

Faraday cage

Mu-Copper wallcovering system



We produce Faraday cages, shielded chambers, shielded tents and other shielding materials like power & signal filters (page 35), waveguides, shielded doors (page 34) and windows (page 21), and honeycomb ventilation panels (page 18 & 19). In addition, tempest equipment for crypto communication and even welded EMP bunkers are our business.

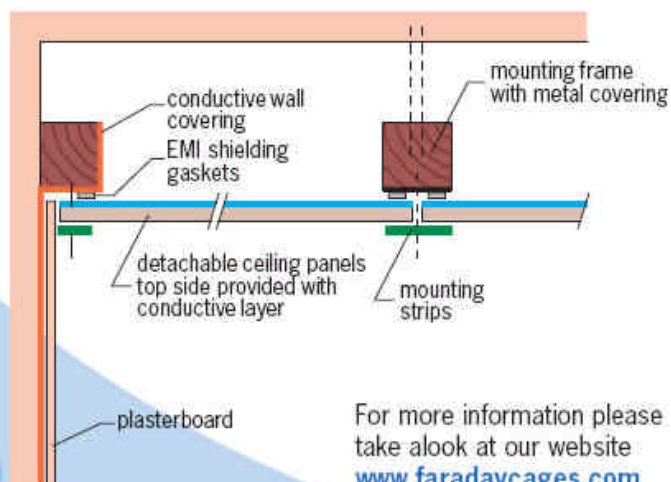
From our big standard range in stock we deliver to the cage building industry. We also design items according to the customer's wishes, with very short delivery times.

Wallcovering System Mu-Copper

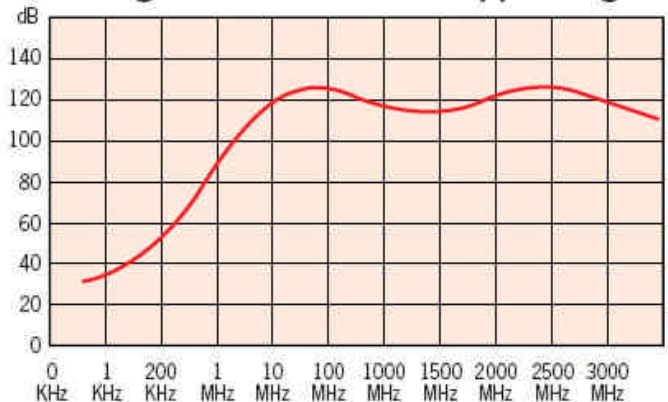
Mu-Copper foil has high damping properties in the electrical field (up to 120 dB) as well as in the magnetic field (see table). It is easy to apply, like wallpaper, thanks to its special adhesive for walls, ceilings and floors. The finishing can be plasterboard, foam tiles or plywood.

This product enables creating a Faraday cage with high shielding performance yourself in an economic way, using local labour. Both in existing buildings and in new ones, without loss of space. Depending on the quality of the doors, vent panels, filters and windows covered, damping of up to 60-80 dB in the E-field can be realised in an existing room in just a few days, without loss of space. When double layers are applied, it is possible to achieve over 120 dB.

The standard width is 1000 mm or 40". About 10-15% more than the net surface is needed for overlap and lost.



Shielding Performance Mu-copper cage



Shielding Performance

Basic Values for the Material

Field	Frequency	Mu-Copper
H	1 kHz	22 dB
H	10 kHz	35 dB
H	200 kHz	68 dB
E	10 kHz	99 dB
E	200 kHz	127 dB
E	1 MHz	125 dB
E	18 MHz	101 dB
P	400 MHz	120 dB
P	1 GHz	110 dB
P	10 GHz	120 dB

Shielding performance of mu-Copper foil 0,12mm thick

Ceilings

Detachable ceiling to separate existing ducts and cables from the shielded room.

Applications: EMC test rooms, computer rooms, medical examination rooms (MRI, EEG, EMG & EVP), rooms for physiotherapy, radar protection, tempest sites, military EMC protection or even complete buildings for intelligence agencies.

Faraday cage

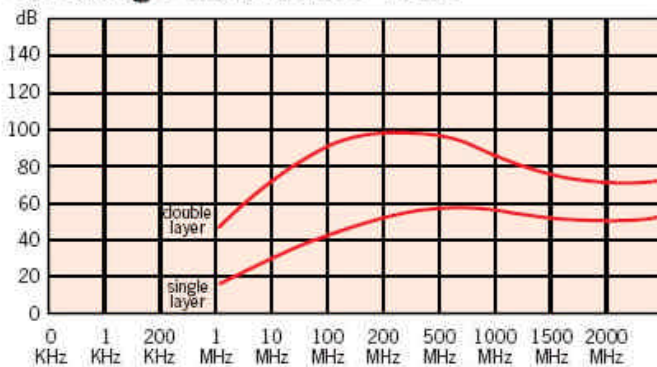
for high & low frequencies



Faraday Tents

Mounting on wall or ceiling, or in a stand-alone-frame. Made of strong and highly conductive fabric to save space. For experiments, measurements, mobile military/forensic activities in the field. We can produce them in any shape or dimension: pyramid (with a single point mounting rope), cubic, or cylindrical. Sizes range from 0.5 to 15 meters. Doors are fitted with magnetic strips or Velcro strips.

Shielding Performance Tents



Anechoic Chambers

Our Anechoic Chambers are constructed as shielded rooms. All over the walls and the ceiling, absorbing materials and/or ferrite tiles are attached. The Anechoic Chambers show superb shielding performance and are mainly applied in EM emission testing according to commercial and military standards. The Anechoic Chambers are used to perform compliant radiated immunity tests in accordance to EMC-standards such as IEC / EN 61000-4-3. They provide a full compliance immunity test site for the frequency range of 30 to 1000 MHz. Also suitable for future free space emission test, pr EN 50147-3. We also build open area test sites.

Prefab Faraday Cages (Modular)

Our prefab shielding system is designed to meet or exceed the vast majority of shielding requirements. This system is available both in standard modular enclosures and custom-designed modular enclosures to meet exacting specifications in government, industry, r&d, university or hospital use. Modular cages are provided with single or double knife edge finger strip doors (page 34). The standard module is 1.09 meters.

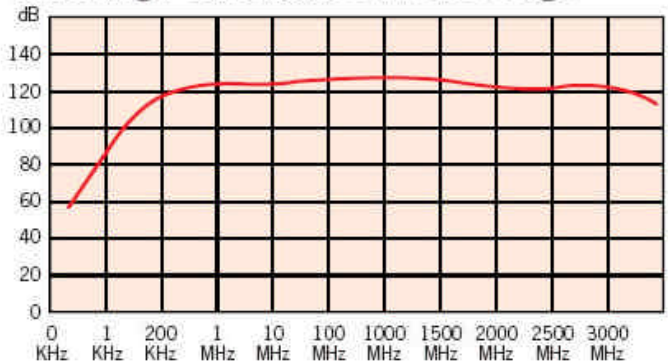
Outside dimensions Length x Width in meters
1090 x 1170
1090 x 2260
2180 x 2260
3270 x 2260
3270 x 3350
4360 x 2260
4360 x 4440
5450 x 5530



Dimensions

Standard Height: 2315 mm. Other dimensions on request.

Shielding Performance Prefab Cage



Doors for Faraday cages



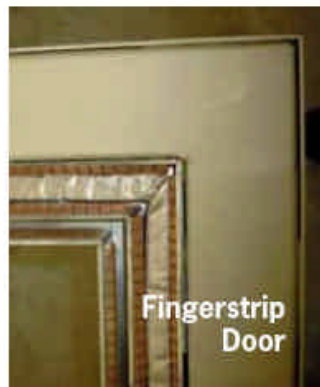
We specialize in designing and manufacturing standard and custom doors: high performance single & double knife edge fingerstrip doors, sliding doors and double shielded doors. Our engineers will assist to find the best solution possible.

We also produce sets to shield doors with gaskets on top and sides, while the bottom is provided with a conductive copper brush and doorstep. See the drawing at the bottom of this page.



Fingerstrip Doors

The fingerstrip doors are well known for their high shielding performance and are used in prefab cages as well as together with our Mu-Copper systems. We manufacture single fingerstrip doors for medium shielding performance and double fingerstrip doors for high shielding performance (damping up to 140 dB). Delivery from stock in various dimensions. Options: fire proof, automatic closing, gas tight, locking system.



To achieve the attenuation levels required, our doors are equipped with at least two rows of beryllium copper "fingers" around the periphery of the door. In the closed position, the fingers contact the edge of the door to assure an RFI/EMI leak-proof seal.



Sliding Doors

The opening procedure of the sliding door is performed in two steps:

- Unlatching of the contact spring system and outward movement;
- Sideway movement of the door leaf.

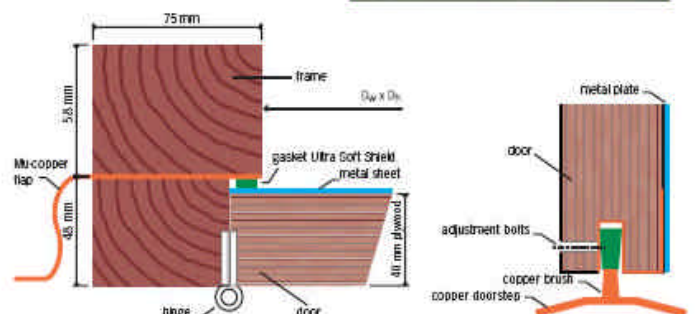
The movements of the door and ramp are fully automatic; they are operated electrically and pneumatically. Each opening and closing of the door has a self-cleaning effect on the contact surfaces. Sizes range from 1 x 2.1 meters to a 'jumbo' door of 8 x 12 meters.

Options for Doors:

- Automatic locking system with 2 doors
- Lowered doorstep
- Automatic closing systems
- Sound reduction
- Clean room specifications

Standard Sizes

Standard shielded leaf doors in steel/wood or steel frames
 Width : single 800 / 1200 mm, double 1500 / 2000 mm
 Height : 2000 / 2100 / 2500 mm



RFI/EMI/EMP/NEMP

shielding filters for power and signal lines

We offer a selection of RFI signal, power and data transmission filters and EMI filters. Apart from the standards we stock, we also design custom EMI/RFI filters for your specific application. For the entire range and extra high performances up to 120 dB, EMP filters and NEMP filters, please refer to www.faradaycages.com

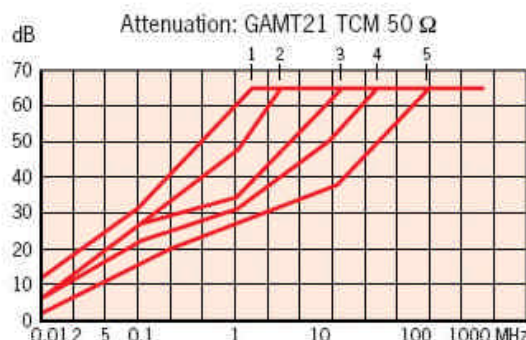
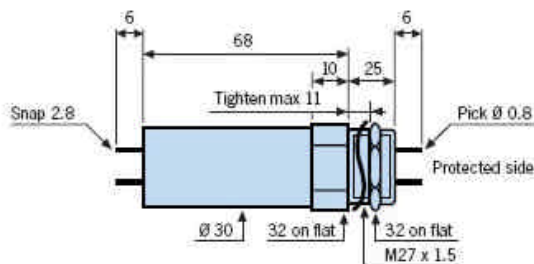
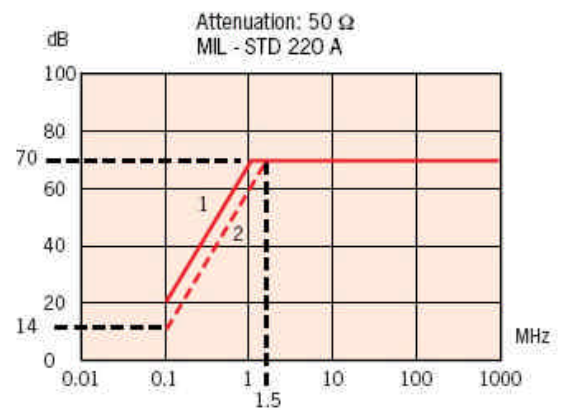
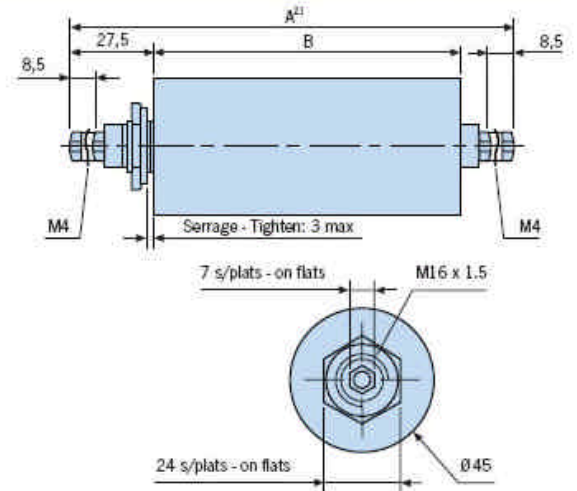
To allow for cable entry in Faraday cages we produce filter plates or shielded racks, equipped with high performance power filters, also including the cable passage of digital signals like ISDN and UTP (internet/network connections), etc. We manufacture signal filters for even higher performance as in the case of tempest applications, and we can also provide a system which uses optical technology and waveguide passage.



Power Filter & Telephone Filter

Power Filters 3 - 200 Amp (A) Specifications

Part Number	Current max (A)	C (μF)	L (μH)	Ohmic resistance max (m) Ω	Leakage current under 250v - 50Hz max. (mA)	Weight max. (gr)	A (mm)	B (mm)	Curve
HSS-3AW	3	0.1	270	85	17.3	140	105	60	1
HSS-5AW	5	0.22	80	22	38	175	105	60	1
HSS-5AV	5	0.1	80	22	17.3	175	105	60	2
HSS-10AW	10	0.47	110	11	81.2	300	131	86	1
HSS-10AV	10	0.22	110	15	38	280	105	60	2
HSS-25AW	25	0.47	65	5	81.2	420	146	101	1
HSS-32AW	32	0.47	30	3	81.2	420	146	101	1
HSS-32AV	32	0.22	30	3	38	420	146	101	2
HSS-50AW	50	1	40	<1.5	<173	860	192	115	1
HSS-50AV	50	0.47	40	<1.5	<81.2	860	192	115	2
HSS-100AW	100	1	7	<0.7	<173	880	199	122	1
HSS-100AV	100	0.47	7	<0.7	<81.2	880	199	122	2
HSS-200AW	200	1	2	<0.4	<173	940	217	140	1
HSS-200AV	200	0.47	2	<0.4	<81.2	940	217	140	2



Telephone Filters with NEMP Lighting Protection, 2 Leads

Part Number	Under used	Impedence Ω	Pass band t 3 dB	Resistance Ω	Curve
1400	Telephone CN DT 19200 bauds	600	50 kHz	< 1.5	1
1500	56 kbits/s	600	500 kHz	< 1.2	4
1600	64 kbits/s	100/120	500 kHz	< 1.2	1
1700	144 kbits/s	100/120	1 MHz	< 1	2
1800	256 kbits/s	100/120	2 MHz	< 0.5	3
1900	512 kbits/s	100/120	5 MHz	< 0.5	4
2000	2.048 kbits/s	100/120	10 MHz	< 0.5	5