

Electro-Osmotic De-Moisturizing Technology

What is EOD?

The EOD System eliminates excess moisture from concrete and masonry resulting from rising damp, otherwise known as capillary action. The System includes four main components: 1) a Control Unit, 2) a Ferrit Antenna, 3) Wall Mounted Electrodes (anodes), and 4) an Earth Spear (cathode). The surface mounted Control Unit measures about 19 x 5 x 5 inches and is compact. The System is exceptionally energy efficient, using normal line voltage (110 volts) and consuming only 8 watts of power. The entire EOD System can usually be installed in one or two days, with minimal disruption to the building's occupants or surroundings.

How does EOD work?

Electromagnetic waves emitted by the EOD Control Unit divert the flow of capillary ground moisture into a building and keep it out based on the following principles:

- a. The Ferrit Antenna emits modulated, timed, and varying low frequency radio waves (141 kHz). The radio waves stimulate water molecules to reduce their adhesion to masonry or concrete;
- b. The System produces an electrical field between the building and earth to attract salt and water from the walls and slab to the surrounding earth. Over time, moisture is driven out and away from the masonry or concrete back into the earth.

EOD's Origins and Uses

EOD was developed in Germany in 1997 by the firm Hamatrol[®], which has to date successfully installed more than 3,000 Systems in Europe. In 2003, the firm Moisture Solutions, LLC became the exclusive US and Canadian distributor for the EOD System. From 2003 to the present, Moisture Solutions has performed test installations in several buildings for the purpose of data collection. In addition, an engineering doctoral student based his thesis on EOD's performance and concluded that the System performs as Moisture Solutions markets it. Further, Moisture Solutions has been asked by the National Park Service Division of Technical Preservation Services and the National Trust for Historic Preservation to screen select historic buildings and determine if EOD is a viable solution to the below grade capillary action problems present in these structures. Moisture Solutions has determined that for the North American market, the System is a good fit for commercial, institutional and historic structures that have below grade moisture problems that cannot be resolved using traditional waterproofing methods.

Why EOD is innovative

EOD Benefits:

- A cost-effective alternative to building renovation that preserves and keeps a building in tact
- Transforms unusable space into usable space increasing real estate square footage value
- Protects building mechanicals and increases the longevity of interior finishings and wall paint
- Is energy efficient, using normal line voltage (110 volts) and consuming about 8 watts
- Is compact, measuring 19" x 5" x 5" (surface mounted Control Unit)
- FCC approved; does not interfere with the operation of other devices
- Safe; does not pose health affects associated with operation
- Quick installation, usually in one to two days

What EOD has changed or replaced

As a member of the Sealant, Waterproofing and Restoration Institute, Moisture Solutions sees the potential for the System to complement traditional waterproofing methods where difficult to resolve rising damp problems are present. The EOD System is a compact, less intrusive, significantly more cost effective solution to resolving rising damp when compared to the cost and work involved with excavation/trenching methods sometimes used to solve this type of problem.

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**Electro-Osmotic De-Moisturizing Technology
Innovation Illustration – Measurable Results**

2005 NOVA Award Nomination



© Greg Anderson Photography – Shown above – Control Unit Installed in a Building..



Shown Left:
An unusable elementary school classroom in Germany before installation of the EOD system.



Shown Left:
The same classroom now in use due to EOD's drying results.

Excerpt from Wessam Daoud's doctoral dissertation* on Electro-Osmotic De-Moisturizing Technology illustrating System drying overtime.

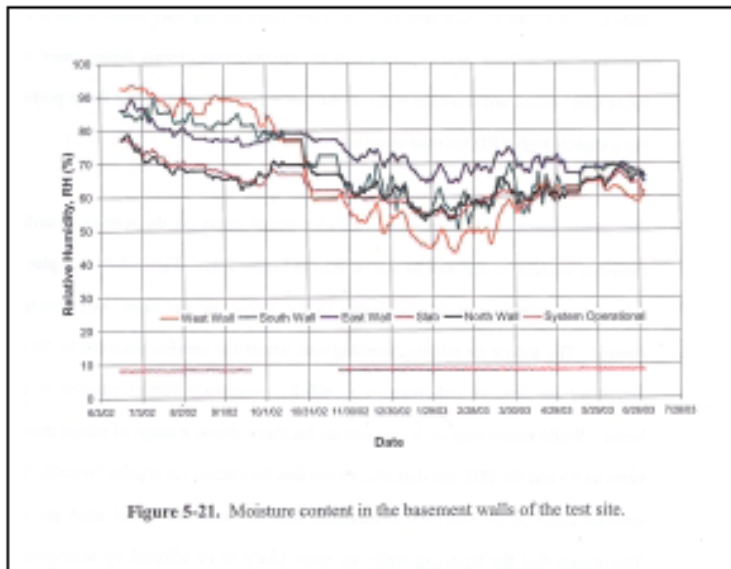


Figure 5-21 (left) illustrates the System's performance over a one year testing period from July 15, 2002 to June 18, 2003.

Detailed research in this United Stated application revealed the System was responsible for a 26% decrease in relative humidity within the walls and slab floor of this treated building.

* Mr. Daoud's dissertation is available for review upon request.