

STN	Tepelnoizolačné výrobky pre budovy Prefabrikované reflexné izolačné výrobky (RI) Špecifikácia	STN EN 16863 72 7217
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Thermal insulation products for buildings - Factory made reflective insulation (RI) products - Specification

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

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/23

Obsahuje: EN 16863:2023

EUROPEAN STANDARD

EN 16863

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2023

ICS 91.100.60

English Version

Thermal insulation products for buildings - Factory made reflective insulation (RI) products - Specification

Produits isolants thermiques pour le bâtiment -
Produits d'isolation réfléchissants manufacturés -
Spécification

Wärmedämmstoffe für Gebäude - Werkmäßig
hergestellte reflektierende Wärmedämmstoffe -
Spezifikation

This European Standard was approved by CEN on 17 April 2023.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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EN 16863:2023 (E)**European foreword**

This document (EN 16863:2023) has been prepared by Technical Committee CEN/TC 88 “Thermal insulating materials and products”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by December 2023, and conflicting national standards shall be withdrawn at the latest by March 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This standard is one of a series of standards for thermal insulation products used in buildings but this standard can be used in other areas where appropriate. A list of all parts in a series can be found on the CEN website.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

Reflective insulation products are made from low emissive film(s) and infrared semi-transparent material layer(s) called spacers; like waddings of synthetic or natural fibres, synthetic foam or plastic filled with air bubbles.

Reflective (low emissivity at the appropriate wavelengths) surfaces are used to reduce the heat transfer by thermal radiation. This may occur across the product itself when it includes air cavities or a material that is wholly or partially transparent to infrared radiation, and/or across air gap(s) that are deliberately created between the external reflective surface(s) of the product and the structure of the building element.

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1 Scope

This document is applicable to factory-made reflective insulation (RI) products intended for use as thermal and acoustic insulation of buildings. The products are manufactured in the form of rolls or boards. They are made from low emissive film(s) and infrared semi-transparent material layer(s) or air cavities.

This document describes the methods and criteria for assessing the performance of factory-made reflective insulation products in relation to essential product characteristics and includes the procedures for assessment and verification of the constancy of performance.

Reflective insulation products require specific setup instruction(s) depending on their level of compressibility.

This document does not specify the required level of a given property to be achieved by a product to demonstrate fitness for purpose in a particular application. The levels required for a given application can be found in regulations or non-conflicting standards.

This document does not cover:

- products intended to be used for the insulation of building equipment and industrial installations;
- products made of mineral wool, polystyrene or polyurethane foams (not inclusive) faced with aluminium or metalized foil on one or both external surfaces (which are already covered by a corresponding harmonized European product standard);
- membranes used as vapour control layer (VCL) or vapour-permeable roof or wall underlay (which are already covered by a specific harmonized European product standard).

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 824:2013, *Thermal insulating products for building applications — Determination of squareness*

EN 1928:2000, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*

EN 1931:2000, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*

EN 12114:2000, *Thermal performance of buildings — Air permeability of building components and building elements — Laboratory test method*

EN 12310-1:1999, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for waterproofing — Determination of resistance to tearing (nail shank)*

EN 12311-1:1999, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for roof waterproofing — Determination of tensile properties*

EN 13172:2012, *Thermal insulation products — Evaluation of conformity*

EN 13501-1:2018, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

- EN 13820:2003, *Thermal insulating materials for building applications — Determination of organic content*
- EN 13823:2020+A1:2022, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*
- EN 13859-1:2014, *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Part 1: Underlays for discontinuous roofing*
- EN 15101-1:2013+A1:2019, *Thermal insulation products for buildings — In-situ formed loose fill cellulose (LFCI) products — Part 1: Specification for the products before installation*
- EN 15715:2009, *Thermal insulation products — Instructions for mounting and fixing for reaction to fire testing — Factory made products*
- EN 16012:2012+A1:2015, *Thermal insulation for buildings — Reflective insulation products — Determination of the declared thermal performance*
- EN 16516:2017+A1:2020, *Construction products: Assessment of release of dangerous substances — Determination of emissions into indoor air*
- EN 16733:2016, *Reaction to fire tests for building products — Determination of a building product's propensity to undergo continuous smouldering*
- EN 29052-1:1992, *Acoustics — Determination of dynamic stiffness — Part 1: Materials used under floating floors in dwellings*
- EN ISO 354:2003, *Acoustics — Measurement of sound absorption in a reverberation room (ISO 354:2003)*
- EN ISO 1182:2020, *Reaction to fire tests for products — Non-combustibility test (ISO 1182:2020)*
- EN ISO 1716:2018, *Reaction to fire tests for products — Determination of the gross heat of combustion (calorific value) (ISO 1716:2018)*
- EN ISO 9053-1:2018, *Acoustics — Determination of airflow resistance — Part 1: Static airflow method (ISO 9053-1:2018)*
- EN ISO 9229:2020, *Thermal insulation — Vocabulary (ISO 9229:2020)*
- EN ISO 11654:1997, *Acoustics — Sound absorbers for use in buildings — Rating of sound absorption (ISO 11654:1997)*
- EN ISO 11925-2:2020, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2:2020)*
- EN ISO 12572:2016, *Hygrothermal performance of building materials and products — Determination of water vapour transmission properties — Cup method (ISO 12572:2016)*
- EN ISO 16535:2019, *Thermal insulating products for building applications — Determination of long-term water absorption by immersion (ISO 16535:2019)*
- EN ISO 29465:2022, *Thermal insulating products for building applications — Determination of length and width (ISO 29465:2022)*

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EN ISO 29466:2022, *Thermal insulating products for building applications — Determination of thickness (ISO 29466:2022)*

EN ISO 29469:2022, *Thermal insulating products for building applications — Determination of compression behaviour (ISO 29469:2022)*

EN ISO 29770:2022, *Thermal insulating products for building applications — Determination of thickness for floating-floor insulating products (ISO 29770:2022)*

EN ISO 29767:2019, *Thermal insulating products for building applications — Determination of short-term water absorption by partial immersion (ISO 29767:2019)*

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