

## Research subject<sup>1</sup>:

# Updating and development of Eurocode 5 during January 2014 – March 2023

### Description:

The standard Eurocode 5 (EC 5) - respectively all parts of EN 1995 - Design of Timber Structures - with Part 1-1: General - Common rules and rules for buildings, Part 1-2: General - Structural fire design and Part 2: Bridges - was published in 2004 after a long historical development starting in 1983 with a CIB report "Structural Timber Design Code". EC 5 is part of the family of Structural Eurocodes providing common European design rules for the design of structures with all main building materials creating the built environment. The Eurocodes are of high importance for a common European building market. They should provide a common level of safety in buildings, as there is no reason from the human perspective to provide different safety levels in Vienna, Berlin, Helsinki or Lisbon.

### Project leader:

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### Project team members:

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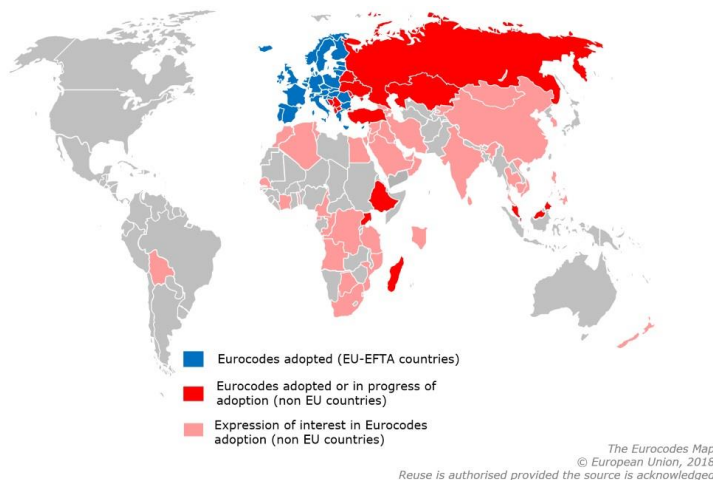
### Term:

1. Januar 2014 bis  
30. März 2023

### Funded by:

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However, it is recognized that there are nowadays high variations of National Dependend Parameters (NDP's) and – in addition - a high number of 'Non-Contradictory Information' (NCI) given in the published National Annexes (NA's), demonstrating that rules are missing in the Eurocodes. Further on, in general, design rules need to be improved or to be expanded and, and in parallel, additional design rules need to comply with the 'state-of-the-art'.

Subsequently, to enable additional improvement of the European construction sector and a sustainable development of the built environment a further harmonization and evolution of the European standards is in heavy need.

## Project aims:

### a) Enhancing 'ease-of-use'

The Eurocodes are addressed to "Competent civil, structural and geotechnical engineers, typically qualified professionals able to work independently in relevant fields". Their profile is the benchmark to enhance the ease of use throughout the document with respect to:

- Clarity and understandability and
- 'Ease-of-navigation'

On the one hand, keywords as 'clarity' and 'understandability' may give the idea of restructuring Eurocode 5. On the other hand, it is clearly described that fundamental changes to the approach to structure of the Eurocodes is to be avoided.

### b) Revision of existing parts

Systematic reviews of the existing parts were realised for whole Eurocode 5 in 2014 and 2015. Comments from all National Standardisation Bodies (NSB's) on the first generation of Eurocodes were collected.

Consequentially, following subjects will be taken into account as most important items for the revision of the standard:

- Vibration of floors
- Compression perpendicular to the grain
- Racking resistance of walls
- Element stability
- Timber failure capacity in connections
- Rules for the 'execution' of timber structures

### c) New Items

Additional design rules need to be included to comply with the 'state-of-the-art' which is based in commonly accepted results of research that has been validated through sufficient practical experience:

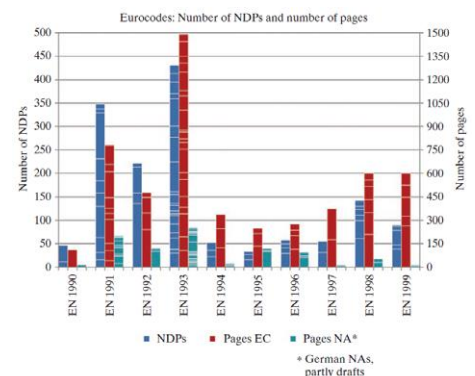
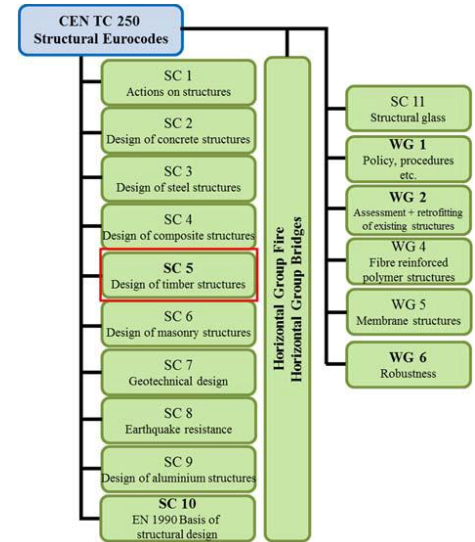
- Cross Laminated Timber (CLT)
- Timber Concrete Composites (TCC)
- Reinforcement

It is also clearly determined that excessive expansion is to be avoided (20% of the design rules – shall be relevant for 80% of daily use design).

### d) Review of NDP's

The responsible NSB's of the Member States published so called 'National Annexes' (NA) as addition to the Eurocode parts where NDP's as well as 'Non-Contradictory Information' (NCI) are included. The following progress will be followed during the project:

- Revision and categorization of NDP's
- Elimination of NDP's considered 'questionable'



<sup>1</sup>according to Kleinhenz, Dietsch, Winter