

FATIGUE DAMAGE BEHAVIOUR OF STRUCTURAL COMPONENTS UNDER VARIABLE AMPLITUDE LOADING

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ABSTRACT

The paper summarizes some main results achieved by authors in recent research on fatigue damage behaviour under variable amplitude loading. The fatigue damage behaviour of the P355NL1 steel is investigated as well as of a double sided notched rectangular plate made of P355NL1 steel. Block loading is applied to smooth and notched specimens. Also, constant amplitude loading is applied to derive the basic fatigue strength data for damage calculations according to existing damage rules. Nonlinear fatigue damage evolution with load sequential effects has been found for the P355NL1 steel and for the structural component.