



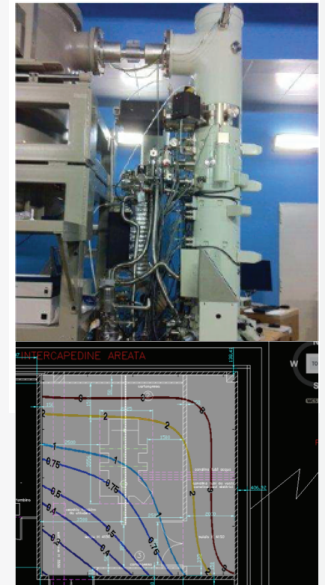
BESHIELDING
BUSBAR | ENGINEERING | SHIELDING



ELECTRON MICROSCOPE SHIELDING

Description of the problem

Electron microscopes are extremely sensitive to magnetic fields and cannot tolerate magnetic induction values greater than 0.1-0.2 μT . The case presented concerns a microscope at a materials research centre, installed in an area bordered by ducts bearing lines that carry currents of several hundred amperes. The induction levels — both measured and estimated — were around 5-10 μT . Thus a system was required to reduce the magnetic fields generated by such sources, able to achieve a shielding factor of around 100-fold.



Solution

The solution proposed and implemented revolves around two aspects: transposition of the conductors and installation of the shielded ducting. The figures show the layout of conductors **without** transposition. Together with shielding, transposition makes it possible to achieve very high magnetic induction reduction factors.



Results

The figure depicts the magnetic induction map obtained after applying the mitigation works, showing that the levels meet the required specification.

