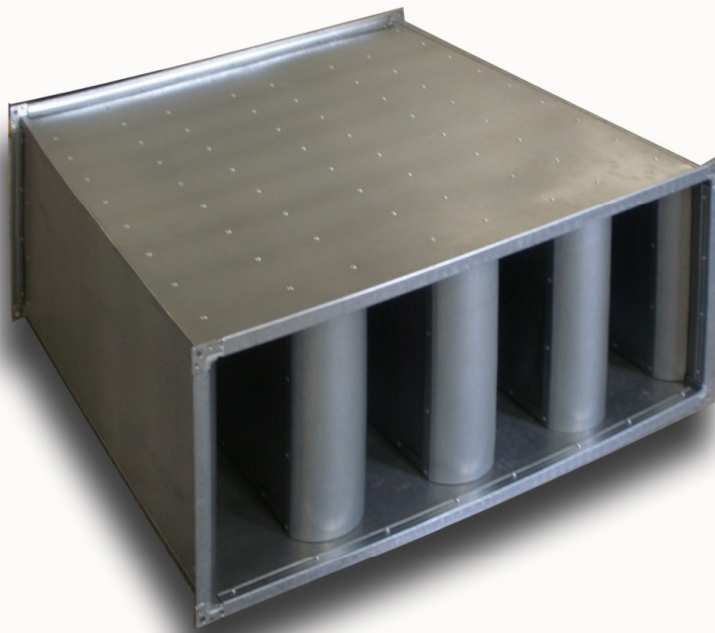




# Sound Attenuators





## APPLICATIONS

- ▶ **Plant room ventilation**
- ▶ **Refrigeration plant**
- ▶ **Relief air from factories and workshops**
- ▶ **Outdoor air ventilation systems**
- ▶ **Ventilation to acoustic equipment enclosures**
- ▶ **Equipment barrier wall systems**
- ▶ **Power generation equipment**
- ▶ **Air conditioning installations and cooling towers**





IGC Silencers were developed with superior Dynamic Insertion Loss and Static Pressure characteristics. The data for these products has been developed in strict accord with ASTM E477 in independent, nationally recognized laboratories.

## KEY DESIGN FEATURES

- Solid Radius Nosepiece
- Fully Tapered Pod
- Uniform Expansion Angle
- Superior Static Pressure Performance
- Acoustically transparent perforated liner
- Acoustical grade fibrous media
- 1-1/2" slip flange

## PRIMARY APPLICATIONS

- **Standard:** VAV boxes, rectangular ductwork, air handling units, generator radiator silencing, tunnel ventilation, general ventilation
- **With Non-fibrous Liner:** Cleanroom systems, hospitals, chemical laboratories, cooling towers (DM), fume hood exhaust

## CHARACTERISTICS

- Acoustical attenuation across all eight octave bands
- Can be stacked to make large banks
- Can be sized to match duct dimensions, eliminating need for expensive transitions between silencer and ductwork
- IGC will manufacture silencers of any intermediate length.

## ACOUSTIC INFILL

Absorptive material is of acoustical grade and is compressed not less than 5% to prevent settling. Material is vermin and moisture proof and impart no odor to the airstream. Fibrous media exhibits not more than the following fire hazard classification values when tested in accord with ASTM E84, NFPA 255, or UL-723 test methods:

Flamespread . . . . .	.20
Fuel Contributed . . . . .	.15
Smoke Developed . . . . .	.20

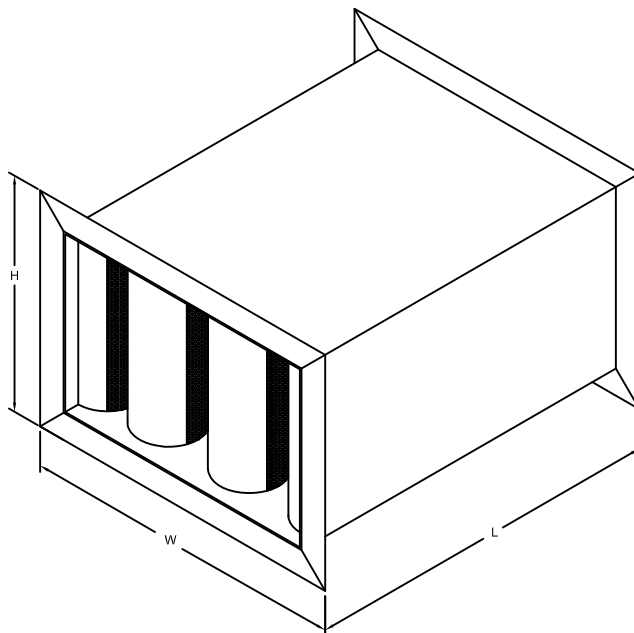


## DESCRIPTION

SA rectangular dissipative sound attenuators are designed with fully tapered pods and solid radius nosepiece to minimize resistance to airflow while maintaining high insertion losses.

## STANDARD CONSTRUCTION

- Casing:** 20 gauge (1.0 mm) thick galvanized steel sheet
- Perforated Sheet:** 24 gauge (0.7 mm) thick galvanized steel sheet with 3 mm diameter perforations at 5.0 mm staggered pitch
- Baffles:** 20 gauge (1.0 mm) thick galvanized steel sheet filled with sound absorbing material and having bull nose shape at air entering end and flat shape at air leaving end
- Sound Absorbing Material:** Fiberglass slabs of 50 mm thick of density- 48 kg/m<sup>3</sup>, with black glass fibre tissue cloth covering at air moving end
- Finish:** Mill with touch up on welds
- Options:**  
Flanges: Duct mate flange with corners for bolting  
Baffles: 100 mm or 200 mm deep baffles



# SOUND ATTENUATORS PERFORMANCE DATA



Below SA performance charts are based on tests performed at Cert-Aire Laboratory at Arlington Heights, Illinois in accordance with ASTM E-477 standard (Standard Method of Testing Duct Liner Materials and Prefabricated Silencers for Acoustical and Airflow Performance).

NET INSERTION LOSS (dB) AND PRESSURE DROP (WG)										
LENGTH (INCH)	FACE VELOCITY (FPM)      STATIC PRESSURE DROP (WG)		OCTAVE BAND NUMBER & CENTER FREQ. (Hz)							
			1	2	3	4	5	6	7	8
			63	125	250	500	1000	2000	4000	8000
INSERTION LOSS (dB)										
36	-2000	0.81	5	11	21	30	37	28	14	10
	-1000	0.20	7	10	20	30	38	29	16	11
	0	-	5	8	18	29	37	33	20	13
	1000	0.20	5	7	17	27	35	32	20	13
	2000	0.81	3	7	16	24	33	32	20	13
60	-2000	0.95	9	17	35	43	51	43	27	16
	-1000	0.24	9	14	32	44	51	47	27	16
	0	-	6	12	28	40	48	50	31	19
	1000	0.24	6	11	26	40	48	50	31	19
	2000	0.95	4	11	25	38	48	46	31	19
84	-2000	1.11	9	22	43	46	52	45	34	19
	-1000	0.28	11	23	42	46	52	51	37	19
	0	-	9	17	37	43	49	54	41	22
	1000	0.28	7	15	33	43	49	54	41	22
	2000	1.11	5	14	31	41	49	48	38	22
120	-2000	1.28	15	27	45	51	55	48	45	21
	-1000	0.32	16	26	47	55	52	49	47	21
	0	-	10	23	49	56	58	59	55	30
	1000	0.32	9	21	45	56	58	59	55	30
	2000	1.28	7	19	42	53	58	52	53	30

# SOUND ATTENUATORS MAINTENANCE INSTRUCTIONS



## **DUCT SILENCERS INSTALLED INDOORS**

Duct silencers installed inside buildings are designed to be essentially maintenance-free for the life of the product. The same method and routine used for periodic cleaning of the ductwork will also apply to the duct silencers. The acoustic media used in duct silencers is protected by the perforated metal liner so it will not erode during normal duct cleaning with vacuum equipment.

## **DUCT SILENCERS INSTALLED OUTDOORS**

Silencers exposed to the outdoors should have all external joints and seams caulked with suitable sealant. Wherever possible, silencers should be shielded from exposure to moisture from rain or snow by providing suitable hoods, louvers or dampers. Occasional exposure of the silencers to moisture will not affect the longevity or the acoustical performance, provided that the water evaporates after exposure. If water is retained inside the silencer module casing or baffles, premature rusting may occur. To prevent this, drain holes should be provided in the silencer casing at all locations where water can collect. Duct silencers installed outdoors should be inspected at 6-month intervals. Silencers specified for outdoor locations require all seams to be caulked with mastic sealant for waterproofing, and all exposed welds to be coated with zinc-rich paint for rust proofing. Inspect the condition of the joints and replace loose or damaged sealant. Inspect the welds and casings for signs of rusting. Remove visible rust using a wire brush and recoat with zinc-rich spray paint.

## **SILENCERS EXPOSED TO HIGH HUMIDITY**

Silencers exposed to high humidity levels, such as those installed on cooling tower discharge fans, should be inspected frequently for signs of rusting. Remove visible rust using a wire brush and recoat with zinc-rich spray paint. As a general rule, the lifetime of a silencer exposed to high humidity will be less than one installed in a dry indoor location. Replacement of the silencer may be required at 10-year intervals or even sooner under more extreme conditions.

## **SILENCERS EXPOSED TO CORROSIVE ELEMENTS**

Silencers specified for installation in locations where the outer casings will be exposed to high temperature or corrosive elements are typically constructed with corrosive-resistant materials or finished with corrosion-resistive coatings. Similarly, silencers that must convey high-temperature or corrosive gases will be constructed internally with non-corrosive materials. The required maintenance and expected lifetime of these products will vary. Consult the factory for specific maintenance information for silencers used in such applications.