



Product catalog

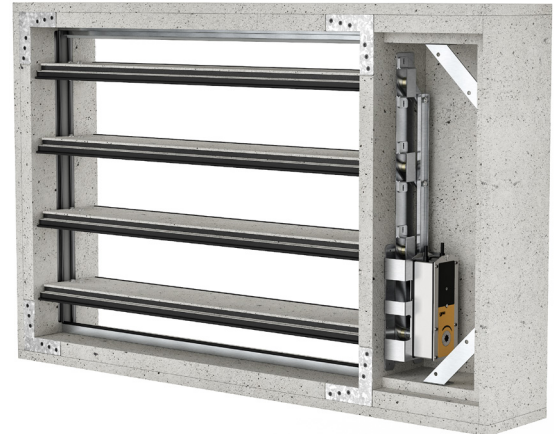
FSD

Smoke control damper

Fire protection

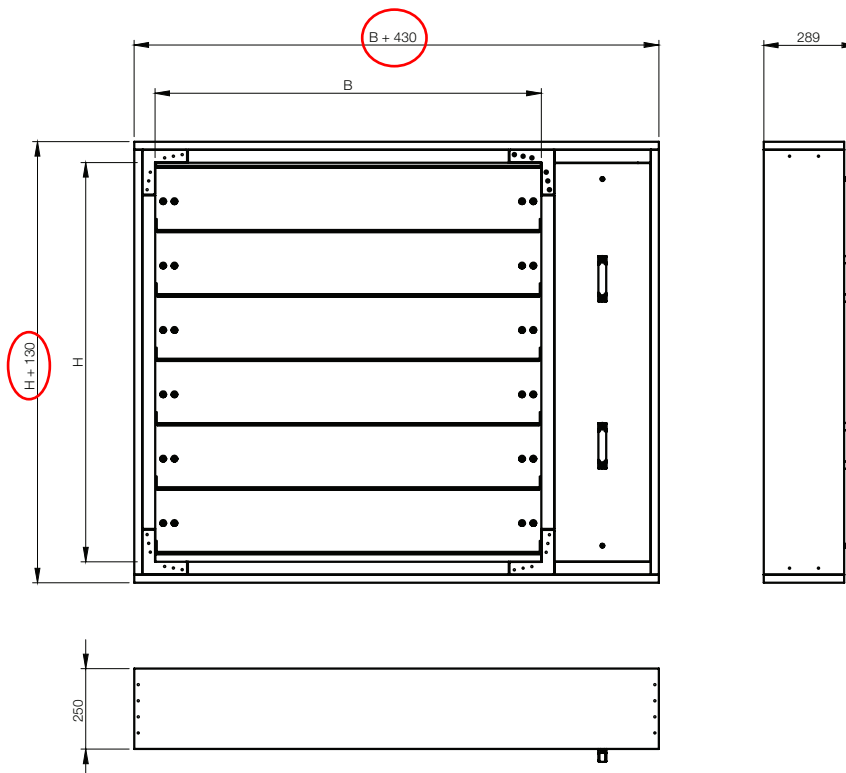
SMOKE CONTROL DAMPERS FSD

- Smoke control damper is used in smoke extract systems. Smoke control damper is certified for installation in a concrete wall.
- Produced according to standard EN 12101-8 and tested according to EN 1366-10 and EN 1366-2 norms for smoke control systems
- Smoke control dampers come in dimensions from 200x440 mm till 1200x1240 mm. Volume flows up to 53760 m³/h with airflow velocities up to 10m/s.
- Damper casing is produced out of rigid, thermally stable calcium silicate material
- Smoke control damper has two control positions: open and closed. In case of smoke detection, electric actuator receives a signal for opening the damper from closed position.



DIMENSIONS

Nominal dimensions BxH - 200x440 up to 1200x1240



HxB	Weight [kg]																				
	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
440	51,7	53,6	55,6	57,5	59,5	61,4	63,3	65,3	67,2	69,2	71,1	73	75	76,9	78,9	80,8	82,8	84,7	86,6	88,6	90,5
640	63,5	65,7	68	70,2	72,4	74,7	76,9	79,2	81,4	83,6	85,9	88,1	90,3	92,6	94,8	97,1	99,3	101,5	103,8	106	108,2
840	75,3	77,8	80,4	82,9	85,4	88	90,5	93	95,6	98,1	100,6	103,2	105,7	108,2	110,8	113,3	115,8	118,4	120,9	123,4	126
1040	87,1	90	92,8	95,6	98,4	101,3	104,1	106,9	109,8	112,6	115,4	118,2	121,1	123,9	126,7	129,6	132,4	135,2	138,1	140,9	
1240	98,9	102,1	105,2	108,3	111,4	114,6	117,7	120,8	123,9	127,1	130,2	133,3	136,4	139,6	142,7	145,8	148,9	149,9	152,1	155,2	158,3

CLASSIFICATION (according to EN 13501-3)

All smoke control dampers are tested and certified by the official certification institutions. Test reports form the basis of certification of our products.



Europa: Classification according to EN 13501-4 : 2009

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

Please consult latest Declaration of Performance on our website: <http://www.klimaoprema.hr/en/hvac/quality/certificates/>

Range	Supporting construction	Wall thickness	Supporting construction details	Type of installation	Classification	Details
200-440 up to 1200x1240		≥100mm	Aerated concrete wall, $\rho \geq 500 \text{ kg/m}^3$, fire resistance $\geq 120'$	Dry installation, Mineral wool, density $\geq 150 \text{ kg/m}^3$		
	Rigid wall	≥100mm	Concrete wall, $\rho \geq 500 \text{ kg/m}^3$, fire resistance $\geq 120'$	Dry installation, Mineral wool, density $\geq 150 \text{ kg/m}^3$	EI90 ($V_{ew}, o \leftrightarrow i$) S 1500 C ₁₀₀₀₀ AA _{multi}	
		≥100mm	Brick wall, $\rho \geq 500 \text{ kg/m}^3$, fire resistance $\geq 120'$	Dry installation, Mineral wool, density $\geq 150 \text{ kg/m}^3$		
		≥100mm	Aerated concrete shaft wall, $\rho \geq 500 \text{ kg/m}^3$, fire resistance $\geq 120'$	Dry installation, Mineral wool, density $\geq 150 \text{ kg/m}^3$		
	Rigid shaft-wall	≥100mm	Concrete shaft wall, $\rho \geq 500 \text{ kg/m}^3$, fire resistance $\geq 120'$	Dry installation, Mineral wool, density $\geq 150 \text{ kg/m}^3$	EI90 ($V_{ew}, o \leftrightarrow i$) S 1500 C ₁₀₀₀₀ AA _{multi}	
		≥100mm	Brick shaft wall, $\rho \geq 500 \text{ kg/m}^3$, fire resistance $\geq 120'$	Dry installation, Mineral wool, density $\geq 150 \text{ kg/m}^3$		

ORDERING KEY

(1) Damper type (2) Dimension (3) Mechanism type

FSD - BxH - M24-S

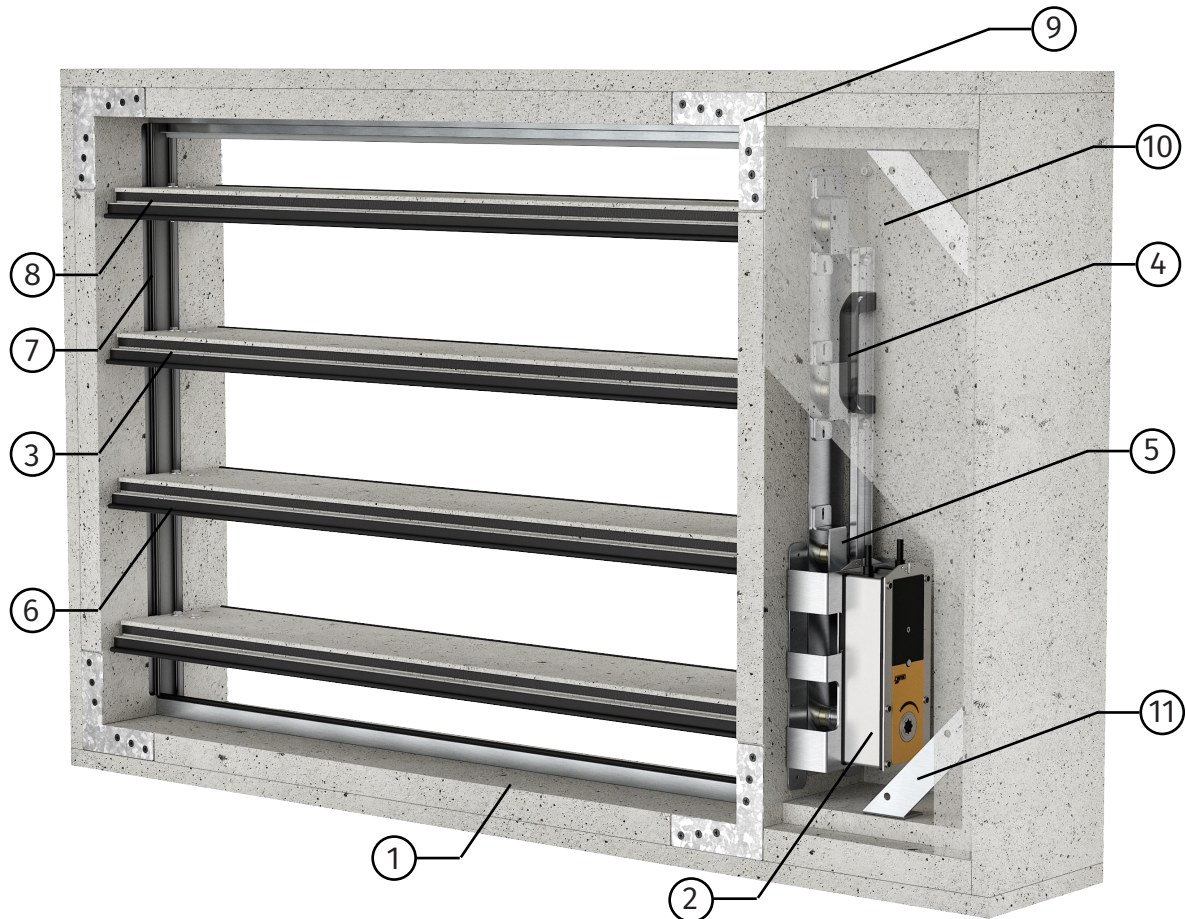
(1) FSD - Smoke control damper

(2) Damper dimensions

(3) M230-S - electric actuator AC230V
M24-S - electric actuator AC/DC24V

TECHNICAL DATA

Multiblade smoke control damper FSD is made out of fire resistant calcium silicate material. All smoke dampers are equipped with Belimo electric open/close actuators to operate the damper. Blade shafts, shaft bearings and driving mechanism is made out of galvanized steel. Steel angle joints are included for easy connection to the ventilation ducts. Steel angle joints are included for easy connection to the ventilation ducts. All smoke control dampers can be additionally equipped with network modules for integration with standard bus systems.



- | | | |
|----------------------|-----------------------|----------------------|
| 1. Casing | 5. Blade mechanism | 9. Steel angle joint |
| 2. Electric actuator | 6. Silicone seal | 10. Service hatch |
| 3. Damper blade | 7. Silicone seal | 11. Hatch bracket |
| 4. Cover handle | 8. Expanding material | |

Casing length	250mm
Volume flow	Up to 53763 m ³ /h or 14935 l/h
Differential pressure range	-1000 up to 500 Pa
Operating temperature	-10°C up to 50°C

QUICK SELECTION TABLES

Quick selection tables represent respective volume flow rates and pressure drops per each dimension. Data in the table is measured for smoke control damper installed without cover grilles. More detailed report for exact air volume flows can be created in our product selection software Solveair, on our website (solveair.klimaoprema.hr).

Dimension	v = 2,5 m/s			v = 5 m/s			v = 10 m/s		
	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]
200 x 440	804	224	4,04	1585	441	15,3	3170	881	61,2
250 x 440	1011	281	4,04	1994	554	15,3	3988	1108	61,2
300 x 440	1206	336	4,04	2378	661	15,3	4755	1321	61,2
350 x 440	1413	393	4,04	2787	775	15,3	5573	1549	61,2
400 x 440	1608	447	4,04	3170	881	15,3	6339	1761	61,2
450 x 440	1815	505	4,04	3579	995	15,3	7157	1989	61,2
500 x 440	2009	559	4,04	3962	1101	15,3	7924	2202	61,2
550 x 440	2217	616	4,04	4371	1215	15,3	8742	2429	61,2
600 x 440	2411	670	4,04	4755	1321	15,3	9509	2642	61,2
650 x 440	2618	728	4,04	5164	1435	15,3	10327	2869	61,2
700 x 440	2813	782	4,04	5547	1541	15,3	11094	3082	61,2
750 x 440	3020	839	4,04	5956	1655	15,3	11911	3309	61,2
800 x 440	3215	894	4,04	6339	1761	15,3	12678	3522	61,2
850 x 440	3422	951	4,04	6748	1875	15,3	13496	3749	61,2
900 x 440	3616	1005	4,04	7132	1982	15,3	14263	3962	61,2
950 x 440	3824	1063	4,04	7541	2095	15,3	15081	4190	61,2
1000 x 440	4018	1117	4,04	7924	2202	15,3	15848	4403	61,2
1050 x 440	4225	1174	4,04	8333	2315	15,3	16666	4630	61,2
1100 x 440	4420	1228	4,04	8716	2422	15,3	17432	4843	61,2
1150 x 440	4627	1286	4,04	9125	2535	15,3	18250	5070	61,2
1200 x 440	4822	1340	4,04	9509	2642	15,3	19017	5283	61,2
200 x 640	1185	330	3,62	2335	649	13,62	4637	1289	52,8
250 x 640	1445	402	3,2	2889	803	12,79	5778	1606	51,16
300 x 640	1777	494	3,62	3503	974	13,62	6955	1932	52,8
350 x 640	2020	562	3,2	4040	1123	12,79	8079	2245	51,16
400 x 640	2369	659	3,62	4670	1298	13,62	9273	2576	52,8
450 x 640	2595	721	3,2	5190	1442	12,79	10380	2884	51,16
500 x 640	2961	823	3,62	5838	1622	13,62	11591	3220	52,8
550 x 640	3171	881	3,2	6341	1762	12,79	12681	3523	51,16
600 x 640	3554	988	3,62	7005	1946	13,62	13909	3864	52,8
650 x 640	3746	1041	3,2	7491	2081	12,79	14982	4162	51,16
700 x 640	4146	1152	3,62	8173	2271	13,62	16227	4508	52,8
750 x 640	4321	1201	3,2	8642	2401	12,79	17283	4801	51,16
800 x 640	4738	1317	3,62	9340	2595	13,62	18545	5152	52,8
850 x 640	4896	1361	3,2	9792	2721	12,79	19584	5441	51,16
900 x 640	5330	1481	3,62	10508	2919	13,62	20863	5796	52,8
950 x 640	5633	1565	3,62	11104	3085	13,62	22047	6125	52,8
1000 x 640	5922	1646	3,62	11675	3244	13,62	23181	6440	52,8
1050 x 640	6225	1730	3,62	12271	3409	13,62	24365	6769	52,8
1100 x 640	6515	1810	3,62	12843	3568	13,62	25499	7084	52,8

QUICK SELECTION TABLES

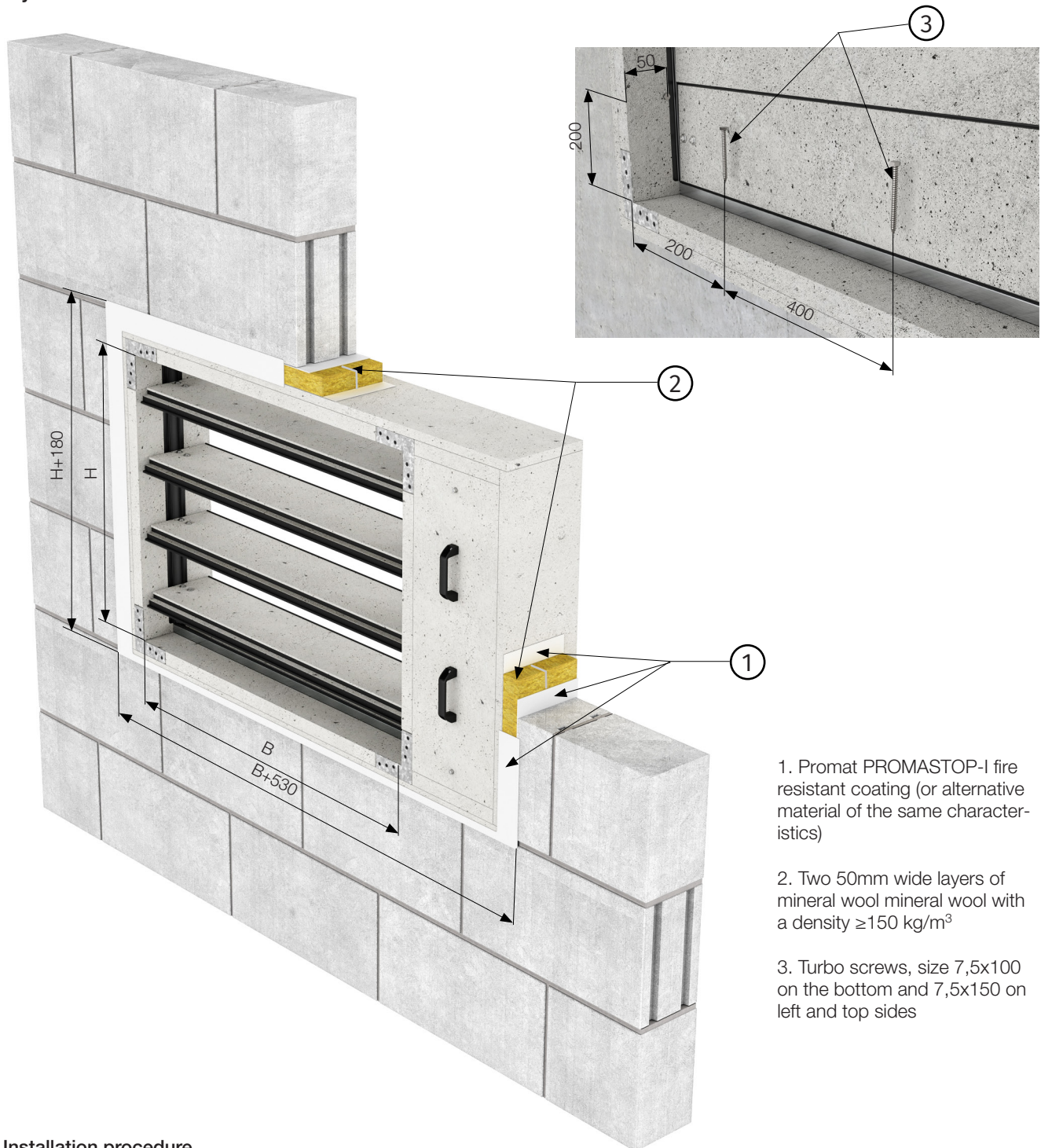
Dimension	v = 2,5 m/s			v = 5 m/s			v = 10 m/s		
	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]
900 x 640	5330	1481	3,62	10508	2919	13,62	20863	5796	52,8
950 x 640	5633	1565	3,62	11104	3085	13,62	22047	6125	52,8
1000 x 640	5922	1646	3,62	11675	3244	13,62	23181	6440	52,8
1050 x 640	6225	1730	3,62	12271	3409	13,62	24365	6769	52,8
1100 x 640	6515	1810	3,62	12843	3568	13,62	25499	7084	52,8
1150 x 640	6817	1894	3,62	13439	3734	13,62	26683	7412	52,8
1200 x 640	7107	1975	3,62	14010	3892	13,62	27817	7727	52,8
200 x 840	1543	429	3,2	3040	845	11,98	6079	1689	47,9
250 x 840	1934	538	3,2	3811	1059	11,98	7566	2102	46,3
300 x 840	2314	643	3,2	4559	1267	11,98	9118	2533	47,9
350 x 840	2706	752	3,2	5331	1481	11,98	10662	2962	47,9
400 x 840	3085	857	3,2	6079	1689	11,98	12157	3377	47,9
450 x 840	3477	966	3,2	6851	1904	11,98	13701	3806	47,9
500 x 840	3856	1072	3,2	7598	2111	11,98	15196	4222	47,9
550 x 840	4248	1181	3,2	8370	2326	11,98	16740	4651	47,9
600 x 840	4627	1286	3,2	9118	2533	11,98	18235	5066	47,9
650 x 840	5019	1395	3,2	9890	2748	11,98	19779	5495	47,9
700 x 840	5398	1500	3,2	10637	2955	11,98	21274	5910	47,9
750 x 840	5790	1609	3,2	11409	3170	11,98	22818	6339	47,9
800 x 840	6169	1714	3,2	12157	3377	11,98	24313	6754	47,9
850 x 840	6561	1823	3,2	12929	3592	11,98	25857	7183	47,9
900 x 840	6941	1929	3,2	13677	3800	11,98	27353	7599	47,9
950 x 840	7332	2037	3,2	14448	4014	11,98	28896	8027	47,9
1000 x 840	7712	2143	3,2	15196	4222	11,98	30392	8443	47,9
1050 x 840	8103	2251	3,2	15968	4436	11,98	31935	8871	47,9
1100 x 840	8483	2357	3,2	16716	4644	11,98	33431	9287	47,9
1150 x 840	8874	2466	3,2	17487	4858	11,98	34974	9716	47,9
1200 x 840	9254	2571	3,2	18235	5066	11,98	36470	10131	47,9
200 x 1040	1878	522	2,8	3755	1044	11,18	7509	2086	44,7
250 x 1040	2353	654	2,8	4705	1307	11,18	9409	2614	44,7
300 x 1040	2816	783	2,8	5632	1565	11,18	11263	3129	44,7
350 x 1040	3291	915	2,8	6582	1829	11,18	13164	3657	44,7
400 x 1040	3755	1044	2,8	7509	2086	11,18	15017	4172	44,7
450 x 1040	4230	1176	2,8	8459	2350	11,18	16918	4700	44,7
500 x 1040	4693	1304	2,8	9386	2608	11,18	18771	5215	44,7
550 x 1040	5168	1436	2,8	10336	2872	11,18	20672	5743	44,7
600 x 1040	5632	1565	2,8	11263	3129	11,18	22525	6257	44,7
650 x 1040	6107	1697	2,8	12213	3393	11,18	24426	6786	44,7
700 x 1040	6570	1826	2,8	13140	3651	11,18	26279	7300	44,7
750 x 1040	7045	1957	2,8	14090	3914	11,18	28180	7828	44,7

QUICK SELECTION TABLES

Dimension	v = 2,5 m/s			v = 5 m/s			v = 10 m/s		
	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]	Qv[m ³ /h]	Qv[l/h]	Δps[Pa]
800 x 1040	7509	2086	2,8	15017	4172	11,18	30033	8343	44,7
850 x 1040	7984	2218	2,8	15967	4436	11,18	31934	8871	44,7
900 x 1040	8447	2347	2,8	16894	4693	11,18	33787	9386	44,7
950 x 1040	8922	2479	2,8	17844	4957	11,18	35688	9914	44,7
1000 x 1040	9386	2608	2,8	18771	5215	11,18	37541	10429	44,7
1050 x 1040	9861	2740	2,8	19721	5479	11,18	39442	10957	44,7
1100 x 1040	10324	2868	2,8	20648	5736	11,18	41295	11471	44,7
1150 x 1040	10799	3000	2,8	21598	6000	11,18	43196	11999	44,7
1200 x 1040	11263	3129	2,8	22525	6257	11,18	45049	12514	44,7
200 x 1240	2258	628	2,8	4515	1255	11,18	8961	2490	43,12
250 x 1240	2828	786	2,8	5655	1571	11,18	11225	3119	43,12
300 x 1240	3386	941	2,8	6772	1882	11,18	13441	3734	43,12
350 x 1240	3957	1100	2,8	7913	2199	11,18	15705	4363	43,12
400 x 1240	4515	1255	2,8	9029	2509	11,18	17921	4979	43,12
450 x 1240	5085	1413	2,8	10170	2826	11,18	20185	5607	43,12
500 x 1240	5643	1568	2,8	11286	3136	11,18	22401	6223	43,12
550 x 1240	6214	1727	2,8	12427	3452	11,18	24665	6852	43,12
600 x 1240	6772	1882	2,8	13544	3763	11,18	26882	7468	43,12
650 x 1240	7342	2040	2,8	14684	4079	11,18	29145	8096	43,12
700 x 1240	7901	2195	2,8	15801	4390	11,18	31362	8712	43,12
750 x 1240	8471	2354	2,8	16941	4706	11,18	33626	9341	43,12
800 x 1240	9029	2509	2,8	18058	5017	11,18	35842	9957	43,12
850 x 1240	9600	2667	2,8	19199	5334	11,18	38106	10586	43,12
900 x 1240	10158	2822	2,8	20315	5644	11,18	40322	11201	43,12
950 x 1240	10728	2981	2,8	21456	5961	11,18	42586	11830	43,12
1000 x 1240	11286	3136	2,8	22572	6271	11,18	44802	12446	43,12
1050 x 1240	11857	3294	2,8	23713	6587	11,18	47066	13074	43,12
1100 x 1240	12415	3449	2,8	24830	6898	11,18	49283	13690	43,12
1150 x 1240	12985	3607	2,8	25970	7214	11,18	51546	14319	43,12
1200 x 1240	13544	3763	2,8	27087	7525	11,18	53763	14935	43,12

INSTALLATIONS AND SEALING

Dry installation in aerated concrete



1. Promat PROMASTOP-I fire resistant coating (or alternative material of the same characteristics)
2. Two 50mm wide layers of mineral wool mineral wool with a density $\geq 150 \text{ kg/m}^3$
3. Turbo screws, size 7,5x100 on the bottom and 7,5x150 on left and top sides

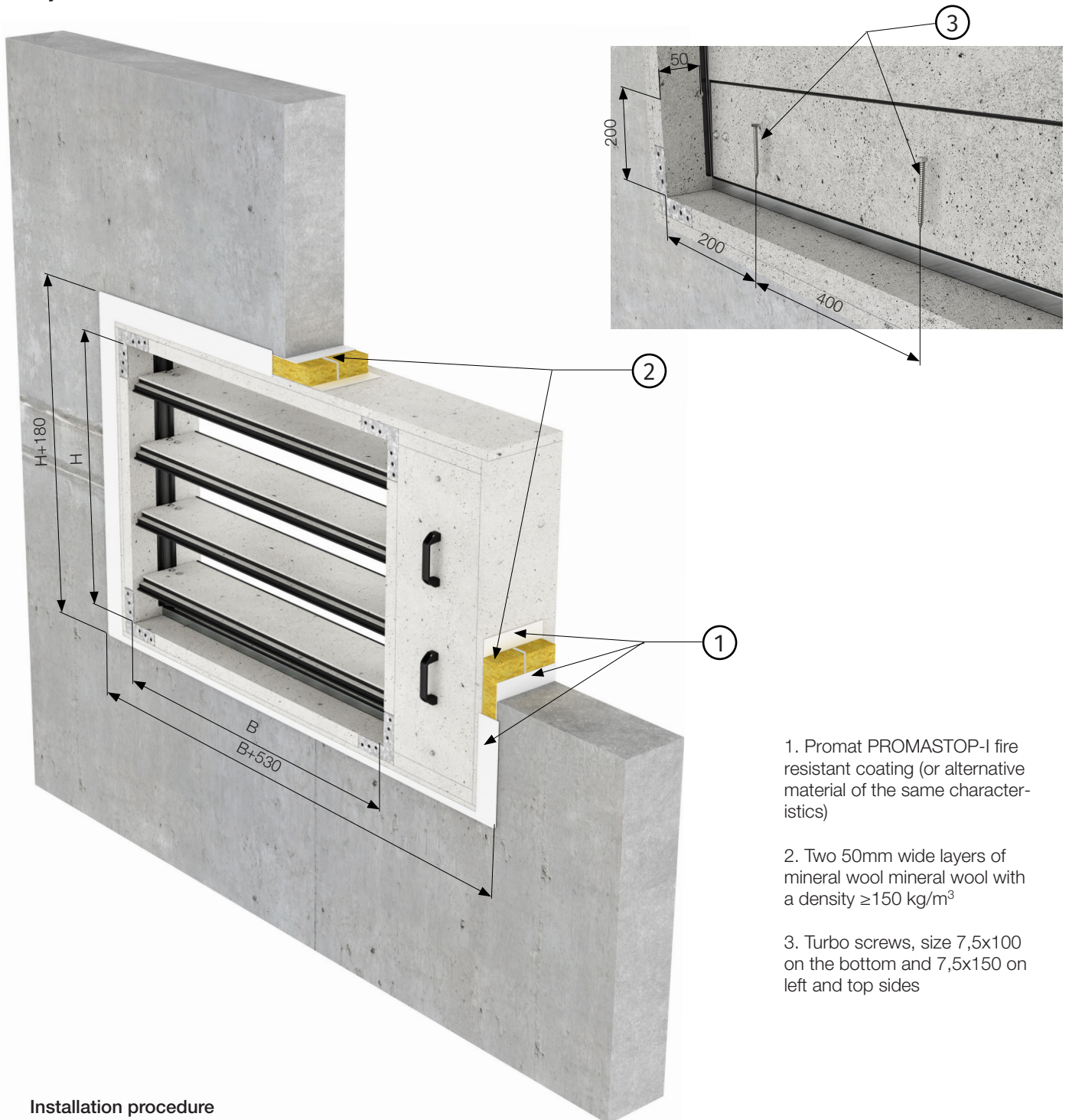
Installation procedure

Create an opening in the wall with dimensions $B + 530$ and $H + 180$. Coat the lower surface with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 2mm. Insert the damper into the opening in the wall so that the lower horizontal side of the damper sits firmly against the wall. CAUTION: Avoid leaning on damper blades when mounting!

Drill holes in the damper on the lower horizontal side and on the vertical side opposite the mechanism. Connect the damper to the wall using a 100 mm and 150 mm turbo screw for horizontal or vertical sides. CAUTION: Make sure that the clamping force does not cause the housing to deform! Fill the gap between the damper and the wall on all three sides with two layers of mineral wool, density 150 kg/m^3 , 50 mm wide, precoated with fire protection coating (Promat PROMASTOP-I) in minimum thickness of 1mm. Coat the remaining uncoated surfaces of the wool with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 1mm.

INSTALLATIONS AND SEALING

Dry installation in solid concrete



1. Promat PROMASTOP-I fire resistant coating (or alternative material of the same characteristics)
2. Two 50mm wide layers of mineral wool mineral wool with a density $\geq 150 \text{ kg/m}^3$
3. Turbo screws, size 7,5x100 on the bottom and 7,5x150 on left and top sides

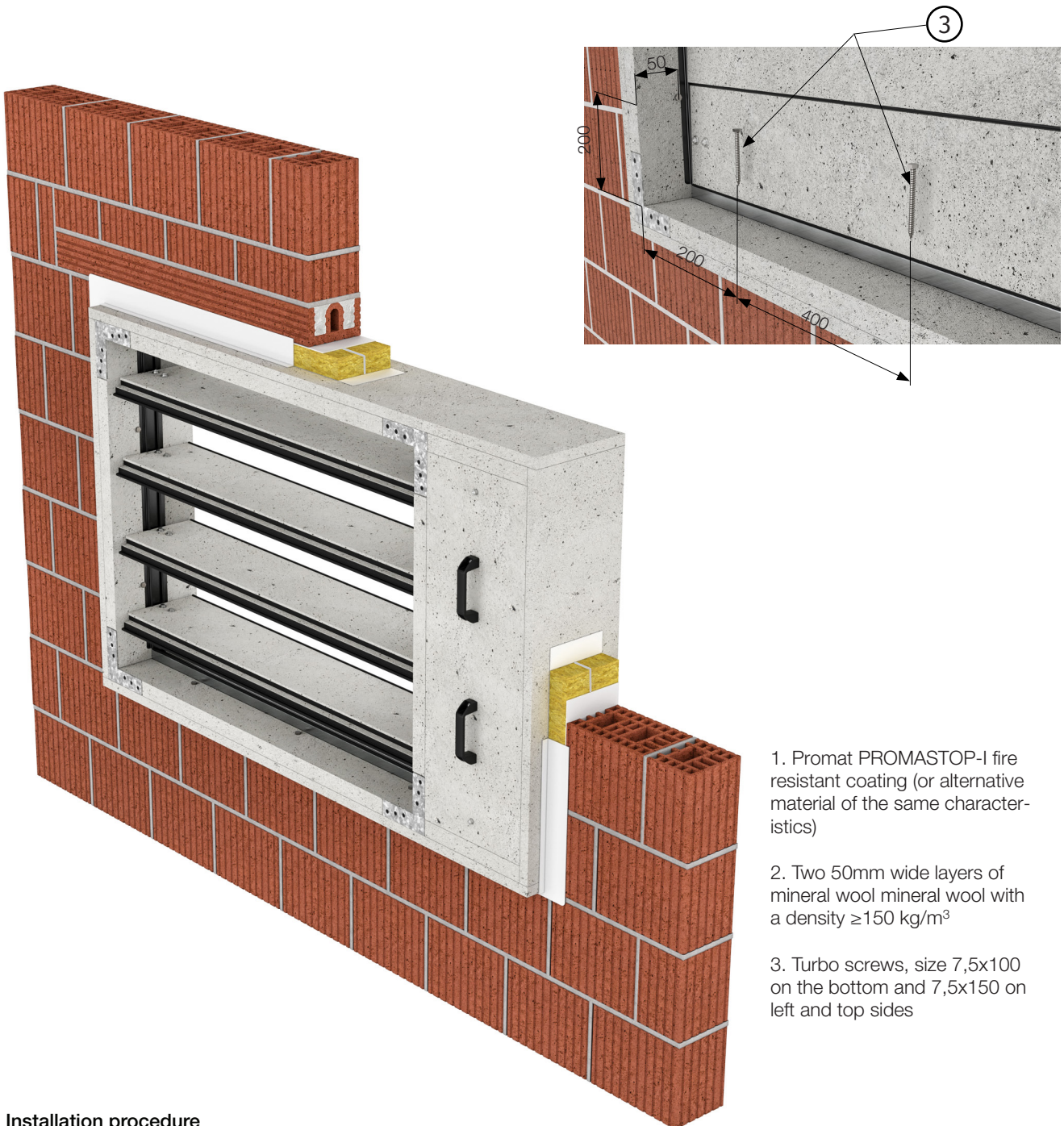
Installation procedure

Create an opening in the wall with dimensions $B + 530$ and $H + 180$. Coat the lower surface with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 2 mm. Insert the damper into the opening in the wall so that the lower horizontal side of the damper sits firmly against the wall. **CAUTION:** Avoid leaning on damper blades when mounting!

Drill holes in the damper on the lower horizontal side and on the vertical side opposite the mechanism. Connect the damper to the wall using a 100 mm and 150 mm turbo screw for horizontal or vertical sides. **CAUTION:** Make sure that the clamping force does not cause the housing to deform! Fill the gap between the damper and the wall on all three sides with two layers of mineral wool, density 150 kg/m^3 , 50 mm wide, precoated with fire protection coating (Promat PROMASTOP-I) in minimum thickness of 1mm. Coat the remaining uncoated surfaces of the wool with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 1mm.

INSTALLATIONS AND SEALING

Dry installation in brick wall



1. Promat PROMASTOP-I fire resistant coating (or alternative material of the same characteristics)
2. Two 50mm wide layers of mineral wool mineral wool with a density $\geq 150 \text{ kg/m}^3$
3. Turbo screws, size 7,5x100 on the bottom and 7,5x150 on left and top sides

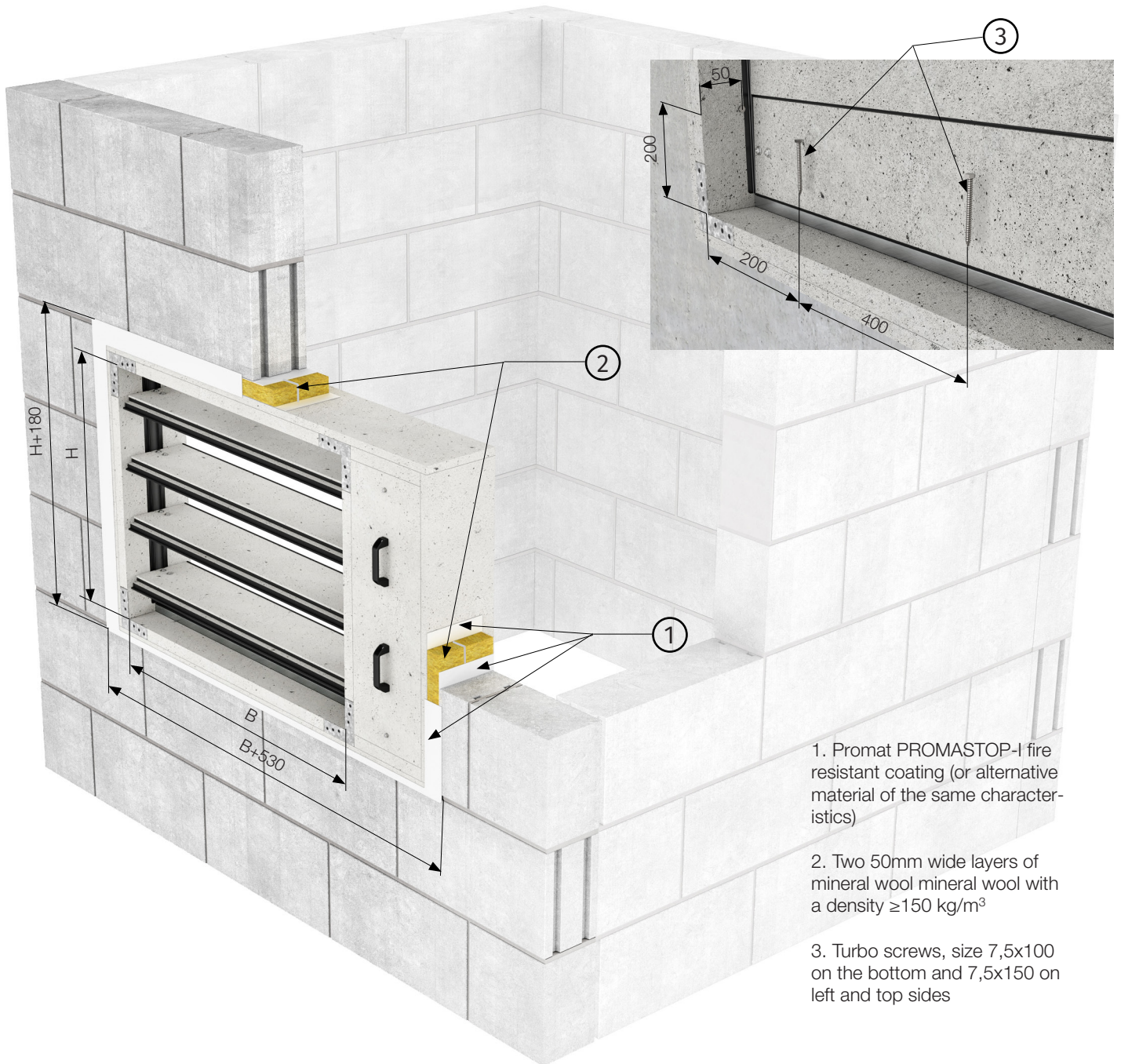
Installation procedure

Create an opening in the wall with dimensions $B + 530$ and $H + 180$. Fill the hollow brick holes on the lower mounting surface with mortar. Coat the lower surface with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 2 mm. Insert the damper into the opening in the wall so that the lower horizontal side of the damper sits firmly against the wall. CAUTION: Avoid leaning on damper blades when mounting!

Drill holes in the damper on the lower horizontal side and on the vertical side opposite the mechanism. Connect the damper to the wall using a 100 mm and 150 mm turbo screw for horizontal or vertical sides. CAUTION: Make sure that the clamping force does not cause the housing to deform! Fill the gap between the damper and the wall on all three sides with two layers of mineral wool, density 150 kg/m^3 , 50 mm wide, precoated with fire protection coating (Promat PROMASTOP-I) in minimum thickness of 1mm. Coat the remaining uncoated surfaces of the wool with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 1mm.

INSTALLATIONS AND SEALING

Dry installation in aerated concrete shaft wall



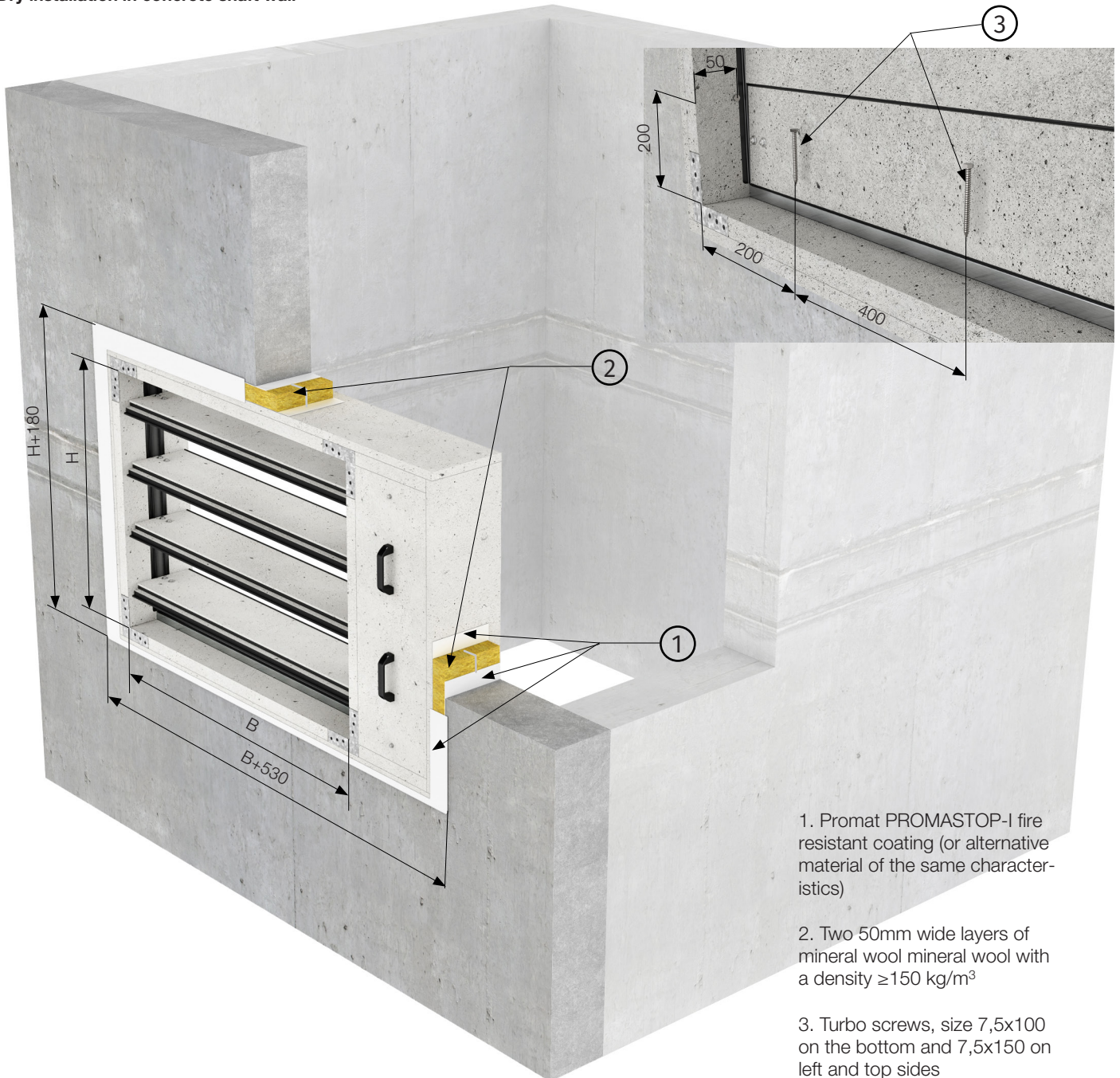
1. Promat PROMASTOP-I fire resistant coating (or alternative material of the same characteristics)
2. Two 50mm wide layers of mineral wool mineral wool with a density $\geq 150 \text{ kg/m}^3$
3. Turbo screws, size 7,5x100 on the bottom and 7,5x150 on left and top sides

Installation procedure

Create an opening in the wall with dimensions $B + 530$ and $H + 180$. Coat the lower surface with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 2 mm. Insert the damper into the opening in the wall so that the lower horizontal side of the damper sits firmly against the wall. CAUTION: Avoid leaning on damper blades when mounting!
 Drill holes in the damper on the lower horizontal side and on the vertical side opposite the mechanism. Connect the damper to the wall using a 100 mm and 150 mm turbo screw for horizontal or vertical sides. CAUTION: Make sure that the clamping force does not cause the housing to deform! Fill the gap between the damper and the wall on all three sides with two layers of mineral wool, density 150 kg/m^3 , 50 mm wide, precoated with fire protection coating (Promat PROMASTOP-I) in minimum thickness of 1mm. Coat the remaining uncoated surfaces of the wool with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 1mm.

INSTALLATIONS AND SEALING

Dry installation in concrete shaft wall



1. Promat PROMASTOP-I fire resistant coating (or alternative material of the same characteristics)

2. Two 50mm wide layers of mineral wool mineral wool with a density $\geq 150 \text{ kg/m}^3$

3. Turbo screws, size 7,5x100 on the bottom and 7,5x150 on left and top sides

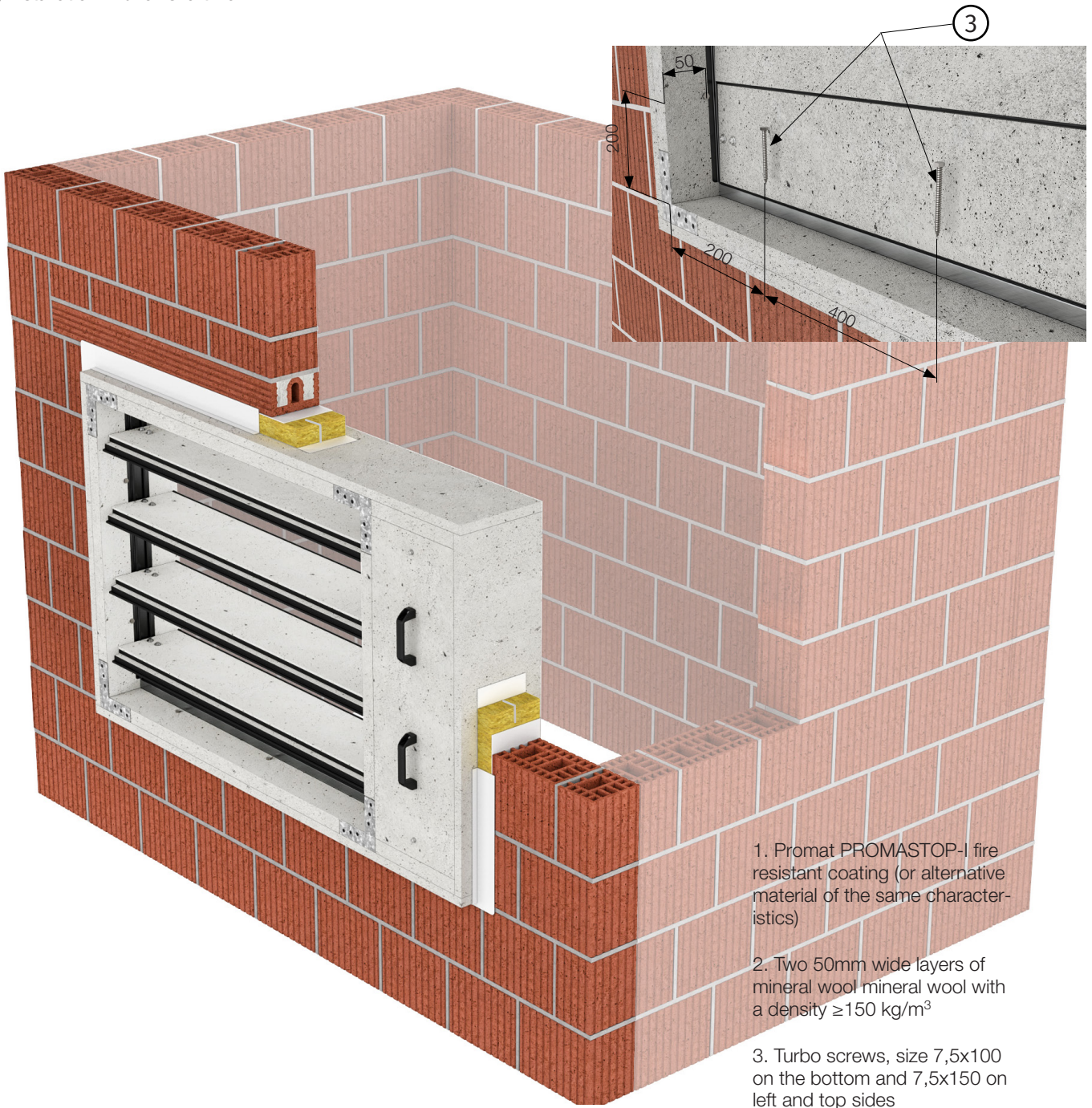
Installation procedure

Create an opening in the wall with dimensions $B + 530$ and $H + 180$. Coat the lower surface with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 2mm. Insert the damper into the opening in the wall so that the lower horizontal side of the damper sits firmly against the wall. CAUTION: Avoid leaning on damper blades when mounting!

Drill holes in the damper on the lower horizontal side and on the vertical side opposite the mechanism. Connect the damper to the wall using a 100 mm and 150 mm turbo screw for horizontal or vertical sides. CAUTION: Make sure that the clamping force does not cause the housing to deform! Fill the gap between the damper and the wall on all three sides with two layers of mineral wool, density 150 kg/m^3 , 50 mm wide, precoated with fire protection coating (Promat PROMASTOP-I) in minimum thickness of 1mm. Coat the remaining uncoated surfaces of the wool with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 1mm.

INSTALLATIONS AND SEALING

Dry installation in brick shaft wall



1. Promat PROMASTOP-I fire resistant coating (or alternative material of the same characteristics)
2. Two 50mm wide layers of mineral wool mineral wool with a density $\geq 150 \text{ kg/m}^3$
3. Turbo screws, size 7,5x100 on the bottom and 7,5x150 on left and top sides

Installation procedure

Create an opening in the wall with dimensions $B + 530$ and $H + 180$. Fill the hollow brick holes on the lower mounting surface with mortar. Coat the lower surface with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 2 mm. Insert the damper into the opening in the wall so that the lower horizontal side of the damper sits firmly against the wall. CAUTION: Avoid leaning on damper blades when mounting!

Drill holes in the damper on the lower horizontal side and on the vertical side opposite the mechanism. Connect the damper to the wall using a 100 mm and 150 mm turbo screw for horizontal or vertical sides. CAUTION: Make sure that the clamping force does not cause the housing to deform! Fill the gap between the damper and the wall on all three sides with two layers of mineral wool, density 150 kg/m^3 , 50 mm wide, precoated with fire protection coating (Promat PROMASTOP-I) in minimum thickness of 1mm. Coat the remaining uncoated surfaces of the wool with a fire coating (Promat PROMASTOP-I) in a minimum thickness of 1mm.

CONTROL MECHANISMS

BEN

Torque 15 Nm
 Power consumption: AC/DC 24V In operation 3 W / in rest position 0.1W
 AC 230 V In operation 4 W / in rest position 0.4 W
 Angle of Rotation 95°
 Running time < 30 s / 90°
 Control Open-close, modulating
 Damper dimensions According to the table below



BEE

Torque 25 Nm
 Power consumption: AC/DC 24V In operation 2,5 W / in rest position 0.1 W
 AC 230 V In operation 3,5 W / in rest position 0.4 W
 Angle of Rotation 95°
 Running time < 60 s / 90°
 Control Open-close, modulating
 Damper dimensions According to the table below



BE

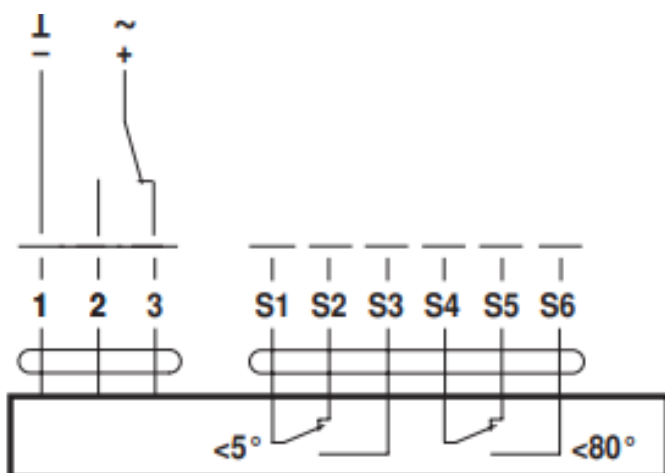
Torque 40 Nm
 Power consumption: AC/DC 24V In operation 12 W / in rest position 0.5 W
 AC 230 V In operation 8 W / in rest position 0.5 W
 Angle of Rotation 100°
 Running time < 60 s / 90°
 Control Open-close, modulating
 Damper dimensions According to the table below



H\B	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1200
440																				
640	BEN						BEE										BE			
840			BEE														BE			
1040													BE							
1240																				

WIRING DIAGRAMS

AC/DC 24 V, open-close

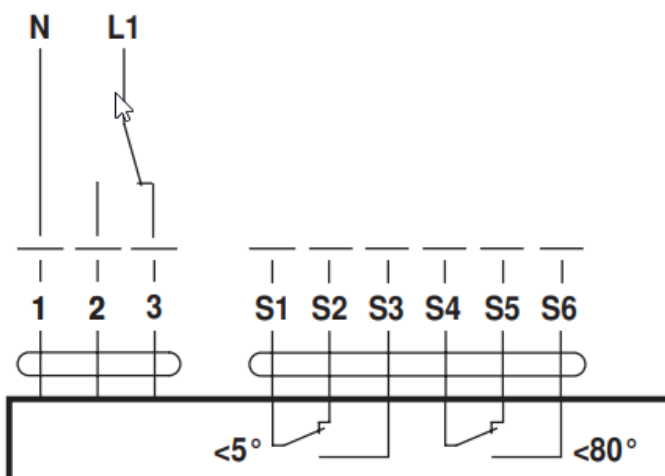


Cable colours:

- 1 = black
- 2 = red
- 3 = white

- S1 = violet
- S2 = red
- S3 = white
- S4 = orange
- S5 = pink
- S6 = grey

AC 230 V, open-close



Cable colours:

- 1 = blue
- 2 = brown
- 3 = white

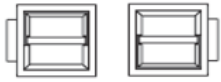
- S1 = violet
- S2 = red
- S3 = white
- S4 = orange
- S5 = pink
- S6 = grey

COMMISSIONING, STORAGE AND HANDLING

Use caution when opening damper blades on uninstalled damper.

Warning:

- Avoid damaging the casing
- Avoid casing deformation during installation and commissioning
- Installation is possible only in horizontal axis position



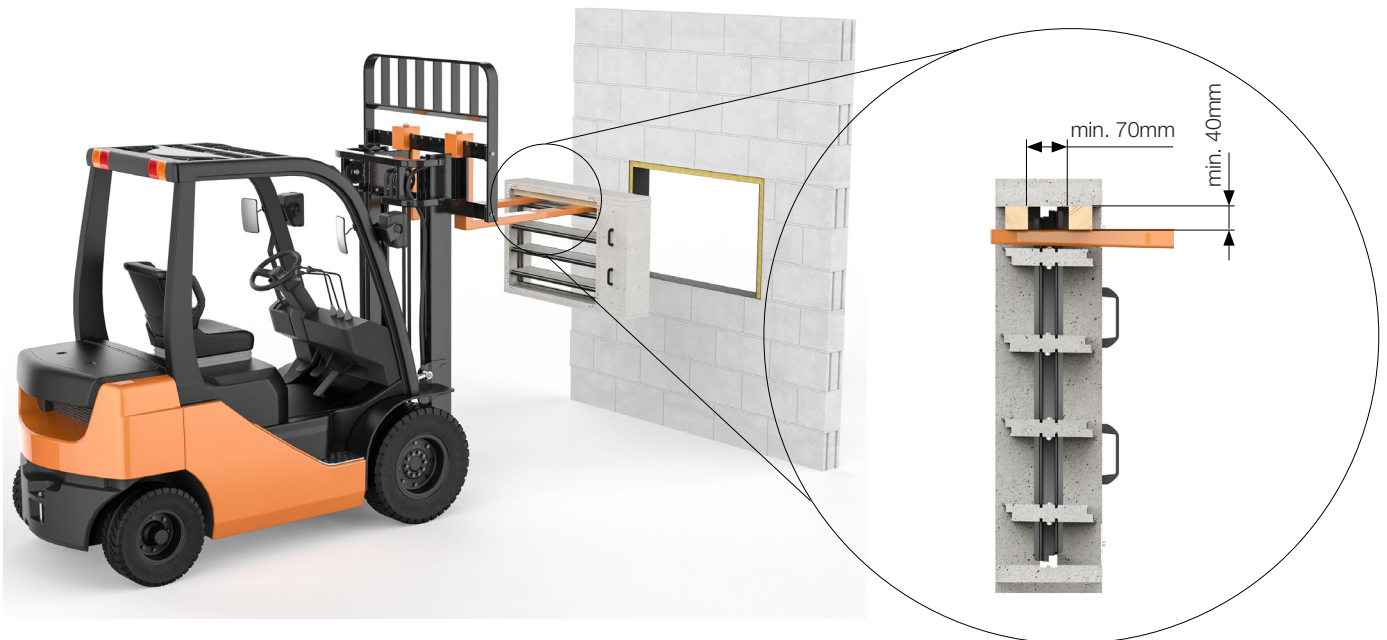
Permissible damper orientations

- Make sure that the product is installed in a way that is accessible for future inspection and maintenance. Provide minimum 250mm for service access after installation
- Avoid deformation of the casing during mounting and sealing
- During installation, avoid applying force to the damper blades.

Reccomendation:

- Unload on a flat and dry surface
- Avoid shocks to the damper
- When using forklift for installation, make sure to support the upper side of the smoke damper with wooden support beams

Detail: wooden supports





Projektiranje, proizvodnja i održavanje opreme za klimatizaciju, ventilaciju i čiste prostore.
Design, production and service of Ventilation, Air-Conditioning and Cleanroom equipment.

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