



**COMPLIANCE
ENGINEERING**
EMC - Shielding - Environmental

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RF Shielded Enclosures



This image is for presentation purposes only and details the typical construction and finish.

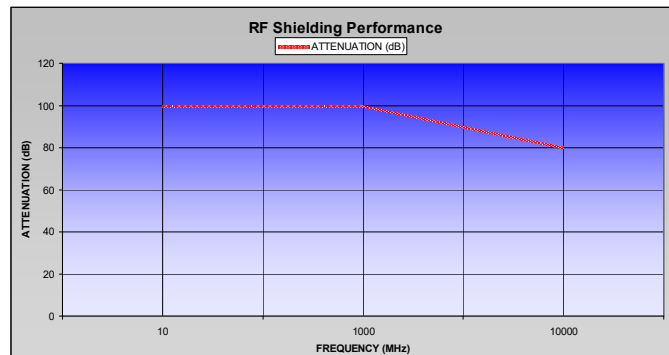




"Compliance Engineering provides custom solutions to meet the ever-changing applications and performance requirements."

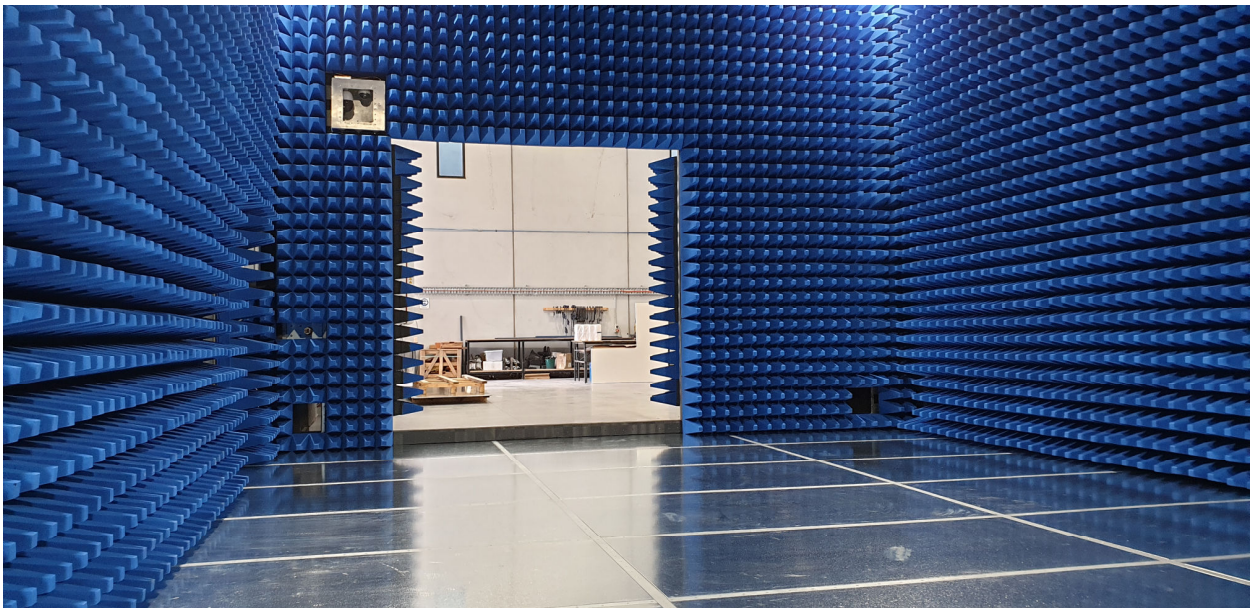
Compliance Engineering offers a turnkey service in the design, fabrication and installation of specialized Modular Shielded Rooms / EMC Chambers / Anechoic Chambers / Mobile Shielding Containers. Each shielded room can be built to various performance specifications and be fitted out with a variety of finishes to create the desired end use; from an office type interior to using microwave absorbers to form a semi or fully anechoic chamber.

Modular Shielded Rooms or Modular Faraday Cages are constructed using prefabricated, zincalume sheet steel panels which allow for almost unlimited size and configuration options, and provide maximum shielding performance and corrosion resistance.



Nominal Attenuation Characteristics

All rooms come fitted with Shielded Doors, Shielded Windows, Pipe Penetrations and RF Filters to complete the EMC Chamber. Furthermore, Compliance Engineering can offer full lighting and electrical distribution within the rooms.



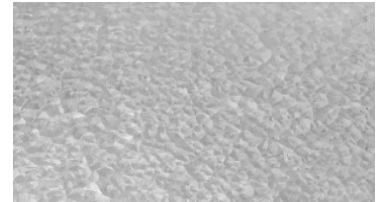


Description of Enclosure

Construction:

Ceiling, floor and wall panels are constructed from (ultra-durable) zincalume plated steel sheets laminated to each side of an 18 mm thick particleboard panel (standard size: 1200 mm x 2400 mm).

The zincalume panel finish is exceptionally durable and resistant to wear. The finish is aesthetically pleasing and does not require painting (similar in appearance to a textured silver/grey laminate).



Example of a zincalume finish

The RF enclosure framing is constructed from 3 mm thick zinc plated steel profiles (Hat/Flat & W/U) clamping the panels and providing the RF shielding integrity.





Enclosure size:

Enclosures are customised to client specific requirements.

Underlay:

Dielectric vapour/moisture barrier and Masonite (if required).

RF Door:

Compliance Engineering offer a range of RF shielded doors. Our standard 2050 mm high x 900 mm wide single leaf, single knife edge wiping action with custom manufactured bearing hinges, heavy duty rack and pinion (manual) operation & dual cam roller bearing latching offers high level of attenuation performance. All our doors and frames are manufacturer for long life wear and tear. All frames come supplied with beryllium copper finger stock installed within a recessed channel. Finger stock is readily replaceable without soldering or special tools.

Note: Stainless steel is preferred for the door contact surfaces over brass, as brass suffers from significant wear (forming grooves) caused by the wiping action of the BeCu finger stock.





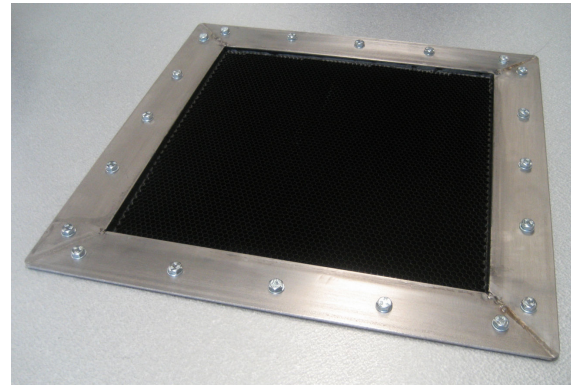
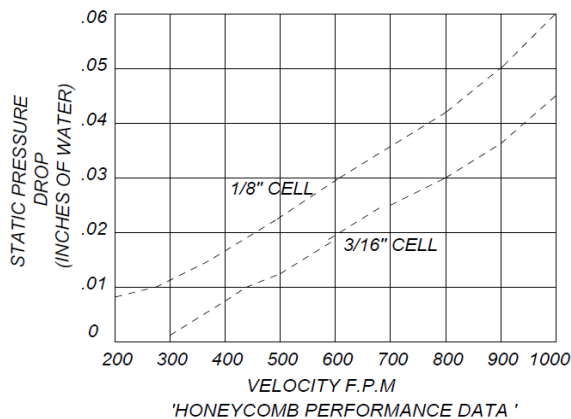
RF Air Vents.

Vents are also a crucial component for any shielded building, room or enclosure as they allow air to pass through whilst still attenuating radiated interference. Compliance Engineering design and custom manufacture a wide range of steel and aluminium waveguide vents specifically for all shielding applications.

Individual waveguides can be built to any size. Our standard 300 mm x 300 mm (nominal) 3/16 steel hex cell honeycomb air vents are mounted into a stainless-steel frame (exact location of each air vent is to be advised by client prior to manufacture).

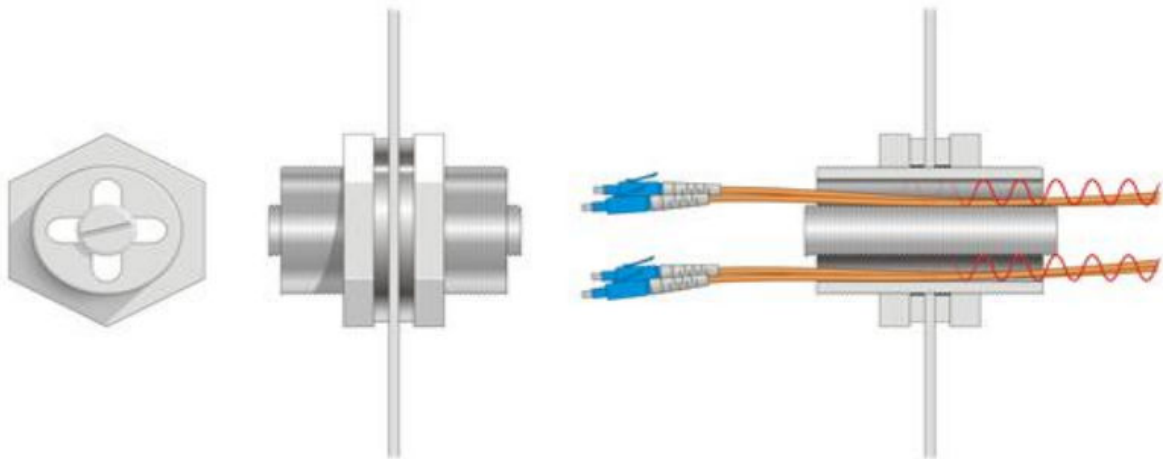


High performance - 40 GHz air vents are also available upon request.



Fibre Optic Penetration.

Brass fibre optic penetrations are available to cater for all your fibre optic needs.



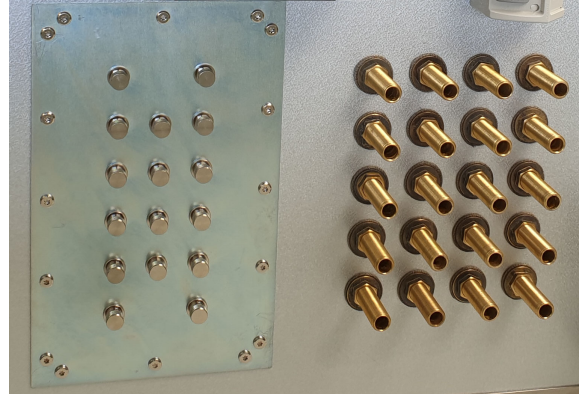


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Penetration Panel.

Compliance Engineering manufacturer custom stainless steel penetration panel(s) populated with various bulkhead connectors (i.e., N-type, SMA etc) to meet client requirements,



Mains Power & Signal Filters.

For optimum EMI performance, high performance mains filters are essential to any rf shielded enclosure. Compliance Engineering offers a wide range of mains power line, dc and signal filters. Mains power filters are available in various power and current ratings (single and three phase power). We also supply specialised EMP high performance power filters.





Installation Requirements

The enclosure must be housed in a dry and clean parent building, on a smooth plane, free of defects and sealed from dust and dampness.

It is the responsibility of the client to ensure that the floor area where the enclosure is to be installed is level, with a planarity of less than 1 cm in 3 m.

The mains power supply to the enclosure must be free of earth leakage monitoring, as the RF shielded enclosures power filters allow current leakage to ground.

Commissioning

After installation an RF shielding performance test will be performed on the enclosure at the following frequencies using the procedures of MIL-STD-285 as a reference:

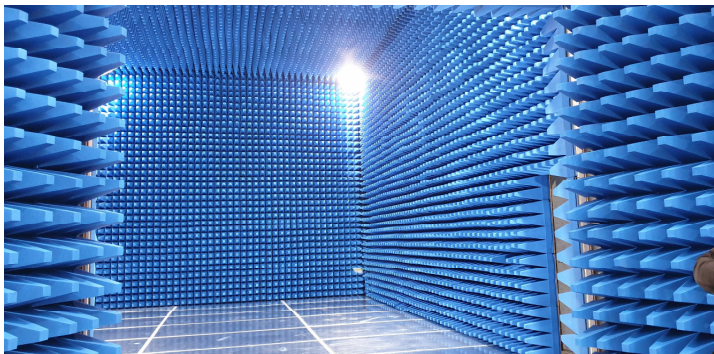
10 MHz, 100 MHz, 1 GHz

Warranty:

Compliance Engineering offers a 5 Year warranty on all its rf shielded enclosures excluding any issues which arise from normal wear and tear.

The warranty does not extend to finger strip gasket (this is a consumable) tarnishing of panels over time, scratches on panels, accelerated wear due to high dust or proximity to outdoor access, exposure to water (including condensation) or chemicals or misuse.

Consumable items such as the beryllium copper fingers will need to be changed at some stage. The fingers can last anywhere from 5 to 15 years however will greatly depend on the general frequency of door use. The cost to replace any fingers if needed will be passed on to the customer.





Options:

- **False Floor:**
Sub floor framing will be constructed from 90mm x 45mm MGP10 pine. 19mm tongue and groove sheets will be installed on top of the sub frame.
- **ESD Flooring:**
ESD Vinyl floor covering installed on top of false floor.
Price dependant on type of flooring
- **Signal Filters:**
2 Line signal filters XL-56KB rated at 200VDC 1 Amp
- **DC Power Filters:**
Two-line Power Filters DL-2X50A (70 - 100 dB nominal, 150 kHz to 10 GHz) rated at 50 amps, 200 VDC. *Please note: Other DC and Mains power filters available upon request*
- **Penetration Panels:**
Stainless steel penetration panel fitted with 8 x N type bulkhead connectors.
Stainless steel penetration panel fitted with 16 x N type bulkhead connectors.
Stainless steel penetration panel fitted with 20 x N type bulkhead connectors.
Stainless steel penetration panel fitted with 32 x N type bulkhead connectors.
- **Fibre Optic to Ethernet (10/100):**
(10/100) Fibre optic to Ethernet system
(10 Gb) Fibre optic to Ethernet system
- **USB To Fibre Optic System**
Fibre optic USB 3.0 conversion system
- **Electrical:**
Internal electrical fit out of the enclosure (Lights, GPO's switchboards etc) can be supplied and installed.

