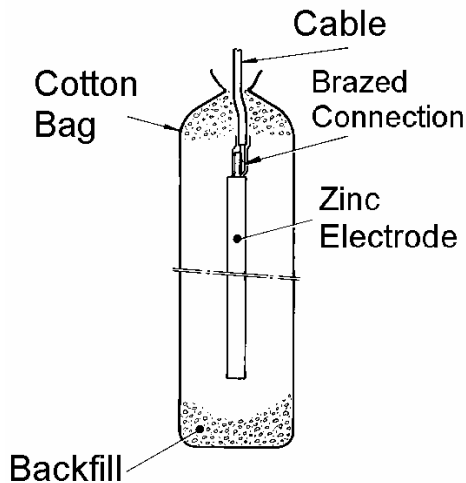


## ZINC GROUNDING ELECTRODES

## 2.4.1

Zinc is probably the longest serving cathodic protection anode material. It also has a number of closely related applications all of which can be served by BAC high quality products.



### Zinc Anodes - Underground

These are available in a variety of shapes and weights, packaged and with pre-attached cables to suit individual requirements.

### Zinc Grounding Earthing Electrodes

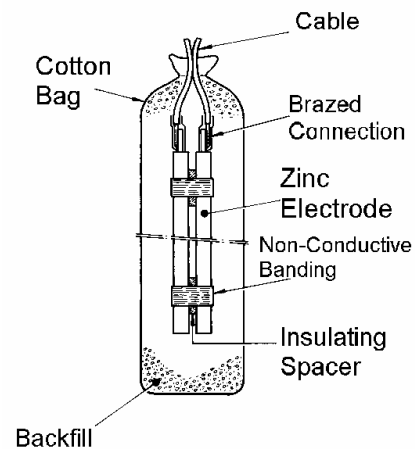
These are essentially packaged anodes where the anode has a high length to weight ratio in order to minimise its ohmic resistance to ground.

There are two principal applications for these electrodes:-

1. As a substitution for copper or copper coated power grounding electrodes in order to avoid bi-metallic corrosion of associated ferrous structures.
2. In mitigation of voltages which may be introduced in pipelines by adjacent overhead AC power lines. Pipelines may be grounded via zinc electrodes without attendant disruption of pipeline cathodic protection.

### Twin Zinc Earthing Electrodes

These are similar in design to the single electrode except there are two zinc anodes which are insulated from each other. Generally, one anode rod would be connected to the structure to be protected, and the other to an earthing device. The rods are surrounded by a low resistivity backfill which allows any large stray currents to pass between the electrodes. This has the benefit of earthing a structure to ground without providing a direct connection.



SEE OVER PAGE FOR ALLOY COMPOSITION



## Alloy Composition:

## 2.4.1

The zinc used in BAC anodes is within the specification laid down by US Mil-A-18001H.

Aluminium:	0.15-0.30%
Cadmium:	0.04-0.06%
Iron:	0.002% Maximum
Tin:	0.001% Maximum
Copper:	0.001% Maximum
Lead:	0.004% Maximum
Silicon:	0.100% Maximum
Zinc:	Remainder

### Electrochemical Properties

Efficiency:	95%
Potential:	-1.10V (Cu/CuSO <sub>4</sub> )
Capacity:	780Ampere hours per kilogram
Consumption:	11.2 kg per Ampere year