



Holland Shielding Systems B.V. has developed a new material for shielding / screening low-frequent magnetic fields. 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

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 10 Hz to 100 KHz.

Customer Benefits

- Cost-effective solution
- Up to 95% field-strength reduction and more
- Flexible design
- Measurement report
- 10-year guarantee

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



Magnetic field strength measurement



MuFerro™ 6800 wall shielding

Why use shielding/screening?

Magnetic fields pose a serious threat to human health and wellbeing. Scientific research has shown that exposure to magnetic fields of $> 300\text{nT}$ or $0,003$ Gauss increases one's chance of developing leukemia significantly. Moreover there are numerous other health symptoms that are associated with exposure to magnetic fields, e.g. headaches, depression, and insomnia. For this reason the ICNIRP (International Commission on Non-Ionizing Radiation Protection) has made the recommendation that for working spaces, exposure should be $< 0.5 \mu\text{T}=500 \text{ nT}$ and for public spaces it should be $< 0.1 \mu\text{T}=100\text{nT}$.



Apart from their negative impact on health, strong magnetic fields can disturb or damage electronics in the direct surroundings of the field. In addition, magnetic fields disturb sensitive measurements in hospitals and laboratories.

Applications

- Transformer rooms (indoors or outdoors)
- Power plants
- Aluminium melting/production
- High-voltage labs
- Anything that creates high magnetic fields (high currents)
- Railways and Subway systems
- Sensitive measurements

Holland Shielding Systems B.V. can realise magnetic shielding 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.



Transformer room

Magnetic-field measurements

Before the screening/shielding is put in place, a site survey (magnetic field-strength measurement) can be conducted. We not only measure the magnetic field strength but also locate its probable source. The measurement results are provided in a report.

Examples of projects

Due to space restrictions, one of our customers was forced to create a workplace in a room which had formerly been used as a warehouse and that was located above power transformers. After the magnetic fields were noticed by flickering computer displays, we were asked to carry out a magnetic field measurement. It was found that the magnetic field strength was far above the standard referred to above: it was 750nTesla. The magnetic field was reduced by installing an umbrella construction of MuFerro™ 6800. After completion of this project, the magnetic field measured only 80nTesla.



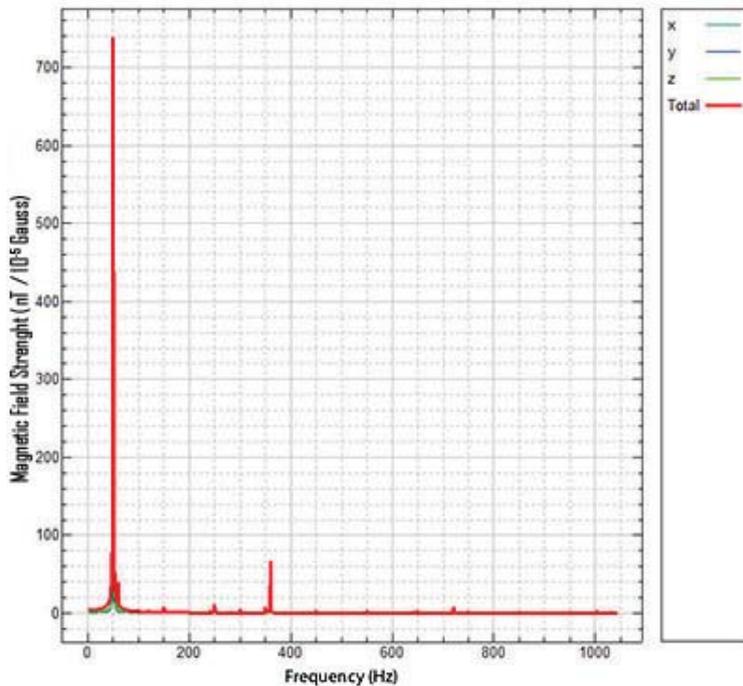
Measuring setup



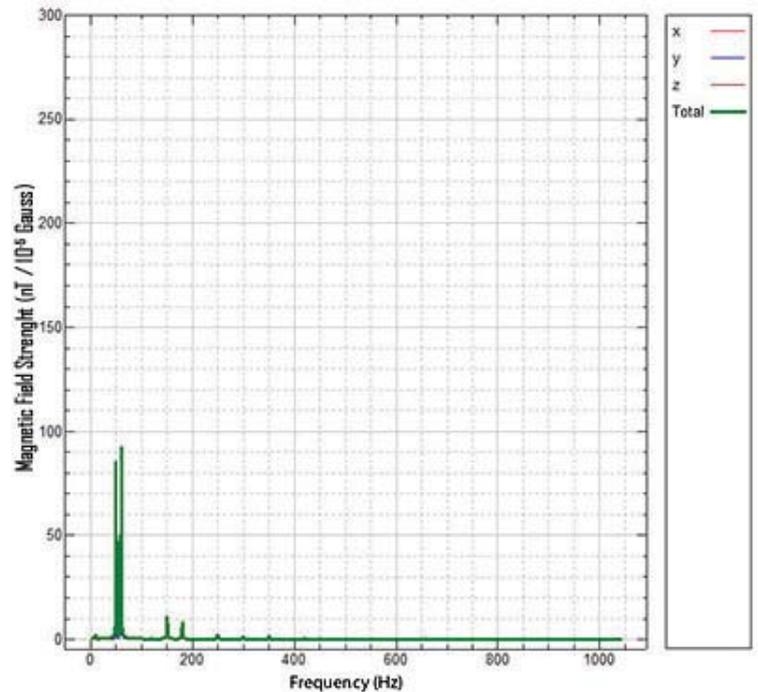
MuFerro™ 6800 ceiling umbrella construction



The graphs below show the magnetic fields in nano Tesla or 10^{-5} Gauss before and after the magnetic shielding was installed.



Measurement before placing MuFerro™ 6800 plating
750 nTesla



Measurement after placing MuFerro™ 6800 plating
80 nTesla

Several clients have engaged us to MuFerro™ 6800 shielding, including:

