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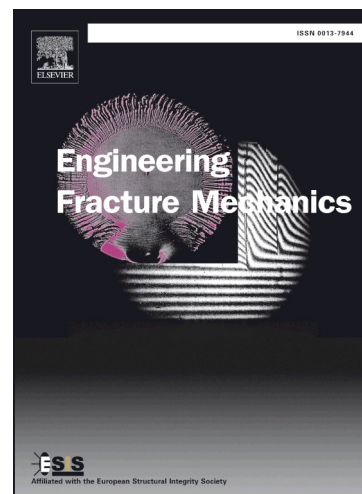
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Fracture properties of high performance steels and their welds

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Abstract

Lack of design rules and manufacturing experience, scarcity of special sections and undue conservatism in design limit the current structural application of UHSS. The two major concepts governing the assessment of steels construction codes are the Master Curve methodology and the T_0 - $TC_{V_{28J}}$ transition temperature correlation. Here, focussing on novel directly quenched high performance steels, the applicability of the Master Curve methodology with special emphasis on the temperature dependence is investigated and the validity of the standard T_0 - $TC_{V_{28J}}$ transition temperature correlation is checked. Based on the work, improvements to the criteria are proposed for further considerations.

Keywords

Fracture toughness, Ultra high strength steel, Charpy-V correlation, Master Curve

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