

Ferrite-austenite welded joint elastic-plastic behaviour

Comportarea elasto-plastică a îmbinărilor sudate din oțeluri austenito-feritice

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Abstract

Ferrite-austenite welded joint elastic-plastic behaviour is investigated using numerical simulation (Finite Element Method – FEM) and experimental tensile testing (Digital Image Correlation – DIC). Large plastic deformation has been experienced before tensile specimen failure in the base metal, due to the overmatching effect. Comparison of the FEM and DIC results shows good agreement, indicating possibility for replacing expensive experimental investigation with cheap numerical simulation.

Keywords

Ferrite-austenite welded joint, Digital Image Correlation, Finite Element Method