

# Industrial Noise Control

Solutions to industrial and environmental noise problems



# Industrial Noise Control

**IAC Acoustics is among the world's leading providers of solutions to industrial noise problems.**

A comprehensive and thoroughly proven range of products is effective both in combating workplace noise problems - to ensure compliance with health and safety legislation - and in eliminating noise pollution from manufacturing / industrial sites.

IAC Acoustics provides a complete service including:

- Noise surveys and acoustic evaluations
- Customised design solutions with adequate provision for maintenance, access, ventilation and cleaning etc
- Manufacture of all components / structures to agreed specifications
- Delivery, installation and commissioning

## Product Range

- Modular acoustic enclosures for noisy plant and machinery
- Soundproof rooms for product testing
- Factory offices and control / observation rooms
- Partial acoustic enclosures and sliding covers
- Acoustic barriers and screens
- Sound-absorptive wall linings and ceiling baffles
- Acoustic doors and windows
- Silencers and acoustic louvres for ventilation and mechanical plant equipment

## Design advantages

- Guaranteed acoustic performance and compliance
- Clean, rapid installation, keeps building time and mess / disruption to an absolute minimum
- Strong, lightweight structures are approximately 1/3 the weight of conventional structures of the same acoustic performance
- Panels can be dismantled and relocated at low cost and with no loss in acoustic performance







Typical stages of installation...



# Moduline™

## The proven, cost effective method for creating acoustic structures, barriers and panels.

Moduline™ is a range of high-performance acoustic panel systems from which IAC has successfully created complete acoustic structures and walls for over 60 years. Features Include:

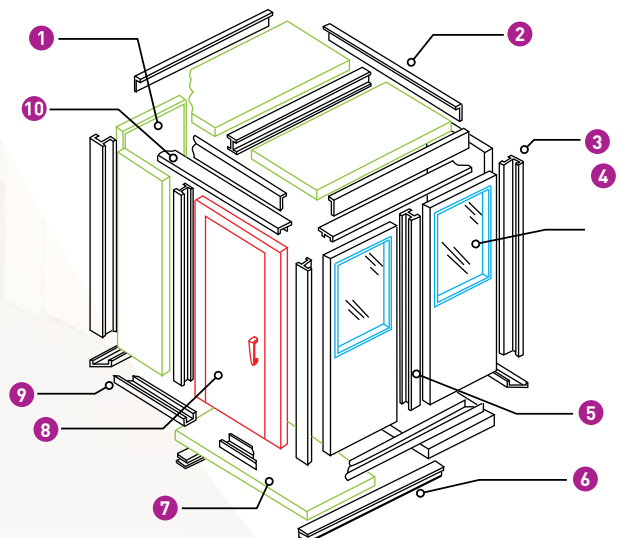
- Guaranteed acoustic performance
- Combined Sound Transmission Loss (STL) and sound absorption
- Doors / windows and ventilation systems readily incorporated
- Simple, rapid assembly
- Strong, durable construction
- Fire resistant
- Full demountability

For each individual project, it is possible to select a panel design which has the required sound transmission loss (STL) and sound absorption ratings. These ratings, amongst other details can be seen within Table 1 on page 5.

The flexibility of Moduline™ panels means that the following types of noise control solutions can be configured:

- Straight walls / barriers
- Partial enclosures / shields
- Access control, including doors, windows and hatches
- Complete enclosures including acoustic roofs and isolated / floating floors
- Silent ventilation packages for all types of enclosure from personnel shelters to power generation plant rooms

- 1 Panel - inner surface typically perforated
- 2 Roof apron
- 3 Corner joiner
- 4 IAC Noise-Lock® acoustic window
- 5 IAC 'H' panel joiner
- 6 Isolation rail
- 7 Floor panel
- 8 IAC Noise-Lock® acoustic door
- 9 Floor channel
- 10 Roof channel

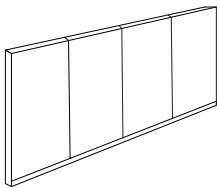


## Moduline™ Panel Details

	Panel	Acoustic Rating				Panel / Door Thickness	Octave Band Centre Frequency, Hz								NRC	Weight
		Rw	R'w	STC	NIC		63	125	250	500	1k	2k	4k	8k		
		Sound Transmission Loss, dB														
Panels	Noise-Lock® 2	45	43	44	42	102mm / 4"	27	30	32	41	50	59	67	71	0.95	45.9kg/m <sup>2</sup> (9.40lb/ft <sup>2</sup> )
	Noise-Lock® 2 (hard)	60	58	61	59	102mm / 4"	24	40	50	57	65	73	80	78	N/A	51.2kg/m <sup>2</sup> (10.5lb/ft <sup>2</sup> )
	Noise-Lock® 3	57	55	59	57	102mm / 4"	19	33	52	65	77	80	80	73	0.80	61.7kg/m <sup>2</sup> (12.6lb/ft <sup>2</sup> )
	Noise-Lock® 4	44	42	44	42	102mm / 4"	-	25	31	43	52	64	74	-	0.80	38.1kg/m <sup>2</sup> (7.80lb/ft <sup>2</sup> )
	Noise-Lock® 5	53	51	55	53	102mm / 4"	17	29	45	53	58	63	64	60	0.95	56.7kg/m <sup>2</sup> (11.6lb/ft <sup>2</sup> )
	Noishield Regular	40	38	40	38	102mm / 4"	20	21	27	38	48	58	67	66	0.80	30.4kg/m <sup>2</sup> (6.2lb/ft <sup>2</sup> )
	Noishield Regular (hard)	55	53	56	54	102mm / 4"	22	33	45	52	58	68	75	65	N/A	35.7kg/m <sup>2</sup> (7.3lb/ft <sup>2</sup> )
Doors	Noise-Lock® D-100	50	45	51	46	64mm / 2½"	22	25	45	49	51	54	60	52	-	44kg/m <sup>2</sup> (9lb/ft <sup>2</sup> )
	Noise-Lock® D-200	52	47	53	48	64mm / 2½"	22	30	47	52	54	51	57	55	-	54kg/m <sup>2</sup> (11lb/ft <sup>2</sup> )
	Noise-Lock® D-300	53	48	54	49	89mm / 3½"	23	32	52	53	53	52	62	≥62	-	78kg/m <sup>2</sup> (16lb/ft <sup>2</sup> )
	Noise-Lock® D-400	59	54	61	56	89mm / 3½"	28	33	54	58	60	62	≥66	≥66	-	80kg/m <sup>2</sup> (16lb/ft <sup>2</sup> )
	Noise-Lock® D-500	63	58	64	59	127mm / 5"	32	40	56	61	64	66	≥68	≥68	-	88kg/m <sup>2</sup> (18lb/ft <sup>2</sup> )

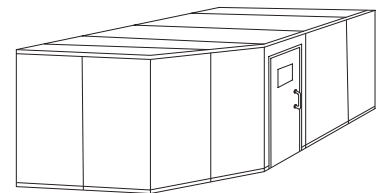
Table 1 - Moduline Panel Details

## Typical Moduline™ Configurations



### Straight Walls - Barriers

Walls can be used as standalone noise barriers or as part of an enclosure.

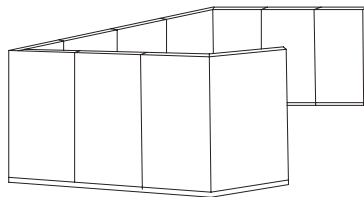


### Complete Enclosures

Using acoustic roof panels and access doors, complete enclosures can be made to reduce sound from machinery or isolate staff working in noisy industrial environments.

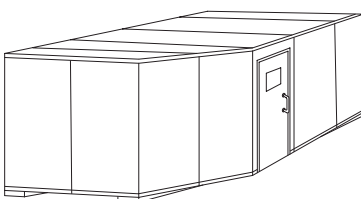
### Partial Enclosures / Shields

Using corner joiners, a right angle can be formed on straight barrier walls to create open acoustic enclosures / shields.



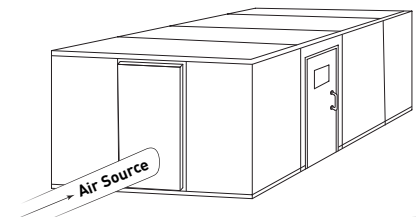
### Ventilation Systems

Ventilation systems are available for both personnel and industrial machinery acoustic enclosures. Air conditioning is also available when required.



### Vibration Isolation

Where structurally transmitted noise and / or vibration must be controlled, acoustic enclosures are built upon a floating floor system on vibration isolators. The isolators used can be tailored to suit individual project requirements.





# Industrial Noise Control

**A complete range of additional solutions to solving industrial noise issues.**

IAC Acoustics is also able to offer a full range of engineered solutions to industrial noise, all centred around modular components that can work independently or as part of a package to solve even the most complicated of projects.

In addition to Moduline™, IAC Acoustics can offer a number of other complementary solutions to noise control, including:

- HVAC attenuators
- Standalone acoustic doors and windows
- Acoustic louvres
- Splitter silencers
- Hot gas exhausts including emission control
- Vent silencers
- Generator set enclosures, including containerised solutions
- Gas turbine acoustic packages
- Power generation filtration
- Anti-vibration mounts
- Tuning panels, reverberation control and absorption systems
- Acoustic monitoring and analysis
- Aero-engine testing facilities
- Acoustic testing facilities, including anechoic and reverberation chambers



## Project - Kingston Heights

The scheme, built by United House on behalf of NHP Leisure Developments, represented a unique engineering challenge involving the construction of 136 new homes and a 150 bedroom hotel above and adjacent to an existing electricity sub-station. It is the first project of its kind in the UK to encase an electrical substation in order for surrounding land to be developed.

Working specifically on the residential element of the project, IAC Acoustics used a number of modern noise reduction measures including the installation of acoustic doors and louvres at the base of the outer walls as well as fitting several tons of silencers in all the chimneys on top of the roofs. These measures ensured that a cooling airflow could be provided to the transformer unit now located on the ground floor of the building.

The project involved teams from across IAC Acoustics to design the optimum solution in this demanding project, proving our ability to package multiple products for a specific application.



## Acoustic Performance

Acoustic performance for most applications is paramount.

IAC Acoustics offer a full service to help determine the optimum solution for each project in terms of correct product selection, quantities required, location and configuration.

Through over 60 years of experience, IAC Acoustics has created a complete range of products to solve even the most demanding noise problems. Through continued development, both in our laboratories and in the field, we're constantly evolving to make the world a quieter place.



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