

**REFERENCE CELLS**

# Permacell Plus<sup>™</sup>

## Permanent Reference Cell

### The Complete Monitoring System

Permanent reference cells measure electrical potentials. Test stations provide contact points for surveying buried metallic structures. Combining these two devices, Corrpro developed Permacell Plus, a totally integrated monitoring system, which provides easy access to vital corrosion related data. The system is composed of a test station, lead wire, and permanent reference cell. The test station on the system is equipped for monitoring up to 4 structures, and is made from ultraviolet- and chemically resistant inert tubing. To reduce operator error, test leads on the station are specially configured, with the cell contact at the center of the test head, and the structure contacts along the perimeter. The test leads themselves are made from solid brass. They are slightly recessed into the test head, and are clearly marked for fast and trouble-free readings. To protect against damage from chemicals found in many buried environments, #14 AGW Hypalon<sup>™</sup> insulated copper wire is used to connect the test station and reference cell. This wire is covered by flexible tubing to provide an extra level of mechanical protection to the wire.

Electrical stability is the most important aspect of any reference cell. Permacell Plus has unsurpassed stability, with a thirty-year design life, and an accuracy level of within five millivolts. The system's impressive performance is due in large part to its reference cell element. The cell is composed of a 99.99% pure copper element, which is housed in a specially designed porcelain cup. An inside track within the cup greatly reduces the chance for ion intermixing, and ensures cell purity.



Surrounding this cup is a thixotropic stabilized gel backfill. This backfill material greatly reduces the cell's electrical resistance to the earth and does not require moistening.

### Typical Applications

Permacell Plus can be used to measure the electrical potentials on all types of buried structures. It is offered with either pole- or flush-mount test stations, and is ideally suited for structures, such as underground storage tanks, which are located under pavement or other impediments. The system is not recommended for use in areas with high chloride concentrations.



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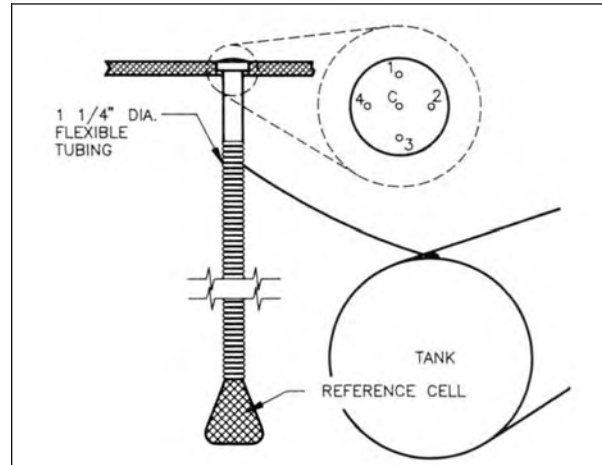
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## Permacell Plus™ Permanent Reference Cell

### Ordering Procedure

The Permacell Plus system is custom manufactured to meet the customer's specifications. To order this monitoring system for your particular application, indicate that you need a Permacell Plus reference cell system, and specify the quantity desired, the number of terminals, the length of structure and cell lead wires, and whether it should be pole or flush mounted. Pole length also should be specified for pole-mounted stations. An example is provided to help illustrate this process.



Ordering Procedure Example	
ITEM	EXAMPLE
Quantity	20
Product	Permacell Plus
Number of Terminals	4
Cell Wire Length	12 ft.
Structure Wire Length	24 ft.
Test Station Type	Flush Grade

### Product Specifications

STANDARD TERMINAL LEADS	MAXIMUM TERMINAL LEADS	STANDARD CELL WIRE LENGTHS ft. (m)	STANDARD STRUCTURE WIRE LENGTHS ft. (m)
2, 4	4	12, 20, 34 (3.7), (6.1), (10.4)	40 (12.2)

