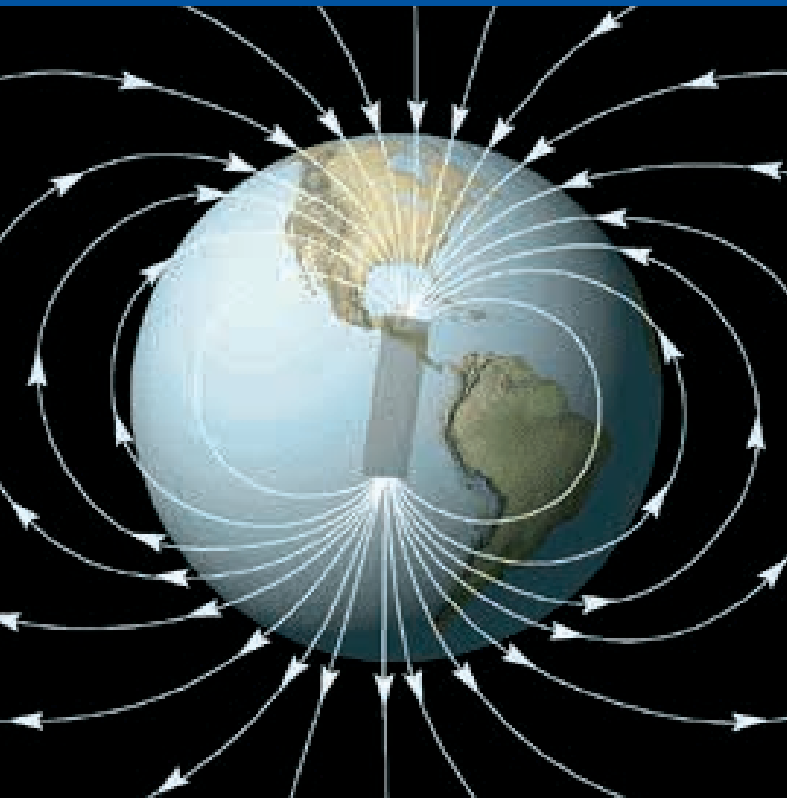


EDITION 2



Electromagnetic compatibility

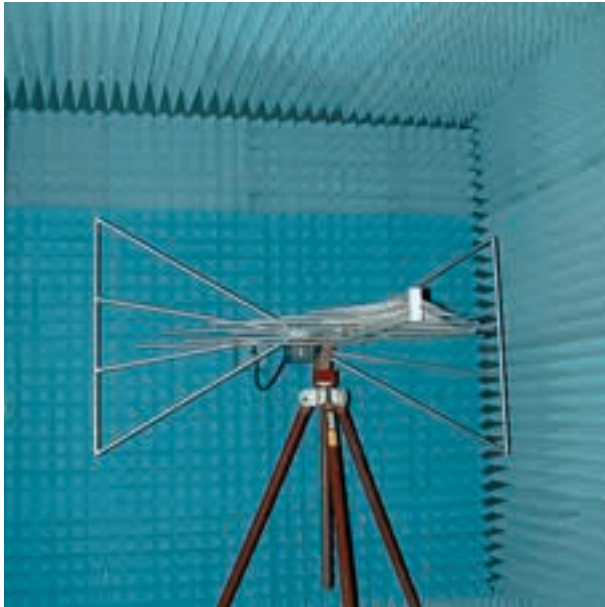


Measuring
magnetic fields



The technical Competence Centre
in energy processes and energy use.
From R&D to operational assistance.

Measurements of EM fields for worker safety



EM fields can cause health problems

Electromagnetic (EM) fields are frequent in industrial environments. Machines using power electronics, for instance, produce EM fields at several frequencies. These fields must be measured since they can cause health problems in case of high level exposure.

Compliance required by 2008

The new European directive 2004/40/EC imposes strict frequency depending limits for EM fields at working places, ensuring workers health and safety. The directive must be transposed into law in each country by April 2008. All companies in the country then have to prove their compliance with national requirements. As this is not always an easy task, every industry should start these investigations immediately.

Solutions for your company

Laborelec has appropriate devices for measuring EM fields in a frequency range of 0 to 1,000 MHz. Our experts also have a long-term experience in using these tools at industrial sites. If measurements exceed the requirements of the directive, we will identify areas around the machines where workers are safe. For several field frequencies, we are also able to suggest solutions for attenuating field levels.

Tools and procedures accredited BELTEST

Laborelec has recently received a BELTEST accreditation for on-site measurements of electric fields at 50 Hz and of magnetic fields from 50 Hz to 10 kHz. We are the only ones in Belgium with this acknowledgement. This proves the high reliability of our measurement equipment and procedures, and ensures independence from manufacturers and vendors. It is a quality guarantee for all companies that need EM field measurements to comply with the 2004/40/EC directive.



Five reasons for you to choose Laborelec



1. You have one-stop shopping

Why should you call us?

- You will know whether the electromagnetic fields in your premises are higher than the levels required by the 2004/40/EC directive for workers' health.
- You can obtain a map of the magnetic field levels around a radiating source. This map will determine the volumes outside which the magnetic fields levels remain below the recommended values.
- If one of your employees wears a pacemaker or any other implant, it is essential for him to stay in places where the magnetic fields are lower than the limit recommended by the pacemaker's manufacturer.

- Depending on the frequency, you get solutions to decrease the field level at the source or at critical places.

2. You get access to more than 40 years of experience

Take advantage of Laborelec's decades of experience in electromagnetic fields measurements. We keep abreast of the latest technical aspects and legislation.

3. You increase the profitability of your installations

You make the best use of your electrical installations if experts implement the electromagnetic compatibility rules in your premises. You will have the information to improve the daily safety of your employees at your disposal.

4. You benefit from independent and confidential advice

Laborelec is not selling or installing equipment. This guarantees you neutral and independent advice.

5. You are supported by a recognized and accredited laboratory

Laborelec is the only laboratory in Belgium accredited BELTEST for on-site measurements of EM fields. This is your guarantee for high-quality measurement tools and procedures.

Have a look at our testimonials!

Testimonials

STIB-MIVB

Laborelec's independence from suppliers and manufacturers is a strong asset when you need indisputable proof that your installations comply with regulations. This was the case recently for the STIB-MIVB. It needed to show that generated electric and magnetic fields were below prescribed limits when it installed a new power supply for one of its tramway lines in Brussels. It was also concerned that the new power supply didn't affect radio and TV reception. Laborelec performed comprehensive measurements and presented the results to nearby residents and to authorities. Their independence guaranteed impartial results.



UMICORE

Germanium producer Umicore Electro Optic Materials uses several induction ovens that emit powerful EM fields. It asked Laborelec to measure the EM fields near the ovens to ensure the health of its workers.

'Laborelec is one of just a few research centres to offer the appropriate measurement techniques and to master them. Its experts quickly provided us with a report including practical recommendations for keeping field level within recommended health limits. From now on, we will apply this advice for every new oven and at every new plant.'

Thierry Vandevelde

Process and Product Development Manager, Umicore

Testimonials

ELECTRABEL nuclear power plant Doel

'We recently investigated health risks linked to electric and magnetic fields at our plant. The purpose was to prepare for our OHSAS 18001 certification (health and safety management system), for which a wide range of threat and risk must be assessed.'

'To evaluate the strength of the fields, we first looked through the literature hoping to find field values that could be extrapolated to our installations. But this method proved to be unreliable.'



'We called upon Laborelec's EMC experts to perform accurate field assessments. They conducted measurements right away and provided us quickly with accurate field strengths as well as with most recent legal limits. Results were quite surprising. At most places, field values were low but they would reach very high levels at some specific spots. Laborelec identified these spots precisely. This way, we were able to take all necessary measures to address this issue.'

Dirk Poppe

IDPB Electrabel Nuclear Production Zone Doel

Testimonials

MONSANTO

Monsanto has asked Laborelec to verify that the magnetic fields generated by one of its new devices remained within recommended limits. Laborelec performed field measurements at more than twenty strategic points, at normal device load. Measurements were then extrapolated to maximal load to get maximal possible field levels. The recommendations were exceeded in a few locations. Since no screening of the device was possible, Laborelec recommended clearly and precisely marking these areas, so workers could avoid them during operation.

Hugo Molkens
Monsanto



NETMANAGEMENT

Residential sites in Brussels must comply with strict limits regarding exposure to magnetic fields. Laborelec's team knows regional legislations and is experienced in identifying the most critical locations of exposure.

NetManagement called on this expertise before transforming one of its office buildings into apartments. 'Three high voltage transformers are located at the back of the building, so we wanted to make sure that safety levels of magnetic fields were respected. Laborelec performed measurements at more than forty carefully chosen points. Values were found to be ten times lower than the prescribed levels.'

Stefaan Roelant
NetManagement

Testimonials

STOCKO CONTACT

At Stocko Contact, a number of workstations are located in the vicinity of electrical machinery. As a consequence, our personnel are exposed to a magnetic field of 50 Hz, which can be significant.

We decided to bring in Laborelec with a view to checking and confirming that one of our employees who recently underwent a pacemaker implant was able to go on working in total safety within a magnetic industrial environment.

For such an operation, it is important to be aware of the immunity level of the pacemaker to a magnetic field of 50 Hz. Laborelec obtained all the information we needed on this cardiac stimulator from the surgeon who carried out the operation. Its experts then went on to take magnetic field measurements in various workstations and compared these with

the health values laid down by the European Council on the one hand and the compatibility limit of the pacemaker on the other.

'As prevention adviser, my role is to monitor the safety of Stocko Contact personnel in the workplace. Laborelec enabled us to overcome our doubts on the interaction between the magnetic field and the cardiac implant of a colleague who had recently undergone a heart operation. Today, we feel

reassured. As a result of the work carried out by Laborelec, our colleague is now able to go on working with no cause for concern.'

Heribert STOFFELS
Prevention Adviser,
Stocko Contact



SOLVAY

'We want to add a few words to sum up our full satisfaction regarding Laborelec work.'

'The measurements of magnetic fields around our electrolysis rooms are an essential factor for our company. These measurements have enabled us to take concrete actions with a view to improving the quality of life in the workplace for our personnel.'

Marc Thomas
Head of Operational Sector, US.ELEC



Five reasons for you to choose Laborelec:

- you have one-stop shopping for your energy needs;
- you get access to more than 40 years of experience;
- you increase the profitability of your installations;
- you benefit from independent and confidential advice;
- you are supported by a recognized and accredited laboratory.



What is the meaning of «Electromagnetic compatibility» (EMC)?

Electromagnetic compatibility is the ability of a device or system to function satisfactorily in its electromagnetic environment without introducing any electromagnetic disturbances into that environment that might lead to any inefficiencies or malfunctions.

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in energy processes and energy use.
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Electromagnetic compatibility

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