
Splitter silencers and tube silencers for ventilation systems



Noise control systems

Silencers reduce sound, reduce sound propagation in ventilation systems, and ensure that HVAC systems are low-noise.

BerlinerLuft. offers soundproofing systems for rectangular and round air ducting systems as well as special sound solutions in various designs and dimensions. Stable, effective and economical.

Splitter silencer	368
Tube silencer	382

Splitter silencer

PRODUCT DESCRIPTION

Splitter silencers are mainly used in ventilation systems. Other areas of application are sound reduction at building openings or installation in sound enclosures.

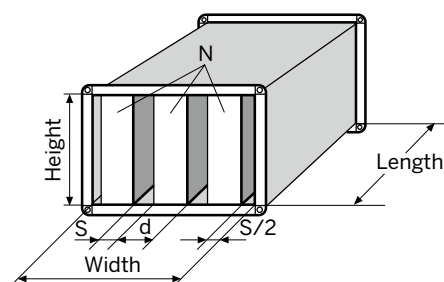
The housing is made of galvanised sheet steel with a frame made of lightweight section, available for pressure ratings as per VDI 3803¹. The absorber material in the splitter is covered in abrasion-proof material. It is non-flammable (A1/EN13501) and does not present any health risk (bio-soluble/VDI6022) with a glass fibre cover.

Splitter silencers are approved up to an air temperature of 100 °C, with a perforated sheet metal shell (made of flat-rolled expanded metal) up to 150 °C. An air flow velocity of up to 30 m/s is permissible only when the silencer is additionally equipped with perforated sheet metal. BerlinerLuft. Technik GmbH is a member of the RAL-Gütegemeinschaft (Quality Assurance Association) for silencers (RAL Quality Mark 595).

¹ Available for pressure ratings N and M as per VDI 3803

TECHNICAL PARAMETERS

Splitter silencer



Splitter silencer, rectangular

Splitter silencer, rectangular		Gap dimension assignment	
Width	150-4800 mm	A-100, K-100	s = 40-150 mm
Height	150-3800 mm	A-200	s = 50-400 mm
Length	500-1500 mm	K-200, K230	s = 50-400 mm
		A-300	s = 75-800 mm
		C100	s = 40-150 mm

STOCK SIZES

Splitters – preferred dimensions: Actual dimension = nominal dimension – 5 mm

Nominal dimensions	[mm]									
Splitter height	300	450	600	900	1200	1500	1800			
Splitter length	500	750	1000	1250	1500					

NOTE

Larger splitters are produced by means of connection using U and I caps.

Splitters in materials 1.4301, 1.4404, 1.4571 or AlMg3 are also available on request.

Flat silencers

Resonance absorbers



Single splitter

Splitter silencer

A-100T, A-200T, A-300T

Works using the absorption principle

Technical specifications are quality controlled, RAL Quality Mark 595, certified according to VDI 6022, VDI 3803

Absorber: Mineral wool (bio-soluble, RAL Quality Mark 388)

Non-flammable (A1/EN13501), hydrophobic, protected by a glass fibre surface

Splitter thickness A-100T: 100 mm

Splitter thickness A-200T: 200 mm

Splitter thickness A-300T: 300 mm

Gap velocity up to 20 m/s

Medium: air, max. 100 °C

Note

Within the limit dimensions, all casing dimensions are available in 10 mm increments.

K-100T, K-200T, K-230T

Works using the chamber absorption principle

Technical specifications are quality controlled, RAL Quality Mark 595, certified according to VDI 6022, VDI 3803

Absorber: Mineral wool (bio-soluble, RAL Quality Mark 388) non-flammable (A1/EN13501), hydrophobic, protected by glass fibre surface.

Resonance plates on one half, chamber design

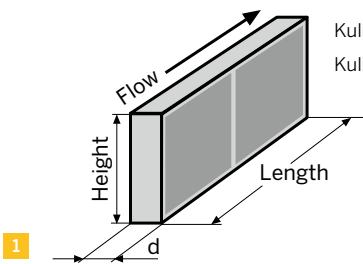
Splitter thickness K-100T: 100 mm

Splitter thickness K-200T: 200 mm

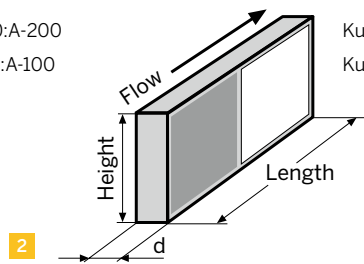
Splitter thickness K-230T: 230 mm

Gap velocity up to 20 m/s

Medium: air, max. 100 °C



Kulissentyp A: d= 200:A-200
Kulissentyp A: d= 100:A-100



Kulissentyp K: d= 200:K-200
Kulissentyp K: d= 100:K-100



- 1 | Single splitters
Splitter type A (absorber splitter)
- 2 | Splitter type K with chamber plates

SILENCER FOR KITCHEN EXHAUST AIR (SPLITTER TYPE C)

Kitchen exhaust air contains grease particles which cannot be completely separated, even by grease filters. With unprotected, open-pored absorption materials, it is unavoidable that the finest grease particles penetrate the absorption material. Even the glass fibre cladding of the splitters, which protects the mineral wool from the air flow, cannot prevent sooting, since this covering material must be open-pored for acoustic reasons. Grease-contaminated mineral wool filling can no longer be completely cleaned, poses an extreme risk in terms of fire hazard, leads to unpleasant odours and is unhygienic.

PRODUCT DESCRIPTION

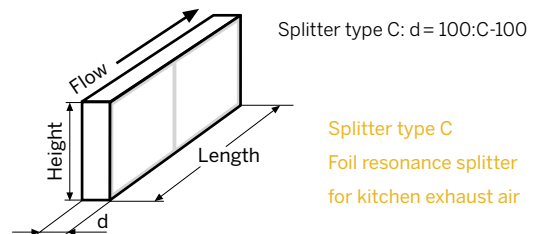
The AKUSCLEAN® splitter consists of two different sections. The first section is designed as a plate resonator and tuned to low frequencies. The second section has a surface of thin aluminium foil reinforced with glass fibre and acts as a foil resonator (patent DE 10122617), which is effective in the remaining frequency range.

The combination of the plate/foil surface and the volume of air enclosed between the metal surfaces filled with mineral wool produces an attenuation effect over a wide bandwidth, which is very well adapted to the range of a fan.

The fabric reinforcement stabilises the foil and protects it from mechanical stress. Tests have shown that the splitter can even withstand spray cleaning without damage, as long as an appropriate distance is maintained between the device and the foil surface. To prevent particles from entering the absorber, splitters with a foil cover and perforated sheet metal are generally recommended for grease laden air. Although this design offers protection against sooting of the mineral wool, it has the disadvantage that the protective foil can stick to the perforated sheet metal and thus greatly reduce the attenuation effect. It is almost impossible to thoroughly clean the surface, especially the foil behind the perforated sheet metal.

Silencers for kitchen exhaust air should have a completely smooth surface that is impervious to fluids and have at least the equivalent attenuation properties as conventional silencers.

TECHNICAL PARAMETERS



Splitter type C
Foil resonance splitter
for kitchen exhaust air



C-100

Works using the foil resonance principle

Quality controlled technical values

RAL Quality Mark 595

Glass fibre reinforced aluminium foil surface

Suitable for kitchen exhaust air

Splitter thickness 100 mm

Gap velocity up to 14 m/s

Medium: air, max. 80 °C



AKUSCLEAN® silencers are RAL tested. The splitters have the type designation C100 and are only available in a splitter thickness of 100 mm.

Splitter silencer

ATTENUATION VALUES FOR STANDARD APPLICATIONS, SPLITTER TYPE K-100T

Splitter length 500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	3	5	9	16	19	16	13	10	dB	26	40	57	Pa
100	2	2	6	11	13	12	8	7	dB	17	26	37	Pa
150	1	1	4	7	8	6	5	4	dB	14	21	31	Pa

Splitter length 750 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	4	7	13	24	28	24	19	15	dB	29	45	65	Pa
100	3	4	9	17	19	18	13	10	dB	18	28	40	Pa
150	2	2	6	10	12	10	7	6	dB	15	23	33	Pa

Splitter length 1000 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	5	9	17	28	32	28	23	19	dB	32	50	72	Pa
100	3	5	11	20	23	21	15	11	dB	19	30	43	Pa
150	2	3	7	12	15	11	8	6	dB	15	24	35	Pa

Complete design of silencers and other types of splitters with AKUSWIN® software

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**ATTENUATION VALUES FOR STANDARD APPLICATIONS,
SPLITTER TYPE K-100T**

Splitter length 1250 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	5	10	22	32	37	33	27	22	dB	35	55	80	Pa
100	4	6	13	23	27	24	17	13	dB	21	32	46	Pa
150	2	3	8	15	17	13	9	7	dB	16	25	37	Pa

Splitter length 1500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	6	12	26	36	41	37	31	26	dB	39	60	87	Pa
100	4	7	15	25	31	27	19	14	dB	22	34	49	Pa
150	3	4	10	17	20	15	10	8	dB	17	27	39	Pa

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Splitter silencer

ATTENUATION VALUES FOR STANDARD APPLICATIONS, SPLITTER TYPE K-200T

Splitter length 500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	3	7	17	20	24	22	16	13	dB	38	60	91	Pa
100	2	5	11	12	14	10	7	8	dB	25	39	59	Pa
150	1	4	9	9	11	8	6	6	dB	22	34	49	Pa
200	1	3	7	7	7	6	5	4	dB	19	29	42	Pa

Splitter length 750 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	4	10	26	30	36	33	25	20	dB	40	63	96	Pa
100	3	7	17	18	21	15	11	12	dB	26	41	63	Pa
150	2	6	13	14	16	12	9	9	dB	23	35	51	Pa
200	1	5	10	10	11	8	7	7	dB	19	30	43	Pa

Splitter length 1000 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	5	13	33	38	43	41	30	23	dB	43	67	102	Pa
100	3	9	22	23	27	18	13	14	dB	28	43	66	Pa
150	2	8	17	18	20	14	11	11	dB	24	37	53	Pa
200	2	6	13	13	13	10	8	8	dB	20	31	45	Pa

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**ATTENUATION VALUES FOR STANDARD APPLICATIONS,
SPLITTER TYPE K-200T**

Splitter length 1250 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	6	16	40	46	50	50	34	26	dB	45	70	108	Pa
100	4	11	27	28	32	21	15	16	dB	29	45	69	Pa
150	3	9	21	22	24	17	12	12	dB	25	38	55	Pa
200	2	7	16	15	15	12	10	9	dB	20	32	46	Pa

Splitter length 1500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	6	19	47	50	50	50	39	28	dB	47	74	113	Pa
100	4	13	32	33	38	24	16	18	dB	30	47	72	Pa
150	4	11	25	26	27	19	14	14	dB	26	40	57	Pa
200	3	9	19	18	17	14	11	10	dB	21	33	47	Pa

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Splitter silencer

ATTENUATION VALUES FOR STANDARD APPLICATIONS, SPLITTER TYPE A-100T

Splitter length 500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	2	4	9	16	26	29	21	16	dB	26	40	57	Pa
100	1	3	5	11	19	20	13	9	dB	17	26	37	Pa
150	0	2	3	8	13	14	7	5	dB	14	21	31	Pa

Splitter length 750 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	3	6	13	24	39	43	32	24	dB	29	45	65	Pa
100	2	4	8	17	29	30	19	13	dB	18	28	40	Pa
150	1	3	4	12	19	21	11	7	dB	15	23	33	Pa

Splitter length 1000 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	4	8	16	28	41	44	35	27	dB	32	50	72	Pa
100	2	5	10	20	32	34	23	16	dB	19	30	43	Pa
150	1	3	6	15	21	20	15	10	dB	15	24	35	Pa

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**ATTENUATION VALUES FOR STANDARD APPLICATIONS,
SPLITTER TYPE A-100T**

Splitter length 1250 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	4	9	20	31	42	45	38	31	dB	35	55	80	Pa
100	3	6	12	23	36	37	27	19	dB	21	32	46	Pa
150	1	4	7	18	22	18	19	12	dB	16	25	37	Pa

Splitter length 1500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	5	11	23	35	44	46	41	34	dB	39	60	87	Pa
100	3	7	14	27	39	41	30	22	dB	22	34	49	Pa
150	2	4	9	21	23	17	22	15	dB	17	27	39	Pa

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Splitter silencer

ATTENUATION VALUES FOR STANDARD APPLICATIONS, SPLITTER TYPE A-200T

Splitter length 500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	5	10	15	28	39	40	29	26	dB	30	47	71	Pa
100	2	3	8	18	24	21	14	10	dB	25	39	59	Pa
150	1	3	7	15	19	15	10	8	dB	22	34	51	Pa
200	1	2	6	12	14	10	6	6	dB	18	29	43	Pa

Splitter length 750 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	8	14	23	42	50	50	44	39	dB	31	49	74	Pa
100	2	5	12	27	37	31	21	15	dB	26	41	62	Pa
150	2	4	11	23	29	23	15	12	dB	23	35	54	Pa
200	1	3	9	18	20	15	9	8	dB	19	30	45	Pa

Splitter length 1000 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	8	15	26	49	50	50	50	44	dB	33	51	77	Pa
100	3	6	16	35	45	39	25	18	dB	27	43	65	Pa
150	2	5	14	29	36	29	18	14	dB	24	37	56	Pa
200	2	4	11	24	26	18	11	9	dB	20	31	47	Pa

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**ATTENUATION VALUES FOR STANDARD APPLICATIONS,
SPLITTER TYPE A-200T**

Splitter length 1250 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	8	16	29	50	50	50	50	48	dB	34	53	80	Pa
100	3	8	19	43	50	47	30	21	dB	29	45	68	Pa
150	3	6	17	36	43	34	21	16	dB	25	39	59	Pa
200	2	5	14	29	32	21	12	10	dB	21	33	50	Pa

Splitter length 1500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
50	8	17	32	50	50	50	50	50	dB	35	55	83	Pa
100	4	10	23	50	50	50	35	24	dB	30	47	71	Pa
150	3	8	19	43	50	40	24	18	dB	26	40	61	Pa
200	2	6	16	34	37	25	14	11	dB	22	34	52	Pa

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Splitter silencer

ATTENUATION VALUES FOR STANDARD APPLICATIONS, SPLITTER TYPE A-300T

Splitter length 500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
100	3	6	12	21	26	24	16	13	dB	31	49	70	Pa
150	2	5	10	15	18	14	9	7	dB	28	44	63	Pa
200	2	4	9	13	15	12	8	6	dB	34	38	55	Pa

Splitter length 750 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
100	5	8	19	31	40	36	24	19	dB	32	50	72	Pa
150	3	7	15	23	28	22	14	11	dB	28	44	64	Pa
200	2	6	13	20	23	18	12	9	dB	25	39	56	Pa

Splitter length 1000 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
100	5	11	24	38	45	42	29	23	dB	33	52	75	Pa
150	4	9	19	29	35	26	17	12	dB	29	45	65	Pa
200	3	8	17	25	29	21	14	10	dB	25	40	57	Pa

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**ATTENUATION VALUES FOR STANDARD APPLICATIONS,
SPLITTER TYPE A-300T**

Splitter length 1250 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
100	3	6	12	21	26	24	16	13	dB	31	49	70	Pa
150	4	11	24	36	42	31	19	13	dB	29	46	66	Pa
200	3	9	21	31	35	25	16	11	dB	26	41	59	Pa

Splitter length 1500 mm

Gap width [mm]	Insertion loss									Pressure drop			
	63	125	250	500	1K	2K	4K	8K	Hz	8	10	12	m/s
100	7	16	34	50	50	50	39	29	dB	35	55	79	Pa
150	4	13	28	42	49	36	22	14	dB	30	46	66	Pa
200	4	11	25	36	40	29	18	12	dB	27	41	60	Pa



**SILENCER DESIGN –
QUICK AND EASY WITH AKUSWIN®**

Technical design of splitter silencers,
tube silencers, and flexible telephony
silencers

Free download at
www.berlinerluft.de

Rigid tube silencers with and without core

PRODUCT DESCRIPTION

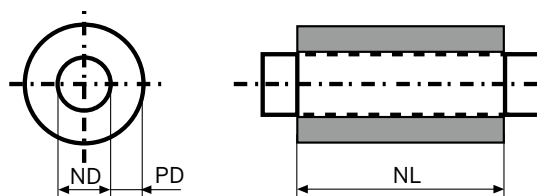
Tube silencers are used to reduce various types of noise in round tube systems without causing significant pressure losses.

The casing consists of a galvanised, folded tube. The inner tube is made of perforated sheet metal with additional trickle protection. The connection is made using either plug-in connectors or a flange. The absorber material is non-flammable (A1/EN13501) and does not present any health risk (bio-soluble/VDI6022)

Air temperatures up to max. 150 °C

Flow velocities permissible up to max. 20 m/s

DELIVERY SIZES



Application limits

Gap velocity = max. 20 m/s

Internal pressure = -500/+1000 Pa

Temperature = 150 °C

6.2.1.1 TYPE RS50 WITH LIP SEAL

	[mm]						
ND	80	100	125	160	200	250	280
PD	50						
NL	300	600	900				

6.2.1.2 TYPE RS100 WITH LIP SEAL

	[mm]								
ND	100	125	160	200	250	315	400	500	630
PD	100								
NL	300	600	900	1200					

Nominal diameter = ND

Packing thickness (insulation) = PD

Nominal length= NL

Tube silencers available in various packing sizes



Tube silencer, type RS50

PRODUCT DESCRIPTION

Tube silencers are used to minimise various types of noise in round tube systems without causing significant pressure losses.

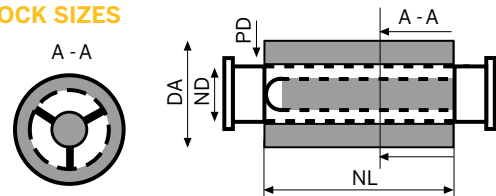
The casing consists of a galvanised, folded tube. The inner tube is made of perforated sheet metal with additional trickle protection.

The connection is made using either plug-in connectors or a flange. The absorber material is non-flammable (A1/EN13501) and does not present any health risk (bio-soluble/VDI6022)

Air temperatures up to max. 150 °C

Flow velocities permissible up to max. 20 m/s

STOCK SIZES



Nominal diameter = ND
Outer diameter = DA

Packing thickness (insulation) = PD
Nominal length = NL

Application limits

Gap velocity = max. 20 m/s

Internal pressure = -500/+1000 Pa

Temperature = 150 °C

6.2.1.4 TYPE RSD

	[mm]							
ND	80	90	100	125	160	200	250	
	280	315	355	400	500	630	800	
PD	25	50	100	150	200			
NL	500	700	1000	1250	1500			

6.2.1.5 TYPE RSK

	[mm]						
ND	250	315	400	500	630	800	1000
PD	100						
NL	500	750	1000	1250	1500	1750*	2000*

* from DN 630



Tube silencer, type RS50



Tube silencer, type RSK

Rigid tube silencer, flat design

PRODUCT DESCRIPTION

Tube silencers serve the purpose of reducing various types of noise in round tube systems without causing significant pressure losses.

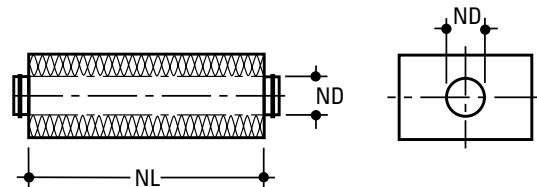
The casing consists of a galvanised, folded tube. The inner tube is made of perforated sheet metal with additional trickle protection.

The connection is made using either plug-in connectors or a flange. The absorber material is non-flammable (A1/EN13501) and does not present any health risk (bio-soluble/VDI6022)

Air temperatures up to max. 150 °C

Flow velocities permissible up to max. 20 m/s.

STOCK SIZES



TYPE FSR

	[mm]								
ND	80	100	125	160	200	250	315	400	450
NL	500		750		1000		1250		1500



Rigid tube silencer,
flat design



Flexible tube silencer

PRODUCT DESCRIPTION

Flexible tube silencers are easy to install and can be used for a wide range of applications. They are primarily used in the false ceiling area of ventilation systems.

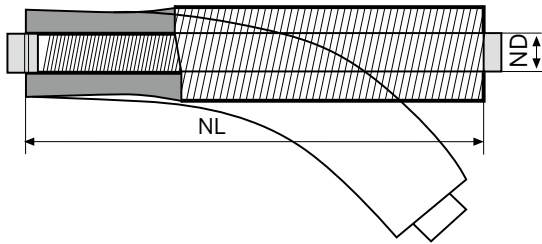
The casing consists of a flexible aluminium tube, and the inner lining is a perforated aluminium tube. The connection is made using plug-in connectors.

The absorber material is non-flammable as per DIN 4102 and does not present any health risk (bio-soluble or >KI40).

Air temperatures up to max. 150 °C

Flow velocities permissible up to max. 20 m/s

Minimum bending radius: $r = 3 \times d$



TYPE FLSDA

	[mm]									
ND	80	90	100	112	125	140	150	160	180	
	200	224	250	300	315	355	400			
PD	25					50				
NL	500		1000		1500		2000			

Application limits

Splitting speed = 20 m/s

Internal pressure = -500/+1000 Pa

Temperature = max. 150 °C



Flexible tube silencer
(telephony silencers)