

ASOCIAȚIA DE STANDARDIZARE DIN ROMÂNIA

ROMANIAN STANDARDS ASSOCIATION



Through standards towards energy efficiency in buildings

"România eficientă" Forum, Bucharest November 21st 2019

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Why do we need standards on energy efficiency in buildings?

- to design new buildings with minimum energy consumption, which produce energy at the same time
- to ensure a comfortable and healthy environment in new and existing buildings
- to reduce energy consumption in existing buildings
- to reduce CO₂ emissions related to the production of building related energy
- to use the newest and most secure technologies and materials for the construction of the new buildings and for the renovation of the existing buildings

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The word 'WHY?' is rendered in a 3D, blocky font. The letters are white with a red outline and a red shadow on the right side, giving it a three-dimensional appearance. It is positioned on the left side of the slide.

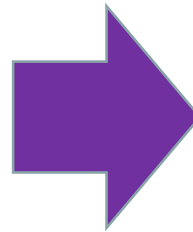
Why do we need standards on energy efficiency in buildings?

- **to support the implementation of the energy performance of buildings directives in EU Member States**
- **for the harmonization of the methodology for the assessment of the energy performance of buildings at European level**



Directive 2010/31/EU:

- Increase of energy efficiency
 - in existing buildings
 - in new buildings
- use of renewable energy sources



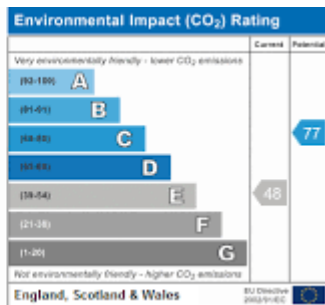
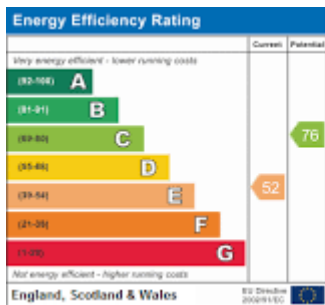
**CE Mandate M/480 to CEN –
revision of existing and
development of new EPB
standards**



The main target groups for this standards:

- regulators
- designers
- energy auditors
- developers of European Assessment Documents (EAD)
- manufacturers of building and installations materials
- certification bodies

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The new set of standards includes:

- standards regarding the content and the development of the energy performance certificate of the building
- standards regarding the evaluation of the energy performance of the building as such
- standards regarding the evaluation of the energy performance of the technical systems (installations) of the building (heating, cooling, ventilation, hot water and lighting)
- standards regarding the building automation and the technical management system of the building
- standards regarding renewable energy sources used to produce energy at the building level (solar and photovoltaic thermal installations, wind turbines, local cogeneration on biomass, heat pumps, etc.)
- standards regarding classical energy sources



Standards content:

- calculation procedures for the assessment of energy performance of buildings
- guides for the inspection of technical systems in buildings (ventilation, air conditioning, boilers, heating systems, domestic hot water systems, automation systems)

The standards are used for:

- the assessment of the energy performance of buildings
- the sizing of the technical systems in buildings
- the design of the automation systems and the technical management system of the building



Specifics of the new standards regarding the energy performance of buildings:

- The standards contain only the calculation procedures, they do not include informative content.
- Each standard that includes a calculation method is accompanied by:
 - ❑ a technical report, containing information, explanations and justifications regarding the calculation methods presented in the standard, as well as worked out examples
 - ❑ a national annex, which must be developed by each Member State
 - ❑ an electronic spreadsheet (Excel file) - these can be found on the EPB Center website: <https://epb.center/support/resources/spreadsheets>



EPB standards were designed to be flexible:

- to enable the **customization** at national and regional level
- to allow Member States to set their **own requirements**

All EPB standards provide a certain **flexibility** with regard to:

- ❖ the calculation methods
- ❖ the required input data (or methods to obtain that data)
- ❖ references to other EPB standards
- Annex A of the standards contains a normative model (template) for the Member States to specify their choices

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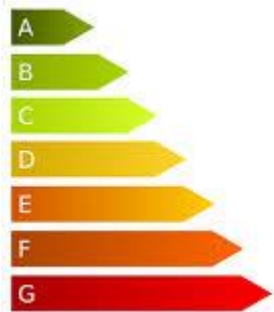


EPB standards were designed to be flexible:

Choices and input data are indispensable for the application of the standards:

- ❖ geographical data
- ❖ climatic data
- ❖ technical data
- ❖ financial data

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42 standards require the development of national annexes:

- 5 general standards
- 12 standards related to the building as such
- 25 standards related to the technical systems of the building

The development of the national annexes to the EPB standards is under way in all EU countries. The most advanced is Italy.

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Current situation in Romania:

- All the EPB standards and standardization documents in the new set have been adopted as national standards by ASRO by publishing the Romanian version:
 - ❑ 49 standards (2017-2019)
 - ❑ 38 technical reports (2017-2019)
 - ❑ 2 technical specifications (2015)

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Current situation in Romania:

Methodology for the assessment of energy performance of buildings (national regulation regarding the EPB):

- in preparation (Ministry of Public Works, Development and Administration contract) – soon to be published
- includes references to EPB standards → EPB standards – mandatory in Romania





“Efficient Romania” Program

- The development of the national annex to the standard SR EN 16798-1:2019 is under way. The development of this national annex is part of the "Efficient Romania" Program (ASRO is a part in this Program).
- **SR EN 16798-1:2019/NA:2019 Energy performance of buildings — Part 1: Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics — Module M1-6. National annex**
- The national annex is being developed by experts (professors, researchers), members in ASRO/CT 302 *Heating, ventilation and air conditioning systems*
- The development of the national annex draft is now completed, and the draft is being subject to national enquiry (all stakeholders have been notified)

“Efficient Romania” Program

- **National annex SR EN 16798-1:2019/NA:2019** contains the national choices regarding:
 - buildings categories
 - thermal environment
 - design values of the indoor operative temperature in winter and summer
 - temperature ranges for hourly calculation of cooling and heating energy
 - local thermal discomfort design criteria
 - acceptable indoor temperatures of buildings without mechanical cooling systems
 - design ventilation rates for diluting emissions from buildings and occupants
 - design air flow rates by room and building type
 - design opening areas for dwellings
 - design criteria for the humidity in occupied spaces
 - the way of defining low and very low polluting buildings
 - criteria for lighting
 - noise criteria
 - values for indoor and outdoor air substances

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“Efficient Romania” Program

- ASRO also envisages the development of **other national annexes** to the standards regarding the energy performance of buildings within the “Efficient Romania” Program in the following years.
- 2020 – ASRO is planning to develop the national annex to standard **SR EN 12831-1:2017 *Energy performance of buildings - Method for calculation of the design heat load - Part 1: Space heating load, Module M3-3***



Thank you for your attention!