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Aerospace series - Steel and heat resisting alloys - 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. 09/21

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English Version

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

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

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

This European Standard was approved by CEN on 24 February 2020.

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

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

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European foreword

This document (EN 4700-002:2021) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (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of an identical text or by endorsement, at the latest by November 2021, and conflicting national standards shall be withdrawn at the latest by November 2021.

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 4700-002:2017.

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, Turkey and the United Kingdom.

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 defines 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, *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 2951, *Aerospace series — Metallic materials — Micrographic determination of content of non-metallic inclusions*

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

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

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

1) Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), http://www.asd-stan.org/

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*

EN 4259, *Aerospace series — Metallic materials — Definition of general terms* [1)]

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

EN 10079, *Definition of steel products*

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

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

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

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)*

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*

EN ISO 3887, *Steels — Determination of depth of decarburization*

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

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

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

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

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

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

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

AMS 2315, *Determination of Delta Ferrite Content* [2)]

AMS 2750, *Pyrometry* [2)]

ASTM A604, *Standard Practice for Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets* [3)]

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2) Published by SAE international (US) Society of Automotive Engineers, http://www.sae.org/

3) Published by ASTM international (US) American Society for Testing and Materials, http://www.astm.org/

ASTM E45, *Standard Test Methods for Determining the Inclusion Content of Steel* [3)]

ASTM E340, *Standard Practice for Macroetching Metals and Alloys* [3)]

ASTM E381, *Standard Method of Macroetch Testing Steel Bars, Billets, Blooms and Forgings* [3)]

ASTM E399, *Standard Test Method for Linear-Elastic Plane-Strain Fracture Toughness KIc of Metallic Materials* [3)]

ASTM E407, *Standard Practice for Microetching Metals and Alloys* [3)]

ASTM E1444, *Standard Practice for Magnetic Particle Testing* [3)]