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Development of Corrosion-Resistant S. G. Iron

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The spheroidal graphite (S.G) iron which is also known as ductile or nodular iron is the most useful alloy belonging to the Cast Iron family. Ever since its discovery in 1948, its application in engineering industries is increasing day by day. The very recent development is the application of S. G. Iron as a cask material for the transport of spent nuclear fuels. These casks are often kept in sea water at a depth of around 30 meter (from the sea-level). This is done to prevent scattering of radiation into the environment even if the container fails to serve its purpose due to some reason or other. Obviously in such cases the cask-material has to be highly corrosion-resistant. It has been found that best corrosion resistance can be obtained by intercritical annealing that results in DMS (Dual Matrix Structure i.e., Ferrite + Martensite). The corrosion-resistance can also be improved by alloying with Ni, Cu and Cr.

Biography

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