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## Evaluation of surface hardness behavior of heat treated 35Mn6Mo3 and C35Mn75 steels

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### Abstract

The authors have evaluated surface hardness behavior of heat treated 35Mn6Mo3 and C35Mn75 steels. In this research work the authors have estimated the hardness of the test specimens by Rockwell hardness tester. The samples were heated to 980<sup>0</sup>c and tempered at 250<sup>0</sup>c. The hardness values of the quenched specimens were relatively higher than as-cast samples. The specimens quenched in oil resulted better mechanical properties compared to water quenched samples. Water quenched steels produced best hardness while oil quenched steel shows less hardness compared to water quenching. Steel is an alloy of iron with definite percentage of carbon ranging from 0.15 to 1.5 %. Plain carbon steels account for 90% of steel applications. The reason for this is that it is tough, ductile and cheap. The steel developed by quenching followed by suitable tempering process at desired temperature has the best mechanical properties which are very attractive for structural purposes. In this paper the authors have given a detailed account of medium carbon steels, heat treatment process, quenching process, and tempering process.