

## Investigation of Heat Affected Zone of Steel P92 Using the Thermal Cycle Simulator

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**Abstract :** This work is focused on mechanical properties and microstructure of heat affected zone (HAZ) of steel P92. The thermal cycle simulator was used for modeling a fine grained zone of HAZ. Hardness and impact toughness were measured on simulated samples. Microstructural analysis using optical microscopy was performed on selected samples. Achieved results were compared with the values of a real welded joint. The thermal cycle simulator allows transferring the properties of very small HAZ to the sufficiently large sample where the tests of the mechanical properties can be performed. A satisfactory accordance was found when comparing the microstructure and mechanical properties of real welds and simulated samples.

**Keywords :** heat affected zone, impact test, thermal cycle simulator, time of tempering

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