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## Mathematical modelling for predicting the average hardness of heat treated AISI 1013 low carbon steel weldment in selected quenching media

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### Abstract

The authors proposed mathematical model for predicting the average hardness of heat treated AISI 1013 low carbon steel weldment in selected quenching media. The above steel weldment were quenched in brine solution, pure water and air. The mathematical model developed by them, effectively predicted the average hardness of the heat effected zone. The following are the conclusions drawn by the authors. Hardness is the most important mechanical property associated with heat affected zones since it gives an indication of the degree of embrittlement there. Also cooling medium employed during welding varies with application. Thus, this paper has proposed generalized models for predicting the average hardness of heat affected zone of AISI 1013 low carbon steel weldment in three selected quenching media namely water, air and saline solution.