The Eurocodes, history and present

Jean-Armand CALGARO
Ingénieur Général des Ponts et Chaussées
Conseil Général des Ponts et Chaussées
Ecole nationale des Ponts et Chaussées, France
# A short story of the Eurocodes

<table>
<thead>
<tr>
<th>Period</th>
<th>Description</th>
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<tbody>
<tr>
<td>1971-1976</td>
<td>Public procurement Directive (1971) – Appointment of a steering committee to examine the feasibility of developing a common European set of technical documents covering the design of a wide range of construction works.</td>
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<td>1990 - 1998</td>
<td>Conversion, by CEN, of the first Eurocodes into provisional European standards (ENVs)</td>
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<td>1998 – 2006</td>
<td>Conversion of the provisional European standards ENV into European standards EN</td>
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<td>2007 - ∞</td>
<td>Maintenance and evolution of the Eurocodes</td>
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The Member States of the EU and EFTA(1) 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 of Council Directive 89/106/EEC, particularly Essential Requirement N°1 – Mechanical resistance and stability – and Essential Requirement N°2 – Safety in case of fire;

* as a basis for specifying contracts for construction works and related engineering services;

* as a framework for drawing up harmonised technical specifications for construction products (ENs and ETAs)

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(1) EFTA: European Free Trade Association (Iceland, Norway, Switzerland, Liechtenstein)
Objectives of Eurocodes (cont.)

In addition, the Eurocodes are foreseen to:

- improve the functioning of the single market for products and engineering services by removing obstacles arising from different nationally codified practices for the assessment of structural reliability;

- improve the competitiveness of the European construction industry and the professionals and industries connected to it, in countries outside the European Union.
THE EUROCODES

EC0 – Basis of design

EC1 - Actions

EC2 - Concrete

EC3 - Steel

EC4 – Composite steel-concrete

EC5 - Timber

EC6 - Masonry

EC7 - Geotechnics

EC8 - Earthquakes

EC9 - Aluminium

Building the Future in the Euro-Mediterranean Area

Workshop - 27-29 November 2006, Varese, Italy
LINKS BETWEEN THE EUROCODES

EN 1990

EN 1991

EN 1992
EN 1993
EN 1994
EN 1995
EN 1996
EN 1997
EN 1998
EN 1999

Structural safety, serviceability and durability
Combinations of actions

Actions on structures

Design and detailing

Geotechnical and Seismic design
The environment of the Eurocodes

- Executive Standards
- Product Standards
- Test Standards
- Technical Approvals
- Material Standards
From birth to publication of an EN Eurocode Part

- **Start PT work**
- **Finalisation of the document and translations**
- **Final vote by SC**
- **Final editing**
- **Transmission to CEN (3 languages E, F, G)**
- **Ratification of the EN**
- **Publication by CEN**

Time line:
- Step 32: Start PT work
- Step 34: Finalisation of the document and translations
- Step 49: Final vote by SC
- Step 51: Final editing
- Step 53: Transmission to CEN (3 languages E, F, G)
- Step 64: Ratification of the EN & Publication by CEN
IMPLEMENTATION OF EUROCODES (1)

Eurocode EN 199n-p

- Normative Part (no choice)
- Part open to choices

Transformation into National standard

Choices made in the National Annex

(National) EN 199n-p

Choices for the individual project, national guidance, etc.
The National annex may only contain information on those parameters which are left open in the Eurocode for national choice, known as Nationally Determined Parameters, to be used for the design of buildings and civil engineering works to be constructed in the country concerned, i.e.:

- values and/or classes where alternatives are given in the Eurocode,
- values to be used where a symbol only is given in the Eurocode,
- country specific data (geographical, climatic, etc.), e.g. snow map,
- the procedure to be used where alternative procedures are given in the Eurocode.

It may also contain

- decisions on the application of informative annexes,
- references to non-contradictory complementary information to assist the user to apply the Eurocode.
COMMISSION RECOMMENDATION (2003/887/EC) OF 11/12/2003 on the implementation and use of the Eurocodes for construction works and structural construction products

Abridgement of the recommendation

1.- The Eurocodes are a suitable tool:
   - to check mechanical resistance and stability
   - to give a presumption of conformity with Essential Requirements 1, 4, 2 of the Directive 89/106/EEC

2.- NDPs should be laid down

3.- The use of recommended values is encouraged as far as possible and NDPs should be notified to the Commission

4.- The Commission may request changes of NDP values to reduce divergence from recommended values
COMMISSION RECOMMENDATION (2003/887/EC) OF 11/12/2003 on the implementation and use of the Eurocodes for construction works and structural construction products

Abridgement of the recommendation (cont.)

5.- Reference to Eurocodes in the national provisions on structural construction products (in the absence of technical specifications) is encouraged.

6.- Research is encouraged in cooperation with JRC for the evolution of Eurocodes, in particular in the fields of fire and earthquake resistance.

7.- Promotion of instruction in the use of the Eurocodes is encouraged.
The present situation: we are ready!
The main qualities of the Eurocodes …

… their technical soundness and their transparency
Thank you for your attention

We are now obliged to learn the Eurocodes.