

Simplification of Eurocodes

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Experiences

□ Survey about Eurocodes in Austria 2014

- As many users of Eurocodes (45 %) are satisfied („good experiences“), as are dissatisfied (“bad experiences“)
- Main points of criticism are:
 - Effort and detail of calculation is not adequate to the results
 - Very high cost to buy the whole set of standards
- Instructions and guidance requested
 - not only by people using ECs rarely, but also by “experts” using them frequently (80 % of respondents)



Experiences

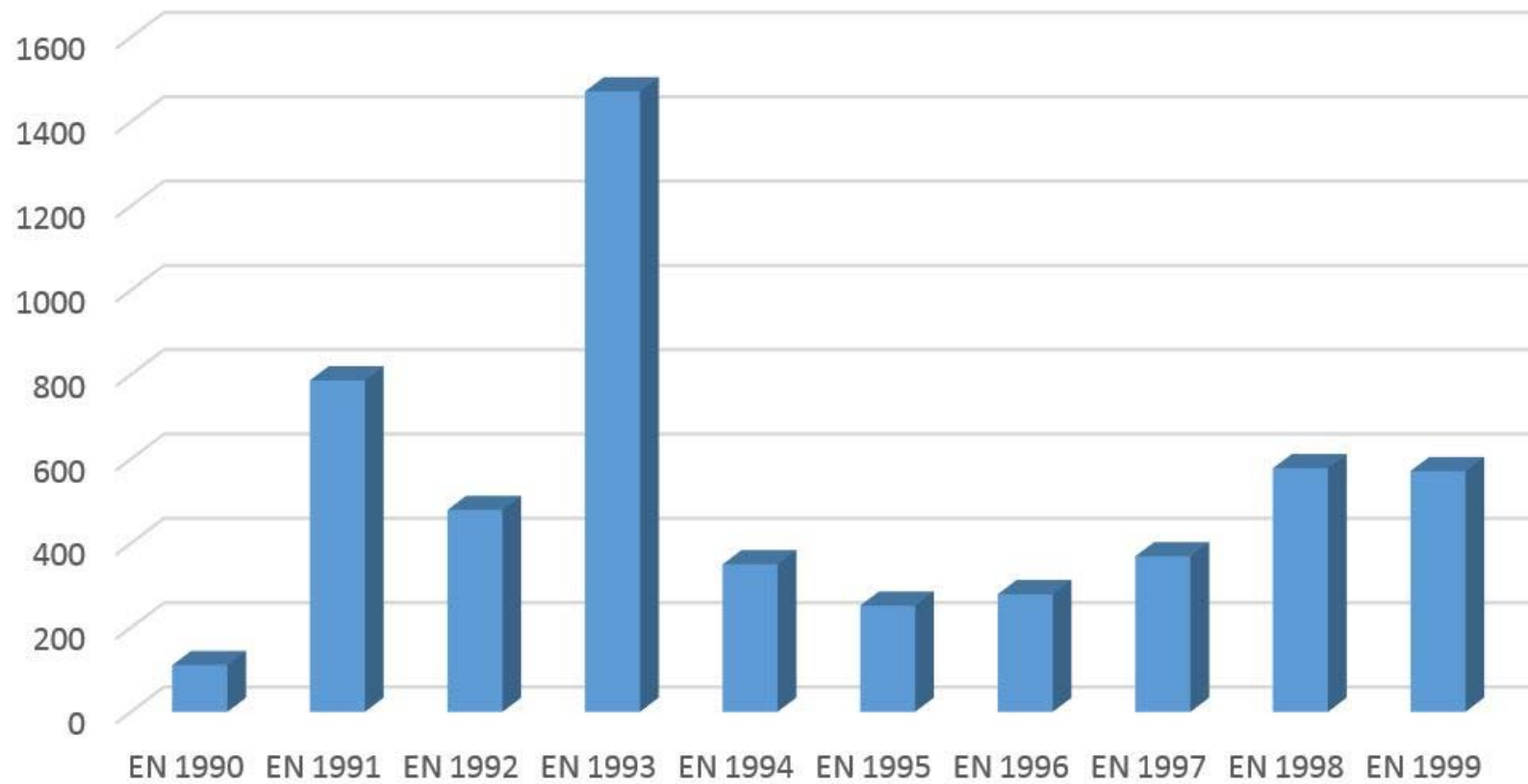
□ Survey about Eurocodes in Austria 2014 (Cont'd)

- Not sufficient education and training for ECs in technical schools
- Simplifications requested by 70 % of respondents
 - Especially for low consequence classes (CC1 and CC2)
- 50 % of respondents use ECs rarely or never

SMEs?



Number of pages ÖNORM EN



Eurocode	Number of pages
EN 1990 Basis of structural design	111
EN 1991 Actions on structures	786
EN 1992 Design of concrete structures	479
EN 1993 Design of steel structures	1.472
EN 1994 Design of composite steel and concrete structures	350
EN 1995 Design of timber structures	252
EN 1996 Design of masonry structures	279
EN 1997 Geotechnical design	369
EN 1998 Design of structures for earthquake resistance	578
EN 1999 Design of aluminium structures	571

Simplified Handbooks

□ Project of

- Austrian Institute of Construction Engineering
- Chamber of Architects and Engineers
- Chamber of Commerce – professional association of builders
- Technical University of Vienna

→ **to draft simplified handbooks for the application of Eurocode-conform structural design**

Simplified Handbooks

□ Purpose and field of application

- For smaller projects (design tasks)
 - „Simple solutions for simple projects“
- Improvement of understanding and of „engineering spirit“
 - „Use your brain before applying the software“

□ Concept

- Simplified calculation methods which are
 - compatible with the Eurocodes and
 - on the „safe side“

Simplified Handbooks

□ Principles

- No cross-references to different Eurocodes or parts
 - „all in one“
- Including everything which is required for a particular project
 - from the foundation to the roof
- Pre-determination of classes (CC, DSL, IL, Ex etc,)
- Should be able to be used in schools (without being a „thick schoolbook“)

Simplified Handbooks

□ Scope

- Only covering
 - EN 1992 Design of concrete structures
 - EN 1993 Design of steel structures
 - EN 1995 Design of timber structures
 - EN 1996 Design of masonry structures
 - EN 1997 Geotechnical design
- Separate part
 - EN 1991 Actions on structures

Simplified Handbooks

□ Scope (Cont'd)

- Special cases
 - EN 1990 Basis of structural design
 - in each part integrated
 - EN 1998 Design of structures for earthquake resistance
 - in each part integrated (mostly by deemed to satisfy solutions)
- Not covered:
 - EN 1994 Design of composite steel and concrete structures
 - EN 1999 Design of aluminium structures
- All restricted to lower consequence classes
 - CC1 buildings (residential, small and simple workshops, halls for workshops or storage)

Thank you very much for your attention!