



**COMPLIANCE  
ENGINEERING**  
EMC - Shielding - Environmental

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# RF Shielding

Only Australian manufacturer of RF shielded enclosures.



# RF Shielding

Compliance Engineering is the only Australian manufacturer of modular RF shielded enclosures. The RF shielding services include new installations, relocation and servicing of existing RF enclosures. We also provide a comprehensive range of RF shielded enclosure components such as RF power filters, EMC gaskets, RF waveguides, honeycomb air vents, RF absorbing materials, etc.

Compliance Engineering can provide and install EMF shielding for electrical substations, to reduce the EMF exposure levels to building occupants located nearby.

We are also agents for well-known EMC equipment manufacturers located around the world and can supply a wide range of specialist EMC test equipment.

As a leading service provider for Electromagnetic Compatibility, we've become the go-to for a wide range of product EMC certification and testing needs.

Compliance Engineering prides itself on delivering the most efficient and cost-effective solution for your compliance testing needs. Drawing on our years of experience, modern test facilities and knowledgeable operators ensures your products adhere to the requirements of current EMC standards.



# RF Shielded Enclosures

## Leading Manufacturer of Shielded Enclosures in Australia

RF Shielded Enclosures, Faraday Cages and Anechoic Chambers

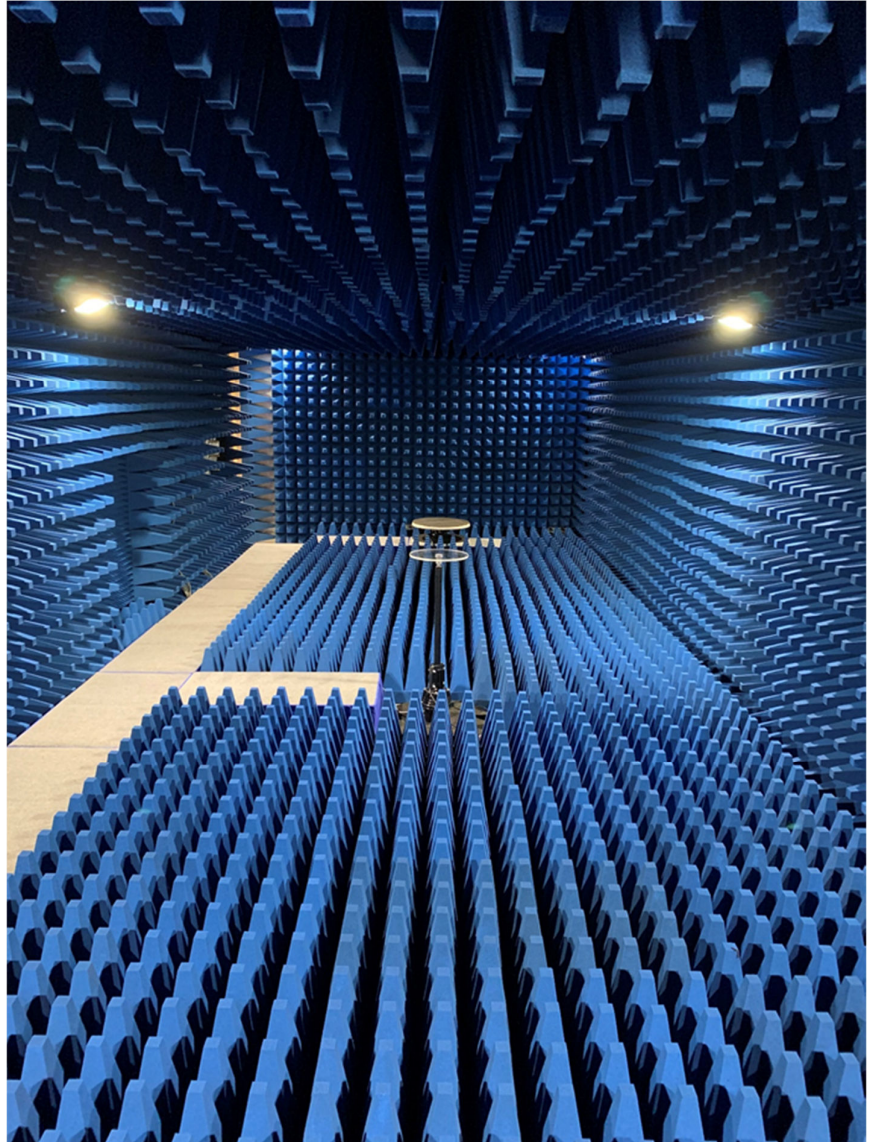
### Introduction

Compliance Engineering is the only privately-owned manufacturer of modular RF shielded enclosures in Australia, which are used throughout industry for many purposes including:

- [EMC Compliance testing](#)
- Antenna characterisation
- Wireless Product Testing
- Research facilities
- RF transceiver repair and calibration
- Secure Computer accommodation
- Magnetic Resonance Imaging (MRI)
- Biomedical Laboratories
- High Voltage Test Laboratories
- Tempest security
- Broadcast facilities
- Telecommunications
- Defence Installations
- Educational facilities such as universities
- Embassies and Consulates

*Industries customers include:*

- Defence
- Telstra, Vodaphone, Optus
- AFP
- CSIRO
- Universities
- R&D facilities
- Health & Medical



An [RF shielded enclosure](#) (or Faraday Cage) is basically a room lined on all internal surfaces with a metallic skin to shield against radio frequency (RF) or electromagnetic interference. We manufacture RF shielded enclosures in Australia using prefabricated panels clamped within a steel framework. RF enclosures can also be manufactured by overlaying the internal surfaces of a room with copper or aluminium foil. All power cabling entering an RF shielded enclosure must pass through filters and air flow into the enclosure is provided via honeycomb waveguide air vents.



# Modular RF Shielded Enclosures:

One of the most versatile designs from any manufacturer in Australia, our modular enclosures are fully demountable and can easily be extended or relocated. The panels are constructed from particle board laminated on either side with zincalume steel sheets. These panels are clamped together in a zinc plated steel frame.

The RF door is a key component of the enclosure and utilises sliding edge (sometimes called knife edge) construction, with a double row of beryllium copper contact fingers. Specialised heavy-duty hinges with internal bearings are used for long term alignment reliability.

Compliance Engineering can provide an RF enclosure designed and manufactured in Australia in line with your requirements.



## Shielding performance:

Compliance Engineering's RF shielded enclosures provide 100dB attenuation to radiated RF (electric) fields over the frequency range 14 kHz to 1 GHz (Refer MIL-STD-285). Enclosures installed by Compliance Engineering will have an RF shielding verification test performed after assembly and prior to installation of any internal linings or RF Absorbing materials (where applicable).

The site where the enclosure is to be installed should be relatively dust free and flat with a maximum slope of 10 mm in 3 metres and a maximum unevenness of  $\pm 5$  mm. Sufficient clear space is required inside the building for placement of the enclosure materials during the construction phase.

*Compliance Engineering is also A2LA accredited to perform RF Shielding Performance testing in accordance with MIL-STD-285 and IEEE 299*



## Foil – RF Shielded Enclosures

[Compliance Engineering](http://www.compeng.com.au) is also a manufacturer of copper foil enclosures that meet all the requirements for a RF non-ferrous shielding of MRI equipment installations in Australia.

Copper sheets are soldered, taped or stapled together on either new or existing substrates which also allows for easy field application to any room configuration and is acceptable for a wide array of applications.

Our MRI doors are specifically designed to meet the requirements and needs of the MRI industry. Each door is custom built and assembled consisting of the frame, door leaver, hardware and RF seal.

We offer two main types of shielded doors for the MRI Industry and both meet all current MRI system manufacturer specifications.



### Key Benefits

- Low cost
- Low ferrous content
- Unusual shapes catered for
- Ideal for MRI applications



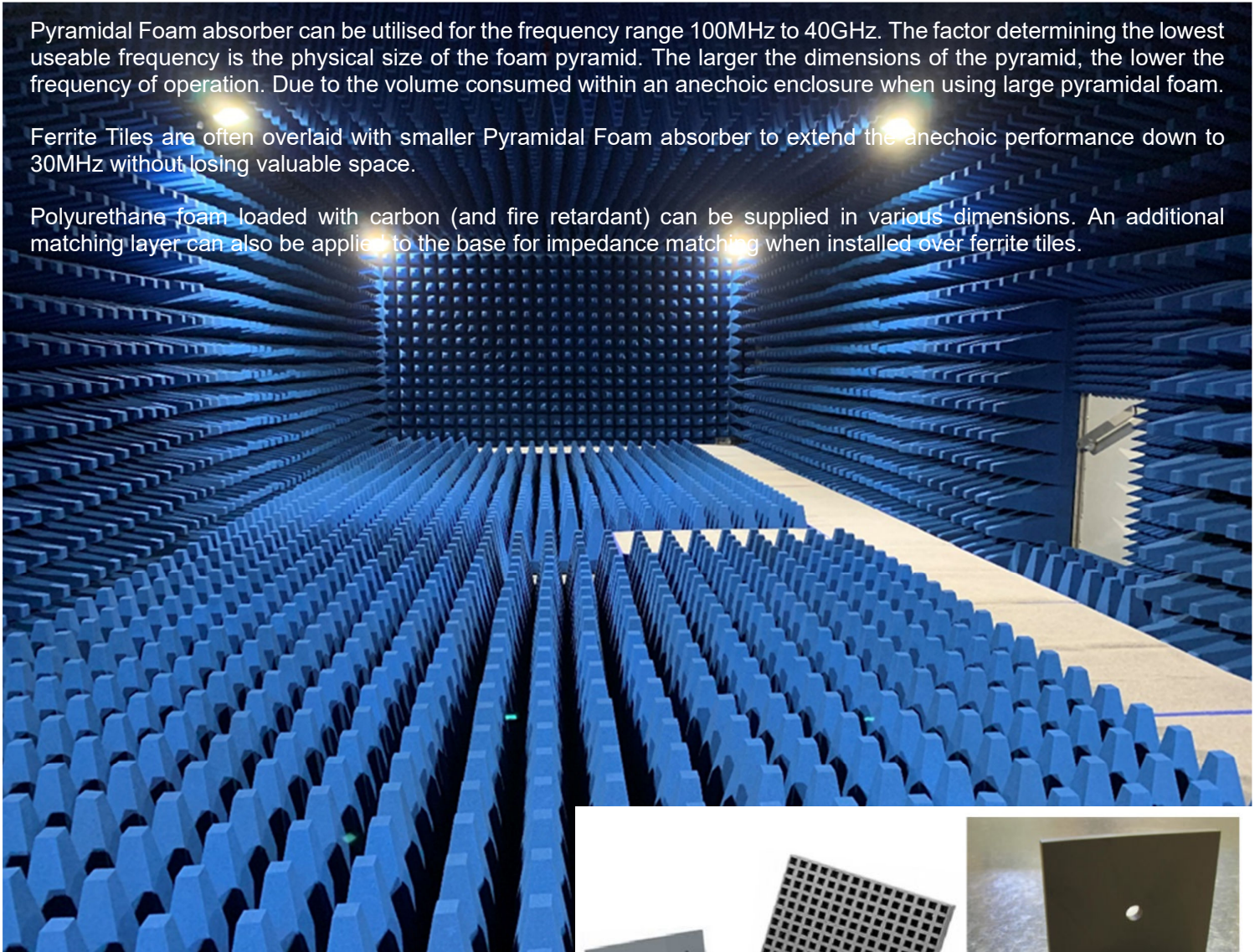
# RF Absorbing Materials

## Pyramidal Foam

Pyramidal Foam absorber can be utilised for the frequency range 100MHz to 40GHz. The factor determining the lowest useable frequency is the physical size of the foam pyramid. The larger the dimensions of the pyramid, the lower the frequency of operation. Due to the volume consumed within an anechoic enclosure when using large pyramidal foam.

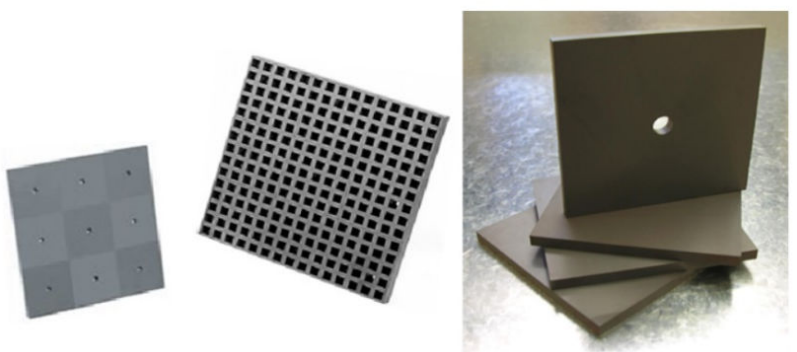
Ferrite Tiles are often overlaid with smaller Pyramidal Foam absorber to extend the anechoic performance down to 30MHz without losing valuable space.

Polyurethane foam loaded with carbon (and fire retardant) can be supplied in various dimensions. An additional matching layer can also be applied to the base for impedance matching when installed over ferrite tiles.



## RF Absorbing Materials Related:

- [Flat Ferrite RF Absorber: SFA version](#)
- [Grid Ferrite RF Absorber: SGA version](#)
- [Pyramidal RF Absorber: SAM version](#)
- [Pyramidal RF Absorber: SMT version](#)
- [Pyramidal RF Absorber - SA version](#)



## Ferrite Tiles

Ferrite tile absorbers are useful over the frequency range 30 MHz to 1 GHz, however the performance deteriorates quickly above 1GHz.

Ferrite tiles can be supplied individually (measuring 100mm square and 6.7mm thick) or glued to MDF panels 600mm square.

[Flat Ferrite RF Absorber : SFA version](#)

[Grid Ferrite RF Absorber : SGA version](#)





# Accreditation

To demonstrate our commitment to quality and technical competence, Compliance Engineering pursued and obtained accreditation from the American Association for Laboratory Accreditation (A2LA), which is one of the world's most highly respected accreditation organisations.



A2LA and NATA (National Association of Testing Authorities) are both signatories to the ILAC MRA and acceptance testing and calibration results from each organisation are mutually recognised.

Compliance Engineering's Certificate Number: **2829.01**

Compliance Engineering are accredited to perform the following tests on military, automotive sub-components, information technology equipment (ITE), medical electrical equipment, electric motors, various electronic and electrical components/systems:

## Contact info

Compliance Engineering is conveniently located in the Melbourne suburb of Keysborough, just off Eastlink.

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For further information please contact Compliance Engineering Pty Ltd on +61 3 9763 3079 or email us at [info@compeng.com.au](mailto:info@compeng.com.au). Please see our full scope of testing capabilities at [www.compeng.com.au](http://www.compeng.com.au)

