

**REFERENCE CELLS**

# Permacell<sup>®</sup> 803

## Permanent Reference Cell

### Stable Potential Testing In Salt Water Environments

Reference electrodes are used to determine the potential values of buried and submerged metallic structures. However, if the potential value of the reference cell itself is not consistent, its usefulness in determining the level of protection provided to a structure is lost. On structures located in aqueous environments containing high chloride concentrations, such as salt water, Corrpro's Permacell 803 has the proven electrical stability for long-life performance. The cell is made from a silver element, which is contained in an inert tube and surrounded by a supersaturated gel of silver chloride. Because the gel is saturated with silver and chloride ions, the risk of contaminants migrating into the cell is reduced. The purity of the cell is further protected by a silver chloride mixture of plaster and bentonite which surrounds the tube element. Low-resistance contact to the electrolyte is made through a filtering plug located on one end of the tube.

A quality lead wire connection is important for reference cells submerged in aqueous environments. The connection on Corrpro's 803 cell is made to withstand the harshest environments, and ensures that the cell will deliver long-life performance. Contained within the cell's protective tubing, the connection is made using a compression fitting, which is encapsulated with a moisture-resistant wire with HMWPE insulation.



### Typical Applications

Corrpro's 803 permanent reference cell is designed to obtain potential readings on structures located in brackish or salt waters. The cell is not affected by the presence of chloride ions, and maintains an accuracy level of  $\pm 5$  millivolts. It can be operated in temperatures ranging from 33° to 140°F, but should not be installed in areas with high concentrations of sulfides or bromides. The cell can be installed to depths of up to 50 feet.



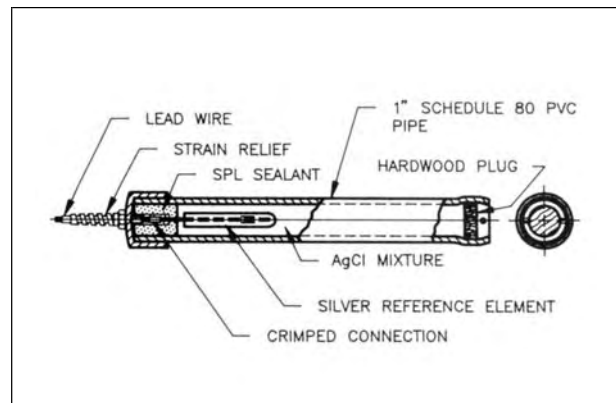
#### Corrpro Companies Europe Limited

Adam Street, Bowesfield Lane, Stockton on Tees, TS18 3HQ  
Telephone: (01642) 614106 (8 lines) Telex: 587388  
Fax: (01642) 614100 E-mail: ccel@corrpro.co.uk

## Permacell<sup>®</sup> 803 Permanent Reference Cell

### Ordering Procedure

The Permacell 803 reference cell is supplied standard with fifty feet of lead wire to address numerous types of applications. To order this cell for your particular application, indicate that you need a Permacell 803 silver/silver chloride reference cell, and specify the quantity desired and the lead wire length, size, and insulation if different from the standard provided. An example is included to help illustrate this process.



| Ordering Procedure Example                  |                                 |
|---|---------------------------------|
| ITEM  | EXAMPLE                         |
| Quantity                                    | 20                              |
| Product                                     | <i>Permanent Reference Cell</i> |
| Permacell Model                             | 803                             |
| Lead Wire:<br>Length<br>(50 ft. = Standard) | <i>50 ft.</i>                   |
| Size<br>(#14 AWG = Standard)                | <i>#14 AWG</i>                  |
| Insulation<br>(HMWPE = Standard)            | <i>HMWPE</i>                    |

### Product Specifications

| NOMINAL DIMENSIONS<br>in. (mm)<br>Ø LENGTH | WEIGHT<br>lbs. (kg) | ELECTRICAL STABILITY                       | MAX. TEMP.<br>°F (°C) | MAX. OPER. DEPTH<br>ft. (m) | DESIGN LIFE |
|--|---------------------|--|-----------------------|-----------------------------|-------------|
| 1 10<br>(25.4) (254.0)                     | 2<br>(0.91)         | ±5 millivolts<br>with 3.0<br>microamp load | 140°F<br>(60°C)       | 50<br>(15.24)               | 10 yrs.     |

