Copperbonded Ground Rods

The ground electrode is a critical component of the grounding system. Many different types of electrodes are available, some "natural" and some "made".

"Made" electrodes are specifically installed to improve the system grounding or earthing. These earth electrodes must ideally penetrate into the moisture level below the ground level to reduce resistance.

They must also consist of metal conductors (or a combination of metal conductor types), which do not corrode excessively for the period of time they are expected to serve. Made electrodes include rods or pipes driven into the earth, metallic plates buried in the earth or a copper wire ring encircling the structure.
As a compromise, steel cored ground rods, swaged in a copper sheath were developed. These ground rods are much less expensive than their solid counterparts. They are capable of being deep driven. However, the sheath of this rod type has been known to slip or tear, particularly the copper version. Once this sheath has been damaged, the integrity of the entire electrode is at risk.

Ground Rods sizes are driven by Standards and Codes of Practice in regards to Minimim Sizes to respect.
In most of cases, diameter and coating thickness is the key information listed on such documents.

Various manufacturing process can exist, main being Copper Cladding Process (mechanical) vs. Electrolytic Copper Bonding process.

Although Copper Cladding Process (mechanical) being authorized, Standards also precise that the manufacturing method must result with a product offering:

- **In case of threaded ground rods, the coating must extend over the threads,**
- **During installation stage, the ground rod is not producing any cracking or tearing**.

Some testing methods easilly show results that might happen in service life conditions : please see below.

Beside picture shows two ground rods subjected to the same pressure load test.

The ERITECH Copperbonded Ground Rod (shown on the left) will bend without tears, cracks or folds to the outer sheat.

The Copper Cladded Ground Rod (shown in the right) has developed cracks and creases to the outer sheat.

This will significantly reduce service life and damage the entire electrode or network integrity.

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Years ago, ERICO rationalized their entire Ground Rod production to produce ERITECH CopperBonded Ground Rod while Copper Coated Ground Rods were discontinued.

ERICO is marketing ERITECH Ground Rods produced with 99.9% Pure Electrolytic Copper, with a Min. of 10 mils (254 µm) thickness.

A uniform copper thickness provides better corrosion resistance in most soil conditions. Copperbonded rods last longer, drive easier and will not crack.

ERITECH CopperBonded Ground Rods are manufactured within an ISO9001 processed envirronment.

- Manufacturing operations as :
- Steel wire cleaning,
- Steel wire calibration,
- Nickel sealing,
- Copperbonding,
- Finishing steps

These steps take place within a continuing process ensuring high quality finish, which is constantly monitored within an automated process.

As result of this, superior ERITECH CopperBonded Ground Rods provide :

- Copper exteriors, molecularly bonded to nickel-sealed high-strength steel cores, exceeding the requirements of ANSI®/UL® 467-1984 (ANSI C33.8-1972) and CSA®.
- Copper Coating: standard copper plating thickness exceeds UL and ANSI specs. of 0.254mm, conforms to KEMA 83C as well as other Norms as EN50164-2.
- Ground Rods exceeding a tensile strength of 515,000 kPa,
- Ground Rods that may be extended with use of ERITECH couplers.

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