ZINC GROUNDING ELECTRODES

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.

**2.4.1 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.

SEE OVER PAGE FOR ALLOY COMPOSITION
Alloy Composition:  

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/CuSO₄)
- **Capacity:** 780 Ampere hours per kilogram
- **Consumption:** 11.2 kg per Ampere year