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Experimental studies on the effect of adding carbon on microstructure and mechanical properties of white cast iron

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Abstract

The authors made experimental studies on the effect of adding carbon on microstructure and mechanical properties of white cast iron. Carbon additives are very useful additives for improving the surface finish of cast products. The authors tried with mixing burnt granular cow bond as mold additive in casting and studied the microstructure and mechanical properties of white cast iron. The resulted structure was a phase of cementite matrix. Castings of different compositions exhibited different structures. Some times the rate of cooling also affected the microstructure. Other factors which affect the microstructure are mold material, solidification mechanism and evaluation of gas and the metal. Further carbon additives avoid initial machining process .The weight of the casting is the major consideration. The basic function of coal in molding sand is to aid permeability which will have more effect in coarser grades. To improve the casting dimensional stability, good surface finish, clean and smooth casting, carbon additives must be used which also improve the mechanical properties.