Magnetic Shielding

Low frequency magnetic shielding

MuFerro 6800
Low-frequency magnetic shielding
A new material for shielding / screening low-frequency magnetic fields has been developed. These fields are generated by installations in which high currents flow, for example transformer rooms, power lines, busbar systems and nearby high-voltage cables.

Indoor transformer rooms

The frequency of these magnetic fields is typically 50/60 Hz. But the MuFerro material is suitable for magnetic shielding in frequency ranges from 0 Hz to 100 KHz.

Customer Benefits
• Cost-effective solution
• Up to 95% field-strength reduction and more
• Flexible design
• Measurement report
• Can be delivered with 10-year guarantee

MuFerro combines permeable and satiety characteristics which make it extremely suitable for screening low-frequency magnetic fields.

Why use magnetic shielding/screening?
Strong magnetic fields can interfere with or damage electronics in the direct surroundings of the field. In addition, magnetic fields negatively affect sensitive measurements in hospitals and laboratories. Apart from their impact on electronics, magnetic fields may pose a serious threat to human health and well-being. For this reason many countries have adopted the recommendation that for working spaces exposure should be < 0.4 µT=400 nT.

Applications
• Transformer rooms (indoors or outdoors)
• Power plants
• Hospitals / laboratories
• Aluminium melting/production
• High-voltage labs
• Anything that creates high magnetic fields (high currents)
• Bus bars

Magnetic shielding can be realized even after the transformer has been placed. For screening whole buildings, or rooms, the shielding material is applied to walls, ceilings and/or floors. This protects both people and electronics.

For magnetic shielding of electronic devices Mu-ferro 6800-HD is available in 1 and 0.5 mm thick plate material.
Magnetic shielding for sensors and electronic devices

For magnetic shielding of electronic devices and PCBs, Mu-ferro 6800-HD has been developed. Mu-ferro 6800-HD is used to prevent a device emitting low frequency magnetic radiation (0Hz – 300KHz), or it is applied around a sensitive device or sensor, to prevent the electromagnetic interference disrupting normal operations.

Mu-ferro 6800-HD offers important magnetic field shielding characteristics, due to its high magnetic permeability and its ability to absorb magnetic energy. This allows for the highest possible attenuation, making this shielding alloy the material of choice for reducing low-frequency electromagnetic interference.

For magnetic shielding of electronic devices, Mu-ferro 6800-HD is available in 1 and 0.5 mm thick plate material. In addition we can produce custom shapes which will yield the best possible shielding effect for your needs.

Mu-ferro 6800-HD is also available as a foil, delivered on rolls (0.024 mm thick) with or without regular or conductive self adhesive for high frequency shielding and easy mounting.

Shielding performance 2 mm Mu-ferro-HD

<table>
<thead>
<tr>
<th>Frequency (HZ)</th>
<th>Shielding factor (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>0</td>
</tr>
<tr>
<td>0.01</td>
<td>10</td>
</tr>
<tr>
<td>0.1</td>
<td>20</td>
</tr>
<tr>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>100</td>
<td>60</td>
</tr>
</tbody>
</table>

Example

Sheet of Mu-Ferro-HD, 50 x 1000 mm and 1 mm thick.

Mu-ferro HD

Properties

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>0.02%</td>
</tr>
<tr>
<td>Manganese</td>
<td>0.50%</td>
</tr>
<tr>
<td>Silicone</td>
<td>0.35%</td>
</tr>
<tr>
<td>Nickel</td>
<td>80.00%</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>4.20%</td>
</tr>
<tr>
<td>Iron</td>
<td>Balance</td>
</tr>
<tr>
<td>Density kg/m3</td>
<td>8747</td>
</tr>
<tr>
<td>Thermal conductivity W/m· K</td>
<td>34.6</td>
</tr>
<tr>
<td>Electrical conductivity micro-ohms</td>
<td>580</td>
</tr>
</tbody>
</table>

Applications

- Aviation and aerospace industry
- Sensitive sensors
- Medical equipment
- Physics research
- Telecommunication
- Automotive
- Military

Ordering information

Part number: Mu-Ferro-HD
Width (mm): 50
Length (mm): 1000
Thickness: 1 mm

Specify the width in mm
Specify the length in mm
Thickness in mm:
0.5 mm
1.0 mm

innovative EMI shielding solutions