

# Acoustic Barriers

A complete range of solutions for solving environmental noise problems

- Galvanised steel or Aluminium
- Free-draining
- Lightweight
- Easily installed
- Sound absorptive
- Weather tested finishes
- Demountable and relocatable
- Freestanding or add-on cladding
- Horizontal or vertical installation



# IAC Acoustics

## Making the World a Quieter Place

Founded on an unrivalled history of engineering with some of the most pioneering discoveries in the industry, the IAC Acoustics brand is synonymous with technological innovation.

From controlling noise at a power station to tuning the sound in a TV or radio studio, IAC Acoustics has had a positive impact on society and helped to shape what can be achieved to make speech more intelligible, music more enjoyable, reduce the impact of industrial noise and protect people's sense of hearing.

The continual success of our products and services over the decades has brought the brand a reputation for quality and reliability among customers, whether they are multinational corporations or independent family businesses. This is supported by the expertise and passion of our workforce, the people behind the products, including designers, engineers and industry specialists.

To face the ever increasing noise reduction demands of the future, we will strive to further enhance our ability to reduce excessive noise. We aim to focus on developing tomorrow's solution today, innovating faster and delivering solutions that meet the requirements of the next generation. In doing so, we will stay true to our key values and founding philosophy to make the world a quieter place.

# Acoustic Barriers

A complete range of certified, high performance solid and louvred acoustic barriers to solve a wide variety of environmental noise pollution problems.

- Guaranteed, proven, sound reduction
- Sound absorptive surfaces minimise reflected noise
- Rugged, abuse-resistant, long-lasting steel construction
- Weather resistant and almost maintenance-free
- Wide choice of finishes to blend with individual landscapes

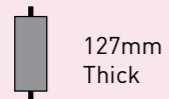

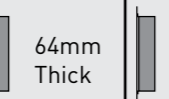


## A Complete Range of Barrier Systems

### Absorptive

Free standing barrier systems - Type FS and SFS - are sound absorptive on one or both sides, offer excellent sound transmission loss (STL) characteristics and are rapidly assembled from prefabricated components. Panels are simply stacked between steel posts to achieve the desired height.

### Louvre Screens

Our range of Noishield™ and Slimshield™ louvres provide highly effective, stylish acoustic screens for mechanical services plant (such as pumps, compressors and chillers) and are particularly suitable when ventilation air must pass freely through the barrier (see the complete range in our acoustic louvres catalogue).

		Type FS	Type SFS	Type C	Type C12	Type C38
<b>Configuration</b>		 127mm Thick	 127mm Thick	 64mm Thick	 76mm Thick	 102mm Thick
<b>Weight (Kg/m<sup>2</sup>)</b>	<b>Steel</b>	FS/S - 29.9	SFS/S - 36.7	C/S - 9.8	C12/S - 11.2	C38/S - 13.7
	<b>Aluminium</b>	FS/A - 22.0	SFS/A - 25.4	C/A - 5.4	C12/A - 6.8	C38/A - 9.3
<b>Application</b>		Freestanding alongside noisy equipment	Freestanding between multiple noise sources	Apply to new or retrofit existing metal, wood, brick, concrete, stone or other noise-reflecting walls. Select Types C12 & C38 for enhanced 125 Hz sound absorption.		

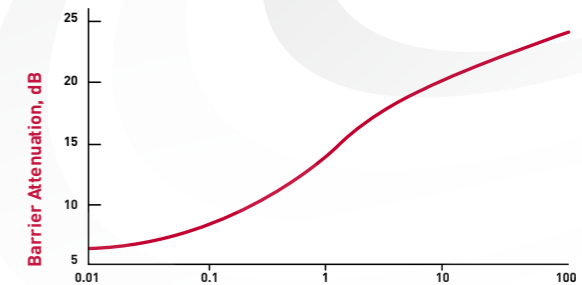
### Applications

- Data Centres
- Suitable for an extensive range of applications including:
- Screening Mechanical Plant such as Generators, Compressors and Chillers
- Roads and Railways
- Car Washes / Drive Thru's
- Aircraft Pens and Airport Boundaries
- Power Stations
- Electricity Transformers
- Factories and other Manufacturing Sites
- Loading Bays
- Railways

# Free-standing Solid Barriers

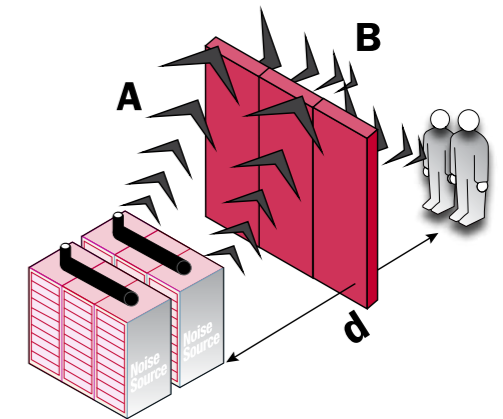
## Barrier Attenuation

Theoretical attenuation, provided by solid barriers, is shown on the graph below. In practice, the maximum barrier attenuation cannot be greater than the barrier's sound transmission loss (STL).



$$\text{Fresnel Number} = N = \frac{2 \delta}{\lambda}$$

Where:  $\lambda$  = Wavelength of Sound  $\delta$  = A + B - d



Sound absorptive surfaces reduce reverberant build-up between parallel barriers and other reflective surfaces and increase the ability of barriers to attenuate noise.

## Acoustic Performance

All IAC Acoustics Noishield™ barriers offer exceptional transmission loss characteristics and incorporate proven, sound absorbing materials which prevent noise reflections. Detailed, laboratory-tested acoustic ratings for free standing barriers appear in the table below.

## Sound Transmission Loss Data, dB

1/1 Octave Band Centre Frequency, Hz	125	250	500	1k	2k	4k	8k	STC
FS/S and SFS/S	21	34	40	33	32	26	37	30
FSt/S	24	38	40	41	35	29	34	33
FS/A and SFS/A	21	32	37	30	37	28	30	31

## Sound Absorptive Coefficients

1/1 Octave Band Centre Frequency, Hz	125	250	500	1k	2k	4k	8k	NRC
FS/S FS/A & FSt/S	1.12	1.12	1.10	1.01	0.89	0.76	0.57	1.05
SFS/S & SFS/A	0.49	1.04	1.14	1.05	0.96	0.95	0.87	1.05
C/S & C/A	0.30	1.05	1.07	1.01	0.96	0.88	0.78	1.00
C12/S & C12/A	0.48	1.08	1.10	0.99	0.92	0.83	0.78	1.00
C38/S & C38/A	0.68	1.19	1.10	1.03	0.90	0.81	0.76	1.05

All data in accordance with ISO standard 354, ASTM C 423 and E 413 with 11.15m<sup>2</sup> test sample in 262m<sup>3</sup> reverberation room. Coefficients greater than 1.0 result from edge diffraction effects. Do not use sound absorption values greater than 0.95.



# Acoustic Barriers

## Installation & Maintenance

We offer a full design, delivery and installation service, which can also include all necessary structural steelwork. Barriers can be erected by IAC's own, trained personnel. Alternatively, they can be installed by others (contractors, end users etc), preferably under the supervision of an IAC Acoustics engineer.

All IAC Acoustics barriers have guaranteed, rust-proof finishes. Periodic cleaning can be undertaken using water/mild detergent. More stubborn stains and graffiti can be removed using harsher cleaning chemicals, though we only recommend these are applied to Polyester Powder Coated (PPC) surfaces.

## Finishes

IAC Acoustics Noishield™ barriers are available in a wide range of standard finishes and colours. These include:

- Galvanised Steel
- Aluminium
- Polyester Powder Coating (PPC)
- Vinyl Coated Steel

Special, optional finishes are also available. For example, barriers can be faced with brick, stone, wood, slate and other materials.

## Features & Benefits

- Proven, certified, sound transmission loss (noise reduction)
- Sound absorption to minimise reflected sound
- Tough, abuse-resistant steel/aluminium construction
- Weather-resistant, rust-proof, durable finishes which blend sympathetically with the surrounding landscape
- Very low maintenance and easy to clean
- Assembled from prefabricated components for fast on-site installation
- Structural steelwork included on request

## Applications

IAC Acoustics Noishield™ barrier systems give communities effective protection from a large range of noise pollution sources.

These include:

- Utilities: Power Stations, Electricity Transformers, Gas Regulator Centres, Water Pumping Stations
- Transport: Railways, Roads and Airports
- Mechanical Plant: Generators, Compressors, Pumps, Motors and Chillers
- Manufacturing and Distribution: Factories and other Industrial Facilities, Loading/Unloading Bays, Building Construction Sites

# Contacts



## Head Office - Winchester, UK

T: +44 (0) 1962 873 000  
F: +44 (0) 1962 873 111  
E: info@iac-uk.com



## Australia

T: +61 (0) 2 8781 0400  
F: +61 (0) 2 9725 2939  
E: info@iac-australia.com.au



## Canada

T: +1 (905) 612 4000  
F: +1 (905) 612 8999  
E: toronto@iac-acoustics.com



## China

T: +86 (0) 769 89899966 802 F: +86 (0) 769 89899966 810 E: china.sales@iac-china.com



## Denmark

T: +45 36 77 88 00  
F: +45 36 78 12 30  
E: mail@iac-nordic.dk



## France

T: +33 (0) 3 20 05 88 88  
F: +33 (0) 3 20 05 88 99  
E: france@iac-acoustics.com



## Germany

T: +49 (0) 2163 9991 0  
F: +49 (0) 2163 9991 23  
E: deutschland@iac-gmbh.de



## Italy

T: +39 02 48 44 22 1  
F: +39 02 48 44 22 22  
E: italia@iac-acoustics.com



## Spain

T: +34 93 321 6684  
F: +34 93 321 6249  
E: espana@iac-acoustics.com



## UAE - Dubai

T: +971 42 517 456  
F: +971 42 517 457  
E: dubai@iac-acoustics.com



## USA - Houston

T: +1 (832) 554 0980  
F: +1 (832) 554 0990  
E: houston@iac-acoustics.com



## USA - Lincoln

T: +1 (402) 323 7272  
F: +1 (402) 323 7271  
E: lincoln@iac-acoustics.com



## USA - New York

T: +1 (718) 931 8000  
F: +1 (718) 863 1138  
E: newyork@iac-acoustics.com



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