



## The Eurocodes What are they?

### The Eurocodes system

The Eurocodes are a set of European Standards (EN) for the design of buildings and other civil engineering works and construction products.

The Eurocodes cover in a comprehensive manner the basis of design, actions on structures, the principal construction materials, all major fields of structural engineering and a wide range of types of structures and products.

EN 1990	Eurocode: Basis of structural design
EN 1991	Eurocode 1: Actions on structures
EN 1992	Eurocode 2: Design of concrete structures
EN 1993	Eurocode 3: Design of steel structures
EN 1994	Eurocode 4: Design of composite steel and concrete structures
EN 1995	Eurocode 5: Design of timber structures
EN 1996	Eurocode 6: Design of masonry structures
EN 1997	Eurocode 7: Geotechnical design
EN 1998	Eurocode 8: Design of structures for earthquake resistance
EN 1999	Eurocode 9: Design of aluminium structures

The verification procedure is based on the limit state concept used in conjunction with partial safety factors. The Eurocodes allow for design based on probabilistic methods as well as for design assisted by testing, and provide guidance for the use of these methods.

### Why implement the Eurocodes?

The Member States of the EU and EFTA recognise that Eurocodes serve as reference documents for the following purposes:

- as a means to prove compliance of building and civil engineering works with the Essential Requirements (ER) of the Construction Products Directive (89/106/EEC), particularly ER 1 “Mechanical resistance and stability” and parts of ER 2 “Safety in case of fire” and ER 4 “Safety in use”,
- as a basis for specifying public contracts for construction works and related engineering services,
- as a framework for drawing up harmonised technical specifications for construction products.

On 11 December 2003, the European Commission issued a Recommendation (2003/887/EC) “on the implementation and use of Eurocodes for construction works and structural construction products”.

### Flexibility – Nationally Determined Parameters

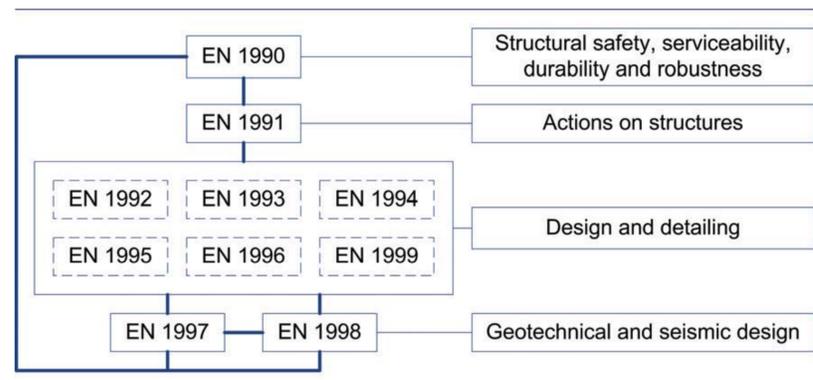
The Eurocodes “recognise the responsibility of regulatory authorities in each Member State and have safeguarded their right to determine values related to safety matters at national level where these continue to vary from State to State”.

National choice is provided by the Eurocodes with sets of recommended values which can be replaced by Nationally Determined Parameters (NDPs).

The NDPs account for possible differences in geographical or climatic conditions, or in ways of life, as well as different levels of protection that may prevail at national, regional or local level.

### Innovation - The role of EN 1990

EN 1990 establishes for all the Eurocodes the principles and requirements for safety, serviceability and durability of structures.



EN 1990 provides the basis for the structural design and verification of buildings and civil engineering works. The verification procedure is based on the limit state concept used in conjunction with partial safety factors.

EN 1990 allows for design based on probabilistic methods as well as for design assisted by testing and provides guidance for the use of these methods, while adequate levels of structural reliability are maintained.

An appropriate degree of reliability is obtained by design and execution according to the Eurocodes. Annex B of EN 1990 allows the designer to select different levels of reliability and gives guidelines to achieve them.

#### Contact

European Commission • Joint Research Centre  
Institute for the Protection and Security of the Citizen  
<http://eurocodes.jrc.ec.europa.eu>  
E-mail: [eurocodes@jrc.it](mailto:eurocodes@jrc.it)