LIDA TUBULAR ANODES

ICP 0012

High Current Output

Anode current density in carbonaceous backfill is 100 A/m² (9.3 A/ft²). Groundbeds are installed in a wide range of operating conditions: current output may range from a few amps to 100 amps; soil resistivities vary from a few hundred to over 20,000 ohm-cm; various backfill material such as metallurgical coke or calcined petroleum coke (although the use of a high quality calcined petroleum coke is highly recommended).

Long Life

Each LIDA® groundbed assembly is designed for a nominal 20 years life. The anhydrous mixed metal oxide coating is an excellent electrical conductor which shows a very high chemical stability, even in environments with pH values below one.

Economical

Savings versus graphite or silicon iron anodes may be realised on an installed cost basis. These savings may result from using a smaller hole diameter, reduced length of cable and overall lower materials and installation costs.

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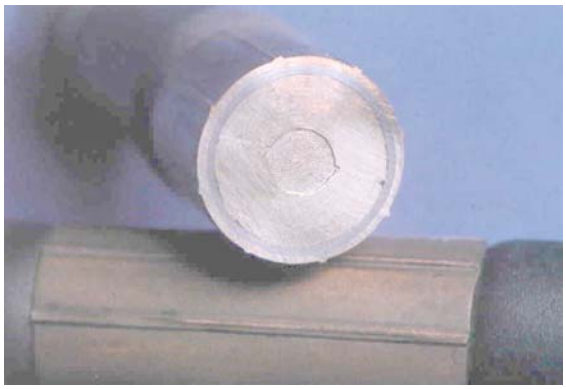

Patented LIDA® Cable to Anode Connection

The LIDA® connection and seal is not dependent on a mastic or resin sealant. The electrical connection is made by crimping the tube onto a section of stripped conductor. The seal is accomplished by plastic deformation of the tube on the copolymer cable cover.

Quality Assurance

LIDA® anodes are assembled in a dedicated facility and undergo 100% Quality Control testing including electrical and chemical tests on the cable, helium leak test on the connection and electrochemical tests on the anode coating.

Easy to Install

LIDA® anode cable assemblies are lightweight, rugged, flexible and have an outside diameter of one inch or less. LIDA® strings are easy to transport and handle.

Background

LIDA® mixed metal oxide coated titanium anodes are based on electrode technology developed in the early 1960's for chlor-alkali production. These anodes have been used extensively worldwide for cathodic protection in hundreds of deep and shallow groundbeds.

The following table lists the tubular anodes available and their characteristics:

Designation	Diameter cm/in	Length cm/in	Current Output Amp
Soil			
S.T. 2.5/50	2.5/1.00	50/19.7	4.00
S.T. 2.5/100	2.5/1.00	100/39.4	8.00
S.T. 1.6/50	1.6/0.63	50/19.7	2.50
S.T. 1.6/100	1.6/0.63	100/39.4	5.00
Fresh - Brackish Water			
FW.T. 2.5/50	2.5/1.00	50/19.7	4.00
FW.T. 2.5/100	2.5/1.00	100/39.4	8.00
FW.T. 1.6/50	1.6/0.63	50/19.7	2.50
FW.T. 1.6/100	1.6/0.63	100/39.4	5.00
Sea Water			
SW.T. 2.5/50	2.5/1.00	50/19.7	25
SW.T. 2.5/100	2.5/1.00	100/39.4	50
SW.T. 1.6/50	1.6/0.63	50/19.7	15
SW.T. 1.6/100	1.6/0.63	100/39.4	30
Mud			
M.T. 2.5/50	2.5/1.00	50/19.7	2-4 (see note 5)
M.T. 2.5/100	2.5/1.00	100/39.4	4-8

Note:

1) The 1.6cm (0.63") diameter tubular anodes are assembled on LIDA® EPR/CSPE 16mm² (6 AWG) cable.
2) The 2.5cm (1") diameter tubular anodes are assembled on LIDA® EPR/CSPE 50mm² (1/0 AWG) cable.
3) Anodes installed in soil or fresh water are operated for a nominal design life of 30 years. SW.T. anodes are operated in flowing seawater for a 20 years nominal design life. Anodes installed in brackish water or mud are operated for a 20 years nominal design life.
4) All anodes are installed with protective PTFE plastic sleeves on the cable extending approx. 10cm from both anode ends.
5) The performance of mixed metal oxide anodes in mud is temperature dependent. Low temperature applications should be discussed with the CP Tech Engineer.

How to Order LIDA®

When ordering LIDA® anodes, please specify the following:

- Type of assembly (multiple or single anode per cable)
- Anode type (e.g. S.T. 1.6/50)
- Number of anodes per cable
- End to end spacing between anodes along the cable
- Cable tail (above the top anode)
- Total cable length (sum of lengths of anodes, spaces and tail)
- Current output
- Electrolyte details