

Waveguide Vents for Electromagnetic Pulse Protection (EMPP)

A Waveguide is essentially a hollow conducting tube which acts as a filter for radiated Electromagnetic Interference (EMI), but which allows air and fluids to pass. Only EMI energy at very high frequencies can pass through it with little attenuation. This is called Wave Guide Beyond Cutoff (WGBC).

The shielding performance of a Waveguide is governed by the surface geometry of the apertures (length and width), the apertures depth, the shape, and total number of apertures.

European EMC Products design and manufacture a wide range of steel Waveguide Vents specifically for high performance applications, particularly in the magnetic mode at low frequencies.

These waveguides are made from 1mm thick steel slats assembled to form a 10mm wide x 50mm deep matrix for 10 GHz performance and 6mm x 50mm matrix for 18 GHz performance. The completed vent is hot tin solder dipped to give corrosion protection and conductivity in all planes. This type of Waveguide Vent is typically used for military facilities requiring NEMP (Nuclear Electromagnetic Pulse) Protection.

EEP can manufacture these vents in any size, with a range of flange designs to meet all applications. Paint finishes and coatings for harsh or corrosive environments can also be applied.

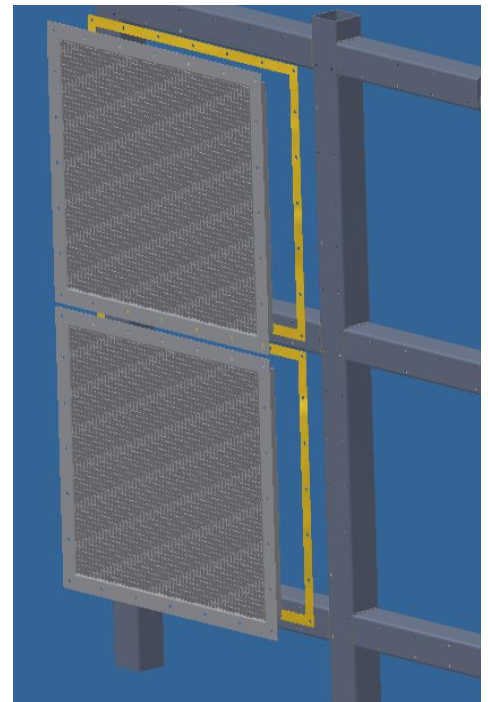
Individual waveguides can be built to any size up to 600 x 600 mm. Above this waveguides can be mounted in steel framework to make a larger unit.

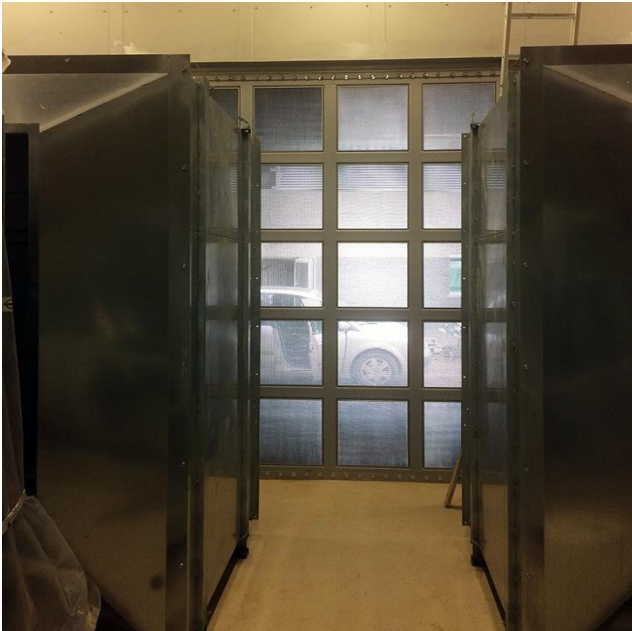
EEP can supply custom designs complete with all fixings and gaskets required.

EMP Performance

The waveguide vents meet the shielding attenuation requirements for EMPP will be as per Mil Std 188-125 and Def Stan 59-188.

Mil Std 188-125 Part 2 is a military document titled HIGH ALTITUDE ELECTROMAGNETIC PULSE (HEMP) PROTECTION FOR GROUND-BASED C4I FACILITIES PERFORMING CRITICAL, TIME URGENT MISSIONS – PART 2 TRANSPORTABLE SYSTEMS. This describes the protection and testing required for these types of facilities.





Our experience with EMP ensures we can offer advice on all aspects of design, manufacture and testing for Electromagnetic Pulse Protection.

Introduction

European EMC Products Ltd was formed in July 1996 to supply high quality products and services to the Electro-Magnetic Compatibility (EMC) market. The emphasis being on EMP and RF Shielded Chambers and associated products and services such as RF Shielded Windows, Shielded Doors and Shielding Effectiveness and EMP Testing.

Quality

European EMC Products are registered to BS EN ISO 9001:2015, Certificate No. FS 38901.

License scope: The design, assembly, servicing and testing of RF Shielded structures and equipment including EMI shielding and thermal management materials; Gas tight doors; and specialised mobile electromagnetic pulse protected (EMPP) containers.