The Project

The project aims to describe the structures operating in limit state conditions. The studies are performed by experimental and numerical research methods. Therefore, the main objective is to provide an assessment of structure behaviour, by comparing of the parameters such as stress, strain, crack occurrence, etc., caused by certain load level and temperature at this unexpected limit state with those allowed by material properties. The following research sub-objects should be accomplished: testing of material properties; impact energy; the determination of the crack driving force and life assessment of structural elements; evaluation of the semi-rigid structural joints/connections behaviour; buckling simulations of composite beam-type structures; proper constitutive modelling at limit operating conditions, etc. Although many journal papers were published, only some of them are mentioned here.


Outcomes

SEM and EDS analysis: 51CrV4 steel under uniaxial (sinusoidal) fatigue

Channel section L-frame buckling

a) mitre joint; b) box joint; c) stiffened mitre joint; d) box mitre joint

Nonuniform heating of a doubly clamped beam

Distribution of the normal stress δ along the doubly clamped beam loaded with the non-uniform temperature

Journal Papers 2014 - 2018


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