

The logo for CEN (European Committee for Standardization) is located in the top left corner. It consists of the lowercase letters 'cen' in a white, sans-serif font, set against a dark blue square background. A white curved line sweeps across the bottom of the square.

Basic Work Requirements 6

Energy economy and heat retention

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Milan May 14 2009



BWR6: Look widely what do we need?

- Before we start to discuss I want to give you a short summary of what CEN produced on BWR6 but focused on the EPBD
- After that:
 - What is still missing from the program of work in CEN
 - Are the System TC's or Product TC's in CEN (or ISO) active in the field of BWR6 "Energy economy and heat retention" missing WI's

BWR 1 Mechanical resistance and stability	BWR2 Safety in case of fire	BWR3 Hygiene, health and the environment	BWR4 Safety in use	BWR5 Protection against noise	BWR6 Energy economy and heat retention	BWR7 Sustainable use of natural resources
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CEN TC 350 Sustainability of construction works

CEN TC 371 Program Committee on EPBD

- System oriented TC's for buildings
 - TC89 Thermal performance.
 - TC156 Ventilation
 - TC169 Lighting
 - TC228 Heating
 - TC247 Control and automation
 - Etc.
- Product TC's
 - TC88 Thermal insulation products
 - TC57/109 Centr. H.Boilers
 - TC62 Gasfired space heaters
 - TC110 Heatexchangers
 - TC113 Heatpumps & AC-units
 - TC129 Glass in buildings
 - etc

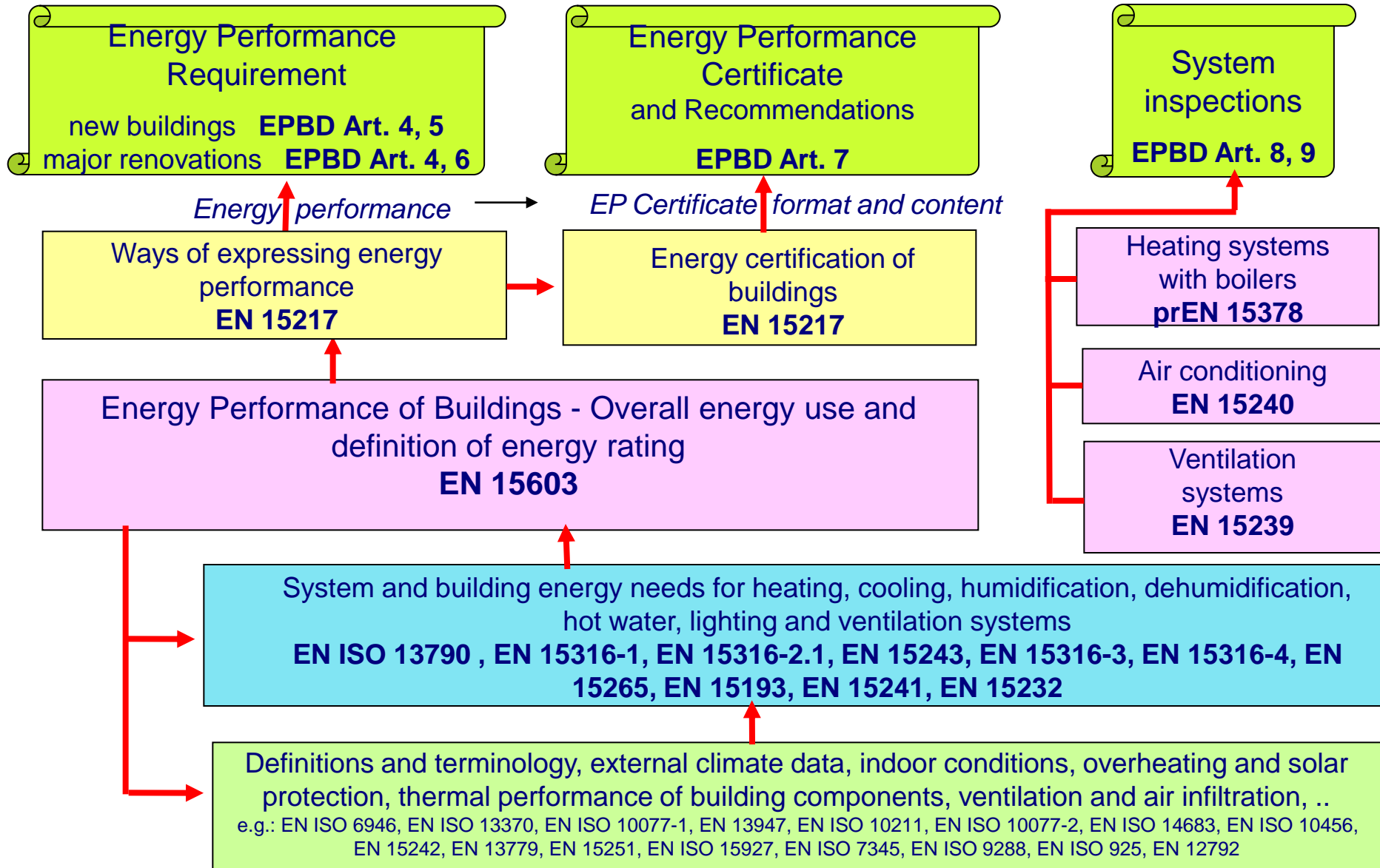
2004: EU mandate to CEN to develop standards to support the MS's in order to:

- Achieve the required transparency and support the implementation of the EPBD through the MS regulations
- Get access to reliable tools and procedures for all EU Member States
- Promote a free market in energy saving services and products throughout the EU

Mandate 343

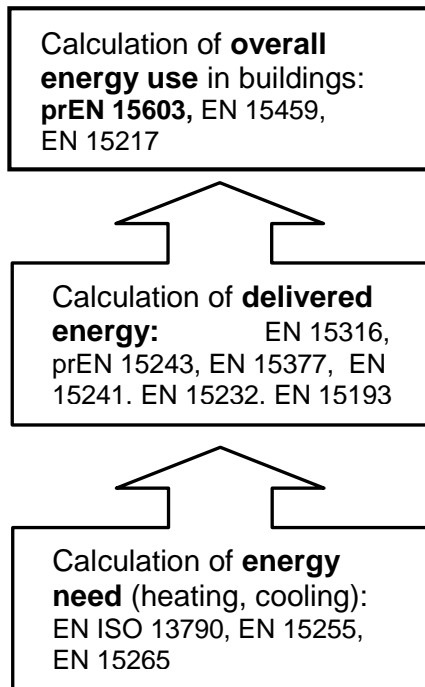
- To support the implementation of the Energy Performance of Buildings Directive (EPBD), the European Commission issued early 2004 a mandate (M343-EN-2004) to the European standards body (CEN) for the development of standards covering 31 individual work items.
- This mandate asked CEN to elaborate and adopt standards on a methodology, calculating the integrated energy performance of buildings and estimating the environmental impact, in accordance with the directive.

Methodology for calculating energy performance (EPBD Article 3 and Annex)



Scope of the Standard EN 15603

General framework for the assessment of overall energy use



Top-Position of EN 15603,
calculation based on results
from other standards

Modular structure of CEN Standards

CEN BT TC 371

Energy ratings
Overall energy use



CEN TC 156, TC 169, TC 228, TC 247

Technical building systems standards
(System loss calculation)



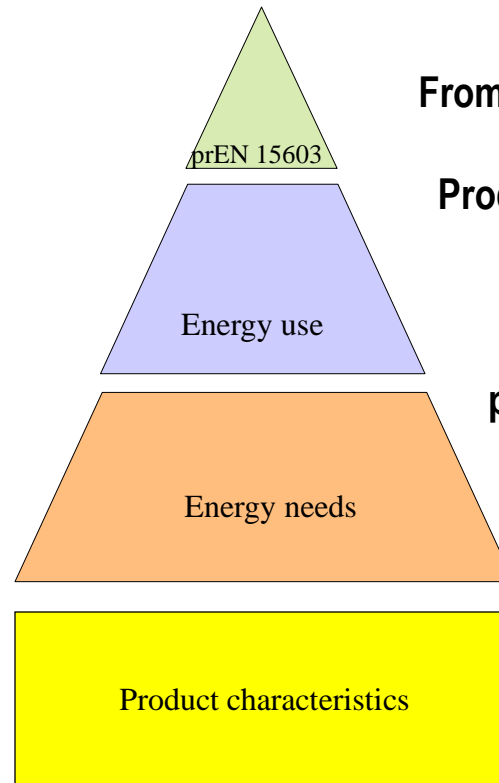
CEN TC 89, TC 156, TC 169, TC 228

Building services standards
(Energy needs calculation)



CEN TC 48, TC 57, TC89, TC 109, etc

Building or system products standards
(Evaluation of product characteristics)



From product standards to overall energy use

**Product is not longer evaluated as a product
but as part of a system**

**Maintain the links between
product testing and system evaluation**

Principle of the Method

Building needs

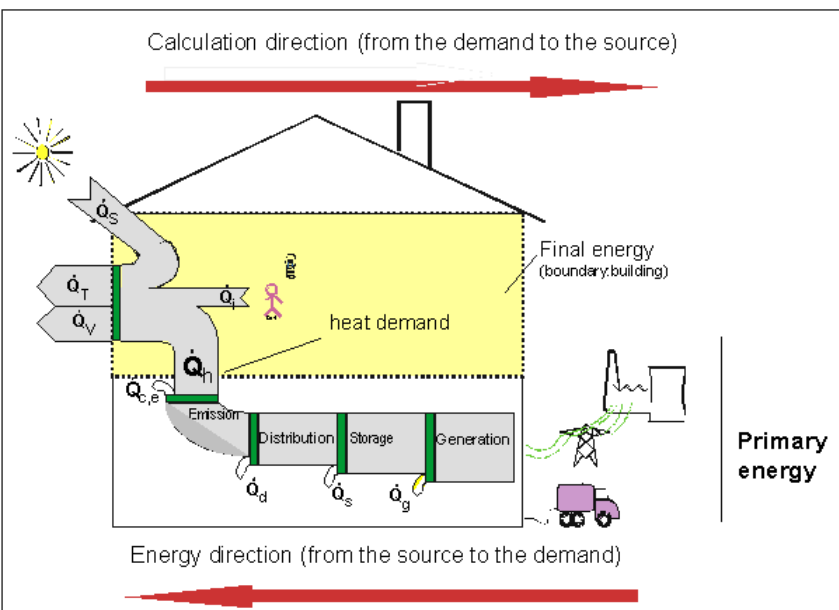
Technical system losses

Delivered / exported energy

Energy rating
(prim. energy, CO₂, etc)

Inside the building

Outside the building

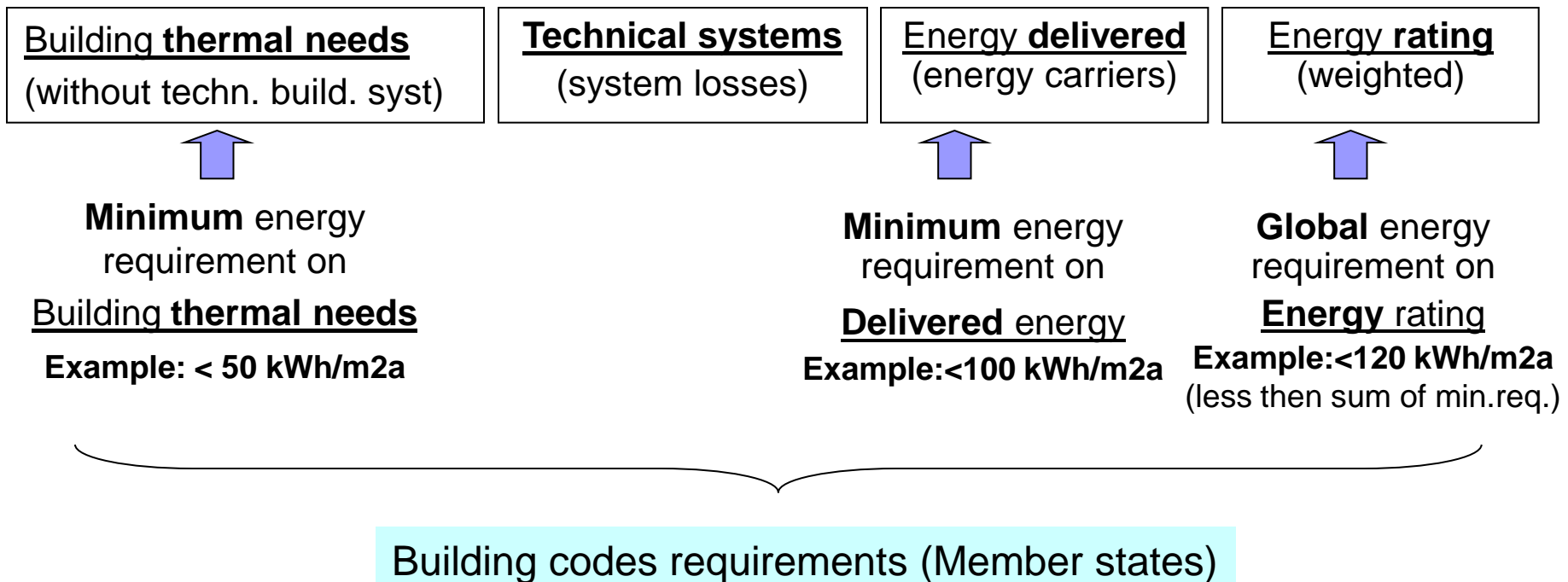


- **Calculation direction** from **needs** to **source** (from the energy needs to the primary energy).
- Energy can be **imported** or **exported** (different weightings)
- **Electrical** uses and **thermal** uses are considered **separately** inside the building boundary.
- **Inside** the system boundary the system losses are taken into account **explicitly**,
- **Outside** the system boundary they are taken into account in the **conversion factor** (e.g. district heating).

Links between Building codes and EN 15603

Example: Association of minimum energy requirements and one global requirement

General frame EN 15603



EN 15603

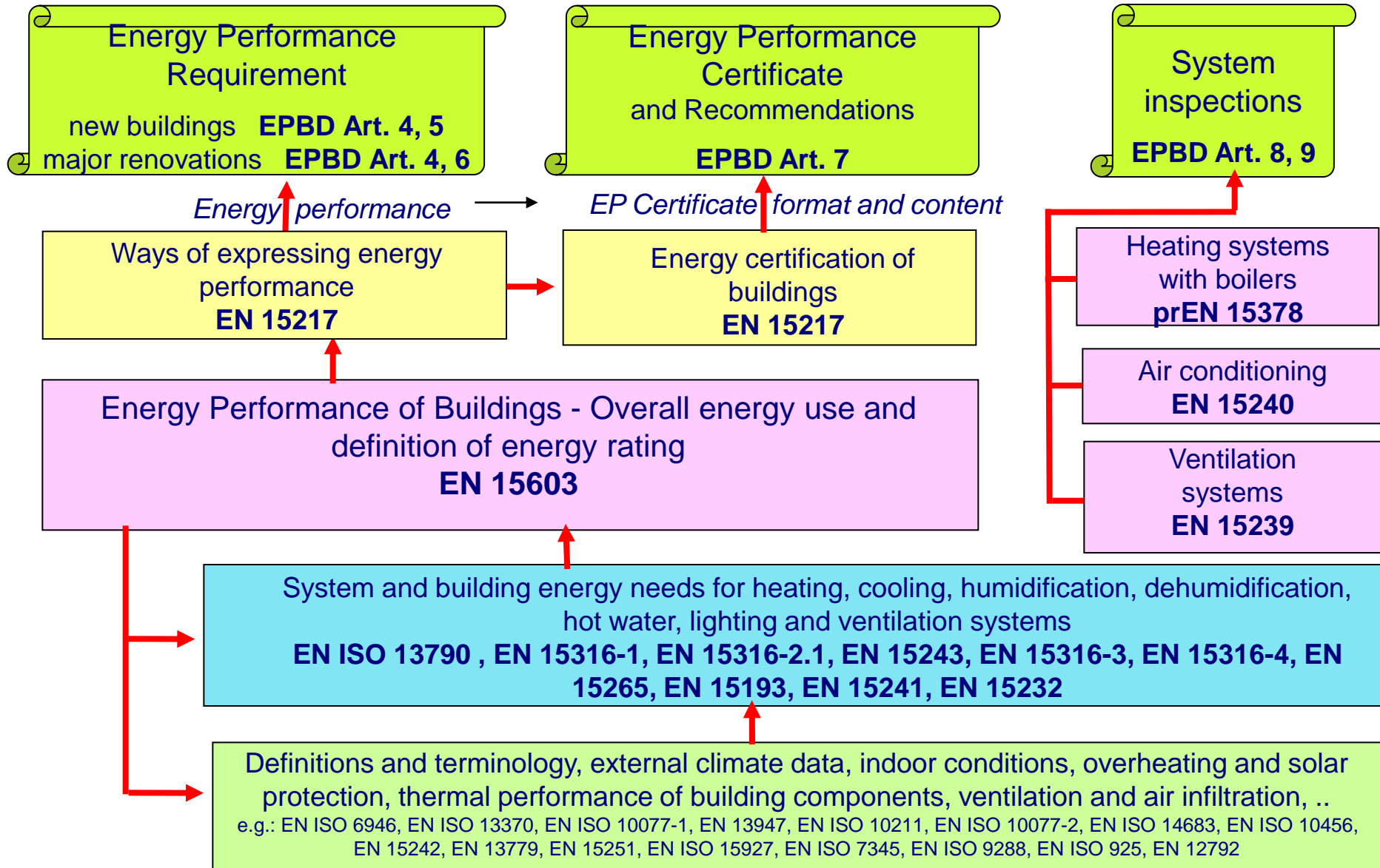
- CEN worked out a **complete, consistent and flexible** approach, from the product standard to the overall energy use
- **EN 15603** is the top standard of this approach **defining the whole structure**
- Reporting according EN 15603 underlines the **strong and weak points** in the overall energy use of a building
- Adopting EN 15603 in national building regulation is the **first step towards an European calculation method**



The “Umbrella Document”

CEN Technical Report
TR 15615

Methodology for calculating energy performance (EPBD Article 3 and Annex)



The set of standards present an integrated, interacting methodology

- For the calculation of the energy uses and losses for heating and cooling, ventilation, domestic hot water, lighting, natural lighting, passive solar systems, passive cooling, position and orientation, automation and controls, and auxiliary installations necessary for maintaining a comfortable indoor environment.
- The methodology integrates, where relevant, the positive influences of active solar systems and heat and electricity from renewable energy sources, as well as quality co-generation heating plants (CHP, including micro-CHP) and district heating and cooling systems.
- It also facilitates an estimation of the environmental impact from this energy use and provides data requirements for carrying out standard economic evaluations for the use of different systems.
- Finally, the set includes standards on inspection procedures for Boilers, Heating systems, Ventilation systems and Cooling/AC systems.

Need to continue the work on the CEN EPBD standards

- On top of this: until recently, many Member States did not have much experience with integrated energy performance methodology in their building regulations.
- There is a need to gain experience on the type of methodologies that would best fit their objectives.
- Finally, it is also anticipated that in the context of the periodic review of the EPBD, the European Commission proposed a further harmonization of the methodologies: the recasting of the EPBD.

The bottom-up approach of the EPBD-CEN standards facilitates the EEESD and Eco-Design of Products Directive

- The need for the development of harmonized methods for energy efficiency and saving calculations is also written down in Annex 4 *General framework for measurement and verification of energy savings* of the Energy End-use Efficiency and Energy Services Directive (EEESD).
- Standardization should support for the implementation of this EEESD directive.
- It can be useful too for the implementation of other directives such as EPBD (Energy Performance Building Directive) and Eco-Design of Products Directive.

The global perspective: ISO



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Relation with ISO work

- ISO/TC's 163 and 205 have shown interest to prepare ISO standards on energy efficiency in buildings, using the CEN EPBD standards as starting point.
- A number of the EPBD standards were already developed as EN-ISO standards. For these it is expected that ISO takes responsibility of the review of these standards.
- ISO/TC's 163 and 205 also intend in close collaboration, to develop new standards combining and making use of most of the present CEN-EPBD standards.
- Until now only 9 of the current 43 EPBD titles are ISO or EN-ISO standards.

Coordination in CEN and ISO

- It seems logical that these ISO initiatives will be carried out in good cooperation with the relevant CEN/TC's.
- From the experience within CEN, where the coordination by CEN/TC 371 Project Committee EPBD of the activities of the five involved TC's proved very important it appears to stay very useful if in the coming years
- TC371 should be a coordination platform to discuss the matters from a European perspective and particularly with the requirements of the European Commission (including the recasting of the EPBD) in mind.
- CEN/TC 371 Program Committee on EPBD should continue to provide this platform and continue to play a role in the discussions with the European Commission in relation to the recasting of the EPBD.
- TC371 should help to coordinate the work under BWR6

Activities of CEN/BT TC371 Project Committee on EPBD

- Coordination of the following activities, including a rough indication of timing:
- 2008-2009:
 - National implementation
 - Feed back (questions, comments, suggestions) from MS to CEN
 - Promotion and explanation from CEN to the Member States
 - Relevant results from EU projects
 - Minor revisions of urgent errors in the published EN standards
- 2010-2011:
 - Major revision of the CEN standards to support the EPBD, probably in cooperation with ISO