

Guideline - Design for Robustness of Timber Structures

COST Action E55 *“Modelling of the
Performance of Timber Structures”*

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Foreword

This report is a publication of the European network COST¹ Action E55 “Modelling of the Performance of Timber Structures”.

The COST Action E55 (website: www.cost-e55.ethz.ch) entitled “Modelling of the Performance of Timber Structures” is a research network established under the aegis of the COST domain “Forests, their Products and Services”. The main objective of COST Action E55 is to provide the basic framework and knowledge required for the efficient and sustainable use of timber as a structural and building material. The Action is structured into three working groups: a) assessment of failures and malfunctions, b) vulnerability of timber structures and c) robustness of timber structures.

An important aspect for the assessment of the life cycle performance of timber structures is the interaction of structural components in structural systems. System effects in timber structures are pronounced because of multiscale spatial variability of environmental exposures and material properties. Further, the concept of robustness is an important characteristic of structural systems. Within the scope of Working Group 3, focus was on studying structural robustness of timber structures resulting in the present guideline for assessment of and design for robustness of timber structures. Robustness aspects for timber structures are presented and illustrated by examples. Further, recommendations for robustness design of timber structures are given.

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