



INSTALLATION MANUAL OF

# KWP-O-(E)S / KWP-P-E

FIRE DUMPER AND SMOKE DUMPER IN BATTERIES  
AND  
INSTALLATION BATTERIES IN FIRE BARRIERS



**NOTE:**

1. The "installation manual of KWP type fire dampers in building barrier" is an integral part of this manual.
2. This manual does not replace the operation and maintenance documentation.

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## PART I – ASSEMBLY OF FIRE DAMPERS KWP IN BATTERIES

The assembly of fire dampers in batteries is possible only after previous delivery of the information (at the stage of ordering) about which fire dampers and in which arrangement (horizontal or vertical) would be installed in a wall, in order to prepare suitable openings for self-tapping screws in the fire damper body.

There are two possibilities of realizing the order of fire damper batteries: basic and complete. First one covers the set of fire dampers, assembly strips and complete set of self-tapping screws. The purchase of other materials needed such as: intumescent gasket, mineral wool for thermal insulation (with minimum density of  $60\text{kg/m}^3$ ) and aluminum tape remains with the Customer. The second variant provides for supply by the Manufacturer of complete set of fire dampers and all the elements needed for installation.

The fire dampers are assembled into batteries with use of assembly strips with length of 1200 [mm]. In case when total dimension of the battery is smaller than multiple of the length of the assembling strip, the last one should be cut with angle grinder on the construction site to match the dimension of the battery (basic variant) or cut in manufacturing facility by Manufacturer (complete variant).

Fire dampers should be marked with letters: A, B, C, D.

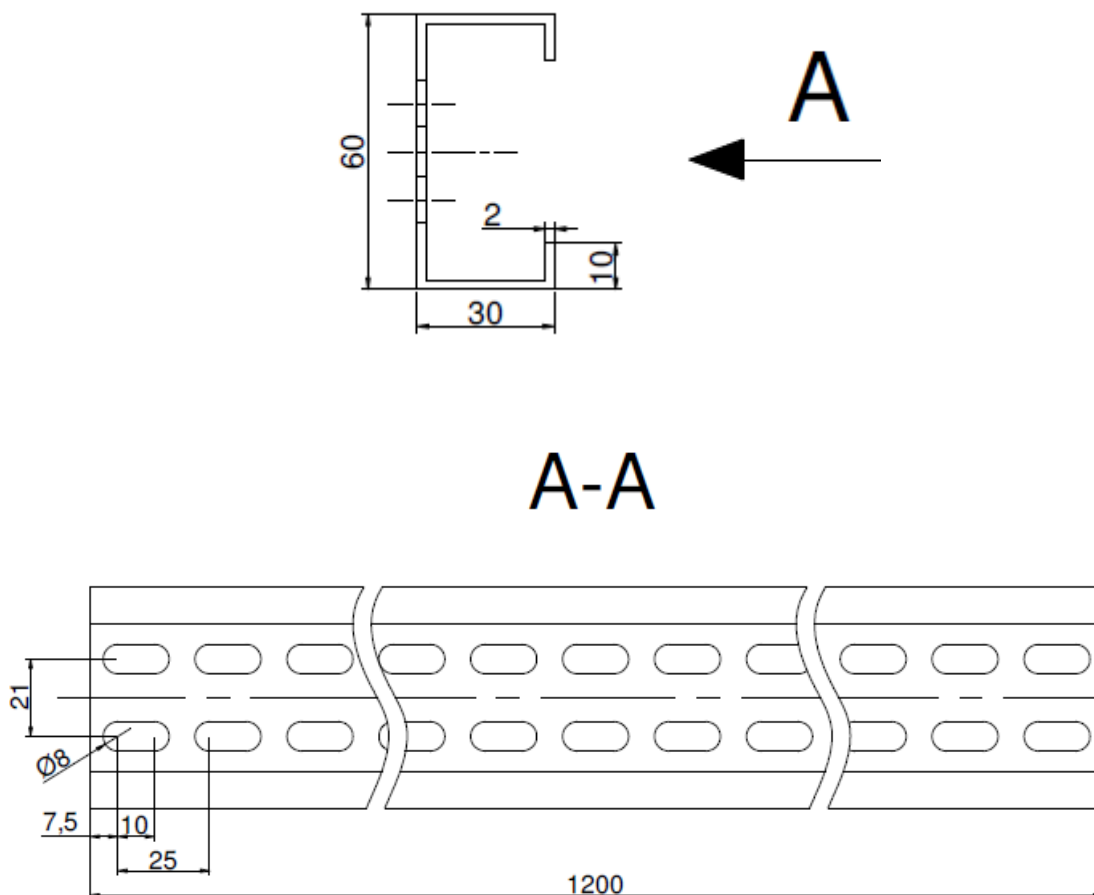


Figure 1. Assembly strip

**Arrangement 1 – vertical battery consisting of two fire dampers KWP (Figure 2)**

1. Fix the gasket on insulating spacer of one of adjoining fire dampers (position (1) in the Figure 2).
2. Put non-combustible mineral wool into recess in upper surface of the fire damper. The thickness of mineral wool should be twice as the thickness of the recess in upper surface of the fire damper in order to fill the whole free space between the fire dampers as shown in (w1).

**Note:** The alternative way of wool mounting is to use two layers of wool with thickness of 30mm. In this case, apply the fire resistant PROMASTOP-Coating with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

3. Place the fire damper A on the fire damper B and assemble them together on the front and back with use of perforated assembly strips (2) and self-tapping screws M6x16 (3), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].

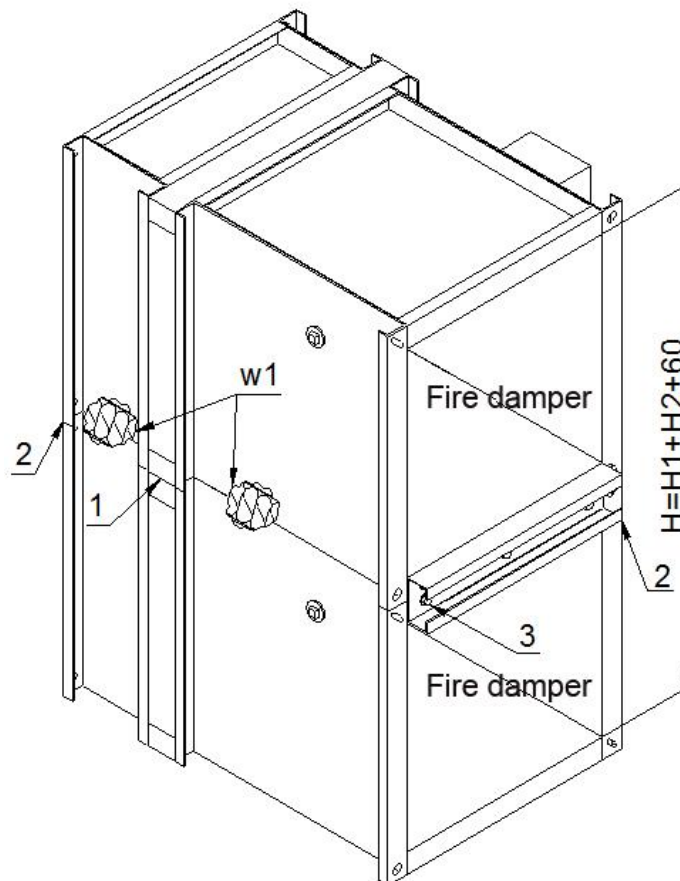


Figure 2. Arrangement 1 - vertical battery consisting of two fire dampers KWP

**Arrangement 2 – vertical battery consisting of three fire dampers KWP (Figure 3)**

1. Fix the gasket on insulating spacer of one of adjoining fire dampers (position (1) in the Figure 3).
2. Put non-combustible mineral wool into recess in upper surface of the fire damper. The thickness of mineral wool should be twice as the thickness of the recess in upper surface of the fire damper in order to fill the whole free space between the fire dampers as shown in (w1).

**Note:** The alternative way of wool mounting is to use two layers of wool with thickness of 30mm. In this case, apply the fire resistant PROMASTOP-Coating with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

3. Place the fire damper B on the fire damper C and assemble them together on the front and back with use of perforated assembly strips (2) and self-tapping screws M6x16 (3), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].
4. Repeat accordingly paragraphs 2 and 3 to assemble fire damper A on the fire damper B.

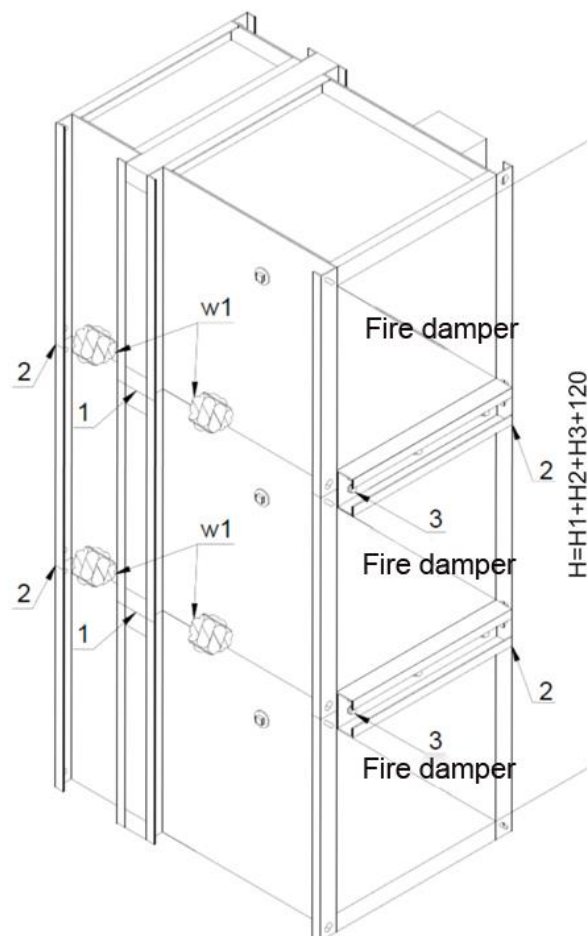


Figure 3. Arrangement 2 - vertical battery consisting of three fire dampers KWP

**Arrangement 3 – horizontal battery consisting of two fire dampers KWP (Figure 4)**

1. Fix the gasket on insulating spacer of one of adjoining fire dampers (position (1) in the Figure 4).
2. Set together the sides of fire damper A and the fire damper B (where the gasket was fixed) and assemble them together on the front and back with use of perforated assembly strips (2) and self-tapping screws M6x16 (3), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].
3. Fill the whole free space between the joint of fire dampers with non-combustible mineral wool, as shown in (w1).

**Note:** The alternative way of wool mounting is to use two layers of wool with thickness of 30mm. In this case, apply the fire resistant PROMASTOP-Coating with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

4. The place of sealing the top of the fire damper with mineral wool should be sealed with aluminum tape (4).

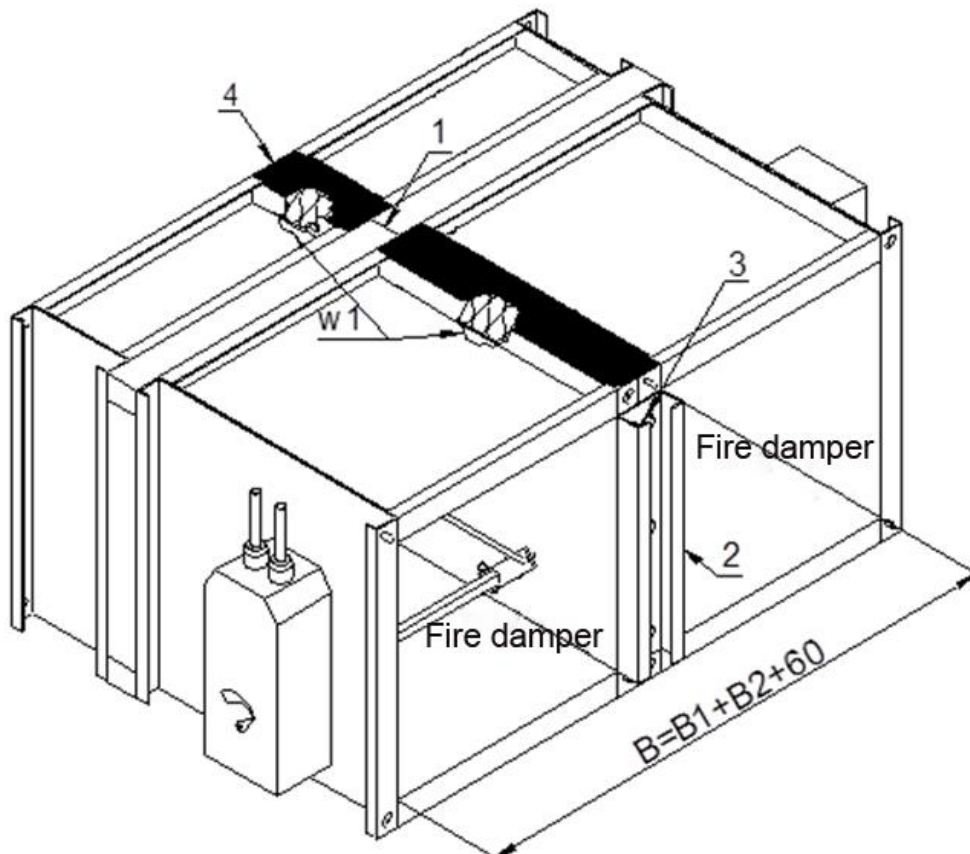


Figure 4. Arrangement 3 - horizontal battery consisting of two fire dampers KWP

**Arrangement 4 – battery consisting of four fire dampers KWP (Figure 5).**

The assembly of battery consisting of four fire dampers is divided into two steps:

- Step 1 – assembly of fire damper A and fire damper B and assembly of fire damper C and fire damper D
- Step 2 – assembly of the set of fire dampers A, B and the set of fire dampers C, D

**STEP 1:**

1. Fix the gasket on insulating spacer of one of adjoining fire dampers (position (1) in the Figure 5).
2. Set together the sides of fire damper A and the fire damper B (where the gasket was fixed) and assemble them together on the front and back with use of perforated assembly strips (3) and self-tapping screws M6x16 (4), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].
3. Repeat paragraph 2 to assemble fire damper C on the fire damper D.

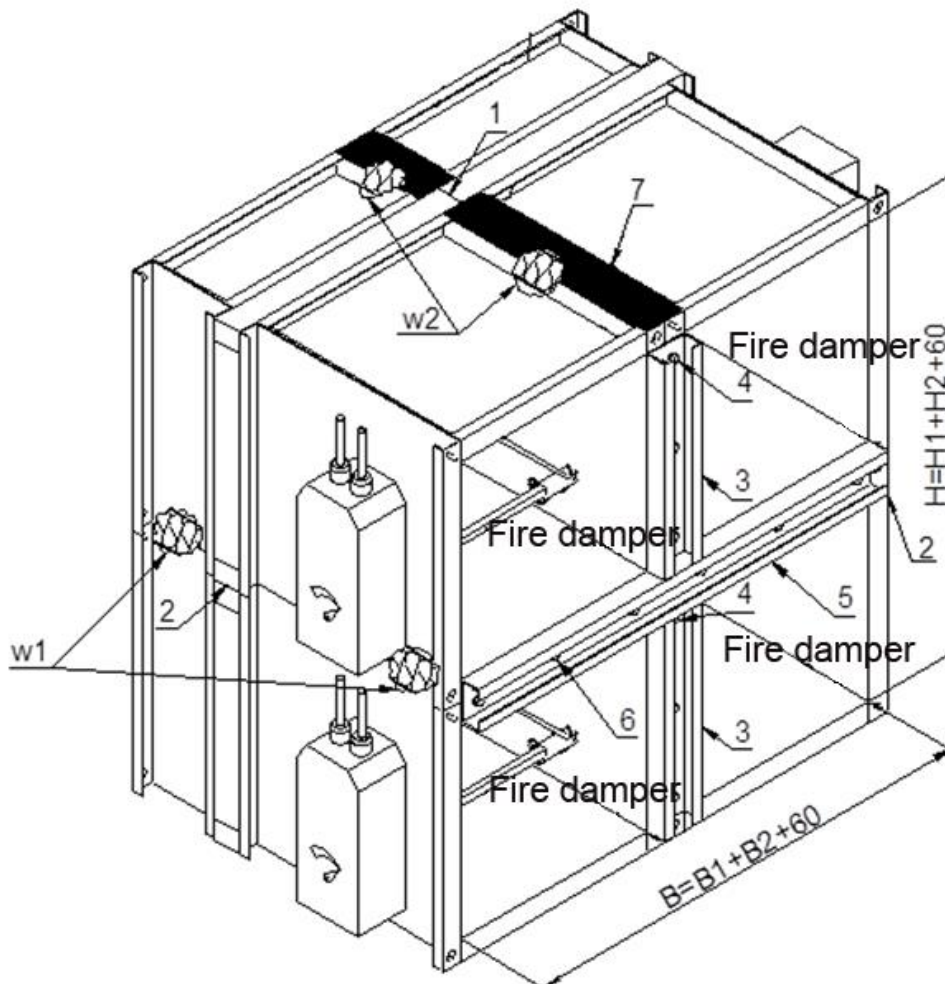


Figure 5. Arrangement 4 – battery consisting of four fire dampers KWP



**STEP 2:**

1. Fix the gasket on insulating spacer of one of adjoining fire dampers (position (2) in the Figure 4).
2. Put non-combustible mineral wool into recess in upper surface of the fire damper C and fire damper D. The thickness of mineral wool should be twice as the thickness of the recess in upper surface of the fire dampers in order to fill the whole free space between the fire dampers C and D and the fire dampers A and B, as shown in (w1).

Note: The alternative way of wool mounting is to use two layers of wool with thickness of 30mm. In this case, apply the fire resistant PROMASTOP-Coating with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

3. Place the set of fire dampers A and B on the set of fire dampers C and D and assemble them together on the front and back with use of perforated assembly strips (5) and self-tapping screws M6x16 (6), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].
4. The empty space between joint of the bodies of fire dampers A, B and fire dampers C, D should be filled with non-combustible mineral wool (as shown in (w2)).

Note: The alternative way of wool mounting is to use two layers of wool with thickness of 30mm. In this case, apply the fire resistant PROMASTOP-Coating with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

5. The place of sealing the top of the battery with mineral wool should be sealed with aluminum tape (7).

## PART II - INSTALLATION OF FIRE DAMPER KWP BATTERIES IN RIGID WALL COMPARTMENT

### Installation of fire damper KWP batteries in rigid wall compartment (Figure 5.1 to 5.6)

1. Make an opening in the wall with dimensions depending on the battery size and its arrangement:
  - for vertical battery consisting of two fire dampers:  $(B+120) \times (H1+H2+180)$ , (Figure 5.3)
  - for vertical battery consisting of three fire dampers:  $(B+120) \times (H1+H2+H3+240)$ , (Figure 5.4, Figure 5.5)
  - for battery consisting of four fire dampers:  $(B1+B2+180) \times (H1+H2+180)$ , (Figure 5.1, Figure 5.2)
2. Put the battery of fire dampers into the installation opening on depth marked by undercuts on the damper body (dimension 60mm). From one side fix it with suspension Z1, and from other side, fix it to ventilation duct suspended on suspension Z2 (according to the figure).

#### NOTE:

Fixing of the ductwork has to cover the weight of the battery of fire dampers. Specifically the bolts, anchors, installation frame of the duct and screws used to join the duct with battery of fire dampers should be taken into account. If there is no possibility of ensuring the safe suspension of the battery of fire dampers during installation, the battery should be supported from the bottom side.

3. After setting the battery of fire dampers in accordance to the guidelines, fill the gap between the fire damper and the wall with cement and lime mortar, concrete or PROMASTOP MG III made by PROMAT .
4. After 72h from the installation, the suspensions and supports used during installation, may be removed .

#### **REMARKS:**

1. Install the fire damper in such way, that the damper blades would be in horizontal position.
2. Fire damper cannot be the support for the constructed wall
3. Ductwork cannot be the load for the fire damper, ductwork suspensions have to provide full load capacity.
4. Ductwork suspensions fixed to the fire damper have to be made in accordance with the ductwork manufacturer instructions.
5. Selection of mounting rails should be performed in accordance to the guidelines provided by the manufacturer of suspensions, considering weight and arrangement of the battery of fire dampers.
6. In place of suspensions Z1, Z2 and cement mortar, mounting brackets may be applied (paying special attention for immobilization of the fire damper).



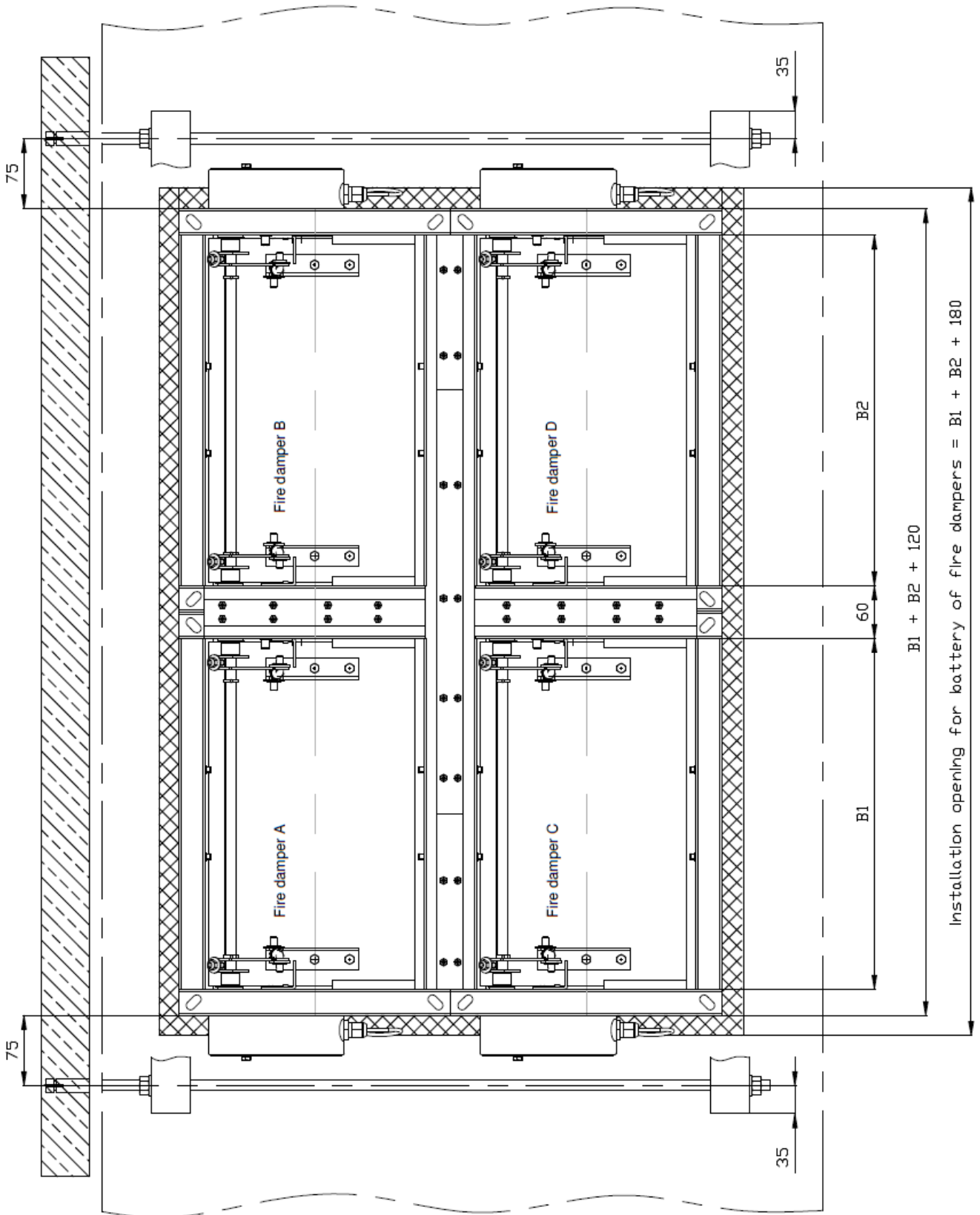


Figure 5.1. Installation of a battery consisting of four fire dampers KWP in rigid compartment – front view.

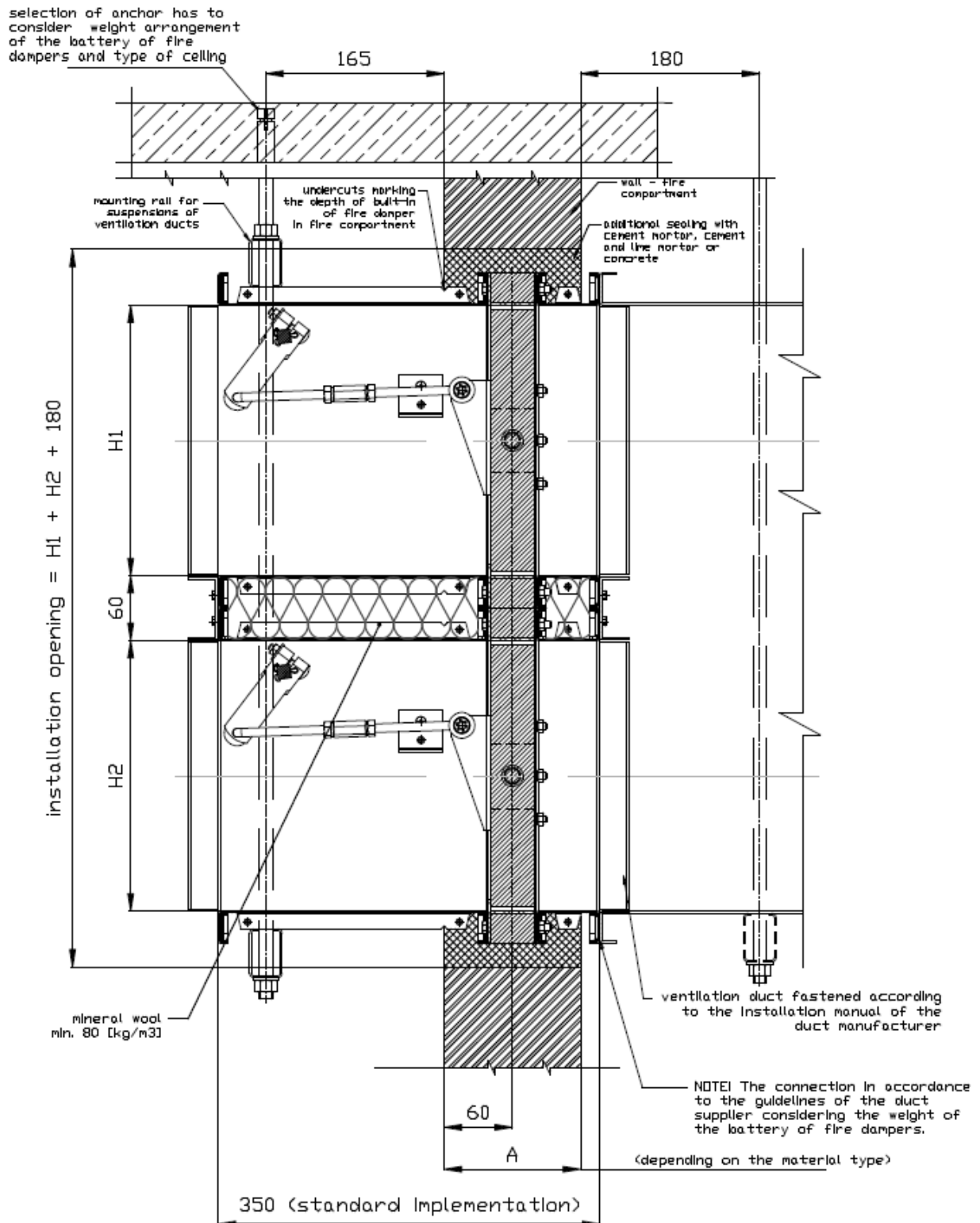


Figure 5.2. Installation of a battery consisting of four fire dampers KWP in rigid compartment – side view.

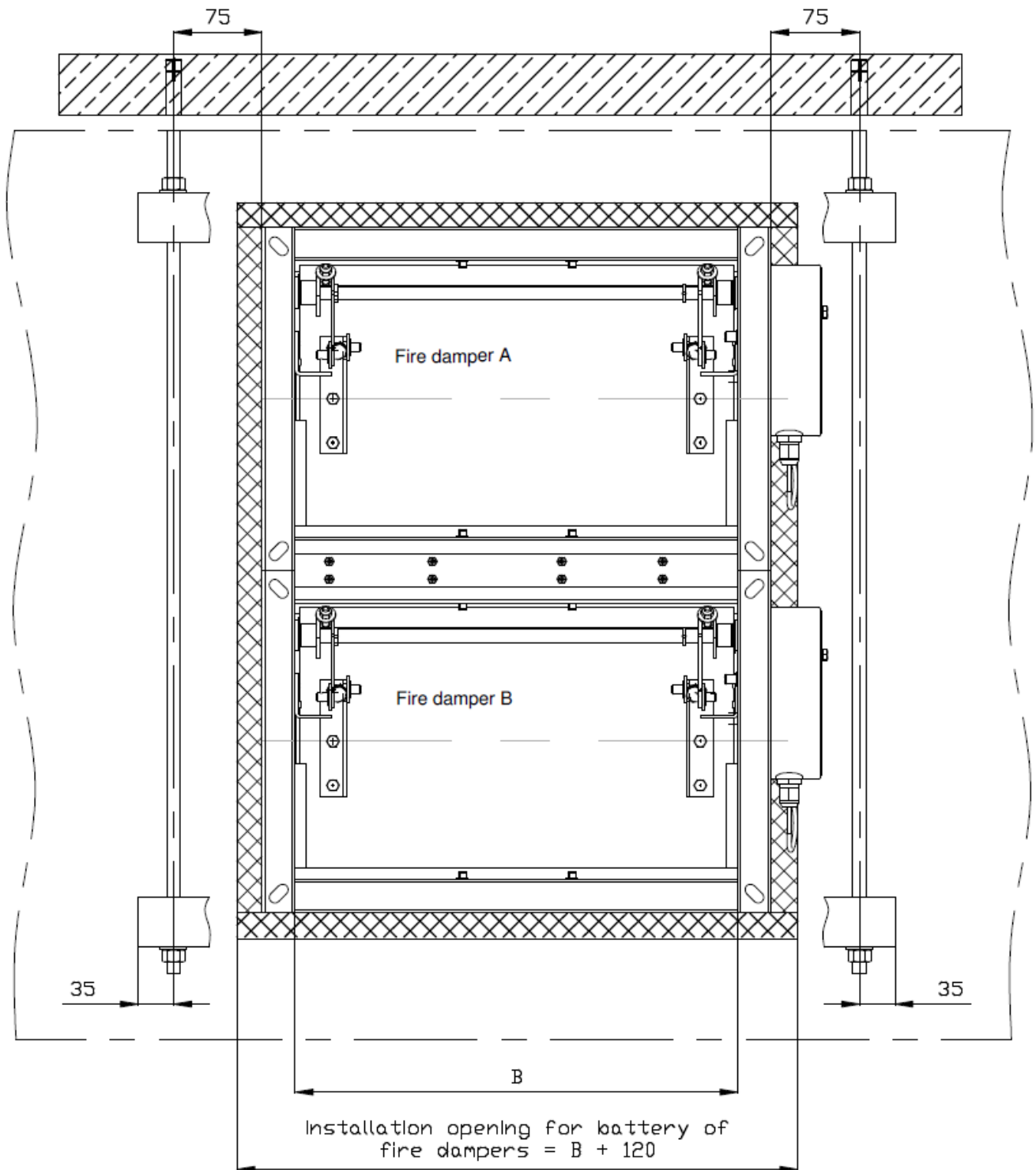


Figure 5.3. Installation of a battery consisting of two fire dampers KWP in vertical arrangement in rigid compartment - front view.

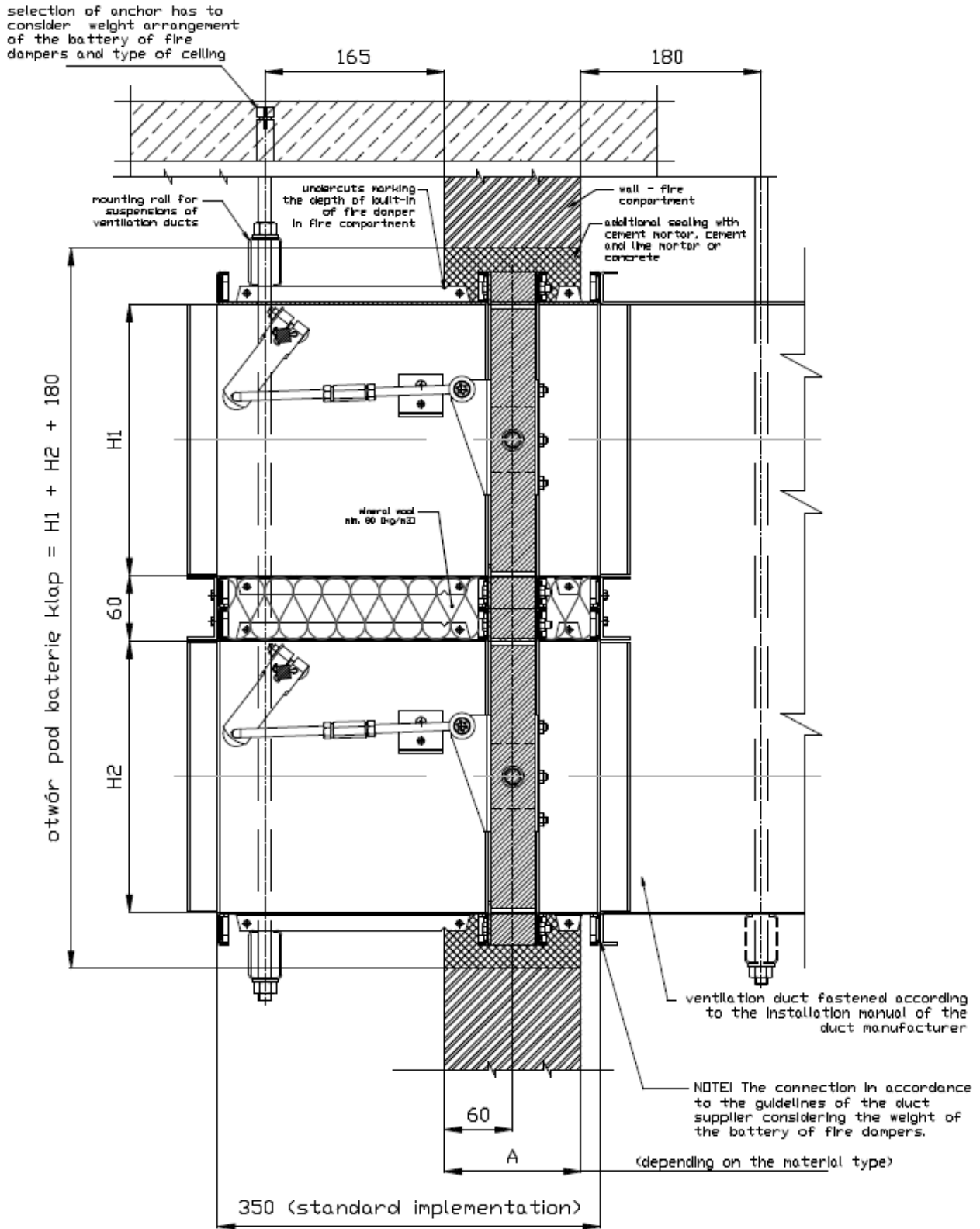


Figure 5.4. Installation of a battery consisting of two fire dampers KWP in vertical arrangement in rigid compartment – side view.

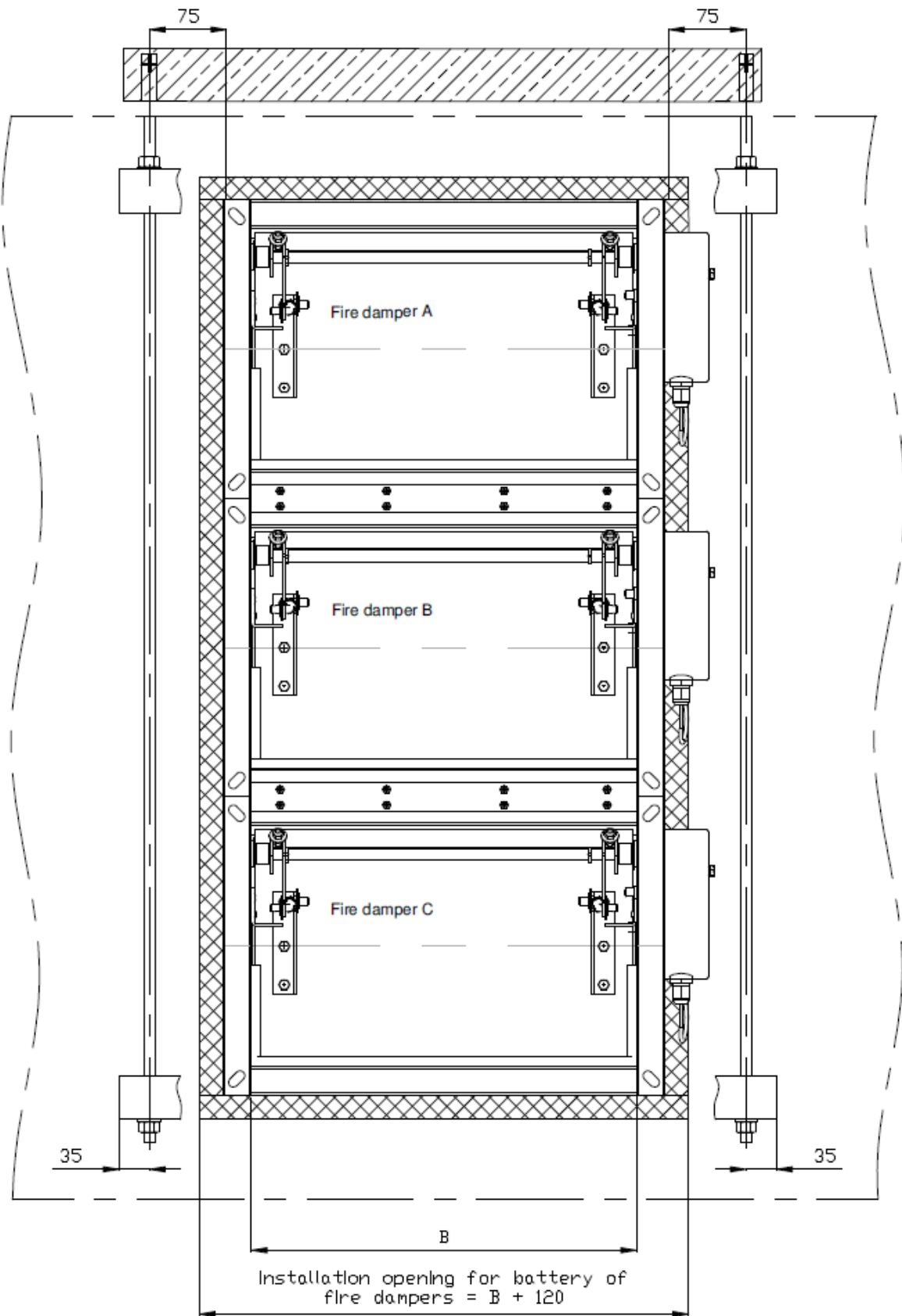


Figure 5.5. Installation of a battery consisting of three fire dampers KWP in vertical arrangement in rigid barrier – front view.

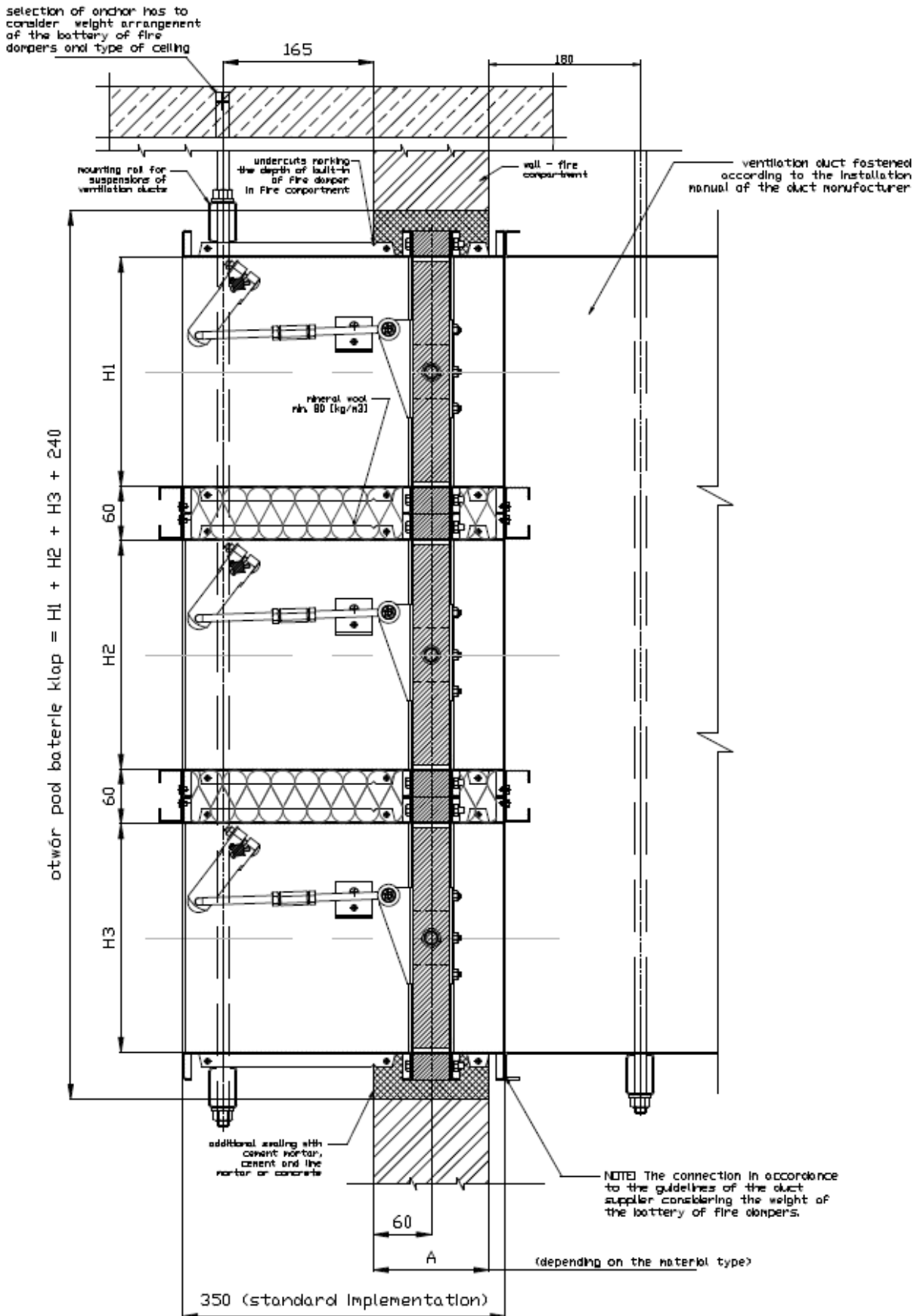


Figure 5.6. Installation of a battery consisting of three fire dampers KWP in vertical arrangement in rigid barrier – side view.

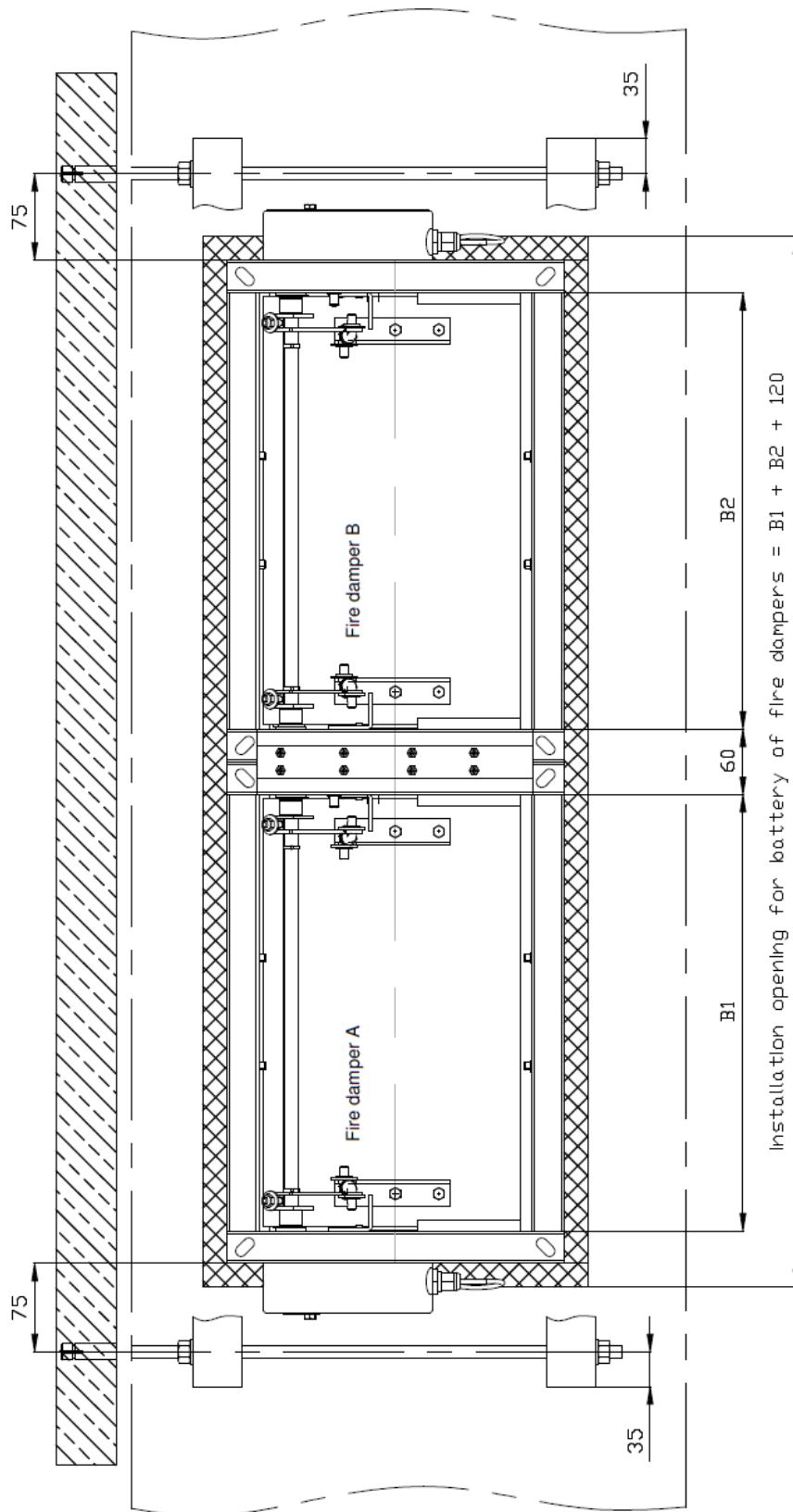


Figure 5.7. Installation of a battery consisting of two fire dampers KWP in horizontal arrangement in rigid compartment – front view.



selection of anchor has to consider weight arrangement of the battery of fire dampers and type of ceiling

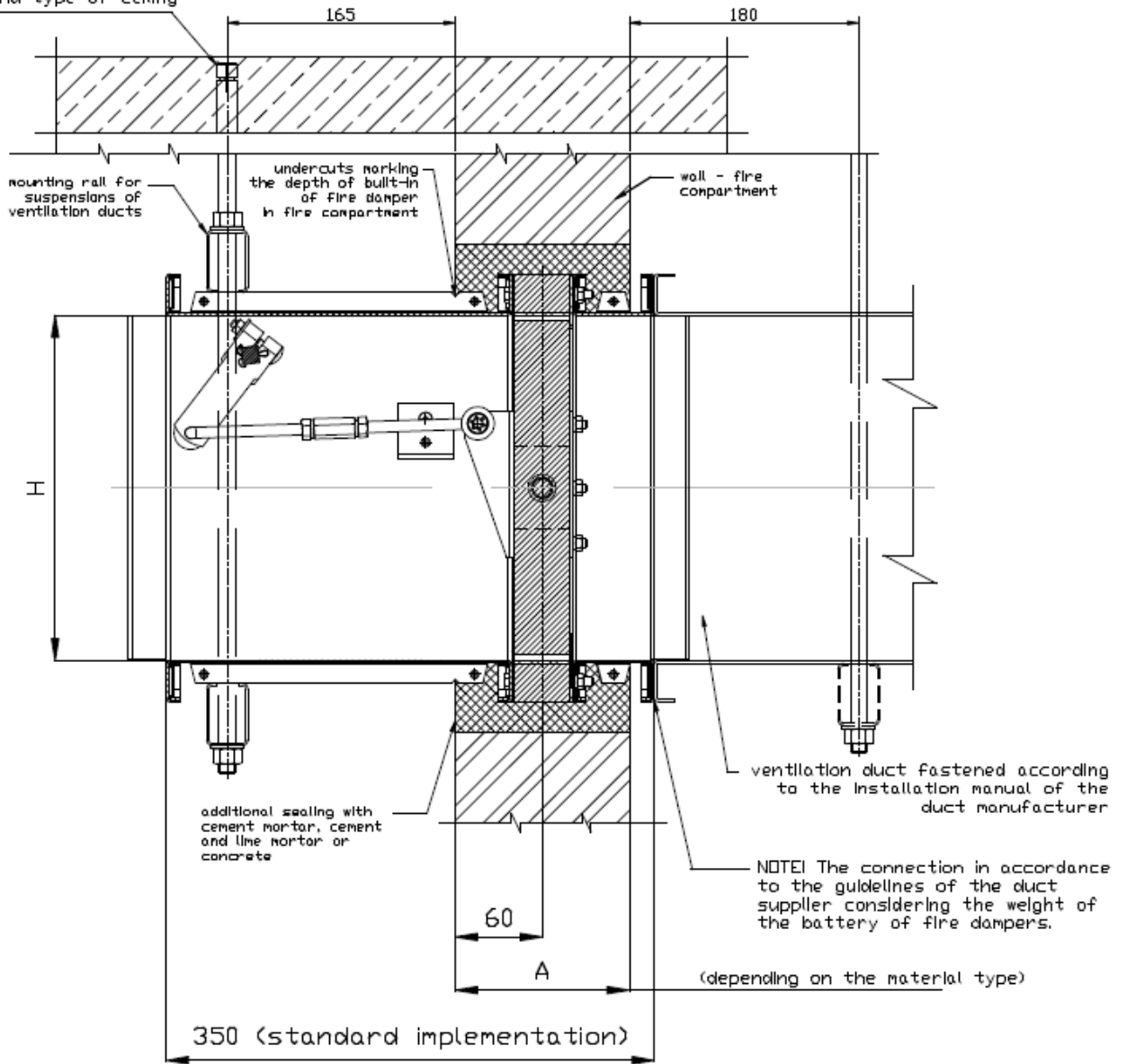


Figure 5.8. Installation of a battery consisting of two fire dampers KWP in horizontal arrangement in rigid compartment – side view.

## ADDITIONAL INFORMATION

### Weight of fire dampers KWP-O-E

<b>Weight of fire damper KWP-O-E [kg]</b>																
<b>B[mm] – inner width of the fire damper KWP</b>																
H[mm] – inner height of the fire damper KWP		200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
	200	11,0	13,1	15,2	17,5	19,6	21,8	23,9	26,1	28,2	30,4	32,6	34,7	36,9	39,0	
	300	13,1	15,5	17,8	20,3	22,7	25,0	27,6	30,0	32,4	34,8	37,2	39,6	42,0	44,4	
	400	15,2	17,8	20,4	23,2	25,9	30,0	31,1	33,7	36,5	39,2	41,7	44,6	47,2	49,9	
	500	17,5	20,3	23,2	26,0	28,9	31,8	34,7	37,6	40,4	43,5	46,4	49,3	52,3	55,2	
	600	19,6	22,7	25,9	28,9	32,0	35,2	38,3	41,5	44,6	47,7	50,9	54,1	57,2	60,3	
	700		25,0	30,0	31,8	35,2	38,4	41,8	47,6	51,2	52,1	55,4	59,3	63,5	66,8	
	800		27,6	31,1	34,7	38,3	41,8	45,5	49,0	52,8	56,4	60,0	63,7	67,4	70,6	
	900		30,0	33,7	37,6	41,5	47,6	49,0	52,9	56,9	60,8	64,6	68,5	72,5	76,4	
	1000			36,5	40,4	44,6	51,2	52,8	56,9	60,9	65,1	69,2	73,4	77,6	81,7	

<b>Weight of the battery consisting of two fire dampers KWP-O-E [kg]</b>																
<b>B[mm] – inner weight of the fire dampers KWP being a part of a battery</b>																
H[mm] – inner height of the fire dampers KWP being a part of a battery		200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
	200	23,9	28,7	33,4	38,1	42,8	47,5	52,3	57,0	61,7	66,4	71,1	75,9	80,6	85,3	
	300	28,5	33,8	39,1	44,3	49,6	54,8	60,2	65,4	70,7	75,9	81,2	86,5	91,8	97,0	
	400	33,2	38,9	44,8	50,6	56,3	62,1	68,0	73,7	79,6	85,4	91,2	97,0	102,8	108,6	
	500	38,2	44,1	50,4	56,8	63,1	69,5	75,8	82,1	88,5	94,8	101,2	107,7	114,2	120,6	
	600	42,9	49,2	56,1	63,0	69,8	76,7	83,6	90,5	97,4	104,3	111,2	118,3	125,1	131,9	
	700		54,4	61,8	69,2	76,6	84,1	91,5	98,9	106,3	113,7	120,9	127,6	136,6	143,7	
	800			67,5	75,5	83,4	91,4	99,3	107,3	115,2	123,2	131,1	139,3	147,4	154,5	
	900			73,1	81,7	90,2	98,6	107,2	115,7	124,1	132,6	141,2	149,6	158,5	167,2	
	1000			78,8	87,9	96,9	106,0	115,0	124,1	133,1	142,1	151,1	160,3	169,7	178,8	

<b>Weight of the battery consisting of three fire dampers KWP-O-E [kg]</b>																
<b>B[mm] – inner weight of the fire dampers KWP being a part of a battery</b>																
H[mm] – inner height of the fire dampers KWP being a part of a battery		200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
	200	36,8	44,3	51,6	58,7	66,0	73,3	80,6	87,9	95,2	102,4	109,7	117,0	124,3	131,6	
	300	43,9	52,1	60,4	68,3	76,5	84,6	92,8	100,8	109,0	117,1	125,2	133,4	141,5	149,6	
	400	51,2	60,0	69,2	78,0	86,7	94,2	104,9	113,7	122,7	131,6	140,7	149,4	158,3	167,3	
	500	59,0	67,9	77,6	87,6	97,3	107,2	116,9	126,6	136,6	146,1	156,0	166,1	176,2	186,0	
	600	66,2	75,7	86,3	97,1	107,6	118,2	128,9	139,5	150,2	160,9	171,5	182,5	193,0	203,6	
	700		83,8	93,6	106,6	118,0	129,8	141,2	150,2	161,4	175,3	186,4	196,0	209,7	220,6	
	800			103,9	116,3	128,5	141,0	153,1	165,6	177,6	190,0	202,2	214,9	227,4	238,5	
	900			112,5	125,8	138,9	149,6	165,4	178,5	191,3	204,4	217,8	230,8	244,5	257,9	
	1000			121,1	135,4	149,2	160,8	177,2	191,3	205,3	219,1	233,0	247,3	261,7	275,9	

Weight of the battery consisting of four fire dampers KWP-O-E [kg]															
H[mm] – inner height of the fire dampers KWP being a part of a battery	B[mm] – inner weight of the fire dampers KWP being a part of a battery														
	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
200	49,7	59,9	69,8	79,3	89,2	99,1	108,9	118,8	128,6	138,5	148,3	158,1	168,0	177,8	
300	59,3	70,4	81,7	92,3	103,4	114,4	125,4	136,2	147,3	158,3	169,3	180,3	191,2	202,2	
400	69,2	81,1	93,6	105,4	117,1	126,3	141,8	153,7	165,8	177,8	190,2	201,8	213,9	226,0	
500	79,7	91,7	104,8	118,4	131,5	144,9	158,0	171,1	184,7	197,4	210,8	224,5	238,1	251,4	
600	89,5	102,2	116,5	131,2	145,4	159,7	174,2	188,5	203,0	217,5	231,8	246,7	260,9	275,2	
700		113,2	125,4	144,0	159,4	175,5	190,9	201,5	216,5	236,9	251,9	264,3	282,7	297,6	
800			140,3	157,1	173,6	190,6	206,9	223,9	240,0	256,8	273,3	290,5	307,5	322,4	
900			151,9	169,9	187,6	200,6	223,6	241,3	258,5	276,2	294,4	311,9	330,5	348,7	
1000			163,4	182,9	201,5	215,6	239,4	258,5	277,5	296,1	314,9	334,2	353,8	373,0	

**REMARKS:**

1. The series of types of fire dampers KWP-O-E type made by SMAY consist of fire dampers with dimensions from BxH=200x200 to BxH=1500x1000, every 50 [mm] for dimension B and/or H.
2. Every dimension within the series of types may be manufactured on special request.