

The Technical guideline for Europe

The guideline presents information for architects, engineers, educators, authorities and building industries on the fire safe use of timber structures and wood products in buildings. It aims at providing the highest scientific knowledge with regard to fire safety at the European level. The guidance covers the use of design codes (such as Eurocode 5), European standards, practical guidance and examples for fire safe design and principles of performance based design.

The guideline is focusing on structural fire protection by providing latest detailed guidance on load-bearing and separating functions of timber structures under standard fire exposure. New design methods are presented. The guideline includes information on reaction to fire performance of wood products according to the new European standards. The importance of proper detailing in building design and on execution and control at building sites is stressed by practical solutions. Active measures of fire protection are presented as important means in fulfilling fire safety objectives.

Timber construction

Globally, forests are an immense resource, accounting for about 30 % of the Earth's total land base. Europe has more than 1,000 million ha of forests equivalent to 1.42 ha (more than two football pitches) per person.

Timber has been a favoured construction material from the beginning of civilization because of its abundance, high stiffness and strength-to-weight ratios and the simplicity to use. These days, timber products have experienced a renaissance for their environmental credentials.

New design tools have made timber constructions efficient, offering good quality at affordable prices. Construction sites mainly employing timber products are recognised for their quiet and dry conditions, and the completed buildings offer user-friendly, healthy, natural living environments.



Fire safety

The combustibility of timber is one of the main reasons that too many building regulations strongly restrict the use of timber as a building material. Fire safety is an important contribution to feeling safe, and an important criterion for the choice of materials for buildings. The main precondition for increased use of timber for buildings is adequate fire safety.

Fire test and classification methods have recently been harmonised in Europe. The European standards exist on the *technical* level, but fire safety is governed by national legislation, i.e. the *political* level. National fire regulations will therefore remain, but the new European standards will hopefully speed up the harmonisation of the regulations.

The FireInTimber project

The guideline Fire Safety in Timber buildings has been developed within the European research project FireInTimber (Fire Resistance of Innovative Timber structures). Leading experts and researchers from nine European countries are participating and guarantee its quality and relevance.

The project has been sponsored by national funding organisation within the WoodWisdom-Net Research Programme and by European wood industry represented by the Building With Wood process within CEI Bois.

Fire safety in timber buildings

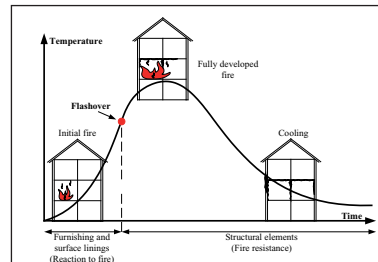


Technical guideline

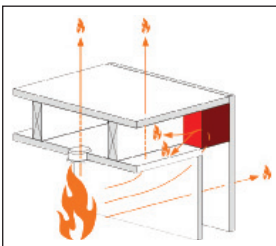
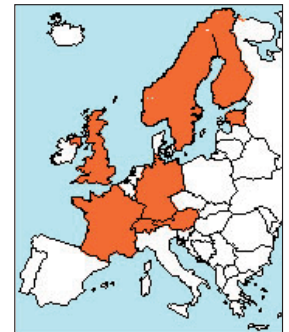


Guideline chapters

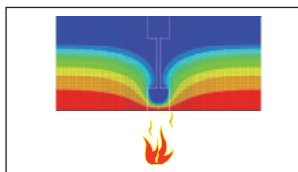
- 1 Timber buildings
- 2 Fire safety in buildings
- 3 European requirements
- 4 Wood products as linings, floorings, claddings and façades
- 5 Separating structures
- 6 Load-bearing timber structures
- 7 Timber connections
- 8 Fire stops, service installations and detailing in timber structures
- 9 Novel products and their implementation
- 10 Active fire protection
- 11 Performance-based design
- 12 Quality of construction workmanship and inspection



Design for both the initial and the fully developed fire in buildings is included in the guideline.



Proper detailing in timber structures is necessary to ensure that the fire resistance of structures is maintained. Fire stops are needed for concealed spaces, joints, penetrations and installations.



New fire design models have been developed for new innovative timber structures and verified by testing. The new models will be used as input to the next version of Eurocode 5.

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FireInTimber research partners

Country	Partners
Sweden	SP Trätec, Coordinator
Finland	VTT
Germany	TUM Technische Universität München DGfH
France	BPU Blaise Pascal University CSTB
Norway	TreSenteret, Wood Centre
UK	BRE Building Research Establishment
Austria	HFA Holzforschung Austria UIBK Innsbruck University TUV Technische Universität Wien
Switzerland	ETH Zurich
Estonia	Resand

Further information from

Birgit Östman, SP Trätec
Stockholm, Sweden, Coordinator
Phone: +46 10 516 62 24
E-mail: birgit.ostman@sp.se

