

Closed Shielding Box Data Sheet

The **Closed Shielding Box** consists of bolted aluminum panels (thickness 1,5 mm) and structural aluminum profiles used to make the walls, the ceiling, and the floor of the shielded room. The system is demountable and relocatable without any disruptive intervention. The shielding is free-standing and self supporting without any connections to the parent building's walls and ceiling.

RF SHIELDING DOOR

The door size is 1.20 x 2.10 (WxH) mt. The door's core structure is made of a tubular aluminum frame. Inside the door there is a series of pneumatic pistons, which retract and/or move forward with the opening and closing of the door. When the door is closed, the pistons push a flexible and conductive gasket which is installed all around the door's width. The conductive gasket provides electrical continuity between the door itself and the door frame. The conductive gasket can be inspected for maintenance and can be easily replaced without affecting the structure of the door. The door is hinged to a solid stainless steel frame. The solid stainless steel frame is then bolted to the aluminium RF cage. From the electrical point of view, then, the door is configured as a shielding panel. The two faces of the door are covered with stainless steel sheets, followed by plywood, and lastly a melamine finish is applied. Melamine color options are available. The opening and closing operations of the door are carried out manually by a chrome-plated handle.

RF Shielding Material	aluminum
RF Shielding Assembly Type	bolted
RF Shielding Attenuation	100 dB (5 MHz ÷ 1 GHz range)
Reference Standard	ieee-std 299
Pneumatic Door	stainless steel, manual, hinged (sliding version available on request)
Magnetic shielding	available on request according to site requirements
Acoustic Noise Suppression	STC 35 (STC 50 on request)
Observation Window	included (dimming window available on request)
MRI Anti Vibration System	available on request
Helium Vent Pipe Frame	included (vent pipe available on request)
MRI Penetration Panel Frame	included
Internal Utilities Penetration Panel	included (customizable according to required accessories)
Electric System and Cabling	according to custom needs
Lighting System	halogen lamps (White LEDs or RGB LEDs available on request)
Ventilation System	honeycomb filters, flexible air ducts and diffusers

Interior Finishings

WALLS

The vertical shielding walls are made of aluminum profiles and aluminum panels connected to the floor and to the ceiling by bolted aluminum angular profiles. The total electrical insulation is greater than 3 KOhm and the sound insulation is about 25 dBA to 400 Hz. No wood is allowed in the walls' core structure.

FLOOR

The shield on the floor is made of aluminum profiles and aluminum panels in which dielectric insulating material panels are placed. Aluminum plates (thickness 5 mm) are placed on top of the dielectric insulating material panels and are covered with a layer of PVC.

CEILING

The shield on the ceiling is made of aluminum profiles and with aluminum panels. No wood is allowed in the ceiling's core structure.

RF WINDOW

The viewing window allows the patient to be monitored during the examination from the control MR room. It is constituted by an aluminum frame on which are fixed two steel wire meshes. The aluminum frame with wire meshes is electrically connected to the rest of the shield through steel gaskets.

Wall Panels

particle board with melamine finishing (available colors: white, blue, or green)

Floor

plywood/aluminum with PVC finishing

Ceiling

factory painted stone wool tiles (white)

Door finishes

plywood with white or blue melamine finishing

Why we choose aluminum vs copper?

Aluminum is strong enough to form a self standing structure, while copper must be attached to the parent wall. Moreover the shielding efficiency of the aluminum offers a better values in a wide range of frequency more that copper screen.

Why we choose aluminum vs galvanized steel?

Aluminum provides a better attenuation. It is more efficient on 60 Hz magnetic field fluctuations. Galvanized steel becomes magnetized and each mechanical vibration will introduce a magnetic field fluctuation. Furthermore, aluminum is lighter than galvanized steel.

Why we do not have wood in our structural system?

Wood is not a reliable material for long term use. Wood's sensitivity to humidity and other environmental factors will cause shielding systems to leak. A problem could arise early in time, for instance if the wood gets damaged from humidity or thermal dilatation, and jeopardize an entire installation.

ISO 9001
ISO 17025
ISO 14001
ISO 13485
CE

CLOSED SHIELDING BOX

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