

# Construction Products Directive, CPD Overview

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Fire Safety of Wooden Structures

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## Purpose of CPD

- Elimination of technical barriers to trade for construction products
- Only products which are fit for their intended use, maybe put on the market

## Structure of CPD

- 10 Chapters
  - Harmonized standards and European technical approvals (ETA)
  - Interpretative documents
  - Attestation of conformity (AoC) and special procedures
  - Approved bodies
  - Standing Committee on Construction, SCC
- 3 Annexes
  - Essential requirements
  - ETA, AoC; CE conformity marking
  - Approval of testings laboratories, inspection

## Essential requirements

- Mechanical resistance and stability
- Safety in case of fire
- Hygiene, health and the environment
- Safety in use
- Protection against noise
- Energy economy and heat retention

## Safety in case of fire

The construction works must be designed and built in such a way that in the event of an outbreak of fire:

- The load-bearing capacity of the construction can be assumed for a specific period of time
- The generation and spread of fire and smoke within works are limited
- The spread of the fire to neighbouring construction works is limited
- Occupants can leave the works or be rescued by other means
- The safety of rescue teams is taken into consideration

## Interpretative document No. 2: Safety in case of fire

- Contains explanations on the essential requirement
- Includes also engineering approach for Fire Safety
  - FSE by the application of engineering principles to evaluating the required level of fire safety and to designing and calculating the necessary safety measures.
- Regarding fire safety of construction works, the tools of fire safety engineering can be used in several ways:
  - (a) for determining basic information on how fire and fire effluents are developing and spreading in works, e.g.
    - the calculation of fire development in rooms
    - the calculation of fire spread inside or outside buildings
    - the assesment of movement of fire effluents in buildings and similar works

- (b) for the assessment of actions, e.g.
  - the exposure to heat and fire effluents of persons and works
  - the mechanical action on building structures and/or works
- (c) for evaluating the performance of construction products when exposed to fire, e.g.
  - in developing fires, characteristics like ignitability, flame spread, rate of heat release, production of smoke and toxic gases
  - resistance of structures affected by fire in terms of load-bearing capacity and separating function
- (d) for the evaluation of detection, activation, suppression, e.g.
  - the activation times of control systems, suppression systems, fire brigade, occupants
  - the effect of fire and smoke control systems (including extinguishing agents)

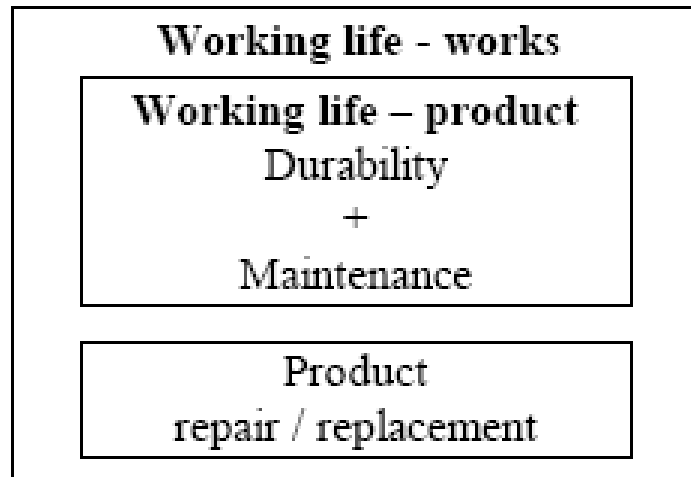
- the assessment of detection times depending on the nature and location of fire/smoke detectors
- the interaction of suppression and other safety devices
- (e) for the evaluation and design of evacuation and rescue provisions

### Statements on status (1994) and conditions:

- At present only some aspects of fire engineering have been developed and a significant research effort is needed in order to develop a global, coherent approach.
- An engineering approach requires that relevant characteristics of products are provided, and calculation and design procedures are validated on an agreed and harmonized basis.

## Guidance papers

- **Guidance Paper G** - The European classification system for the reaction to Fire Performance of Construction Products
  - Background, procedures, appeals, etc..
- **Guidance Paper L** - Application and use of Eurocodes
  - Use of Eurocodes for structural design of works (National provisions!)
  - Use of Eurocodes in technical specifications for structural products
- **Guidance Paper F** - Durability and the Construction Products Directive



# EUROCODES

- Eurocodes are a set of standards that contain common unified calculation methods to assess the mechanical resistance of structures or parts thereof
- Eurocodes are used:
  - To design of structural construction works (building and civil engineering works)
  - To check their conformity with Essential Requirement (mechanical resistance, safety in use, safety in case of fire + durability)
  - To determine the performance of structural construction products (CPD)

# FIRE PERFORMANCE OF CONSTRUCTION PRODUCTS BY TESTING

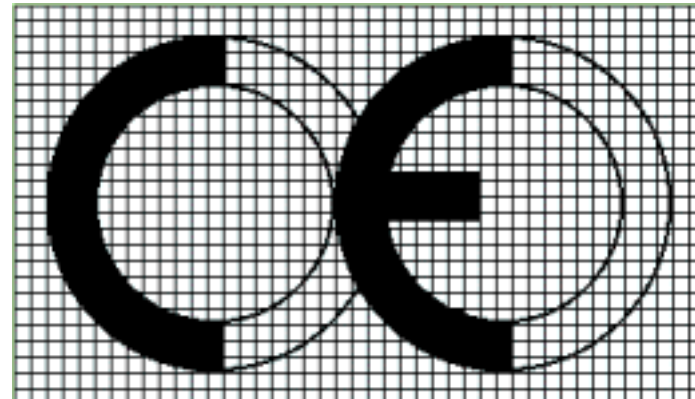
## Testing standards

- Reaction to fire (Euroclasses)
- Fire resistance
- External fire performance (roofs)

## Classification standards

# ATTESTATION OF CONFORMITY WITH TECHNICAL SPECIFICATIONS

- **METHODS OF CONTROL OF CONFORMITY**
  - Third party assessment
  - Notified Bodies
- **CE marking of products**
  - Not a quality mark
  - Product declaration on listed characteristics



## CPD versus national implementation

In EU each country defines their own safety level

⇒ National fire regulations

All countries must use the harmonised design and classification methods in their regulations

⇒ Structures:

- Fire resistance classifications
- Eurocodes

⇒ Surface linings and roofings:

- Euroclasses for reaction to fire performance
- Classifications for roofs



## Commission, groups and links

### DG Enterprise

- Construction products
- SCC, Standing Committee for Construction
  - EGF, Expert Group on Fire issues
    - CWFT, Sub-group on Classified Without Further Testing

### Links

#### CPD, Interpretative documents and Guidance papers:

- [http://europa.eu.int/comm/enterprise/construction/internal/cpd/cpd\\_en.htm](http://europa.eu.int/comm/enterprise/construction/internal/cpd/cpd_en.htm)

#### CEN:

- <http://www.cenorm.be>

#### European Organisation for Technical Approvals:

- <http://www.eota.be>