

carbon electrode

Also contains definition of: graphite electrode

An electrode for an electrical application. In its green state it comprises granular carbon material bound with pitch. The granular carbon material may be either needle coke, fine-grained or isotropic coke or reclaimed graphite powder. Electrodes for use in steel production can only be manufactured from needle coke, and the green electrodes are fired at temperatures above around 2800 K to produce highly graphite electrodes. The other granular carbon materials may be used for aluminium electrodes where the duty is not so severe, and the green electrodes are generally fired to lower temperatures.

Note:

In both cases it is essential that the granular carbons and the pitch binders used in the production of the green electrodes have a low sulfur content as the release of sulfur during the high-temperature firing can lead to the production of significant porosity.

See also: puffing, graphitic carbon, graphitization heat treatment, isotropic carbon

Source:

PAC, 1995, 67, 473 (*Recommended terminology for the description of carbon as a solid (IUPAC Recommendations 1995)*) on page 480