

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 755-1:2016 sisaldab Euroopa standardi EN 755-1:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 755-1:2016 consists of the English text of the European standard EN 755-1:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.06.2016.	Date of Availability of the European standard is 08.06.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 77.150.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:

Aru 10, 10317 Tallinn, Eesti; koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

EN 755-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2016

ICS 77.150.10

Supersedes EN 755-1:2008

English Version

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

Aluminium et alliages d'aluminium - Barres, tubes et profilés filés - Partie 1 : Conditions techniques de contrôle et de livraison

Aluminium und Aluminiumlegierungen - Stranggepresste Stangen, Rohre und Profile - Teil 1: Technische Lieferbedingungen

This European Standard was approved by CEN on 11 April 2016.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
European foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Ordering information	6
5 Requirements	8
5.1 Production and manufacturing processes	8
5.2 Quality control	8
5.3 Chemical composition limits	8
5.4 Mechanical properties	8
5.5 Freedom from surface defects	9
5.6 Tolerances on dimensions and form	9
5.7 Stress corrosion cracking resistance	9
5.8 Additional requirements	9
6 Test procedures	9
6.1 Sampling	9
6.1.1 Samples for chemical analysis	9
6.1.2 Specimens for mechanical testing	10
6.1.3 Test pieces for tensile test	11
6.2 Test methods	11
6.2.1 Chemical composition limits	11
6.2.2 Tensile testing	11
6.2.3 Brinell hardness testing	11
6.2.4 Measurement of dimensions	11
6.2.5 Surface finish	12
6.2.6 Resistance to stress corrosion cracking	12
6.2.7 Additional tests	12
6.3 Re-tests	12
6.3.1 Chemical composition limits	12
6.3.2 Mechanical properties	12
6.3.3 Other properties	13
7 Inspection documents	13
8 Marking of products	13
9 Packaging	13
10 Arbitration	13
Annex A (normative) Location of test pieces	14
A.1 Round, square and hexagonal bar	14
A.1.1 For diameter (<i>D</i>) or width across flats (<i>S</i>) up to and including 40 mm	14
A.1.2 For diameter (<i>D</i>) or width across flats (<i>S</i>) over 40 mm	14
A.2 Rectangular bar	15
A.2.1 For thickness up to and including 12,5 mm	15

A.2.2	For thickness (T) over 12,5 mm and up to and including 40 mm	15
A.2.3	For thickness (T) exceeding 40 mm.....	15
A.3	Tube.....	16
A.4	Profiles.....	16
A.4.1	For thickness up to and including 12,5 mm.....	16
A.4.2	For thickness over 12,5 mm and up to and including 40 mm.....	16
A.4.3	For thickness exceeding 40 mm	17
Annex B (normative)	Resistance to stress-corrosion cracking for alloy EN AW-7075 in tempers T73, T73510 and T73511 - Electrical conductivity.....	18
Bibliography	19

European foreword

This document (EN 755-1:2016) has been prepared by Technical Committee CEN/TC 132 "Aluminium and aluminium alloys", 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 December 2016, and conflicting national standards shall be withdrawn at the latest by December 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 755-1:2008.

The following technical modifications have been introduced during the revision:

- Clause 4, Ordering information,
- Subclause 5.5, Freedom from surface defects,
- Subclause 6.3.2, Mechanical properties.

EN 755 comprises the following parts under the general title *Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles*:

- *Part 1: Technical conditions for inspection and delivery;*
- *Part 2: Mechanical properties;*
- *Part 3: Round bars, tolerances on dimensions and form;*
- *Part 4: Square bars, tolerances on dimensions and form;*
- *Part 5: Rectangular bars, tolerances on dimensions and form;*
- *Part 6: Hexagonal bars, tolerances on dimensions and form;*
- *Part 7: Seamless tubes, tolerances on dimensions and form;*
- *Part 8: Porthole tubes, tolerances on dimensions and form;*
- *Part 9: Profiles, tolerances on dimensions and form.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the technical conditions for inspection and delivery of wrought aluminium and aluminium alloy extruded rod/bar, tube and profile for general engineering applications.

This European Standard does not apply to:

- forging stock (EN 603 (all parts)),
- extruded precision profiles in alloys EN AW-6060 and EN AW-6063 (EN 12020 (all parts)),
- products delivered in coils (EN 13957),
- coiled tubes cut to length (EN 13957).

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 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 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 2004-1, *Aerospace series — Test methods for aluminium and aluminium alloy products — Part 1: Determination of electrical conductivity of wrought aluminium alloys*

EN 10204, *Metallic products — Types of inspection documents*

EN 12258-1:2012, *Aluminium and aluminium alloys — Terms and definitions — Part 1: General terms*

EN 14242, *Aluminium and aluminium alloys — Chemical analysis — Inductively coupled plasma optical emission spectral analysis*

EN 14361, *Aluminium and aluminium alloys — Chemical analysis — Sampling from metal melts*

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

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

ISO 9591, *Corrosion of aluminium alloys — Determination of resistance to stress corrosion cracking*

ASTM G47, *Standard Test Method for Determining Susceptibility to Stress-Corrosion Cracking of 2XXX and 7XXX Aluminum Alloy Products*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12258-1:2012 and the following apply.

3.1 order document

document or set of documents agreed between supplier and purchaser at the time of ordering

4 Ordering information

The order document shall contain the following:

- a) form and type of product:
 - 1) form of the product (extruded rod/bar, tube or profile). If tube, whether seamless or porthole/bridge extruded,
 - 2) reference to EN 573-3 for chemical composition limits,
 - 3) reference to EN 515 for temper designation,
 - 4) purchaser application, in particular whether subsequent anodizing is intended. This shall be clearly stated on the order document;
- b) reference to EN 755-2 for mechanical property limits;
- c) reference to this document (EN 755-1);
- d) dimensions and shape of the product:
 - 1) round tube:
 - i) length,