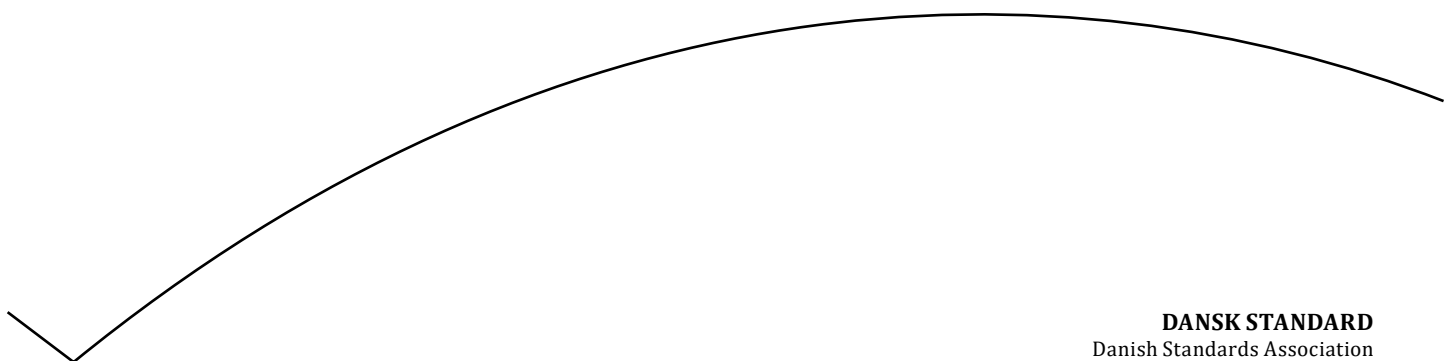


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Metalprofiler med termisk barriere – Mekanisk ydeevne – Krav, eftervisning og prøvning til vurdering af egnethed

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



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EUROPÄISCHE NORM

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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

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Contents

Page

European foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Symbols and abbreviations	11
5 Requirements	16
5.1 General	16
5.2 Thermal barrier with mechanical functions	17
5.3 Mechanical resistance	17
5.4 Static proof	20
6 Tests	20
6.1 General	20
6.1.1 Test specimens	20
6.1.2 Test temperature	20
6.1.3 Mechanical test equipment	21
6.1.4 Pre-test conditioning	21
6.2 Effects of different conditionings of the thermal barrier on the mechanical performances of the connection	21
6.2.1 Generalities	21
6.2.2 Performance after immersion in water	21
6.2.3 Performance after exposure to humidity	21
6.2.4 Testing for brittleness	22
6.2.5 Testing of the creep factor under constant shear load	22
6.2.6 Testing of the creep factor under constant transverse tensile load	22
6.2.7 Performance after exposure to UV radiation (if applicable)	22
6.2.8 Testing for tensile cracks	23
6.3 Transverse tensile strength (Q)	24
6.3.1 Test specimens	24
6.3.2 Test procedure	24
6.3.3 Evaluation	25
6.4 Shear strength and elasticity constant (T, c)	25
6.4.1 Test specimens	25
6.4.2 Test procedure	26
6.4.3 Result types of systems with mechanical design system type A	27
6.4.4 Test flow	29
6.4.5 Special cases	29
6.4.6 Evaluation	32
6.5 Ageing	33
6.5.1 General	33
6.5.2 Method 1 = M1	33
6.5.3 Method 2 = M2	34
6.5.4 Method 3 = M3	36
6.6 Characteristic values	37
6.6.1 Transverse tensile strength	37
6.6.2 Characteristic shear strength	37
6.6.3 Elasticity constant	37
6.6.4 Residual deformation Δh for M1 and deformation f for M2	37
6.6.5 Ageing effect, creep factor $\varphi_{c,s}$ under constant shear load	38
6.6.6 Ageing effect, creep factor $\varphi_{c,t}$ under constant transverse tensile load	38
6.6.7 Combined shear and tensile stress, design-factor γ_{Rd}	38
6.7 Test report	38
6.7.1 General	38

This is a preview of DS/EN 14024:2023. [Click here to purchase the full version from the ANSI store.](#)

6.7.2	Test report on effects of different conditionings of the thermal barrier on the mechanical performances of the connection	39
6.7.3	Test report on the mechanical resistance of the profile.....	39
Annex A (informative) Static proof.....		41
Annex B (informative) Extension of characteristic data for profile design		49
Annex C (informative) Effective momentum of inertia of metal profiles with thermal barrier		51
Annex D (informative) Simple products which typically do not need a static proof by calculation		59
Bibliography.....		62

This is a preview of DS/EN 14024:2023. [Click here to purchase the full version from the ANSI store.](#)

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.

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

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)*