

A
Project Report
on

Structure Property Correlation of Dual Phase and HSLA Steels

Submitted in partial fulfilment of the requirements

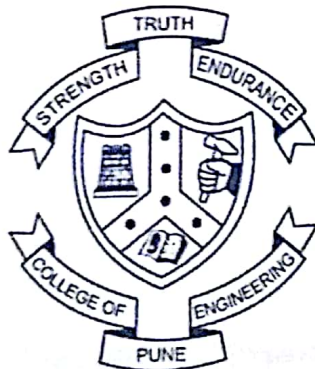
of the degree of

Master of Technology

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2017-18

Abstract

In steel industries high strength grades shows variation in mechanical properties along the width and length of the coil and also from coil to coil of same slab due to narrow temperature regime. In this work we have focussed on Ferrite-Bainite, Hot rolled and Dual phase steels. To check the homogeneity in properties various mechanical properties have been checked which includes hole expansion ratio, mechanical properties and hardness. To find the root cause for inhomogeneity in these grades various characterisation techniques are used and micro structural features such as phases, phase fraction, grain size distribution and texture are correlated with mechanical properties. Further, by using these correlations the reasons for inhomogeneity are addressed in consideration with the plant parameters. And some preferential solutions including changes in Continuous Annealing line parameters, speed of the coil, cooling rates and temperature profile have been implemented.

Keywords: Dual Phase, Hole expansion ratio, Annealing line, inhomogeneity.