MANDÍK®

TPM 146/20
Version 2024-04-26

SEDM-L

Multi compartment smoke control damper

Technical Documentation
Installation, Commissioning, Operation, Maintenance and Service Manual

CE
1391

MANDÍK®
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These technical specifications state a row of manufactured sizes, main dimensions, design and range of use of multi compartment smoke control dampers SEDM-L.
It is valid for production, design, ordering, delivery, storage, assembly, operation, maintenance and serviceability checks.

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I. GENERAL

Description

Smoke control dampers - SEDM-L are designed into an inlet or extract smoke ventilation system. The dampers are designed either to close to provide compartmentalization or to open (for fresh air inlet) or to allow removal of the heat and combustible products from a fire in the affected fire zone/compartment.

The damper blade is controlled by electrical actuating mechanism.

Dampers are fire resistant and are intended for systems with manual or automatic activation.

Dampers are designed for using in fire compartments that can be connected to the smoke exhaust ducts (tested according to EN 1366-8) or they can be installed in or on the construction of the fire compartment.

Damper SEDM-L

Damper characteristics

- CE certified acc. to EN 12101-8
- Tested in accordance with EN 1366-10
- Classified acc. to EN 13501-4
- External Casing leakage class C, Internal leakage min. class 3 acc. to EN 1751
- Cycling test in class C_{mod} acc. to EN 12101-8
- Certificate of constancy of performance No. 1391-CPR-XXXX/XXXX
- Declaration of Perfomance No. PM/SEDM-L/01/XX/X
- Hygienic assessment - Report No. 1.6/pos/19/19b

Classification of Dampers		
Supporting construction	**Installation type**	**Classification**
Horizontal or vertical smoke extraction ducts into/onto the duct	Connection to single or multi compartment smoke extraction ducts tested according to EN 1366-8 or 9	EI 120 (v_{ed} i↔o) S1000C_{mod}HOT 400/30MAmulti
In gypsum plasterboard wall construction, application as a wall or as a shaft wall, th. min. 100 mm	Ablative Coated Batt	EI 120 (v_{edw} i↔o) S1000C_{mod}HOT 400/30MAmulti
In solid wall construction, application as a wall or as a shaft wall, th. min. 100 mm		EI 120 (v_{edw} i↔o) S1000C_{mod}HOT 400/30MAmulti
In solid wall construction, application as a shaft wall, th. min. 100 mm	Mortar or gypsum	EI 120 (v_{ed} i↔o) S1000C_{mod}HOT 400/30MAmulti
In solid wall construction, application as a wall th. min. 100 mm		EI 90 (v_{ew} i↔o) S1000C_{mod}HOT 400/30MAmulti
In shaft wall British Gypsum, application as a wall or as a shaft wall, th. min. 107 mm		EI 120 (v_{edw} i↔o) S1000C_{mod}HOT 400/30MAmulti
In solid ceiling construction, application as a ceiling or as a shaft floor, th. min. 150 mm		EI 120 (h_{od} i↔o) S1000C_{mod}HOT 400/30MAmulti

Working conditions

- Exact damper function is provided under the following conditions
  - maximum air velocity 12 m/s
  - underpressure max. -1000 Pa or overpressure max. 500 Pa
- Dampers are designed for installation in vertical or horizontal openings of fire separating constructions.
- Dampers are designed for macroclimatic areas with mild climate according to EN IEC 60 721-3-3 ed.2., class 3K22. (Environment 3K22 is typically protected place with regulated temperature)
- Temperature in the place of installation is permitted to range from -30°C to +50°C.

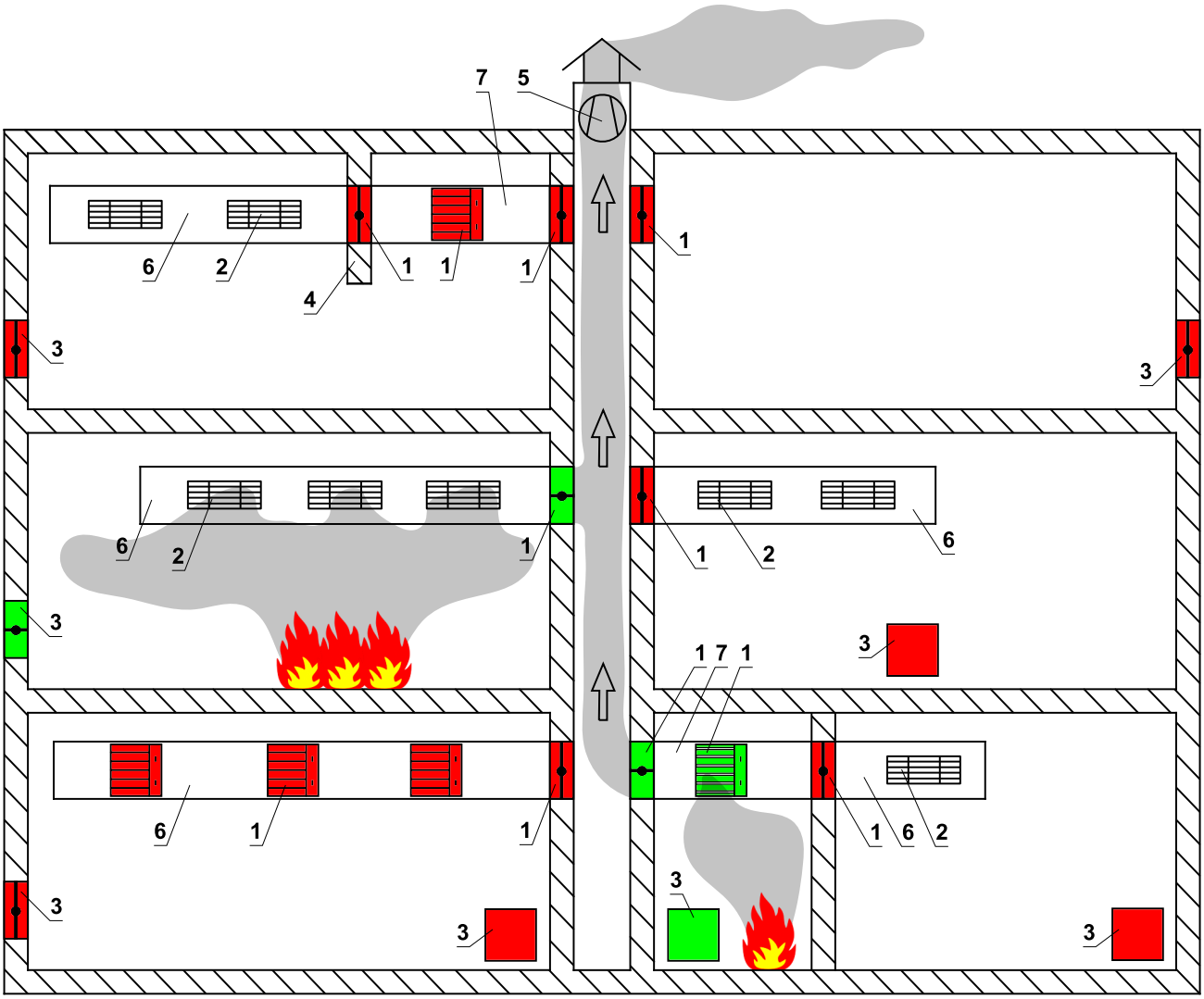
Smoke and heat removal system

- In normal operation, SEDM-L dampers remain closed.
- If necessary, in the event of a fire, the SEDM-L dampers in the affected fire section will open completely so that the smoke can be removed.
- When the smoke and heat removal dampers are activated, the dampers used for air supply in the affected section open.
- The dampers used to supply air in the affected fire section are installed at the ground.
- The dampers are controlled from the central control system on the basis of signals, e.g. from smoke detectors.
- The use of cables with a certain fire resistance for the supply voltage ensures that the actuator is supplied even in the event of a fire.

Ventilation system

- During ventilation, SEDM-L dampers in the smoke and heat extraction system are controlled by a control system, it's possible to fully open, close or continuously control the flow.
- The SEDM-L dampers, which are used for air supply, remain closed during ventilation.

Example of a ventilation device for forced smoke and heat removal



1 Multi compartment smoke control damper
2 Ventilation grille or damper for smoke and heat removal from one section
3 Air inlet
4 Smoke barrier
5 Fan for forced smoke and heat removal
6 Duct for smoke extraction from one section
7 Multi-section smoke extraction duct

II. DESIGN

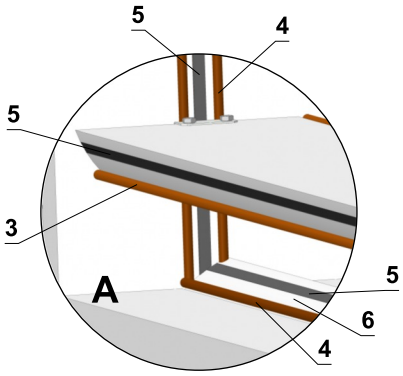
Design with spring return actuator

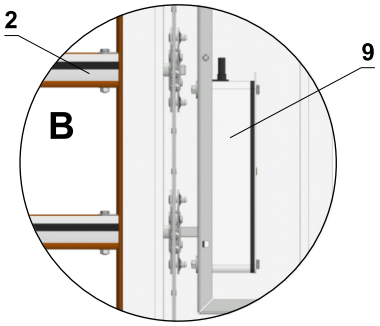
Design .44 and .54

- Belimo actuators are used for dampers, series BEN, BEE, BE for 230V AC resp. 24 V AC/DC actuators (universal 24V or 230V supply) are used for large size of dampers.
- After connection to the power supply voltage, the actuator moves the damper blade to the "OPEN" position or "CLOSED" (according to the corresponding connection, see wiring diagram). If the power supply is interrupted, the actuator stops at the current position. The signalling of the "OPEN" and "CLOSED" damper blade positions is ensured by two built-in fixed “potential-free” end- limit switches.
- The actuator for operating the damper blade is mounted in an insulated cover/box. It is accessible after removing the cover lid. The electrical connection of the actuator is made with a non-flammable cable (or a cable located in the adjoining cable duct), which passes through an opening made in the wall of the insulated cover/box when installing the damper or when connecting the actuator power cable. Cable penetrations must meet a minimum fire resistance of 30 minutes.

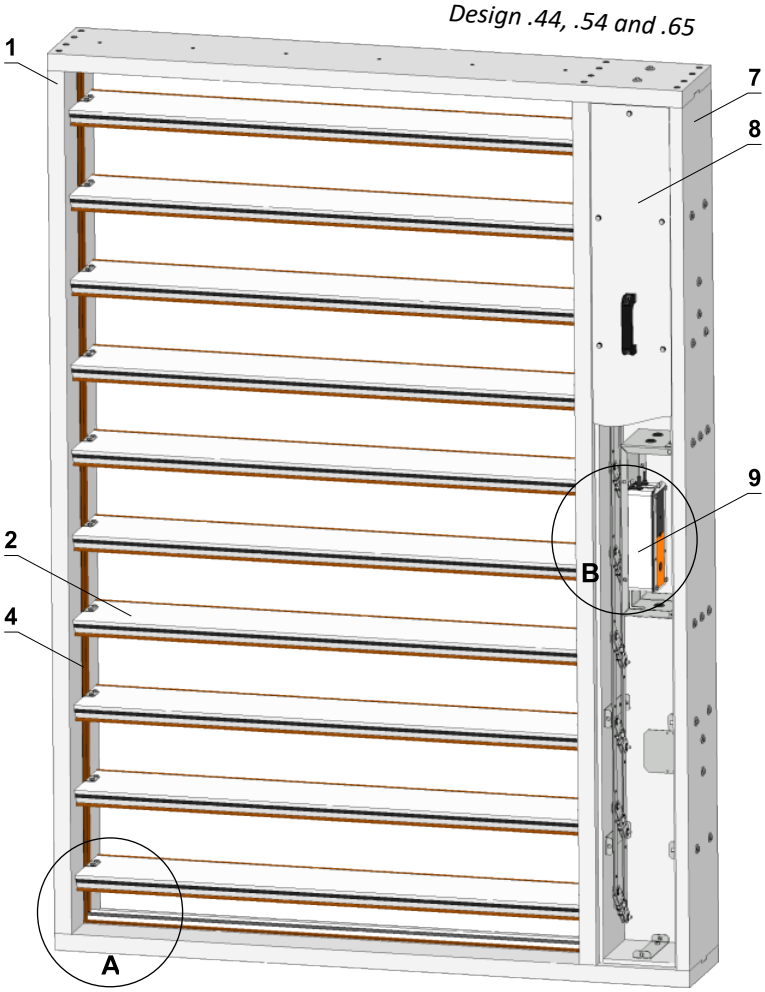
Design .65

- Belimo modulating actuators, BEN (BEE)-SR series for 24V AC/DC are specially designed for remote control of smoke control dampers. The position of the damper blade is adjustable by means of control voltage 0 (2)...10V DC.
- The signalling of the "OPEN" and "CLOSED" damper blade positions is ensured by two built-in fixed “potential-free” limit switches.
- The actuator for operating the damper blade is mounted in an insulated cover/box. It is accessible after removing the cover lid. The electrical connection of the actuator is made with non-flammable cables (or cables located in the adjoining cable duct), which pass through an opening made in the wall of the insulated cover when installing the damper or when connecting the power cables of the actuator. Cable penetrations must meet a minimum fire resistance of 30 minutes.



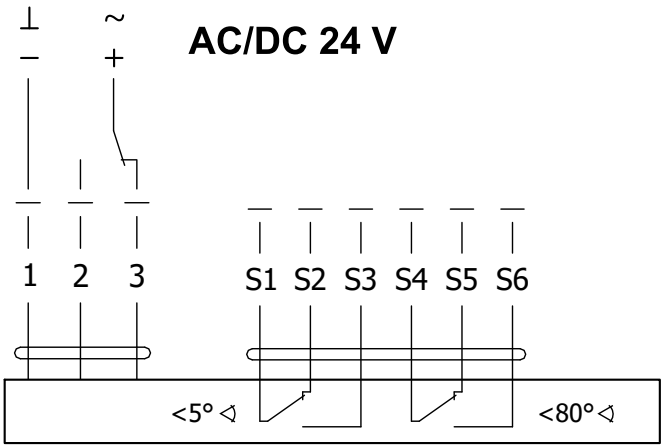


Design .44, .54 and .65

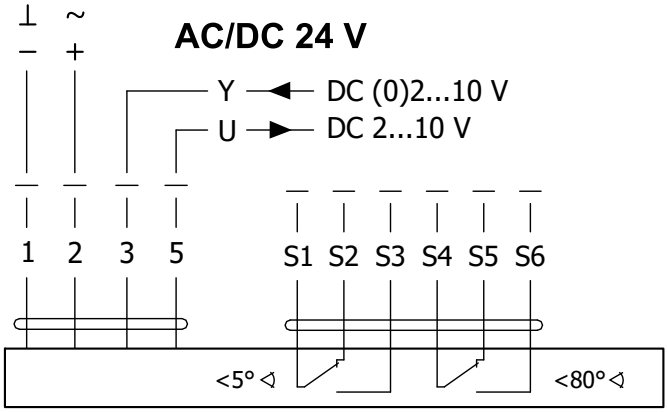


1 Damper housing
2 Blades
3 Silicone blade seal
4 Internal silicone seal
5 Fire-fighting foam tape
6 Blade stop
7 Actuator housing
8 Actuator housing cover
9 Actuator

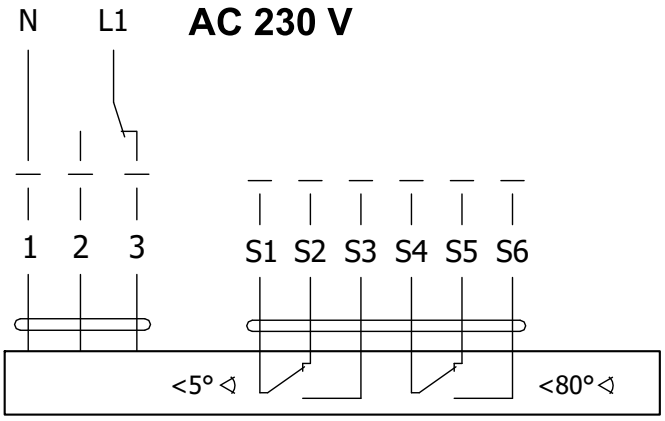
Actuator BELIMO BEN 24(-ST)



Actuator BELIMO BEN 24-SR



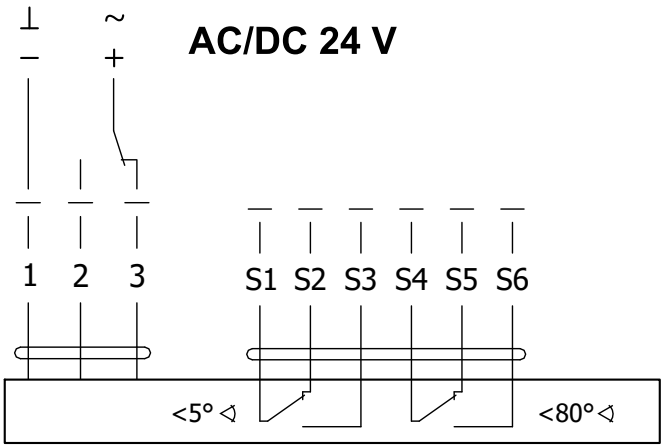
Actuator BELIMO BEN 230



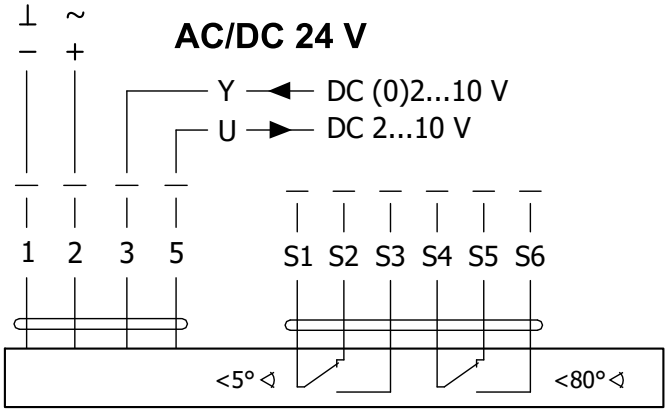
Actuator BELIMO BEN 24(-ST), BEN 24-SR, BEN 230			
Actuator BELIMO - 15 Nm	**BEN 24(-ST)**	**BEN 24-SR***	**BEN 230**
Power voltage	AC/DC 24 V 50/60Hz	AC/DC 24 V 50/60Hz	AC 230 V 50/60Hz
Power consumption - in operation - in the end position	3 W 0,1 W	3 W 0,3 W	4 W 0,4 W
Dimensioning	6 VA (Imax 8,2 A @ 5 ms)	6,5 VA (Imax 8.2 A @ 5 ms)	7 VA (Imax 4 A @ 5 ms)
Protection class	III	III	II
Degree of protection	IP 54		
Adjustment time for 95°	< 30 s		
Ambient temperature Storage temperature	-30°C ... +55°C -40°C ... +80°C		
Connection - drive - auxiliary switch	Cable 1 m, 3 x 0,75 mm² Cable 1 m, 6 x 0,75 mm² (BEN 24-ST) with plug connectors	Cable 1 m, 4 x 0,75 mm² Cable 1 m, 6 x 0,75 mm²	Cable 1 m, 3 x 0,75 mm² Cable 1 m, 6 x 0,75 mm²

* Only available for 24V and selected damper sizes

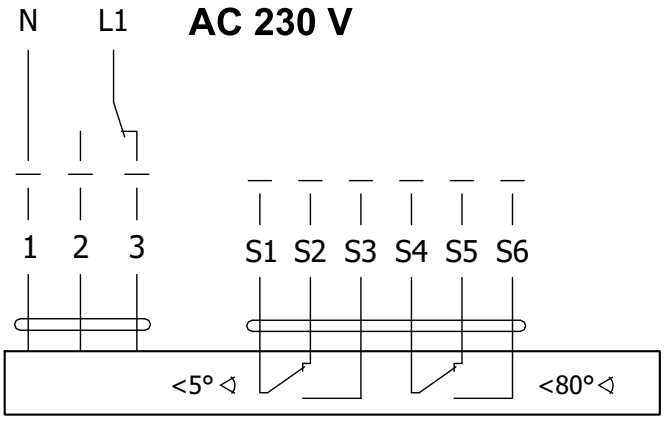
Actuator BELIMO BEE 24(-ST)



Actuator BELIMO BEE 24-SR



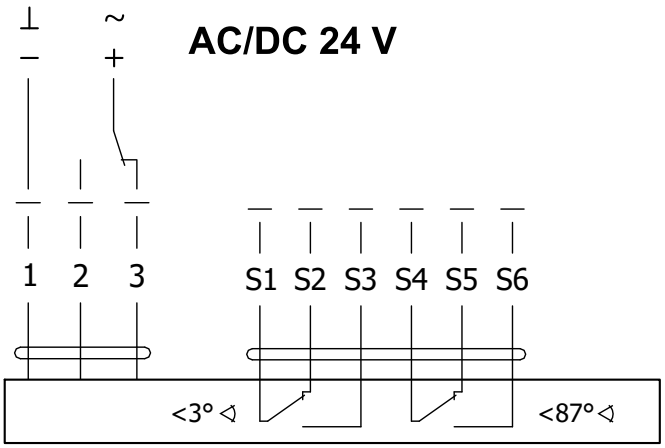
Actuator BELIMO BEE 230



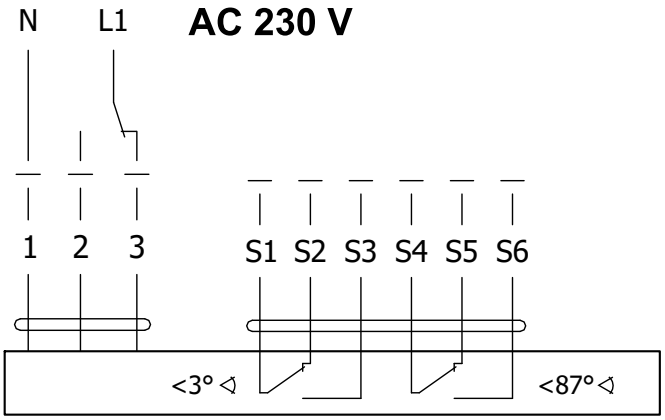
Actuator BELIMO BEE 24(-ST), BEE 24-SR, BEE 230			
Actuator BELIMO - 25 Nm	**BEE 24(-ST)**	**BEE 24-SR***	**BEE 230**
Power voltage	AC/DC 24 V 50/60Hz	AC/DC 24 V 50/60Hz	AC 230 V 50/60Hz
Power consumption - in operation - in the end position	2,5 W 0,1 W	3 W 0,3 W	3,5 W 0,4 W
Dimensioning	5 VA (Imax 8,2 A @ 5 ms)	5,5 VA (Imax 8.2 A @ 5 ms)	6 VA (Imax 4 A @ 5 ms)
Protection class	III	III	II
Degree of protection	IP 54		
Adjustment time for 95°	< 60 s		
Ambient temperature Storage temperature	-30°C ... +55°C -40°C ... +80°C		
Connection - drive - auxiliary switch	Cable 1 m, 3 x 0,75 mm² Cable 1 m, 6 x 0,75 mm² (BEE 24-ST) with plug connectors	Cable 1 m, 4 x 0,75 mm² Cable 1 m, 6 x 0,75 mm²	Cable 1 m, 3 x 0,75 mm² Cable 1 m, 6 x 0,75 mm²

* Only available for 24V and selected damper sizes

Actuator BELIMO BE 24-12(-ST)



Actuator BELIMO BE 230-12

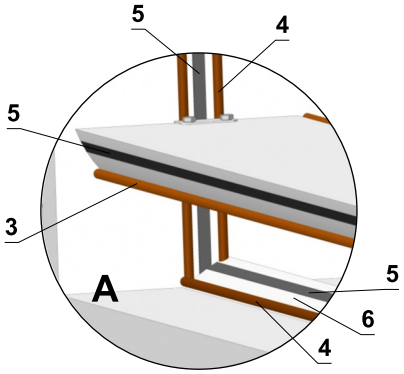


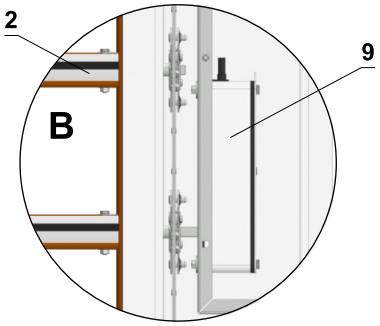
Actuator BELIMO BE 24-12(-ST), BE 230-12		
Actuator BELIMO - 40 Nm	**BE 24-12(-ST)**	**BE 230-12**
Power voltage	AC/DC 24 V 50/60Hz	AC 230 V 50/60Hz
Power consumption - in operation - in the end position	12 W 0,5 W	8 W 0,5 W
Dimensioning	18 VA (Imax 8,2 A @ 5 ms)	15 VA (Imax 7.9 A @ 5 ms)
Protection class	III	II
Degree of protection	IP 54	
Adjustment time for 95°	< 60 s	
Ambient temperature Storage temperature	-30°C … +55°C -40°C … +80°C	
Connection - drive - auxiliary switch	Cable 1 m, 3 x 0,75 mm^2 Cable 1 m, 6 x 0,75 mm^2 (BE 24-ST) with plug connectors	

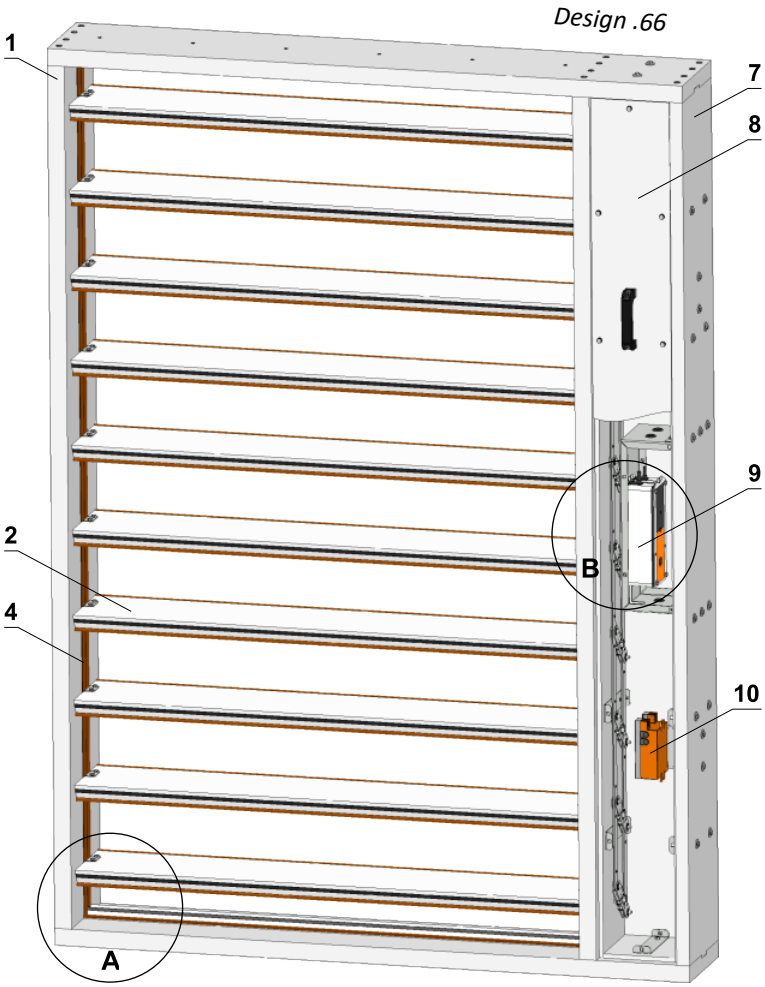
Design with the communication and supply device

Design .66

- Design with communication and power supply device BKNE 230-24 and with actuator BEN (BEE, BE)-ST for 24V.
- The BKNE 230-24 serves on the one hand as a decentralized network device for powering the actuator and on the other hand transmits the signal of the communication and control device BKSE 24-6.
- It simplifies electrical installation and connection of dampers. In the meantime, it facilitates “on-site inspection” and allows central control and inspection of dampers using a simple 2-wire line.
- The BKNE 230-24 transmits the "OPEN" / "CLOSED" damper position (switches in the actuator) and fault messages to the BKSE 24-6. It also receives commands from the control device and controls the adjustment of the actuator to the desired position. The last control command will be retained even after a temporary network failure..
- The BKNE 230-24 controls the switching position of the actuator, its adjustment time and the data exchange with the BKSE 24-6. In addition, it controls the actuator current (actuator connection) and the power supply.
- To simplify the connection, the actuator is equipped with plug connectors that plug directly into the BKNE 230-24.
- The actuator, communication and power supply device BKNE 230-24 are mounted in an insulated cover, they are accessible after removing the cover.
- The electrical connection of the actuator and the BKNE 230-24 communication and power supply device is made with a non-flammable cable (or a cable located in an adjoining cable duct), the two-wire BKNE 230-24 cable should be connected to terminals 6 and 7.
- It is also recommended to use cable, which is used for fire signalling network. The cables pass through an opening made in the wall of the insulated cover when installing the damper or when connecting the actuator power cable.
- Cable penetrations must meet a minimum fire resistance of 30 minutes.

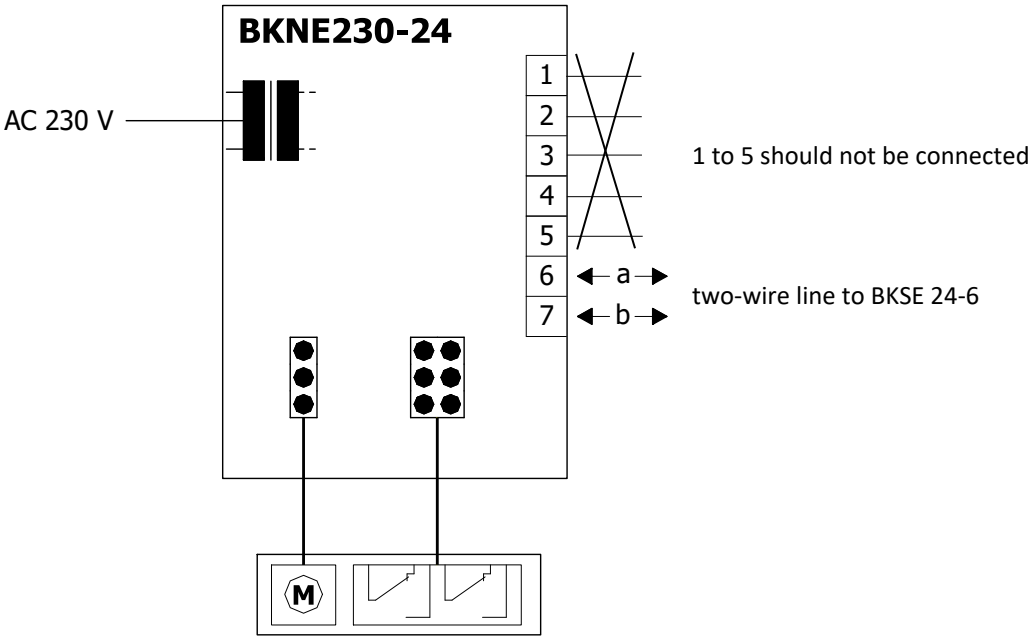






1	Damper housing	6	Blade stop
2	Blades	7	Actuator housing
3	Silicone blade seal	8	Actuator housing cover
4	Internal silicone seal	9	Actuator
5	Fire-fighting foam tape	10	Communication and power supply device BKNE 230-24

Communication and supply device BKNE 230-24, with actuator BEN 24(-ST), BEE 24(-ST), BE 24-12(-ST)

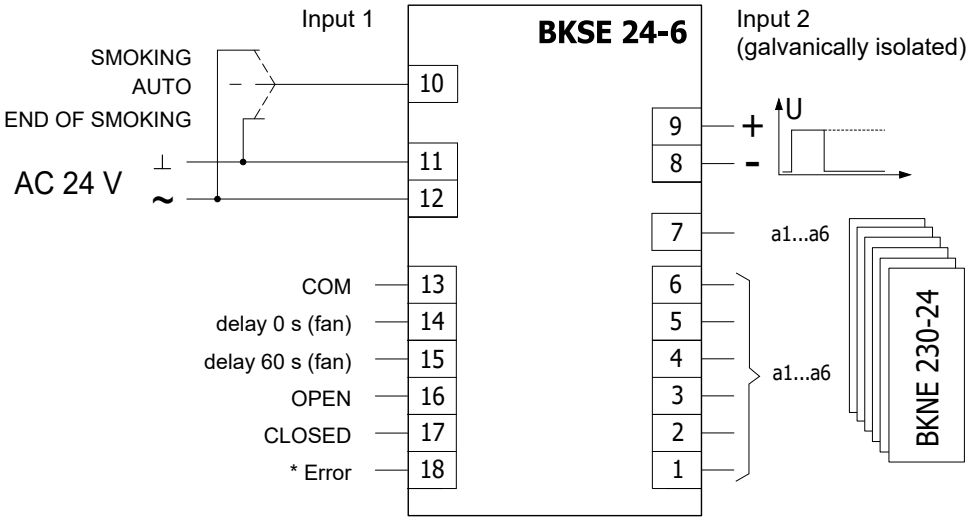


Signalling		
LED	**State**	**Function**
yellow	flashes	damper rotates to the open position
yellow	shines	damper is open
green	flashes	damper rotates to the closed position
green	shines	damper is closed
yellow or green	flashes twice as often	fault
yellow + green	dark	network outage

Communication and supply device BKNE 230-24	
Power voltage	AC 230 V 50/60Hz
Power consumption	10 W (including actuator)
Dimensioning	19 VA (including actuator)
Protection class	II
Degree of protection	IP 40
Ambient operation temperature Storage temperature	-30°C … +50°C -40°C … +80°C
Connection - net - motor - terminal board	cable 0,9 m with EURO plug type 26 6-pole connector, 3-pole connector screw terminals for cable 2x1,5 mm²

Communication and control device BKSE 24-6

- BKSE 24-6 indicates operating condition and faults of dampers.
- These conditions can be signalled or transmitted to the higher-level control system via the auxiliary built-in contacts. Signals from individual BKNE 230-24 are evaluated separately. All BKNE 230-24 are controlled simultaneously.
- A maximum of 6 BKNE 230-24 can be connected to the BKSE 24-6.
- Damper control is ensured with a simple 2-wire line.
- The damper's correct function is indicated by two LEDs. The operating status of the entire control system and any errors are indicated by these LEDs and the corresponding error LED.
- Mounting and connection of BKSE 24-6 can be done on a 35mm DIN rail. It's connected using two 9-pin terminal blocks (plug connectors).



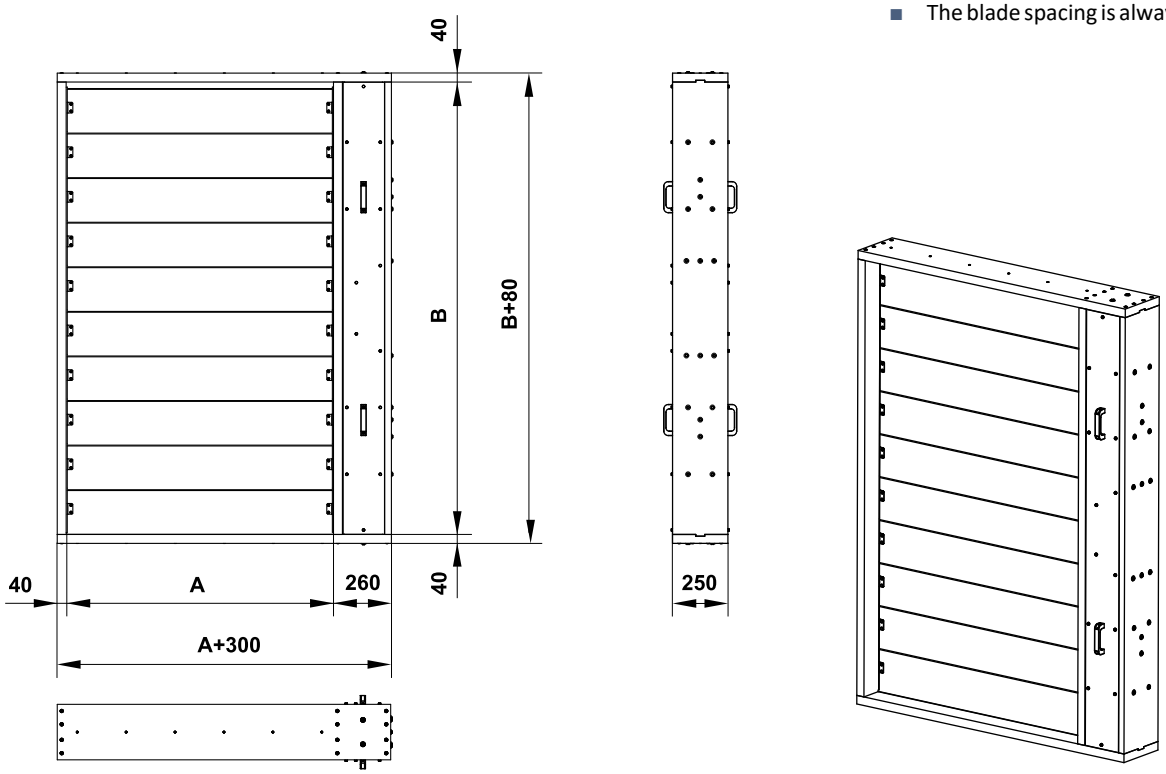
* reverse output: fault = contact open

Communication and control device BKSE 24-6	
Power voltage	AC 24 V 50/60Hz
Power consumption	3,5 W
Dimensioning	5,5 VA 18 VA (Imax 6.4 A @ 2.5 ms)
Protection class	III
Degree of protection	IP 20
Ambient operation temperature	0°C ... +50°C
Connection	terminal 2 x 1,5 mm^2

III.DIMENSIONS

SEDM-L without flange and cover grille

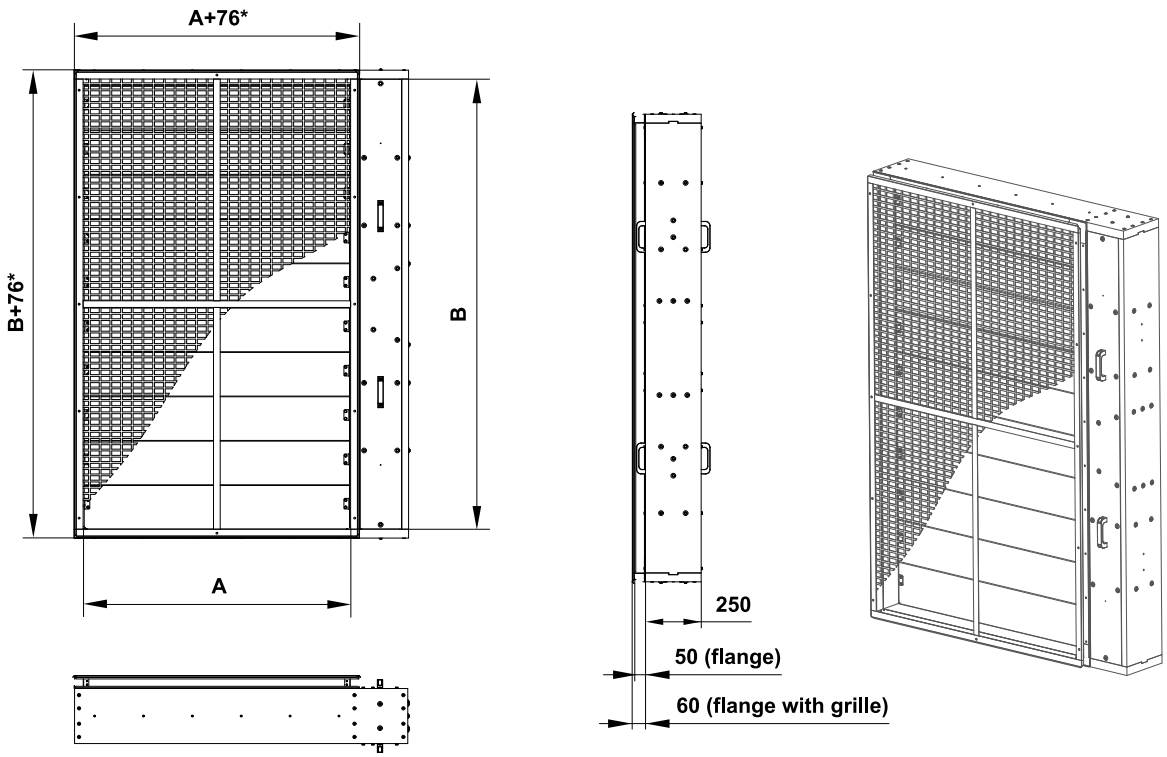
- The blade spacing is always 200mm



SEDM-L with flange and cover grille over blades

* External dimension of the grille

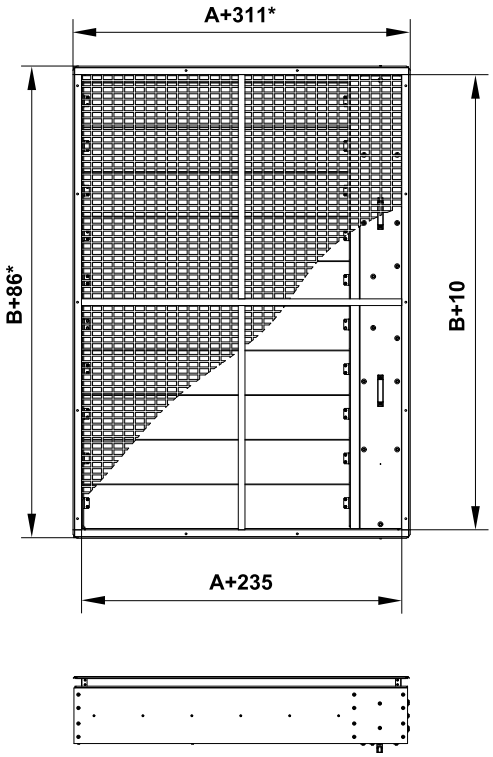
- The blade spacing is always 200mm
- For a detail of the cover grille filling, → see page 14

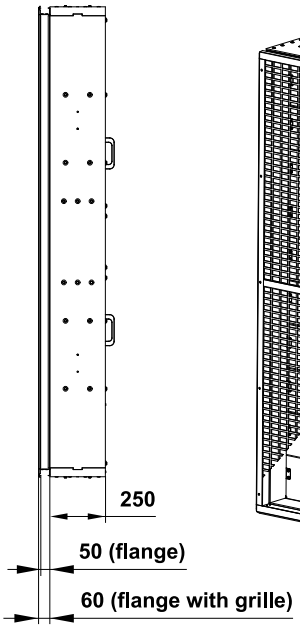


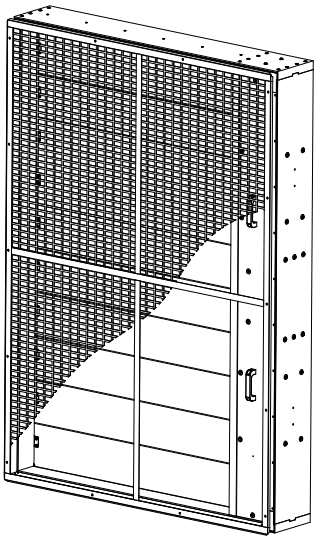
SEDM-L with flange and cover grille over damper

* External dimension of the grille

- The blade spacing is always 200mm
- For a detail of the cover grille filling, → see page 14

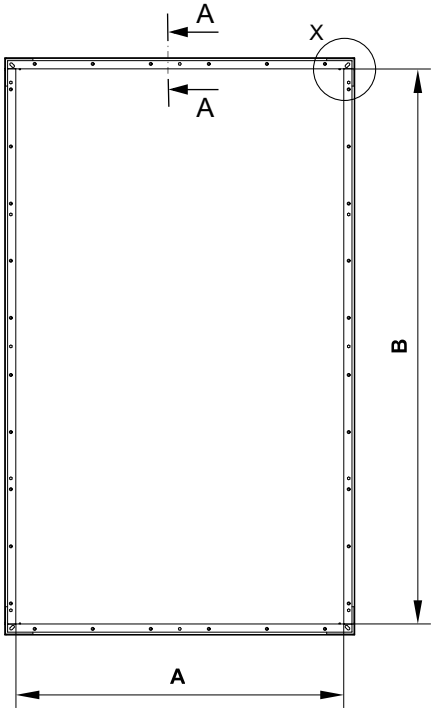






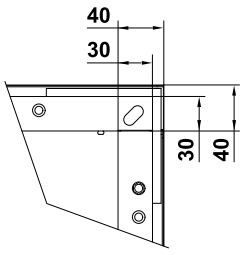
Flange (2 types)

Flange over blades

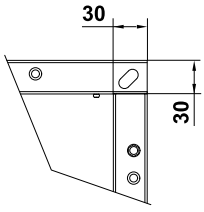


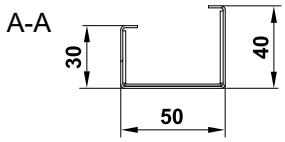
- Oval holes in the corners are used to connect the duct. Other holes are technological.

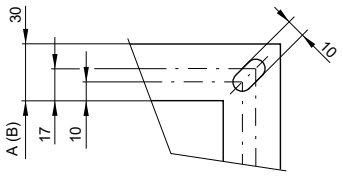
Detail X



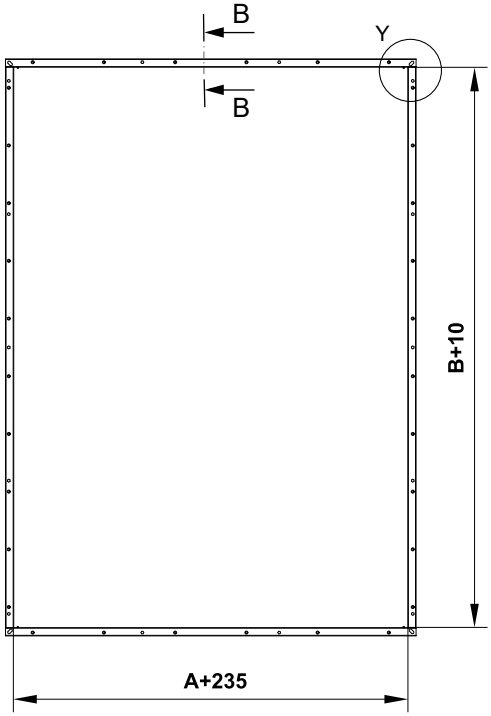
Detail Y

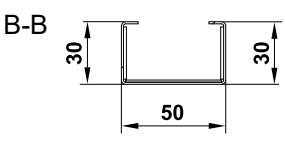






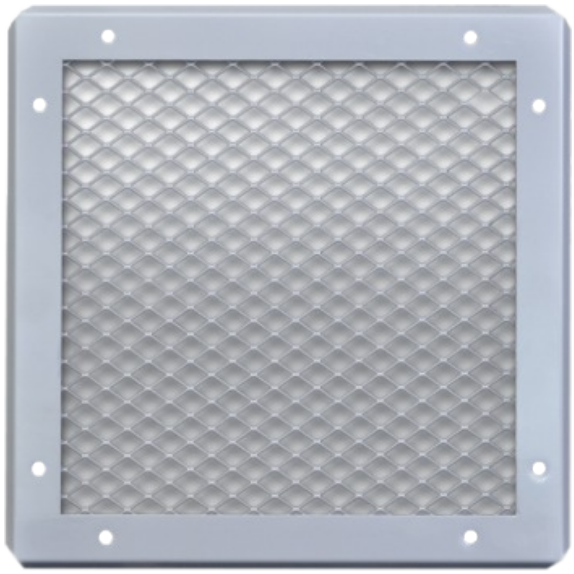
Flange over damper





Cover grille KMM

- The grilles type KMM (TPM 002/96) can be used to close smoke control dampers.
- Maximum size KMM can we supply is 2400x2400mm.
- Free area value for KMM is 78%.



Technical parameters

A x B [mm]	Number of blades	Effective area Sef [m²]	Weight SEDM-L [kg] *	Weight flange over blades [kg]	Weight flange over damper [kg]	Weight grille over blades [kg]	Weight grille over damper [kg]	Actuating mechanism type
200		0,0537	39	1,8	2	0,9	1,4	
250		0,0682	40,7	1,9	2,1	1	1,5	
300		0,0827	42,4	2	2,2	1,1	1,6	
350		0,0972	44,3	2,1	2,3	1,2	1,7	
400		0,1117	45,9	2,2	2,4	1,3	1,8	
450		0,1262	47,6	2,3	2,5	1,4	1,9	
500		0,1407	49,3	2,4	2,6	1,5	2	
550		0,1552	51	2,5	2,7	1,6	2,1	
600		0,1697	52,7	2,6	2,7	1,7	2,2	
650		0,1842	54,8	2,7	2,8	1,8	2,3	BELIMO BEN (15 N.m)
700 x 430	2	0,1987	56,5	2,8	2,9	1,9	2,4	
750		0,2132	59,8	2,9	3	2	2,5	
800		0,2277	61,5	2,9	3,1	2,1	2,6	
850		0,2422	63,2	3	3,2	2,2	2,7	
900		0,2567	64,9	3,1	3,3	2,3	2,8	
950		0,2712	66,9	3,2	3,4	2,4	3	
1000		0,2857	68,6	3,4	3,5	2,5	3,1	
1050		0,3002	70,3	3,5	3,6	2,6	3,2	
1100		0,3147	72	3,6	3,7	2,7	3,3	
1150		0,3292	73,7	3,7	3,8	2,8	3,4	
1200		0,3437	75,4	3,8	3,9	3	3,5	
200		0,0833	50,3	2,2	2,4	1,2	1,8	
250		0,1058	52,3	2,3	2,5	1,3	1,9	
300		0,1283	54,4	2,4	2,6	1,4	2	
350		0,1508	56,6	2,5	2,7	1,6	2,2	
400		0,1733	58,6	2,6	2,7	1,7	2,3	
450		0,1958	60,7	2,7	2,8	1,8	2,4	
500		0,2183	62,7	2,8	2,9	1,9	2,5	BELIMO BEN (15 N.m)
550		0,2408	64,8	2,9	3	2	2,7	
600		0,2633	66,8	3	3,1	2,2	2,8	
650		0,2858	70,9	3,1	3,2	2,3	2,9	
700 x 630	3	0,3083	72,9	3,2	3,3	2,4	3	
750		0,3308	74,9	3,3	3,4	2,5	3,2	
800		0,3533	77	3,3	3,5	2,7	3,4	
850		0,3758	79	3,4	3,6	2,8	3,5	
900		0,3983	81,1	3,5	3,7	2,9	3,6	
950		0,4208	83,5	3,6	3,8	3	3,8	
1000		0,4433	86,7	3,7	3,9	3,4	3,9	
1050		0,4658	88,7	3,9	3,9	3,5	4	BELIMO BEE (25 N.m)
1100		0,4883	90,8	4	4	3,6	4,1	
1150		0,5108	92,8	4,1	4,1	3,8	4,3	
1200		0,5333	94,9	4,2	4,2	3,9	4,4	
200		0,1129	61,8	2,6	2,7	1,5	2,2	
250		0,1434	64,2	2,7	2,8	1,6	2,3	
300		0,1739	66,6	2,8	2,9	1,8	2,5	
350		0,2044	69,2	2,9	3	1,9	2,6	
400		0,2349	71,6	3	3,1	2,1	2,8	BELIMO BEN (15 N.m)
450		0,2654	74	3,1	3,2	2,2	2,9	
500		0,2959	76,4	3,2	3,3	2,4	3,1	
550		0,3264	80,4	3,3	3,4	2,5	3,2	
600		0,3569	82,8	3,4	3,5	2,7	3,4	
650		0,3874	85,5	3,5	3,6	2,8	3,5	
700 x 830	4	0,4179	87,9	3,6	3,7	2,9	3,7	
750		0,4484	91,5	3,7	3,8	3,1	3,8	
800		0,4789	93,9	3,7	3,9	3,2	4,1	
850		0,5094	96,3	3,8	3,9	3,4	4,3	
900		0,5399	98,7	3,9	4	3,5	4,4	
950		0,5704	101,9	4	4,1	3,7	4,6	BELIMO BEE (25 N.m)
1000		0,6009	104,3	4,2	4,2	4,1	4,7	
1050		0,6314	106,7	4,3	4,3	4,3	4,9	
1100		0,6619	109,1	4,4	4,4	4,4	5	
1150		0,6924	111,5	4,5	4,5	4,6	5,2	
1200		0,7229	113,9	4,6	4,6	4,7	5,3	

** In case of BKNE design it is necessary to add the weight 0,68 kg.*

A x B [mm]	Number of blades	Effective area Sef [m²]	Weight SEDM-L [kg] *	Weight flange over blades [kg]	Weight flange over damper [kg]	Weight grille over blades [kg]	Weight grille over damper [kg]	Actuating mechanism type
200		0,1425	74,1	3	3,1	1,8	2,6	
250		0,1810	76,8	3,1	3,2	1,9	2,9	
300		0,2195	79,6	3,2	3,3	2,1	3,1	BELIMO BEN (15 N.m)
350		0,2580	82,6	3,3	3,4	2,3	3,3	
400		0,2965	85,3	3,4	3,5	2,4	3,5	
450		0,3350	89,7	3,5	3,6	2,6	3,7	
500		0,3735	92,4	3,5	3,7	3	3,9	
550		0,4120	95,2	3,6	3,8	3,2	4,1	
600		0,4505	99,1	3,7	3,9	3,3	4,3	
650		0,4890	102,4	3,8	3,9	3,5	4,4	
700 x 1030	5	0,5275	105,2	3,9	4,0	3,7	4,6	BELIMO BEE (25 N.m)
750		0,5660	108,3	4	4,1	3,9	4,8	
800		0,6045	111,1	4,1	4,2	4,1	5,4	
850		0,6430	113,9	4,2	4,3	4,3	5,6	
900		0,6815	116,6	4,3	4,4	4,5	5,8	
950		0,7200	120	4,4	4,5	4,7	5,9	
1000		0,7585	122,7	4,5	4,6	5,2	6,1	
1050		0,7970	125,5	4,6	4,7	5,4	6,3	
1100		0,8355	128,2	4,7	4,8	5,6	6,5	BELIMO BE (40 N.m)
1150		0,8740	131	4,8	4,9	5,8	6,7	
1200		0,9125	133,8	4,9	5	6	6,9	
200		0,1721	85,3	3,4	3,5	2,1	3,1	
250		0,2186	88,4	3,5	3,6	2,3	3,4	BELIMO BEN (15 N.m)
300		0,2651	91,5	3,6	3,7	2,4	3,6	
350		0,3116	94,9	3,7	3,8	2,6	3,8	
400		0,3581	98	3,8	3,9	2,8	4	
450		0,4046	102,7	3,9	4	3,2	4,2	
500		0,4511	107	4	4	3,4	4,4	
550		0,4976	110,1	4,1	4,1	3,6	4,6	BELIMO BEE (25 N.m)
600		0,5441	113,2	4,2	4,2	3,8	4,9	
650		0,5906	117,3	4,2	4,3	4	5,1	
700 x 1230	6	0,6371	120,4	4,3	4,4	4,2	5,3	
750		0,6836	123,5	4,5	4,5	4,5	5,5	
800		0,7301	126,7	4,5	4,6	4,7	6,1	
850		0,7766	129,8	4,6	4,7	4,9	6,3	
900		0,8231	132,9	4,7	4,8	5,1	6,6	
950		0,8696	136,6	4,8	4,9	5,3	6,8	
1000		0,9161	139,7	4,9	5	5,9	7	BELIMO BE (40 N.m)
1050		0,9626	142,8	5	5,1	6,2	7,2	
1100		1,0091	145,9	5,1	5,2	6,4	7,4	
1150		1,0556	149	5,3	5,2	6,6	7,6	
1200		1,1021	152,1	5,4	5,3	6,8	7,8	
200		0,2017	96,7	3,7	3,9	2,3	3,5	BELIMO BEN (15 N.m)
250		0,2562	100,2	3,8	3,9	2,6	3,8	
300		0,3107	103,6	3,9	4	2,8	4	
350		0,3652	109	4	4,1	3,1	4,2	
400		0,4197	112,4	4,1	4,2	3,4	4,5	
450		0,4742	117	4,2	4,3	3,6	4,7	
500		0,5287	120,5	4,3	4,4	3,8	5	BELIMO BEE (25 N.m)
550		0,5832	124,4	4,4	4,5	4,1	5,2	
600		0,6377	127,9	4,5	4,6	4,3	5,4	
650		0,6922	132	4,6	4,7	4,5	5,7	
700 x 1430	7	0,7467	135,4	4,7	4,8	4,8	5,9	
750		0,8012	138,9	4,8	4,9	5	6,1	
800		0,8557	142,3	4,9	5	5,2	6,9	
850		0,9102	145,8	5	5,1	5,5	7,1	
900		0,9647	149,2	5,1	5,1	5,7	7,3	
950		1,0192	153,3	5,2	5,2	5,9	7,6	BELIMO BE (40 N.m)
1000		1,0737	156,7	5,3	5,3	6,7	7,8	
1050		1,1282	160,2	5,4	5,4	6,9	8	
1100		1,1827	163,7	5,5	5,5	7,1	8,3	
1150		1,2372	167,1	5,6	5,6	7,4	8,5	
1200		1,2917	170,6	5,7	5,7	7,6	8,7	

** In case of BKNE design it is necessary to add the weight 0,68 kg.*

A x B [mm]	Number of blades	Effective area Sef [m²]	Weight SEDM-L [kg] *	Weight flange over blades [kg]	Weight flange over damper [kg]	Weight grille over blades [kg]	Weight grille over damper [kg]	Actuating mechanism type
200		0,2313	108,1	4,2	4,2	2,6	3,9	
250		0,2938	111,9	4,3	4,3	2,9	4,2	
300		0,3563	115,7	4,4	4,4	3,1	4,5	
350		0,4188	121,4	4,4	4,5	3,5	4,7	
400		0,4813	126,4	4,5	4,6	3,7	5	BELIMO BEE (25 N.m)
450		0,5438	130,2	4,7	4,7	4	5,2	
500		0,6063	134	4,7	4,8	4,3	5,5	
550		0,6688	138,4	4,8	4,9	4,5	5,8	
600		0,7313	142,2	4,9	5	4,8	6	
650		0,7938	146,6	5	5,1	5	6,3	
700 x 1630	8	0,8563	150,4	5,1	5,2	5,3	6,5	
750		0,9188	154,2	5,2	5,2	5,5	6,8	
800		0,9813	158	5,3	5,3	5,8	7,6	
850		1,0438	161,8	5,4	5,4	6,1	7,9	
900		1,1063	165,6	5,5	5,5	6,3	8,1	BELIMO BE (40 N.m)
950		1,1688	170	5,6	5,6	6,6	8,4	
1000		1,2313	173,8	5,7	5,7	7,4	8,7	
1050		1,2938	177,6	5,8	5,8	7,7	8,9	
1100		1,3563	181,4	5,9	5,9	7,9	9,2	
1150		1,4188	185,3	6	6	8,2	9,4	
1200		1,4813	189,1	6,1	6,1	8,4	9,7	
200		0,2609	120,2	4,6	4,6	2,9	4,3	
250		0,3314	124,3	4,7	4,7	3,2	4,6	
300		0,4019	128,5	4,8	4,8	3,6	4,9	
350		0,4724	135,8	4,9	4,9	3,8	5,2	BELIMO BEE (25 N.m)
400		0,5429	139,9	5	5	4,1	5,5	
450		0,6134	144,1	5,1	5,1	4,4	5,8	
500		0,6839	148,2	5,1	5,2	4,7	6	
550		0,7544	153	5,3	5,2	5	6,3	
600		0,8249	157,2	5,4	5,3	5,3	6,6	
650		0,8954	162,1	5,4	5,4	5,5	6,9	
700 x 1830	9	0,9659	166,3	5,5	5,5	5,8	7,2	
750		1,0364	170,5	5,6	5,6	6,1	7,5	
800		1,1069	174,6	5,7	5,7	6,4	8,4	
850		1,1774	178,8	5,8	5,8	6,7	8,7	
900		1,2479	182,9	5,9	5,9	6,9	8,9	BELIMO BE (40 N.m)
950		1,3184	187,9	6	6	7,2	9,2	
1000		1,3889	192,1	6,1	6,1	8,1	9,5	
1050		1,4594	196,2	6,2	6,2	8,4	9,8	
1100		1,5299	200,4	6,3	6,3	8,7	10,1	
1150		1,6004	204,5	6,4	6,4	9	10,4	
1200		1,6709	208,7	6,5	6,4	9,3	10,6	
200		0,2905	131,3	4,9	5	3,2	4,7	
250		0,3690	135,8	5	5,1	3,6	5,1	
300		0,4475	143,1	5,1	5,2	3,9	5,4	BELIMO BEE (25 N.m)
350		0,5260	148	5,2	5,2	4,2	5,7	
400		0,6045	152,5	5,3	5,3	4,5	6	
450		0,6830	157	5,4	5,4	4,8	6,3	
500		0,7615	161,5	5,5	5,5	5,1	6,6	
550		0,8400	166,7	5,6	5,6	5,4	6,9	
600		0,9185	171,2	5,7	5,7	5,7	7,2	
650		0,9970	176,5	5,8	5,8	6	7,5	
700 x 2030	10	1,0755	181	5,9	5,9	6,3	7,8	
750		1,1540	185,5	6	6	6,6	8,1	
800		1,2325	190	6,1	6,1	7	9,1	
850		1,3110	194,5	6,2	6,2	7,3	9,4	BELIMO BE (40 N.m)
900		1,3895	199,1	6,3	6,3	7,6	9,7	
950		1,4680	204,4	6,4	6,3	7,9	10	
1000		1,5465	208,9	6,5	6,4	8,9	10,4	
1050		1,6250	213,4	6,6	6,5	9,2	10,7	
1100		1,7035	217,9	6,7	6,6	9,5	11	
1150		1,7820	222,4	6,8	6,7	9,8	11,3	
1200		1,8605	226,9	6,9	6,8	10,1	11,6	

** In case of BKNE design it is necessary to add the weight 0,68 kg.*

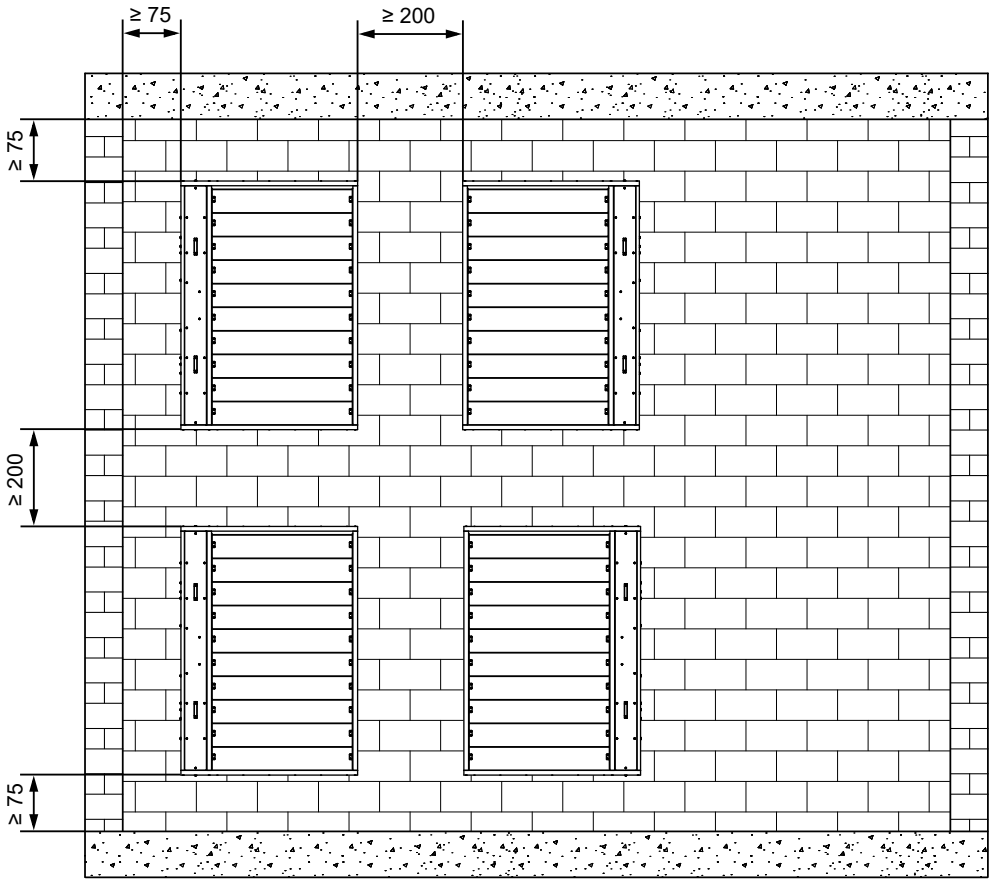
IV. INSTALLATION

Placement and installation

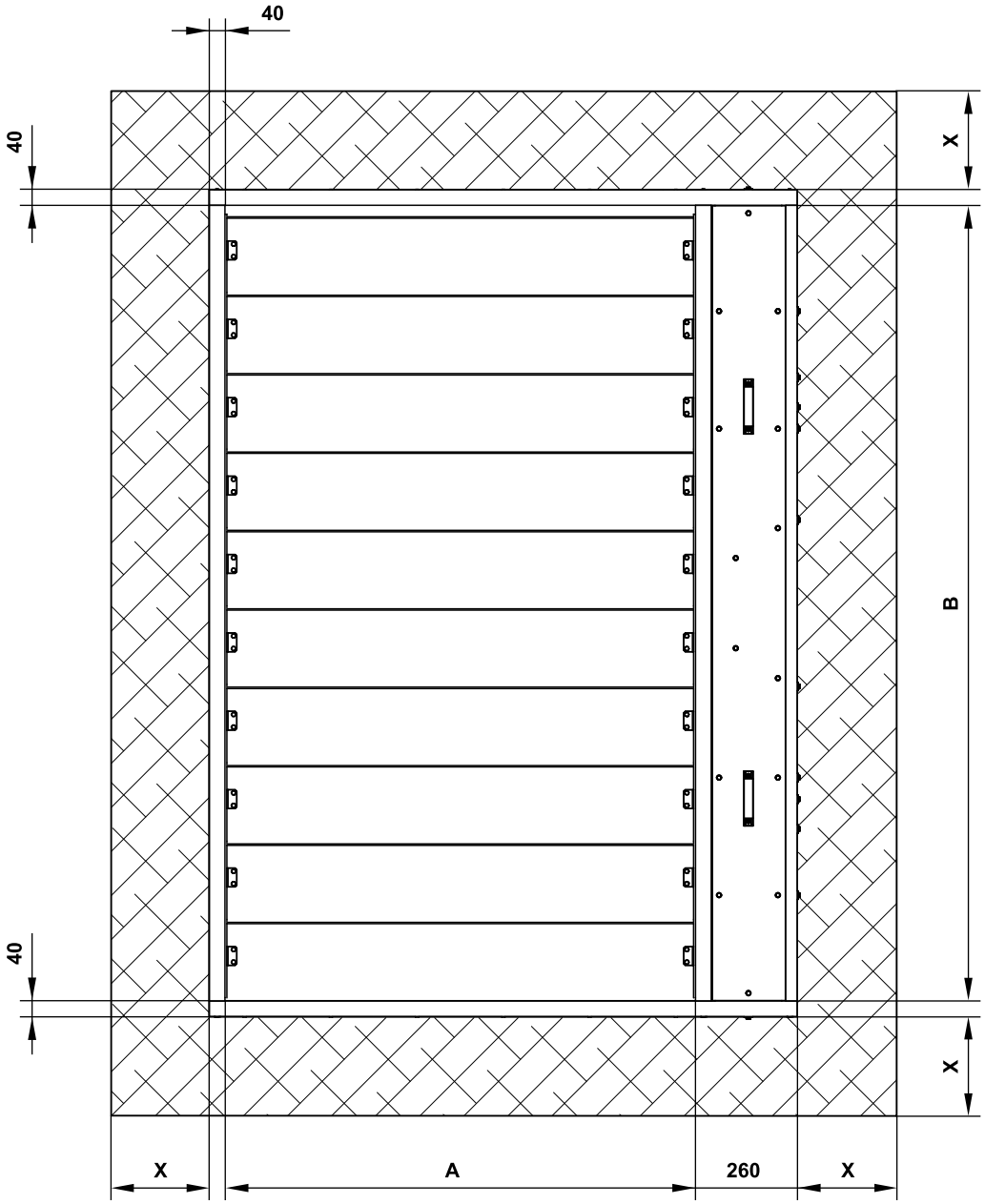
- Dampers are designed to remove heat and combustion products (e.g. smoke) from fire compartments
- Dampers are suitable for installation in vertical and horizontal position passages of fire separating constructions. The damper installation procedures must be done so that all load transfer from the fire separating constructions to the damper is absolutely excluded.
- Following air-conditioning duct must be suspended or supported so that all load transfer from the following duct to the damper flange is absolutely excluded.
- The gap between the installed damper and the fire separating construction must be perfectly filled with approved material.
- The dampers are suitable for installation into/onto smoke extraction ducts, tested and certified according to EN 1366-8, → see page 46
- After installing the damper, the damper blades must only be opened, or closed by operation of the actuator only.
- The distance between the damper and the construction (wall, ceiling) must be 75 mm at the minimum, according to EN 1366-2. If two or more dampers are to be installed in one fire separating construction, the distance between adjacent dampers must be 200 mm at the minimum, according to EN 1366-10.
- To provide the necessary space for access to the control device, it is recommended that other objects be at least 350 mm away from the control parts of the damper.

Minimum distance between the dampers and the construction

- minimum distance 200 mm between dampers, according to EN 1366-10
- minimum distance 75 mm between damper and construction (wall/ceiling), according to EN 1366-10



Recommended construction openings



Mortar or gypsum

x = 50 mm

Ablative Coated Batt system

x = 200 mm…400 mm

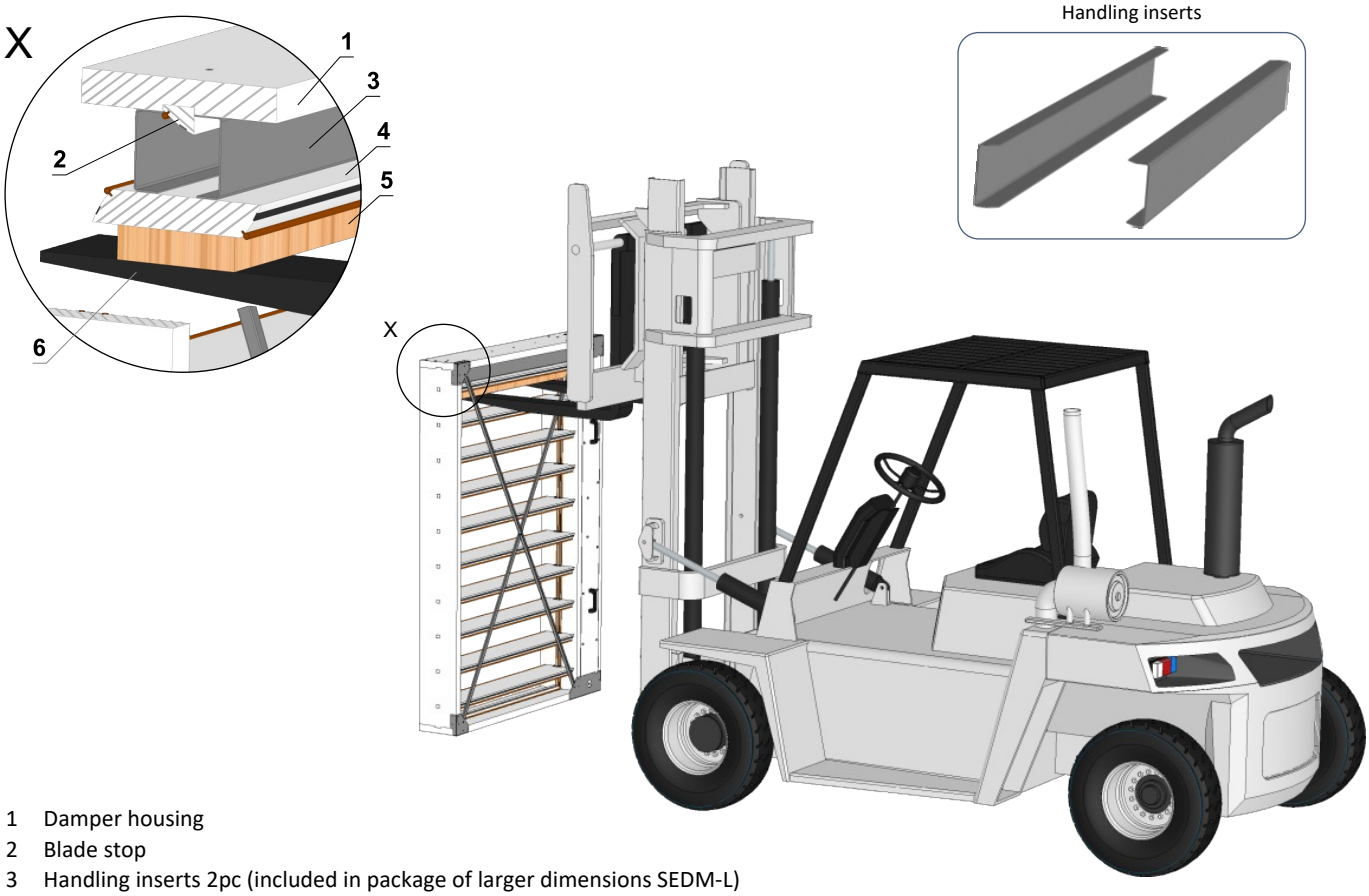
Transport of the damper to the installation place and the installation procedure

- Transport the damper to the installation site in the transport packaging. Pay attention to the appropriate length of the forks of the forklift /handling equipment/ to avoid breaking of wooden planks, consequently damaging the damper´s blades.
- Smaller dimensions can be transported, handled and installed into the builders work opening manually, for dimensions where a handling insert is included in the delivery, it is recommended to use a suitable handling tools and machines, e.g. a forklift.

Damper handling when installed in the mounting hole

1. Place the damper in a vertical position. Do not remove the transport pacers and corners !

2. Place handling inserts between the top blade and the damper housing.



1 Damper housing
2 Blade stop
3 Handling inserts 2pc (included in package of larger dimensions SEDM-L)
4 Blade
5 Board - thickness min. 25mm (not included)
6 Forks

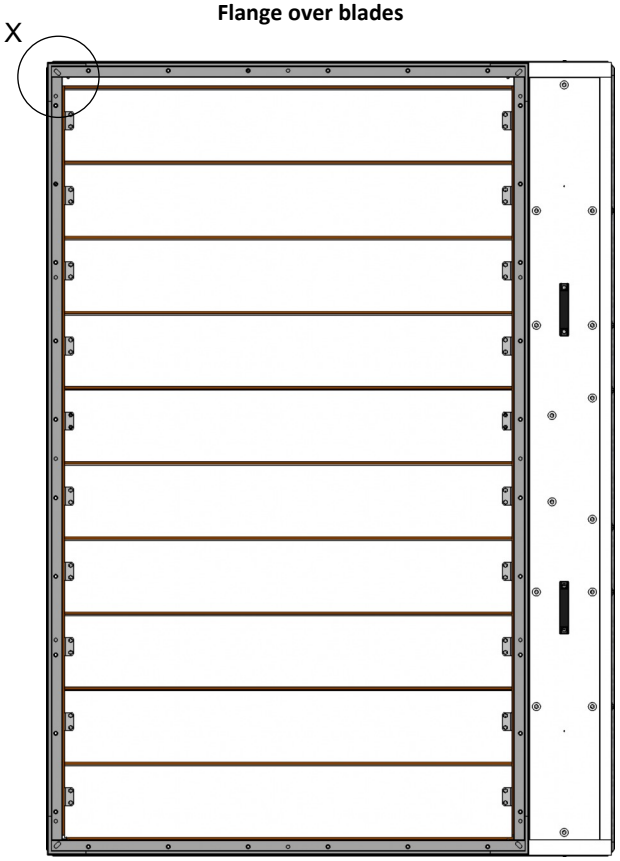
3. Drive the forklift under the highest blade. It's necessary to put a board between the blade and the fork along the blade's entire length so that the blade is not damaged when the damper is raised.

4. Place the damper in the installation hole.

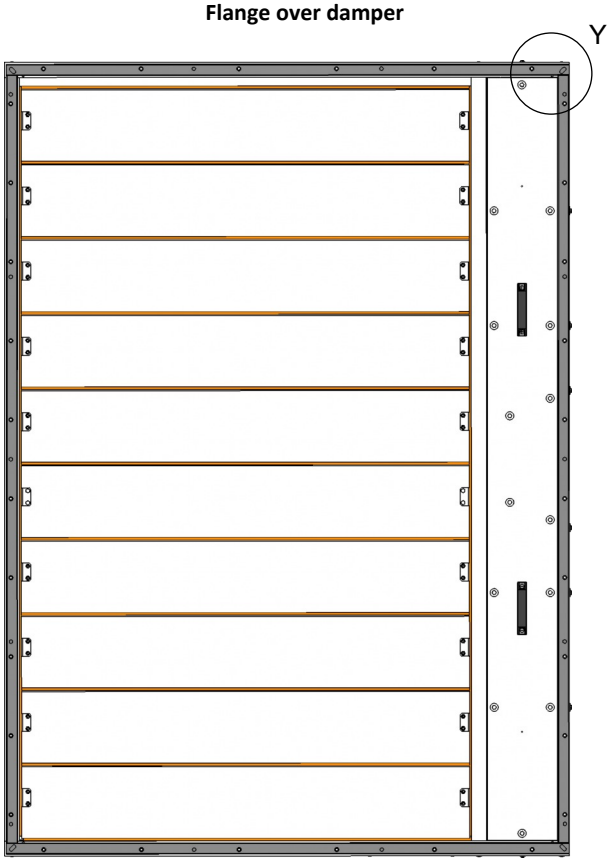
5. After installing the damper and possibly hardening the plaster/mortar, remove the transport struts and corners.

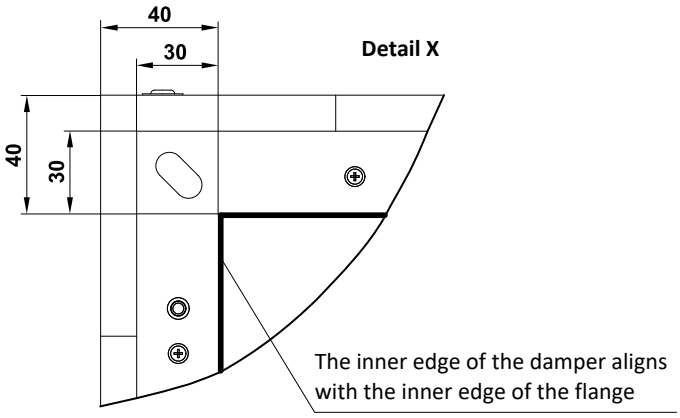
6. Ways of placing the flange on the damper (2 types of flanges)

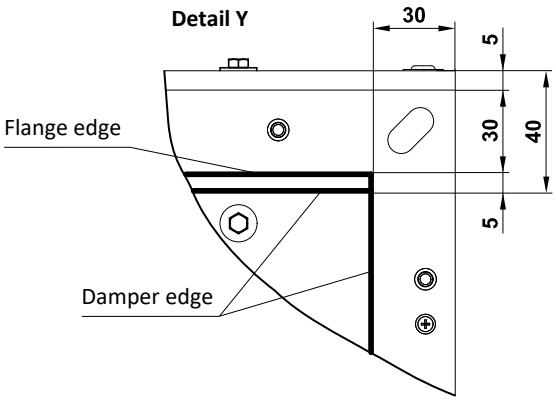
Flange over blades



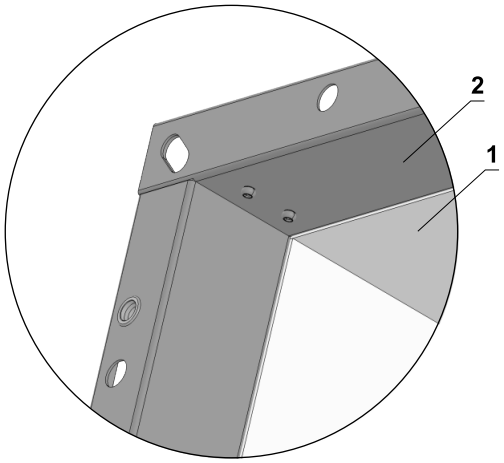
Flange over damper





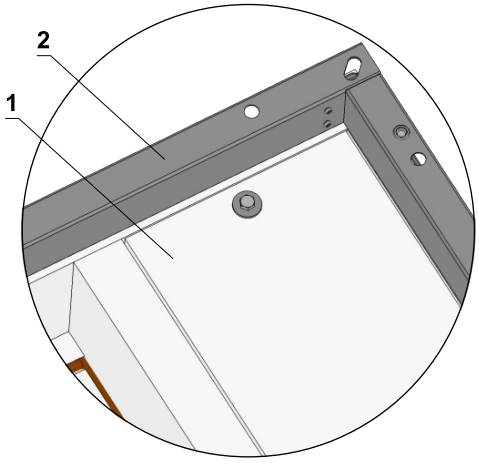


Detail X

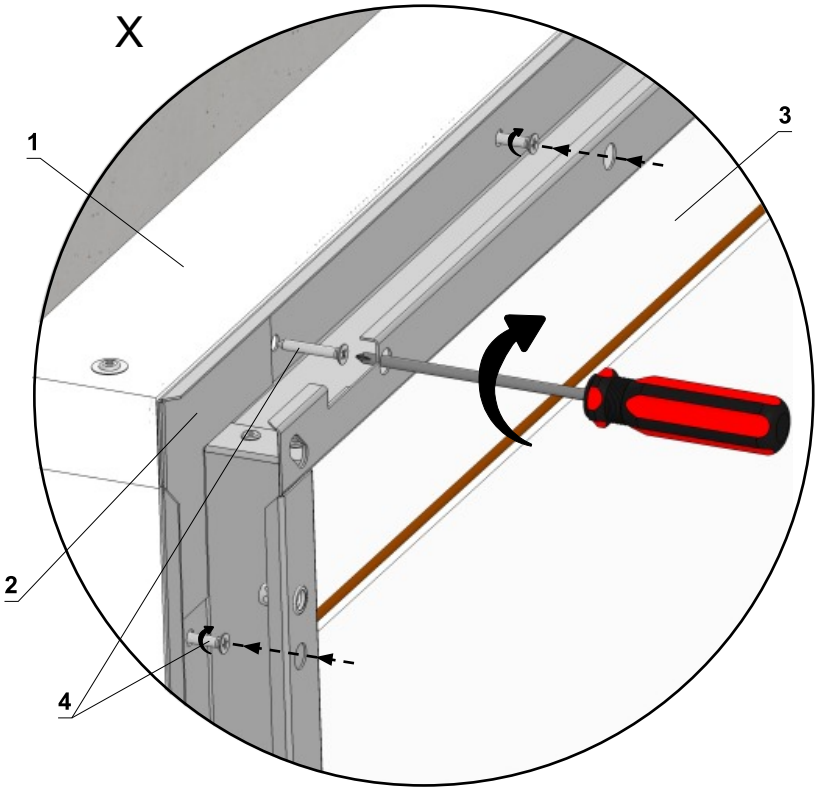


1 SEDM-L
2 Flange

Detail Y



7. Mounting the flange on the damper

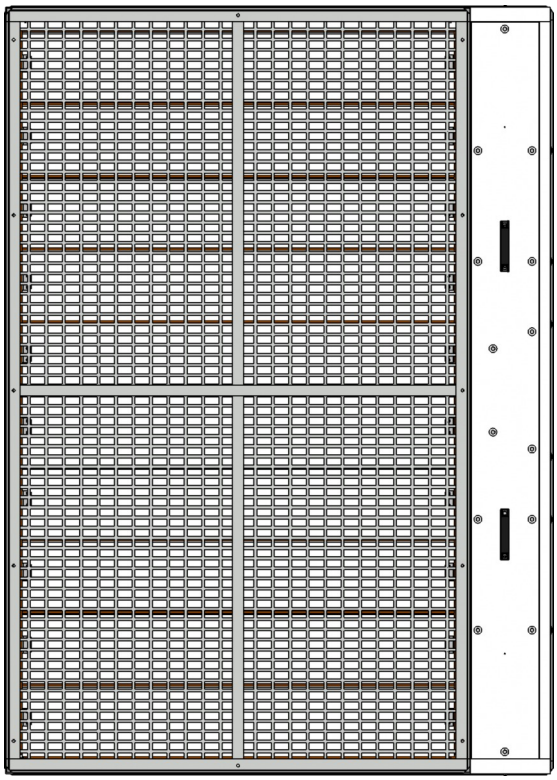


* Fix in all holes, around the perimeter of the flange.

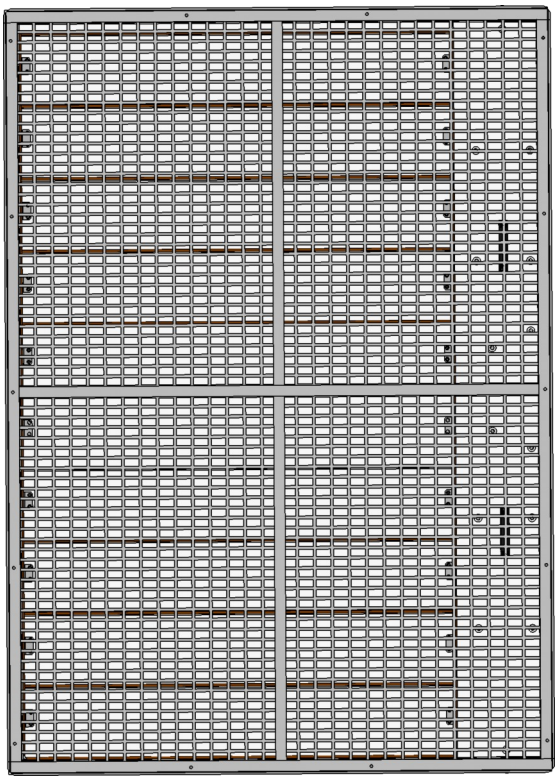
1 SEDM-L
2 Flange
3 Blades
4 Screw UNI 4x30 mm (included in the flange package)*

8. Ways of placing the grille on the damper with a flange (2 types)

Grille over blades

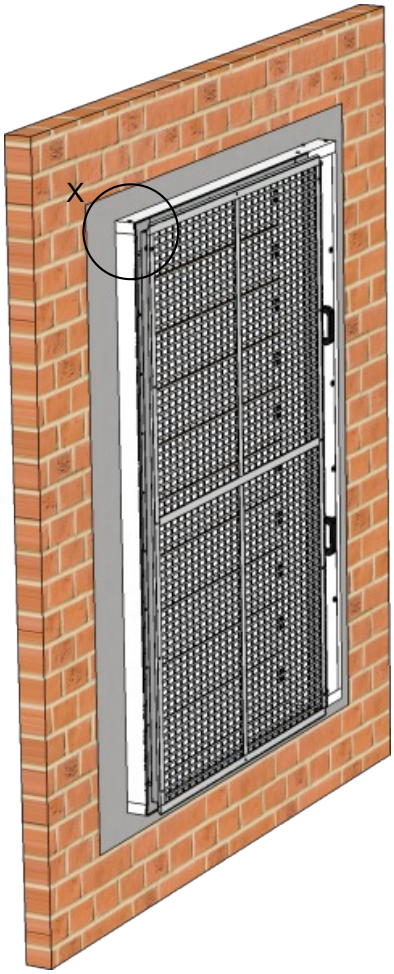


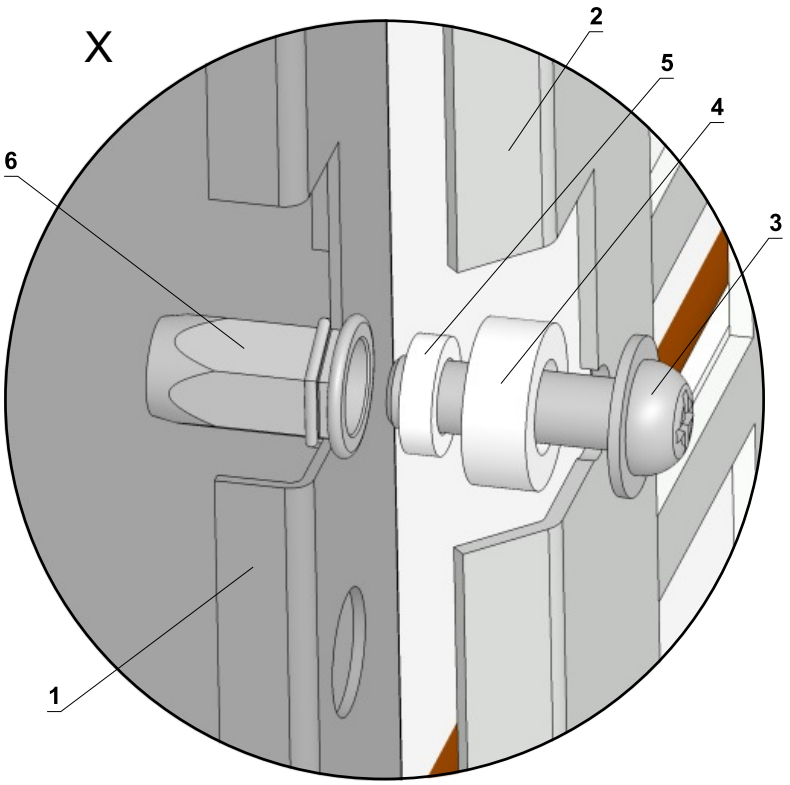
Grille over damper



- For a detail of the cover grille filling, → see page 14

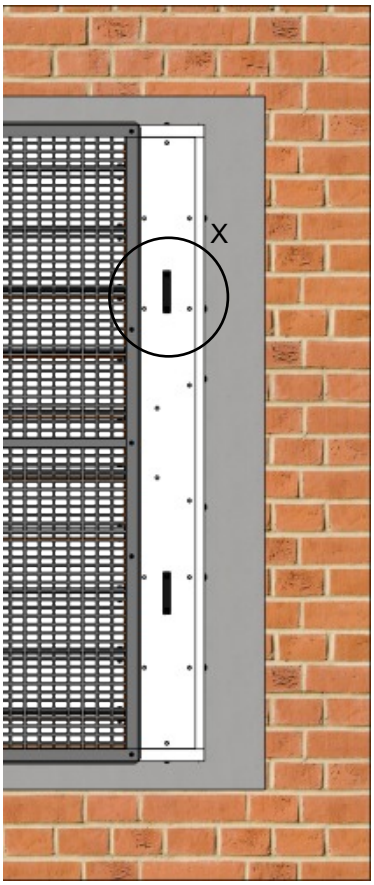
9. Mounting the grille on the flange

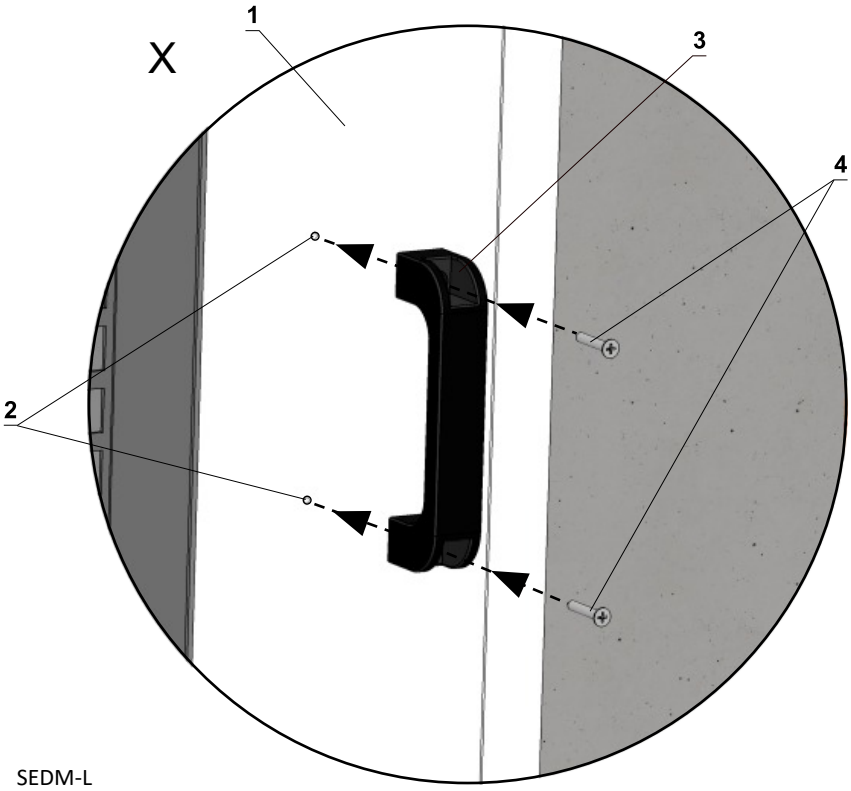




1 Flange
2 Grille
3 Bolt M6x20 type BN 4825 (included in the grille package)
4 Spacer ring (included in the grille package)
5 Retaining ring (included in the grille package)
6 Rivet nuts (mounted on the flange from the factor)

10. Mounting the handrail on the damper





1 SEDM-L
2 Pre-drilled holes
3 Handrail (part of SEDM-L)
4 Screw UNI 5x50 mm (part of SEDM-L)

Statement of installations

Type of construction	Method of placement in the construction	Min. thickness of construction [mm]	Penetration seal	Classification	Page
In solid wall construction	damper in the wall	100	Mortar or gypsum	EI 90 (v_{ew} i↔o) S1000C_{mod}HOT 400/30MAmulti	26
	damper in the wall application as a shaft wall			EI 120 (v_{ed} i↔o) S1000C_{mod}HOT 400/30MAmulti	
	damper in the wall application as a wall or as a shaft wall		Ablative Coated Batt system	EI 120 (v_{edw} i↔o) S1000C_{mod}HOT 400/30MAmulti	27
In gypsum wall construction	damper in the wall application as a wall or as a shaft wall	100	Ablative Coated Batt system	EI 120 (v_{edw} i↔o) S1000C_{mod}HOT 400/30MAmulti	28
Battery in solid wall construction	2 dampers side by side	100	Mortar or gypsum	EI 90 (v_{ew} i↔o) S1000C_{mod}HOT 400/30MAmulti* EI 120 (v_{ed} i↔o) S1000C_{mod}HOT 400/30MAmulti**	29
	3 dampers side by side				32
	2 dampers on top of each other				35
	3 dampers on top of each other				38
	4 dampers				41
	2 dampers side by side	100	Ablative Coated Batt system	EI 120 (v_{edw} i↔o) S1000C_{mod}HOT 400/30MAmulti	30
	3 dampers side by side				33
	2 dampers on top of each other				36
	3 dampers on top of each other				39
	4 dampers				42
Battery in gypsum wall construction	2 dampers side by side	100	Ablative Coated Batt system	EI 120 (v_{edw} i↔o) S1000C_{mod}HOT 400/30MAmulti	31
	3 dampers side by side				34
	2 dampers on top of each other				37
	3 dampers on top of each other				40
	4 dampers				43
In shaft wall British gypsum	damper in the wall application as a wall or as a shaft wall	107	Mortar or gypsum	EI 120 (v_{edw} i↔o) S1000C_{mod}HOT 400/30MAmulti	44
In solid ceiling construction	damper in the ceiling, application as a shaft floor	150	Mortar or gypsum	EI 120 (h_{od} i↔o) S1000C_{mod}HOT 400/30MAmulti	45
Horizontal or vertical smoke extraction ducts	Into/onto sheet metal duct with insulation	Connection to single or multi compartment smoke extraction ducts tested according to EN 1366-8 or EN 1366-9		EI 120 (v_{ed} i↔o) S1000C_{mod}HOT 400/30MAmulti	46-47

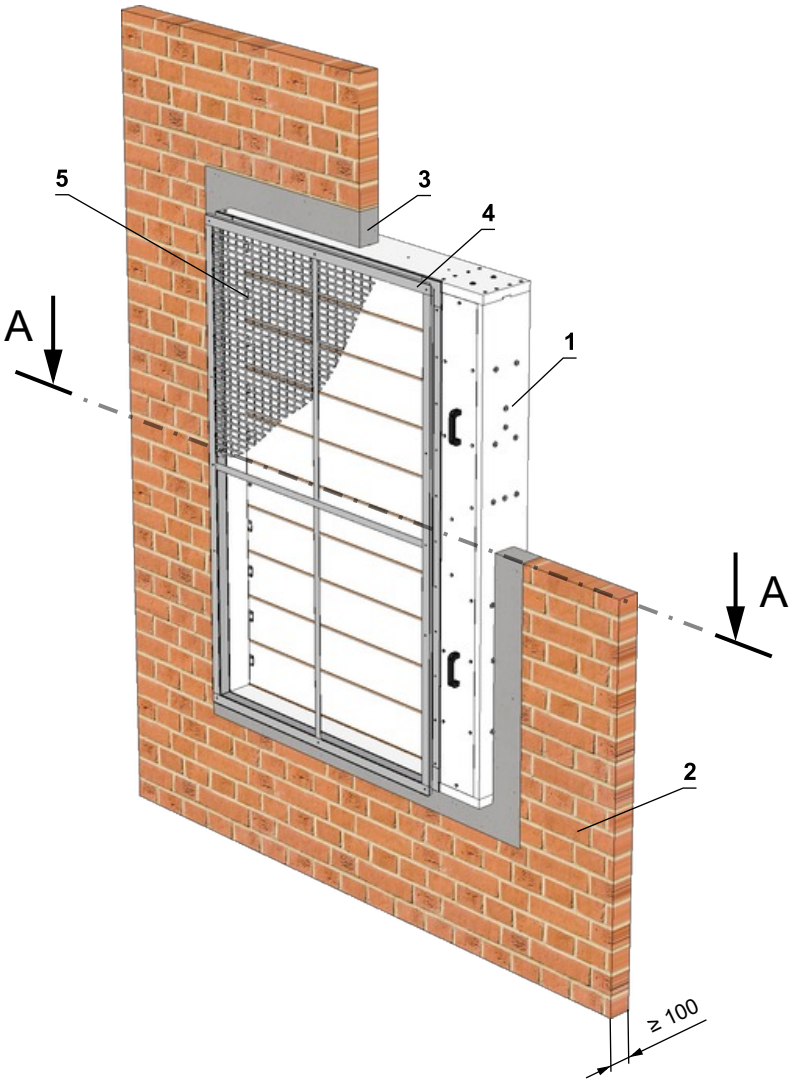
* *Application as a wall*
** *Application as a shaft wall*

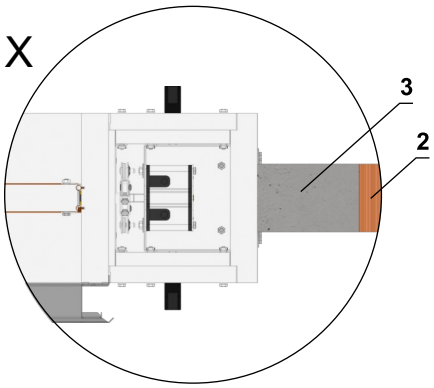
Installation in solid wall construction

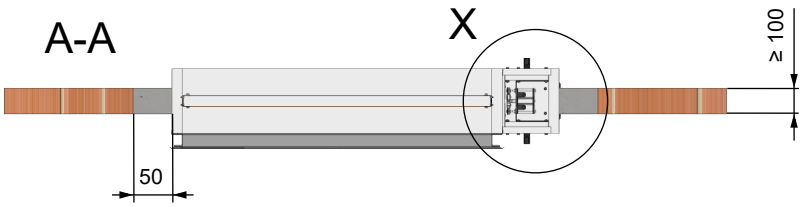
Solid wall - mortar or gypsum

EI 90 S - application as a wall
EI 120 S - application as a shaft wall

- Each Damper must be suitably supported in each corner front and rear with temporary block-work, temporary steel supports or similar, until gypsum has fully hardened.





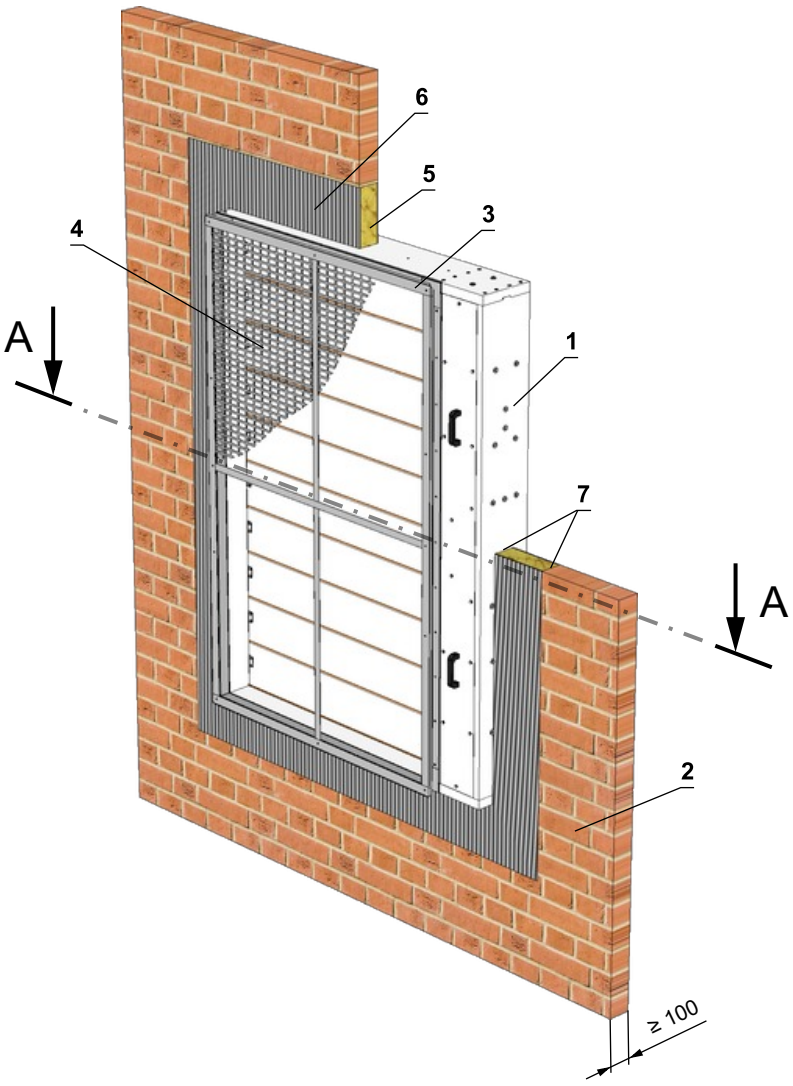


- Examples of anchors to the fire dividing construction → see pages 48 to 50

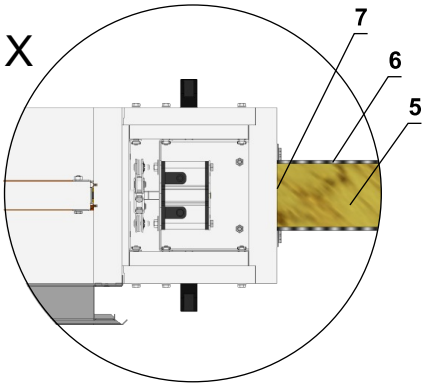
1 SEDM-L
2 Solid wall construction
3 Mortar or gypsum
4 Flange
5 Grille

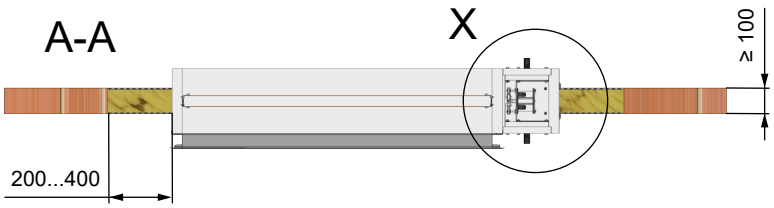
Solid wall - ablative coated batt

EI 120 S



- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.





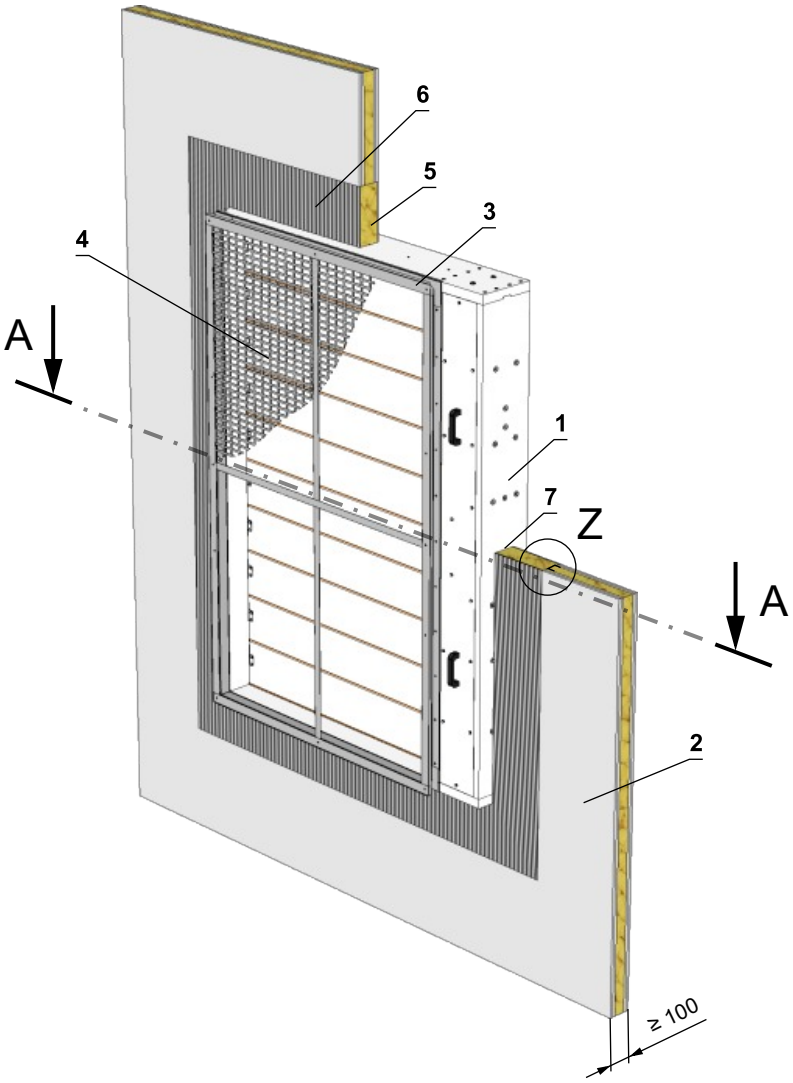
- Examples of anchors to the fire dividing construction → see pages 48 to 50

1 SEDM-L
2 Solid wall construction
3 Flange
4 Grille
Ablative Coated Batt system HILTI
5 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
6 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
7 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

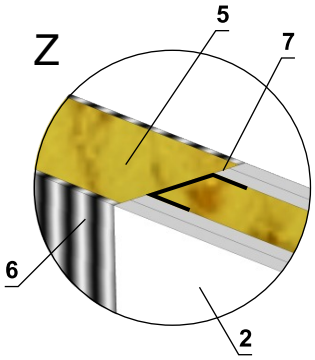
Installation in gypsum wall construction

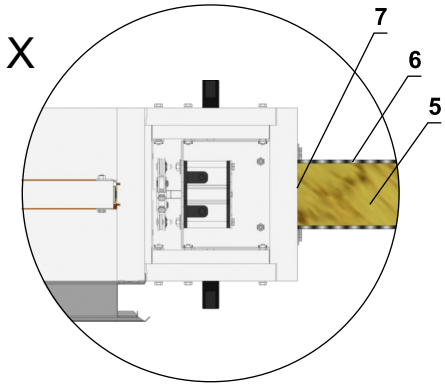
Gypsum wall - ablative coated batt

EI 120 S

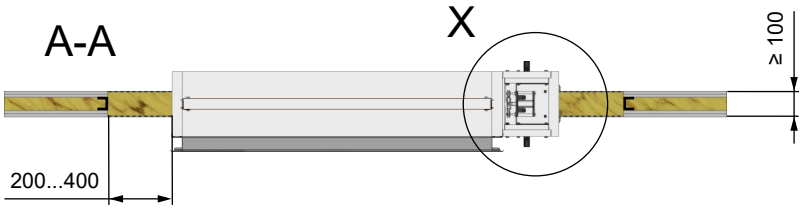


- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.





- Examples of anchors to the fire dividing construction → see pages 48 to 50

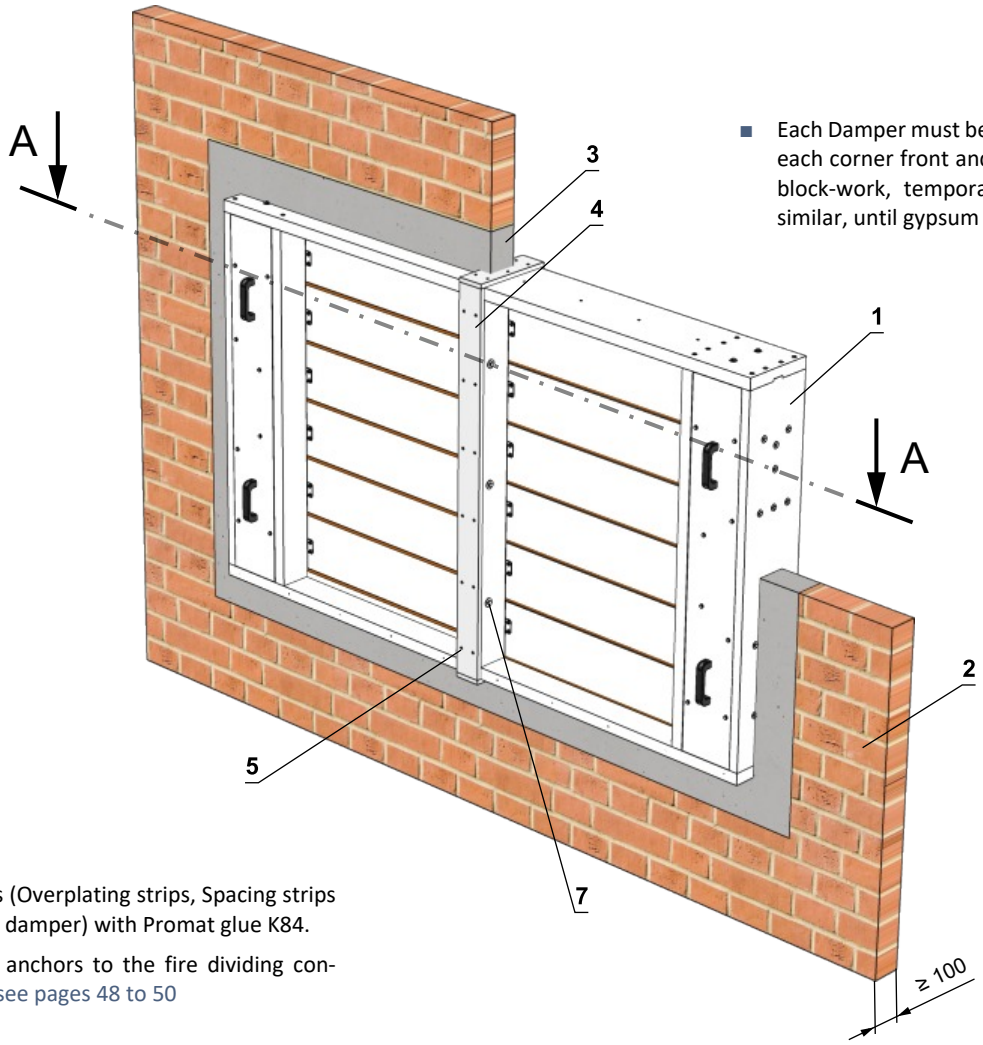


1 SEDM-L
2 Gypsum wall construction
3 Flange
4 Grille
Ablative Coated Batt system HILTI
5 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
6 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
7 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

Installation in battery

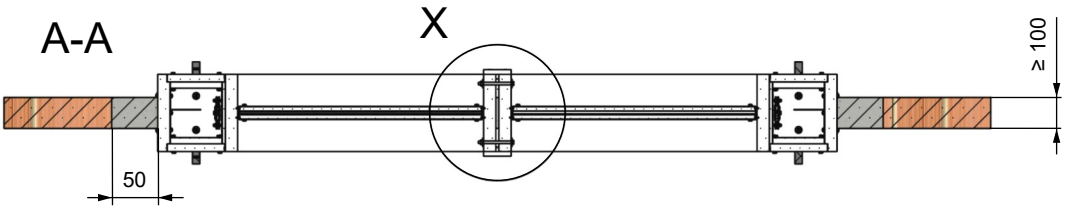
2 dampers side by side - solid wall - mortar or gypsum

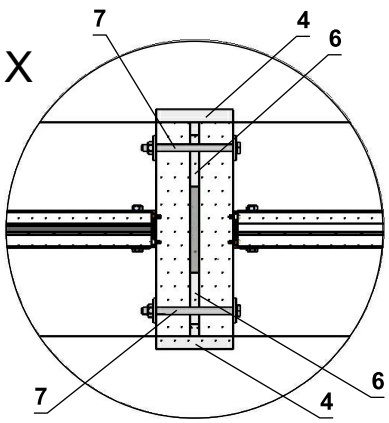
EI 90 S - application as a wall
EI 120 S - application as a shaft wall



- Each Damper must be suitably supported in each corner front and rear with temporary block-work, temporary steel supports or similar, until gypsum has fully hardened.

- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50





* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

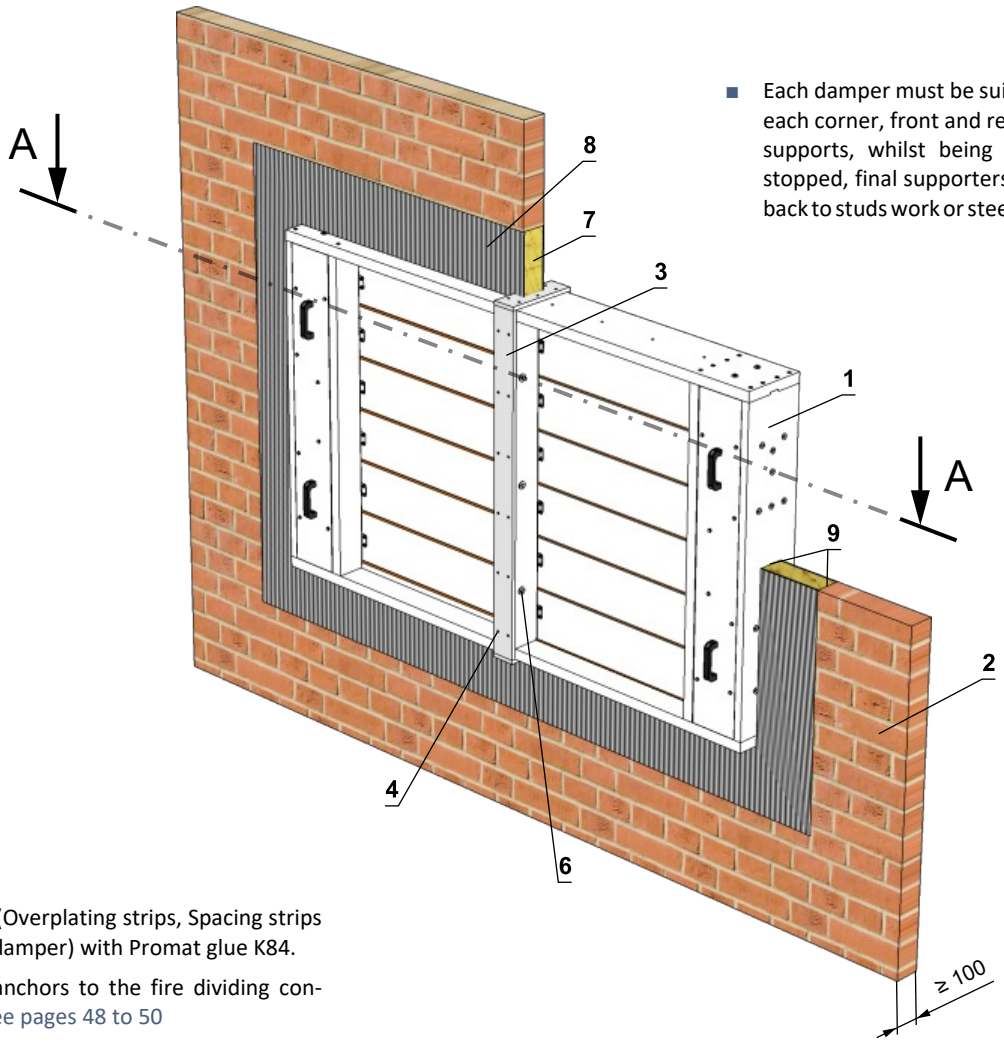
** When installing a flange, overplating strip is not installed.

1 SEDM-L
2 Solid wall construction
3 Mortar or gypsum
4 Overplating strip (e.g. Promatect-H, th. 15 mm)**
5 Screw UNI 4x40 mm (span 200-250 mm)
6 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
7 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)*

Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

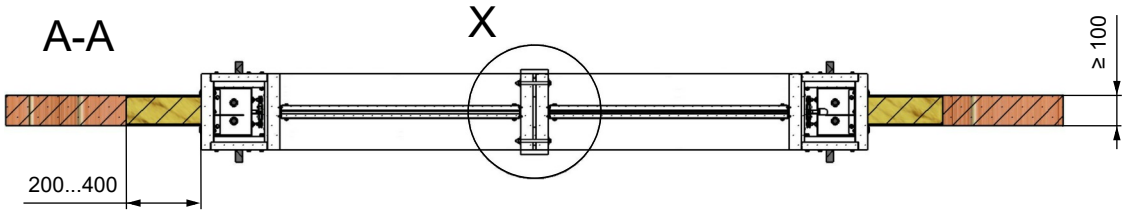
2 dampers side by side - solid wall - ablative coated batt

EI 120 S



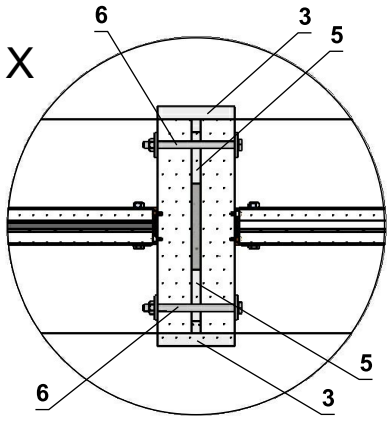
- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.

- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50



* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

** When installing a flange, overplating strip is not installed.

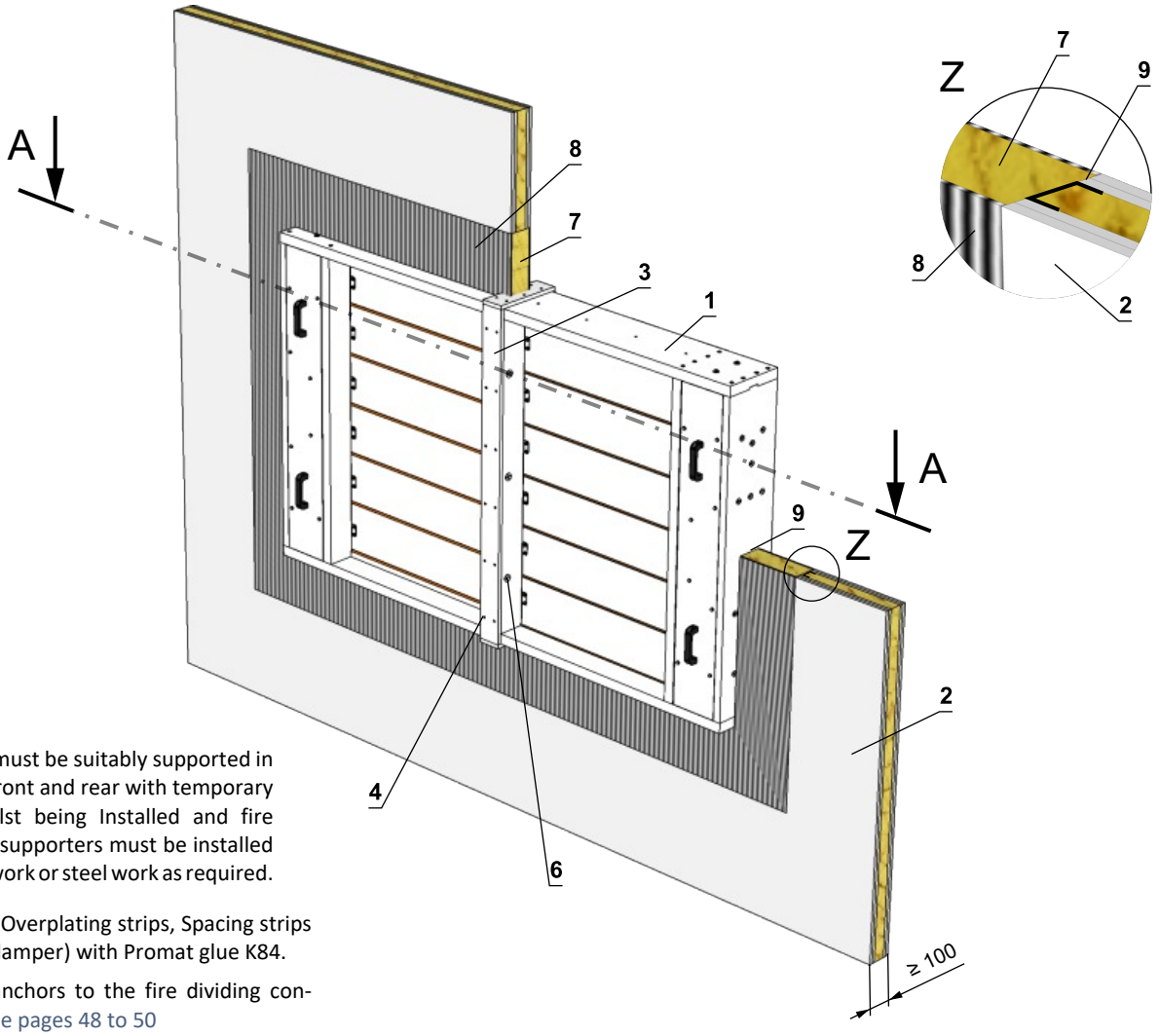


1 SEDM-L
2 Solid wall construction
3 Overplating strip (e.g. Promatect-H, th. 15 mm)**
4 Screw UNI 4x40 mm (span 200-250 mm)
5 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
6 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)*
Ablative Coated Batt system HILTI
7 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
8 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
9 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

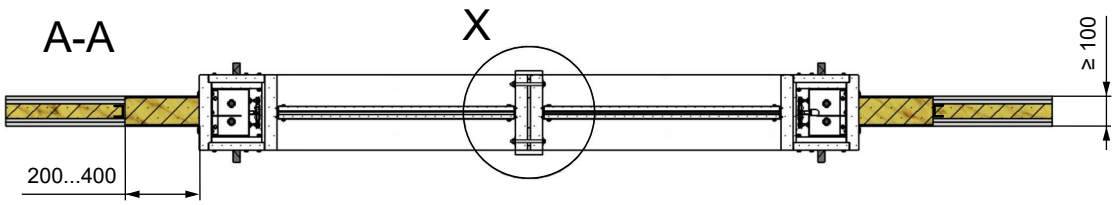
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

2 dampers side by side - gypsum wall - ablative coated batt

EI 120 S

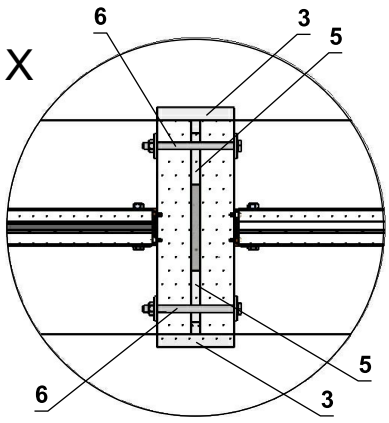


- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.
- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50



* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

** When installing a flange, overplating strip is not installed.



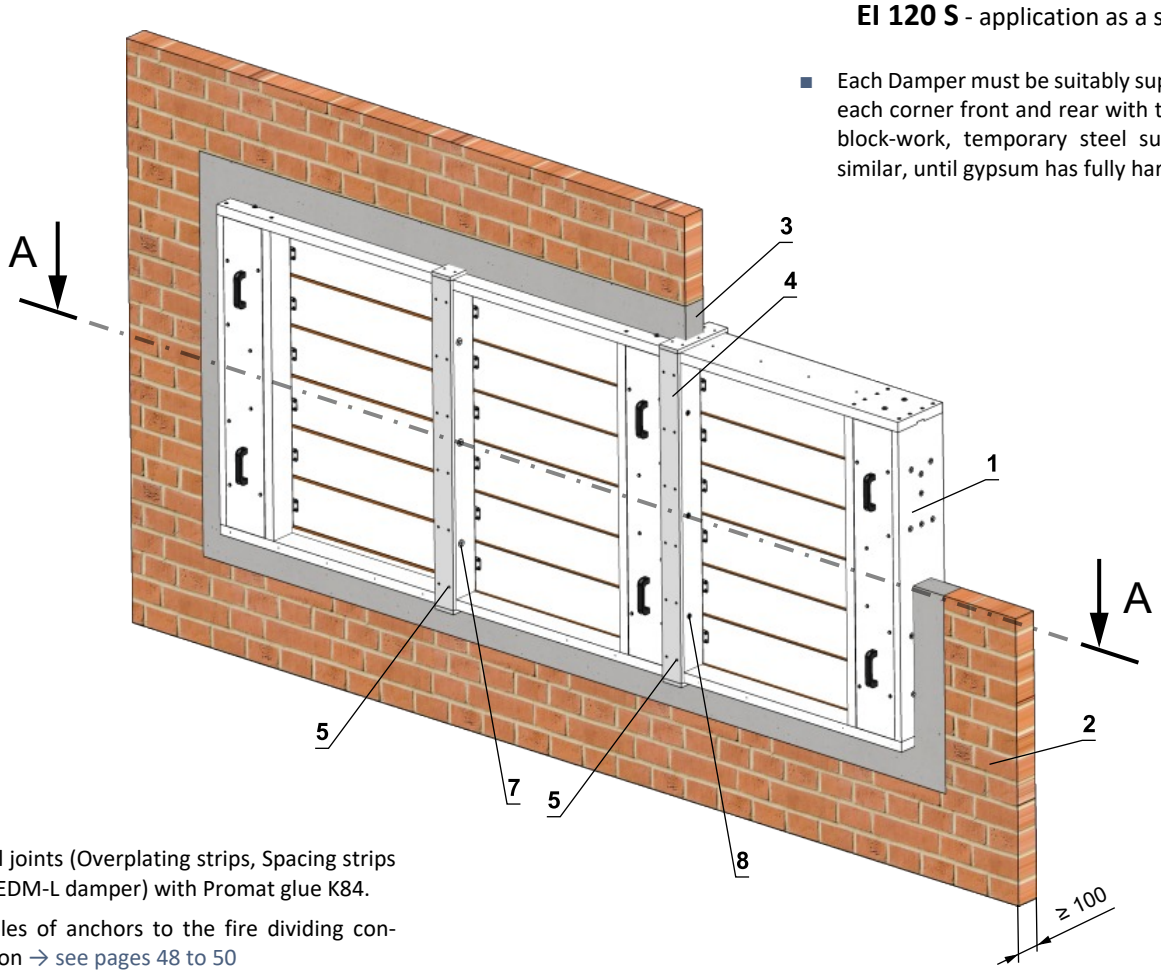
1 SEDM-L
2 Gypsum wall construction
3 Overplating strip (e.g. Promatect-H, th. 15 mm)**
4 Screw UNI 4x40 mm (span 200-250 mm)
5 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
6 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)*
Ablative Coated Batt system HILTI
7 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
8 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
9 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

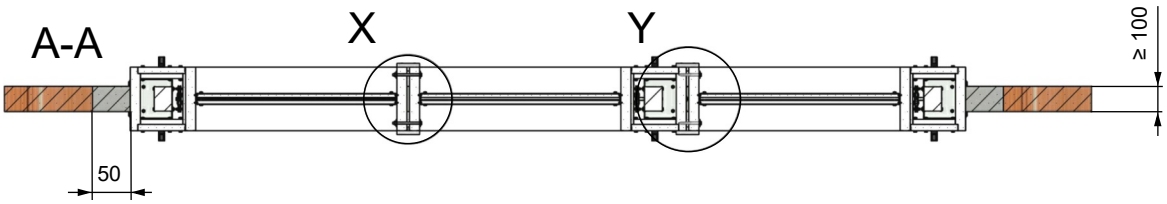
3 dampers side by side - solid wall - mortar or gypsum

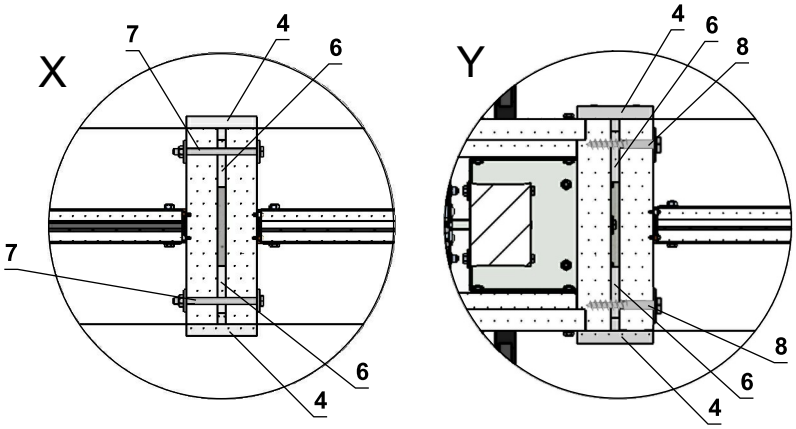
EI 90 S - application as a wall
EI 120 S - application as a shaft wall

- Each Damper must be suitably supported in each corner front and rear with temporary block-work, temporary steel supports or similar, until gypsum has fully hardened.



- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50





* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

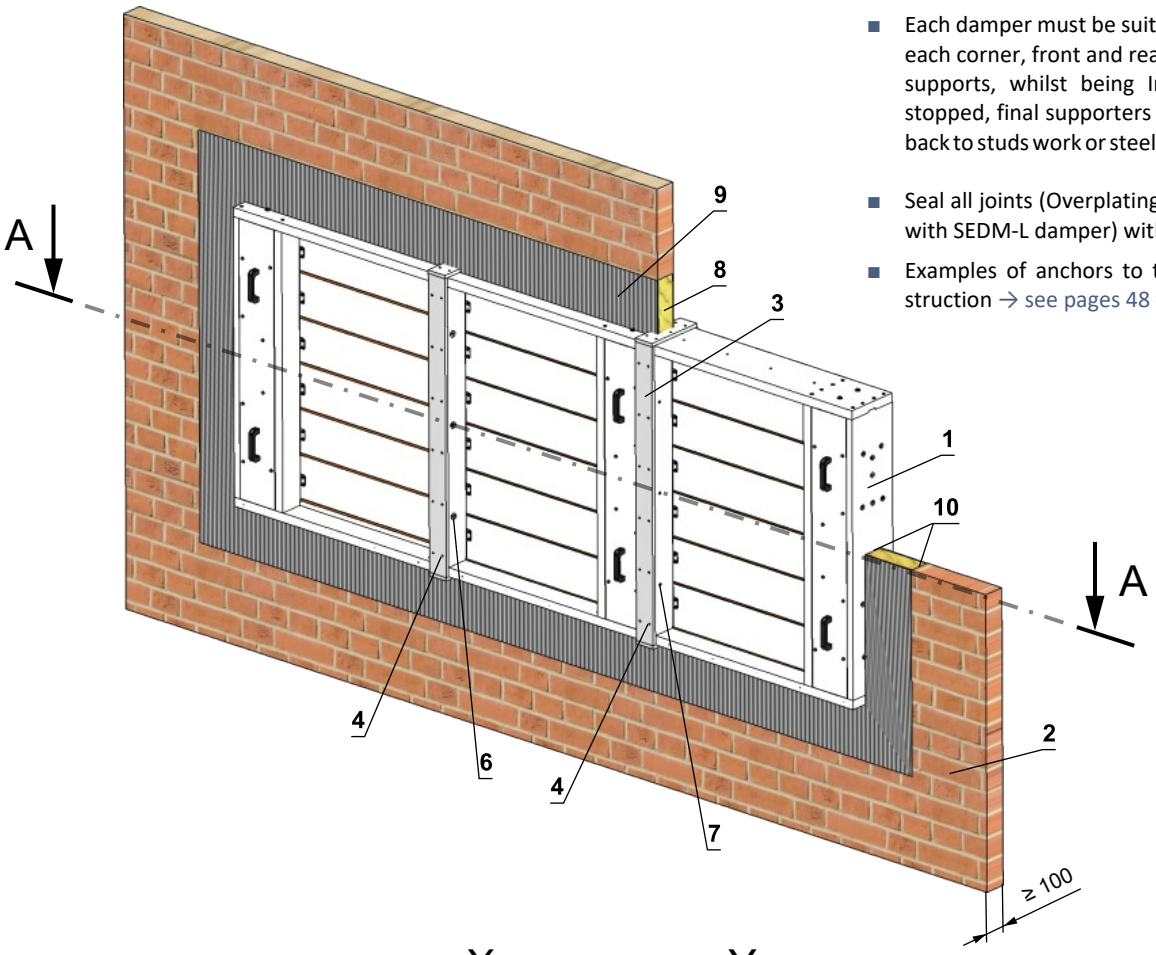
** When installing a flange, overplating strip is not installed.

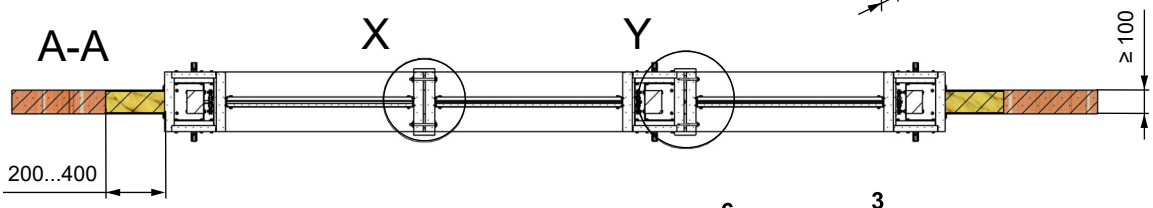
1 SEDM-L
2 Solid wall construction
3 Mortar or gypsum
4 Overplating strip (e.g. Promatect-H, th. 15 mm)**
5 Screw UNI 4x40 mm (span 200-250 mm)
6 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
7 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)*
8 Screw UNI 6x80 mm with large washer*

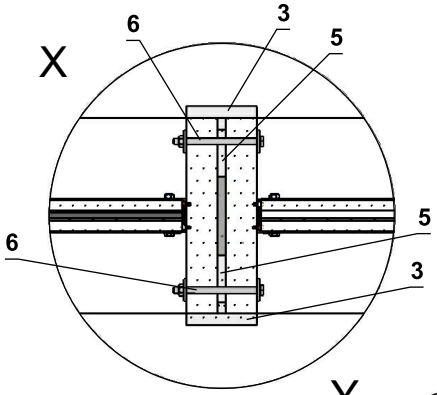
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

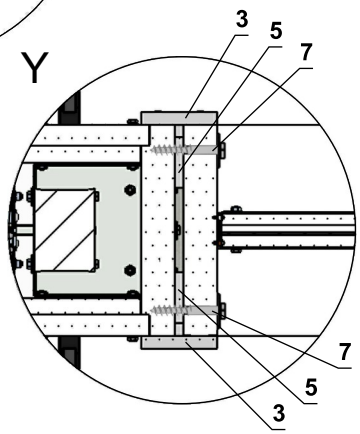
3 dampers side by side - solid wall - ablative coated batt

EI 120 S









- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.
- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50

* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

** When installing a flange, overplating strip is not installed.

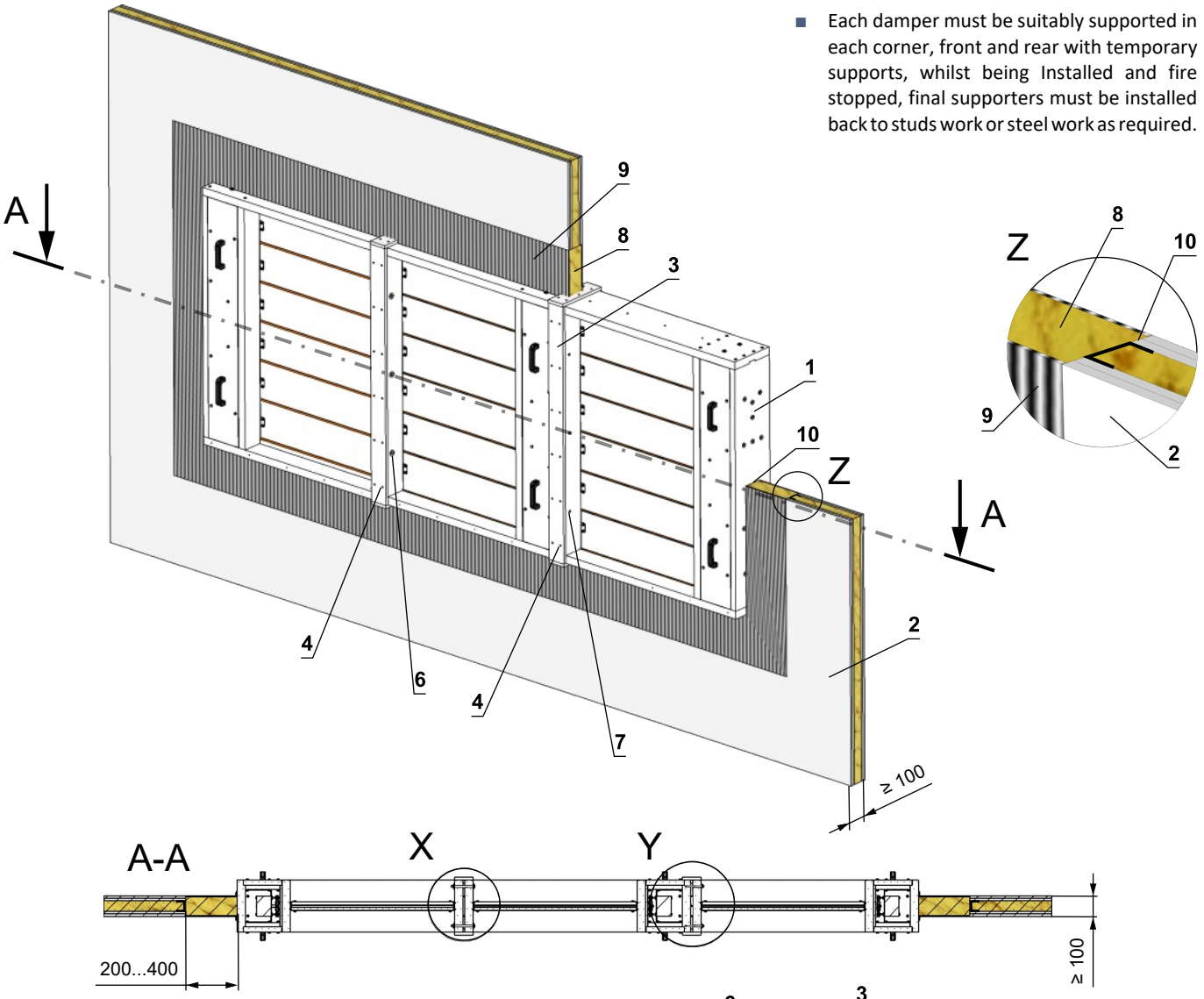
1 SEDM-L
2 Solid wall construction
3 Overplating strip (e.g. Promatect-H, th. 15 mm)**
4 Screw UNI 4x40 mm (span 200-250 mm)
5 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
6 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)*
7 Screw UNI 6x80 mm with large washer*
Ablative Coated Batt system HILTI
8 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
9 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
10 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

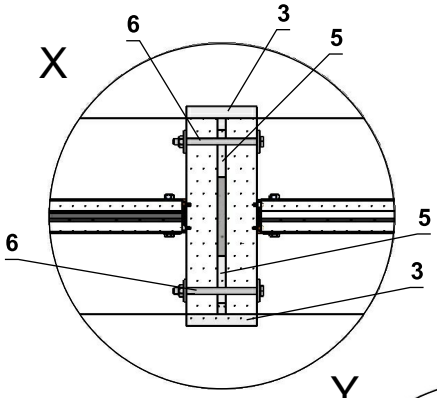
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

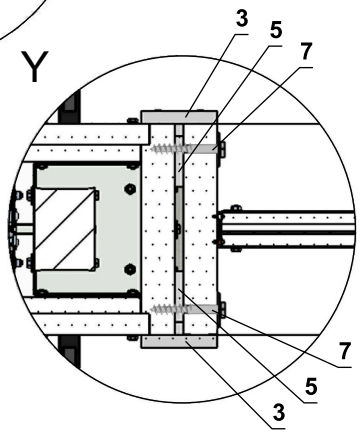
3 dampers side by side - gypsum wall - ablative coated batt

EI 120 S

- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.







- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50

* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

** When installing a flange, overplating strip is not installed.

1 SEDM-L
2 Gypsum wall construction
3 Overplating strip (e.g. Promatect-H, th. 15 mm)**
4 Screw UNI 4x40 mm (span 200-250 mm)
5 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
6 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)*
7 Screw UNI 6x80 mm with large washer*
Ablative Coated Batt system HILTI
8 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
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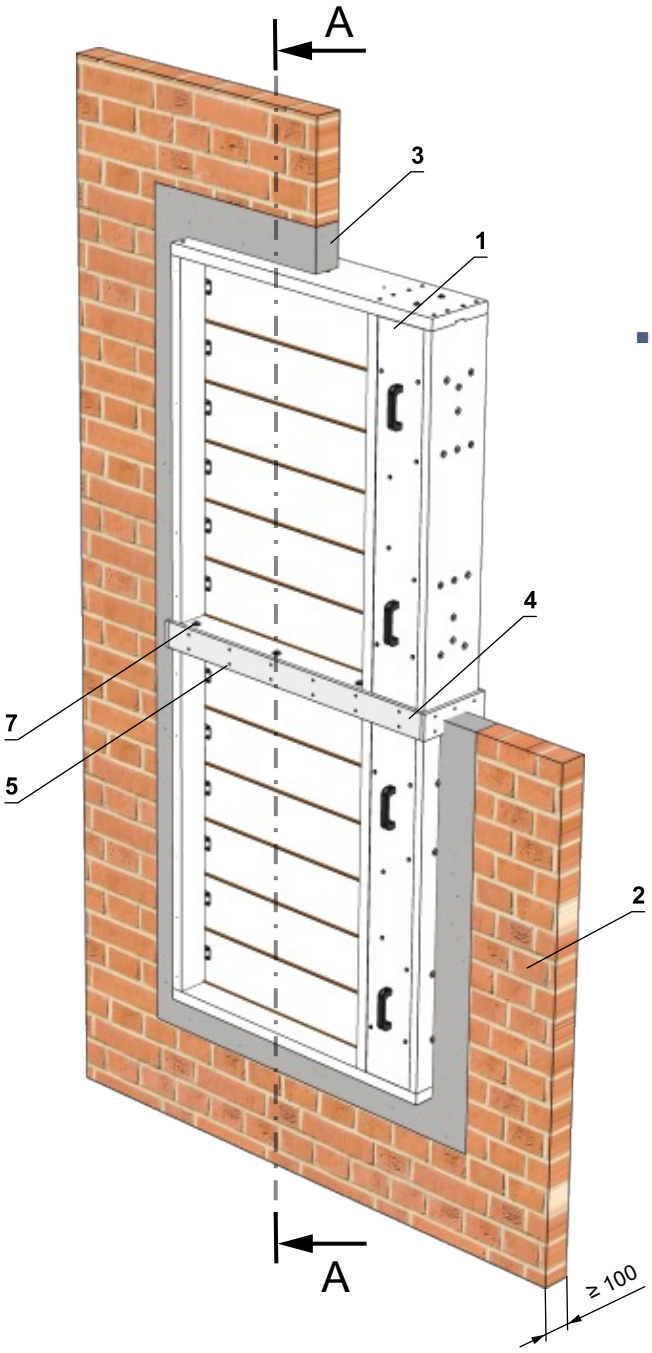
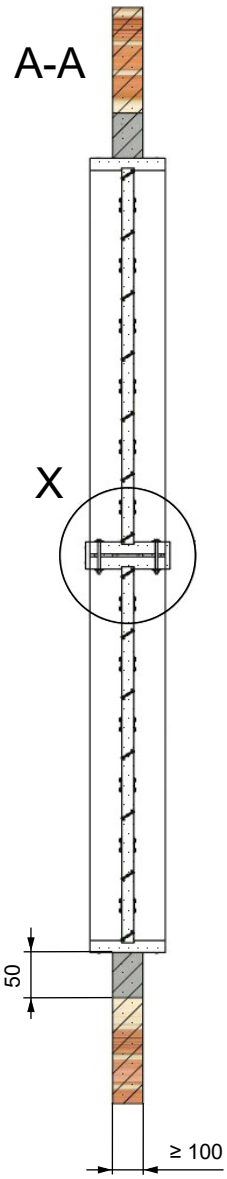
10 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

2 dampers on top of each other - solid wall - mortar or gypsum

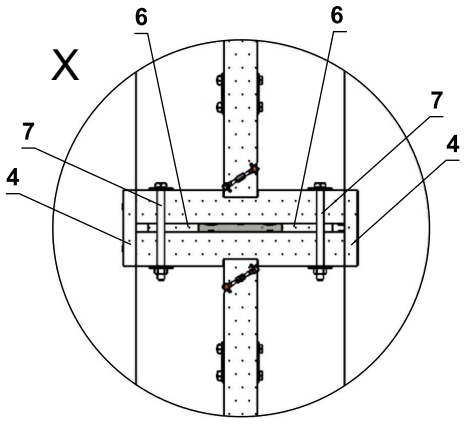
EI 90 S - application as a wall
EI 120 S - application as a shaft wall





- Each Damper must be suitably supported in each corner front and rear with temporary block-work, temporary steel supports or similar, until gypsum has fully hardened.

- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50



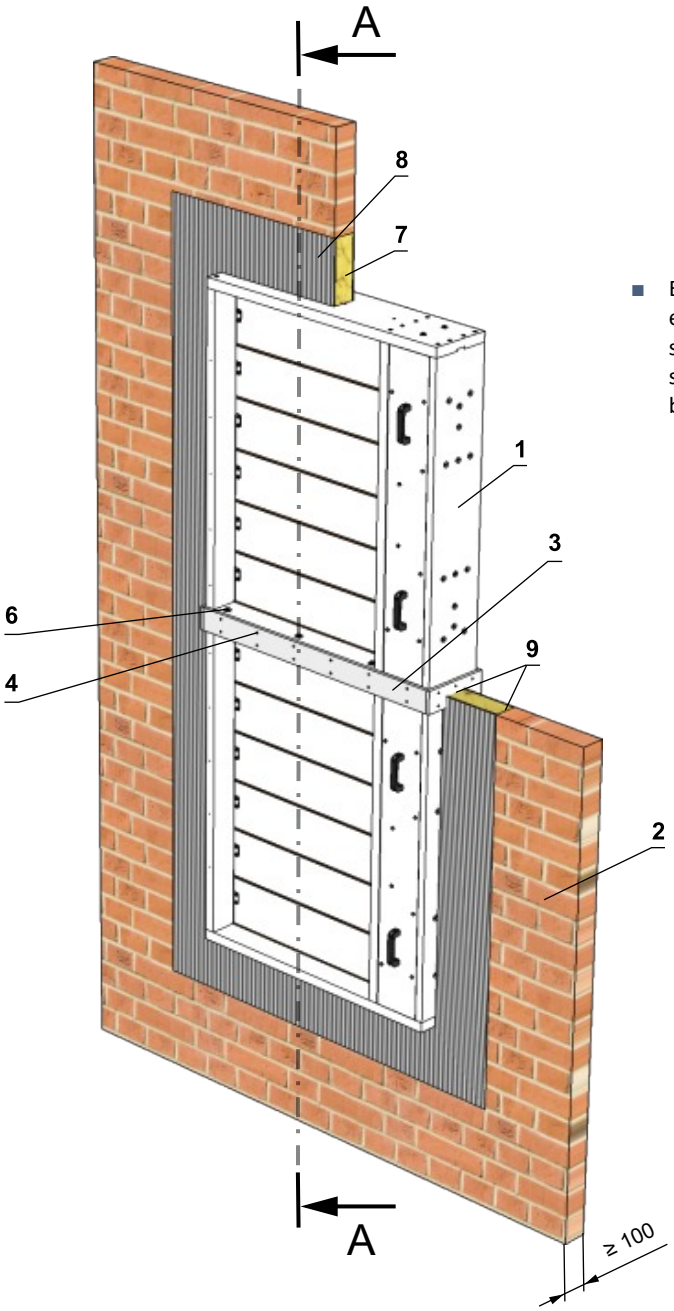
* When installing a flange, overplating strip is not installed.

1 SEDM-L
2 Solid wall construction
3 Mortar or gypsum
4 Overplating strip (e.g. Promatect-H, th. 15 mm)*
5 Screw UNI 4x40 mm (span 200-250 mm)
6 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
7 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)

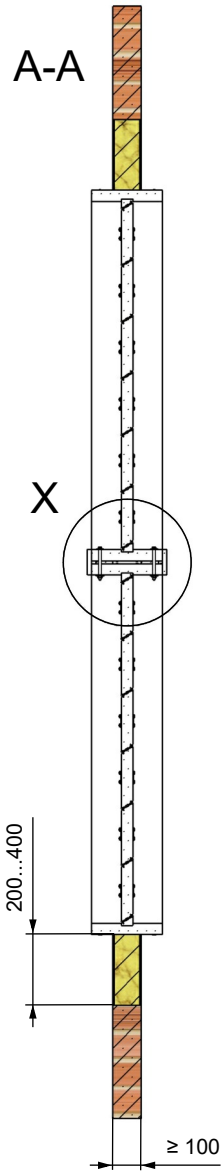
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

2 dampers on top of each other - solid wall - ablative coated batt

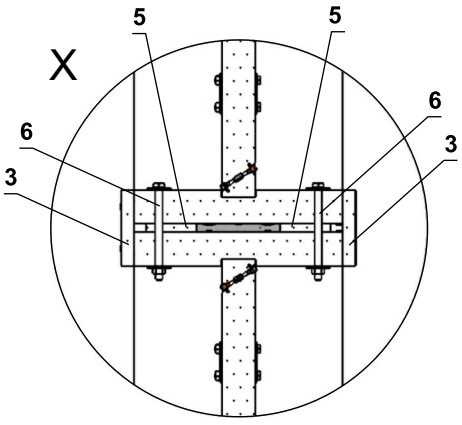
EI 120 S



- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.



- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50



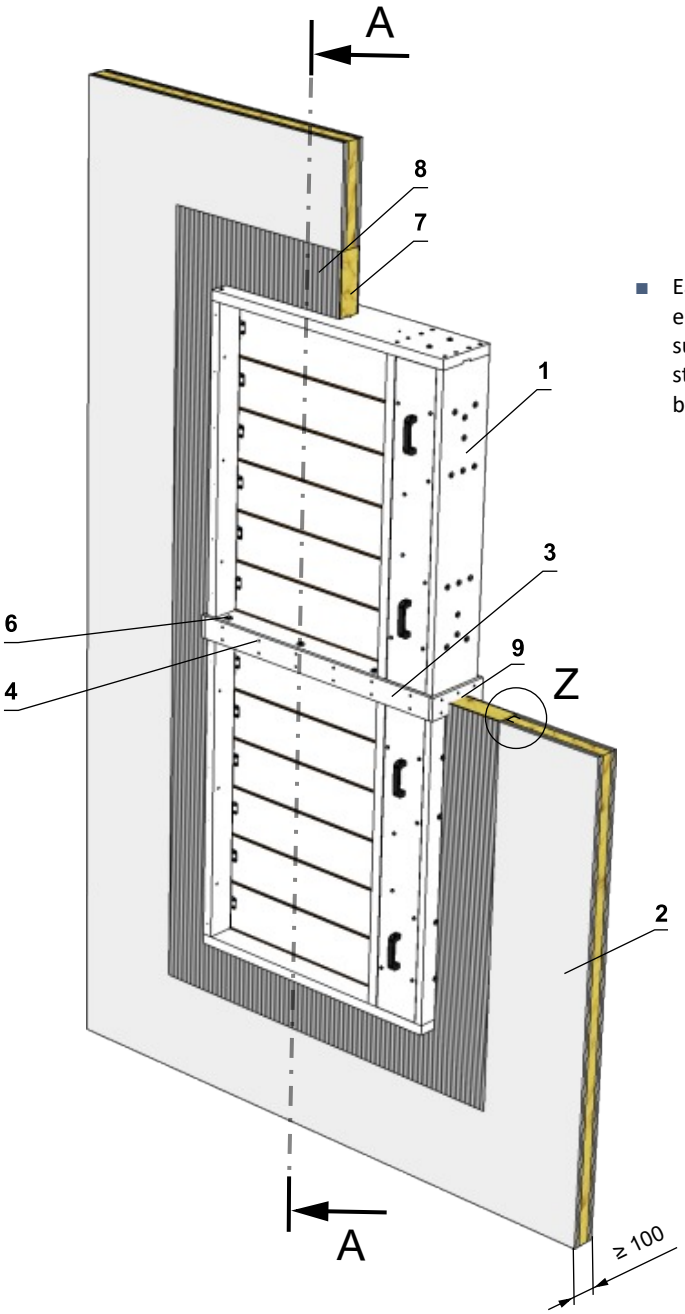
* When installing a flange, overplating strip is not installed.

1 SEDM-L
2 Solid wall construction
3 Overplating strip (e.g. Promatect-H, th. 15 mm)*
4 Screw UNI 4x40 mm (span 200-250 mm)
5 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
6 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)
Ablative Coated Batt system HILTI
7 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
8 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
9 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

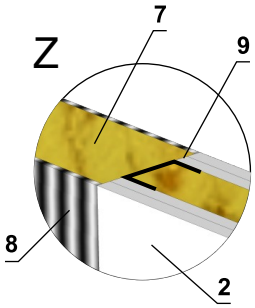
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

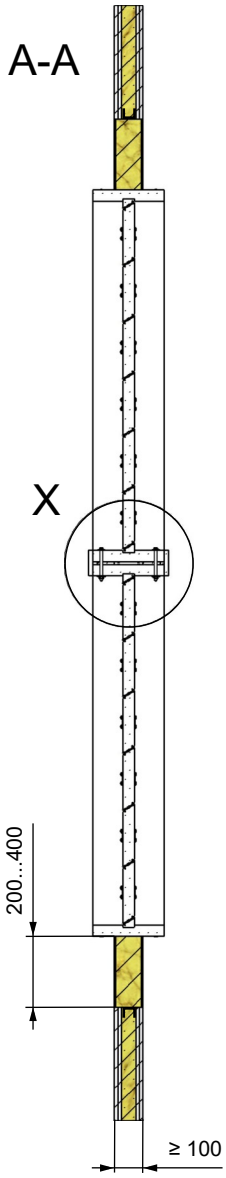
2 dampers on top of each other - gypsum wall - ablative coated batt

EI 120 S

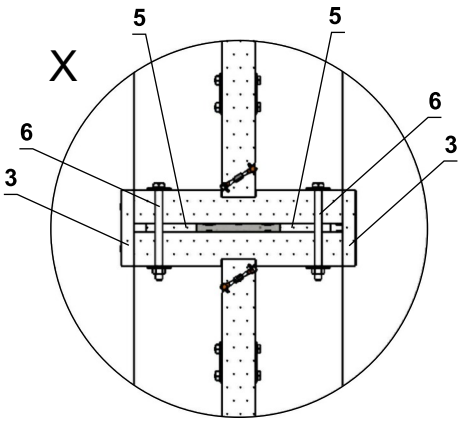


- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.





- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50



* When installing a flange, overplating strip is not installed.

1 SEDM-L
2 Gypsum wall construction
3 Overplating strip (e.g. Promatect-H, th. 15 mm)*
4 Screw UNI 4x40 mm (span 200-250 mm)
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7 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
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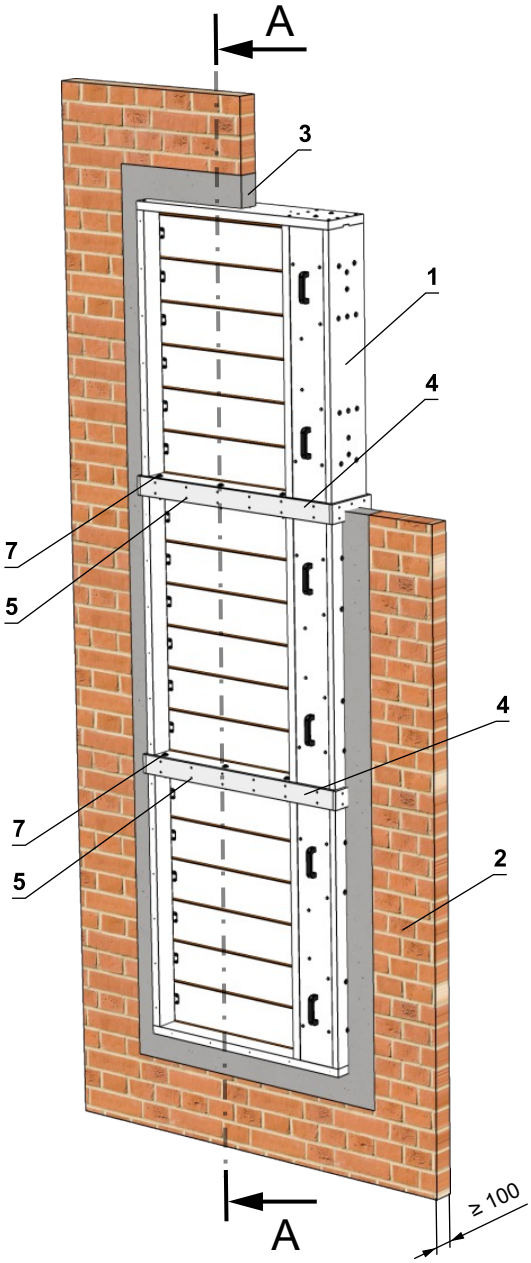
9 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

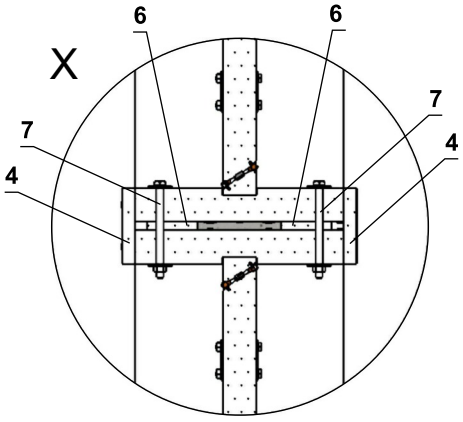
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

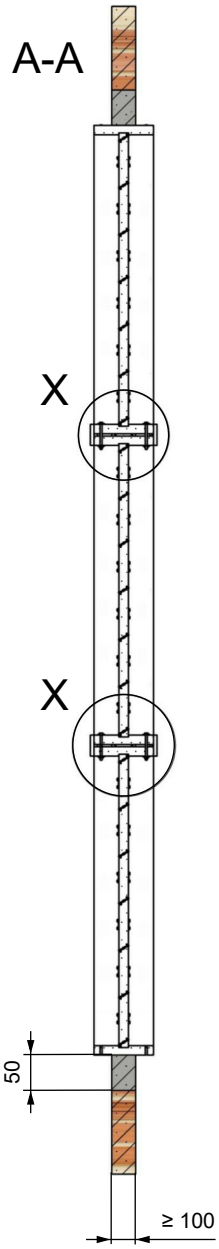
3 dampers on top of each other - solid wall - mortar or gypsum

EI 90 S - application as a wall
EI 120 S - application as a shaft wall



- Each Damper must be suitably supported in each corner front and rear with temporary block-work, temporary steel supports or similar, until gypsum has fully hardened.





- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50

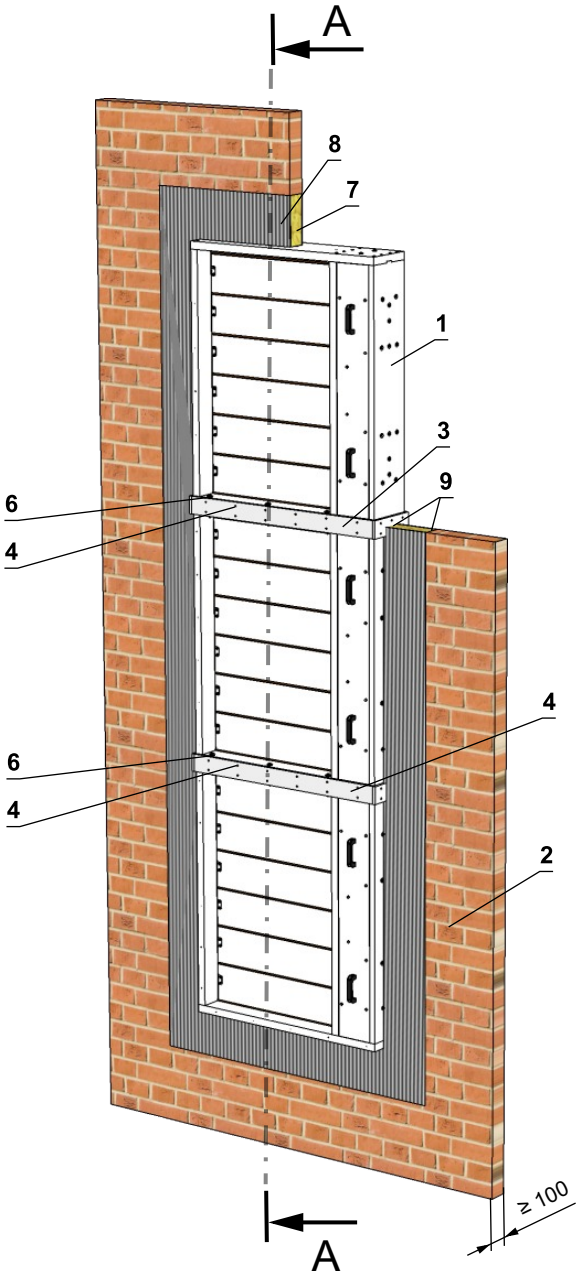
* When installing a flange, overplating strip is not installed.

1 SEDM-L
2 Solid wall construction
3 Mortar or gypsum
4 Overplating strip (e.g. Promatect-H, th. 15 mm)*
5 Screw UNI 4x40 mm (span 200-250 mm)
6 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
7 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8), span 200-300 mm

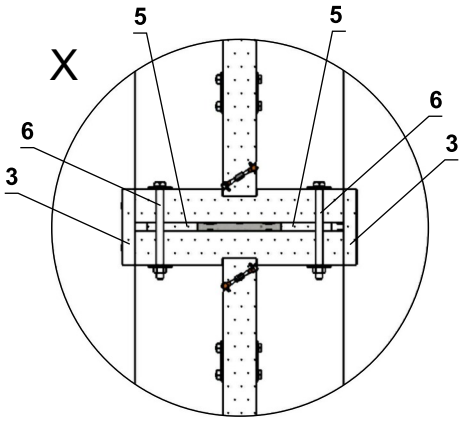
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

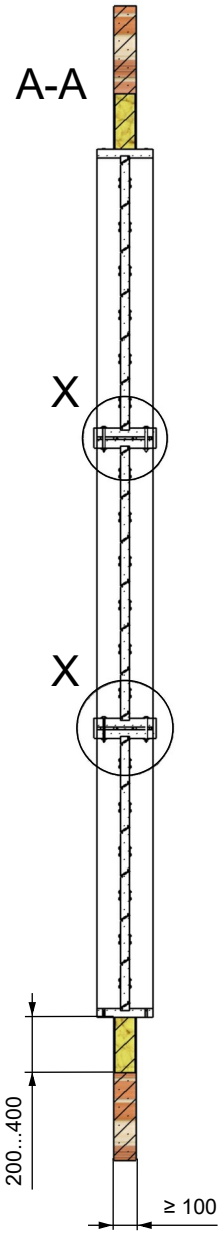
3 dampers on top of each other - solid wall - ablative coated batt

EI 120 S



- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.
- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50





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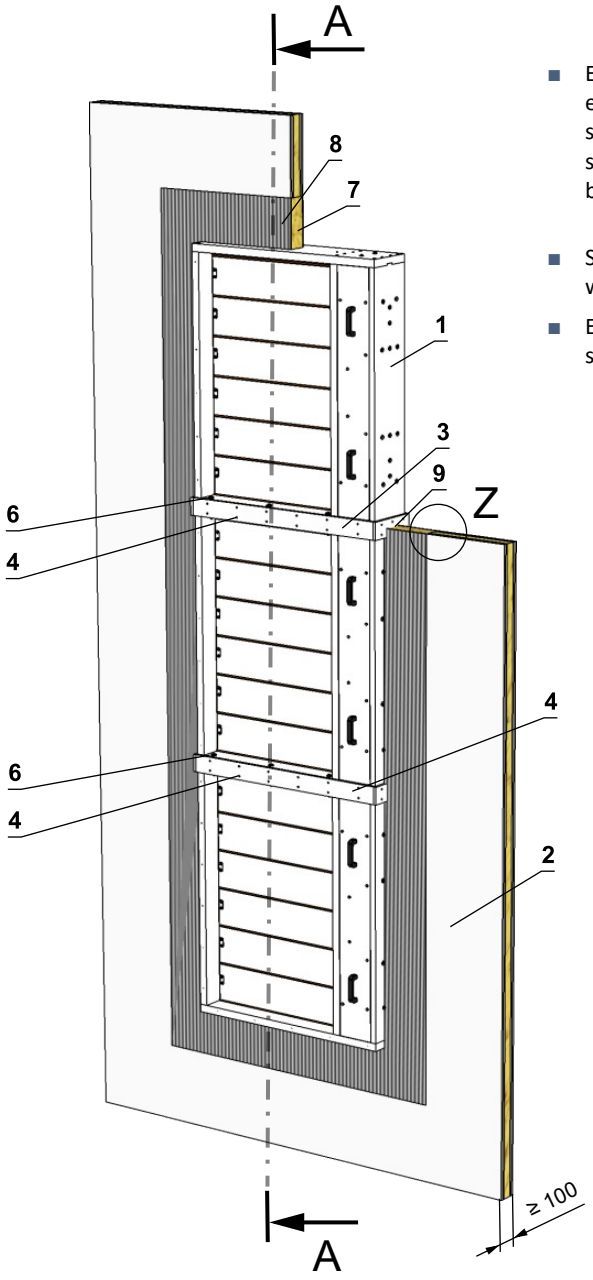
8 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
9 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

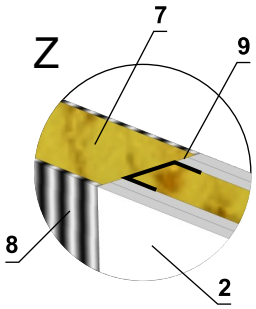
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

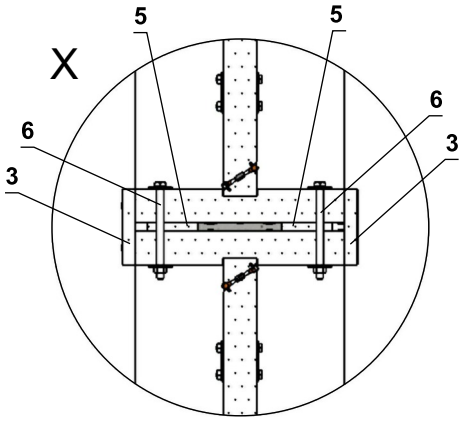
3 dampers on top of each other - gypsum wall - ablative coated batt

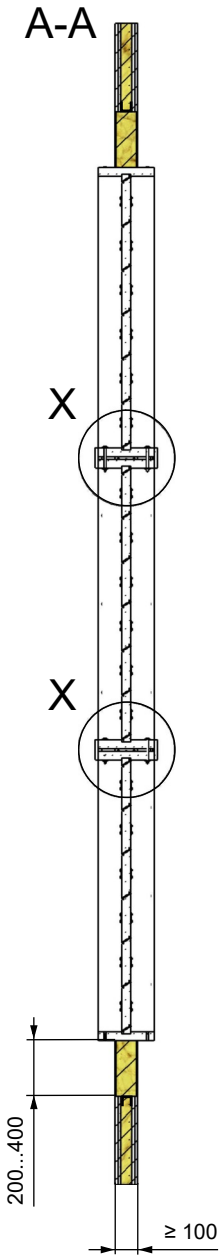
EI 120 S



- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.
- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50







* When installing a flange, overplating strip is not installed.

1 SEDM-L
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3 Overplating strip (e.g. Promatect-H, th. 15 mm)*
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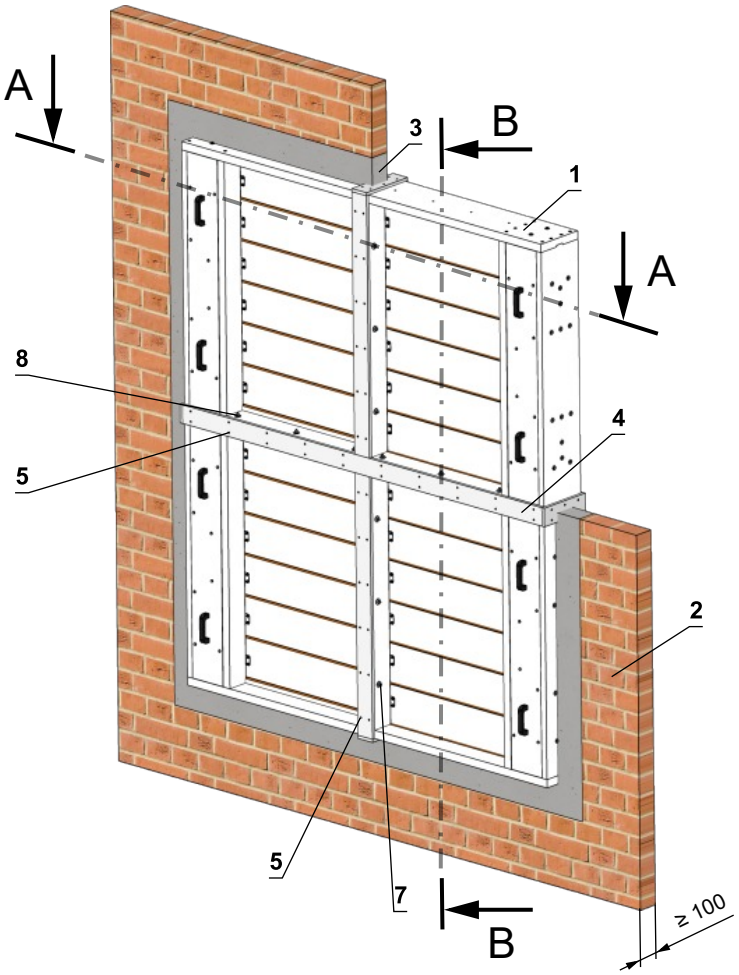
9 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

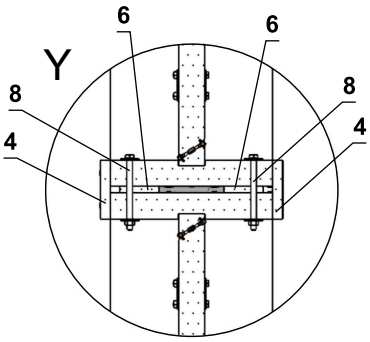
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

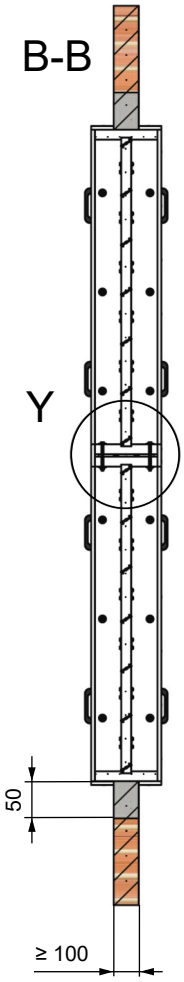
4 dampers - solid wall - mortar or gypsum

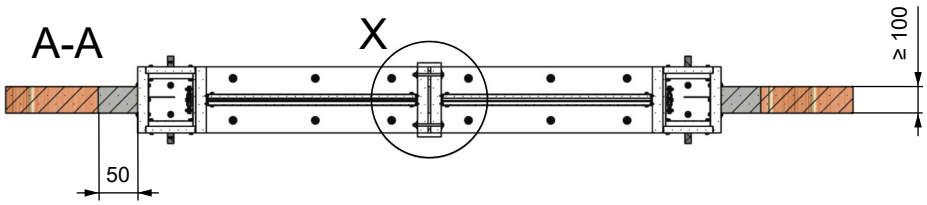
EI 90 S - application as a wall
EI 120 S - application as a shaft wall



- Each Damper must be suitably supported in each corner front and rear with temporary block-work, temporary steel supports or similar, until gypsum has fully hardened.
- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50

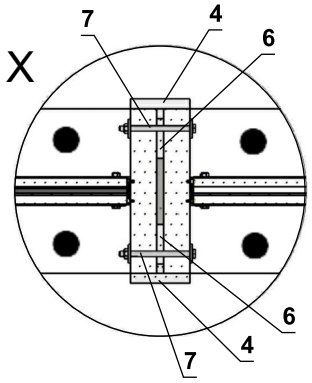






* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

** When installing a flange, overplating strip is not installed.



1 SEDM-L
2 Solid wall construction
3 Mortar or gypsum
4 Overplating strip (e.g. Promatect-H, th. 15 mm)**
5 Screw UNI 4x40 mm (span 200-250 mm)
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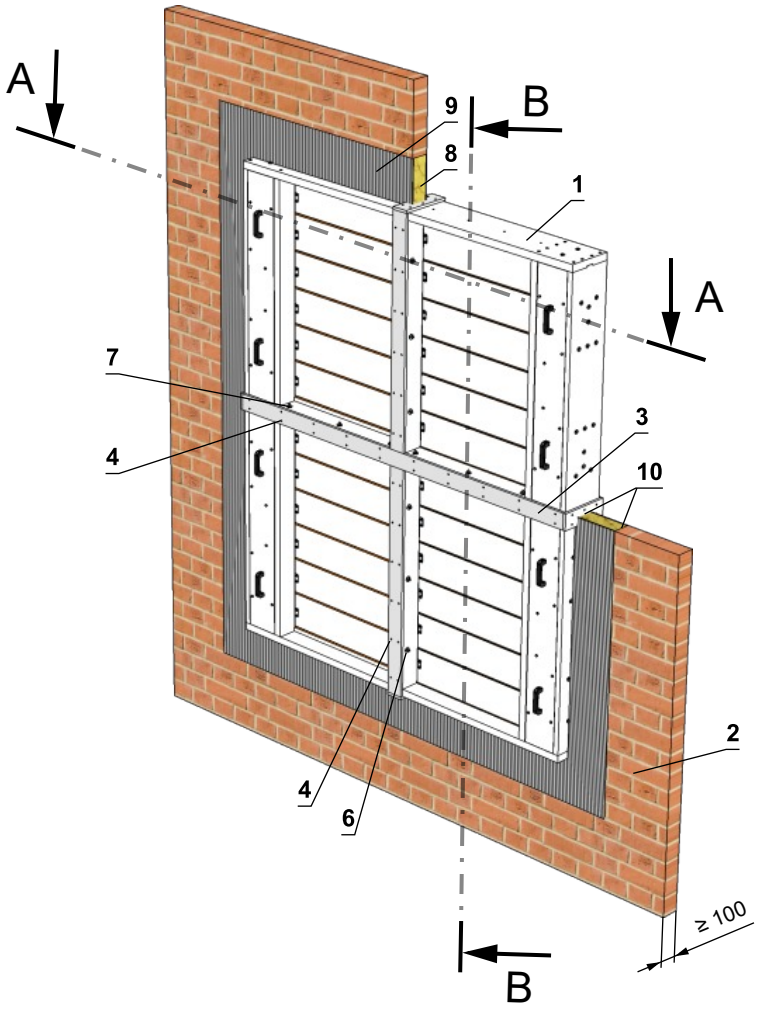
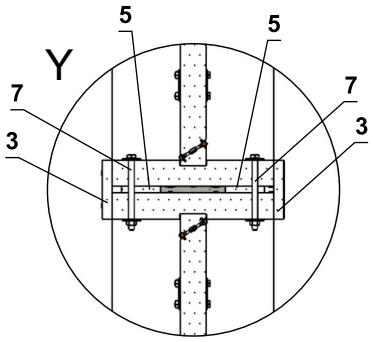
8 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8), span 200-300 mm

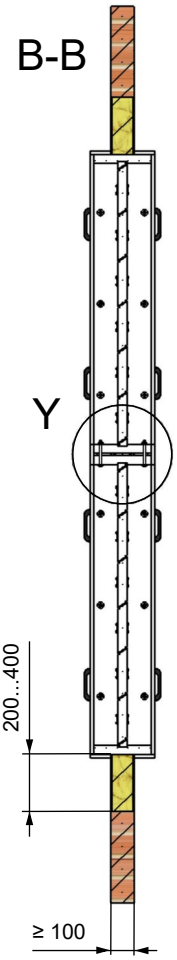
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

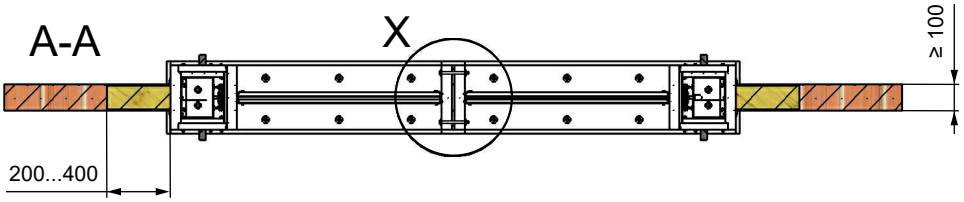
4 dampers - solid wall - ablative coated batt

EI 120 S





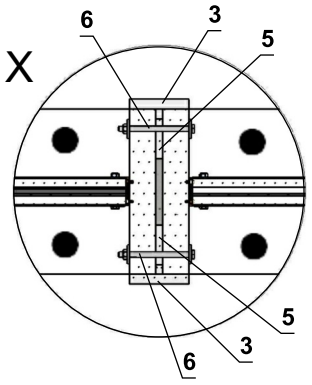




- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.
- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50

* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

** When installing a flange, overplating strip is not installed.

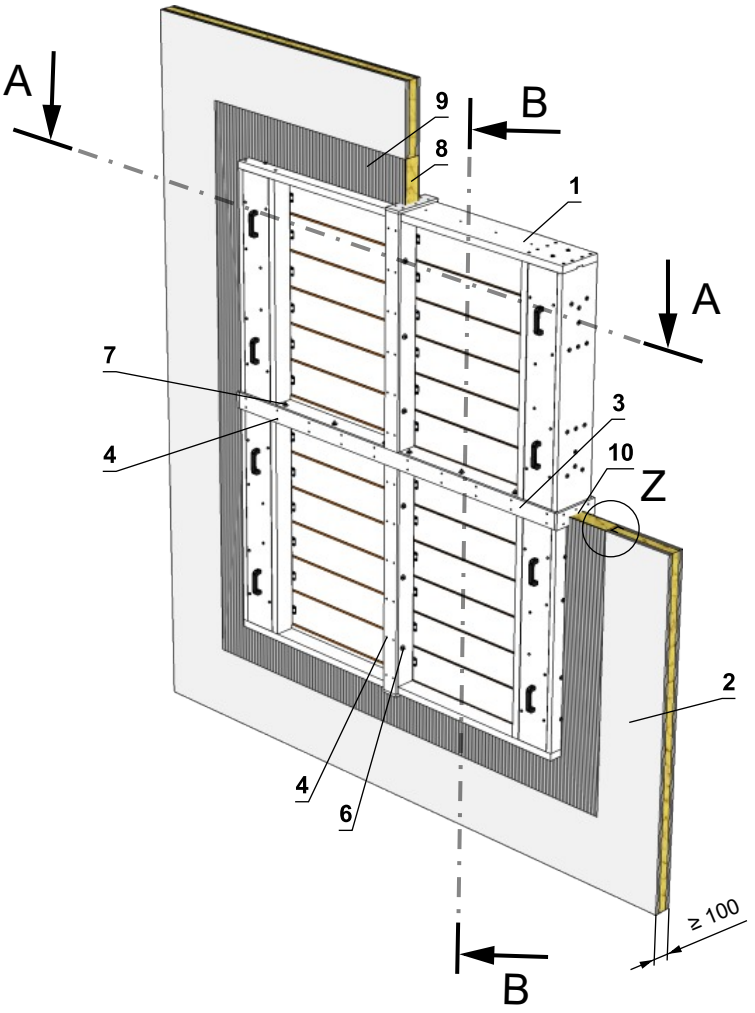


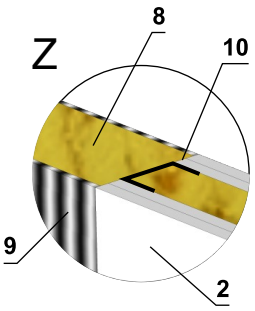
1 SEDM-L
2 Solid wall construction
3 Overplating strip (e.g. Promatect-H, th. 15 mm)**
4 Screw UNI 4x40 mm (span 200-250 mm)
5 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
6 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)*
7 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8), span 200-300 mm
Ablative Coated Batt system HILTI
8 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
9 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
10 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.

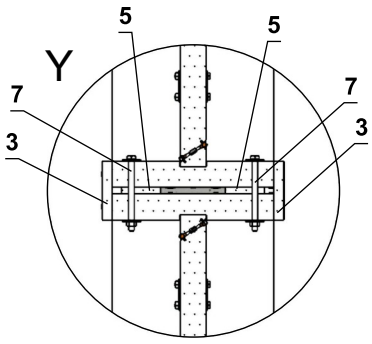
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

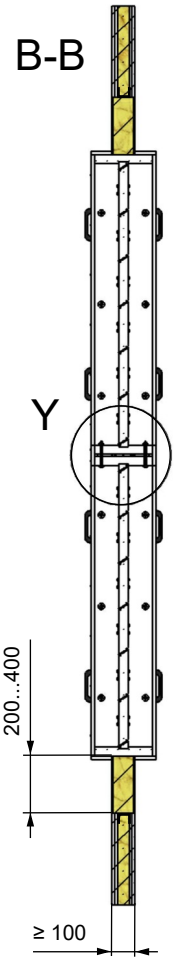
4 dampers - gypsum wall - ablative coated batt

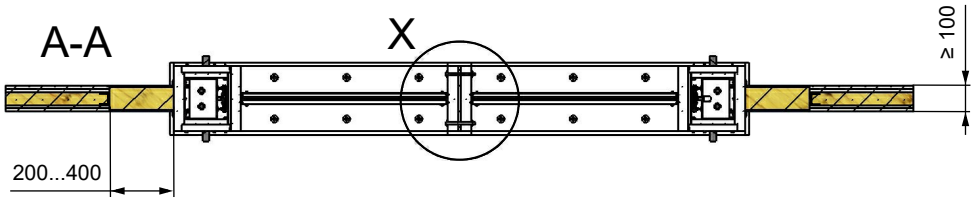
EI 120 S











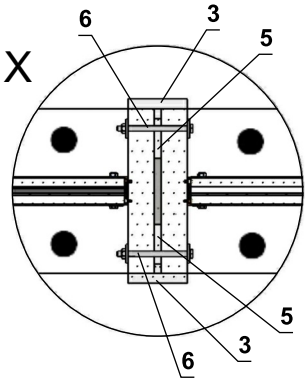
- Seal all joints (Overplating strips, Spacing strips with SEDM-L damper) with Promat glue K84.
- Examples of anchors to the fire dividing construction → see pages 48 to 50

- Each damper must be suitably supported in each corner, front and rear with temporary supports, whilst being Installed and fire stopped, final supporters must be installed back to studs work or steel work as required.

* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

** When installing a flange, overplating strip is not installed.

1 SEDM-L
2 Gypsum wall construction
3 Overplating strip (e.g. Promatect-H, th. 15 mm)**
4 Screw UNI 4x40 mm (span 200-250 mm)
5 Spacing strip (e.g. Promatect-H, th. 10 mm, width 40-50 mm)
6 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8)*
7 M8 bolt assemply (bolt M8x105 mm, 2 pcs large washer M8, nut M8), span 200-300 mm
Ablative Coated Batt system HILTI
8 Mineral wool board - min. density 140 kg/m³ (HILTI CFS-CT B 1S 140/50...)
9 Fire stop coating - th. 1 mm (HILTI CFS-CT...) - coating is overcoated on the support construction and on the damper casing/duct.
10 Fire-resistant mastic - (HILTI CFS-S ACR...) fill the gap from both sides of the fire separation construction and around the perimeter of penetration and damper casing.



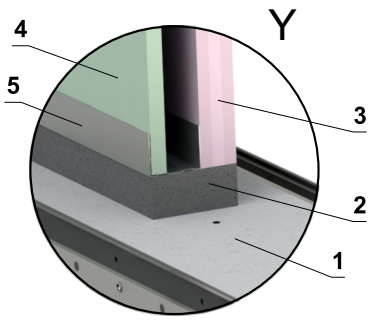
Connecting straps, spacer straps, screws, screw connections and Promat glue K84 are not included in the delivery !

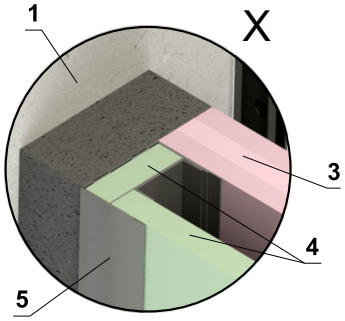
Installation in shaft wall British Gypsum

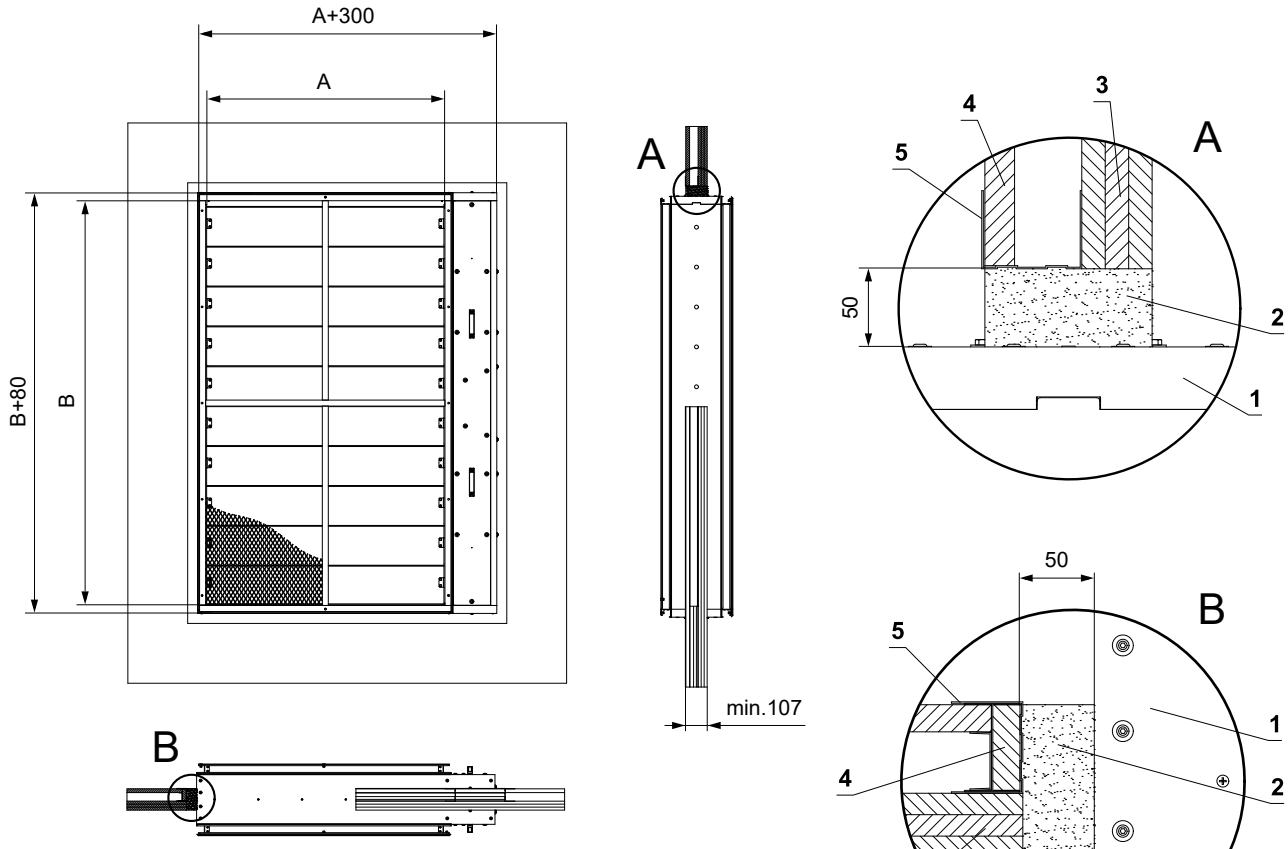
In shaft wall British gypsum - mortar or gypsum

EI 120 S

- It is possible to use e.g. wall type A306030... from www.british-gypsum.com
- It is possible to use walls that have the same or greater thickness and density of boards than the walls listed below (more layers of boards can also be used)
- Follow the instructions of the shaft wall manufacturer.
- Each Damper must be suitably supported in each corner front and rear with temporary block-work, temporary steel supports or similar, until gypsum has fully hardened.





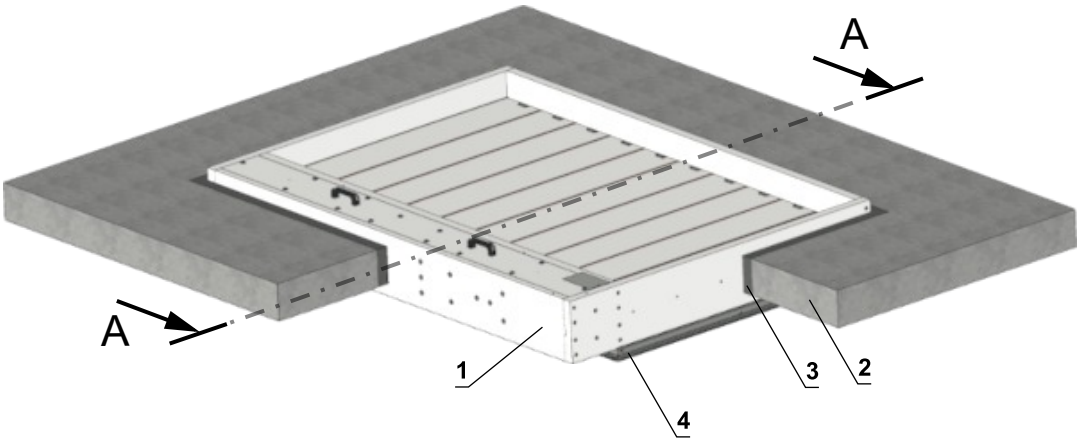


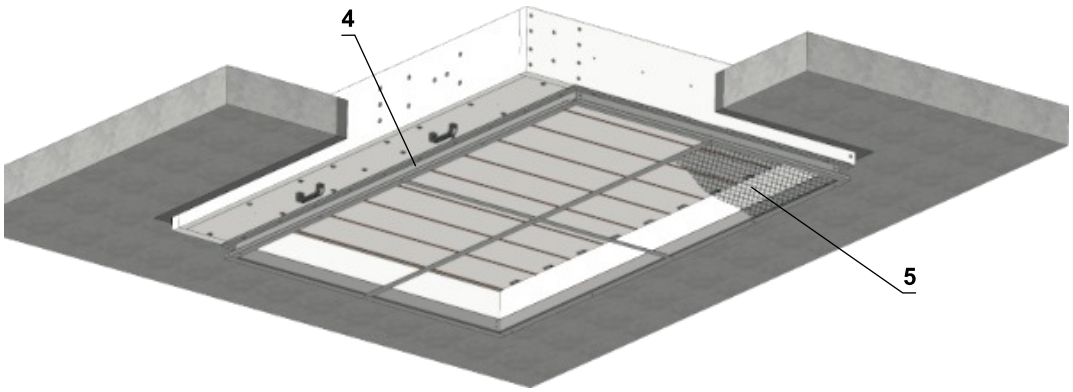
1 SEDM-L
2 Mortar or gypsum
3 Plasterboard EN 520 - Type F min. 3x15 mm
4 Plasterboard EN 520 - Type F min. 1x19 mm
5 Plasteboard profile

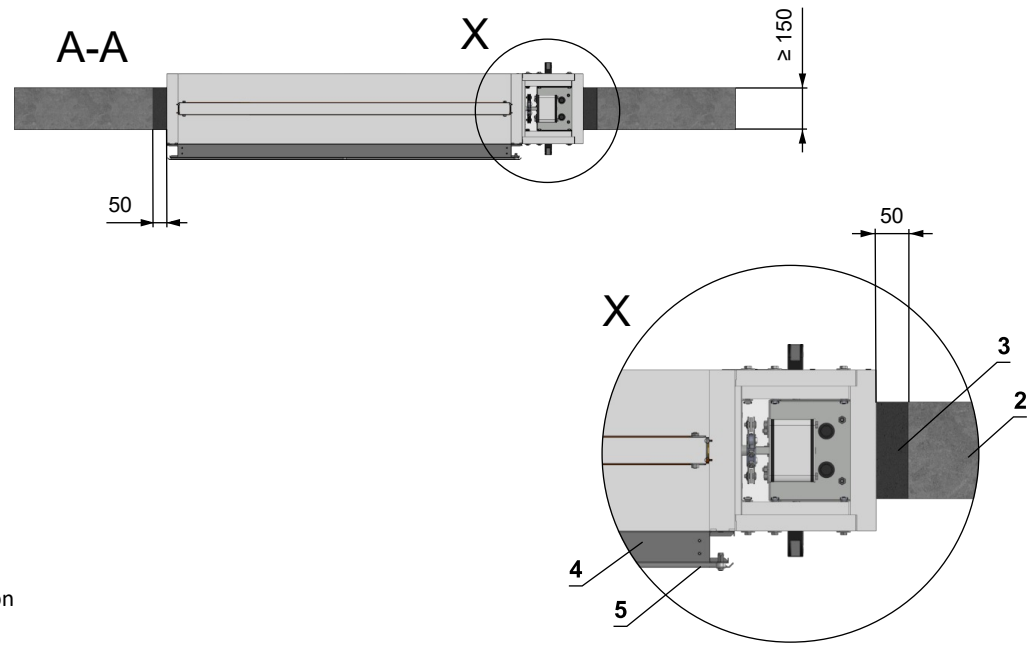
Installation in solid ceiling construction

In solid ceiling construction - mortar or gypsum

EI 120 S - application as a shaft



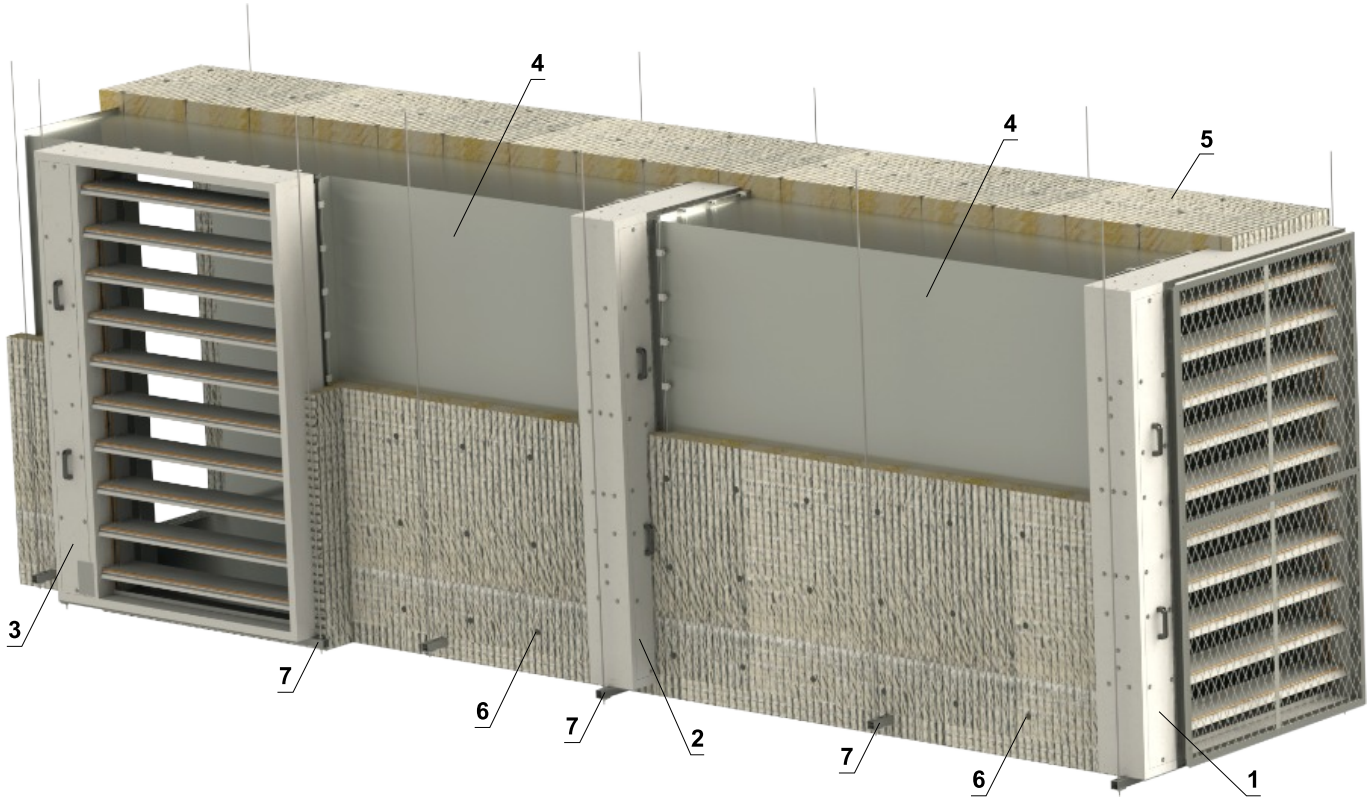




1 SEDM-L
2 Solid ceiling construction
3 Mortar or gypsum
4 Flange
5 Grille

Installation damper into/onto smoke extraction ducts

- The dampers may be installed onto or into smoke extraction ducts listed below:
  - **Flameshield Fireduct (manufacturer Kent Ductwork Ltd.)**
    The duct is made of 1.2 mm thick galvanized steel sheet and insulated with 1 layer of 90 mm thick stone wool Rockwool FirePro DuctRock Slab (manufacturer ROCKWOOL Ltd.). The stone wool is finished with a black aluminium foil on the outer side.
  - **FPL08 (manufacturer Fire Protection Ltd)**
    The duct is made of galvanized steel sheet. The thickness of the duct depends of its dimensions. The surface of the duct is fire sprayed with Flamebar BW11 (manufacturer Firespray International Ltd). The duct is insulated with two layers of stone wool. The first layer is made of 50 mm thick ROCKWOOL FPL 110 SLAB and the second layer with aluminium foil is made of 50 mm thick ROCKWOOL FPL 110 FOIL FACED SLAB (manufacturer ROCKWOOL Ltd.).
- The dampers may be installed onto or into other smoke extraction ducts than that specified above with the following limitations:
  - The duct shall be tested according to EN 1366-9 or EN 1366-8 depending on the intended use,
  - The duct shall be made of material of the same or greater density and of the same or greater thickness as the ducts listed below,
  - Changing surface protection materials is not permitted,
  - Changing the paint surface finish is not permitted.
- The damper must be independetly provided with a duct support within 100 mm of the centre of the damper blade axis.
- Support, drop rods, anchors etc. must be used in accordance with a duct manufacturer instructions.
- The connected duct shall be suspended in such a way that the transfer of all loads from the duct to the damper is completely excluded.
- The damper may be installed in vertical position with the horizontal position of the blades axis.



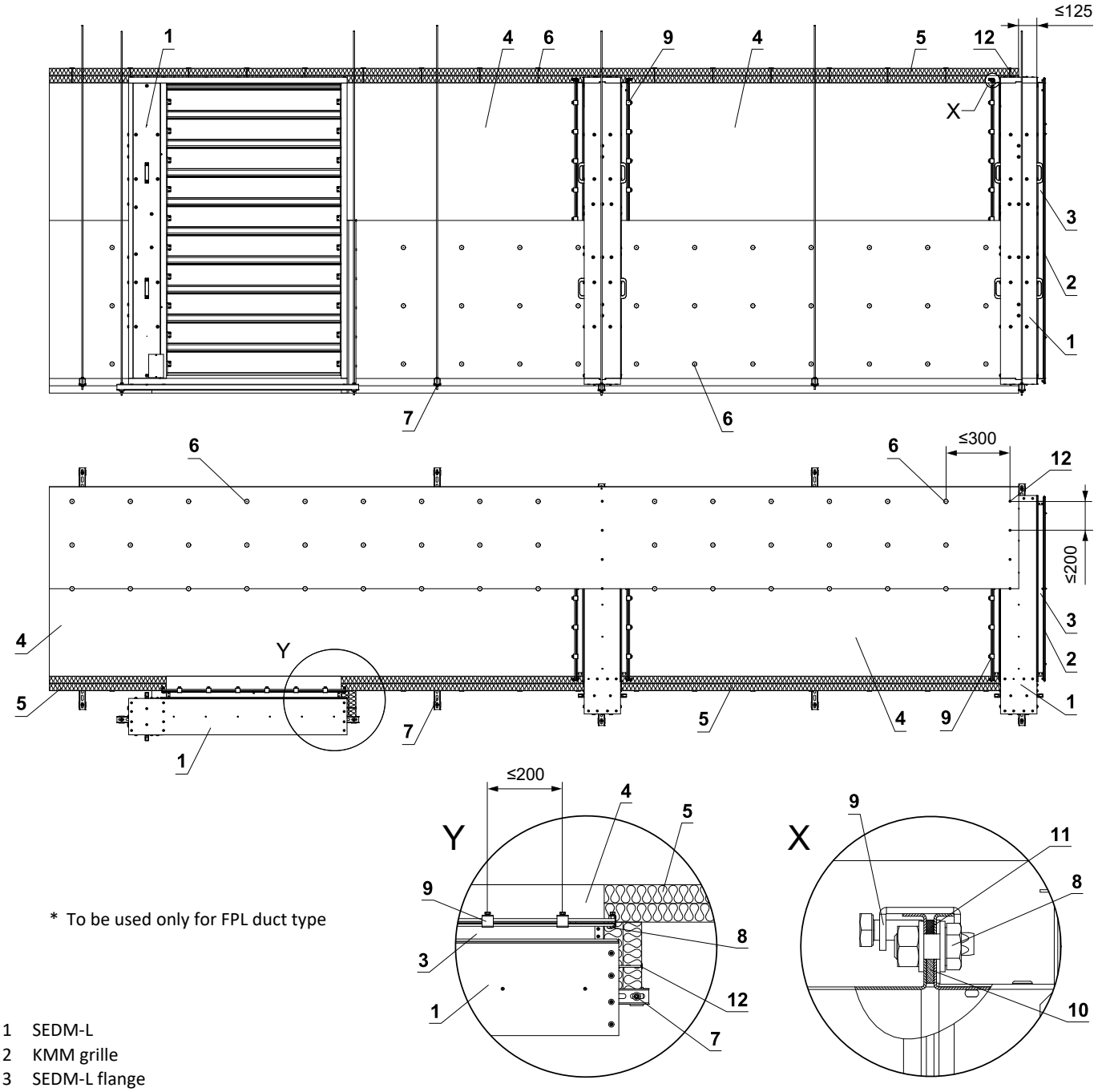
1 SEDM-L 2x flange, 1x grille
2 SEDM-L 2x flange
3 SEDM-L 1x flange*
4 Smoke extraction duct (according to duct manufacturer)
5 Surface protection material (according to duct manufacturer)
6 Steel instulation pin (according to duct manufacturer)
7 Smoke extraction damper and duct supports (according to duct manufacturer)

* If the damper is installed onto end of the duct it must be fitted with a grille. If not the fire resistance is reduced by one level.

(continued on next page)

continuation of installation damper into/onto smoke extraction ducts

- <u>The damper is connected to the smoke extraction duct by the damper flange as folow</u>:
  - M10 bolts, washers and nuts are used at the corners of the flange
  - C-clamps with M8 bolts with a maximum spacing of 200 mm are used around the circumference
  - Ceramic selfadhesive sealing tape is inserted between flanges
  - The gap between the flanges is filled with intumescent acrylic sealant*
- The duct insulation is stretched at least 125 mm on three sides of the damper body and attached to the damper with Screws with diameter 5 mm and a washer M5 (DIN 125A) with a maximum spacing 200 mm.

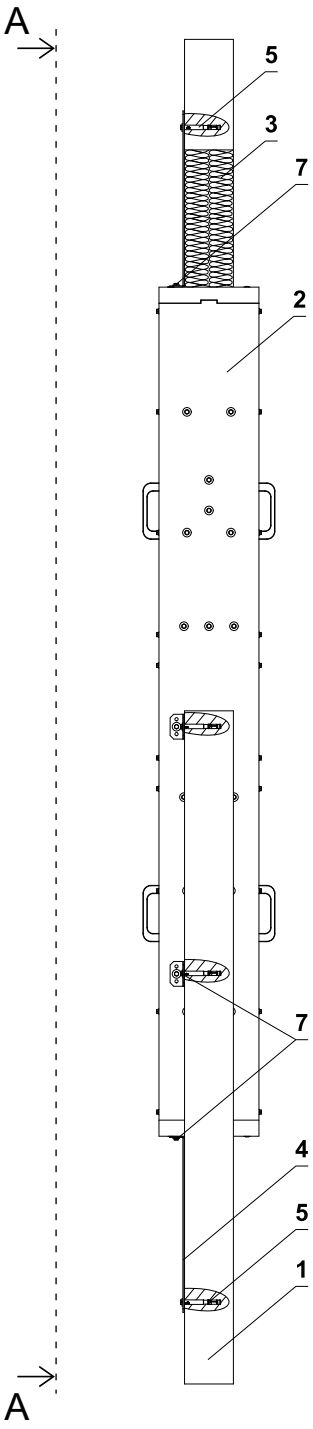


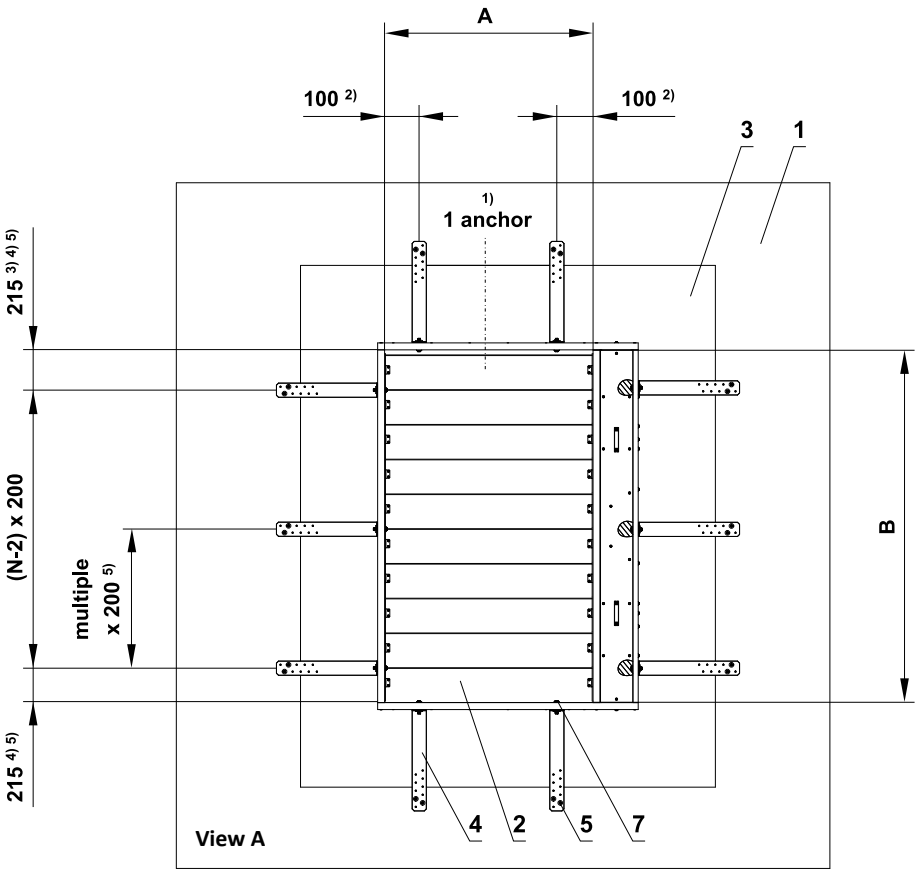
* To be used only for FPL duct type

1 SEDM-L
2 KMM grille
3 SEDM-L flange
4 Smoke extraction duct
5 Surface protection material (type according to duct manufacturer instructions)
6 Steel instulation pin (type according to duct manufacturer instructions)
7 Suspension system (type according to duct manufacturer instructions)
8 Flange connection at corners - M10 bolt, washers and nut
9 M8 C-clamps - maximum spacing of C-clamps 200 mm (type according to duct manufacturer instructions)
10 Ceramic selfadhesive sealing tape - arround the duct circumference (type according to duct manufacturer instructions)
11 Intumescent acrylic Sealant - arround the duct circumference (type according to duct manufacturer instructions)*
12 Insulation connection to the damper body - washer M5 (DIN 125A), screw 5xL mm (screw lenght = insullation thickness + 20 mm)

V. SUSPENSION SYSTEMS

Fixing SEDM-L to the solid wall construction - Ablative Coated Batt system



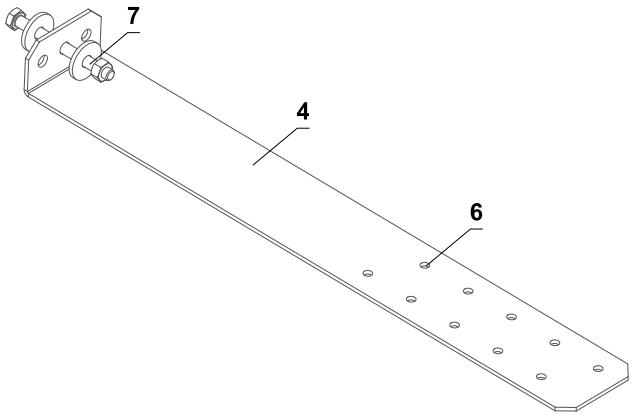


N => number of blades

FOR: **A < 500 => 1 anchor [1]**
A ≥ 500 => 2 anchor [2]

FOR: **B = 430 and 630 => 1 anchor [3]**
B = 830, 1030, 1230 => 2 anchors [4]
B = 1430, 1630, 1830, 2030 => 3 anchors [5]

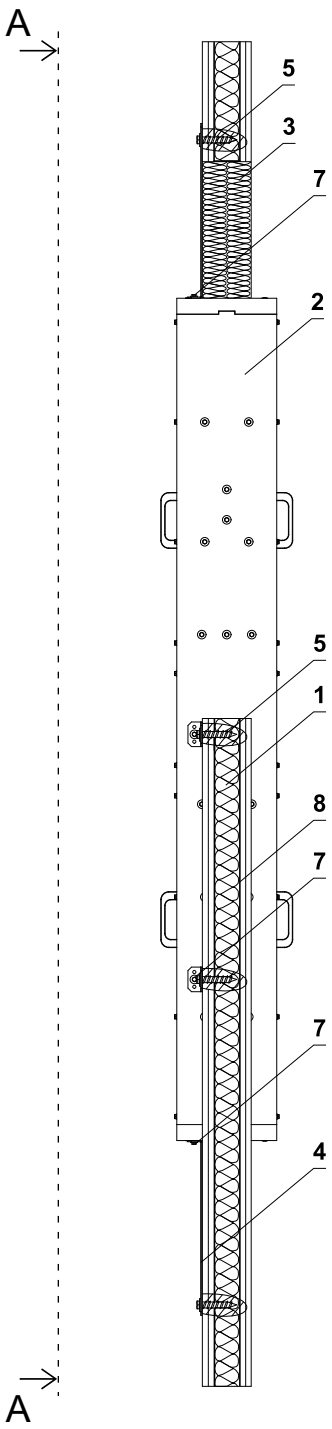
- The method of mounting must meet the minimum requirements for attachment in accordance with national regulations.

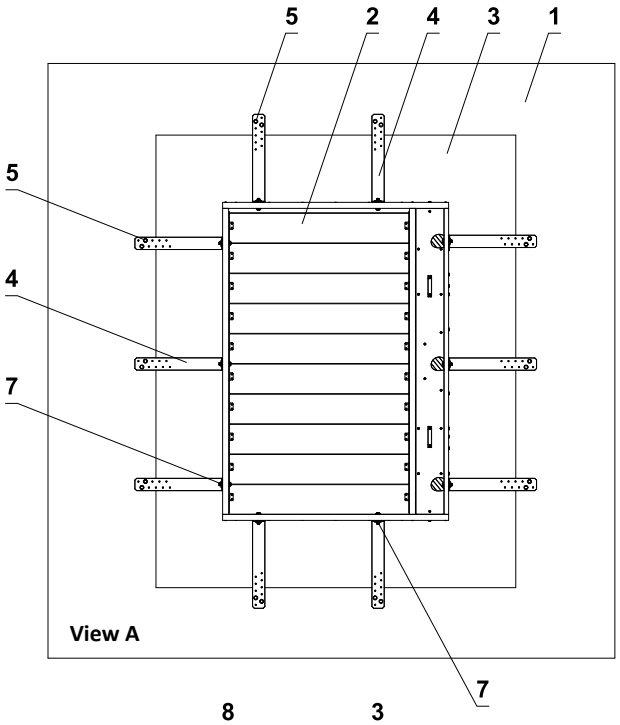


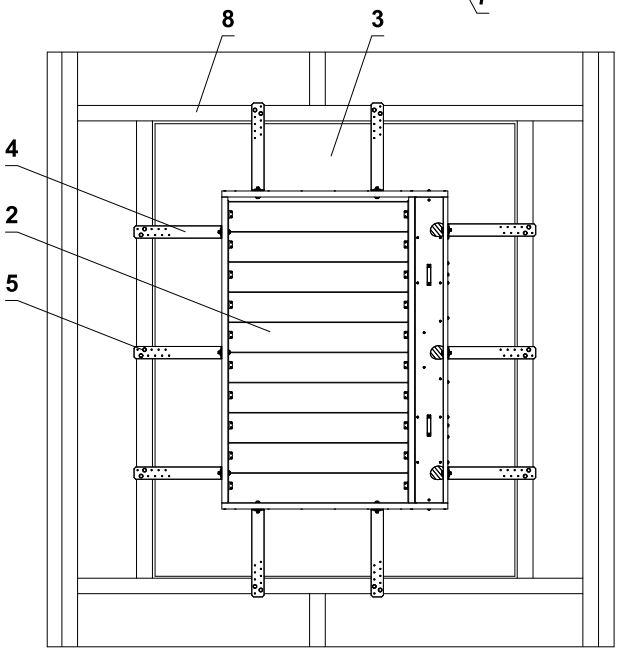
* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.

1 Solid wall construction
2 SEDM-L
3 Ablative Coated Batt
4 Fixing element/steel bracket for connecting damper to the wall (optional accessories MANDIK, a.s. or sheet metal min. thickness 2 mm and min. width 60 mm). Full drawing of bracket, → see page 50
5 Anchor to concrete min. M6
6 Installation hols
7 M8 bolt assemply (bolt M8x55 mm, 2 pcs large washer M8, nut M8) *

Fixing SEDM-L to the gypsum wall construction - Ablative Coated Batt system



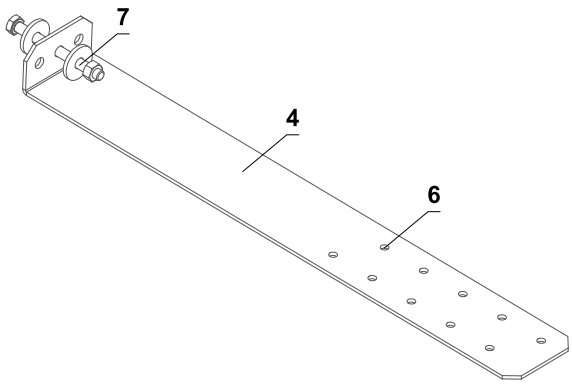




View A - grid from "C" profile

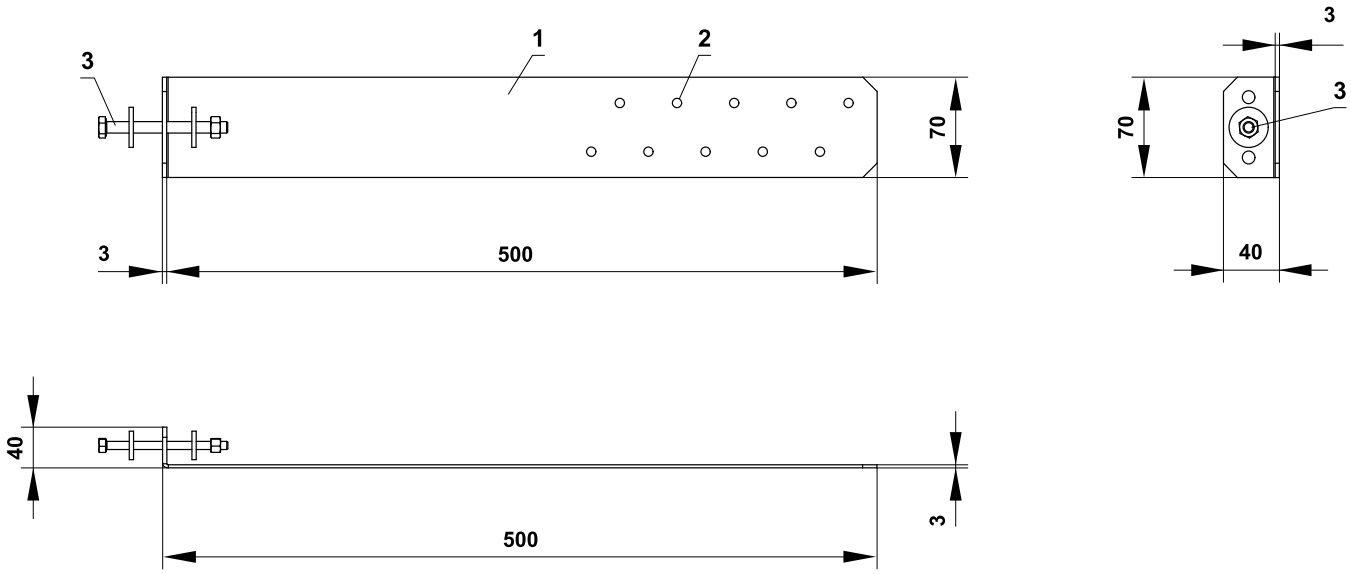
- The method of mounting must meet the minimum requirements for attachment in accordance with national regulations.

* **RESPECT JOINT POSITION !**
Bolts and nuts shall not prevent free rotation on the blades.



1 Gypsum wall construction
2 SEDM-L
3 Ablative Coated Batt
4 Fixing element/steel bracket for connecting damper to the wall (optional accessories MANDIK, a.s. or sheet metal min. thickness 2 mm and min. width 60 mm). Full drawing of bracket, → see page 50
5 Screw UNI 6x60 mm
6 Installation hols
7 M8 bolt assemply (bolt M8x55 mm, 2 pcs large washer M8, nut M8) *
8 Gypsum grid from "C" profile

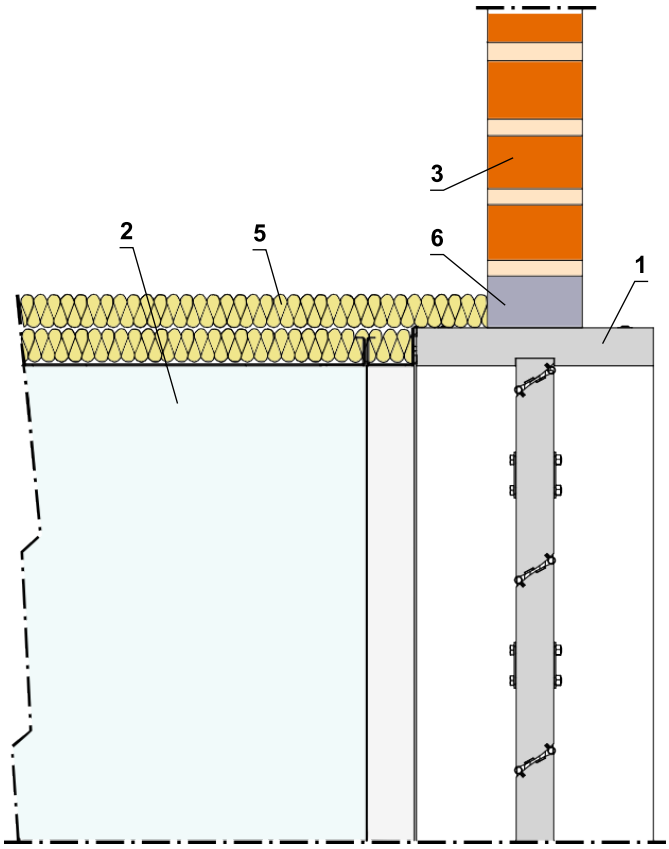
Fixing element/steel bracket for connecting damper to the wall



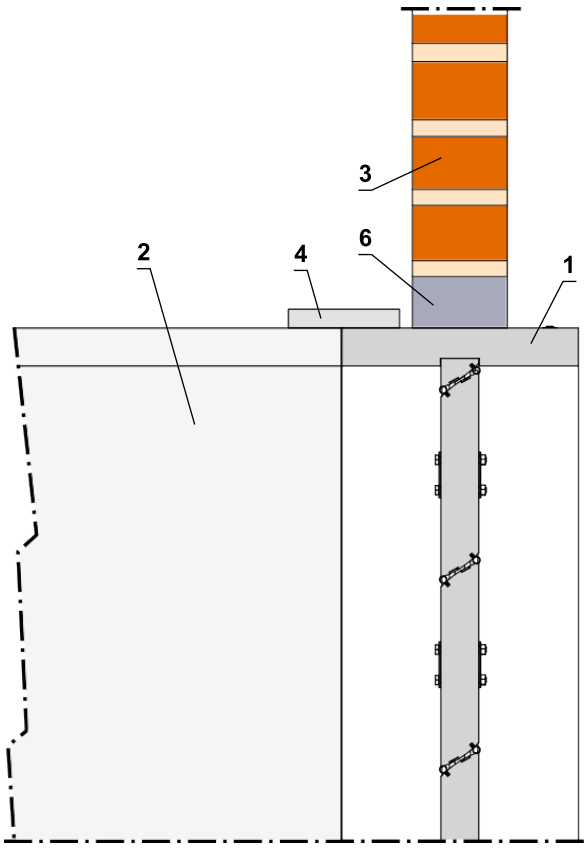
1 Fixing element/steel bracket for connecting damper to the wall (optional accessories MANDIK, a.s. or sheet metal min. thickness 2 mm and min. width 60 mm)
2 Installation hols
3 M8 bolt assemply (bolt M8x55 mm, 2 pcs large washer M8, nut M8)

Example of duct connection

Example of connection to SHEET STEEL duct



Example of connection to duct made of INSULATION BOARDS



1 SEDM-L
2 Smoke extraction duct - tested acc.to EN 1366-8 or EN 1366-9
3 Fire separating constructions
4 Overplating strip - min. th. 30 mm, the same material as a duct.
5 Surface protection material (type according to duct manufacturer instructions)
6 Penetration seal

VI. TECHNICAL DATA

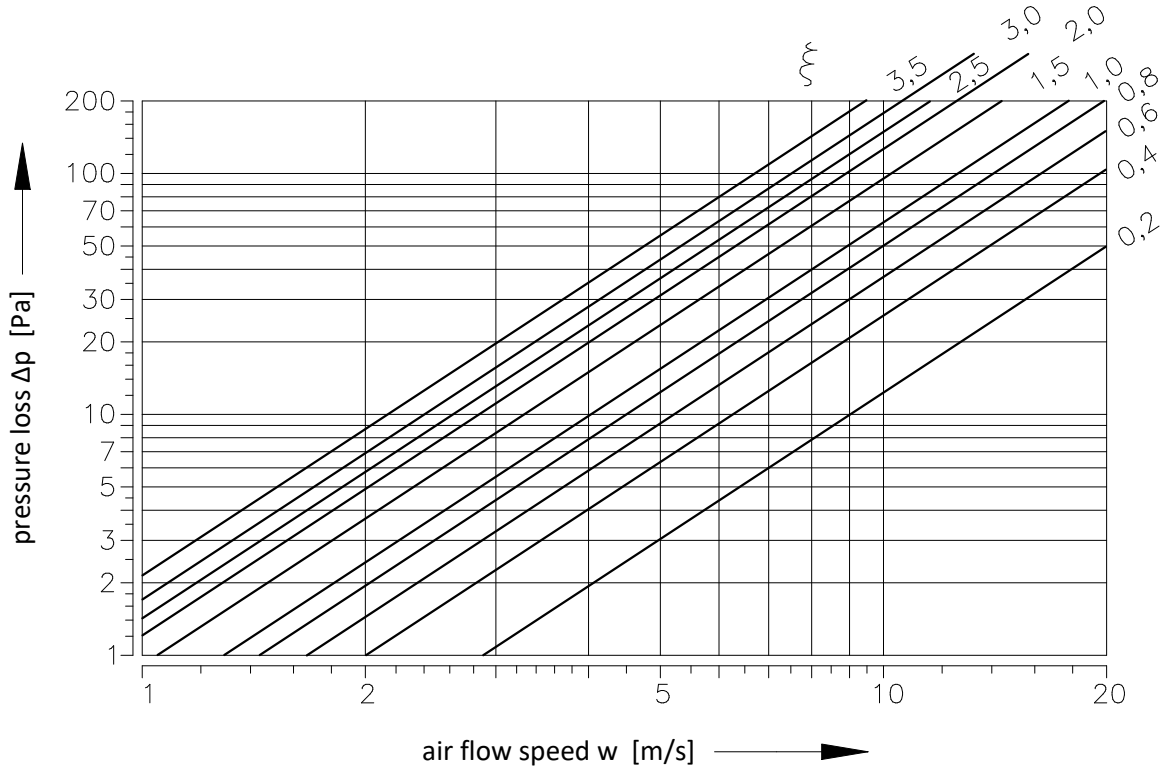
Pressure loss

Pressure loss calculation

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

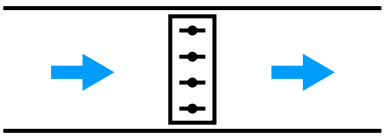
Δp	[Pa]	pressure loss
w	[m/s]	air flow speed in nominal damper section
ρ	[kg/m³]	air density
ξ	[-]	coefficient of local pressure loss for the nominal damper section → see pages 53 to 56

Determination of pressure loss by using diagram ρ = 1,2 kg/m³



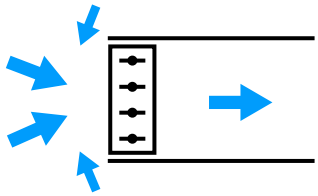
Coefficient of local pressure loss

Installation in duct



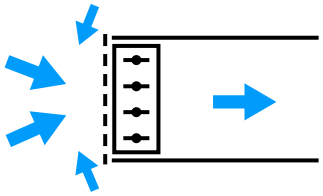
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	0,658	0,586	0,554	0,535	0,523	0,515	0,509	0,504	0,500
250	0,637	0,568	0,536	0,518	0,507	0,499	0,493	0,488	0,484
300	0,624	0,556	0,525	0,508	0,496	0,488	0,482	0,478	0,474
350	0,614	0,548	0,517	0,500	0,489	0,481	0,475	0,471	0,467
400	0,608	0,542	0,512	0,494	0,483	0,476	0,470	0,465	0,462
450	0,602	0,537	0,507	0,490	0,479	0,472	0,466	0,461	0,458
500	0,598	0,533	0,504	0,487	0,476	0,468	0,463	0,458	0,455
550	0,595	0,530	0,501	0,484	0,473	0,466	0,460	0,456	0,452
600	0,592	0,528	0,499	0,482	0,471	0,464	0,458	0,454	0,450
650	0,590	0,526	0,497	0,480	0,469	0,462	0,456	0,452	0,448
700	0,588	0,524	0,495	0,478	0,468	0,460	0,455	0,450	0,447
750	0,586	0,522	0,493	0,477	0,466	0,459	0,453	0,449	0,446
800	0,585	0,521	0,492	0,476	0,465	0,458	0,452	0,448	0,445
850	0,583	0,520	0,491	0,475	0,464	0,457	0,451	0,447	0,444
900	0,582	0,519	0,490	0,474	0,463	0,456	0,450	0,446	0,443
950	0,581	0,518	0,489	0,473	0,462	0,455	0,449	0,445	0,442
1000	0,580	0,517	0,488	0,472	0,462	0,454	0,449	0,444	0,441
1050	0,579	0,516	0,488	0,471	0,461	0,453	0,448	0,444	0,440
1100	0,579	0,516	0,487	0,471	0,460	0,453	0,447	0,443	0,440
1150	0,578	0,515	0,487	0,470	0,460	0,452	0,447	0,443	0,439
1200	0,577	0,515	0,486	0,470	0,459	0,452	0,446	0,442	0,439

Installation at the beginning of duct - without grille



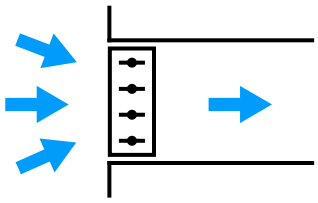
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	1,250	1,114	1,052	1,017	0,994	0,978	0,967	0,958	0,950
250	1,210	1,079	1,019	0,985	0,963	0,947	0,936	0,927	0,920
300	1,185	1,056	0,998	0,964	0,943	0,928	0,916	0,908	0,901
350	1,167	1,041	0,983	0,950	0,929	0,914	0,903	0,894	0,888
400	1,154	1,029	0,972	0,939	0,918	0,904	0,893	0,884	0,878
450	1,144	1,020	0,964	0,931	0,911	0,896	0,885	0,877	0,870
500	1,137	1,013	0,957	0,925	0,904	0,890	0,879	0,871	0,864
550	1,130	1,008	0,952	0,920	0,899	0,885	0,874	0,866	0,859
600	1,125	1,003	0,947	0,916	0,895	0,881	0,870	0,862	0,855
650	1,121	0,999	0,944	0,912	0,891	0,877	0,867	0,858	0,852
700	1,117	0,996	0,940	0,909	0,888	0,874	0,864	0,856	0,849
750	1,113	0,993	0,938	0,906	0,886	0,872	0,861	0,853	0,847
800	1,111	0,990	0,935	0,904	0,884	0,869	0,859	0,851	0,845
850	1,108	0,988	0,933	0,902	0,882	0,868	0,857	0,849	0,843
900	1,106	0,986	0,931	0,900	0,880	0,866	0,855	0,847	0,841
950	1,104	0,984	0,930	0,898	0,878	0,864	0,854	0,846	0,839
1000	1,102	0,983	0,928	0,897	0,877	0,863	0,852	0,844	0,838
1050	1,101	0,981	0,927	0,896	0,876	0,862	0,851	0,843	0,837
1100	1,099	0,980	0,926	0,895	0,875	0,860	0,850	0,842	0,836
1150	1,098	0,979	0,924	0,893	0,873	0,859	0,849	0,841	0,835
1200	1,097	0,978	0,923	0,893	0,872	0,858	0,848	0,840	0,834

Installation at the beginning of duct - with grille



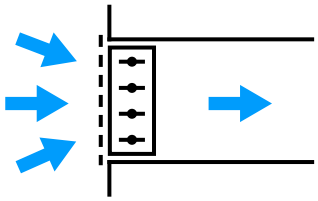
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	2,350	2,214	2,152	2,117	2,094	2,078	2,067	2,058	2,050
250	2,310	2,179	2,119	2,085	2,063	2,047	2,036	2,027	2,020
300	2,285	2,156	2,098	2,064	2,043	2,028	2,016	2,008	2,001
350	2,267	2,141	2,083	2,050	2,029	2,014	2,003	1,994	1,988
400	2,254	2,129	2,072	2,039	2,018	2,004	1,993	1,984	1,978
450	2,244	2,120	2,064	2,031	2,011	1,996	1,985	1,977	1,970
500	2,237	2,113	2,057	2,025	2,004	1,990	1,979	1,971	1,964
550	2,230	2,108	2,052	2,020	1,999	1,985	1,974	1,966	1,959
600	2,225	2,103	2,047	2,016	1,995	1,981	1,970	1,962	1,955
650	2,221	2,099	2,044	2,012	1,991	1,977	1,967	1,958	1,952
700	2,217	2,096	2,040	2,009	1,988	1,974	1,964	1,956	1,949
750	2,213	2,093	2,038	2,006	1,986	1,972	1,961	1,953	1,947
800	2,211	2,090	2,035	2,004	1,984	1,969	1,959	1,951	1,945
850	2,208	2,088	2,033	2,002	1,982	1,968	1,957	1,949	1,943
900	2,206	2,086	2,031	2,000	1,980	1,966	1,955	1,947	1,941
950	2,204	2,084	2,030	1,998	1,978	1,964	1,954	1,946	1,939
1000	2,202	2,083	2,028	1,997	1,977	1,963	1,952	1,944	1,938
1050	2,201	2,081	2,027	1,996	1,976	1,962	1,951	1,943	1,937
1100	2,199	2,080	2,026	1,995	1,975	1,960	1,950	1,942	1,936
1150	2,198	2,079	2,024	1,993	1,973	1,959	1,949	1,941	1,935
1200	2,197	2,078	2,023	1,993	1,972	1,958	1,948	1,940	1,934

Installation at the beginning of duct in the wall - without grille



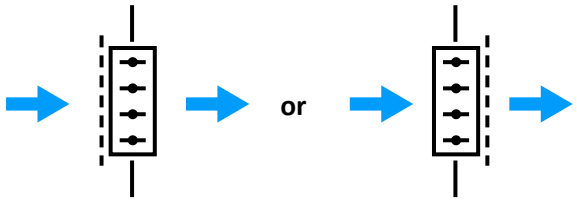
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	1,151	1,026	0,969	0,937	0,916	0,901	0,890	0,882	0,875
250	1,115	0,994	0,939	0,907	0,887	0,873	0,862	0,854	0,848
300	1,091	0,973	0,919	0,888	0,868	0,854	0,844	0,836	0,830
350	1,075	0,958	0,905	0,875	0,855	0,842	0,832	0,824	0,818
400	1,063	0,948	0,895	0,865	0,846	0,832	0,822	0,815	0,808
450	1,054	0,940	0,888	0,858	0,839	0,825	0,815	0,808	0,802
500	1,047	0,933	0,882	0,852	0,833	0,820	0,810	0,802	0,796
550	1,041	0,928	0,877	0,847	0,828	0,815	0,805	0,798	0,792
600	1,036	0,924	0,872	0,843	0,824	0,811	0,801	0,794	0,788
650	1,032	0,920	0,869	0,840	0,821	0,808	0,798	0,791	0,785
700	1,029	0,917	0,866	0,837	0,818	0,805	0,796	0,788	0,782
750	1,026	0,914	0,864	0,835	0,816	0,803	0,793	0,786	0,780
800	1,023	0,912	0,861	0,833	0,814	0,801	0,791	0,784	0,778
850	1,021	0,910	0,859	0,831	0,812	0,799	0,789	0,782	0,776
900	1,019	0,908	0,858	0,829	0,810	0,797	0,788	0,780	0,775
950	1,017	0,906	0,856	0,828	0,809	0,796	0,786	0,779	0,773
1000	1,015	0,905	0,855	0,826	0,808	0,795	0,785	0,778	0,772
1050	1,014	0,904	0,854	0,825	0,807	0,794	0,784	0,777	0,771
1100	1,012	0,903	0,853	0,824	0,805	0,793	0,783	0,776	0,770
1150	1,011	0,901	0,851	0,823	0,805	0,792	0,782	0,775	0,769
1200	1,010	0,900	0,851	0,822	0,804	0,791	0,781	0,774	0,768

Installation at the beginning of duct in the wall - with grille



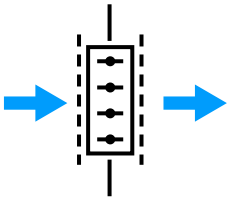
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	2,251	2,126	2,069	2,037	2,016	2,001	1,990	1,982	1,975
250	2,215	2,094	2,039	2,007	1,987	1,973	1,962	1,954	1,948
300	2,191	2,073	2,019	1,988	1,968	1,954	1,944	1,936	1,930
350	2,175	2,058	2,005	1,975	1,955	1,942	1,932	1,924	1,918
400	2,163	2,048	1,995	1,965	1,946	1,932	1,922	1,915	1,908
450	2,154	2,040	1,988	1,958	1,939	1,925	1,915	1,908	1,902
500	2,147	2,033	1,982	1,952	1,933	1,920	1,910	1,902	1,896
550	2,141	2,028	1,977	1,947	1,928	1,915	1,905	1,898	1,892
600	2,136	2,024	1,972	1,943	1,924	1,911	1,901	1,894	1,888
650	2,132	2,020	1,969	1,940	1,921	1,908	1,898	1,891	1,885
700	2,129	2,017	1,966	1,937	1,918	1,905	1,896	1,888	1,882
750	2,126	2,014	1,964	1,935	1,916	1,903	1,893	1,886	1,880
800	2,123	2,012	1,961	1,933	1,914	1,901	1,891	1,884	1,878
850	2,121	2,010	1,959	1,931	1,912	1,899	1,889	1,882	1,876
900	2,119	2,008	1,958	1,929	1,910	1,897	1,888	1,880	1,875
950	2,117	2,006	1,956	1,928	1,909	1,896	1,886	1,879	1,873
1000	2,115	2,005	1,955	1,926	1,908	1,895	1,885	1,878	1,872
1050	2,114	2,004	1,954	1,925	1,907	1,894	1,884	1,877	1,871
1100	2,112	2,003	1,953	1,924	1,905	1,893	1,883	1,876	1,870
1150	2,111	2,001	1,951	1,923	1,905	1,892	1,882	1,875	1,869
1200	2,110	2,000	1,951	1,922	1,904	1,891	1,881	1,874	1,868

Installation in the wall between the rooms - 1 grille



	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	3,994	3,680	3,537	3,456	3,403	3,366	3,339	3,318	3,301
250	3,903	3,599	3,460	3,381	3,330	3,294	3,268	3,247	3,231
300	3,844	3,546	3,411	3,333	3,283	3,248	3,222	3,202	3,187
350	3,803	3,510	3,376	3,300	3,251	3,216	3,191	3,171	3,156
400	3,773	3,483	3,351	3,276	3,227	3,193	3,168	3,148	3,133
450	3,750	3,463	3,332	3,257	3,209	3,175	3,150	3,131	3,115
500	3,732	3,446	3,316	3,242	3,194	3,160	3,136	3,117	3,101
550	3,717	3,433	3,304	3,230	3,182	3,149	3,124	3,105	3,090
600	3,705	3,422	3,294	3,220	3,173	3,139	3,115	3,096	3,081
650	3,695	3,413	3,285	3,212	3,165	3,131	3,107	3,088	3,073
700	3,686	3,405	3,278	3,205	3,158	3,125	3,100	3,081	3,067
750	3,679	3,399	3,271	3,199	3,152	3,119	3,094	3,076	3,061
800	3,672	3,393	3,266	3,193	3,146	3,114	3,089	3,071	3,056
850	3,666	3,388	3,261	3,189	3,142	3,109	3,085	3,066	3,051
900	3,661	3,383	3,257	3,184	3,138	3,105	3,081	3,062	3,048
950	3,657	3,379	3,253	3,181	3,134	3,101	3,077	3,059	3,044
1000	3,652	3,375	3,249	3,177	3,131	3,098	3,074	3,056	3,041
1050	3,649	3,372	3,246	3,174	3,128	3,095	3,071	3,053	3,038
1100	3,645	3,369	3,243	3,172	3,125	3,093	3,069	3,050	3,036
1150	3,642	3,366	3,241	3,169	3,123	3,090	3,066	3,048	3,033
1200	3,640	3,364	3,239	3,167	3,121	3,088	3,064	3,046	3,031

Installation in the wall between the rooms - 2 grille



	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	4,894	4,580	4,437	4,356	4,303	4,266	4,239	4,218	4,201
250	4,803	4,499	4,360	4,281	4,230	4,194	4,168	4,147	4,131
300	4,744	4,446	4,311	4,233	4,183	4,148	4,122	4,102	4,087
350	4,703	4,410	4,276	4,200	4,151	4,116	4,091	4,071	4,056
400	4,673	4,383	4,251	4,176	4,127	4,093	4,068	4,048	4,033
450	4,650	4,363	4,232	4,157	4,109	4,075	4,050	4,031	4,015
500	4,632	4,346	4,216	4,142	4,094	4,060	4,036	4,017	4,001
550	4,617	4,333	4,204	4,130	4,082	4,049	4,024	4,005	3,990
600	4,605	4,322	4,194	4,120	4,073	4,039	4,015	3,996	3,981
650	4,595	4,313	4,185	4,112	4,065	4,031	4,007	3,988	3,973
700	4,586	4,305	4,178	4,105	4,058	4,025	4,000	3,981	3,967
750	4,579	4,299	4,171	4,099	4,052	4,019	3,994	3,976	3,961
800	4,572	4,293	4,166	4,093	4,046	4,014	3,989	3,971	3,956
850	4,566	4,288	4,161	4,089	4,042	4,009	3,985	3,966	3,951
900	4,561	4,283	4,157	4,084	4,038	4,005	3,981	3,962	3,948
950	4,557	4,279	4,153	4,081	4,034	4,001	3,977	3,959	3,944
1000	4,552	4,275	4,149	4,077	4,031	3,998	3,974	3,956	3,941
1050	4,549	4,272	4,146	4,074	4,028	3,995	3,971	3,953	3,938
1100	4,545	4,269	4,143	4,072	4,025	3,993	3,969	3,950	3,936
1150	4,542	4,266	4,141	4,069	4,023	3,990	3,966	3,948	3,933
1200	4,540	4,264	4,139	4,067	4,021	3,988	3,964	3,946	3,931

Noise data - level of acoustic output corrected with filter A

Air velocity 2 m/s Level of acoustic output [dB]									
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	27	28	29	30	30	31	31	32	32
250	28	29	30	30	31	32	32	33	33
300	28	29	30	31	32	32	33	33	34
350	29	30	31	32	32	33	33	34	34
400	29	30	31	32	33	33	34	34	35
450	30	31	32	33	33	34	34	35	35
500	30	31	32	33	34	34	35	35	36
550	31	32	33	33	34	35	35	36	36
600	31	32	33	34	34	35	36	36	36
650	31	32	33	34	35	35	36	36	37
700	32	33	34	34	35	36	36	37	37
750	32	33	34	35	35	36	36	37	37
800	32	33	34	35	36	36	37	37	38
850	32	34	34	35	36	36	37	37	38
900	33	34	35	35	36	37	37	38	38
950	33	34	35	36	36	37	37	38	38
1000	33	34	35	36	37	37	38	38	39
1050	33	34	35	36	37	37	38	38	39
1100	34	35	36	36	37	38	38	39	39
1150	34	35	36	36	37	38	38	39	39
1200	34	35	36	37	37	38	38	39	39

Air velocity 3 m/s Level of acoustic output [dB]									
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	36	37	38	39	39	40	40	41	41
250	37	38	39	39	40	41	41	42	42
300	37	38	39	40	41	41	42	42	43
350	38	39	40	41	41	42	42	43	43
400	38	39	40	41	42	42	43	43	44
450	39	40	41	42	42	43	43	44	44
500	39	40	41	42	43	43	44	44	45
550	40	41	42	42	43	44	44	45	45
600	40	41	42	43	43	44	45	45	45
650	40	41	42	43	44	44	45	45	46
700	41	42	43	43	44	45	45	46	46
750	41	42	43	44	44	45	45	46	46
800	41	42	43	44	45	45	46	46	47
850	41	43	43	44	45	45	46	46	47
900	42	43	44	44	45	46	46	47	47
950	42	43	44	45	45	46	46	47	47
1000	42	43	44	45	46	46	47	47	48
1050	42	43	44	45	46	46	47	47	48
1100	43	44	45	45	46	47	47	48	48
1150	43	44	45	45	46	47	47	48	48
1200	43	44	45	46	46	47	47	48	48

Air velocity 4 m/s
Level of acoustic output [dB]

	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	42	43	44	45	46	47	47	47	48
250	43	44	45	46	47	47	48	48	49
300	44	45	46	47	47	48	49	49	49
350	44	46	47	47	48	49	49	50	50
400	45	46	47	48	49	49	50	50	51
450	45	47	48	48	49	50	50	51	51
500	46	47	48	49	50	50	51	51	52
550	46	47	48	49	50	51	51	52	52
600	47	48	49	50	50	51	51	52	52
650	47	48	49	50	51	51	52	52	53
700	47	48	49	50	51	52	52	53	53
750	48	49	50	51	51	52	52	53	53
800	48	49	50	51	51	52	53	53	53
850	48	49	50	51	52	52	53	53	54
900	48	50	50	51	52	53	53	54	54
950	49	50	51	52	52	53	53	54	54
1000	49	50	51	52	52	53	54	54	54
1050	49	50	51	52	53	53	54	54	55
1100	49	50	51	52	53	53	54	54	55
1150	49	51	52	52	53	54	54	55	55
1200	50	51	52	53	53	54	54	55	55

Air velocity 5 m/s
Level of acoustic output [dB]

	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	49	50	51	52	53	54	54	54	55
250	50	51	52	53	54	54	55	55	56
300	51	52	53	54	54	55	56	56	56
350	51	53	54	54	55	56	56	57	57
400	52	53	54	55	56	56	57	57	58
450	52	54	55	55	56	57	57	58	58
500	53	54	55	56	57	57	58	58	59
550	53	54	55	56	57	58	58	59	59
600	54	55	56	57	57	58	58	59	59
650	54	55	56	57	58	58	59	59	60
700	54	55	56	57	58	59	59	60	60
750	55	56	57	58	58	59	59	60	60
800	55	56	57	58	58	59	60	60	60
850	55	56	57	58	59	59	60	60	61
900	55	57	57	58	59	60	60	61	61
950	56	57	58	59	59	60	60	61	61
1000	56	57	58	59	59	60	61	61	61
1050	56	57	58	59	60	60	61	61	62
1100	56	57	58	59	60	60	61	61	62
1150	56	58	59	59	60	61	61	62	62
1200	57	58	59	60	60	61	61	62	62

Air velocity 6 m/s Level of acoustic output [dB]									
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	54	55	56	57	58	58	59	59	60
250	55	56	57	58	59	59	60	60	61
300	55	57	58	59	59	60	60	61	61
350	56	57	58	59	60	60	61	61	62
400	57	58	59	60	60	61	62	62	62
450	57	58	59	60	61	62	62	63	63
500	57	59	60	61	61	62	62	63	63
550	58	59	60	61	62	62	63	63	64
600	58	60	61	61	62	63	63	64	64
650	59	60	61	62	62	63	64	64	64
700	59	60	61	62	63	63	64	64	65
750	59	60	61	62	63	64	64	65	65
800	59	61	62	63	63	64	64	65	65
850	60	61	62	63	64	64	65	65	66
900	60	61	62	63	64	64	65	65	66
950	60	61	62	63	64	65	65	66	66
1000	60	62	63	64	64	65	65	66	66
1050	61	62	63	64	64	65	66	66	67
1100	61	62	63	64	65	65	66	66	67
1150	61	62	63	64	65	65	66	66	67
1200	61	62	63	64	65	66	66	67	67

Air velocity 8 m/s Level of acoustic output [dB]									
	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	60	62	63	64	64	65	66	66	66
250	61	63	64	65	65	66	66	67	67
300	62	63	64	65	66	67	67	68	68
350	63	64	65	66	67	67	68	68	69
400	63	65	66	67	67	68	68	69	69
450	64	65	66	67	68	68	69	69	70
500	64	66	67	67	68	69	69	70	70
550	65	66	67	68	69	69	70	70	71
600	65	66	67	68	69	70	70	71	71
650	65	67	68	69	69	70	70	71	71
700	66	67	68	69	70	70	71	71	72
750	66	67	68	69	70	71	71	72	72
800	66	68	69	69	70	71	71	72	72
850	66	68	69	70	70	71	72	72	73
900	67	68	69	70	71	71	72	72	73
950	67	68	69	70	71	72	72	73	73
1000	67	68	70	70	71	72	72	73	73
1050	67	69	70	71	71	72	73	73	73
1100	67	69	70	71	72	72	73	73	74
1150	68	69	70	71	72	72	73	73	74
1200	68	69	70	71	72	73	73	74	74

Air velocity 10 m/s
Level of acoustic output [dB]

	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	66	68	69	70	70	71	72	72	72
250	67	69	70	71	71	72	72	73	73
300	68	69	70	71	72	73	73	74	74
350	68	70	71	72	73	73	74	74	75
400	69	71	72	72	73	74	74	75	75
450	70	71	72	73	74	74	75	75	76
500	70	71	73	73	74	75	75	76	76
550	70	72	73	74	75	75	76	76	77
600	71	72	73	74	75	76	76	77	77
650	71	73	74	75	75	76	76	77	77
700	71	73	74	75	76	76	77	77	78
750	72	73	74	75	76	77	77	78	78
800	72	73	75	75	76	77	77	78	78
850	72	74	75	76	76	77	78	78	79
900	72	74	75	76	77	77	78	78	79
950	73	74	75	76	77	78	78	79	79
1000	73	74	76	76	77	78	78	79	79
1050	73	75	76	77	77	78	79	79	79
1100	73	75	76	77	78	78	79	79	80
1150	74	75	76	77	78	78	79	79	80
1200	74	75	76	77	78	79	79	80	80

Air velocity 12 m/s
Level of acoustic output [dB]

	B								
A	**430**	**630**	**830**	**1030**	**1230**	**1430**	**1630**	**1830**	**2030**
200	71	73	74	75	75	76	76	77	77
250	72	73	75	75	76	77	77	78	78
300	73	74	75	76	77	78	78	79	79
350	73	75	76	77	78	78	79	79	80
400	74	75	77	77	78	79	79	80	80
450	74	76	77	78	79	79	80	80	81
500	75	76	77	78	79	80	80	81	81
550	75	77	78	79	80	80	81	81	82
600	76	77	78	79	80	81	81	82	82
650	76	77	79	79	80	81	81	82	82
700	76	78	79	80	81	81	82	82	83
750	77	78	79	80	81	81	82	83	83
800	77	78	79	80	81	82	82	83	83
850	77	79	80	81	81	82	83	83	84
900	77	79	80	81	82	82	83	83	84
950	78	79	80	81	82	82	83	84	84
1000	78	79	80	81	82	83	83	84	84
1050	78	80	81	82	82	83	83	84	84
1100	78	80	81	82	82	83	84	84	85
1150	78	80	81	82	83	83	84	84	85
1200	79	80	81	82	83	84	84	85	85

VII. MATERIAL, FINISHING

- Damper casings and blades are made of fire resistant asbestos free boards made of mineral fibres.
- Damper bodies and blades can be coated with Promat 2000 anti-moisture coating or Promat-SR anti-aggressive coating.
- Fasteners are galvanized.
- According to the customer's requirements, damper can be made of stainless material.

  Specifications for stainless-steel models – classification of stainless steel:

  - Class A2 – Food-grade stainless steel (AISI 304 – EN 17240)
  - Class A4 – Chemistry-grade stainless steel (AISI 316, 316L – EN 17346, 17349)

  The respective stainless steel is the material for all components present or accessing the damper interior; components outside the damper body are typically from galvanised sheet metal (fasteners for mounting the actuator).

  The following components, including the fasteners, are made from stainless steel at all times:

  - Damper body and all components permanently attached
  - Blade´s holders, including pins, metal parts of blade
  - Inspection hole cover and fasteners (if they are parts of the cover)

  Everything that is located or enters the inner space or the cross-section of the damper is from a given stainless-steel material. The parts located outside the body and in the damper mechanism space are made of galvanised material as standard. In the case of the stainless-steel design, the cover grilles are always made of galvanised material with a "powder-coated" coating.

  Plastic, rubber and silicon components, sealants, foaming bands, glass-ceramic seals, housings, brass bearings of the blade, actuators, and end switches are identical for all material variants of the dampers.

  Some fasteners and components are available in one class of stainless steel; the type will be used in all stainless-steel variants.

  The blade in the variants for chemical environments (Class A4) is always treated with a coating of chemically resistant Promat SR.

  Any other requirements for the design shall be considered atypical and shall be addressed on an individual basis.

VIII. TRANSPORTATION AND STORAGE

Logistic terms

- Dampers are delivered on special pallets. As standard, the dampers are wrapped in plastic foil for protection during transport and must not be used for long-term storage of the equipment . Changes in temperature during transport may cause condensation of water vapour inside the packaging and thereby condisitions may arise inside the packaging that are suitable for corrosion of materials used in the equipment (e.g. white corrosion on zinc-coated items or mould on calcium silicate). Therefore, it is necessary to remove the transport packaging immediately after unloading to allow air to circulate around the product.
- The equipment must be stored in clean, dry, well ventilated and dust-free environment out of direct sunlight. ensuring protection against moisture and extremes of temperatures (minumum temperature +5°C) the equipment must be protected against mechanical and accidental damage prior to installation.
- Another required packaging system should be approved and agreed by manufacturer. Packaging material is not returnable in case that another packaging system (material) is required and used and it is not included into final price of damper.
- For unloading and further manipulation with the damper is necessary to use appropriate tooling (forklifts) due to damper weight. Dampers are fragile.
- Dampers are transported by box freight vehicles without direct weather impact, there must not occur any shocks and ambient temperature must not exceed +50°C. Dampers must be protected against impact when transported and manipulated. During transportation, the damper blades must be in the "CLOSED" position.
- Dampers are stored indoor in environment without any aggressive vapours, gases or dust. Indoor temperature must be in the range from -30°C to +50°C and maximum relative humidity 95% (avoid condensation on the damper body). Dampers must be protected against impact when transported and manipulated.

Warranty

- The manufacturer provides a warranty of 24 months from the date of dispatch for the dampers.
- The warranty for fire dampers SEDM-L, provided by the manufacturer, is completely void if actuating, closing and control devices are unprofessionally handled by untrained workers or if electric components, i.e. actuators, communication and supply device.
- The warranty is void if dampers are used for other purposes, devices and working conditions than those allowed by these technical conditions or if the dampers are mechanically damaged during handling.
- If the dampers are damaged by transport, a record must be written down with the forwarder at reception for later complaint.

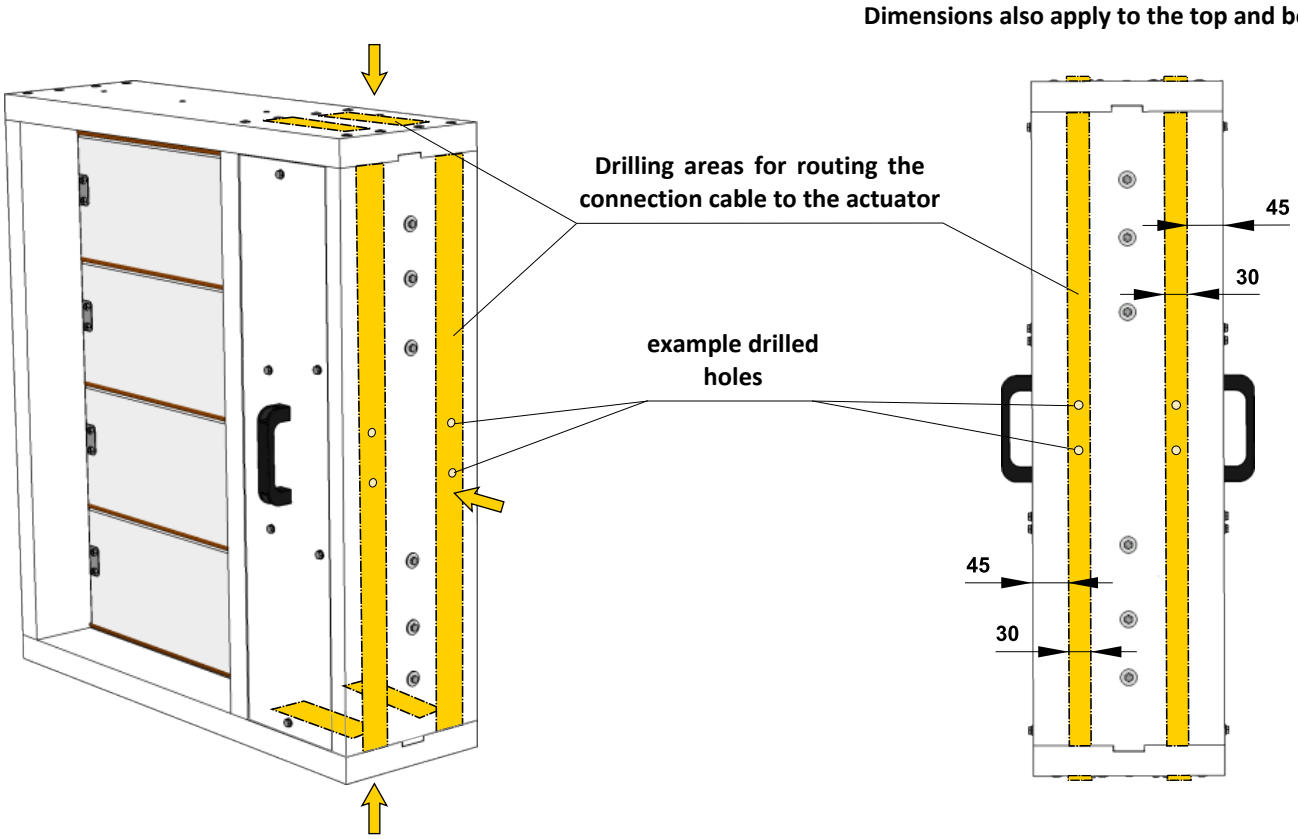
IX. ASSEMBLY, ATTENDANCE AND MAINTENANCE

- Assembly, maintenance and damper function check can be done only by qualified and trained person, i.e. “AUTHORIZED PERSON” according to the manufacturer documentation. All works done on the smoke control dampers must be done according international and local norms and laws.
- All effective safety standards and directives must be observed during damper assembly.
- To ensure reliable smoke exhaust damper function it is necessary to avoid blocking the closing mechanism and contact surfaces with collected dust, fibre and sticky materials and solvents.
- <u>Manual operation</u>
  - Without power supply, the damper can be operated manually and fixed in any required position.

Electrical connection of the actuator in protection box

Protection box without slot or predrilled holes

- Drill two holes into the protection box (from outside to inside) and pull through field wiring cables (CAT 3 fire resistant cables as BS 8519) to connect to the actuator trailing lead inside the housing, using a standard screwed cable connector block, the protection box is made of calcium silicate plates.
- Procedure
  - Use drill (drill size acc. To suit connecting cable Ø + 2 mm for seal up by mastic) and make two holes. It is possible to drill holes in any side of the housing.
  - Pull the heat resistant cable through the calcium silicate plate (wall) and connect with cables from actuator acc. to above mentioned electrical diagram.
  - Seal up the space around cable with fire resistant mastic (HILTI CFS-S ACR, PROMASTOP) or equivalent.
  - Let the mastic harden.

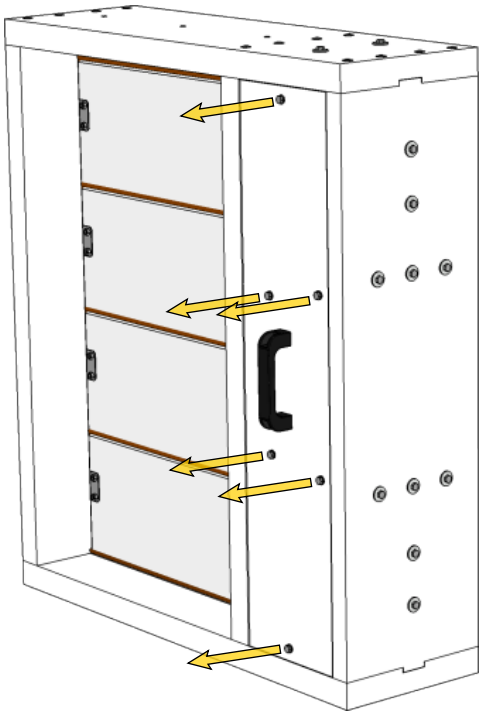


Example of position of holes in the wall of the box, without pre-manufactured slot

Entry into service and revisions

- Before entering the dampers into operation after assembly and after sequential revisions, checks and functionality tests of all designs including operation of the electrical components must be successfully provided and finished. After entering into operation, these revisions must be done according to requirement set by national regulations.
- In case that dampers are found unable to serve for their function for any cause, it must be clearly marked. The operator is obliged to ensure that the damper is put into condition in which it is ready for function and meanwhile he is obliged to provide the fire protection by another appropriate way.

- <u>Removing actuator housing cover (from both sides)</u>
  - Release actuator housing cover by unscrewing all the screws located on the cover.



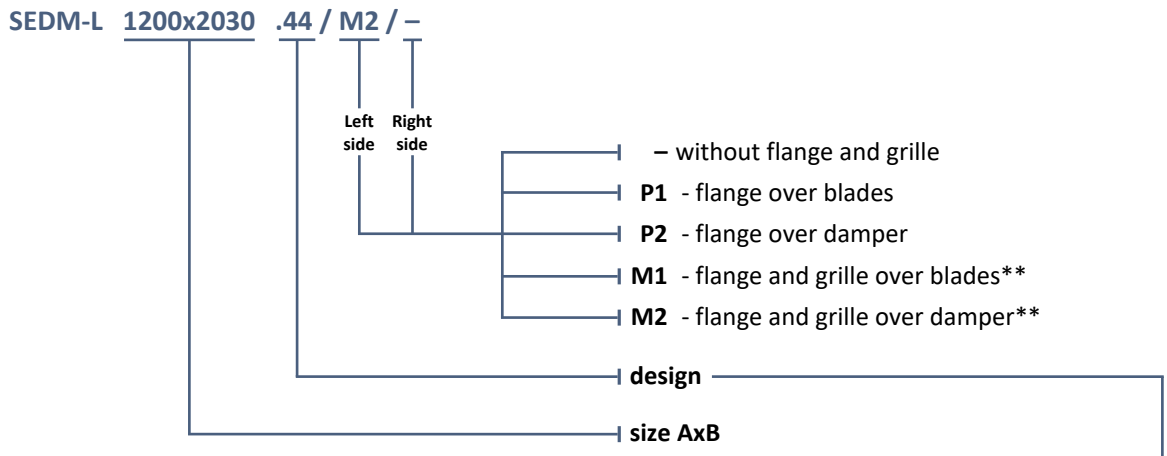
Actuator housing cover detail

- Results of regular checks, imperfections found and all-important facts connected with the damper function must be recorded in the "FIRE BOOK" and immediately reported to the operator.
- Before entering the dampers into operation after their assembly and by sequential checks, the following checks must be carried out for all designs.
- Visual inspection of proper damper integration, inside damper area, damper blade, contact surfaces and silicon sealing.

- Ensure each damper is fully checked for operational capability, control should be initiated from the control system. Dampers blades should open and close correctly and operation should be visually inspected and documented prior to handover.

X. ORDERING INFORMATION

Ordering key



EXAMPLE:
SEDM-L 1200x2030 .44/M2/– 1200x2030-damper size, **.44**-damper design, **M2**-flange and grille over damper,
–without flange and grile on right side

Dampers design	Additional digit
with actuating mechanism BEN, BEE, BE for 230V	.44
with actuating mechanism BEN, BEE, BE for 24V	.54
with actuating mechanism BEN (BEE)-SR for 24V	.65*
with the communication and supply device BKNE 230-24 and actuating mechanism BEN (BEE, BE)-ST for 24V	.66***

* *Design .65 is not available by using actuating mechanism BE.*
** *The surface of the grille is provided with powder coating, standard colour is the RAL 9010. Requirements for other colour must be discussed in advance with the manufacturer.*
*** *In case of BKNE design it is necessary to add the weight 0,68 kg.*

Data label

- Data label is placed on the damper casing (example)

The producer reserves the right for innovations of the product.
For actual product information see www.mandik.com

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