ICS 91.060.10, 91.060.50 SLOVENSKÁ TECHNICKÁ NORMA Október 2023

STN	**Kovové profily s prerušeným tepelným mostom Mechanické vlastnosti Požiadavky, preukazovanie vlastností a skúšky**	**STN EN 14024 74 6211**

Metal profiles with thermal barrier - Mechanical performance - Requirements, proof and tests for assessment

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. 09/23

Obsahuje: EN 14024:2023

Oznámením tejto normy sa ruší
STN EN 14024 (74 6211) z apríla 2005

obsahuje farebné strany

137453

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14024

July 2023

ICS 91.060.10; 91.060.50 Supersedes EN 14024:2004

English Version

Metal profiles with thermal barrier - Mechanical performance - Requirements, proof and tests for assessment

Profilés métalliques à rupture de pont thermique - Performances mécaniques - Exigences, preuve et essais pour évaluation

Metallprofile mit thermischer Trennung - Mechanisches Leistungsverhalten - Anforderungen, Nachweis und Prüfungen für die Beurteilung

This European Standard was approved by CEN on 12 June 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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 14024:2023 E

Contents

Page

European foreword

This document (EN 14024:2023) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, the secretariat of which is held by AFNOR.

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 January 2024, and conflicting national standards shall be withdrawn at the latest by January 2024.

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 document supersedes EN 14024:2004.

The main changes compared to the previous edition EN 14024:2004 are:

— new geometric design types have been introduced;

— the distinction between the two “Use categories” "W" and "CW" has been superseded by one category that includes both windows (W) and curtain walls (CW);

— revision of the clauses dealing with testing and test sequence;

— new Annex D dealing with simple products which typically do not need a static proof by calculation;

— inclusion of FEM analysis for specific non-symmetric profiles, as alternative validated method for static proof;

— Annex A: introduction of the semi-probabilistic approach in regard of static proof;

— Annex C: introduction of a full set of formulae to determine the maximal cross-section loads, contact shear strength and mid-span deformation for a simply supported beam loaded with a uniformly distributed load and subjected to a uniformly distributed temperature load.

Thermal barrier profiles are used in various fields of applications and demand a differing assessment of their mechanical performance depending on their intended use.

This document deals with the general field of application: profiles in windows, doors and façades.

In the design process, the safety aspect is part of national competency. For this reason, the definition of specific products that normally do not require tests or proof by calculation for the determination of mechanical properties, is a task of national specifications. This document applies when national specifications require tests or proof by calculation to determine the characteristic values of mechanical properties of the thermal barrier profile and to assess the suitability of the thermal barrier material.

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.

1 Scope

This document specifies requirements for assessment of the mechanical strength of metal profiles incorporating a thermal barrier having mechanical performance depending on their intended use.

It also specifies the tests to determine the characteristic values of mechanical properties of the thermal barrier profile and to assess the effect of different conditionings of the thermal barrier on the mechanical performance of the connection.

This document does not apply to thermal barriers which do not give a contribution to the mechanical resistance of the profiles.

This document is applicable to thermal barrier profiles designed mainly for windows, doors, screens and curtain walls.

This document does not apply to thermal barriers made only of metal profiles connected with metal pins or screws.

This current edition of EN 14024 will supersede EN 14024:2004. Differences in test procedures between the two versions will not lead to significant differences in test results. Therefore, existing test results according to EN 14024:2004 are considered as equivalent to new test results according to the current edition of EN 14024.

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 12519, *Windows and pedestrian doors — Terminology*

EN 14351-1, *Windows and doors — Product standard, performance characteristics — Part 1: Windows and external pedestrian doorsets*

EN 16759:2021, *Bonded glazing for doors, windows and curtain walling — Verification of mechanical performance of bonding*

EN ISO 4892-2, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2)*

EN ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system (ISO 7500-1)*

EN ISO 22088-3, *Plastics — Determination of resistance to environmental stress cracking (ESC) — Part 3: Bent strip method (ISO 22088-3)*

EN ISO 22088-4, *Plastics — Determination of resistance to environmental stress cracking (ESC) — Part 4: Ball or pin impression method (ISO 22088-4)*