF SERIES
CFDM - CFDM-V
SELECTION TABLE

Q (m³/h) (l/s)	Diameter mm.	100	125	160	200
	Ak	0,0027	0,0056	0,0115	0,0206
100 27,8	Vk(m/s) Pt(Pa) LwA	10,3 117 58	5,0 16 44		
150 41,7	Vk(m/s) Pt(Pa) LwA	15,4 262 65	7,4 36 50		
200 55,6	Vk(m/s) Pt(Pa) LwA		9,9 64 55	4,8 10 43	
250 69,4	Vk(m/s) Pt(Pa) LwA		12,4 100 59	6,0 16 46	
300 83,3	Vk(m/s) Pt(Pa) LwA			7,2 23 50	4,0 4 39
350 97,2	Vk(m/s) Pt(Pa) LwA			8,5 32 52	4,7 6 42
400 111,1	Vk(m/s) Pt(Pa) LwA			9,7 42 55	5,4 7 44
450 125,0	Vk(m/s) Pt(Pa) LwA			10,9 53 57	6,1 9 47
500 138,9	Vk(m/s) Pt(Pa) LwA			12,1 65 59	6,7 11 48
550 152,8	Vk(m/s) Pt(Pa) LwA			13,3 78 60	7,4 14 50
600 166,7	Vk(m/s) Pt(Pa) LwA			14,5 93 62	8,1 16 52
650 180,6	Vk(m/s) Pt(Pa) LwA				8,8 19 53
700 194,4	Vk(m/s) Pt(Pa) LwA				9,4 22 55

SAMOVENT®
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FD SERIES
FDMR
FIRE DAMPER

Model **FDMR.** FDMR series circular fire dampers function as separators between two fire sectors. They can be installed in both vertical and horizontal walls. They have a perimeter weatherstrip at both ends to ensure the airtightness between the damper and the air ducts.

Characteristics:

• Classification EI120

  (E) Integrity

  (I) Isolation

  (ho) Application in forged ceiling construction. Mounting in horizontal wall.

  (Ve) Application in wall or flexible wall. Mounting on vertical wall.

  (i←→o) Symmetrical (regardless of the direction of the air). Suitable for fire in both directions

  (S) Smoke tightness. For cold and hot fumes.

• Certified according to EN 15650 (Building ventilation - Fire dampers)

• Classified according to EN 13501-3 +A1 (Classification based on data obtained from fire resistance tests of products and elements used in building service installations: fire resistant ducts and dampers)

• Tested according to EN 1366-2 (Fire resistance testing of service installations - Part 2: Fire dampers)

• Tightness of the damper according to EN 1751:

  Damper: Diameter 200 Class 3. Rest of diameters Class 2.

  Case: minimum class C.

• Maximum speed with open damper 12 m.s.

• Maximum pressure difference 1500 Pa.

• It has an inspection hole for access to the interior of the damper.

• The temperature at the installation site is permitted in the range of - 30 to + 50.

Dimensions:
ø100 mm to ø800 mm

Models:

FDMR.01 Manual operation and thermal outside of the damper with protection case.

FDMR.40 Electric servomotor 230 v. AC with return spring Belimo BFL 230-T with two auxiliary contactors

FDMR.50 Electric servomotor 24 v. AC/DC with return sprng Belimo BFL 24-T with two auxiliary contactors.

FD SERIES
FDMR
TECHNICAL DATA

Size øD	a	c	Weight [kg] Control mechanism		Area effective [m²]	Sheet th.	Motor with spring return	Mechanical control
			Manual	Motorized				
FDMR 100	-	-	2.9	3.1	0.0031	20	BFL	M1
FDMR 125	-	-	3.2	3.4	0.0062	20	BFL	M1
FDMR 140	-	-	3.3	3.5	0.0085	20	BFL	M1
FDMR 150	-	-	3.5	3.7	0.0103	20	BFL	M1
FDMR 160	-	-	3.6	3.8	0.0123	20	BFL	M1
FDMR 180	-	-	4.0	4.2	0.0166	20	BFL	M1
FDMR 200	-	-	4.3	4.5	0.0215	20	BFL	M1
FDMR 225	-	-	4.8	5.0	0.0275	25	BFL	M1
FDMR 250	-	9	5.1	5.3	0.0354	25	BFL	M2
FDMR 280	-	24	5.7	5.9	0.0462	25	BFL	M2
FDMR 315	-	42	6.5	6.7	0.0606	25	BFL	M2
FDMR 355	-	62	8.2	8.3	0.0776	30	BFL	M2
FDMR 400	-	84	9.3	9.4	0.1015	30	BFL	M2
FDMR 450	-	109	10.4	10.8	0.1318	30	BFN	M3
FDMR 500	-	134	11.7	12.1	0.1661	30	BFN	M3
FDMR 560	-	164	13.4	13.8	0.2123	30	BFN	M3
FDMR 630	19	199	15.5	17.7	0.2735	30	BF	M4
FDMR 710	59	239	27	29.2	0,3446	40	BF	M4
FDMR 800	104	284	32.4	34.6	0,4448	40	BF	M5

FDMR
Dumper flap overlapping
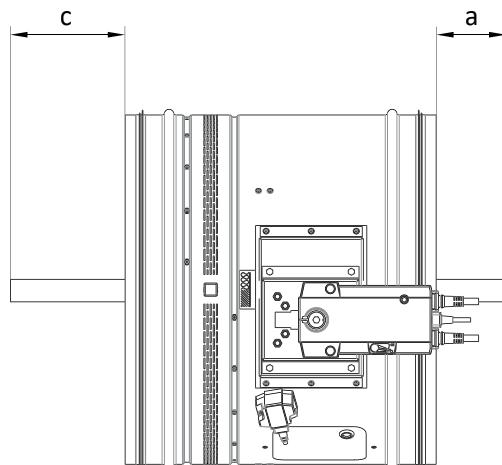
FD SERIES
FDMR

FDMR.01

1. Housing
2. Mechanism
3. Opening/closing slat
4. Inspection cover
5. Sensor label
6. Camera register
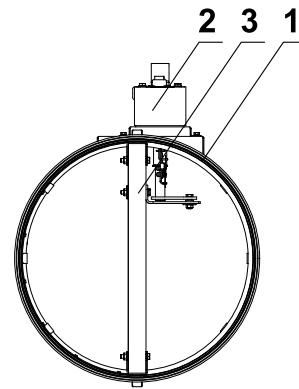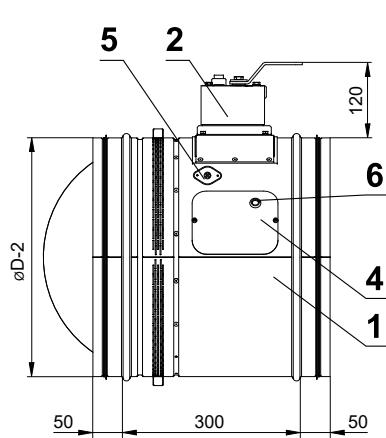
FDMR.40 / .50

1. Housing
2. Drive mechanism
3. Opening/closing slat
4. Inspection cover
5. Thermoelectric starter mechanism BAT
6. Camera register

x-53 mm (BFL)*
x=72 mm (BFN)*
x=78 mm (BF)*
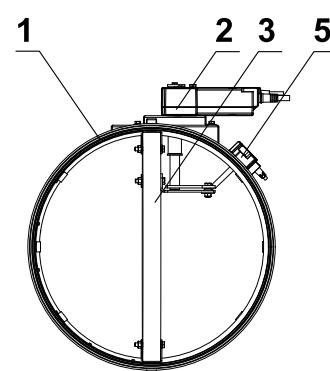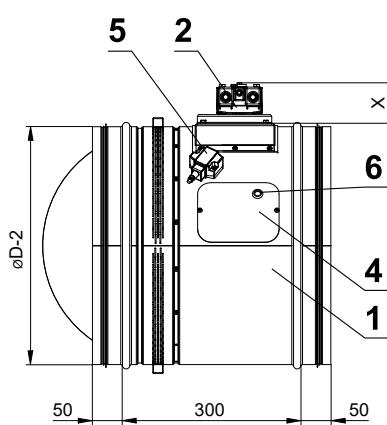
FDMR
Dimensions of the installation duct opening

* Valid dimensions for FDMR.
* The opening of the installation can be less than
  DN + 100mm - If the fire protection material
  can be installed correctly.
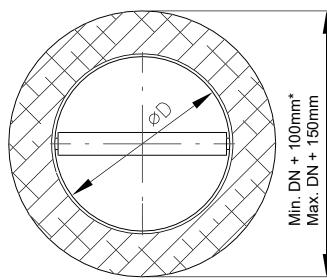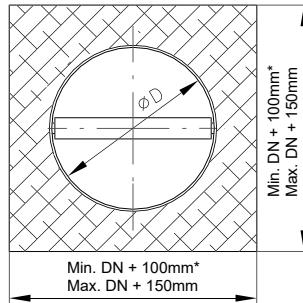
FD SERIES
FDMR

Installation in solid wall construction

Position:
1. Fire damper
2. Rigid wall construction
3. Cement or plaster
4. Duct
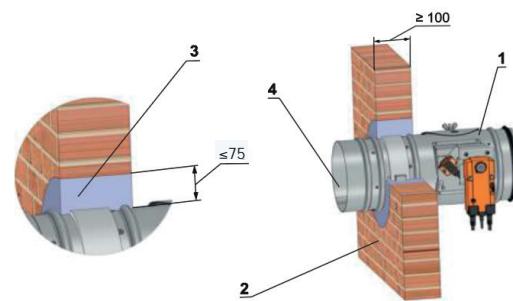
Installation in cement or gypsum wall construction

Position:
1. Fire damper
2. Plasterboard
3. Mineral wool (type will depend on construction).
4. Cement or plaster
5. Duct

El perímetro de la apertura de la instalación tiene que ser reforzado con perfiles de yeso estándar.
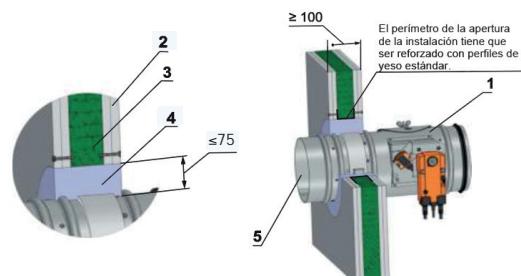
Installation in solid ceiling construction

Position
1 Fire damper
2 Solid ceiling construction
3 Cement or plaster
4 Duct
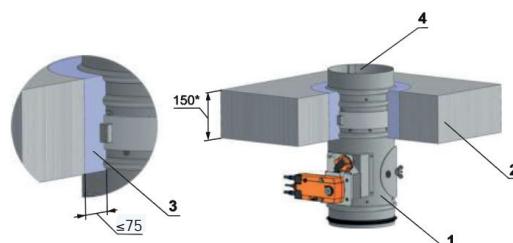
* min. 110 - Concrete / min. 125 - Aerated Concrete
* Around the perimeter

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The diagrams shown are for illustrative purposes only.

FD SERIES
FDMR
SELECTION TABLE

Q (m³/h) (l/s)	Diameter mm.	100	125	160	200	250	315	355	400	450	500	560	630
150	Vn (m/s) Pt (Pa) LwA	5,31 46 27	3,40 15 13										
200	Vn (m/s) Pt (Pa) LwA	7,07 82 37	4,53 26 23	2,76 6 5									
300	Vn (m/s) Pt (Pa) LwA	10,61 185 50	6,79 58 36	4,14 13 18									
400	Vn (m/s) Pt (Pa) LwA		9,05 103 45	5,53 23 27	3,54 5 9								
500	Vn (m/s) Pt (Pa) LwA		11,32 161 52	6,91 36 34	4,42 7 17								
600	Vn (m/s) Pt (Pa) LwA			8,29 52 40	5,31 11 23	3,4 5 11							
700	Vn (m/s) Pt (Pa) LwA			9,67 71 45	6,19 15 28	3,96 7 16							
800	Vn (m/s) Pt (Pa) LwA			11,05 93 50	7,07 19 32	4,53 9 21	2,85 3 5						
1000	Vn (m/s) Pt (Pa) LwA				8,84 30 39	5,66 14 28	3,56 4 12	2,81 2 4					
1500	Vn (m/s) Pt (Pa) LwA				13,26 67 52	8,49 32 41	5,35 9 25	4,21 5 17	3,32 3 10				
2000	Vn (m/s) Pt (Pa) LwA					11,32 57 50	7,13 16 35	5,61 9 27	4,42 5 19	3,49 3 11			
2500	Vn (m/s) Pt (Pa) LwA						8,91 25 42	7,02 13 34	5,53 7 26	4,37 4 18	3,54 2 12		
3000	Vn (m/s) Pt (Pa) LwA						10,69 36 48	8,42 19 40	6,63 10 32	5,24 6 24	4,24 3 18	3,38 2 10	
3500	Vn (m/s) Pt (Pa) LwA							9,82 26 45	7,74 14 37	6,11 8 29	4,95 5 23	3,95 3 15	
4000	Vn (m/s) Pt (Pa) LwA							11,23 34 49	8,84 18 41	6,99 10 34	5,66 6 27	4,51 3 20	3,56 2 12
4500	Vn (m/s) Pt (Pa) LwA							12,63 44 53	9,95 23 45	7,86 13 37	6,37 7 31	5,08 4 23	4,01 2 16
5000	Vn (m/s) Pt (Pa) LwA								11,05 29 49	8,73 16 41	7,07 9 34	5,64 5 27	4,46 3 19

Legend:
Vn (m/s): Nominal speed m/s
Pt = Pressure drop in Pa
LwA: Sound power level in dB(A)

FIREFIGHTING SYSTEMS

FD SERIES
FDMR
TECHNICAL DATA

Pressure loss calculation

$$\Delta p = \xi \cdot \rho \cdot \frac{w^2}{2}$$

Δp	[Pa]	Pressure drop
w	[m.s^{-1}]	Air flow velocity at nominal damper section
ρ	[kg.m^{-3}]	Air density
ξ	[-]	Local pressure loss coefficient for the nominal cross-section of the damper (see Tab. 11.1.1.).

Determination of pressure loss using p=1.2kg.m³ diagram
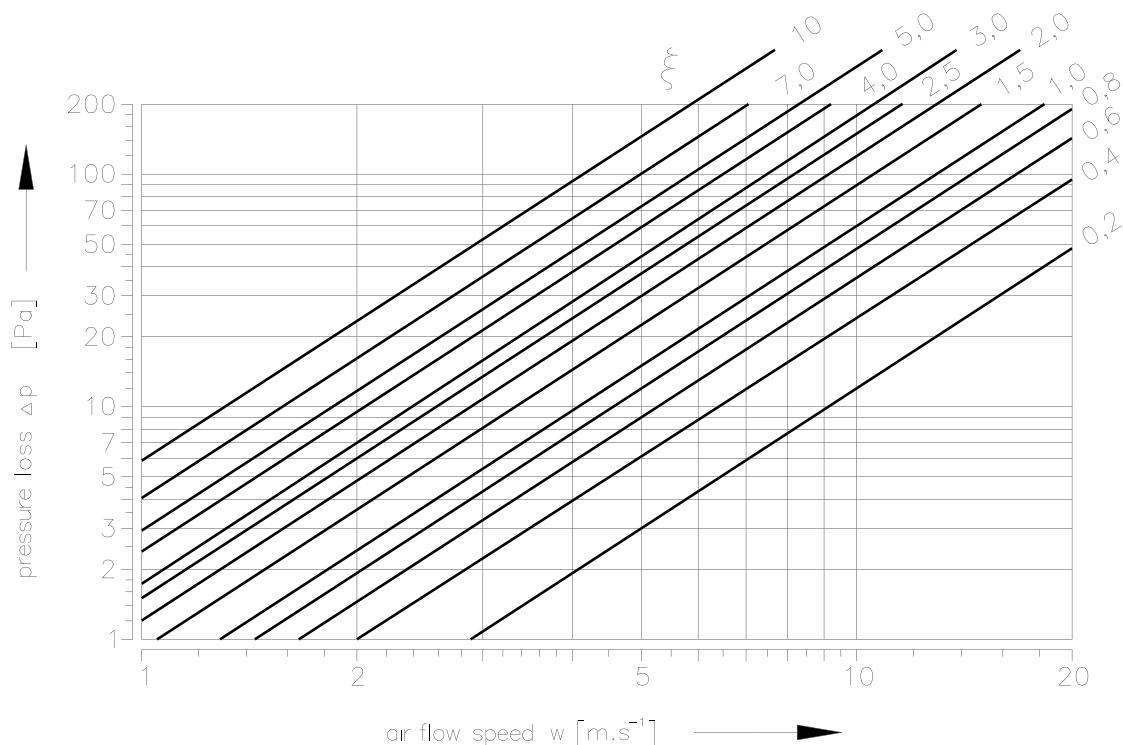
FD SERIES
FDMR
TECHNICAL DATA

Local pressure loss coefficient ξ (-)

D	100	125	140	150	160	180	200	225	250	280	300
ξ	2.736	2.099	1.781	1.527	1.272	0.929	0.636	0.892	0.747	0.627	0.576
D	315	350	355	400	450	500	560	600	630	710	800
ξ	0.531	0.471	0.455	0.393	0.344	0.307	0.273	0.258	0.243	0.111	0.099

Acoustic output level corrected by filter A

$$L_{WA} = L_{W1} + 10\log(S) + K_A$$

L_{WA}	[dB(A)]	Acoustic output level corrected by filter A
L_{W1}	[dB]	Sound output level L_{W1} related to 1 m² cross-section (see Tab.1)
S	[m²]	Duct cross section
K_A	[dB]	Weight filter A correction (see Tab.2)

Acoustic output level in octave ranges.

$$L_{Woct} = L_{W1} + 10\log(S) + L_{rel}$$

L_{Woct}	[dB]	Acoustic output spectrum in octave range
L_{W1}	[dB]	Acoustic output level L_{W1} related to 1 m² cross-section (see Tab.1)
S	[m²]	Duct cross section
L_{rel}	[dB]	Relative level expressing the shape of the spectrum (see Tab.3)

Table of acoustic values
Tab.1 Sound output level L_{W1} related to 1 m² cross-section

w [m/s⁻¹]	[-] ξ 0,1	0,2	0,3	0,4	0,6	0,8	1	1,5	2	2,5	3	3,5
2	9	11,5	14,7	16,9	20,1	22,3	24,1	27,2	29,4	31,2	32,6	33,8
3	16,7	22,1	25,3	27,5	30,7	32,9	34,6	37,8	40	41,7	43,2	44,4
4	24,2	29,6	32,8	35	38,1	40,4	42,1	45,3	47,5	49,2	50,7	51,9
5	30,0	35,4	38,6	40,8	44	46,2	47,9	51,1	53,3	55,1	56,5	57,7
6	34,8	40,2	43,3	45,6	48,7	51	52,7	55,8	58,1	59,8	61,2	62,4
7	38,8	44,2	47,3	49,6	52,7	55	56,7	59,9	62,1	63,8	65,2	66,4
8	42,3	47,7	50,8	53,1	56,2	58,4	60,2	63,3	65,6	67,3	68,7	69,9
9	45,4	50,7	53,9	56,1	59,3	61,5	63,3	66,4	68,6	70,4	71,8	73
10	48,1	53,5	56,6	58,9	62	64,3	66	69,1	71,4	73,1	74,5	75,7
11	50,6	56	59,1	61,4	64,5	66,7	68,5	71,6	73,9	75,6	77	78,2
12	52,8	58,2	61,4	63,6	66,8	69	70,7	73,9	76,1	77,9	79,3	80,5

FD SERIES
FDMR
TECHNICAL DATA

Filter A weight correction
Tab.2

W [m/s⁻¹]	2	3	4	5	6	7	8	9	10	11	12
K_a [dB]	-15,0	-11,8	-9,8	-8,4	-7,3	6,4	-5,7	-5,0	-4,5	-4,0	-3,6

Tab.3 Relative level expressing the shape of the space L_rel

W [m/s⁻¹]	f [Hz]							
	63	125	250	500	1000	2000	4000	8000
2	-4,5	-6,9	-10,9	-16,7	-24,1	-33,2	-43,9	-56,4
3	-3,9	-5,3	-8,4	-13,1	-19,5	-27,6	-37,4	-48,9
4	-3,9	-4,5	-6,9	-10,9	-16,7	-24,1	-33,2	-43,9
5	-4,0	-4,1	-5,9	-9,4	-14,6	-21,5	-30	-40,3
6	-4,2	-3,9	-5,3	-8,4	-13,1	-19,5	-27,6	-37,4
7	-4,5	-3,9	-4,9	-7,5	-11,9	-17,9	-25,7	-35,1
8	-4,9	-3,9	-4,5	-6,9	-10,9	-16,7	-24,1	-33,2
9	-5,2	-3,9	-4,3	-6,4	-10,1	-15,6	-22,7	-31,5
10	-5,5	-4	-4,1	-5,9	-9,4	-14,6	-21,5	-30
11	-5,9	-4,1	-4	-5,6	-8,9	-13,8	-20,4	-28,8
12	-6,2	-4,3	-3,9	-5,3	-8,4	-13,1	-19,5	-27,6

SAMOVENT®
TECHNIK

SERIE FD
FDMB
FIRE DAMPER
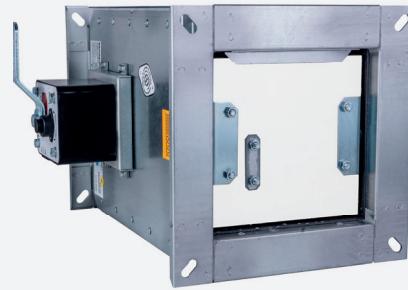
Model **FDMB.** FDMB series rectangular fire dampers function as separators between two fire sectors. They can be installed in both vertical and horizontal walls. They have a perimeter weatherstrip at both ends to ensure the airtightness between the damper and the air ducts.

Características:

- Classification EI120 (v_e h_o i←→o) S

    (E) Integrity

    (I) Isolation

    (ho) Application in forged ceiling construction. Mounting in horizontal wall.

    (Ve) Application in wall or flexible wall. Mounting on vertical wall.

    (i←→o) Symmetrical (regardless of the direction of the air). Suitable for fire in both directions

    (S) Smoke tightness. For cold and hot fumes.

- Certified according to EN 15650 (Building ventilation - Fire dampers)

- Classified according to EN 13501-3 +A1 (Classification based on data obtained from fire resistance tests of products and elements used in building service installations: fire resistant ducts and dampers)

- Tested according to EN 1366-2 (Fire resistance testing of service installations - Part 2: Fire dampers)

- Tightness of the damper according to EN 1751:

    Damper: Diameter 200 Class 3. Rest of diameters Class 2.

    Case: minimum class C.

- Maximum speed with open damper 12 m.s.

- Maximum pressure difference 1500 Pa.

- It has an inspection hole for access to the interior of the damper.

- The temperature at the installation site is permitted in the range of - 30 to + 50.

Standardized dimensions:
200x200 mm to 1000x500 mm.
Minimum dimension:
100x100 mm.
Maximum dimension:
1500x800 mm.

Models:

**FDMB.01** Manual operation and thermal outside of the damper with case of protection.

FDMB.40 Electric servomotor 230 v. AC with spring return Belimo BFL/BFN/BF 230-Twith two auxiliary contacts.

FDMB.50 Electric servomotor 24 v.AC/ DC with spring return Belimo BFL/BFN/BF 24-T with two auxiliary contacts.

FD SERIES
FDMB
FIRE DAMPER
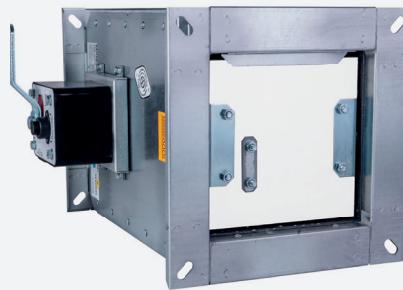
FDMB.01

Position:
1. Damper housing
2. Mechanical
3. Damper blade
4. Inspection hole cover
5. Sensor label
6. Camera hole

X=23 (AXB≤500X400)
X=36 (AXB>500X400)

110
123
375

A-X*
A+60
(60+X)/2
B-X*
(60+X)/2
B+60
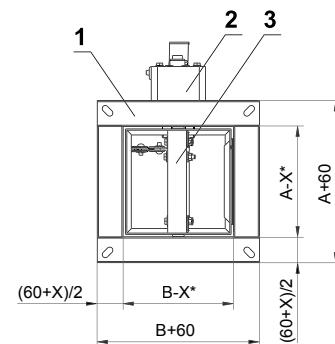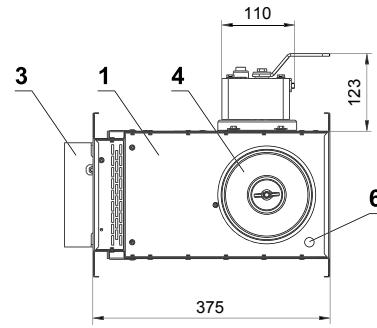
FDMB.40 / .50

Position:
1. Damper housing
2. Actuating mechanism
3. Damper blade
4. Inspection hole
5. Thermoelectric starting mechanism BAT
6. Camera hole

X=23 (AXB≤500X400)
X=36 (AXB>500X400)

375

A-X*
A+60
(60+X)/2
B-X*
(60+X)/2
B+60
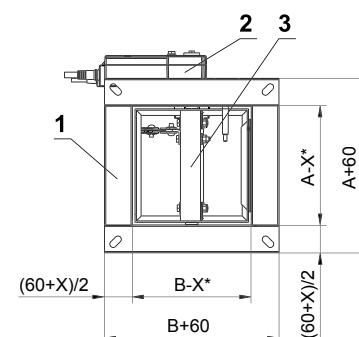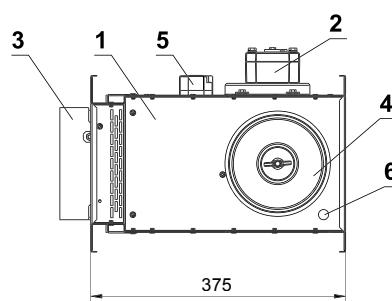
FDMB
Installation duct opening dimensions

B
B+100*
A
A+100*

Installation opening

max. 1650
min.30, max.400
min.30, max.400
min.30, max.400
max. 2050
min.30, max.400
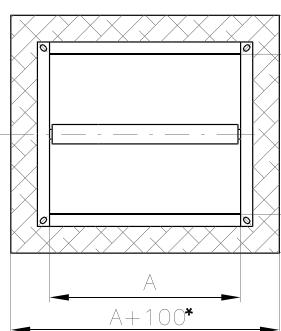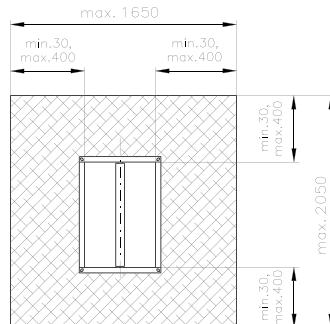
Opening of installation - Weichschott System

Solid ceiling installation
Solid-cement or plaster ceiling

Position:
1. Fire damper
2. Solid ceiling
3. Mortar or plaster
4. Duct

EIS 120
EIS 90

≥ 50**
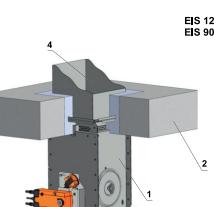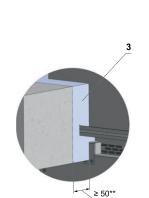
*min.110- Hormigón/min125-Aerated concrete
**Around the perimeter

The incorporation drawings shown on incorporation and gate are for illustrative purposes only.

FD SERIES
FDMB
FIRE DAMPER
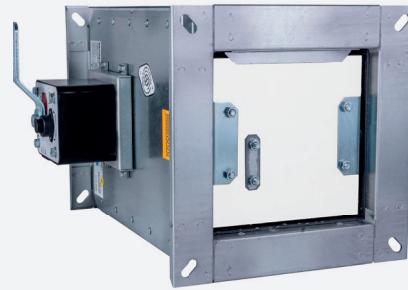
Solid wall installation

Position:
1. Fire damper
2. Solid wall
3. Cement or plaster
4. Duct
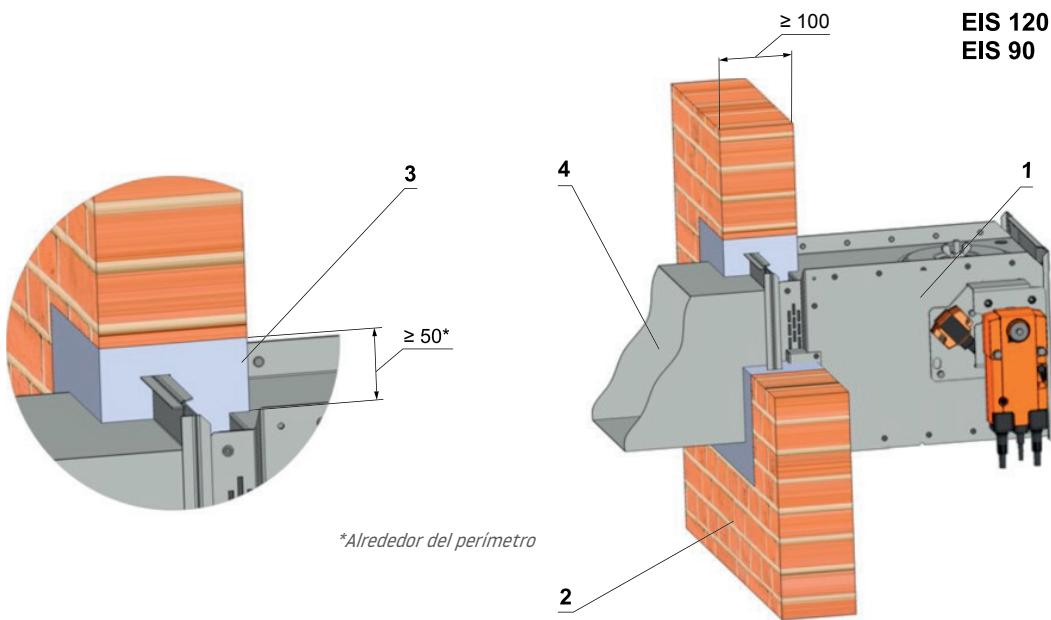
≥ 100

EIS 120
EIS 90

3

≥ 50*

4

1

2

Alrededor del perímetro

Installation in cement or gypsum wall construction

Position:
1. Fire damper
2. Plasterboard
3. Mineral wool (type will depend on the type of construction).
4. Cement or plaster
5. Duct

≥ 100

EIS 120
EIS 90

The opening of the installation must be reinforced with profile (UW, CW). The profile is fixed by means of screws ≥3.5 mm with the corresponding length. Screw spacing ≤200 mm.

2

3

4

≥ 50*

5

1

* Around the perimeter
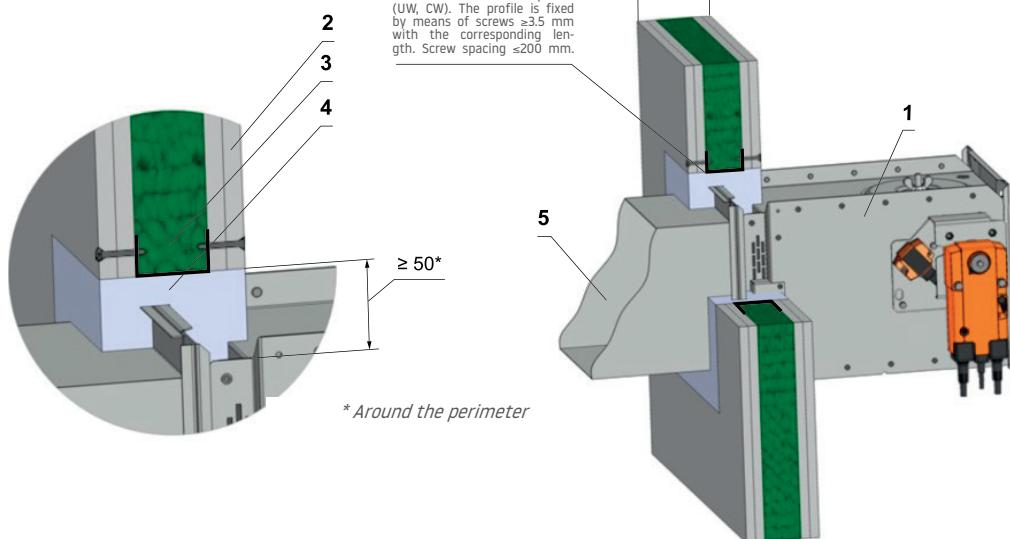
The recommended installation opening dimensions range from 25mm to 50mm on both sides (this means A+50 to A+100 or B+50 or B+100).

FD SERIES
FDMB
SELECTION TABLE
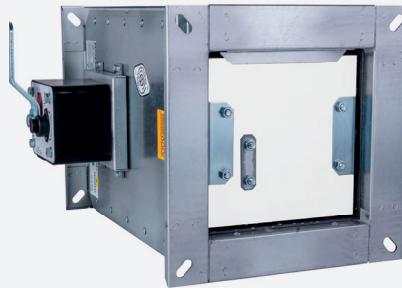
| LxH	Vn (m/s)	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7
200x200	Flow rate (m³/h) Pt (Pa) LwA	360 9 13,4	432 13 19,3	504 17 24,2	576 22 28,6	648 28 32,4	720 35 35,8	792 42 38,8	864 50 41,6	936 59 44,2	1008 68 46,6
300x200	Flow rate (m³/h) Pt (Pa) LwA	540 4 9,9	648 6 15,8	756 9 20,8	864 11 25,1	972 14 28,9	1080 18 32,3	1188 21 35,3	1296 26 38,2	1404 30 40,7	1512 35 43,1
400x200	Flow rate (m³/h) Pt (Pa) LwA	720 3 7,4	864 4 13,3	1008 5 18,3	1152 7 22,6	1296 9 26,4	1440 11 29,8	1584 13 32,9	1728 16 35,7	1872 19 38,3	2016 22 40,6
1000x200	Flow rate (m³/h) Pt (Pa) LwA	1800 4 13,3	2160 5 19,2	2520 7 24,2	2880 9 28,5	3240 11 32,3	3600 14 35,7	3960 17 38,8	4320 20 41,6	4680 24 44,2	5040 28 46,6
250x250	Flow rate (m³/h) Pt (Pa) LwA	562,5 6 11,8	675 8 17,7	787,5 11 22,7	900 14 27	1012,5 18 30,8	1125 22 34,2	1237,5 27 37,2	1350 32 40,1	1462,5 37 42,6	1575 43 45
300x300	Flow rate (m³/h) Pt (Pa) LwA	810 4 10,5	972 5 16,4	1134 7 21,3	1296 10 25,6	1458 12 29,5	1620 15 32,9	1782 18 35,9	1944 22 38,7	2106 26 41,3	2268 30 43,7
400x300	Flow rate (m³/h) Pt (Pa) LwA	1080 2 7,9	1296 3 13,8	1512 5 18,8	1728 6 23,1	1944 8 26,9	2160 9 30,3	2376 11 33,4	2592 13 36,2	2808 16 38,8	3024 18 41,1
500x300	Flow rate (m³/h) Pt (Pa) LwA	1350 3 11,4	1620 5 17,3	1890 6 22,3	2160 8 26,6	2430 10 30,4	2700 13 33,8	2970 16 36,8	3240 19 39,7	3510 22 42,2	3780 25 44,6
600x300	Flow rate (m³/h) Pt (Pa) LwA	1620 3 11,2	1944 4 17,1	2268 6 22,1	2592 7 26,4	2916 9 30,2	"240 11 33,6	3564 14 36,7	3888 16 39,5	4212 19 42	4536 22 44,4
800x300	Flow rate (m³/h) Pt (Pa) LwA	2160 2 10,9	2592 3 16,8	3024 5 21,8	3456 6 26,1	3888 8 29,9	4320 9 33,3	4752 11 36,4	5184 13 39,2	5616 16 41,8	6048 18 44,2
900x300	Flow rate (m³/h) Pt (Pa) LwA	2430 2 11	2916 3 16,9	3402 4 21,9	3888 6 26,2	4374 7 30	4860 9 33,4	5346 11 36,5	5832 13 39,3	6318 15 41,9	6804 17 44,3
1000x300	Flow rate (m³/h) Pt (Pa) LwA	2700 2 11,4	3240 3 17,3	3780 4 22,2	4320 6 26,5	4860 7 30,3	5400 9 33,7	5940 11 36,8	6480 13 39,6	7020 15 42,2	7560 17 44,6
400x400	Flow rate (m³/h) Pt (Pa) LwA	1440 2 7,3	1728 3 13,2	2016 4 18,2	2304 5 22,5	2592 6 26,3	2880 7 29,7	3168 9 32,8	3456 11 35,6	3744 12 38,2	4032 14 40,6

Legend
Vn (m/s): Nominal speed m/s
Pt = Pressure drop in Pa
LwA: Sound power level in dB(A)

SAMOVENT®
TECHNIK

FD SERIES
FDMB
SELECTION TABLE
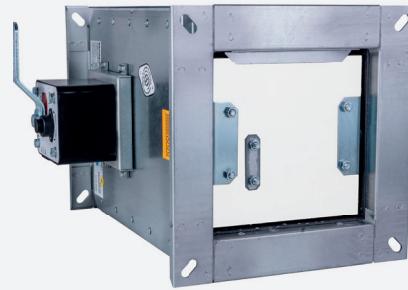
LxH	Vn (m/s)	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7
500x400	Flow rate (m³/h) Pt (Pa) LwA	1800 3 10,9	2160 4 16,8	2520 5 21,8	2880 7 26,1	3240 8 29,9	3600 10 33,3	3960 13 36,4	4320 15 39,2	4680 18 41,8	5040 20 44,2
600x400	Flow rate (m³/h) Pt (Pa) LwA	2160 2 10,7	2592 3 16,6	3024 4 21,6	3456 6 25,9	3888 7 29,7	4320 9 33,1	4752 11 36,1	5184 13 39	5616 15 41,5	6048 18 43,9
700x400	Flow rate (m³/h) Pt (Pa) LwA	2520 2 10,4	3024 3 16,3	3528 4 21,3	4032 5 25,6	4536 7 29,4	5040 8 32,8	5544 10 35,9	6048 12 38,7	6552 14 41,3	7056 16 43,7
800x400	Flow rate (m³/h) Pt (Pa) LwA	2880 2 10,3	3456 3 16,2	4032 4 21,2	4608 5 25,5	5184 6 29,3	5760 7 32,7	6336 9 35,8	6912 11 38,6	7488 12 41,2	8064 14 43,6
1000x400	Flow rate (m³/h) Pt (Pa) LwA	3600 2 10,7	4320 2 16,6	5040 3 21,6	5760 4 25,9	6480 6 29,7	7200 7 33,1	7920 8 36,1	8640 10 39	9360 12 41,5	10080 13 43,9
500x500	Flow rate (m³/h) Pt (Pa) LwA	2250 2 10,9	2700 3 16,8	3150 4 21,7	3600 6 26,1	4050 7 29,9	4500 9 33,3	4950 11 36,3	5400 13 39,1	5850 15 41,7	6300 18 44,1
600x500	Flow rate (m³/h) Pt (Pa) LwA	2700 2 10,6	3240 3 16,5	3780 4 21,5	4320 5 25,8	4860 6 29,6	5400 8 33	5940 10 36,1	6480 11 38,9	7020 13 41,4	7560 15 43,8
800x500	Flow rate (m³/h) Pt (Pa) LwA	3600 2 10,1	4320 2 16	5040 3 21	5760 4 25,3	6480 5 29,1	7200 6 32,5	7920 8 35,6	8640 9 38,4	9360 11 41	10080 12 43,4
900x500	Flow rate (m³/h) Pt (Pa) LwA	4050 1 10,1	4860 2 16	5670 3 21	6480 4 25,3	7290 5 29,1	8100 6 32,5	8910 7 35,6	9720 9 38,4	10530 10 41	11340 12 43,4
1000x500	Flow rate (m³/h) Pt (Pa) LwA	4500 1 10,4	5400 2 16,3	6300 3 21,3	7200 4 25,6	8100 5 29,4	9000 6 32,8	9900 7 35,9	10800 8 38,7	11700 10 41,3	12600 11 43,7
600x600	Flow rate (m³/h) Pt (Pa) LwA	3240 2 10,6	3888 3 16,5	4536 3 21,4	5184 5 25,7	5832 6 29,5	6480 7 32,9	7128 9 36	7776 10 38,8	8424 12 41,4	9072 14 43,8
700x600	Flow rate (m³/h) Pt (Pa) LwA	3780 2 10,3	4536 2 16,2	5292 3 21,2	6048 4 25,5	6804 5 29,3	7560 6 32,7	8316 8 35,8	9072 9 38,6	9828 11 41,1	10584 12 43,5
800x600	Flow rate (m³/h) Pt (Pa) LwA	4320 1 10,3	5184 2 16,2	6048 3 21,2	6912 4 25,5	7776 5 29,3	8640 6 32,7	9504 7 35,8	10368 8 38,6	11232 10 41,2	12096 12 43,6

FD SERIES
FDMB
TECHNICAL DATA
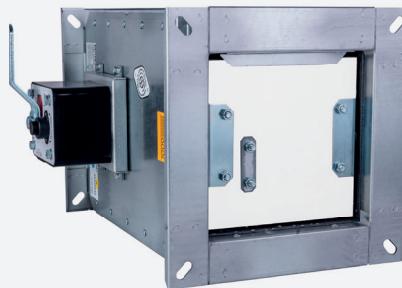
Pressure loss calculation

$$\Delta p = \xi \cdot \rho \cdot \frac{w^2}{2}$$

|		
Δp	[Pa]	Pressure drop
w	[m.s⁻¹]	Air flow velocity at nominal damper section
ρ	[kg.m⁻³]	Air density
ξ	[-]	Local pressure loss coefficient for the nominal cross-section of the damper (see Tab. 11.1.1.).

Determination of pressure loss using p=1.2kg.m³ diagram
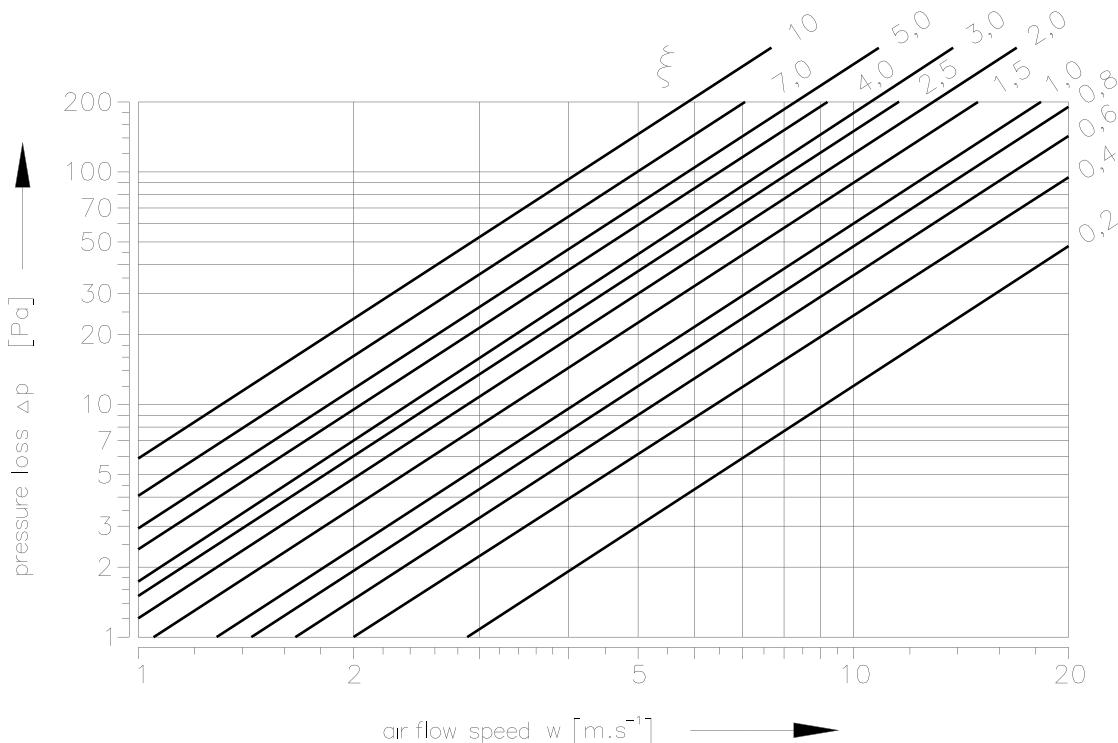
FD SERIES
FDMB
TECHNICAL DATA
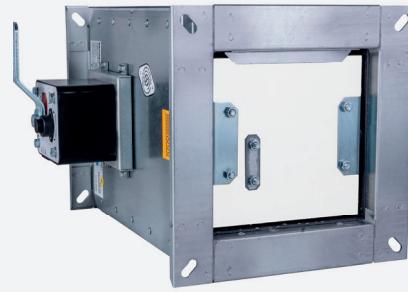
Local pressure loss coefficient ξ (-)

A	B											
	160	180	200	225	250	280	300	315	355	400	450	500
160	4,771	3,458	2,717	2,285	1,813	1,538	1,407	1,327	1,165	1,040	2,025	1,874
180	4,102	3,251	2,351	2,016	1,676	1,342	1,221	1,136	0,986	0,922	1,676	1,548
200	3,701	2,951	2,105	1,867	1,554	1,302	1,113	1,052	0,933	0,801	1,445	1,332
225	3,654	2,873	2,056	1,726	1,475	1,226	1,067	1,029	0,917	0,781	1,239	1,172
250	3,588	2,793	2,005	1,675	1,386	1,155	1,033	0,987	0,893	0,736	1,113	1,021
280	3,411	2,692	1,975	1,599	1,341	1,123	0,986	0,916	0,822	0,713	0,996	0,912
300	3,288	2,599	1,903	1,536	1,315	1,101	0,974	0,911	0,787	0,692	0,937	0,857
315	3,102	2,454	1,833	1,489	1,289	0,988	0,933	0,833	0,721	0,634	0,900	0,822
355	2,955	2,302	1,796	1,412	1,199	0,956	0,902	0,799	0,678	0,588	0,821	0,749
400	2,833	2,159	1,703	1,356	1,126	0,931	0,825	0,711	0,635	0,527	0,757	0,689
450	2,732	2,055	1,623	1,302	1,103	0,852	0,777	0,677	0,599	0,507	0,705	0,640
500	2,670	1,988	1,587	1,251	1,025	0,796	0,725	0,618	0,529	0,460	0,666	0,603
550	4,219	2,941	2,237	1,687	1,402	1,156	1,039	0,968	0,827	0,719	0,635	0,575
560	4,194	2,922	2,222	1,623	1,392	1,147	1,031	0,910	0,820	0,713	0,630	0,570
600	4,104	2,857	2,170	1,573	1,357	1,117	1,004	0,935	0,797	0,692	0,611	0,552
630	4,046	2,814	2,137	1,553	1,334	1,098	0,986	0,918	0,782	0,678	0,598	0,540
650	4,010	2,788	2,116	1,526	1,320	1,086	0,975	0,908	0,773	0,670	0,590	0,533
700	3,975	2,759	2,098	1,515	1,297	1,071	0,965	0,892	0,761	0,656	0,581	0,527
710	3,918	2,720	2,062	1,496	1,284	1,055	0,947	0,881	0,749	0,648	0,571	0,515
750	3,865	2,682	2,032	1,475	1,264	1,037	0,931	0,866	0,736	0,636	0,560	0,504
800	3,808	2,640	1,999	1,445	1,241	1,018	0,913	0,849	0,721	0,623	0,547	0,493
900	3,715	2,572	1,946	1,414	1,205	0,988	0,885	0,822	0,697	0,602	0,528	0,474
1000	3,643	2,519	1,904	1,395	1,177	0,964	0,863	0,801	0,679	0,585	0,512	0,460

FD SERIES
FDMB
TECHNICAL DATA
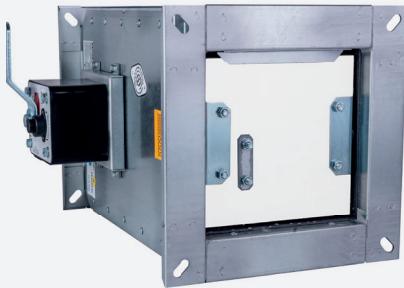
Local pressure loss coefficient ξ (-)

A	B 550	560	600	630	650	700	710	750	800	900	1000
160	1,761	1,741	1,672	1,627	1,601	1,598	1,532	1,493	1,452	1,386	1,336
180	1,451	1,434	1,375	1,337	1,315	1,289	1,256	1,224	1,18	1,133	1,09
200	1,246	1,232	1,179	1,146	1,126	1,106	1,074	1,046	1,015	0,965	0,928
225	1,075	1,035	0,998	0,965	0,938	0,926	0,905	0,873	0,856	0,822	0,803
250	0,952	0,94	0,898	0,871	0,855	0,831	0,813	0,79	0,765	0,725	0,695
280	0,849	0,88	0,8	0,775	0,76	0,742	0,722	0,701	0,678	0,641	0,613
300	0,797	0,786	0,75	0,726	0,712	0,689	0,675	0,655	0,633	0,599	0,572
315	0,764	0,754	0,718	0,695	0,681	0,662	0,646	0,626	0,605	0,572	0,546
355	0,694	0,685	0,651	0,63	0,617	0,603	0,584	0,566	0,546	0,514	0,49
400	0,637	0,628	0,597	0,577	0,565	0,543	0,534	0,516	0,498	0,468	0,445
450	0,591	0,583	0,553	0,534	0,522	0,503	0,493	0,476	0,458	0,43	0,408
500	0,556	0,548	0,52	0,501	0,49	0,482	0,462	0,446	0,429	0,401	0,38
550	0,529	0,521	0,494	0,476	0,465	0,441	0,437	0,422	0,405	0,379	–
560	0,524	0,517	0,489	0,471	0,461	0,448	0,433	0,418	0,401	–	–
600	0,507	0,5	0,473	0,455	0,445	0,426	0,418	0,403	0,387	–	–
630	0,496	0,489	0,462	0,445	0,435	0,418	0,408	0,393	–	–	–
650	0,49	0,482	0,456	0,439	0,428	0,414	0,402	0,387	–	–	–
700	0,483	0,476	0,444	0,431	0,421	0,409	0,398	0,379	–	–	–
710	0,472	0,465	0,439	0,422	0,412	0,399	–	–	–	–	–
750	0,462	0,455	0,429	0,413	0,403	–	–	–	–	–	–
800	0,451	0,444	0,419	–	–	–	–	–	–	–	–
900	0,434	–	–	–	–	–	–	–	–	–	–

FD SERIES
FDMB
TECHNICAL DATA

Acoustic output level corrected by filter A

$$L_{WA} = L_{W1} + 10 \log(S) + K_A$$

L_{WA}	[dB(A)]	Acoustic output level corrected by filter A
L_{W1}	[dB]	Sound output level L_{W1} related to 1 m² cross-section (see Tab.1)
S	[m²]	Duct cross section
K_A	[dB]	Weight filter A correction (see Tab.2)

Acoustic output level in octave ranges.

$$L_{Woct} = L_{W1} + 10 \log(S) + L_{rel}$$

L_{Woct}	[dB]	Acoustic output spectrum in octave range
L_{W1}	[dB]	Acoustic output level L_{W1} related to 1 m² cross-section (see Tab.1)
S	[m²]	Duct cross section
L_{rel}	[dB]	Relative level expressing the shape of the spectrum (see Tab.3)

Table of acoustic values
### Tab.1 Sound output level L_{W1} related to 1 m² cross-section

v [m/s]	[-] ξ														
	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1	1,5	2	2,5	3	4	5
2	15,5	18,7	20,9	22,6	24	25,2	26,3	27,2	28	31,2	33,4	35,1	36,5	38,8	40,5
3	26,1	29,2	31,5	33,2	34,6	35,8	36,9	37,8	38,6	41,7	44	45,7	47,1	49,4	51,1
4	33,6	36,7	39	40,7	42,1	43,3	44,3	45,3	46,1	49,2	51,5	53,2	54,6	56,9	58,6
5	39,4	42,5	44,8	46,5	47,9	49,1	50,2	51,1	51,9	55	57,3	59	60,4	62,7	64,4
6	44,1	47,3	49,5	51,3	52,7	53,9	54,9	55,8	56,6	59,8	62	63,8	65,2	67,4	69,2
7	48,2	51,3	53,5	55,3	56,7	57,9	58,9	59,8	60,7	63,8	66,1	67,8	69,2	71,4	73,2
8	51,6	54,8	57	58,8	60,2	61,4	62,4	63,3	64,1	67,3	69,5	71,3	72,7	74,9	76,7
9	54,7	57,9	60,1	61,8	63,2	64,4	65,5	66,4	67,2	70,4	72,6	74,3	75,7	78	79,7
10	57,4	60,6	62,8	64,6	66	67,2	68,2	69,1	70	73,1	75,3	77,1	78,5	80,7	82,5
11	59,9	63,1	65,3	67,1	68,5	69,7	70,7	71,6	72,4	75,6	77,8	79,6	81	83,2	85
12	62,2	65,4	67,6	69,3	70,7	71,9	73	73,9	74,7	77,9	80,1	81,8	83,2	85,5	87,2

FD SERIES
FDMB
TECHNICAL DATA
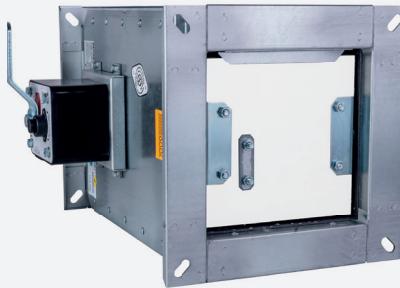
Filter A weight correction
Tab.2

W [m/s]	2	3	4	5	6	7	8	9	10	11	12
K_a [dB]	-15,0	-11,8	-9,8	-8,4	-7,3	6,4	-5,7	-5,0	-4,5	-4,0	-3,6

Tab.3 Relative level expressing the shape of the space L_{rel}

W [m/s]	f [Hz]							
	63	125	250	500	1000	2000	4000	8000
2	-4,5	-6,9	-10,9	-16,7	-24,1	-33,2	-43,9	-56,4
3	-3,9	-5,3	-8,4	-13,1	-19,5	-27,6	-37,4	-48,9
4	-3,9	-4,5	-6,9	-10,9	-16,7	-24,1	-33,2	-43,9
5	-4,0	-4,1	-5,9	-9,4	-14,6	-21,5	-30	-40,3
6	-4,2	-3,9	-5,3	-8,4	-13,1	-19,5	-27,6	-37,4
7	-4,5	-3,9	-4,9	-7,5	-11,9	-17,9	-25,7	-35,1
8	-4,9	-3,9	-4,5	-6,9	-10,9	-16,7	-24,1	-33,2
9	-5,2	-3,9	-4,3	-6,4	-10,1	-15,6	-22,7	-31,5
10	-5,5	-4	-4,1	-5,9	-9,4	-14,6	-21,5	-30
11	-5,9	-4,1	-4	-5,6	-8,9	-13,8	-20,4	-28,8
12	-6,2	-4,3	-3,9	-5,3	-8,4	-13,1	-19,5	-27,6

SV SERIES
SV - SVC
INTUMESCENT GRILLE

Model **SV.**   Rectangular intumescent grille.
Model **SVC.**   Circular intumescent grille.

Fire resistant ventilation grids that allow natural ventilation through construction intended for fire resistance (walls, partitions, doors, etc.)

Characteristics:
Approved according to standards:
EN 1363-1 : 2012 and EN 1364-5:2017.
They react from 100ºC, the ventilation hole being completely sealed in about five minutes.
Clearance area ~60%.
Easy installation. Only to be used indoors. Avoid continuous temperatures over 40ºC.
Outer dimensions = Nominal dimensions -3mm.

SV

1. Hollow
2. Intumescent grid
3. Sealing
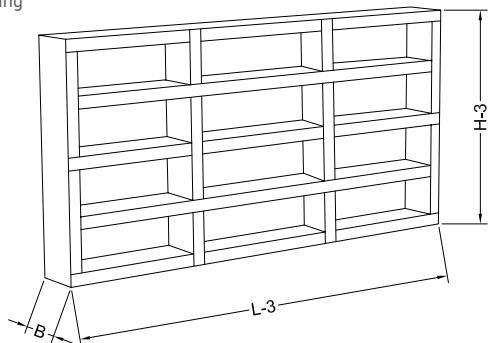
	B	
SV-60	40	EI60
SV-120	60	EI120

Sealing area

Sealing area
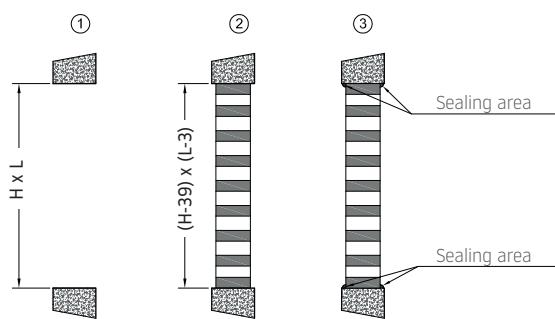
SVC

Dimensions Ø:

100 / 125 / 150 / 200 / 250 / 300 / 350 / 400

SV SERIES
SV - SVC
INTUMESCENT GRILLE

L x H	Area (m²)	Pressure 2 Pa	Pressure 10 Pa
		m³/h	
200x100	0,02	75	150
300x100	0,03	100	225
400X100	0,04	150	300
300X200	0,06	225	475
400X200	0,08	300	650
300X300	0,09	325	700
500X200	0,1	375	800
400X300	0,12	450	950
500X300	0,15	550	1100
400X400	0,16	650	1350
500X400	0,2	900	1900
600X400	0,24	1350	2800
500X500	0,25	1500	3000
600X500	0,3	1900	3800
600X600	0,36	2500	5200

SAMOVENT®
TECHNIK

CI SERIES
CI
INTUMESCENT COLLAR

Model **CI.** Protecta® FR Collars are designed to maintain the fire resistance of fire rated walls and floors where they are penetrated for the passage of fixtures. They can be used in gypsum, masonry or concrete walls and floors.

Each collar consists of a circular steel casing that splits in two to fit around the penetrations by means of a simple "slide lock" system. The steel casing contains a reactive graphite-based material that reacts when exposed to heat, closing openings left by combustible installation material.

Properties:
- Patented, fast expanding graphite material.
- Rated for all types of constructions and installation passages, including plastic, multilayer and metallic pipes and cable bundles.
- Approved plastic pipe sizes range from the smallest to Ø 400 mm, each with a wide range of pipe wall thicknesses.
- The collars are available in various heights according to the required diameters.
- Smaller pipes can be installed inside larger collars.
larger collars if the opening around the pipe is too large.
- Rated up to EI 240. Maintaining integrity and insulation.
- Certified for use in U/U pipe ends.
- High acoustic insulation.
- No detrimental effects on PVC pipe, backed by mechanical testing.
- No emissions.
- Easy to install using standard fixings.

Classifications:
- Sound insulation:
  Rw 58 dB - Collars installed in walls.
- Fire resistance:
  Up to 4 hours depending on application.

Dimensions:
ø40 to ø315

Technical specifications:
- Condition: Ready to use, steel housing with graphite material.
- Housing: 1mm powder coated steel.
- Conditioning procedure: EN 13238:2010.
- Expansion rate 17 : 1.
- Expansion pressure: 65.4 N.
- Density of graphite: 1409 kg/m³
- Normal expansion time: Less than 2 minutes.
- Minimum expansion temp.: 105 °C.
- Durability: International conditions Z2, with humidity class Z1, excluding temperatures below 0°C.
- Service life: Under normal conditions + 30 years.
- Installation temperature: 5 ˚C to 50 ˚C (sealant).
- CE Marking Classification: ETA-18/0854.

CI SERIES
CI
TECHNICAL DATA

CI intumescent collar on flexible or rigid wall

Masonry plaster or cement with thickness

Sealed holes

Cement, wood, screws or steel anchors

CI Collar

CI intumescent collar on rigid wall

Masonry or concrete walls cement with thickness ≥ 150 mm

Sealed holes

Masonry screws or expansion screws

Plastic tube
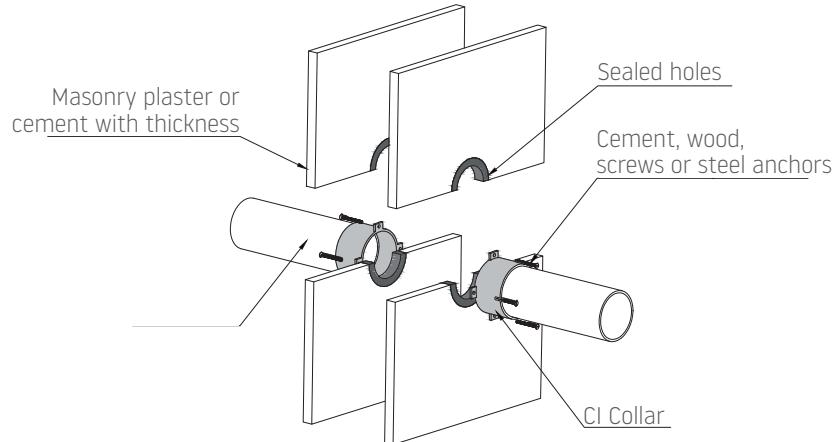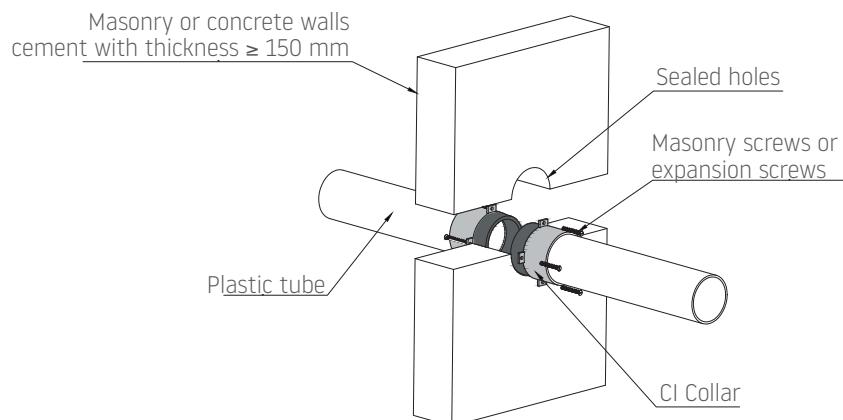
CI Collar

CI intumescent collar on rigid flooring

Plastic tube

Sealed holes

Cement floor with thickness ≥ 150 mm

Masonry screws or expansion screws

CI Collar

FIREFIGHTING SYSTEMS

SAMOVENT®
TECHNIK
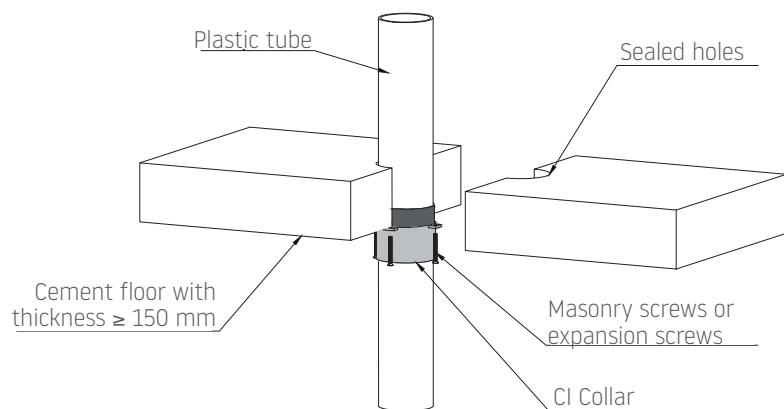
CF - FD - SV - CI
SERIES
ORDER FORM

DESCRIPTION

Fire damper, type CFDM.01. Diameter Ø100. EI60.

Order form:

CFDM	.01	60	Ø100

Firefighinting systems series:

CFDM
CFDM-V

Mechanism:

(.01)
(.11)
(.15)

EI:

60
90
120

Dimensions Ø:

100 / 125 / 160 / 200

DESCRIPTION

Circular fire damper, type FDMR.01. Diameter Ø 100.

Order form:

FDMR	.01	Ø100

Firefighinting systems series::

FDMR

Mechanism:

(.01)
(.40)
(.50)

Accessories:

(.11)
(.80)

Dimensions:

Ø

DESCRIPTION

Circular fire damper, type FDMB.01. 200x200.

Order form:

FDMB	.01	200x200

Firefighinting systems series:

FDMB

Mechanism:

(.01)
(.40)
(.50)

Accessories:

(.11)
(.80)

Dimensions:

LxH

FIREFIGHTING SYSTEMS

CF - FD - SV - CI
SERIES
ORDER FORM

DESCRIPTION

Rectangular intumescent grating, type SV-60. Dimensions LxH.

Order form:

SV	60	LxH

Firefighinting systems series:	**EI:**	**Dimensions:**
SV	60	LxH
SV-C	120	Ø

DESCRIPTION

ntumescent collar, type CI. ø 110.

Order form:

CI	110

FIREFIGHTING SYSTEMS

SAMOVENT®
TECHNIK

SIMBOLOGY
TECHNICAL ICONS

SUPPLY	RETURN	SWIRL	MULTIDIRECTIONAL	LONG RANGE	ACCESSORIES
SQUARED	ROUND	LINEAR	FIX	ADJUSTABLE	
CEILING	FALSE CEILING	WALL	FLOOR		
TRANSIT	DUCT	OUTER/EXTERNAL			
FIRE	DAMP	SMOKE			

CE