ENGLISH SUMMARIES

FIRE DESIGN MODELS FOR STRUCTURAL STEELS S350GD+Z AND S355 BASED UPON TRANSIENT STATE TENSILE TESTS

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Experimental research has been carried out during years 1994-1995 in the Laboratory of Steel Structures at Helsinki University of Technology for investigating mechanical properties of structural steels S350GD+Z and S355 at elevated temperatures using transient state tensile test method. The test results are used here as a basis for modelling the stress-strain relationship of these steels at temperatures 20°C-700°C. Test results are modelled by using the calculation method given in Eurocode 3 and the material model developed by W.Ramberg and W.R.Osgood .

EQUILIBRIUM EQUATIONS FOR SIMPLE FUNDAMENTAL STRUCTURAL MODELS - part I
STRAIGHT AND CURVED PLANE BEAMS

Juha Paavola and Eero-Matti Salonen

In this series of papers, the analysis of various fundamental structural models is considered paying attention to educational purposes, particularly. The expressions for strains are derived by utilizing a local Cartesian coordinate system. The basic ideas of various beam kinematics are examined. The equilibrium equations are derived by applying the principle of virtual work. The system given is new. Its advantage is in an extremely systematic presentation, using which also rather complicated considerations can be performed supporting only on very basic mathematical tools.