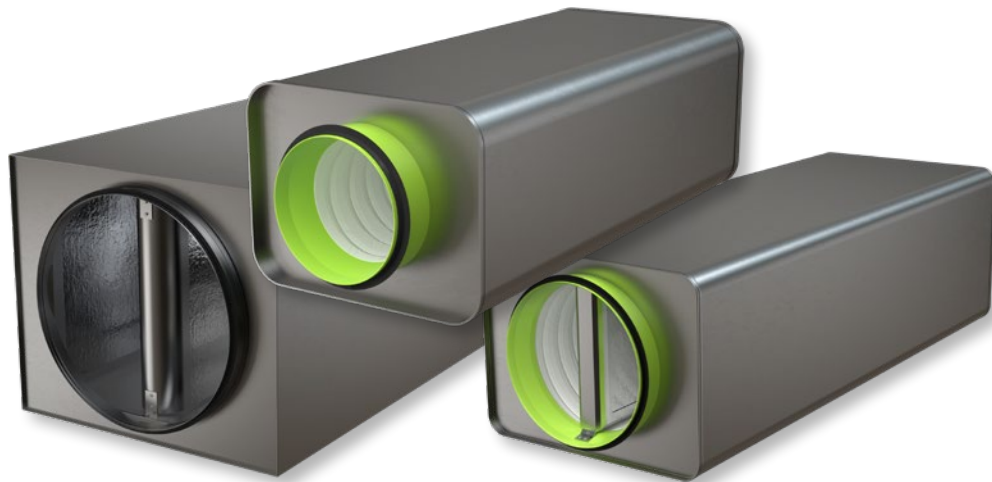


# CLA

Compact sound attenuator for circular ducts



## QUICK FACTS

- Extremely low installation height.
- Excellent noise attenuation
- Mineral wool covered with special polyester fabric
- Air tightness class D
- M1 classified (CLA-A)
- Low pressure drop
- Type-approved
- Included in the MagiCAD database
- Fire-resistance class EI30 to EI120\*

*\*See table for requisite safety distance*

# Technical description

## General

A rectangular sound attenuator with circular connection spigots.

Unique properties regarding installation height, fire-resistance class, fibre-migration proof design and sound attenuation.

Patented in terms of the self-supporting fibre-migration proof surface.

## Function

When we developed the new CLA, we based the design on what we consider to be the three most important characteristics of a sound attenuator. First and foremost, we wanted to create a product that occupies as little space as possible. If the occupants are to perceive a space as being light and airy despite limited ceiling height, then it is desirable to arrange the suspended ceiling as high as possible and this makes ventilation products with minimal installation height supremely interesting. Small installation dimensions also markedly increase the scope for installation and make the installation work much easier. The other aspect was the fitters. Building construction workers and fitters complain much too often about sharp corners and sharp edges on the products they handle. We understand exactly what they mean and promised ourselves that we would change this and make their workday both simpler and safer. The third and perhaps the most important requirement we set up when we began developing this product was that low installation height and installation-friendliness absolutely must not impair the sound attenuating properties of the new CLA, preferably the other way around.

## Patented solution

The result of this development work became a sound attenuator with the smallest installation height of any similar product available on the market, rounded and grip-friendly corners and edges as well as improved acoustic data.

The key to this success is a completely new, patented fabrication technique. The unique solution with the ends integrated directly into the connection spigots and our new fibre-migration proof lining where the mineral wool is covered with special polyester fabric inside the sound attenuator offers excellent tightness. A further feature of the solution is that our new CLA does not have any perforated sheet-metal between the insulation material and the air passage through the sound attenuator. In traditional solutions, pockets often form by the perforations where dirt can collect, a problem which we've been able to completely eliminate thanks to the self-supporting fibre-migration proof surface lining.

## Design

As standard CLA is made of galvanised sheet steel to environmental class C3 (equivalent to M2 as per AMA VVS2016). CLA is approved in terms of cleaning, preventing fibre migration, age resistance, emissions, etc.

## Accessories

No accessories are available for this product.

## Pressure drop

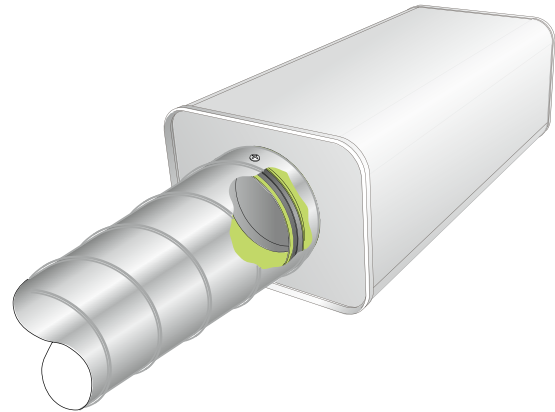
The net area is less than the connection diameter to provide improved sound attenuation data (especially in the low frequencies). The pressure drop that CLA duct-to-duct installation generates is specified in Diagrams 1 and 2.

The specified data is based on a uniform air stream in and out of the product. Any dampers, duct bends or other products in the ducting near the sound attenuator will increase its pressure drop and level of flow-generated sound, and will affect its sound attenuating properties.

## Installation

The connection spigots on this product are designed for connection to ducts only.

It is important to drive screws or blind rivets into the sheet-metal edge on the connection spigot. See Figure.



*Figure 1. Sheet-metal edge firmly fixed in the connection spigot. For extra reliability, the joint duct should be fastened in the curled up sheet-metal edge (at least 25 mm) inside the connection spigot.*

The product can be mounted by means of approved hangers that satisfy the provisions to load bearing capacity rating **R** corresponding to the fire resistance the structural element of the building, for example load bearing capacity rating **R 60** for elements of structure to fire-resistance class **EI60**.

## Maintenance

The product is maintenance-free under normal operating conditions.

In line with its type approval rating, the sound attenuator can be cleaned using a rotating plastic brush.

The normal temperature for (continuous) use is between -30° and +50° C.

## Environment

The relevant building product declaration is available from our website.

# Sizing

## Sound attenuation

Sound attenuation is specified to ISO 7235, i.e. static integral attenuation for duct products.

## Pressure drop

The net area is less than the connection diameter to provide improved sound attenuation data (especially in the low frequencies). The pressure drop that CLA duct-to-duct installation generates is specified in Diagrams 1 and 2.

The specified data is based on a uniform air stream in and out of the product. Any dampers, duct bends or other products in the ducting near the sound attenuator will increase its pressure drop and level of flow-generated sound, and will affect its sound attenuating properties.

## Software

Prosilencer is a program for sizing and selection of sound attenuators. Prosilencer can easily be found on [www.swegon.se](http://www.swegon.se)

Swegon ProSilencer plugin for MagiCAD for AutoCAD and Revit means that you can choose a duct section from the drawings and automatically search for suitable sound attenuator options for the duct based on the duct form, dimensions, air flow and MagiCAD sound data.

The Swegon ProSilencer plugin is a part of the Swegon MagiCAD plugin for AutoCAD and Revit, which enables direct data transfer between Swegon's calculation software and your MagiCAD project.

Diagram 1. Pressure drop – Air flow, CLA-A

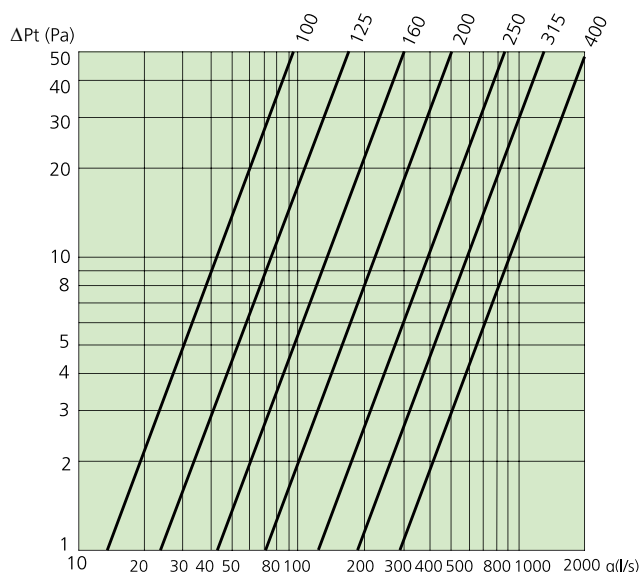
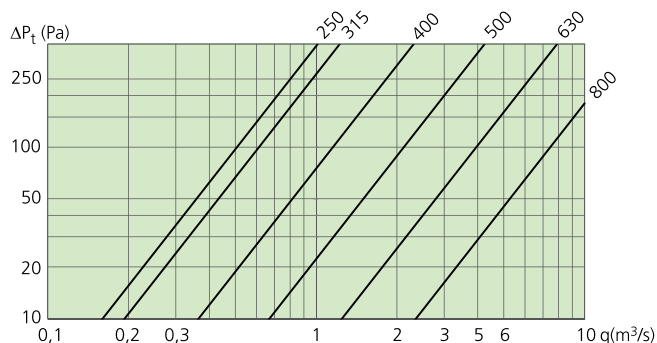


Diagram 2. Pressure drop – Air flow, CLA-B



# CLA-A

## Design

The new CLA is an industrially fabricated product designed for excellent sound attenuation and ease of installation. The standard CLA is made of galvanised sheet steel.

The connection spigots are fitted with rubber seal rings. Type-approved to Ductwork leakage class D

The fire-resistance class is met by providing adequate safety distance. Specified safety distance in the table refers to evacuating persons or 2.5 kW/m<sup>2</sup>.

CLA-A is type approved (TG SC0478-18) in terms of fire-resistance class E120. EI30, EI60 and EI120 are met provided that the safety distance is realised.

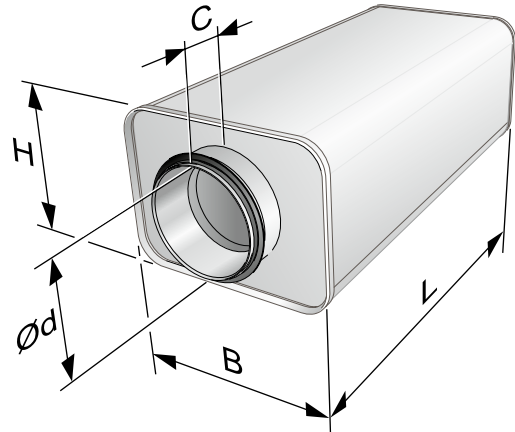


Figure 2. CLA-A – Dimension print

## Pressure drop

The pressure drop that CLA duct-to-duct installation generates is specified in Diagram 1.



## Dimensions CLA-A

Size	B mm	C mm	Ød mm	H mm	L mm	
100	208	45	99	152	500	1000
125	236	45	124	177	500	1000
160	274	45	159	212	500	1000
200	321	45	199	252	500	1000
250	394	45	249	302	500	1000
315	462	45	314	367	500	1000
400	553	70	399	458	500	1000

## Sound attenuation, CLA-A

Size	Length (mm)	Ød (mm)	H (mm)	Static integral attenuation, dB to ISO 7235								Weight (kg)	Safety distance (mm) *		
				63	125	250	500	1 K	2 K	4 K	8 K		EI30	EI60	EI120
100	500	99	152	7	9	14	26	34	42	35	26	3.0	50	50	60
	1000	99	152	7	17	26	44	50	50	50	39	5.7	50	50	80
125	500	124	177	5	9	13	21	29	35	31	20	3.7	50	50	60
	1000	124	177	7	16	23	39	50	50	47	35	6.9	50	50	80
160	500	159	212	5	8	13	17	23	31	21	17	4.7	50	50	60
	1000	159	212	7	13	22	32	45	50	38	25	8.7	50	50	90
200	500	199	252	5	8	11	15	20	22	14	14	6.0	50	50	60
	1000	199	252	7	13	20	28	40	45	27	20	11.2	50	50	100
250	500	249	302	5	6	8	11	15	16	10	7	7.8	50	50	70
	1000	249	302	6	11	15	20	28	31	18	14	14.6	50	50	110
315	500	314	367	4	6	7	9	12	8	8	5	10.1	50	50	70
	1000	314	367	6	10	12	17	24	21	12	7	18.9	50	50	120
400	500	399	458	4	6	7	9	12	8	6	4	13.7	50	50	70
	1000	399	458	5	9	12	16	23	14	8	6	25.4	50	50	120

\* = Specified safety distance for evacuating persons is based on a critical radiation level of 2.5 kW/m<sup>2</sup>

Safety distance to combustible material based on a critical radiation level of 10 kW/m<sup>2</sup> is 50 mm for all fire-resistance classes

# CLA-B

## Design

The CLA-B is a rectangular sound attenuator for connection to circular ducts, is equipped with an acoustic centre baffle for improved sound attenuation data.

The installation height is as much as 80 mm lower than equivalent conventional sound attenuators.

CLA-B up to size 400 is type approved (TG SC0478-18) in terms of fire-resistance class E120. EI30, EI60 and EI120 are met provided that the safety distance is realised.

The CLA-B is an excellent option, for kitchen flues for instance (held by means of a fixing clamp for simple removal for cleaning). The sound attenuator is also available in versions without baffle and with smaller duct connection sizes. For more information, contact your nearest Swegon Office.

The sound-attenuating material on dimension 500-800 ISOVER Cleantec® PLUS, is a type-approved insulation material consisting of long-fibred compressed mineral wool. The mineral wool is covered with a micro-perforated aluminium foil. ISOVER Cleantec® PLUS is type-approved for cleaning using liquids with a plastic brush or even a high-pressure cleaning apparatus. Naturally it also conforms to relevant standards regarding cleaning, fibre entrainment, resistance to ageing and emissions, etc. to type-approval number 2706/92.

The connection spigots are fitted with rubber seal rings. The standard CLA-B is made of galvanised sheet steel.

## Pressure drop

The pressure drop that CLA-B duct-to-duct installation generates is specified in Diagram 2.

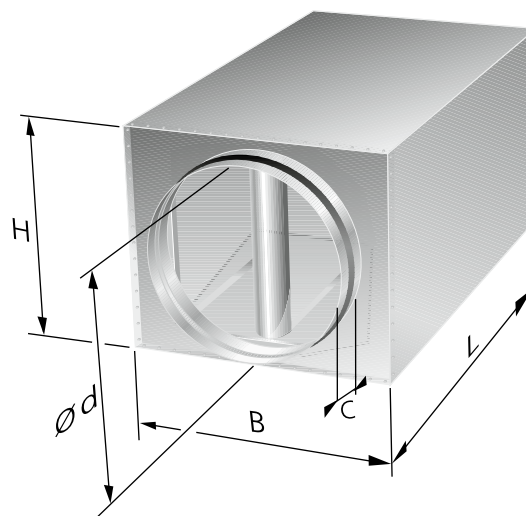


Figure 3. CLA-B – Dimension print

## Dimensions CLA-B

Size	B mm	C mm	Ød mm	H mm	L mm	
250	394	45	249	302	500	1000
315	462	45	314	367	500	1000
400	553	70	399	458	500	1000
500	680	60	499	580	600	1200
630	810	60	629	710	600	1200
800	980	60	799	880	600	1200

## Sound attenuation, CLA-B

Size	Length (mm)	Ød (mm)	H (mm)	Static integral attenuation, dB to ISO 7235								Weight (kg)	Safety distance (mm) **		
				63	125	250	500	1 K	2 K	4 K	8 K		EI30	EI60	EI120
250*	500	249	302	5	6	8	14	24	32	20	9	8.4	50	50	70
	1000	249	302	7	12	17	30	43	40	34	16	15.4	50	50	110
315*	500	314	367	4	6	8	14	25	19	14	8	10.7	50	50	70
	1000	314	367	6	10	14	26	45	42	21	12	19.9	50	50	120
400*	500	399	458	4	6	8	14	22	16	10	6	14.4	50	50	70
	1000	399	458	5	9	14	23	40	24	13	9	26.5	50	50	120
500	600	499	580	4	5	15	23	29	20	15	14	24.0	-	-	-
	1200	499	580	5	7	16	24	30	22	16	14	41.0	-	-	-
630	600	629	710	3	4	12	19	22	17	12	9	30.5	-	-	-
	1200	629	710	4	6	13	20	23	18	12	10	50.0	-	-	-
800	600	799	880	2	2	10	12	11	7	6	2	39.5	-	-	-
	1200	799	880	3	4	11	13	11	8	7	3	64.0	-	-	-

\* = Design as CLA-A + centre baffle.

\*\* = Specified safety distance for evacuating persons is based on a critical radiation level of 2.5 kW/m<sup>2</sup>

Safety distance to combustible material based on a critical radiation level of 10 kW/m<sup>2</sup> is 50 mm for all fire-resistance classes

# Specification

## Product

Rectangular sound attenuator with circular connection spigots

<b>CLA-A</b>	aaa-	bbbb
Connection dimensions: 100, 125, 160, 200, 250, 315, 400		
Length: 500, 1000		

<b>CLA-B</b>	aaa-	bbbb
Connection dimensions: 250, 315, 400, 500, 630, 800		
Length: Connection dimensions: 250, 315, 400: 500, 1000 Connection dimensions 500, 630, 800: 600, 1200		

## Accessories

No accessories are available for this product.

# Specification text

Example of a specification text as per VVS AMA 12.

**QKB.1** Straight sound attenuator with circular connection spigots.

### Example 1

Swegon type CLA-A compact sound attenuators for connection to circular ducts, with the following functions:

- Type-approved
- Fire-resistance class E120
- Fire-resistance Class EI60 with 50 mm safety distance
- Air tightness class D
- M1 classified
- Self-supporting surface layer
- Protection for fibre migration and cleanable

Designation:	CLA-A 160-1000	xx items
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### Example 2

Swegon type CLA-B compact sound attenuators for connection to circular ducts, with the following functions:

- ISOVER Cleantec® PLUS wet-cleanable
- Equipped with centre sound baffle

Designation:	CLA-A 630-1200	xx items
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