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Copper-Copper Sulfate (Cu-CuSO₄)

Buried / Permanent reference electrodes are often installed close to pipelines and other buried or submerged structures with the idea that they will provide more accurate and/or more localized representative potential data, at that specific location, than a reference electrode on the ground surface.

Such potential data may be used to determine the local cathodic protection level, potential shifts, the presence or absence of interference or for control of automatic output rectifiers.



STANDARD SPECIFICATIONS

Two levels of chloride ion trapping technologies are used in the Stelth 2. Both of these systems give an additional benefit of lowering the internal resistance of the Stelth 2 reference electrode.

- First, they are impregnated with a trapping material into the ceramic sensing tube that traps chloride ions before they reach the chemistry of the Stelth 2.
- Second, they employ a chloride ion trapping that removes chloride ions that penetrate the CuSO₄ chemistry of the Stelth 2 before these ions can cause damage.

TECHNICAL SPECIFICATIONS

Size	1.5" (40mm) diameter x 7" (180mm) long
Material	Ceramic w/ moisture retention membrane
Stability	5 millivolts with 0.3 microamps load
Working Temperature Range	32°F to +176°F (0°C to 80°C)
Material Temperature Range	-60°F to +185°F (-51°C to 85°C)
Stelth Model SRE-007-CUY	For buried or concrete service in chloride free environments

BENEFITS

- Minimum 30-year service life.
- 28 sq. in. of sensing service area gives you 9-35 times more surface area than other electrodes. This makes electrode positioning less critical to achieve accurate readings.
- Will not dry out in desert soil, a condition that renders other electrodes ineffective. Cyclical variations in soil conditions, ranging from hydrated to dehydrated, have no adverse effects on the Stelth 2 electrode.

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INSTALLATION INSTRUCTIONS

1. Remove the plastic bag from the Stelth 2 reference electrode just prior to installation. There will be moisture, if not actual water, in this plastic bag. This is intentional as each cell is saturated with distilled water prior to shipment. Always try to install the Stelth 2 reference cell below the frost line.
2. Bore a hole of 2" to 3" diameter, and deep enough so that you can place the Stelth 2 reference electrode level with or below the spring line (horizontal centerline) of the structure and between three (3) inches and twenty-four (24) inches from the structure.
3. Pre-soak the Stelth 2 reference electrode in a clean bucket of fresh potable water just prior to installation for 20-30 seconds. Place the Stelth 2 reference cell in the hole, at the correct level and then pour the remaining water in the bucket into the hole over the Stelth 2 reference cell.
4. Immediately after soaking and placing the Stelth 2 reference electrode in the hole, proceed to backfill with native soil ONLY. Do not use clean/washed sand. After backfilling with the native soil, lightly tamp backfill by hand to ensure good compaction.
5. Run the wire attached to the Stelth 2 reference electrode to a separate terminal in your test station. Attach wire to the structure. Run this wire from the structure to another terminal in the test station. Do not connect these wires together.

NOTE: Chloride at levels of only 200 parts per million alter the chemistry of a CU-CuSO₄ reference electrode enough to cause a complete breakdown, resulting in loss of stability and finally a total shut down.