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Aerospace series - Steel and heat-resisting alloys for wrought products - Technical specification - Part 002: Bars and sections

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. 02/26

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English Version

Aerospace series - Steel and heat-resisting alloys for wrought products - Technical specification - Part 002: Bars and sections

Série aérospatiale - Acier et alliages résistant à chaud pour les produits corroyés - Spécification technique - Partie 002 : Barres et profilés

Luft- und Raumfahrt - Stahl und Hochwarmfesten Legierungen - Umgeformte Erzeugnisse - Technische Lieferbedingungen - Teil 002: Stangen und Profile

This European Standard was approved by CEN on 8 September 2025.

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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.

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COMITÉ EUROPÉEN DE NORMALISATION
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EN 4700-002:2025 (E)

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European foreword

This document (EN 4700-002:2025) has been prepared by ASD-STAN.

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2026, and conflicting national standards shall be withdrawn at the latest by June 2026.

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 4700-002:2021.

EN 4700-002:2025 includes the following significant technical changes with respect to EN 4700-002:2021:

- update of Clause 2 “Normative references”;
- Table 1: addition of a note in line 17 and addition of ASTM E340 and ASTM E381 for steels in line 51.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: 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.

EN 4700-002:2025 (E)**Introduction**

This document is part of the series of EN metallic material standards for aerospace applications. The general organization of this series is described in EN 4258.

1 Scope

This document specifies the requirements for the ordering, manufacture, testing, inspection and delivery of steel and heat-resisting alloy bars and sections. It is presupposed to be applied when referred to and in conjunction with the EN material standard unless otherwise specified on the drawing, order or inspection schedule.

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 2002-001,¹ *Aerospace series — Metallic materials — Test methods — Part 001: Tensile testing at ambient temperature*

EN 2002-002, *Aerospace series — Metallic materials — Test methods — Part 002: Tensile testing at elevated temperature*

EN 2002-005, *Aerospace series — Test methods for metallic materials — Part 005: Uninterrupted creep and stress-rupture testing*

EN 2002-16, *Aerospace series — Metallic materials — Test methods — Part 16: Non-destructive testing — Penetrant testing*

EN 2032-001, *Aerospace series — Metallic materials — Part 001: Conventional designation*

EN 2032-2, *Aerospace series — Metallic materials — Part 2: Coding of metallurgical condition in delivery condition*

EN 2078, *Aerospace series — Metallic materials — Manufacturing schedule, inspection schedule, inspection and test report — Definition, general principles, preparation and approval*

EN 2950, *Aerospace series — Test method — Wrought heat resisting alloys semi-finished products and parts — Conditions for macrographic and micrographic examination — Atlas of structures and defects*

EN 3874,¹ *Aerospace series — Test methods for metallic materials — Constant amplitude force-controlled low cycle fatigue testing*

EN 3987, *Aerospace series — Test methods for metallic materials — Constant amplitude force-controlled high cycle fatigue testing*

EN 3988,¹ *Aerospace series — Test methods for metallic materials — Constant amplitude strain-controlled low cycle fatigue testing*

EN 4050-1, *Aerospace series — Test method for metallic materials — Ultrasonic inspection of bars, plates, forging stock and forgings — Part 1: General requirements*

EN 4050-4, *Aerospace series — Test method for metallic materials — Ultrasonic inspection of bars, plates, forging stock and forgings — Part 4: Acceptance criteria*

¹ Published as ASD-STAN prEN at the date of publication of this document, available at: <https://www.asd-stan.org/>.

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EN 4259:2022, *Aerospace series — Metallic materials — Definition of general terms*

EN 10027-1, *Designation systems for steels — Part 1: Steel names*

EN 10079, *Definition of steel products*

TR 2410,² *Aerospace series — Metallic materials — Relationship between dimensional standards and material standards*

EN ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method* (ISO 148-1)

EN ISO 642, *Steel — Hardenability test by end quenching (Jominy test)* (ISO 642)

EN ISO 643, *Steels — Micrographic determination of the apparent grain size* (ISO 643)

EN ISO 3651-1, *Determination of resistance to intergranular corrosion of stainless steels — Part 1: Austenitic and ferritic-austenitic (duplex) stainless steels — Corrosion test in nitric acid medium by measurement of loss in mass (Huey test)* (ISO 3651-1)

EN ISO 3651-2, *Determination of resistance to intergranular corrosion of stainless steels — Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels — Corrosion test in media containing sulfuric acid* (ISO 3651-2)

EN ISO 3887, *Steels — Determination of the depth of decarburization* (ISO 3887)

EN ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method* (ISO 6506-1)

EN ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method* (ISO 6507-1)

EN ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method* (ISO 6508-1)

EN ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature* (ISO 6892-1)

EN ISO 6892-2, *Metallic materials — Tensile testing — Part 2: Method of test at elevated temperature* (ISO 6892-2)

EN ISO 15549, *Non-destructive testing — Eddy current testing — General principles* (ISO 15549)

ISO 4967, *Steel — Determination of content of non-metallic inclusions — Micrographic method using standard diagrams*

AMS 2315,³ *Determination of delta ferrite content*

AMS 2750,³ *Pyrometry*

ASTM A604,⁴ *Standard practice for macroetch testing of consumable electrode remelted steel bars and billets*

ASTM E45,⁴ *Standard test methods for determining the inclusion content of steel*

² Published as ASD-STAN TR, available at: <https://www.asd-stan.org/>.

³ Published by Society of Automotive Engineers (SAE), available at: <https://www.sae.org/>.

⁴ Published by American Society for Testing and Materials (ASTM International), available at: <https://www.astm.org/>.

ASTM E340,⁴ Standard practice for macroetching metals and alloys

ASTM E381,⁴ Standard method of macroetch testing steel bars, billets, blooms and forgings

ASTM E399,⁴ Standard test method for linear-elastic plane-strain fracture toughness of metallic materials

ASTM E407,⁴ Standard practice for microetching metals and alloys

ASTM E1444,⁴ Standard practice for magnetic particle testing for aerospace

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