



## **Guide to MuROOM® Manufacturing and Installation Considerations - Advantages of a Modular MuROOM®**

### **MuROOM® Built With MuMETAL®**

Our MuROOM® is a cost-effective shielding solution using modular room dimensions, reduced alloy material usage, and overall construction expenses compared to wall shielding or room by room shielding. Large area rooms and spaces can pose logistical difficulties, shielding performance challenges, and construction is permanent. Discover why the free-standing MuROOM is an important consideration to learn about and the best solution to explore – a State-of-the-Art Modular MuROOM® shielding solution!

### **MuROOM® Manufacturing and Installation**

Both Modular MuROOMS and Custom MuROOMS are 6-sided enclosures manufactured and built to specification using highly permeable MuMETAL® Sheet, and other non-magnetic materials. Expert installation construction is completed on-site at your facility by our MuROOM team. Fully annealed MuMETAL® (Co-NETIC® AA Perfection Annealed) sheet panels are joined together seam to seam, and supported using an aluminum frame to construct the room. MuROOM reduces the earth's magnetic field by 125 times. Internal field magnitude is 0.4 micro Tesla. Ambient magnetic fields (0-500Hz) are reduced to 20 nano Tesla (0.2 milli Gauss).

### **Wider Frequency Applications**

For applications using wider frequency ranges that include RF bandwidth, shielding layers may be added to effectively shield to the highest optimum level. Rooms can be created for both magnetic and RF shielding by layering fully annealed MuMETAL® Perfection Annealed Sheet with electrically conductive materials in order to meet such requirements.

#### **Technical Sales**

[shields@magnetic-shield.com](mailto:shields@magnetic-shield.com)

888-766-7800

630-766-7800



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740 N. Thomas Drive  
Bensenville, IL 60106 USA

## Advantages of modular MuROOM® enclosures compared to wall shielding of one or multiple large area lab rooms:

- Custom size MuROOM enclosures built to spec – designed for your unique applications and environment.
- MuROOM is constructed and installed on-site at your facility.
- Modular room for low field testing using a defined space, without usage of the entire room or taking up additional space.
- MuMETAL® panels, frame, and all materials are manufactured to the highest quality and performance.
- Magnetic shielding and RF shielding if required, are available using layered sheet alloy material types achieving significant magnetic field reduction. Sheet material composition may include high nickel, high iron, copper, or aluminum formulations.
- Cost effective installation using modular room dimensions, reduced alloy material usage, and overall expenses.
- Future MuROOM reconfiguration, or different shielding requirements may be possible, easier, and affordable with modular construction.
- New spec to add RF layering sheet panels is possible.

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# MuROOM® Manufacturing and Installation Considerations

## 1. What needs to be shielded?

- If specialized equipment is to be shielded, what is the uppermost acceptable level of field it can be exposed to? What field attenuation is required?
- What access is needed to the room? Do you need a large door, or perhaps access for ventilation equipment or electrical cables?

## 2. How big is the room?

- Determine the size of the room to be shielded. For most large rooms we would recommend additional shielding layers to attain the desired attenuation level.
- The MuROOM aluminum frame structure has slots with spacing in between to insert or secure highly permeable MuMETAL sheet panels. The benefit of this design is that should the shielding requirements of the room change, further layers of MuMETAL can be added to the structure with minimal difficulty.

## 3. Where is the room located?

- Think about the surrounding environment. Rooms being installed in a university building will likely be exposed to fields from equipment in surrounding rooms. If there is equipment in the building that produces a field, when is this equipment in use?
- External sources of fields such as those from nearby electric railways lines could cause interference and areas of unusually high field in the room.
- We have specialist measuring equipment and will fully assess the magnetic field within the room so that we can identify regions of high field and classify their frequencies.

## 4. Do you have any special requirements?

- Our shielded rooms have a great variety of purposes. If you require radio frequency shielding we can incorporate copper or aluminum into the design.
- Does the purpose of the room require strong lighting, or will there be any other electrical components added to the room? If so, these additions must be carefully considered as they will produce their own field within the room. We can source low magnetic field lighting.
- Would you like the walls to have a surface coating, such as blackout paint?

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