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Walk-in cold rooms - Definition, thermal insulation performance and test methods - Part 2: Customized cold rooms

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Walk-in cold rooms - Definition, thermal insulation performance and test methods - Part 2: Customized cold rooms

Chambres froides - Définition, performance d'isolation thermique et méthodes d'essai - Partie 2 : Chambres froides personnalisées

Begehbare Kühlräume - Definitionen, Wärmedämmung und Prüfmethoden - Teil 2: Maßgefertigte Bauteile für Kühlräume

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European foreword

This document (EN 16855-2:2018) has been prepared by Technical Committee CEN/TC 44 “Commercial and Professional Refrigerating Appliances and Systems, Performance and Energy Consumption”, the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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EN 16855-2:2018 (E)**Introduction**

This document was drafted following the necessity to compare the systems placed on the market on the base of the minimum thermal insulation requirements and to establish the average level of energy consumption for a future minimum energy performance standard definition, with reference to the EU policy on increasing energy efficiency of energy related products (Directive 2009/125/EC) in the frame of the EU “20-20-20” targets.

It was necessary to identify the reference standards for calculation, measurement of insulation properties, identify the best practice rules for elimination of thermal bridges, assembly techniques and provisions to be taken in order to ensure the best level of insulation and power consumption.

1 Scope

This document provides test or calculation methods to assess thermal insulation performances for customized walk-in cold rooms and components under normal end-use conditions.

The normal end-use conditions of a walk-in cold room are considered to be:

- installation inside an existing building;
- not exposed to external weather conditions;
- internal side of panels subject to temperatures within the indicative range $-40\text{ °C} \leq T \leq 12\text{ °C}$;
- external side of panels subject to temperatures within the indicative range $-8\text{ °C} \leq T \leq 30\text{ °C}$; temperatures below 0 °C , or higher than 20 °C , can be reached if the walk-in cold room is located inside not air-conditioned premises.

NOTE In case the customized walk-in cold room working at positive storage temperature is used as a food processing room or a clean room, the standard is applied.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12086, *Thermal insulating products for building applications - Determination of water vapour transmission properties*

EN 12667:2001, *Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Products of high and medium thermal resistance*

EN 12865, *Hygrothermal performance of building components and building elements - Determination of the resistance of external wall systems to driving rain under pulsating air pressure*

EN 12939, *Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Thick products of high and medium thermal resistance*

EN 13162, *Thermal insulation products for buildings - Factory made mineral wool (MW) products - Specification*

EN 13163, *Thermal insulation products for buildings - Factory made expanded polystyrene (EPS) products - Specification*

EN 13164, *Thermal insulation products for buildings - Factory made extruded polystyrene foam (XPS) products - Specification*

EN 13165, *Thermal insulation products for buildings - Factory made rigid polyurethane foam (PU) products - Specification*

EN 13166, *Thermal insulation products for buildings - Factory made phenolic foam (PF) products - Specification*

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EN 13167, *Thermal insulation products for buildings - Factory made cellular glass (CG) products - Specification*

EN ISO 4590, *Rigid cellular plastics - Determination of the volume percentage of open cells and of closed cells (ISO 4590)*

EN ISO 6946, *Building components and building elements - Thermal resistance and thermal transmittance - Calculation methods (ISO 6946)*

EN ISO 10077-1, *Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - Part 1: General (ISO 10077-1)*

EN ISO 10077-2, *Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - Part 2: Numerical method for frames (ISO 10077-2)*

EN ISO 10211, *Thermal bridges in building construction - Heat flows and surface temperatures - Detailed calculations (ISO 10211)*

EN ISO 10456, *Building materials and products - Hygrothermal properties - Tabulated design values and procedures for determining declared and design thermal values (ISO 10456)*

EN ISO 12572, *Hygrothermal performance of building materials and products - Determination of water vapour transmission properties - Cup method (ISO 12572)*

EN ISO 14683, *Thermal bridges in building construction - Linear thermal transmittance - Simplified methods and default values (ISO 14683)*

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