

# Low Frequency Electromagnetic Shielding Solutions

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**Abstract**— Electromagnetic shielding is one of the most important concerns of operators from high and very high voltage field, especially those carrying out live work. The electromagnetic field generated by high-voltage overhead power lines and highvoltage equipment may be harmful, especially to those operating these installations. Taking into account the exposure time of workers in the case of maintenance in high voltage installations, there is a need for a thorough analysis of the real stress on workers and methods to reduce exposure to electromagnetic field. When using non-ferromagnetic materials, time-varying magnetic flux  $B$  determines an induced electric field in the shield material, producing an induced electric field, which will generate a magnetic field opposite to field from the outside. The shielding factor depends only on the electric conductivity of the shield material. In the case of ferromagnetic materials, the shielding factor of the shield depends on the penetration depth of the magnetic field, so depends on permeability and electric conductivity of the material. The paper aims to perform a comparative analysis of the methods for magnetic field shields, using different materials with different magnetic and electrical properties.

**Keywords**— shield, magnetic field, material

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