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Effect of Austenitizing Temperature and Tempering on the Tensile Behavior of Low Alloy Steel

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Abstract

Role of austenitizing temperature and quenching by flame hardening treatment on the one kind alloying steel was studied. Three temperatures 900^{0}C, 950^{0}C and 1000^{0}C were employed for austenitizing. After quenching, samples were tempered at various temperatures. Obtained results from tensile test showed that flaming hardening and rapid austenitizing was leaded to the suitable combination strength and ductility. It was also observed that with increasing austenitizing temperature decrease yield strength and ultimate tensile strength. Results imply that tempered embrittlement phenomenon occur especially in austenitizing temperature 1000 into the temper temperature range.

Keywords: Austenitizing temperature, Tensile properties, Flaming hardening

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