

Resolving the nonsense and the misunderstanding on the Eurocodes!

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A. Preliminary

Many myths and emotions have appeared around the Structural Eurocodes. Statements such as “we will never abandon the national codes in my country”, “Eurocodes make constructions much more expensive”, “Eurocodes are not valid here”, ..., are often heard.

In this study, SCIA takes a closer look at the issue. We report on a survey among 456 engineers, who accessed the SCIA website between December 2006 and February 2007, giving an in-depth view on the current perception on Eurocodes. Along with correcting some of the engineers' misunderstanding, we also position the Eurocodes within an international context.

B. Survey

The facts & figures of the survey are outlined in detail in the attachment. Here is a summary of the main misunderstandings:

- 15% of the engineers believe the Eurocodes will be introduced in their country after 2010
- most engineers (88%) believe the Eurocodes may only be used within the EU Member States
- 60% of the respondents believe the national codes will not disappear
- 59% of the respondents fear the Eurocodes will not be accepted worldwide
- 52% of the engineers believe the Eurocodes lead to more expensive structures.

On the other hand, respondents take the Eurocodes seriously: 2/3 of them are taking steps to implement the Eurocodes for design work. The respondents work in companies that operate for 32% outside Europe. We analyzed the average of the company size of the respondents: they come from small (< 5 employees) to large companies (> 200 employees) in equal ratio.

C. The real situation on the Eurocodes

We must immediately correct the misconceptions. The Eurocodes are an assembly of 58 consistent norms, completed with National Annexes. Each country is responsible for these National Annexes, which must ensure safety (a national responsibility). The National Annexes may vary from country to country and specify Nationally Determined Parameters (NDP) e.g. safety factors, wind speeds,..., which lead to dedicated localized versions. The European Commission and the CEN (the European standardisation institute) are aiming to minimize the local National Annexes (see the JRC Project¹). The transition period from old national codes to new codes based on the Structural Eurocodes runs from 2007 through to 31st March 2010, a maximum period of coexistence. Each country must publish its translated version (if required) of the 58 codes plus the National Annexes in this time frame. From 1st April 2010 onwards, all conflicting old national codes will no longer be applicable. The transition period is thus clear: from now till 31/03/10! Each country can decide to withdraw the old codes prior to this deadline; some countries are already doing so (e.g. the UK, where the new British Standards are fully Eurocode compliant, France conc. EC2 and Belgium with EC0 and EC1-1-1 replacing NBN B 03-102 and NBN B 03-103 since 01/01/06 already). The national versions of the Eurocodes are applicable for all types of structures, private as well as public structures, and this for practically all building materials (steel, concrete, masonry, aluminium, soil...).

The Eurocodes will be applicable in all Member States of the European Union, as was already decided a early as 1975 (art. 59 of original Treaty of Rome), later confirmed in various treaties, amongst which the Maastricht Treaty and more recently by a recommendation of the European Commission on the use of the Eurocodes (19.12.2003)². They can be used to prove the compliance of building and civil engineering works with the essential requirements of the Construction Products Directive.

Other countries are free to participate and open their market to suppliers offering services on the basis of the Eurocodes. Each country remains responsible for its safety regulations.

There is no proof that the Eurocodes will lead to more expensive structures: the concepts in the Eurocodes are based on the latest research understanding, and are consistent over all the topics and materials, which is a guarantee for an optimized safety. Up-to-date design checks were added, e.g. on fire resistance. Structural Eurocodes are not a threat (in reference to the withdrawal of the old national codes) but an opportunity for marketing and use of structural components and kits in all the Member states. It is therefore important to be well informed and trained to be competitive throughout Europe and further afield.

¹ <http://eurocodes.jrc.ec.europa.eu/showpage.php?id=64>

² 2003/887/CE

D. Going to international markets with the Eurocodes

There is indeed a growing cooperation between the worldwide normalization institute ISO and the European CEN on the issues of the Eurocodes. More and more countries outside Europe have shown major interest in the Eurocodes, and have even already accepted them (e.g. Vietnam, Singapore). Seminars and training classes are being held on the Eurocodes in North African countries, China and India. The consistency and tuning between the Eurocodes are a major advantage compared with current codes in the USA, where a multitude of standards of different institutes co-exist (e.g. AISC, AISI, ACI, UBC, IRC, ASTM, AWS, WFCM, NDS...), in most cases not available in S.I. units.

Of even greater importance are the publications, the helpdesks, the online versions, the learning material, the free distribution (e.g. Leonardo da Vinci project), all coming up at a rapid rate. For more details we refer to specific websites, such as: <http://eurocodes.jrc.ec.europa.eu>, www.eurocode-online.de, www.eurocodes.co.uk, www.normes.be/eurocodes

Appendix The survey in detail

1. Some figures

Origin of the submissions (period December 2006 – February 2007)

- 456 submissions by readers of the website www.scia-online.com
- 259 submissions from Western Europe
- 189 submissions from Eastern Europe
- 8 submissions from outside Europe
- the submissions from 26 countries in total.

About the companies

- There was quite a well balanced distribution of partners participating in the survey in terms of number of employees (see also chart "How many people are employed in your company")
- 67% of companies are active in both private and public sector, 23% is only active in the private sector and 10% is only active in the public sector.
- 50% of companies work on buildings, 21% on industrial buildings, 18% on civil structures and 11% on atypical structures.
- More than 65% of companies are very active in their local market and very little or not at an international level. Only 13% of companies work more at an international than at a local level.

2. Analyzing the results

Europe, Eastern Europe & Western Europe

- 88% of participants feel that the Eurocodes will affect the public sector as well as the private sector. There is no significant difference in interpretation between Eastern and Western Europe.
- Over 80% of participants thought the Eurocodes would be used in the EU Member States. Currently, 5% thought the Eurocodes would have a worldwide impact. It is remarkable to see that the Western European participants are inclined to think that the Eurocodes will have their impact on Continental Western Europe, whereas the East European participants strongly believe in the impact of the Eurocodes for the entire European Union.
- There's clearly a vagueness when it comes to indicating the deadline of the implementation of the Eurocodes:
 - 45% of the people agreed on 2010 as the ultimate date of implementation
 - 18% thought it was the year 2007
 - 14% thought it would be the year 2008
 - 6% even thought the Eurocodes would not be mandatory by 2016Western European participants tended to indicate an earlier date as the deadline for the implementation (2007), whereas Eastern European participants rather believe in a later deadline (2010).
- Over 50% of the participants believe that the National Codes will not disappear at all. The Western European countries have a stronger believe in the fact that the National Codes will remain applicable compared to the Eastern European countries.
- Almost 60% of the participants don't believe that the Eurocodes will find worldwide acceptance in the coming 5 years. The Western European subscribers are clearly more positive regarding this worldwide acceptance compared to their Eastern European colleagues.
- Almost half of the organizations expect to have to retrain between two to five people. We see very similar figures here for Eastern and Western Europe. One in four companies think they'll manage if they retrain only one person.

- Half of the subscribers consider the costs for training caused by the introduction of the Eurocodes as a common responsibility of their own company.
- More than two thirds of companies are actively preparing themselves to be ready for the implementation of the Eurocodes.
- When it comes to more cross-border competition, the opinions are quite different. It is however remarkable that almost half of the participants don't consider the Eurocodes to lead to more cross-border competition.
- Half the participants think the Eurocodes will not be stricter or less strict than the national standards were until now. From the remaining half, 36% think the Eurocodes will indeed be stricter. We notice a remarkable difference here between the Eastern and Western countries: The Eastern countries consider the Eurocodes to be stricter than the national standards, whereas the Western European countries tend to think that there won't be too much difference.
- More than half of the respondents are convinced that the Eurocodes will lead to more expensive constructions. Here we notice significant regional differences: In Eastern Europe, 75% of the participants think the Eurocodes will bring extra costs. In Western Europe, only 37% believe the costs will increase.
- Almost 70% of international level work takes place within Europe. Currently, Western European companies work more outside Europe than Eastern European countries do, although the difference is not that big.

Europe? OK, but each country has its own identity...

Although we are getting more and more used to the idea of one big Europe, it is nice to see that some answers are very much related to the country of origin of the participants.

Some country-related facts:

- Although most participating countries consider the year 2010 as the deadline for the switch to the Eurocodes, most Belgian participants consider the year 2007 as the deadline.
- Although most participating countries consider the costs of retraining their employees as a mixed responsibility of their company, software providers and the authorities, the French subscribers mainly see it as an investment that should be done by their own company.
- African countries think that the raised cross-border competition will come mainly from countries with low salaries, whereas other countries think that the raised cross-border competition will come from the fact that people will be using the same standards.

3. General

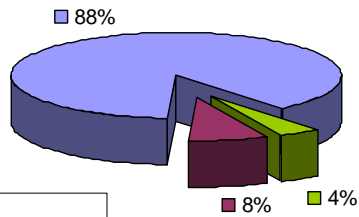
This survey was conducted between December 2006 and February 2007.

Generally speaking, we can say that there is a clear awareness and interest for the Eurocodes and that companies are already preparing themselves to be ready for the concrete implementation of these Eurocodes. On the other hand, it's not clear for a lot of people what the deadline is for the implementation of these Eurocodes.

People don't think that the Eurocodes will have a great impact on their daily work. Two concrete changes that are expected due to the introduction of the Eurocodes are:

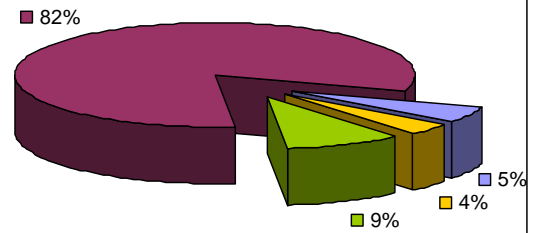
- more cross-border competition.
- an increase in the costs of construction.

Sectors of Application of the Eurocodes



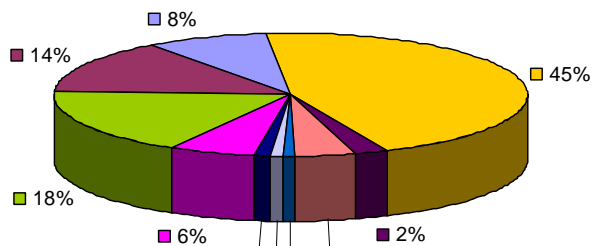
- Private Sector
- Public Sector
- Both Private & Public Sector

Geographical Area of Application of the Eurocodes



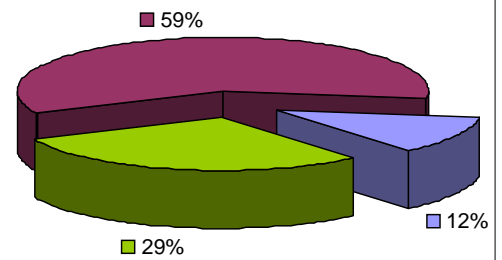
- Continental Western Europe
- EU Member States
- Worldwide
- None of these

Deadline for the implementation of the Eurocodes



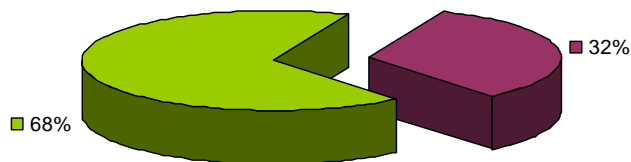
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- Even later

Worldwide accepted in 5 years?



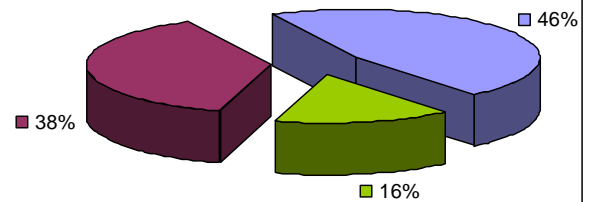
- Yes
- No
- No opinion

Has your company taken already steps for the implementation of the Eurocodes?



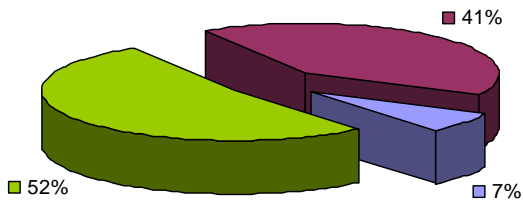
- Yes
- No

Will the Eurocodes lead to more cross-border competition?



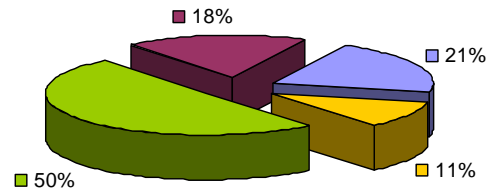
- Yes, low salaries
- Yes, same standards
- No difference

Do you expect the Eurocodes to lead to more expensive constructions?



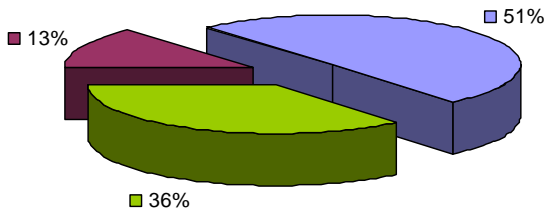
- Yes
- No
- No opinion

Which type of structures does your company deal with?



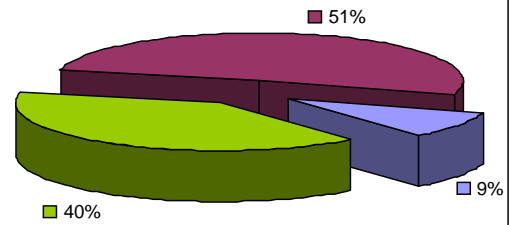
- Buildings
- Civil struct.
- Ind. Buildings
- Atypical struct.

What are the differences between the national standards and the Eurocodes?



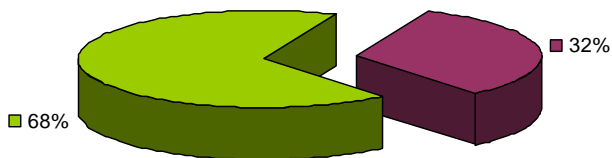
- Eurocodes are stricter
- Eurocodes are less strict
- There is no difference

Will the National Codes disappear?



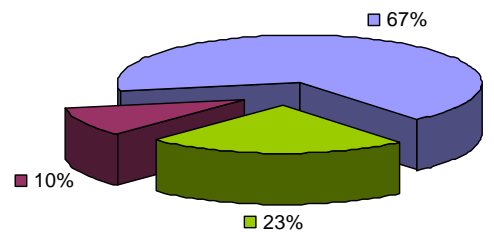
- Yes
- No
- No opinion

Our international business is mainly situated...



- in Europe
- outside Europe

In which market is your company active?



- Private sector
- Public sector
- Both