G M C • S T A P E R M

COMPANY INFORMATION

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Corrosion Control Experts in Design, Testing, Installations and Materials.
"Rust Never Sleeps"

GMC Electrical, Inc. was originally founded in 1984 by Gary L. Matlack who at that time had over 17 years experience in the corrosion control industry from cathodic protection design, testing, installation, and research and development of permanent reference electrodes.

GMC Electrical when founded in 1984 with extensive research and development offered to the corrosion industry their "STAPERM" line of reference electrodes, now with over 30 years experience in the research, development and manufacture of reference electrodes is the world leader.

The "STAPERM" permanent reference electrode is a long-life, highly stable electronic device for measuring the voltage potential of structures to be cathodically protected or measured in the surrounding electrolyte. Available through a worldwide distribution network of GMC ELECTRICAL, INC. "STAPERM" reference electrodes can be used in installations of fresh water, underground, salt water, and saturated saline soil conditions. "STAPERM" provides the means of measuring accurately the effectiveness of cathodic protection systems as the following:

- Inside Water Tanks
- Fresh Water Dock Structures
- Buried and Submerged Pipelines
- Underground Storage Tanks
- Waste Treatment Facilities
- Steel Sheet Pile Bulkheads
- Steel H and Pipe Piles
- Concrete-Encased Steel and Steel Re-Bar
- Offshore Platforms
- Offshore Drilling Rigs
- Offshore Pipelines
- Ships, Work Boats and Yachts
- Undersea Habits

"STAPERM" features a unique Chloride Ion Trap that prevents contamination of electrode electrolyte - enhancing the service life (copper-copper sulfate and zinc-zinc sulfate only).

A specially developed porous ceramic electrode housing tubes and contact plugs that element drying-out problems to insure low contact resistance to earth, providing more reliable readings.

Our reference electrodes are color coded for ease of cell type determination - eliminating guesswork and errors. Our advanced design allows for ease of installation and a long electrode life. It is perfect for inaccessible locations.

GMC Electrical, Inc. also is the proud recipient of the NACE International Western Area Outstanding Company of the Year 2000.

In Use at GMC Electrical Since 1984
QUALITY YOU CAN TRUST

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UNDERGROUND • CONCRETE ENCASEMENT

Permanent Ceramic Reference Electrodes for underground and concrete encased applications (space age porous ceramic)

Features: 3 sizes available 15 sq. in. .83" Dia. x 6" long, 28 sq. in. 1 1/2" Dia x 6" long, 33 sq. in. 1 3/4" Dia. x 6" long. Greater surface area than other standard electrodes will allow readings achieved with greater accuracy.

Electrode will not dry out in arid soils. Moisture content change in soil has no effect on electrode.

Electrode has an infinite shelf life. Minimum service life 30 years.

Copper-Copper and Zinc-Zinc sulphate electrodes equipped with advanced chloride ion trap to prevent chloride contamination. Should not be used in soil with chloride content higher that 200 ppm chloride. All electrodes are side reading 360° (Deg).

Electrodes are color coded for electrode type determination.

Model CU-1-UGPC
copper-copper sulphate (Cu-$CuSO_4$)
(for soil 200 ppm chloride and less.)
Size 1.5" DIA. x 6" long space age **yellow** inert praseodymium membrane ceramic tube with **yellow** protective caps.
Lead Wire: 50' of #14 RHH-RHW yellow.
Stability: + - 5 millivolts with 3.0 microamp load.
Temperature Range: 32° to 135°F (0° to 57.2°c)

Model ZN-4-UGPC
zinc-zinc sulphate (Zn-$ZnSO_4$)
(For soil 200 ppm chloride and less)
Size 1.5" DIA. x 6" long space age **red** inert cadmium membrane ceramic tube with **red** protective caps.
Lead Wire: 50' of #14 RHH-RHW red or black.
Stability: + - 5 millivolts with 3.0 microamp load.
Temperature Range: 32° to 135°F (0° to 57.2°c)

Model AG-4-UGPC
silver-silver chloride (Ag-AgCl)
(for soil 200 ppm chloride or higher.)
Size 1.5" DIA. x 6" long space age **blue** inert colbalt membrane ceramic tube with **blue** protective caps.
Lead Wire: 50' of #14 RHH-RHW blue or black.
Stability: + - 5 millivolts with 3.0 microamp load.
Temperature Range: 32° to 150°F (0° to 65.5°c)

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