



TECHNICAL NOTE

GRAPHI-COAT 623 OXIDATION PROTECTIVE COATING FOR GRAPHITE ELECTRODES

- 1) Graphi-Coat 623 was used to protect Union Carbide AGX and AGR Graphite Electrodes from oxidation in Electric Arc Furnace Liquid Steel Production.
- 2) Three coats of Graphi-Coat 623 were applied using pneumatic spray equipment with a nozzle diameter of approximately 0.050" and pressure setting of 40 psi, with 30 minutes of drying time between coats. The finished coating dry film thickness was approximately 0.010". The coating was set at room temperature in less than 24 hours; no further curing was performed.
- 3) The graphite electrodes were placed in service following the final air set cycle. Initial testing revealed a 15% increase in electrode efficiency as measured by output of liquid steel in metric tons per electrode.
- 4) Preliminary results from a major steel manufacturing plant indicate a gross savings of \$ 10,800 per day based on a \$ 1,400 investment in Graphi-Coat 623 in a 24 hour period. This plant operates four electric arc furnaces that consume approximately 35 tons of graphite at an estimated cost of \$ 70,000 per day.

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