



GRAPHITE ANODES


REVISION 1

APPLICATION

Plain graphite anodes are used in dry soil conditions installed in groundbeds containing compacted carbonaceous backfill. Linseed oil impregnated anodes can be used in moist saline soils, in fresh and brackish water, and for seawater applications. Graphite anodes can be installed as horizontal or deepwell groundbeds to protect buried pipelines or due to their lightweight nature they can be suspended into the electrolyte to protect water tank internal surfaces or marine structures.

GRAPHITE ANODE DATA



Cathodic Protection Co Ltd graphite anodes are manufactured in two standard sizes - 3" dia up to 60" long & 4" dia up to 80" long. There are two types of graphite anodes - plain & linseed oil impregnated. Plain graphite anodes are used for ordinary soil conditions and linseed oil impregnated anodes are usually used for saline soil or seawater environments.

CONSUMPTION RATES

Environment	Current Density Amps/M ²	Consumption Rate kg/Amp/Year
Fresh Water	2.5 - 3	0.1 - 0.3
Sea Water	10	0.3 - 0.5
Carbonaceous Backfill	10	0.1 - 0.3



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TYPICAL CHARACTERISTICS

Properties	gm/cm ²	Plain graphite	Impregnated graphite
Bulk density	gm/cm ³	1.55	1.65
Porosity	H ₂ O%	30	19
Flexural strength	N/mm ²	15	20
Compressive strength	N/mm ²	19	44
Electrical ¹⁾	Ωμm	7.5	14
Resistivity ²⁾		12	20
Thermal conductivity	W/mk	198	38
		116	35
Mean linear thermal coefficient of expansion	1/k	0.9	1.9
		2.7	3.2
Ash	%	<0.5	<0.5

¹⁾ parallel to grain structure

²⁾ perpendicular to grain structure

ANODE TO CABLE CONNECTION

Cable for Graphite Anodes is supplied according to customer requirements. We can offer the following insulation and sheathing types PVC, XLPE/PVC, HMWPE, KYNAR, HALAR, EPR/CSPE.

