Standard flange 1"

Angle section frame
1" × 1" × 0.1"

Aerodynamically optimised splitter frame

Tested to VDI 6022

Sound attenuators

MS

Splitter sound attenuator with high insertion loss, even in the low-frequency range

Splitter sound attenuator, basically a duct section with integral splitters (type MK) with resonating panels, for ventilation and air conditioning systems

- Attenuation effect due to absorption and resonance
- Energy efficient due to aerodynamically formed frame (bullnose radius 0.8")
- Sound absorbing material is biosoluble and hence hygienically safe
- Sound absorbing material faced with glass fibre fabric as a protection against erosion due to airflow velocities up to 3937 fpm
- The sound absorbing material is non-combustible, to EN 13501, fire rating class A1
- Leakage class C and pressure class 2 according to EN 15727
- For use in areas with potentially explosive atmospheres (according to EC Directive 2014/34/EU (ATEX)), zones 1, 2, and zones 21 and 22 (outside) according to EC Directive 1999/92/EC
- Operating temperature up to 212 °F, with expanded metal (variant L) up to 572 °F for a limited period of time

Optional equipment and accessories

- Expanded metal as an additional mechanical protection for the sound absorbing material
- Stainless steel variant A2 (1.4301), with optional perforated metal facing as an additional protection for the sound absorbing material
- Other stainless steel and aluminium variants as well as PUR coating are upon request

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General information

Application

- Splitter sound attenuators used for the reduction of fan noise and air-regenerated noise in ventilation and air conditioning systems
- Attenuation effect due to absorption and resonance
- Broadband attenuation even in the low frequency range of critical fan noise
- For use in areas with potentially explosive atmospheres (EC Directive 2014/34/EU (ATEX)), zones 1, 2, 21 and 22 (outside) according to Directive 1999/92/EC

Special features

- Resonating panels ensure increased insertion loss in the frequency range of critical fan noise
- Leakage class C and pressure class 2 according to EN 15727
- Energy savings due to aerodynamically formed splitter frame
  - Up to 30 % lower differential pressure
- Hygiene tested and compliant with VDI 6022
- Multi-section construction available for large dimensions

Nominal sizes

- Width B: 8", 16", 24", 31", 39", 47", 55", 63", 71", 79", 87", 94"
  - Intermediate sizes: in increments of 0.04"
    - Splitter thickness 4": 6" – 94"
    - Splitter thickness 8": 10" – 94"
    - Splitter thickness 9": 11" – 94"
  - Sizes from 95" – 189" are available with the width subdivided in increments of 0.04"
    - Even no. of splitters: center division
    - Odd no. of splitters: off-center division
- Height H: 12", 16", 20", 24", 28", 31", 35", 39", 43", 47", 51", 55", 59", 63", 67", 71"
  - Intermediate sizes 6" – 71" in increments of 0.04"
  - Sizes from 71" – 142" are available with the height subdivided in increments of 0.04"
    - Center division
- Length L: 20", 30", 39", 49", 59"
  - Intermediate sizes 20" – 59" in increments of 0.04"
- Sizes from 59" – 118" are available with the length subdivided in increments of 0.04"
  - Part L1: 39", 49", 59"
  - Part L2: at least 20" and ≤ L1, in increments of 0.04"
- Width and/or height subdivided if B + H > 165"
- Airway width S
  - Minimum: splitter thickness T × 0.25, but not < 2"
  - Maximum: splitter thickness T × 2

Variants

- MS with splitter type MK
  - Splitter thickness 4"
  - Splitter thickness 8"
  - Splitter thickness 9"

Construction

Duct
- No entry: with duct
- OL: without duct (set of MK splitters only)

Splitter surface
- F: Glass fibre fabric
- L: glass fibre fabric faced with expanded metal as an additional mechanical protection for the sound absorbing material
  - Stainless steel construction with perforated metal facing

Materials and surfaces
- No entry: galvanised steel 1.0917
- A2: stainless steel 1.4301
- P1: splitters powder-coated RAL 7001, silver grey

Duct connection
- P: flange 1", galvanised or stainless steel
- W: angle section frame 1" × 1" × 0.1", galvanised
- T: flange 1", galvanised

Matching frame
- No entry: none
- G: matching frame (only for angle section frame W)

Parts and characteristics

- Duct
  - Leakage class C and pressure class 2 according to EN 15727
  - Various duct connections available
- Matching frame
  - Angle section frame with the same pattern as the requested sound attenuator
  - For installation onto a duct (duct by others)
  - Aerodynamically formed frame
    - Covers the edges of the sound absorbing material
    - Reduces the pressure loss
    - Helps to optimise the airflow, hence reducing the air-regenerated noise
    - Increased rigidity due to special profile
  - Absorption material
  - Resonating panel

Construction features

- Bent duct with grooves for increased rigidity
- Sound attenuators with angle section frame, width or height subdivided
  - Galvanised construction only
- Aerodynamically formed splitter frame (bullnose radius 1" that helps to reduce turbulence on both the upstream and downstream sides; frame with grooves for increased rigidity
  - Frame edges with bullnose for increased rigidity

Operating temperature up to 212 °F; variant L up to 572 °F
- for 8h max.

Materials and surfaces

- Duct, flange in galvanised sheet steel 1.0917 or stainless steel 1.4301
- Angle section frame in galvanised L steel S235JRC2
- Splitter frame, centre mullion and resonating panels made of galvanised sheet steel 1.0917 or stainless steel 1.4301
  - Expanded metal facing made of galvanised steel 1.0917
  - Perforated metal facing made of stainless steel 1.4301
  - Absorption material is mineral wool
    - To EN 13501, fire rating class A1, non-combustible
    - RAL quality mark RAL-GZ 388
    - Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EC
    - Faced with glass fibre fabric as a protection against erosion from airflow velocities of up to 3937 fpm
    - Inert to fungal and bacterial growth according to EN 846

Standards and guidelines

- Insertion loss and sound power level of air-regenerated noise tested to ISO 7235
- Meets the hygiene requirements of VDI 6022, VDI 3803 Part 1 and DIN 1946 Part 4
- EC Directive 2014/34/EC (ATEX): Equipment and protective systems intended for use in areas with potentially explosive atmospheres
- EC Directive 1999/92/EC (ATEX): Improvement of the safety and health protection of workers potentially at risk from explosive atmospheres
- Leakage class and pressure class according to EN 15727

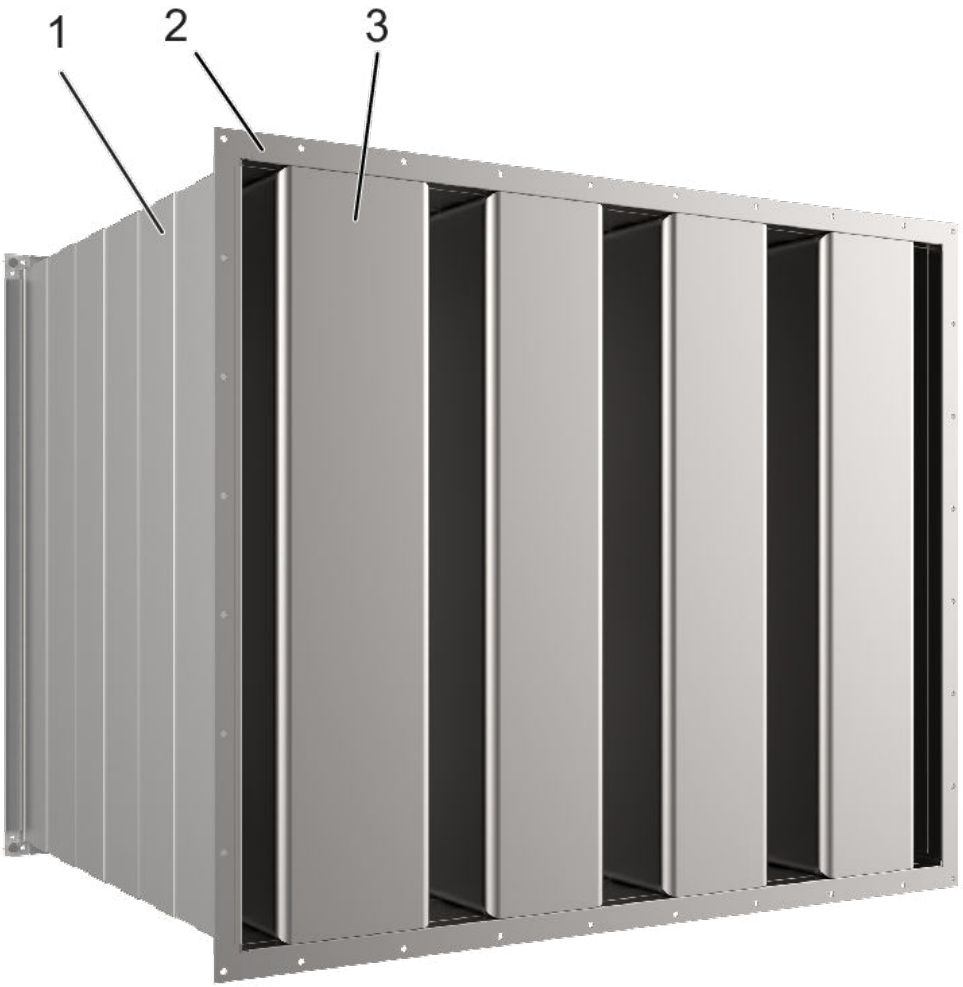
Maintenance

- Low-maintenance as construction and materials are not subject to wear
- Regular cleaning intervals according to VDI6022

Function

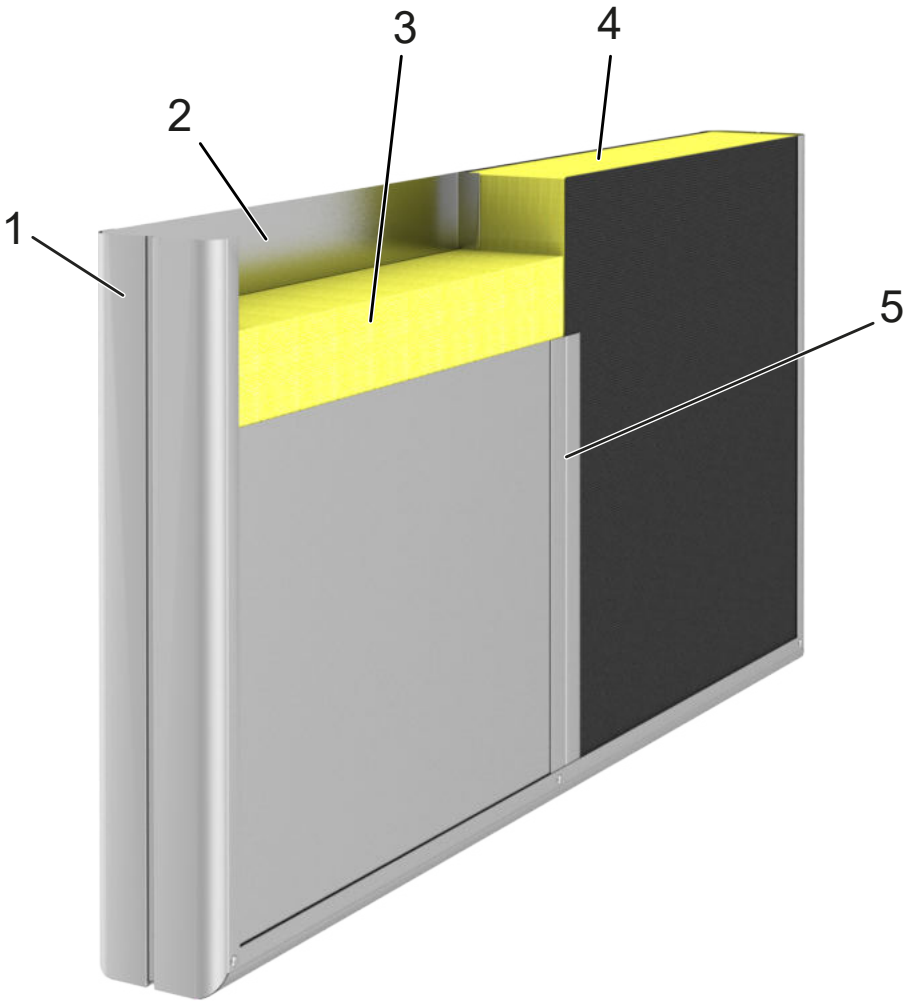
Splitter sound attenuators type MS contain splitters type MK. The attenuation effect of the MK splitters is due to absorption and resonance. The splitters have a mineral wool infill as sound absorbing material. Part of the splitter surface that runs parallel to the airflow is covered with resonating panels. These panels start oscillating due to the sound (resonance) and hence absorb sound energy. Resonance works best in the frequency range of critical fan noise. There is a higher attenuation across a wider frequency range when compared to mere absorption splitters.

Schematic illustration of MS/XS



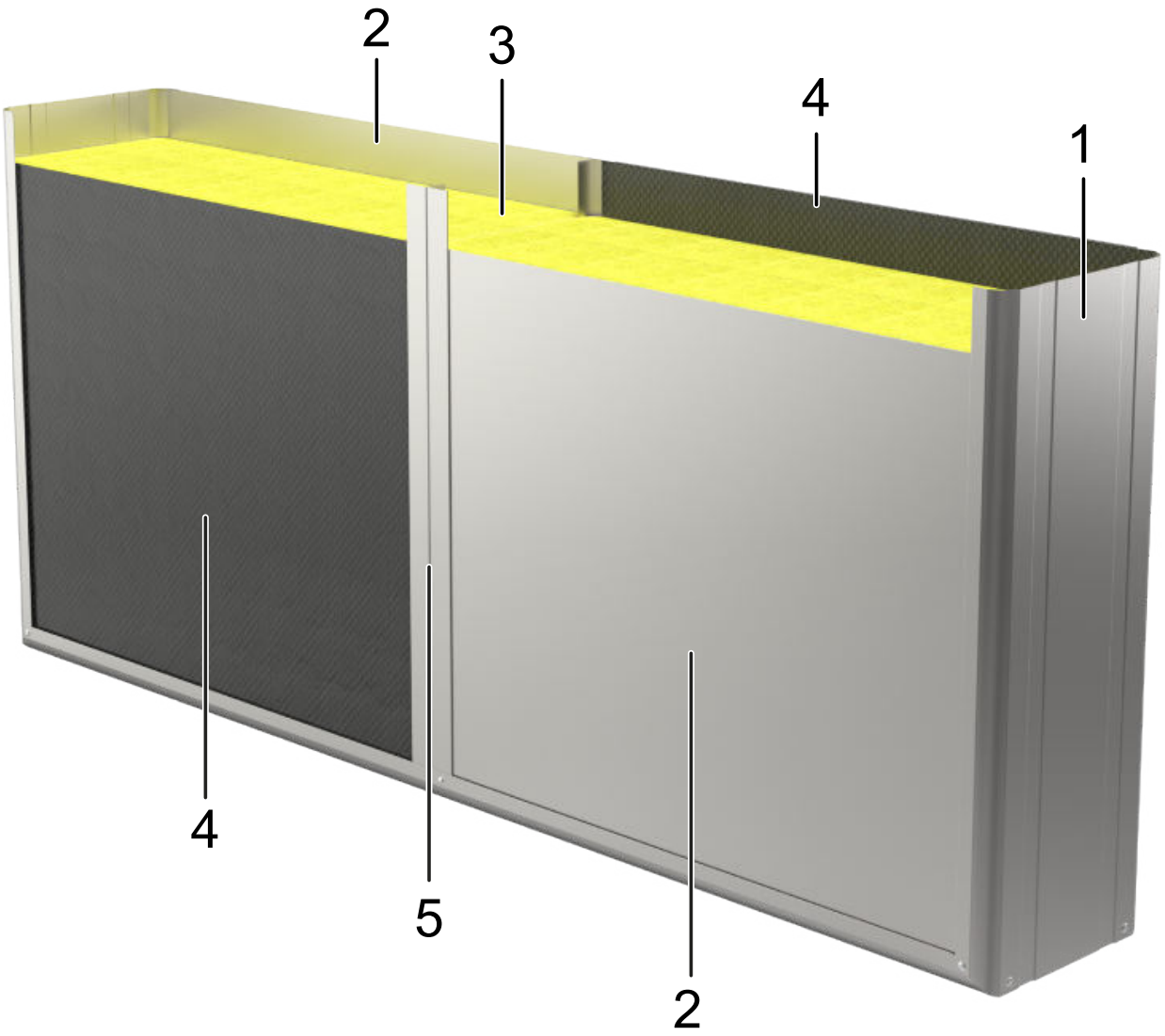
1 Duct
2 Duct connection
3 Splitter

Schematic illustration of MK100



1 Splitter frame
2 Opposing resonating panels
3 Sound absorbing material
4 Sound absorbing material faced on both sides with glass fibre fabric
5 Centre mullion

Schematic illustration of types MK200 and MK230



1 Splitter frame
2 Offset resonating panels
3 Sound absorbing material
4 Glass fibre fabric (facing)
5 Centre mullion

Technical data

Splitter thickness	4", 8", 9"
Nominal sizes (B × H × L)	Type MS 4: 6" × 6" × 20" – 94" × 71" × 59" Type MS 8: 10" × 6" × 20" – 94" × 71" × 59" Type MS 9: 11" × 6" × 20" – 94" × 71" × 59"
Width subdivided	95" – 189"
Height subdivide	71" – 142"
Length subdivided	59" – 118"
Intermediate sizes	In increments of 0.04"
Operating temperature	Up to 212 °F, variant L up to 572 °F for 8 h max.

The length (L) of splitter sound attenuators refers to the airflow direction.

Quick sizing

Quick sizing tables provide a good overview of the insertion loss and of differential pressures for different airway widths and airflow velocities. Intermediate values can be calculated with our Easy Product Finder design program.
The differential pressures apply to sound attenuators with a height of 3'.

MK100, MS100, insertion loss D_e [dB] and differential pressure Δp_t [in WC]

L	Airway width	Centre frequency f_m [Hz]								v_s [fpm]		
		2	5	10	20	39	79	157	315	0.2	0.4	0.6
20	2	4	9	10	11	19	25	21	16	33	95	184
20	4	3	4	5	8	13	15	11	8	26	75	148
39	2	5	11	18	20	28	34	28	23	43	121	236
39	3	4	8	12	16	23	25	19	15	33	92	180
39	4	4	7	9	13	21	21	15	11	30	85	167
59	2	6	14	26	29	37	42	36	29	52	144	285
59	3	5	11	18	22	32	32	24	19	39	105	207
59	4	4	9	14	19	29	28	19	13	33	95	184
79	2	7	17	34	38	46	> 50	44	36	62	171	335
79	3	6	14	24	29	40	40	29	23	43	118	230
79	4	5	12	19	24	37	34	22	16	36	105	203
98	2	8	20	42	47	> 50	> 50	> 50	43	72	197	387
98	3	7	16	30	35	48	47	34	27	46	131	256
98	4	6	15	24	30	44	41	26	19	39	112	220
118	2	9	22	50	> 50	> 50	> 50	> 50	50	79	223	436
118	3	8	19	35	42	> 50	> 50	39	31	52	144	279
118	4	7	17	28	35	> 50	47	30	22	43	121	240

MK200, MS200, insertion loss D_e [dB] and differential pressure Δp_t [in WC]

L	Airway width	Centre frequency f_m [Hz]								v_s [fpm]		
		2	5	10	20	39	79	157	315	0.2	0.4	0.6
20	2	4	6	18	21	24	18	15	13	69	190	374
20	4	2	4	12	13	15	12	10	8	36	102	200
39	2	6	13	29	34	39	29	20	17	79	220	430
39	3	5	11	24	26	29	22	16	13	49	141	276
39	4	4	9	21	22	24	19	13	11	43	115	226
59	2	8	20	41	46	> 50	41	26	21	89	246	482
59	3	6	16	33	36	40	30	20	16	56	157	308
59	4	5	14	30	32	34	25	17	14	46	131	256
79	2	10	28	> 50	> 50	> 50	> 50	31	26	98	272	538
79	3	8	22	43	47	> 50	39	24	19	62	174	344
79	4	7	20	38	41	43	32	21	17	52	144	282
79	8	3	12	23	22	18	12	10	7	30	82	164
98	2	13	35	> 50	> 50	> 50	> 50	37	30	108	302	591
98	3	10	28	> 50	> 50	> 50	47	28	23	69	194	377
98	4	8	25	47	50	> 50	39	24	19	56	157	308
98	8	4	14	29	28	22	14	11	8	33	92	177
118	2	15	42	> 50	> 50	> 50	> 50	42	34	118	328	646
118	3	11	34	> 50	> 50	> 50	> 50	33	26	75	210	413
118	4	10	30	> 50	> 50	> 50	46	28	22	62	174	338
118	8	5	17	35	34	26	16	13	10	36	98	194

MK230, MS230, insertion loss D_e [dB] and differential pressure Δp_t [in WC]

L	Airway width	Centre frequency f_m [Hz]								v_s [fpm]		
		2	5	10	20	39	79	157	315	0.2	0.4	0.6
20	3	2	6	14	16	18	14	12	12	2953	8465	16535
20	4	2	5	12	13	15	11	10	11	2559	6890	13583
39	3	6	11	24	25	29	21	15	15	3543	9646	19094
39	4	5	10	21	22	25	17	13	14	2756	7874	15354
39	8	2	7	14	12	10	6	7	9	1575	4528	8661
59	3	9	17	34	35	41	28	19	18	3937	11024	21457
59	4	8	15	31	31	34	23	16	16	3150	8858	17323
59	8	3	11	20	17	14	9	10	10	1772	4921	9646
79	3	13	22	44	45	> 50	34	22	22	4331	12205	23819
79	4	11	20	40	39	44	29	20	19	3543	9843	19291
79	8	4	14	26	23	18	12	12	12	1969	5512	10630
98	3	16	27	> 50	> 50	> 50	41	25	25	4921	13386	26378
98	4	13	25	49	48	> 50	35	23	22	3937	10827	21260
98	8	5	18	33	28	22	15	15	13	2165	5906	11614
118	3	19	33	> 50	> 50	> 50	48	29	28	5315	14567	28740
118	4	16	30	> 50	> 50	> 50	41	26	25	4331	11811	23031
118	8	6	21	39	34	26	17	17	15	2362	6496	12598

Specification text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design program.

Specification text

Splitter sound attenuators used for the reduction of fan noise and air-regenerated noise in ventilation and air conditioning systems. Attenuation effect due to absorption and resonance. Energy-saving as well as hygiene tested and certified. Splitter sound attenuator that consist of a duct with connections and integral type MK splitters or a splitter set. Splitters consist of an aerodynamically formed frame (bullnose radius 8"), sound absorbing material, and resonating panels. The splitter frame reduces pressure losses and air-regenerated noise. The profiled frame with bullnose edges increase the stiffness of the splitter. Insertion loss and sound power level of air-regenerated noise measured according to EN ISO 7235. For requirements in areas with potentially explosive atmospheres (ATEX), zones 1, 2, 21 and 22 (outside) according to Directive 1999/92/EC. The duct meets leakage class C and pressure class 2 according to EN 15727.

Special features

- Resonating panels ensure increased insertion loss in the frequency range of critical fan noise
- Leakage class C and pressure class 2 according to EN 15727
- Energy savings due to aerodynamically formed splitter frame
  - Up to 30 % lower differential pressure
- Hygiene tested and compliant with VDI 6022
- Multi-section construction available for large dimensions

Materials and surfaces

- Duct, flange in galvanised sheet steel 1.0917 or stainless steel 1.4301
- Angle section frame in galvanised L steel S235JRC2
- Splitter frame, centre mullion and resonating panels made of galvanised sheet steel 1.0917 or stainless steel 1.4301
  - Expanded metal facing made of galvanised steel 1.0917
  - Perforated metal facing made of stainless steel 1.4301
  - Absorption material is mineral wool
    - To EN 13501, fire rating class A1, non-combustible
    - RAL quality mark RAL-GZ 388
    - Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EC
    - Faced with glass fibre fabric as a protection against erosion from airflow velocities of up to 3937 fpm
    - Inert to fungal and bacterial growth according to EN 846

Construction

Duct
- No entry: with duct
- OL: without duct (set of MK splitters only)

Splitter surface
- F: Glass fibre fabric
- L: glass fibre fabric faced with expanded metal as an additional mechanical protection for the sound absorbing material
  - Stainless steel construction with perforated metal facing

Materials and surfaces
- No entry: galvanised steel 1.0917
- A2: stainless steel 1.4301
- P1: splitters powder-coated RAL 7001, silver grey

Duct connection
- P: flange 1", galvanised or stainless steel
- W: angle section frame 1" × 1" × 0.1", galvanised T:
- flange 0.8", galvanised

Matching frame
- No entry: none
- G: matching frame (only for angle section frame W)

Technical data

- Splitter thickness: 4", 8", 9"
- Dimensions B × H × L: MS 4: 6" × 6" × 20", MS 8: 10" × 6" × 20", MS 9: 11" × 6" × 20"
- Undivided construction up to 94" × 71" × 59"
- Width subdivided: 95" – 189"
- Height subdivided: 71" – 142"
- Length subdivided: 59" – 118"
- Intermediate sizes: in increments of 0.04"
- Operating temperature: up to 212 °F, variant L up to 572 °F for 8 h max.

The length (L) of splitter sound attenuators refers to the airflow direction

Sizing data

- B[in]
- H[in]
- L (in airflow direction) [in]
- q_v (cfm)
- D_e at 250 Hz [dB]
- Δp_t [in WC]

Order code

MS – OL – F – A2 / 35 × 24 × 59 / 0.1 × 8 / P / G
1 2 3 4 5 6 7 8 9 10 11

1 Type
MS Splitter sound attenuator

2 Duct
No entry: with duct
OL Without duct (set of MK splitters only)

3 Splitter surface
F Glass fibre fabric
L Glass fibre fabric and expanded metal

4 Material of duct and splitters
No entry: galvanised steel (1.0917)
A2 Stainless steel (1.4301)
P1 Powder-coated, RAL 7001 (variant OL, without duct)

5 Width [in]
6 – 189 (with duct casing)
6 – 3937 (without duct casing)

6 Height [in]
6 – 142 (with duct casing)
6 – 197 (without duct casing)

7 Length in airflow direction [in]
20 – 118 (with duct casing)
6 – 197 (without duct casing)

8 No. of splitters

9 Splitter thickness [in]
4, 8, 9

10 Duct connection
P Flange, 1", galvanised steel or stainless steel
W Angle section frame, 1" × 1" × 0.1", galvanised steel S235JRC2 only (sound attenuators with the width or height subdivided have to have an angle section frame)
T Flange, 0.8", galvanised steel only

11 Matching frame
No entry: None
G G: matching frame (only for angle section frame)

Order example: MS-L/35×59×39/0.1×9/P

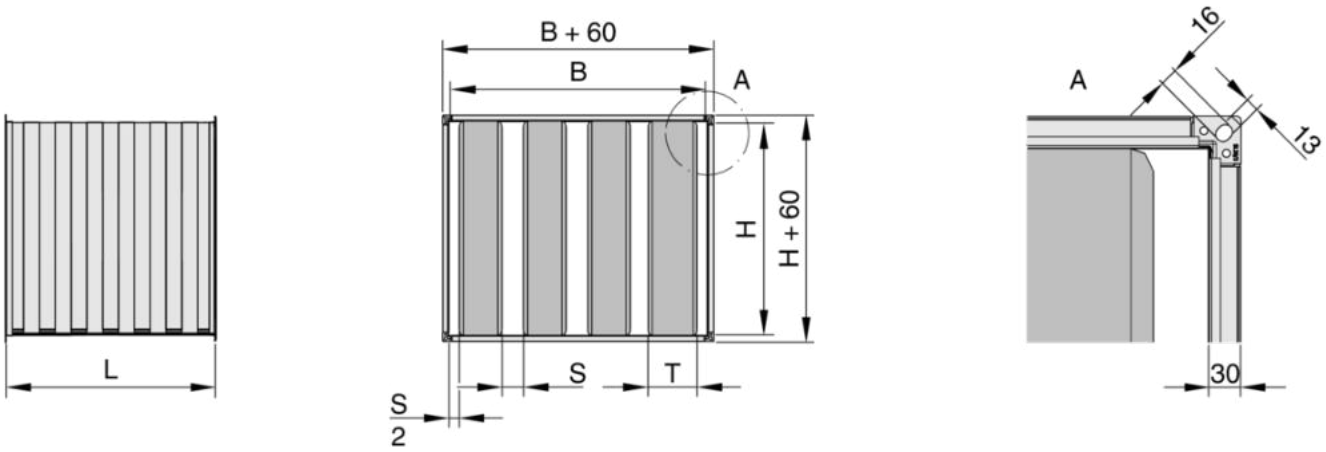
Duct	With duct
Splitter surface	Glass fibre fabric and expanded metal
Material	Galvanised steel (1.0917)
Width	35"
Height	59"
Length	39"
No. of splitters	0.1"
Splitter thickness	9"
Duct connection	Standard flange 1"

Order example: MS-OL-L-A2/31×59×59/0.1×8

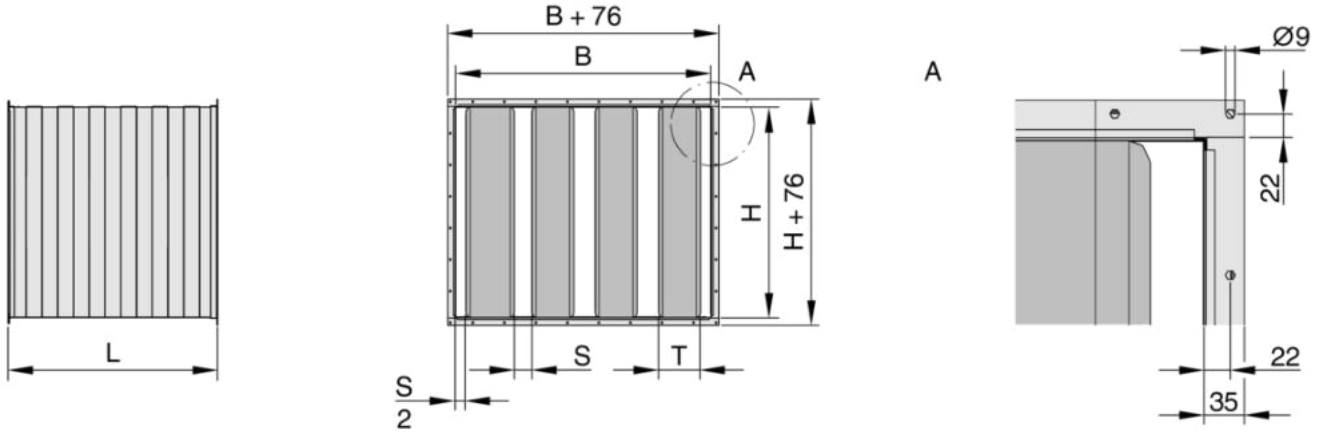
Duct	Without duct (set of MK splitters only)
Splitter surface	Glass fibre fabric and perforated sheet metal
Material	Stainless steel (1.4301)
Width	31"
Height	59"
Length	59"
No. of splitters	0.1"
Splitter thickness	8"

Dimensions

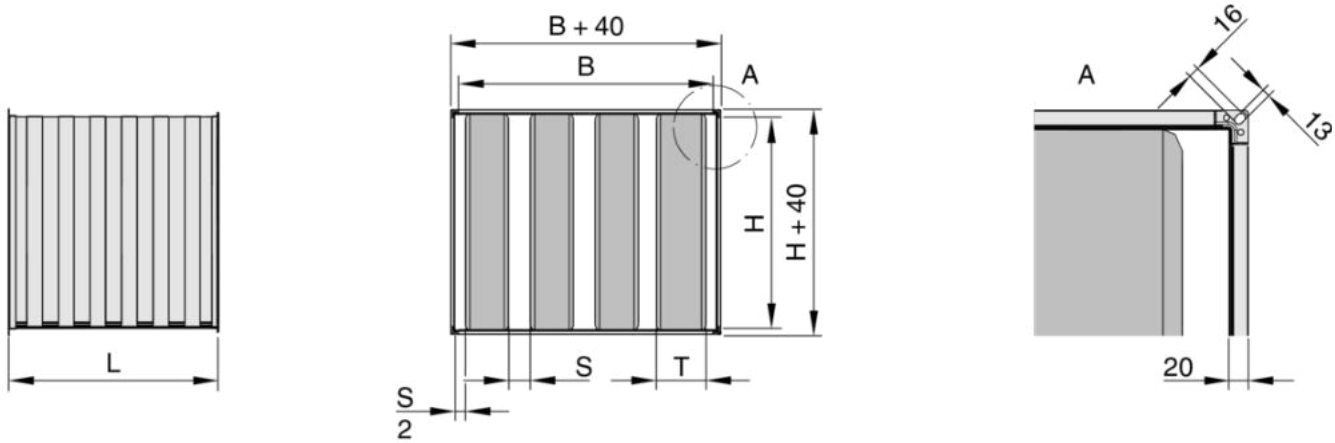
Flange 1" (P), undivided construction



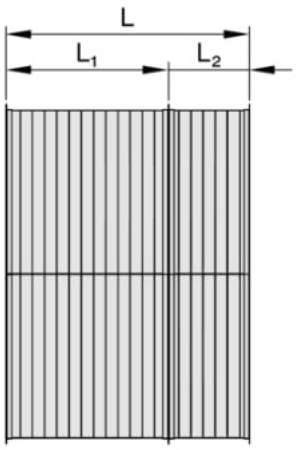
Angle section frame 1" × 1" × 0.1" (W), undivided construction

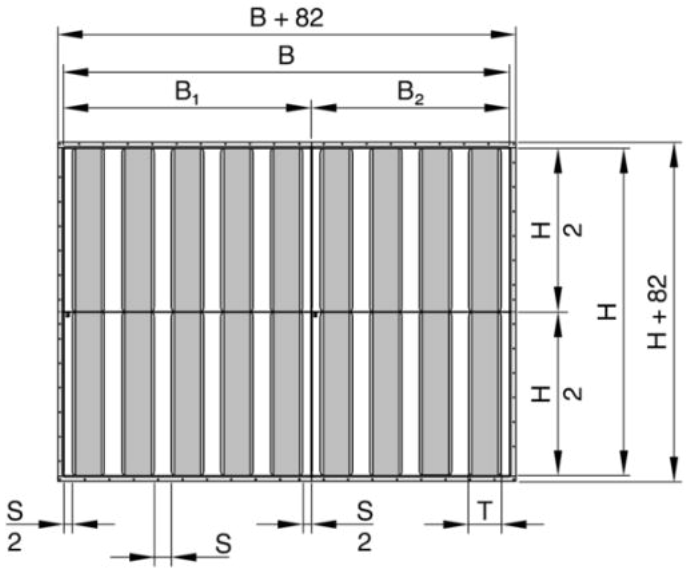


Flange 0.8" (T), undivided construction



Angle section frame 1" × 1" × 0.1" (W), for constructions with the width or height subdivided





Nominal sizes

- Width B: 8", 16", 24", 31", 39", 47", 55", 63", 71", 79", 87", 94"
  - Intermediate sizes: in increments of 0.04"
    - Splitter thickness 4": 6" – 94"
    - Splitter thickness 8": 10" – 94"
    - Splitter thickness 9": 11" – 94"
    - Splitter thickness 12": 15" – 94"
  - Sizes from 95" – 189" are available with the width subdivided in increments of 0.04"
    - Even no. of splitters: centre division
    - Odd no. of splitters: off-centre division

- Height H: 12", 16", 20", 24", 28", 31", 35", 39", 43", 47", 51", 55", 59", 63", 67", 71"
  - Intermediate sizes 6" – 71" in increments of 0.04"
  - Sizes from 71" – 142" are available with the height subdivided in increments of 0.04"
    - Centre division
- Length L: 20", 30", 39", 49", 59"
  - Intermediate sizes 20" – 59" in increments of 0.04"
- Sizes from 59" – 118" are available with the length subdivided in increments of 0.04"
  - Part L1: 39", 49", 59"
  - Part L2: at least 20" and ≤ L1, in increments of 0.04"
- Width and/or height subdivided if B + H > 165"
- Airway width S
  - Minimum: splitter thickness T × 0.25, but not < 2"
  - Maximum: splitter thickness T × 2

Weights

The weight of a splitter sound attenuator is determined by the number and construction of the splitters and ducts.
Weight [lbs] = (weight of splitter x no. of splitters) + duct

Duct with flange (-P), L= 20

H	B								
	16	24	31	39	47	55	63	79	94
12	15	18	22	26	31	35	40	46	55
24	20	24	29	31	35	40	44	51	60
35	29	33	37	42	46	51	55	64	73
47	33	40	42	46	51	55	60	68	77
59	40	44	49	53	57	62	64	73	82
71	46	49	53	57	62	66	71	77	86

Duct with flange (-P), L= 30

H	B								
	16	24	31	39	47	55	63	79	94
12	20	26	33	37	44	49	55	66	79
24	29	33	40	44	51	55	62	71	84
35	37	44	51	55	62	68	73	86	97
47	46	51	57	62	68	73	79	90	101
59	55	62	68	73	79	86	90	104	115
71	62	68	75	79	86	90	97	108	119

Duct with flange (-P), L= 39

H	B								
	16	24	31	39	47	55	63	79	94
12	26	35	42	49	55	64	71	86	101
24	35	42	51	57	64	71	77	93	106
35	46	55	62	68	77	84	90	106	121
47	60	66	75	82	88	97	104	119	134
59	68	75	82	90	97	104	110	123	139
71	79	88	95	101	108	117	123	139	152

Duct with flange (-P), L= 49

H	B								
	16	24	31	39	47	55	63	79	94
12	31	37	46	55	64	73	82	99	117
24	44	51	60	68	77	86	95	112	130
35	57	66	75	84	93	99	108	126	143
47	71	79	88	97	106	115	123	141	159
59	84	93	101	110	119	128	137	154	172
71	97	106	115	123	132	141	150	170	185

Duct with flange (-P), L= 59

H	B								
	16	24	31	39	47	55	63	79	94
12	35	46	57	66	77	88	97	119	139
24	51	62	71	82	93	101	112	132	154
35	66	77	86	97	108	117	128	148	168
47	82	90	101	112	121	132	141	161	183
59	97	106	117	126	137	146	157	176	196
71	115	126	134	146	157	168	179	198	220

Duct with angle section frame (-W), L= 20

H	B								
	16	24	31	39	47	55	63	79	94
12	22	29	35	42	49	55	62	73	86
24	31	37	44	51	57	62	68	82	95
35	44	51	57	64	71	77	84	99	110
47	53	60	66	73	79	86	93	106	119
59	62	68	75	82	88	95	101	115	128
71	71	77	84	90	97	104	110	121	134

Duct with angle section frame (-W), L= 30

H	B								
	16	24	31	39	47	55	63	79	94
12	29	37	44	53	62	68	77	95	110
24	40	46	55	64	71	79	86	101	119
35	53	62	71	77	86	95	101	119	134
47	64	71	79	88	95	104	112	128	143
59	77	86	95	101	110	119	128	143	161
71	88	97	104	112	121	128	137	152	168

Duct with angle section frame (-W), L= 39

H	B								
	16	24	31	39	47	55	63	79	94
12	35	44	55	64	73	84	95	115	132
24	46	57	66	75	86	95	104	121	141
35	62	73	82	90	101	110	121	139	159
47	77	88	97	108	117	128	137	157	176
59	90	99	108	119	128	137	148	165	185
71	106	115	126	134	143	154	163	183	201

Duct with angle section frame (-W), L= 49

H	B								
	16	24	31	39	47	55	63	79	94
12	37	49	60	71	82	93	104	126	148
24	55	66	77	88	99	110	121	143	165
35	73	84	94	106	117	128	139	161	183
47	88	99	110	121	132	146	157	179	201
59	106	117	128	139	150	161	172	196	218
71	123	134	146	157	168	179	190	214	236

Duct with angle section frame (-W), L= 59

H	B								
	400	600	800	1000	1200	1400	1600	2000	2400
12	44	57	68	82	95	108	119	146	170
24	62	75	88	101	112	126	139	163	187
35	82	93	106	119	132	143	157	181	205
47	99	112	126	137	150	161	174	198	225
59	119	130	143	157	168	181	192	216	243
71	139	152	165	179	192	205	218	243	269

MK 4 – Glass fibre fabric (-F)

H	L								
	20	30	39	49	59	69	79	89	98
20	7	11	13	15	18	22	24	26	29
30	11	13	18	20	24	29	33	35	40
39	13	18	22	26	33	37	42	46	51
49	15	20	26	33	40	44	51	60	66
59	18	24	33	40	46	53	64	71	77
69	22	29	37	44	53	X	X	X	X
70	24	33	42	51	60	X	X	X	X
89	26	37	46	55	66	X	X	X	X
98	29	40	51	62	71	X	X	X	X

X = subdivided construction

MK 4 – Glass fibre fabric and expanded metal (-L)

H	L								
	20	30	39	49	59	69	79	89	98
20	9	11	15	18	22	26	29	33	35
30	11	18	22	26	31	35	40	44	49
39	15	22	26	33	42	46	53	57	64
49	18	26	33	42	49	57	64	75	82
59	22	31	40	49	57	66	79	88	97
69	26	35	46	57	66	X	X	X	X
70	29	42	53	64	75	X	X	X	X
89	33	46	57	71	84	X	X	X	X
98	35	51	64	77	90	X	X	X	X

X = subdivided construction

MK 4 – Glass fibre fabric and perforated sheet metal (-L-A2)

H	L								
	20	30	39	49	59	69	79	89	98
20	11	15	18	22	26	31	35	40	44
30	15	20	26	31	37	44	51	55	62
39	18	26	33	40	51	57	66	73	79
49	22	31	40	53	62	71	79	93	101
59	26	37	51	62	73	84	99	110	121
69	31	44	57	71	84	X	X	X	X
70	35	51	66	79	95	X	X	X	X
89	40	55	73	88	106	X	X	X	X
98	44	62	79	97	115	X	X	X	X

X = subdivided construction

MK 8 – Glass fibre fabric (-F)

H	L								
	20	30	39	49	59	69	79	89	98
20	11	15	20	24	29	33	37	40	44
30	15	22	26	31	37	44	51	55	62
39	20	26	33	40	51	57	64	71	77
49	24	31	40	51	60	68	77	90	99
59	29	37	49	60	71	79	95	106	115
69	33	44	57	68	79	X	X	X	X
70	37	51	64	77	90	X	X	X	X
89	42	55	71	86	99	X	X	X	X
98	46	62	77	93	110	X	X	X	X

X = subdivided construction

MK 8 – Glass fibre fabric and expanded metal (-L)

H	L								
	20	30	39	49	59	69	70	89	98
20	13	18	22	26	31	37	42	46	51
30	18	24	31	37	44	51	57	64	71
39	22	31	37	46	57	66	75	82	90
49	26	37	46	60	71	79	90	106	115
59	31	44	57	68	82	95	112	123	134
69	37	53	66	79	95	X	X	X	X
70	42	57	75	90	106	X	X	X	X
89	46	64	82	99	117	X	X	X	X
98	53	71	90	110	130	X	X	X	X

X = subdivided construction

MK 8 – Glass fibre fabric and perforated sheet metal (-L-A2)

H	L								
	20	30	39	49	59	69	70	89	98
20	15	20	26	31	35	42	49	53	60
30	20	29	35	42	51	60	68	75	84
39	26	35	46	55	68	77	88	97	106
49	31	42	55	68	82	95	106	123	134
59	35	51	66	82	95	110	130	146	159
69	44	60	77	95	110	X	X	X	X
70	49	68	88	106	126	X	X	X	X
89	55	75	97	119	139	X	X	X	X
98	60	84	106	130	154	X	X	X	X

X = subdivided construction

MK 9 – Glass fibre fabric (-F)

H	L								
	20	30	39	49	59	69	70	89	98
20	13	18	22	26	31	35	40	44	49
30	18	24	29	35	42	49	55	62	66
39	22	29	37	44	55	62	71	77	86
49	26	35	44	55	66	75	86	99	108
59	31	42	55	66	77	88	106	117	126
69	37	51	62	75	88	X	X	X	X
70	42	55	71	86	99	X	X	X	X
89	46	62	77	95	110	X	X	X	X
98	51	68	86	104	121	X	X	X	X

X = subdivided construction

MK 9 – Glass fibre fabric and expanded metal (-L)

H	L								
	20	30	39	49	59	69	70	89	98
20	13	20	24	29	35	40	46	51	55
30	20	26	33	40	46	55	62	71	77
39	24	33	42	51	64	73	82	90	99
49	29	40	51	64	75	88	97	115	123
59	35	46	62	75	88	101	121	134	146
69	42	57	73	88	101	X	X	X	X
70	46	64	82	97	115	X	X	X	X
89	51	71	90	108	128	X	X	X	X
98	57	77	99	119	141	X	X	X	X

X = subdivided construction

MK 9 – Glass fibre fabric and perforated sheet metal (-L-A2)

H	L								
	20	30	39	49	59	69	70	89	98
20	15	22	29	33	40	46	53	57	64
30	22	31	37	46	55	64	73	82	88
39	29	37	49	60	73	84	95	104	115
49	33	46	60	75	88	101	115	132	146
59	40	55	73	88	104	119	141	154	170
69	46	66	84	101	119	X	X	X	X
70	53	73	95	115	134	X	X	X	X
89	60	82	104	128	150	X	X	X	X
98	64	90	115	139	165	X	X	X	X

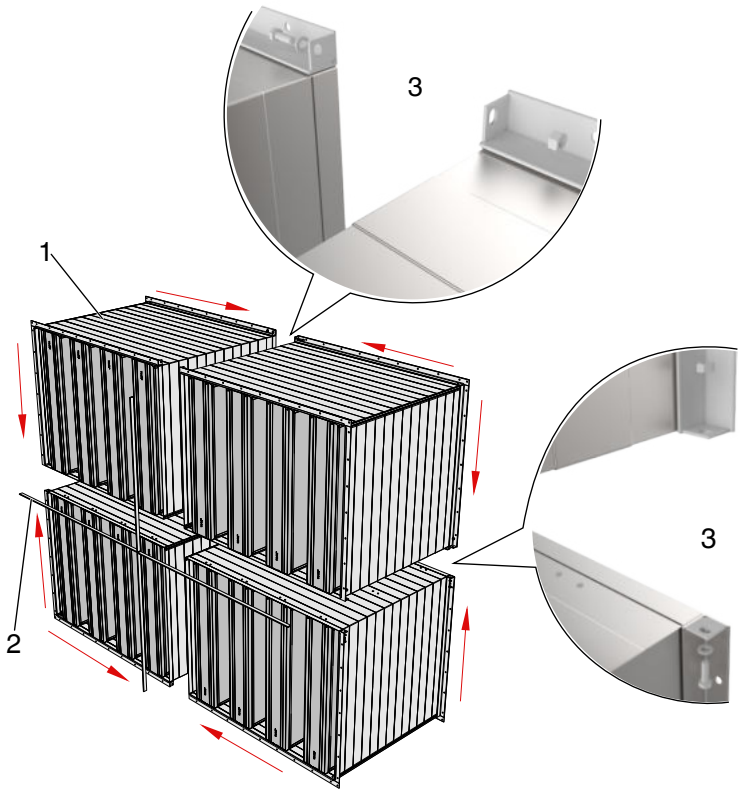
X = subdivided construction

Installation details

Installation and commissioning

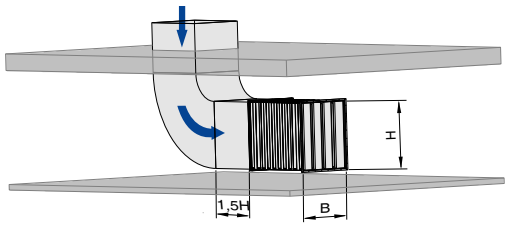
- Follow the installation manual and comply with the general codes of good practice in order to achieve the given performance data
- Up to height H = 47", length L = 59" and 88 lbs: any installation orientation, but we recommend upright installation of splitters
- From height H = 47": upright installation only
- The length (L) of sound attenuator splitters and splitter sound attenuators refers to the airflow direction; be sure to note how width, height and length are defined, particularly in case of a vertical airflow
- A turbulent airflow may cause damage to the splitters
  - A straight upstream section is required upstream of the sound attenuator
  - The recommended minimum upstream section depends on the change of direction, change of cross-section and splitter arrangement
- Installation in ducts outside closed rooms requires sufficient protection against the effects of weather

Schematic illustration of subdivided sound attenuators



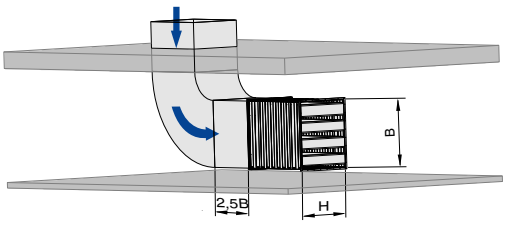
1 Sound attenuator, with width and height subdivided
2 Seal
3 Screw fix connection

Upstream conditions after bends, junctions or a narrowing or widening of the duct, vertical upstream section, splitters upright



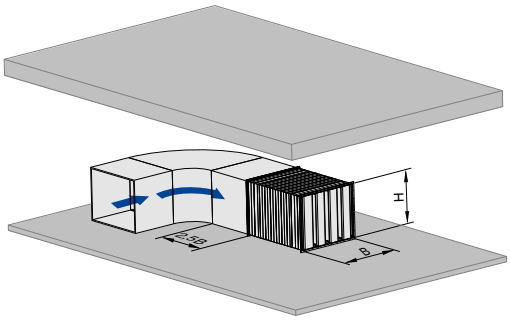
B Width of the sound attenuator
H Height of the sound attenuator and the splitters

Upstream conditions after bends, junctions or a narrowing or widening of the duct, vertical upstream section, splitters lying flat



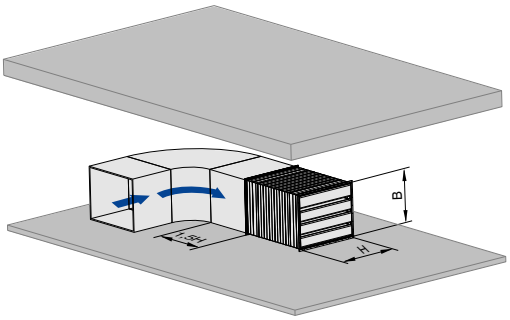
B Width of the sound attenuator
H Height of the sound attenuator and the splitters
Installation with the splitters lying flat only for splitters up to height 47"

Upstream conditions after bends, junctions or a narrowing or widening of the duct, horizontal upstream section, splitters upright

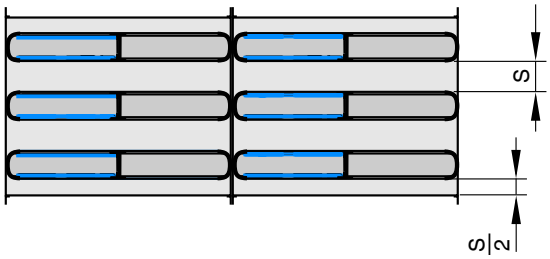


B Width of the sound attenuator
H Height of the sound attenuator and the splitters

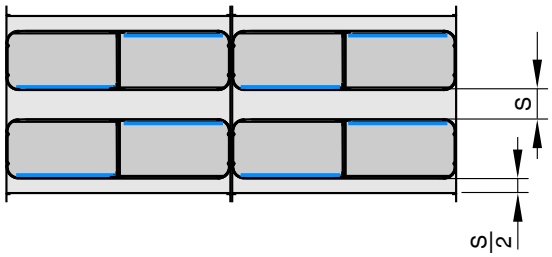
Upstream conditions after bends, junctions or a narrowing or widening of the duct, horizontal upstream section, splitters lying flat



B Width of the sound attenuator
H Height of the sound attenuator and the splitters
Installation with the splitters lying flat only for splitters up to height 47"



MK100: Opposite resonating panels



MK200, MK230: Offset resonating panels

Nomenclature

L [in]
Length of sound attenuator including spigot (always in airflow direction)

L_1 [in]
Length of part 1 of a splitter sound attenuator with the length subdivided

L_2 [in]
Length of part 2 of a splitter sound attenuator with the length subdivided

B [in]
Sound attenuator width and duct width

B_1 [in]
Width of part 1 of a splitter sound attenuator with the width subdivided

B_2 [in]
Width of part 2 of a splitter sound attenuator with the width subdivided

H [in]
Sound attenuator height and duct height (upright splitters)

T [in]
Splitter thickness

S [in]
Airway width

m [lbs]
Weight

f_m [Hz]
Octave band centre frequency

D_e [dB]
Insertion loss

q_v [cfm]
Volume flow rate

Δp_t [in WC]
Total differential pressure

v_s [fpm]
Airflow velocity

Lengths

All lengths are given in inches [in] unless stated otherwise.

Measured values

All sound power levels are based on 1 pW. All values were measured in a TROX lab and to EN ISO 7235. Intermediate values may be achieved by interpolation. Lab measurements exceeding 50 dB are given as 50 dB, based on practical conditions.