

ISO and energy efficiency

the buildings example



Anna Caterina Rossi
Technical Programme Manager
Genève, 17th November 2014



ISO in figures (November 2014)

International Organization for Standardization



- 165 members, 119 full members
- 232 technical committees
- more than 19700 standards in catalogue



Energy – The value added by International Standards

- Promote good energy practices
- Scientific cooperation and harmonization of public policies
- Improve consumers and users understanding and confidence
- Avoid technical barriers to trade related to energy policies
- Enable the creation of world markets for energy technologies



Added value (cont)

- Performance definitions, measurement and test methods
- Codification of best practices and management systems
- Design of checklists and guides
- Interoperability
- State-of-the-art knowledge formalized by recognized experts through double level of consensus, amongst stakeholders and across countries





ISO 50001:2011 Energy management systems - Requirements with guidance for use

Helps organizations to systematically plan and manage their energy use

The screenshot shows the ISO website's page for ISO 50001:2011. The page features a navigation bar with links for Standards, About us, Standards Development, News, and Store. Below the navigation bar, there is a search bar and a breadcrumb trail: Standards > Management system standards > ISO 50001. The main heading is "ISO 50001 - Energy management". Below this, a paragraph states: "Using energy efficiently helps organizations save money as well as helping to conserve resources and tackle climate change. ISO 50001 supports organizations in all sectors to use energy more efficiently, through the development of an energy management system (EnMS)." There is a section titled "ISO and energy management" with a video player showing a young boy sitting on a swing. To the right, there is an "ISO Store" section with a shopping cart icon, listing "ISO 50001:2011 Energy management systems – Requirements with guidance for use" and a link to "Visit the ISO Store to buy more standards". Below that, there is a "Useful publications" section with a thumbnail for "Win the energy challenge with ISO 50001" and a brief description: "ISO 50001 establishes a framework for organizations to manage energy."

Energy in ISO

Over 20 ISO/TCs involved in aspects of energy efficiency and renewable energy sources



Energy efficiency in buildings

ISO



ISO/TC 163 *“Thermal performance and energy use in the built environment”*

&

ISO/TC 205 *“Building environment design”*



Joint Working Group *“Energy performance of buildings using holistic approach”*

CEN



Under the EPBD
CEN/TC 88 *“Thermal insulating materials and products”*

CEN/TC 89 *“Thermal performance of buildings and building components”*

CEN/PC 371 *“Energy Performance of Building project group”*



136 published standards on...

Test methods

(ISO 14857 Determination of air permeance of building materials)

Calculations

(series ISO 15927 Hygrothermal performance of buildings - Calculation and presentation of climatic data)

Thermal insulation products

(series ISO 12575 Thermal insulation products - Exterior insulating systems for foundations)

Building environment design

(series ISO 13612 Heating and cooling systems in buildings - Method for calculation of the system performance and system design for heat pump systems)

Holistic approach

(ISO 16346 Assessment of overall energy performance)



Have a look...

www.iso.org/obp

The screenshot shows a web browser window with the URL <https://www.iso.org/obp/ui/#home>. The page title is "Online Browsing Platform (OBP)". The navigation bar includes a shopping cart icon, "Sign in", "Language", "Help", and "Search". The search bar contains the text "ISO/TR 16344:2012(en)".

Welcome to the Online Browsing Platform (OBP)

Access the most up to date content in ISO standards, graphical symbols, codes or terms and definitions. Preview content before you buy, search within documents and easily navigate between standards.

All Standards Collections Graphical symbols Terms & Definitions Country codes

English

[More options \[+\]](#)

Need help getting started? Check our [Quick start](#) guide here!



Have a look – ISO/TR 16344

Search results

The screenshot shows the ISO Online Browsing Platform (OBP) search results for the query '16344'. The page displays 177 results, sorted by Relevance, with 10 results per page. The search results are listed in a table format, showing the title, introduction, and normative references for each standard. The results are as follows:

Standard ID	Title	Introduction	Normative references	Actions
ISO/TR 16344:2012(en)	Energy performance of buildings — Common terms, definitions and symbols for the overall energy performance rating and certification	Foreword ...shall not be held responsible for identifying any or all such patent rights. ISO/TR 16344 was prepared by Technical Committee ISO/TC 163, Thermal performance and energy use in... Introduction ...building energy performance rating and certification (see also Figure 1) :— ISO/TR 16344 , Energy performance of buildings — Common terms, definitions and symbols for the overall...		Buy <input type="checkbox"/> Follow
ISO 16343:2013(en)	Energy performance of buildings — Methods for expressing energy performance and for energy certification of buildings	Introduction ...building energy performance rating and certification (see also Figure 1) :— ISO/TR 16344 , Energy performance of buildings — Common terms, definitions and symbols for the overall...	2 Normative references ...16346, Energy performance of buildings — Assessment of the overall energy performance ISO/TR 16344 , Energy performance of buildings — Common terms, definitions and symbols for the overall...	Buy <input type="checkbox"/> Follow
ISO 16346:2013(en)	Energy performance of buildings — Assessment of overall energy performance	Introduction ...building energy performance rating and certification (see also Figure 1) :— ISO/TR 16344 , Energy performance of buildings — Common terms, definitions and symbols for the overall...	2 Normative references ...buildings ISO 16818 , Building environment design — Energy efficiency — Terminology ISO/TR 16344 , Energy performance of buildings — Common terms, definitions and symbols for the...	Buy <input type="checkbox"/> Follow
ISO 12655:2013(en)	Energy performance of buildings — Presentation of measured energy use of buildings	Introduction		Buy <input type="checkbox"/> Follow



Have a look – deep inside

Until clause 3 for all publications

Whole text for terminology documents

ISO/TR 16344:2012(en) Energy performance of buildings — Common terms, definitions and symbols for the overall energy performance rating and certification

2 Terms and definitions

For the purposes of this Technical Report, the terms and definitions given in ISO 7345 and the following apply.

2.1 Terms

2.1.1 air-conditioned floor area
area equipped with air-conditioning equipment, measured at floor level from the interior surfaces of the walls

Note 1 to entry: See also "gross floor area".

2.1.2 air-conditioning system
combination of all components required to provide a form of air treatment in which maximum or minimum temperature is controlled, possibly in combination with the control of ventilation, humidity and air cleanliness

2.1.3 auxiliary energy
electrical energy used by technical building systems for heating, cooling, ventilation and/or hot domestic water to support energy transformation to satisfy energy needs

Note 1 to entry: This includes energy for fans, pumps, electronics, etc. Electrical energy input to a ventilation system for air transport and heat recovery is not considered as auxiliary energy, but as energy used for ventilation (see 2.1.156).

Note 2 to entry: In ISO 9488, the energy used for pumps and valves is called "parasitic energy".

2.1.4 building
construction as a whole, including its envelope and all technical building systems, for which energy is used to condition the indoor climate and to provide domestic hot water and illumination and other services related to the use of the building

Note 1 to entry: The term can refer to the building as a whole or to parts thereof that have been designed or altered to be used separately.

Energy efficiency of buildings: holistic approach

Energy performance comprises :

- Heating
- Cooling
- Lighting
- Ventilation
- Domestic hot water
- Appliances (in some cases)



The approach can be applied to evaluate the energy performance of badly insulated existing buildings, for example, compared to that of new, nearly zero-energy buildings, in order to assess compliance with minimum primary energy performance requirements in building regulations. A nearly zero-energy performance can only be achieved if all expertise and disciplines are effectively combined and coordinated.



Holistic approach: ISO...

ISO/TR 16344: common terminology and symbols

Common terms, definitions and symbols

ISO 16346: common rules on assessment boundary, calculation procedure for different energy uses interaction and aggregation

Assessment of overall energy performance

ISO 16343: numerical indicators to be used for building classification

Methods for expressing energy performance and for energy certification of buildings



ISO 12655: facilitating analytical comparisons by unifying the collected data of measured building energy use

Presentation of measured energy use of buildings

... thank you for your attention

For further questions:

- Energy efficiency and renewable energy sources:

Mrs. Kirsi Silander silander@iso.org

- Energy efficiency of buildings:

Ms. Anna Caterina Rossi rossi@iso.org

