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Fire Design of Steel Structures 2nd Edition

This book explains and illustrates the rules that are given in the Eurocodes for designing steel structures subjected to fire. After the first introductory chapter, Chapter 2 explains how to calculate the mechanical actions (loads) in the fire situation based on the information given in EN 1990 and EN 1991. Chapter 3 is dedicated to the models which represent the thermal actions created by the fire. Chapter 4 describes the procedures to be used to calculate the temperature of the steelwork from the temperature of the compartment and Chapter 5 shows how the information given in EN 1993-1-2 is used to determine the load bearing capacity of the steel structure. Chapter 6 presents the essential features that characterise the advanced calculation models, for thermal and mechanical response. The methods used to evaluate the fire resistance of bolted and welded connections are described in Chapter 7. Chapter 8 describes a computer program called 'Elefir-EN' which is based on the simple calculation models given in the Eurocode and allows designers to quickly and accurately calculate the performance of steel components in the fire situation. Chapter 9 looks at the issues that a designer may be faced with when assessing the fire resistance of a complete building. This is done via a case study and addresses most of the concepts presented in the previous chapters.

For this second edition the authors revised and extended the content. The book contains some new sections, e.g. a comparison between the simple and the advanced calculation models, as well as additional examples.

Jean-Marc Franssen is Professor at the Department of Architecture, Geology, Environment and Construction of the University of Liege in Belgium. He is leading the group of fire safety engineering and is the Director of the Fire Resistance Laboratory. He is a member of the Technical Committee TC3 – Fire of ECCS. He founded the Structures in Fire (SiF) movement of which he is the chairman of the Steering Committee. He was a member of the draft team of EN 1993-1-2.

Paulo Vila Real is Professor at the Department of Civil Engineering of the University of Aveiro in Portugal. He is the Head of Department and the Director of the Fire Resistance Laboratory. He is the Chairman of the Technical Committee TC3 – Fire Safety of ECCS, a member of the European Working Groups for Eurocode 3: Part 1-2 and Eurocode 4: Part 1-2 and a member of the Steering Committee of the Structures in Fire (SiF) movement. He was in charge of writing the Portuguese National Annexes to the fire parts of the Eurocodes on actions, concrete, steel, composite and aluminium structures.



ECCS Eurocode Design Manuals

EUROPEAN CONVENTION FOR CONSTRUCTIONAL STEELWORK
CONVENTION EUROPÉENNE DE LA CONSTRUCTION MÉTALLIQUE
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publications@steelconstruct.com
www.steelconstruct.com



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Jean-Marc Franssen
Paulo Vila Real



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Eurocode 1: Actions on Structures
Part 1-2: Actions on structures exposed to fire
Eurocode 3: Design of Steel Structures
Part 1-2: Structural fire design

Jean-Marc Franssen
Paulo Vila Real

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