



**A complete range of certified, high performance Noishield® 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

**Suitable for an extensive range of applications including:**

- Screening Mechanical Plant such as Generators, Compressors and Chillers
- Roads and Railways
- Aircraft Pens and Airport Boundaries
- Power Stations
- Electricity Transformers
- Factories and other Manufacturing Sites
- Loading Bays



**acoustic barriers**

## A COMPLETE RANGE OF BARRIER SYSTEMS

- Free Standing Barriers

IAC 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.

- Cladding Modules

IAC makes three different types of acoustic panels - C, C12 and C38 - which are specifically designed to attach to new or existing walls/barriers to improve their acoustic performance. These sound-absorptive cladding modules are especially good for reducing reflected sound.

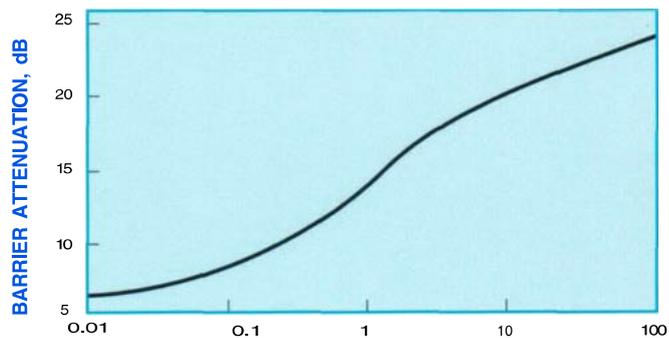
- Louvre Screens

IAC's 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.



## BARRIER ATTENUATION

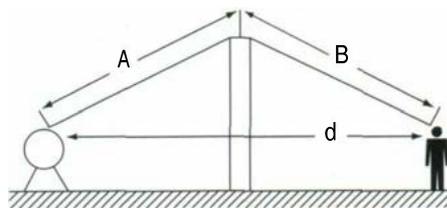
Theoretical attenuation, provided by solid barriers, is shown on the graph below. In practice, the maximum barrier attenuation cannot be greater than the barrier's sound transmission loss (STL).



$$\text{FRESNEL NUMBER} = N = \frac{2\delta}{\lambda}$$

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.



**FREE STANDING BARRIERS (TYPES FS & SFS) AND CLADDING MODULES (TYPES C, C12 & C38)**

CONFIGURATION		TYPE FS	TYPE SFS	TYPE C	TYPE C12	TYPE C38
		 Thickness 127 mm	 Thickness 127 mm	 Thickness 64 mm	 Thickness 76 mm	 Thickness 102 mm
Weight (kg/m <sup>2</sup> )	Steel	FS/S - 29.9	SFS/S - 36.7	C/S - 9.8	C12/S - 112	C38/S - 13.7
	Aluminium	FS/St/S* - 42.0	-	C/A - 5.4	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 125 Hz sound absorption.		

**ACOUSTIC PERFORMANCE**

All IAC Noishield® acoustic barriers offer exceptional transmission loss characteristics and incorporate proven, sound absorbing materials which prevent noise reflections. Free standing barriers (Types FS and SFS) can give up to 14dB transmission loss at 125Hz. Detailed, laboratory-tested acoustic ratings for free standing barriers and cladding modules appear in the table below.



1/3 Octave Band Centre Frequency, Hz	125	250	500	1K	2K	4K	8K	
<b>SOUND TRANSMISSION LOSS DATA, dB</b>								<b>STC</b>
FS/S and SFS/S	21	34	40	33	32	26	37	30
FS/St/S	24	38	41	33	35	29	34	33
FS/A and SFS/A	21	32	37	30	37	28	30	31
All data in accordance with ASTM E90 and E413								
<b>SOUND ABSORPTIVE COEFFICIENTS</b>								<b>NRC</b>
FS/S, FS/A and FS/St/S	1.12	1.12	1.10	1.01	0.89	0.76	0.57	1.05
SFS/S and SFS/A	0.49	1.04	1.14	1.05	0.96	0.95	0.87	1.05
C/S and C/A	0.30	1.05	1.07	1.01	0.96	0.88	0.78	1.00
C12/S and C12/A	0.48	1.08	1.10	0.99	0.92	0.83	0.78	1.00
C38/S and 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.



**LOUVRE SCREENS**

Full specifications and performance details of IAC's two acoustic louvre systems - both ideal for creating acoustic screens - can be found in IAC Bulletin No AL/1.00

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## INSTALLATION & MAINTENANCE

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

All IAC 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.

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## FINISHES

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IAC 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.



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## QUALITY

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IAC products and structures are designed and built in accordance with numerous international technical specifications and standards. The company has also been assessed and accredited with the BS EN ISO 9001 Quality Standard.

## FEATURES AND 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 Noishield® barrier systems give communities effective protection from a large range of noise pollution sources. These include:

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





*Pictures above and below show IAC's production plant at its European Headquarters in Winchester, UK*

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## ABOUT US

Established in 1949, IAC is the world's largest provider of noise and acoustic control products, structures and test facilities. Employing over 650 people, the company has major research and development centres in the USA and France and manufacturing plants on five separate sites in the UK, France, Denmark, the USA and Mexico. IAC's European Headquarters are located in Winchester, UK, approximately 110km (70 miles) from London.

In addition to the facilities directly owned and operated by the company, IAC works in close partnership with several other manufacturing organisations, notably in eastern Europe. It also has a large network of technical sales engineers, agents and distributors, offering advice and assistance to customers around the world. Several of these manufacture IAC products under license.



## THE IAC PRODUCT

### RANGE

IAC offers new and imaginative solutions to an extraordinarily wide range of noise pollution and sound quality problems. For example, we create facilities for testing jet engines and developing quieter motor vehicles. We build TV and radio studios and install soundproof rooms in hospitals for hearing testing (audiology). We shroud noisy plant and machinery with special acoustic enclosures, build road barriers, silence air conditioning systems and combat the noise emissions of large, powerful gas turbine engines. We install partitions in hotel function rooms and provide school children with the special facilities they need to learn foreign languages and practice playing their musical instruments. And our acoustic doors and windows can be found in almost every type of building you can think of.

*making  
the world a  
quieter place*

