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More information can be found at
the CENSE project website:
www.iee-cense.eu

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www.buildingsplatform.eu

Question: « I have seen
the list of CEN standards
for the EPBD (Info Paper
P60). It is an impressive
list! So has the job now
been completed?? »

Answer: « Actually...,
the job has just started.
Read more in this
paper ! »

The CENSE project. Leading the CEN Standards on Energy performance of buildings to practice

A project (2007-2010) under the Intelligent Energy Europe
programme

The aim of the CENSE project is to support the EU Member States
(MS) and other target groups in achieving better awareness and
more effective use of the European (CEN) standards that are related
to the EPBD.

The main activities in the project are:

- > to communicate the role, status and content of these standards
as widely as possible, and to provide guidance on their
implementation;
- > to collect comments and examples of good practice from the
MS, so as to remove obstacles to implementation, and to collect
and secure results from relevant SAVE and FP6 projects;
- > to prepare recommendations to CEN.

1 > Introduction

The aim of the CENSE project is to support the EU Member States and
other target groups in gaining awareness and achieving effective use of the
European (CEN) standards that are related to the EPBD.

These standards were successively published in the years 2007-2008 (see
the so called "Umbrella Document", [1], for a systematic overview) and
are currently either already being implemented or will soon be
implemented in many EU Member States. Sometimes "as is", but more
often "in a practical way".

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- > To collect comments and examples of good practice from the MS, so as
to remove obstacles to implementation, and to collect and secure
results from relevant SAVE and FP6 projects.
- > To prepare recommendations to CEN.

Question: « Why not let it be up to each Member State? »

Answer: « Imagine what would happen if 27 or more countries all developed their own calculation methods on the same subject... That would be a huge waste of time and effort. Besides...: do we really want to build a new Tower of Babylon?? »

Question: « So the goal is to impose the same energy performance requirements across the whole of Europe? »

Answer: « Not at all! The goal is to try to speak the same engineering language »

See also EPBD Buildings Platform Information Paper P25 « Energy performance calculation procedures for the EPBD (1). Introduction », available at www.buildingsplatform.eu

2 > Mandate to CEN for European standards to support the EPBD

The European Commission, DG TREN and DG Enterprise, gave Mandate 343 to CEN. It orders CEN to develop a methodology for calculating the integrated energy performance of buildings in accordance with the terms set forth in Directive 2002/91/EC (Energy Performance of Buildings Directive-EPBD).

Access to this methodology in the form of European Standards makes it possible to coordinate the various measures for improving the energy efficiency in buildings that are used in the Member States. It will increase the accessibility, transparency and objectivity of energy performance assessment in the Member States (as mentioned in recital (10) of the EPBD).

3 > Status and role of the CEN standards

National implementation

The role of the EPBD-CEN standards is to provide a common European concept and common methods for preparing energy performance certification and energy inspections of buildings.

However, the implementation of these CEN standards in the EU Member States is far from trivial: the standards cover a wide variety of levels and a wide range of interlaced topics from different areas of expertise. They comprise different levels of complexity and allow differentiation and national choices at various levels for different applications.

The use of the CEN standards is not mandatory for Member States. Why not?

Legal arguments

The EPBD has stimulated the more rapid development of CEN standards (ENs) for energy calculation procedures for buildings and their systems, and the related standards that are needed to specify buildings and systems performance in accordance with the Directive. The European Commission issued a mandate to CEN in order to speed up the development of standards needed for implementation of the EPBD.

In the case of the **Construction Products Directive (CPD)**, the European Commission issues mandates to CEN to make use of CEN standards mandatory for all Member States.

In contrast with the CPD, the **EPBD** allows national and regional differentiation: the European Commission is responsible for generating a common framework (the Directive) in the field of energy efficiency in the building sector. The implementation of the framework and the definition of requirements and procedures is within the exclusive jurisdiction of each Member States (subsidiary principle). The Member States are not bound to use any standard in their regulations. The implemented procedures can be fully covered in the national laws without reference to national or European standards.

Practical arguments

From a practical point of view, within the given short timescale (2004-2007) it was impossible to produce a set of approved and published standards to be implemented in the Member States before the national implementation of the EPBD (which began in 2006).

Consequently, Member States, in the preparation of national legislation, had to refer to either existing or new national procedures.

In addition, at the time of writing the CEN standards, only a limited number of countries had practical experience with procedures for assessing the integrated energy performance of buildings that could be used in national building regulations. Several of the CEN standards reflect this situation by allowing different options to be decided at national level.

Nevertheless, most Member States are planning to adopt the CEN standards in one way or another within a few years.

The CENSE project organizes the information on the CEN standards and the feed back from the Member States.

What are the future prospects for the status of the CEN standards?

We expect a further harmonization in the near future. In particular when feedback from the Member States and other target groups has led to recommendations for improvement of the CEN standards and when these recommendations have been implemented in updated versions of the standards in a few years from now.

The CENSE project may play an important role in identifying and removing the barriers and to promote examples of good practice.

Why is standardization at EU level so important?

Today most companies (consultants, manufacturers and contractors) work internationally. From their point of view it is preferable to have internationally accepted calculation methods and input data for the energy efficiency of buildings and building systems.

European standards should therefore form the basis of any revision of national building codes. The CENSE project will interact with all partners (building code writers, consultants, manufacturers, educational institutions, etc.).

The point is to establish a two-way communication:

- > CENSE will provide information about the "European Method" and explain the background and use of the standards.
- > CENSE will gather information on any obstacles that are encountered and provide examples of good practice for use when applying the standards, in dialogue with the Member States and other stakeholders and will provide feedback to CEN for a any revision of the standards.

So will the future be one harmonized set of CEN procedures to assess and express the energy performance of buildings?

That would be ideal from the point of view of harmonization.

However, we still have to see to what extent regional differences in Europe require differentiation of input data and boundary conditions.

This has to do with differing climates, building traditions (types of new and existing buildings, types of skill) and the economic and social climate (user behaviour, availability of products and skills), legal settings and quality

It is very important to speak the same engineering language :

« How energy efficient is energy efficient? »

« How reliable is reliable? »

« How accurate is accurate? »

A few examples of diagrams used in the CENSE publications to explain the relationship between the standards

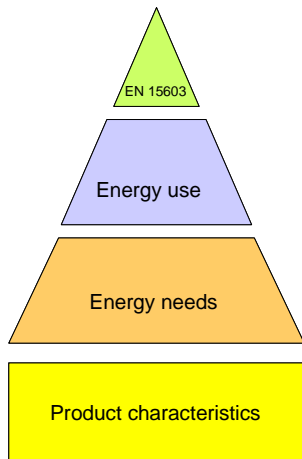


Fig. 1. The location of EN 15603 (Overall energy performance) in the set of EPBD standards

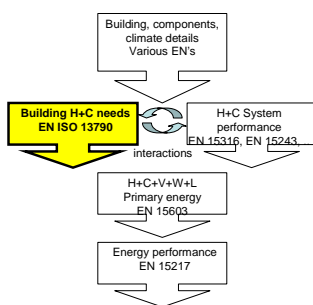


Fig. 2. The location of EN ISO 13790 (energy use for heating and cooling) in the set of EPBD standards

assurance.

It may also have to do with related national or regional requirements.

To name a few:

- > indoor air quality (e.g. which affects the input data for ventilation rates),
- > summertime comfort (e.g. which affects the input data for temperature set points),
- > usability of indoor spaces (e.g. which affects the classification of an attic as a storage space or as a study or bedroom).

It will be very interesting and important to learn to what extent such differentiation will constitute an obstacle for trans-border transparency, in particular for the comparison between Member States of the energy performance of buildings.

4 > CENSE - Project summary

Objective

To accelerate the adoption and improved effectiveness of EPBD-related building energy performance standards in EU Member States

Benefits

Increased accessibility, efficiency and harmonisation of building energy performance assessments in the MS

Main activities

- > To communicate the role, status and content of these standards as widely as possible and to provide guidance on their implementation.
- > To collect comments and examples of good practice from MS, so as to remove obstacles to implementation, and to collect and secure results from relevant SAVE and FP6 projects.
- > To prepare recommendations to CEN.

Duration

The project duration is from October 2007 until March 2010.

Partners

The partners in the project (from eight different countries) are all experts who are active in CEN-EPBD. They combine this expertise with knowledge and experience of implementation at the national level.

Partners:

TNO (coordinator)	The Netherlands	www.tno.nl
CSTB	France	www.cstb.fr
ISSO	The Netherlands	www.isso.nl
Fraunhofer - IBP	Germany	www.ibp.fraunhofer.de
DTU	Denmark	www.ie.dtu.dk
ESD	United Kingdom	www.esd.co.uk
FAMBSI	Finland	www.fambsi.fi
EDC	Italy	www.edilclima.it

Associated partners:

HTA Luzern	Switzerland	www.hslu.ch
BRE	United Kingdom	www.bre.co.uk
Viessmann	Germany	www.viessmann.de
Roulet	Switzerland	www.epfl.ch
JRC (IES)	Eur. Commission	ies.jrc.ec.europa.eu

Expected results

- > A website with guidance documents for the CEN standards.
- > Common trends, obstacles identified, possible solutions and examples of good practice concerning the use of the CEN standards.
- > Recommendations for further harmonisation.

The project reports, presentations and discussions with target groups will result in increased awareness and knowledge on the content and the usefulness of these European standards and to shared experiences between the Member States (building code and standard writers) and other major target groups (design engineers and installation engineers, manufacturers).

Another example of a diagram :

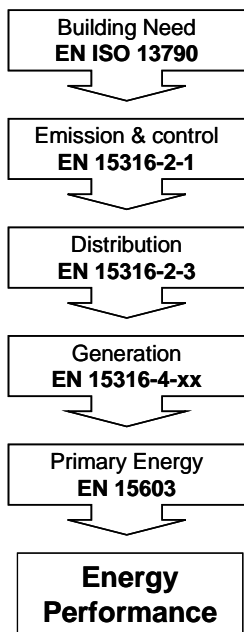
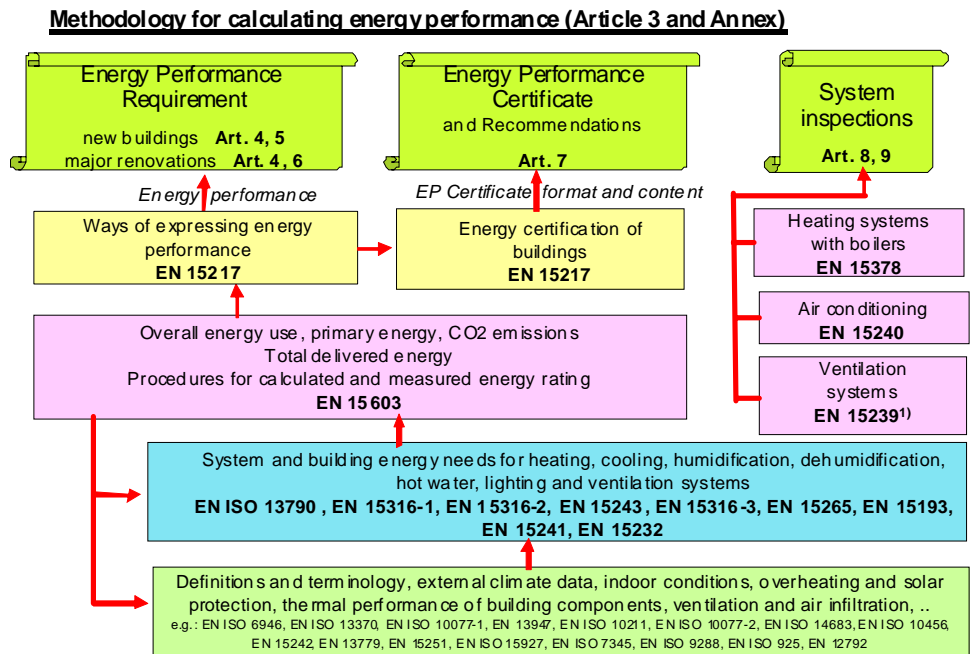


Fig. 3. The location of EN 15316 series (heating and DHW standards) in the set of EPBD standards

Main scheme



1): Not explicitly mentioned in the Directive

Fig. 4. Main scheme showing the hierarchy of the CEN- EPBD standards

5 > CENSE Information Papers in cooperation with the EPBD Buildings Platform

One of the most effective ways to disseminate information on the CEN standards, which also serves to trigger feedback from the target groups, is by so-called Information Papers.

As a result of cooperation with the EPBD Buildings Platform, these Information Papers are based on the general template for Buildings Platform Information Papers and are made available at the Buildings Platform website, along with other Information Papers related to the EPBD.

Currently available:

On feedback concerning the use of CEN standards:

P090 - The use of the CEN standards to support the EPBD in the EU Member States - An overview and some typical examples.

On various CEN standards:

P091 - A vehicle for energy-efficient lighting: EN15193: Energy performance of buildings - Energy lighting requirements.

P092 - Information paper for the EN ISO standard on energy use for heating and cooling (EN ISO 13790).

P098 - Information paper on EN 15316-2-3 - Heating systems in buildings - Space heating distribution systems.

P099 - Information paper on EN 15316-3-1 - Domestic Hot Water systems - Characterisation of Needs .

P100 - Information paper on EN 15316-3-2 - Domestic Hot Water systems - Distribution.

P102 - Information paper on space heating generation systems - Combustion systems - EN 15316-4-1 Combustion Boilers.

P106 - Information paper on EN 15316-4-5 - The performance and quality of district heating and large volume systems.

P107 - Information paper on EN 15316-4-6 - Photovoltaic systems.

P108 - Information paper on EN 15316-4-7 - Space heating generation systems - Biomass combustion systems.

P109 - Information paper on EN 15378 - Heating systems in buildings - Inspection of boilers and heating systems.

P115 - Information paper on Inspection of air conditioning systems - EN 15240 for the application of EPBD Article 9.

P116 - Information paper on Inspection of ventilation systems - EN 15239 for the application of EPBD.

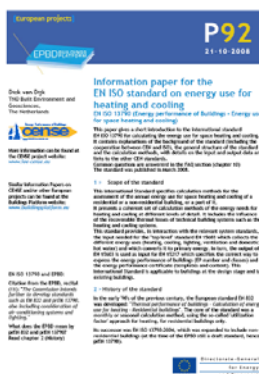
> More Information Papers are under preparation.

Other relevant Information Papers, from the Buildings platform:

On CEN standards for the EPBD:

P002 - The set of CEN standards developed to support the implementation

Examples of information papers from the CENSE project :



of the EPBD in the EU Member States.

P040 - More information on the set of CEN standards for the EPBD.

P060 - More information on the set of CEN standards for the EPBD.

On calculation procedures:

P025 - Energy performance calculation procedures for the EPBD (1). Introduction.

P026 - Energy calculation procedures for the EPBD (2). Quality for purpose.

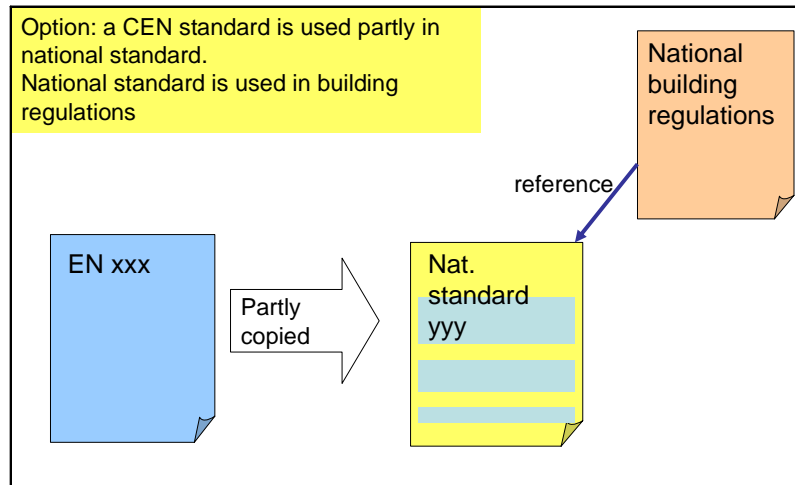


Fig. 5. A figure from Information Paper P90 on the relation between the CEN standards, national standards and national or regional building regulations. This figure shows one of the options found in the Member States.

CENSE partners:

TNO (NL; coordinator), CSTB (FR), ISSO (NL), Fraunhofer - IBP (DE), DTU (DK), ESD (GB), FAMBSI (FI), EDC (IT)

Associated partners:

HTA Luzern (CH), BRE (GB), Viessmann (DE), Roulet (CH), JRC IES (EC)

Link: www.iee-cense.eu

6 > References

1. CEN/TR 15615, Explanation of the general relationship between various European standards and the Energy Performance of Buildings Directive (EPBD) - Umbrella Document, April 2008

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