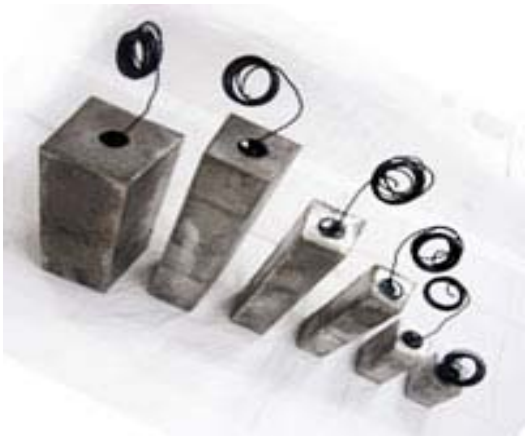
H-1 Standard Potential Mag Anode



Electrolytic conditions in the soil surrounding a buried structure determine the type of anodes employed in a cathodic protection system. In low-resistivity soil (under 2,000 ohm-cm), MESA's line of magnesium anodes are the most economical choice. H-1 anodes are cast to meet ASTM B843, Alloy AZ63.

This unique composition allows for even current output and efficient protection. These anodes produce an open circuit potential of 1.53-1.55 volts, and have a current efficiency of 45 to 55%, when tested in accordance with ASTM-G97 procedures.

Typical Applications

H-1 anodes are recommended for use in low resistivity soils (typically below 2,000 ohm-cm). Because the anodes have a lower driving voltage than high potential anodes, they are ideally suited for structures where over-protection is of concern. Their lower current output allows these anodes to operate longer than high potential anodes in more conductive environments.

MESA Manufacturing Process

Each bare cast anode is closely examined for shrinkage voids, core centering and length, and weight conformity. Any inconsistency results in rejection. A coiled lead wire of #12 TW insulated solid copper is silver soldered (45% silver) to the galvanized steel core. Standard wire length is 10 feet long. The 45% silver in the solder is critical to ensuring a 'stronger than the wire itself' connection. The core cavity is filled with electrical sealing compound to assure a fully insulated and protected connection. Bare anodes are centered in cotton bags, then surrounded with a backfill mixture consisting of 75% hydrated gypsum, 20% bentonite, and 5% sodium sulfate. This backfill lowers the anode-to-earth resistance, draws moisture to the anode for best performance, and creates a uniform environment for the anode to consume itself evenly. The packaged anodes are then inserted into multiwall paper sacks, palletized, and film wrapped for shipping.

Chemical Composition

Element	Content %		
	Grade A	Grade B	Grade C
Aluminum	5.3-6.7%	5.3-6.7%	5.3-6.7%
Zinc	2.5-3.5%	2.5-3.5%	2.5-3.5%
Manganese	0.15-0.7%	0.15-0.7%	0.15-0.7%
Silicon	0.10% Max	0.30% Max	0.30% Max
Copper	0.02% Max	0.05% Max	0.10% Max
Nickel	0.002 % Max	0.003% Max	0.003% Max
Iron	0.003% Max	0.003% Max	0.003% Max
Other Impurities	0.30% Max	0.30% Max	0.30% Max
Magnesium	Remainder	Remainder	Remainder

Sizes Available

Anode Type	Bare Weight	Packaged Weight	Shipping Package	Bare			Packaged	
				W	L	H	D	OL
1lb	1	5	6 per box	1-9/16"	8"	3"	3-1/2"	10"
3lb	3	8	3 per bag	3"	5"	3"	5-1/4"	8"
5lb	5	13	3 per bag	3"	8"	3"	5-1/4"	11-1/4"
9lb	9	27	2 per bag	3"	14"	3"	5-1/4"	20"
17lb	17	45	2 per bag	4"	17"	4"	7-1/2"	24"
32lb	32	68	1 per bag	5"	20-1/2"	5"	8-1/2"	28"
50lb	50	100	1 per bag	7"	16"	7"	10"	24"