



SLOVENSKI STANDARD
oSIST prEN 15088:2016
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**Aluminij in aluminijeve zlitine - Gradbeni proizvodi za konstrukcijska dela -
Tehnični pogoji za prevzem in dobavo**

Aluminium and aluminium alloys - Structural products for construction works - Technical conditions for inspection and delivery

Aluminium und Aluminiumlegierungen - Erzeugnisse für Tragwerksanwendungen - Technische Lieferbedingungen

Aluminium et alliages d'aluminium - Produits pour applications de structure pour construction - Conditions techniques de contrôle et de livraison

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Aluminium and aluminium alloys - Structural products for construction works - Technical conditions for inspection and delivery"

Aluminium et alliages d'aluminium - Produits pour applications de structure pour construction - Conditions techniques de contrôle et de livraison

Aluminium und Aluminiumlegierungen - Erzeugnisse für Tragwerksanwendungen - Technische Lieferbedingungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 132.

If this draft becomes a European Standard, 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.

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

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prEN 15088:2016 (E)

European foreword

This document (prEN 15088:2016) has been prepared by Technical Committee CEN/TC 132 “Aluminium and aluminium alloys”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Regulation No. 305/2011.

For relationship with EU Regulation No. 305/2011, see informative Annex ZA, which is an integral part of this document.

This document will supersede EN 15088:2005.

In comparison with EN 15088:2005, the following significant changes were made:

- a) compliance with the Construction Product Regulation provisions;
- b) respect of the latest CEN templates (Chapter 6 and Annex ZA);
- c) improvements on Bendability.

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Introduction

This European Standard is an “umbrella” standard which gives the regulatory requirements to enable manufacturers or their agents to affix CE marking, in accordance with Regulation (EU) No 305/2011 of the European Parliament and The Council of 9 March 2011 laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC within the scope of this European Standard.

A manufacturer who has no knowledge of its final destination may sell a semi-finished structural aluminium product to a stockist. It is the responsibility of the manufacturer that the semi-finished structural aluminium product complies with the conditions of CE marking for the stated intended use that is included as part of the CE marking. If a stockist resells the product for another intended use or transforms the product in a way, he becomes a new manufacturer that, depending on the intended use of the transformed product, may need to comply with another harmonized technical specification.

Products CE marked in accordance with this European Standard can be presumed to have the performances stated with the CE marking. This does not replace the responsibility of the designer to ensure that the final structural product is correctly designed and its components meet the necessary performance values depending on the design, especially in view of fatigue design.

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1 Scope

This European Standard specifies requirements for conformity assessment of performance characteristics for semi-finished structural aluminium construction products that are used on load bearing structural construction works, covering both building and civil engineering works.

This European standard specifies product characteristics, testing assessment, sampling methods and conformity assessment covering manufacturing characteristics.

This European standard covers semi-finished products which may not fit into structural products without any further transformation (e.g. cutting, drilling).

This European standard does not apply to products which are produced from semi-finished products and after transformation are used on particular structural construction products, covered by EN 1090-1.

This European standard does not apply to construction products that are produced with joining operations (e.g. bolting, welding), covered by EN 1090-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 485-1, *Aluminium and aluminium alloys — Sheet, strip and plate — Part 1: Technical conditions for inspection and delivery*

EN 485-2, *Aluminium and aluminium alloys - Sheet, strip and plate - Part 2: Mechanical properties*
<https://standards.iteh.ai/catalog/standards/sist/408a6863-90e5-464d-a70a-28b80852da71/osist-pr-en-15088-2016>

EN 485-3, *Aluminium and aluminium alloys - Sheet, strip and plate - Part 3: Tolerances on dimensions and form for hot-rolled products*

EN 485-4, *Aluminium and aluminium alloys - Sheet, strip and plate - Part 4: Tolerances on shape and dimensions for cold-rolled products*

EN 515, *Aluminium and aluminium alloys - Wrought products - Temper designations*

EN 573-3, *Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3: Chemical composition and form of products*

EN 586-1, *Aluminium and aluminium alloys - Forgings - Part 1: Technical conditions for inspection and delivery*

EN 586-2, *Aluminium and aluminium alloys - Forgings - Part 2: Mechanical properties and additional property requirements*

EN 586-3, *Aluminium and aluminium alloys - Forgings - Part 3: Tolerances on dimensions and form*

EN 754-1, *Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 1: Technical conditions for inspection and delivery*

EN 754-2, *Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 2: Mechanical properties*

EN 754-3, *Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 3: Round bars, tolerances on dimensions and form*

EN 754-4, *Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 4: Square bars, tolerances on dimensions and form*

EN 754-5, *Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 5: Rectangular bars, tolerances on dimensions and form*

EN 754-6, *Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 6: Hexagonal bars, tolerances on dimensions and form*

EN 754-7, *Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 7: Seamless tubes, tolerances on dimensions and form*

EN 754-8, *Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 8: Porthole tubes, tolerances on dimensions and form*

EN 755-1, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 1: Technical conditions for inspection and delivery*

EN 755-2, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 2: Mechanical properties*

EN 755-3, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 3: Round bars, tolerances on dimensions and form*

EN 755-4, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 4: Square bars, tolerances on dimensions and form*

EN 755-5, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 5: Rectangular bars, tolerances on dimensions and form*

EN 755-6, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 6: Hexagonal bars, tolerances on dimensions and form*

EN 755-7, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 7: Seamless tubes, tolerances on dimensions and form*

EN 755-8, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 8: Porthole tubes, tolerances on dimensions and form*

EN 755-9, *Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 9: Profiles, tolerances on dimensions and form*

EN 1301-1, *Aluminium and aluminium alloys - Drawn wire - Part 1: Technical conditions for inspection and delivery*

EN 1301-2, *Aluminium and aluminium alloys - Drawn wire - Part 2: Mechanical properties*

EN 1301-3, *Aluminium and aluminium alloys - Drawn wire - Part 3: Tolerances on dimensions*

EN 1386, *Aluminium and aluminium alloys - Tread plate - Specifications*

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EN 1396, *Aluminium and aluminium alloys - Coil coated sheet and strip for general applications - Specifications*

EN 1559-1, *Founding - Technical conditions of delivery - Part 1: General*

EN 1559-4, *Founding - Technical conditions of delivery - Part 4: Additional requirements for aluminium alloy castings*

EN 1706, *Aluminium and aluminium alloys - Castings - Chemical composition and mechanical properties*

EN 1999-1-1, *Eurocode 9: Design of aluminium structures — Part 1-1: General rules*

EN 1999-1-3, *Eurocode 9: Design of aluminium structures – Part 1-3: Structures susceptible to fatigue*

EN 12020-1, *Aluminium and aluminium alloys - Extruded precision profiles in alloys EN AW-6060 and EN AW-6063 - Part 1: Technical conditions for inspection and delivery*

EN 12020-2, *Aluminium and aluminium alloys - Extruded precision profiles in alloys EN AW-6060 and EN AW-6063 - Part 2: Tolerances on dimensions and form*

EN 12258-1, *Aluminium and aluminium alloys - Terms and definitions - Part 1: General terms*

ISO 8062 (all parts), *Geometrical product specifications (GPS) - Dimensional and geometrical tolerances for moulded parts*

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3 Terms, definitions, symbols, units and abbreviated terms

3.1 Terms and definitions <https://standards.iteh.ai/catalog/standards/sist/408a6863-90e5-464d-a70a-28b80952da71/osist-pren-15088-2016>

For the purposes of this document, the terms and definitions given in EN 12258-1 and the following apply.

3.1.1

semi-finished structural aluminium construction product

any aluminium product which is placed on the market that could be transformed into a structural component with respect to the basic requirements for construction works number 1 and 3

3.1.2

structural component

components to be used as load-bearing part of works designed to provide mechanical resistance and stability to the works and/or fire resistance, including aspects of durability and serviceability; which can be used directly as delivered or can be incorporated into a construction work

3.1.3

semi-finished structural aluminium product family

group of semi-finished products of the same series of aluminium alloys, process (i.e.: extrusion, rolled, casting, forging) and similar kind of temper that is produced by the same production line

Note 1 to entry: The manufacturer has experience to decide how to group his products range with the aim to prove that his production line is constant and he is able to deliver products that conform to this standard.

EXAMPLE 1 For extrusion: EN AW 6060-T6 is in the same product family as EN AW 6082-T5.

EXAMPLE 2 For rolling: EN AW 5005-O is in the same product family as EN AW 5083-H24.

3.1.4**one-off product**

semi-finished structural aluminium product that is produced once and for the first time and clearly deviating from the normal production programme

3.2 Abbreviations

AVCP	Assessment and verification of constancy of performance
CWFT	Classification without Further Testing
DoP	Declaration of Performance
EC	European Commission
EFTA	European Free Trade Association
EU	European Union
FPC	Factory production control
OJEU	Official journal of the European Union
UTS	Ultimate Tensile Strength

3.3 Symbols

d	Sheet thickness / profile height
f_b	Bending factor
r_i	Inner radius
$r_{i \min}$	Minimum inner radius
t	Original thickness of the product
F	Fatigue test factor
N	Number of cycles derived from test results
R	Stress ratio
d	Sheet thickness / profile height
α	Bending angle
σ	Stress
σ_{\min}	Minimum stress
σ_{\max}	Maximum stress

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4 Products characteristics

4.1 General

4.1.1 Introduction

The ordering information as well as the details on how the selection of the alloy and its temper, are given on 4.1.2 and 4.1.3 respectively.

The characteristics for structural material shall be determined and expressed in accordance with 4.2 to 4.6.

NOTE The conformity with the requirements in this European Standard may be given using e.g. Type 3.1 inspection certificate structure in accordance with EN 10204:2004.

4.1.2 Ordering Information

The following information shall be obtained by the manufacturer when a particular order is given:

- a) Description of the product in accordance with Table 1, column "Product";
- b) reference to this European Standard with dated reference;
- c) Designation of the aluminium alloy and temper shall be given in accordance to EN 573-3, EN 515 for wrought products and EN 1706 for castings. To use these alloys and tempers, their performance characteristics should be either included in EN 1999-1-1 or be available by testing
- d) For particular cases, any additional requirements to those specified in this clause (e.g.: extrusion seams; surface condition) together with the appropriate European Standards or requirements to demonstrate conformity.

If the order agreed between manufacturer and purchaser contains special requirements, which differ from those specified or referenced in this European Standard, then these special requirements shall apply in addition, insofar as they do not conflict with this European Standard.

4.1.3 Selection of alloy and temper

To conform to the required function and use for the fabrication of aluminium structures, the manufacturer shall choose an alloy with a temper in accordance to 5.1.

4.2 Tolerances on dimension and shape

The ability of the product to be used on applications with particular requirements in regards to dimension and shape.

When assessed in accordance to 5.2, results shall be declared.

4.3 Mechanical properties

The following mechanical properties are relevant for aluminium semi-finished products:

- tensile strength, commonly known as ultimate tensile strength (UTS);
- yield strength;
- elongation, the process of lengthening.