

carbon 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 graphitic electrodes (*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.

Notes:

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*.

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