# Status of new CEN EPB Standards

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**European initiatives developing a coherent set of standards needed to describe the Energy Performance of Buildings: the development of the set of EPB standards**

This initiative is originated by the publication of an European Directive 2010/31/EU recasting the Directive 2002/91/EC on energy performance of buildings ([recast] EPBD) which promotes the improvement of the energy performance of buildings within the European Union, taking into account all types of energy uses (heating, lighting, cooling, air conditioning, ventilation) and outdoor climatic and local conditions, as well as indoor climate requirements and cost effectiveness. This initiative is described in Mandate 480, given by the European authorities to CEN.

It is expected that the use of these standards will increase the accessibility, transparency and objectivity of the energy performance assessment by facilitating the comparison of best practices and supporting the internal market for construction products. This development is based on an earlier developed set of EPB standards that has been published in 2007-2008. This earlier (2007-2008) set of 42 EPB standards consists of 30 EN (European) and 11 ISO (EN-ISO) standards.

**The current initiative (2012-2015)** is to review and revisit this set of (2007-2008) EPB-standards and reformulate and add standards so that they become on the one hand unambiguous and compatible, and on the other hand a clear and explicit overview of the choices, boundary conditions and input data that need to be defined at national or regional level.

The EPB-project work will lead to a second generation set of the EPB standards, more usable as direct reference in national legislation and leading to a high transparency in national choices.

## Phase 1 (circa 2012-2013):

The development of **basic principles** and **detailed technical rules** providing the necessary clear guidance for the standards writers and an **overarching standard** providing a continuous but modular structure, preceding:

### **prCENTS 16628:** Technical Specification (TS): Basic Principles for the set of energy performance of buildings related standards

A Technical Specification with basic principles will provide guidance on the required quality, accuracy, usability and consistency of each standard and the rationalisation of different options given in the standards, providing a balance between the accuracy and level of detail, on one hand, and the simplicity and availability of input data, on the other. The basic principles and rules will also comprise rules and formats for the separation of harmonised procedures and choices and input at national or regional level.

Consequently it addresses topics such as:

- a common format for each EPB standard, including a systematic, hierarchic and procedural description of options, input/output variables and relations with other standards;
- a clear separation of the procedures, options and data to be provided at national or regional level;
- a common structure of easily accessible and comparable national annexes to each standard, containing the national or regional options, boundary conditions and input data;
- an informative technical report, accompanying each standard, according to a common structure, comprising at least the results of internal validation tests, examples and background information;
- a clear and comprehensive field of application (scope);
- ensuring that all procedures are software proof and unambiguous;
- ensuring that the standards will be concise and complete, that can be easily referenced in legislation;
- rationalisation of different options given in the standards, each option aiming at specific applications with respect to availability of input data and impact on the energy performance.

The basic principles are intended as basis (the "**why**") for a set of **detailed technical rules** and an **over-arching standard** (the "**how**").

**Status:** At the last CEN TC371 meeting, the 4th of July 2013, it was decided to publish this TS for TC-Approval (TCA). This means that CEN will send this version to all National Standard Bodies, the CEN member organisations, for comments and acceptance. As soon the TS have been send out for TCA there is a 3 months period for all NSB's to react-vote.

### **prCENTS 16628:** Technical Specification (TS): Detailed Technical Rules for the set of energy performance of buildings standards

A Technical Specification with detailed technical rules, based on the basic principles, will provide guidance for the drafting of the over-arching standard (phase 1) and the drafting of each of the set of standards under phase 2.

**Status:** At the last CEN TC371 meeting, the 4th of July 2013, it was decided to publish this TS for TC-Approval (TCA). This means that CEN will send this version to all National Standard Bodies, the CEN member organisations, for comments and acceptance. As soon the TS have been send out for TCA there is a 3 months period for all NSB's to react-vote.

### **prEN15603:2013:** Over-arching standard on the energy performance of buildings

The improved set of EPB standards shall become a systematic, clear and comprehensive package. In order to ensure consistency among EPB standards and user-friendliness, a continuous but modular overall structure is needed, covering all standards related to the energy performance of buildings, providing the overall framework.

This over-arching standard on the integrated energy performance of buildings re-uses the main elements of EN 15603:2008 (Overall energy use and definition of energy rating) and core elements of other key EPD standards, including common definitions, terms and symbols, offering a systematic, clear and comprehensive, continuous but modular structure. Consequently, its scope is significantly wider than the scope of EN 15603:2008.

**Status:** The prEN15603 is available and currently at Public Enquiry. Public Enquiry (PE) will close by October 2013. When considering this prEN for comments the draft prCENTR 15615 should be kept aside, this draft is currently available as working draft within CEN TC371.

### **prCENTR 15615:** The Accompanying Technical Report to prEN15603:2013

Given the number of topics to be dealt with, the over-arching standard prEN15603 results in a rather voluminous and complex document, including many equations linking together energy related parameters, on-site energy production, the use of renewable vs. fossil energy, energy export, links to inspection, product properties, etc.

The complexity of the building energy performance calculation requires a good documentation and justification of the procedures. Informative text is required but is separated from actual procedures, to avoid confusion and unpractical heavy documents. All the informative documentation and justification, including worked examples will be laid down in an accompanying separate Technical Report.

**Status:** At the last CEN TC371 meeting, the 4th of July 2013, it was decided to publish this TR for TC-Approval (TCA). This means that CEN will send this version to all National Standard Bodies, the CEN member organisations, for comments and acceptance. As soon the TR have been send out for TCA there is a 3 months period for all NSB's to react-vote.

## Phase 2: The preparation/revision of the whole set of standards on the energy performance of buildings

Phase 2 will focus on the improvement and expansion of the current set of CEN-EPB standards on the basis of the findings (see also results CENSE project and reports of CAP-EDMC-LC reports) and set of requirements developed in Phase 1 (the Over-Arching standards, the connected TR, the two Technical Specifications and several supporting tools, like templates, checklists and the software tool).

The actual revision of the standards will be carried out under the responsibility of the relevant CEN/TC's on the basis of the clear set of common principles and rules and priorities (the OAS+TR and two TS's).

The issues to be covered in the work include the following:

*Checking the software-proof-ness of the equations given in the separate standards or parts of standards by producing an excel program and calculation example connected to each WI's. General checking of the appropriateness of the current standards in particular the application of these standards for existing buildings. More focus on models and input data which are to be suited to existing buildings. More focus on passive cooling techniques and the assessment of the energy performance of cooling systems. Possible integration of the inspection standards on systems for heating, cooling and ventilation. Where needed, expansion of the procedures to NZE-buildings by way of renewable sources of energy, and procedures for energy producing buildings, with consideration given to alternative systems; Integrated approach for calculating minimum performance requirements for technical building systems and building envelope.*

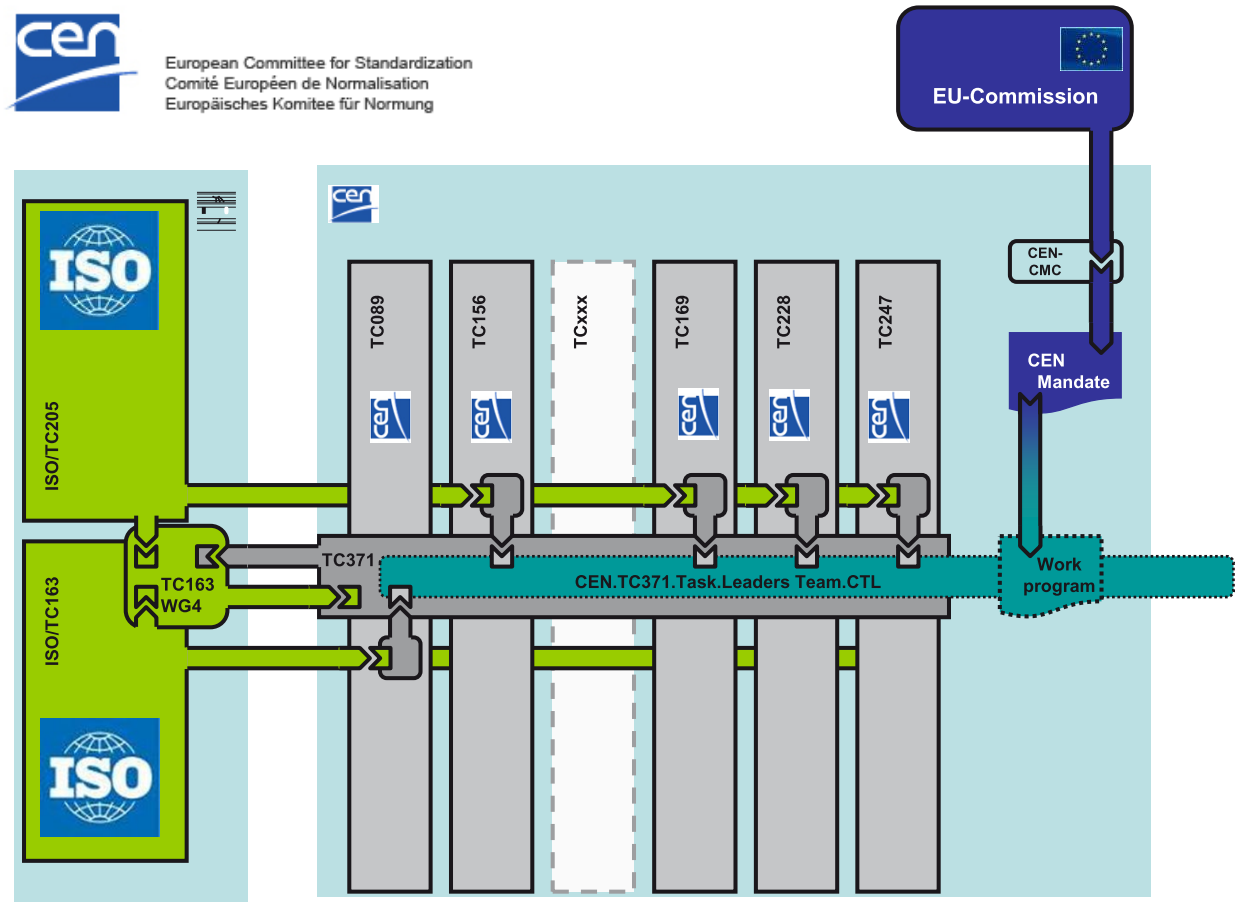
## Work Program of Phase 2

- About 100 Work Items (WI): Resulting in about 50 standards or parts thereof and about 50 TR's connected to these standards
- Some of these WI's may still be merged and some of the TR's may cover more parts of a standard or more standards. This may shorten the list but not the work
- Starting this summer, all WI's have to be registered by the 5 TC's before October 2013
- The first TC-Working Group drafts have to be ready by December 2013, it is expected to reach and possibly finish the enquiry stage of most or, if possible, all EPB-standards before the end of 2014. We should keep in mind that many of the standards will not fundamentally change. ■

### Central coordination within CEN team of Task Leaders/experts under CEN TC 371

CEN TC 371 organises this central coordination team in cooperation with the other relevant CEN TC's.

- CEN TC 89, Thermal performance of buildings and building components: CT-leader: Dick van Dijk
- CEN TC 228, Heating systems in buildings: CT-leader: Johann Zirngibl
- CEN TC 156, Ventilation for buildings: CT-leader: Gerhard Zweifel
- CEN TC 247, Controls for mechanical building services: CT-leader: Dan Napar
- CEN TC 169, Light and lighting: CT-Leader Sohéil Moghtader & Jan de Boer




European Commission has given a mandate to CEN to revise several EPBD related standard administrated by TC 371 and five other CEN technical committees.