

# L2 The Eurocodes

## Getting prepared

### The Eurocodes

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

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.

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".

### 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 Council Directive 89/106/EEC on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products, particularly ER 1 "Mechanical resistance and stability" and ER 2 "Safety in case of fire",
- 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.

The Eurocodes are the most technically advanced suite of structural design codes in the world.

They provide design methods whose development has been fully transparent and promote innovation in structural design.

The Eurocodes present significant opportunities for export of construction products and engineering services both in the European and the world markets.

Conflicting National Standards will be withdrawn by 2010.

### A strategic approach

Successful implementation of the Eurocodes requires a shared effort and close collaboration of stakeholders, namely: National Authorities, National Standards Bodies, Technical and Professional Associations, Academia and the Construction Industry.

The implementation work programme calls for a strategic approach to address the following issues:

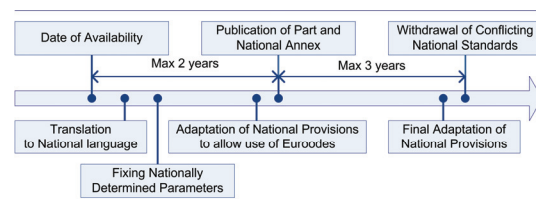
- awareness of the importance of the Eurocodes and of the benefits emanating from their use,
- implementation policies and role of regulatory authorities,
- technical matters and impact on the profession, researchers and academia,
- transfer of knowledge from Eurocode experts to potential National trainers,
- well-timed availability of guidance material.

### Time line – Duties of National Authorities & Standards Bodies

Publication of the Eurocodes was completed in May 2007. National implementation is scheduled for 2010 at the latest.

When a Eurocode Part is made available by CEN (Date of Availability), National Authorities and National Standards Bodies should:

- translate the Eurocode Part in authorised National languages (Translation period – max 1 year),
- set the Nationally Determined Parameters to be applied on their territory (National Calibration period – max 2 years),
- publish the National Standard transposing the Eurocode Part and the National Annex,
- adapt their National Provisions so that the Eurocode Part can be used on their territory,
- withdraw all conflicting National Standards by March 2010,
- promote training on the Eurocodes.



#### National implementation of EN Eurocode Part

During the Coexistence period (max 3 years) the Eurocode Part will be used in parallel with existing National Standards.

## Training of the profession

In order to achieve an adequate application of the Eurocodes, Member States, National Standards Bodies and the construction industry must be ready to use them.

To this end, a comprehensive training programme, including aspects of continuing professional development, is required.

According to Guidance Paper L, training of staff is the responsibility of Industry, in cooperation with National Authorities and National Standards Bodies.

## University education

For those entering the profession as graduates, design to the Eurocodes will be the norm and employers will require their new recruits to understand the latest approaches.

Acknowledging that demand will shift soon from National Standards to the Eurocodes, Universities and Technical Colleges should adapt the content of their courses on civil and structural engineering design.

Education needs comprise teaching notes and software, textbooks and student guides, background information on the principles and rules of the Eurocodes.

## Guidance material

In order to promote and facilitate implementation of the Eurocodes, guidance material should be disseminated as soon as practicable. Such material could include:

- general-purpose, easily understandable booklets,
- implementation aids,
- designer handbooks and manuals,
- guidelines with worked examples,
- background documents on the Eurocodes and on the National Annexes,
- training and design software.

Guidance to competent authorities and the profession is generally available at National level through:

- education, both by means of continuing professional training and within universities,
- websites,
- information on the implementation procedures,
- designer handbooks and manuals,
- software.

## European Commission support

With the objective to increase awareness and promote training in the use of the Eurocodes, the European Commission is supporting:

- facilitation of regional training workshops with support to New Member States and Candidate Countries,
- publication of awareness material (leaflets, booklets, etc.),
- collection and classification of manuals, design aids, etc.,
- facilitation of the development of National material,
- support and facilitation of the exchange of information and guidance material between Member States.

The Joint Research Centre, within an Administrative Arrangement with the Directorate General Enterprise and Industry, launched the Commission's website on the Eurocodes to serve as platform for exchange and dissemination of training and promotional material.

