



# 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

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## 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

## 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.

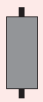
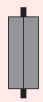


### Louvre Screens

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).

## 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 minimize reflected noise
- Rugged, abuse-resistant, long lasting steel construction
- Weather resistant and almost maintenance-free
- Wide choice of finishes to blend with individual landscapes

|                |           | Type FS  | Type SFS   | Type C12   | Type C38   |
|----------------|-----------|--|--|--|--|
| Configuration  |           |  127mm Thick |  127mm Thick |  76mm Thick  |  122mm Thick |
| Weight (Kg/m²) | Steel     | FS/S - 29.9  | SFS/S - 36.7   | C12/S - 11.2   | C38/S - 13.7   |
|                |           | FS/St/S* - 42.0  |  |  |  |
|                | Aluminium | FS/A - 22.0  | SFS/A - 25.4   | C12/A - 6.8  | C38/A - 9.3  |
| Application    |           | 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 125Hz sound absorption. |  |

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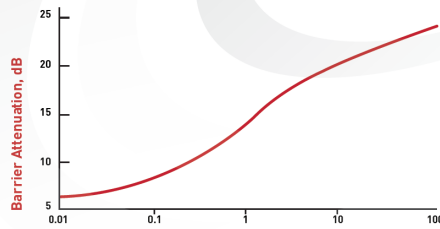
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# Free standing Solid Barriers

## Barrier Attenuation

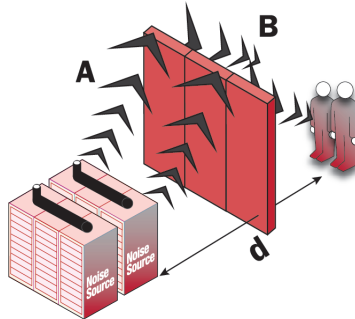
Theoretical attenuation, provided by solid barriers, is shown on the graph below. In practice, the maximum barrier attenuation cannot be greater than the barrier's sound transmission loss (STL).



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

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.



## Sound Transmission Loss Data, dB

| 1/1 Octave Band Centre Frequency, Hz | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | STC |
|--------------------------------------|----|-----|-----|-----|----|----|----|----|-----|
| FS/S and SFS/S                       | 18 | 20  | 32  | 39  | 32 | 31 | 28 | 35 | 30  |
| FSt/S                                | 21 | 23  | 36  | 40  | 32 | 33 | 30 | 33 | 33  |
| FS/A and SFS/A                       | 17 | 23  | 30  | 44  | 51 | 51 | 39 | 39 | 43  |

## 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 |
| 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 |

Test Report 723 20f 95 723 20o 95 723 21e 95 refers All data in accordance with ISO standard 354 ASTM C 423 and E 413 with 1115m test sample in 262m reverberation room Coefficients greater than 10 result from edge diffraction effects Do not use sound absorption values greater than 0.95

## 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 this page's table.

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# 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

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IAC has worldwide offices and manufacturing plants in the UK, Australia, Canada, China, Malaysia, Indonesia, Thailand, Philippines Denmark, France, Germany, Italy, Spain, UAE - Dubai, USA Houston, USA Lincoln, USA - New York.

