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EFFECT OF DENSITY AND POINTED CORNER DEGREE OF PORE ON LOCAL STRESS IN WELDED STRUCTURES: DEFECT IN MARINE STRUCTURES

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Abstract : The process of assembly by welding in marine structures led to the creation of micro-structuralheterogeneities zones. Welded structures generally contain defects such as lack of penetration, slag inclusion, porosity and misalignment.Generally these zones can be discontinuities geometrical. At the origins of stress concentration, these regions are favourable sites where fatigue cracks can initiate and propagate.In this study, the three-dimensional finite element method is used to analyze the distribution and the level of stress generated by the presence in the weld nugget of a pore formed during t he welding process.This analysis was made in the matrix-pore interface.The effects of density and pointed corner degree of pore on the stress levels were also analyzed. Welded structures containing pores are subjected to uniaxial tensile loading

Keywords : welding, Defects, Stress analysis, finite element, steel