SATISHIELDING

ELECTROMAGNETIC SHIELDING PRODUCTS

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Shielding Plates

Mitigation of the magnetic flux density is achieved for both shielding plates and shielding channels by affixing magnetic shields made of two different materials:

- Material with high magnetic permeability.
- Material with high electrical conductivity.

LT Low Thickness plate - 2.7 mm

The overall thickness of the plate is equal to 2.7 mm, with layers having the following features:

- 1st layer: high-permeability magnetic material composed of two overlaid plates each 0.35 mm thick.
- 2nd layer: material with high electrical conductivity 2 mm thick.

MT Medium Thickness plate - 4.7 mm

The overall thickness of the plate is 4.7 mm, with layers having the following features:

- 1st layer: high-permeability magnetic material composed of two overlaid plates each 0.35 mm thick.
- 2nd layer: material with high electrical conductivity 4 mm thick.

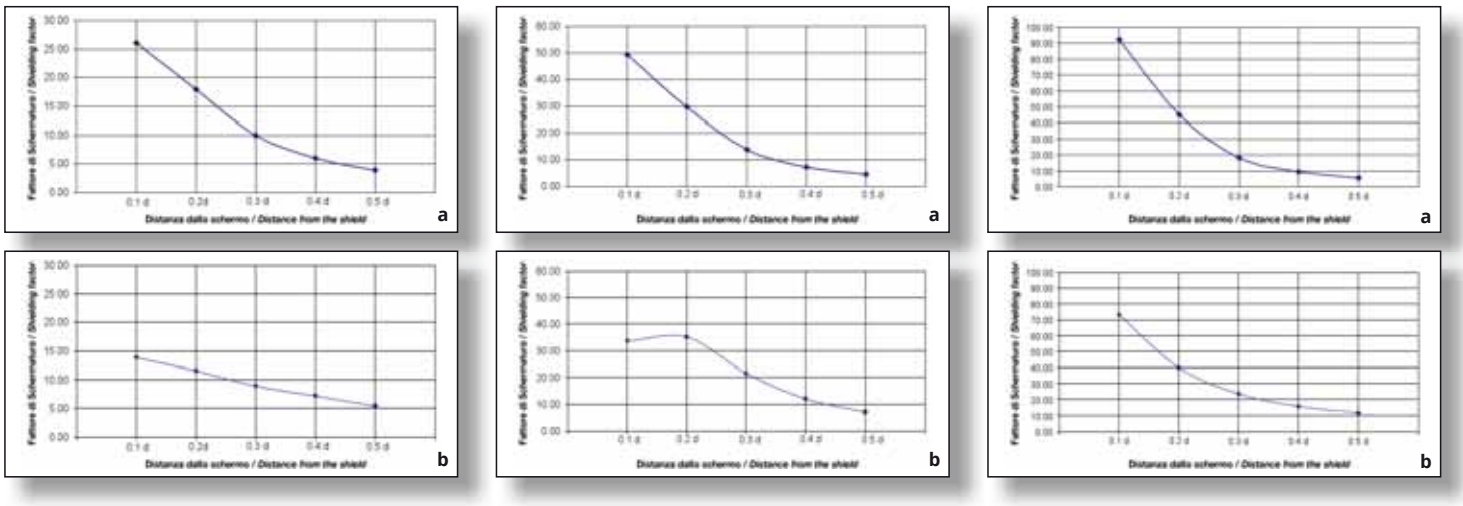
The MT series has improved conductive shielding factors and is capable of maintaining high levels of protection at a distance from the shield.

HT: High Thickness plate - 6.4 mm

The overall thickness of the plate is equal to 6.4 mm, with layers having the following features:

- 1st layer: high-permeability magnetic material composed of four overlaid plates each 0.35 mm thick.
- 2nd layer: material with high electrical conductivity 5 mm thick.

The HT series has improved both conductive and ferromagnetic shielding factors. It offers high protection both near the shield and at a distance from it.



a - Shielding factor with high permeability material facing the source.
b - Shielding factor with high conductivity material facing the source.

Plates for the protection to the value of 3.75 µT.

EMF Source / Distance to Source exposed area	Transformer (kVA)				
	400	630	1250	1600	2500
1 m	LT	LT / MT	MT / HT	HT	HT
1,5 m	LT	MT	MT	MT / HT	HT
2 m	LT	LT	MT	MT	MT

EMF Source / Distance to Source exposed area	Distribution Line (A)				
	250	500	1000	2000	3000
1 m	LT	LT	MT	HT	HT
1,5 m	Not necessary	LT	LT	MT	MT
2 m	Not necessary	Not necessary	LT	LT	MT

Shielding Cable Trays and Cover.

Shielding Cable Trays are capable of ensuring a magnetic field mitigation factor of 25.
It is possible to choose different sizes of shielding channel all having the same shielding factor running through the entire length of the cable tray.

Shielding Underground Lines

The shielding ducts suitable for outdoor installations are designed according to the size required. The choice of the materials of the duct, the type of processing and the dimensions depend on the conditions of installation and on the shielding factor request for the mitigation.

Magnetic Shielding Solutions for the Junction Zone of High Voltage Underground Power Lines

The “High Magnetic Coupling Passive Loop” (HMCPL) allows the mitigation of the field produced by a group of conductors crossed by current through another system of conductors which have high magnetic coupling with the source cables of the power line and the right geometrical displacement.
The coupling between source and shield conductors is obtained by a high permeability magnetic core which induces in the shield conductors a current with opposite phase with respect to the source ones.
This shielding technology is used in particular in high voltage “Joint Bay”.

Software MAGIC®

MAGIC® is a software developed and distributed by Sati Shielding S.r.l. for the computation of magnetic induction levels generated by the most common sources of magnetic fields, assesses the environmental impact and defines the appropriate levels of protection.
The three main menus allow the study of magnetic field sources in two-dimensional and three-dimensional configurations through the integration of the Biot-Savart law.

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