

## One Stop Shop for acoustic refurbishment of Test Chambers

- As a market leader IAC offers a complete service for refurbishment or turnkey acoustical testing
- Over 40 years' experience in installing acoustic testing facilities with a wide variety of organisations

### Complete design, manufacture and installation of:

- Wedges
- Silencers
- Vent Systems
- Test Equipment
- Doors
- Panels
- Civils
- Electrical



refurbishments

## TIME FOR A CHANGE

The last two decades have seen an explosion in acoustical testing by automotive manufacturers, component manufacturing companies, engineering institutions and educational organisations and a rapid growth in the construction of new acoustic test facilities. These facilities allow testing for basic research, R&D, quality control and routine testing in a range of industries to satisfy increasing noise legislation and the need for cutting edge product performance in ever more competitive markets. Many older facilities have become tired and may contain materials that are now considered unsuitable or hazardous. IAC can provide your facility with a much needed upgrade complying with current day standards and utilising state of the art robust materials and technology. All IAC products are rigorously tested and the new materials permit 'corporate styling' and high aesthetic to suit each customer's individual requirement.

## SERVICES AND PRODUCTS

### SERVICES

- Design
- Feasibility Studies
- Quotations
- Installation
- Commissioning

### PRODUCTS

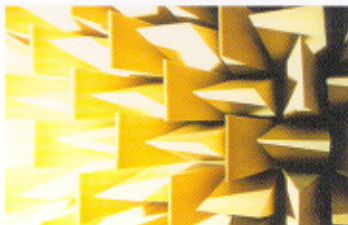
- **Anechoic Wedges**  
foam / fibreglass / metal
- **Acoustic Doors**  
single / double / sliding
- **Acoustic Silencers**  
ventilation / exhaust
- **Louvres**  
acoustic / weather
- **Acoustic Linings**

## ANECHOIC WEDGES

IAC can provide foam, fibreglass or metal anechoic wedges depending on the environment.

Markets catered for include:

- industrial
- research
- automotive
- academic



Foam



Fibreglass



Metadyne

| WEDGE TYPE           | GLASS FIBRE | FOAM     | METADYNE   |
|----------------------|-------------|----------|------------|
| Acoustic Performance | Good        | Good     | Good       |
| Fire Rating          | Poor        | Poor     | Excellent  |
| Structure Stability  | Poor        | Poor     | Excellent  |
| Cost                 | Good        | Good     | Excellent* |
| Colour Choice        | Poor        | Fair     | Excellent  |
| Maintenance          | Poor        | Poor     | Excellent  |
| Life Expectancy      | 5 Years     | 10 Years | 20 Years+  |
| Hostile Environments | No          | No       | Yes**      |
| Climatic             | No          | No       | Yes        |

## ACOUSTIC DOORS

IAC manufactures a complete range of acoustic doors including single, double, sliding or anechoic.

Of the finest quality, they are available in a range of finishes including steel, timber, painted and veneered.

Acoustic performance ranges from STC35 to STC64.



## LININGS

IAC provides a range of acoustic absorption systems to acoustically treat reverberant room spaces.

See IAC Noisefoil and Varitone system brochures for full details.



## VENTILATION SYSTEMS

IAC can upgrade your complete ventilation system including fans, ducting, silencers and controls.

IAC designs and manufactures Air Handling Units, duct attenuators and engine exhaust silencers and has a wealth of engineering experience to design specialist bespoke systems including cooling, heating and environmental systems with large volumes.

We also provide special corner vent designs for anechoic rooms.

Request our brochures on Air Handling Units and Engine Silencers for further details.



## ANCILLARY EQUIPMENT

In addition to supplying individual items of IAC manufactured equipment, IAC frequently undertakes a complete turnkey service. This includes Mechanical and Electrical requirements including lighting, small power exhaust systems, and Building Management Systems.

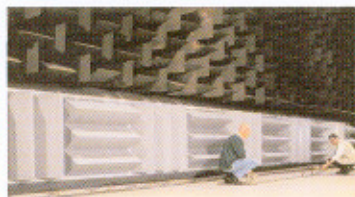
We can also supply equipment such as Chassis Dynamometers.



## LAND ROVER

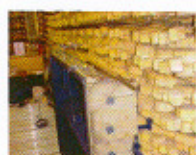
IAC provided an effective solution for the anechoic chamber within Land Rover's Gaydon Plant. The old foam wedges in the pass-by chamber could not be cleaned so Land Rover selected IAC's patented Metadyne metal wedges for their replacement,

Graham Reason, Land Rover's Project Manager, said: "The Metadyne wedges really solved our problem. They're durable, we can clean them easily and they're safe. They cost us no more than a straight foam replacement would have done."



## VOLVO

This 30 year-old, hemi-anechoic testing facility at VOLVO Car in Sweden was completely overhauled in 12 weeks. The



degraded mineral wool cubes that lined the CD1

chamber facility were stripped out and replaced with IAC Metadyne wedges throughout. The result is a safer, brighter and cleaner working environment, with enhanced acoustical performance. The Metadyne wedges cannot only be kept clean but some were finished in accent colour, making the CD1 facility an attractive corporate statement.

## PORSCHE

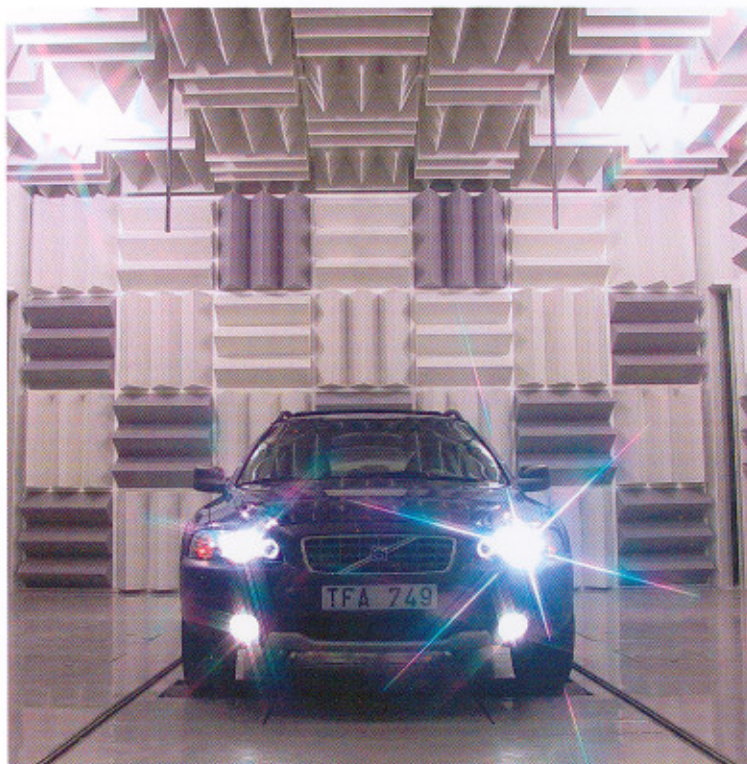
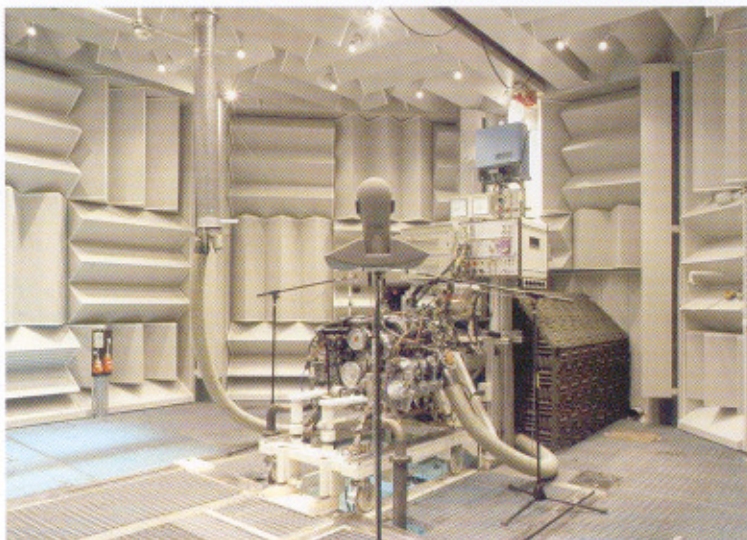
IAC GmbH completely refurbished two fully anechoic chambers at the Research and Development Headquarters of Porsche.

The first chamber was for vehicle testing and the second for engine testing.

The vehicle chamber upgrade consisted of new fibreglass wedges, grate floor, basket doors and ventilation inlets.



The engine chamber upgrade consisted of Metadyne wedges in an octagonal configuration, grate floor, basket doors and ventilation inlets.



## DESIGN GUIDE

The anechoic room dimensions will depend on its use. As a guide, the internal wedge tip to wedge tip dimensions are twice the major dimension of the source (or 2.0m – whichever is greater) plus half a wavelength.

The absorption coefficient (Alpha) for all frequencies is better than 0.99 at cut-off frequency.

The absorption characteristics, when tested in the impedance tube, would be as per the enclosed wedge data sheets.

Where free field to ISO 3744 is necessary, the IAC wedges can be used to great benefit to reduce chamber size when compared to alternative flat absorber designs.

All IAC Metadyne wedges, due to their extended surface area, achieve a random incidence field absorption coefficient (alpha) of between 2 and 3, when measured in an ISO 3741 Reverberation Room.

Planarchoic rooms, employing flat absorbers with a typical absorption coefficient of between 1 and 1.5, will require at least double the amount of surface area for equivalent values of absorption (sabines) compared to chambers utilising correctly sized 'wedges'.



Certificate No. 932300

IAC is a BS EN ISO 9001 quality registered company

## ACOUSTIC COMMISSIONING

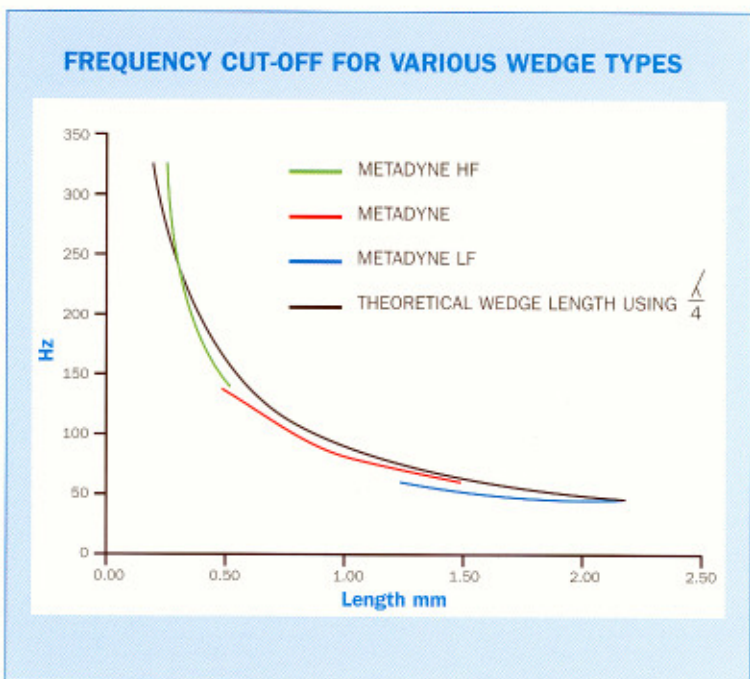
The completed chambers would be acoustically commissioned in accordance with ISO 3744 and 3745 in full room configuration.

Full procedures can be found in the IAC Commissioning document.

### Maximum allowable deviation from Inverse Square Law

| TYPE OF ROOM  | FREQUENCY Hz  | DEVIATION |
|---------------|---------------|-----------|
| ANECHOIC      | <630Hz        | 1.5dB     |
|               | 800 - 5000 Hz | 1.0dB     |
|               | >6300Hz       | 1.5dB     |
| HEMI-ANECHOIC | <630Hz        | 2.5dB     |
|               | 800 - 5000 Hz | 2.0dB     |
|               | >6300Hz       | 3.0dB     |

## WEDGE SELECTION GUIDE



For high frequency range cut-off use foam or Metadyne HF

For mid frequency range cut-off use foam or Metadyne

For low frequency range use Metadyne LF

## CLIENT LIST

**Our 1000s of client organisations in the US, Europe and the UK include:**

### AUTOMOTIVE

Audi  
 BMW - Rover Group  
 Chrysler  
 Ford Motor Company  
 General Motors  
 Goodyear  
 Harley Davidson  
 Honda  
 Hyundai  
 Jaguar Cars  
 Nissan  
 Opel  
 Perstorp Components  
 Renault  
 Samsung  
 Schenk  
 Siemens Automotive Systems  
 Tennex Europe  
 Toyota  
 Valeo  
 Volkswagen

### EDUCATIONAL ESTABLISHMENTS

Aalborg University, Denmark  
 ISVR University of Southampton  
 MIT  
 University College London  
 UCLA, USA  
 Univeristats-HNO-Klinik, Leipzig, Germany  
 University of Jakarta  
 University of Oregon, USA

### TEST HOUSES

Arcelik, Turkey  
 British Standards Institute  
 Delphi  
 FBI  
 Gould Laboratories, UK  
 Langley Research Centre, UK  
 NPL  
 SIKA  
 UK Ministry of Defence

## ABOUT US

IAC is the world's largest provider of noise and acoustic control products, structures and test facilities. The company has major research and development centres in the USA and France and manufacturing plants in the UK, France, Denmark, the USA and Mexico.

IAC's European Headquarters are located in Winchester, in Hampshire, UK. The company's manufacturing operations are housed in a modern, purpose-built factory of almost 8,700m<sup>2</sup>.

Europe's largest industrial and commercial noise control specialist, IAC operates with the slogan 'Making the World a Quieter Place'. Expansion has been achieved through diversification: the company now designs and builds everything from aero-engine test facilities to TV and radio studios; hearing testing (audiology) rooms; enclosures for noisy machinery; road barriers; anechoic test rooms; acoustic partitions, doors and windows; air handling units; air conditioning and power plant silencers and silencing systems for warships and luxury ferries. It even supplies rooms to schools for music practice and to the police for interviewing crime suspects.

IAC's blue chip client list includes such names as British Airways; Ford; the BBC; National Power; Sony; Rolls-Royce; IBM; Glaxo; British Gas and Bovis Construction.

IAC is a practiced exporter, supplying equipment to over 50 countries throughout Europe, Africa, the Middle East and Pacific Rim.



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