SVENSK STANDARD
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Aluminium och aluminiumlegeringar – Kalldragen stång och rör –
Del 2: Mekaniska egenskaper

Aluminium and aluminium alloys – Cold drawn rod/bar and tube –
Part 2: Mechanical properties

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Europastandarden EN 754-2:2016 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 754-2:2016.

Denna standard ersätter SS-EN 754-2:2013, utgåva 3.

The European Standard EN 754-2:2016 has the status of a Swedish Standard. This document contains the official English version of EN 754-2:2016.

This standard supersedes the Swedish Standard SS-EN 754-2:2013, edition 3.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Lättmetaller, SIS/TK 129.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 754-2

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ICS 77.150.10

Supersedes EN 754-2:2013

English Version

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

Aluminium et alliages d'aluminium - Barres et tubes étirés - Partie 2: Caractéristiques mécaniques

Aluminium und Aluminiumlegierungen - Gezogene Stangen und Rohre - Teil 2: Mechanische Eigenschaften

This European Standard was approved by CEN on 15 August 2016.

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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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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 754-2:2016) 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 May 2017, and conflicting national standards shall be withdrawn at the latest by May 2017.

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 754-2:2013.

CEN/TC 132 affirms its policy that if a patentee refuses to grant licenses on standardized products under reasonable and not discriminatory conditions, this product will be removed from the corresponding document.

EN 754 comprises the following parts under the general title *"Aluminium and aluminium alloys — Cold drawn rod/bar and tube*":

— *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*

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 mechanical property limits resulting from tensile testing applicable to aluminium and aluminium alloy cold drawn rod/bar and tube.

Technical conditions for inspection and delivery, including product and testing requirements, are specified in EN 754-1. Temper designations are defined in EN 515. The chemical composition limits for these materials are given in EN 573-3.

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 754-1:2016, *Aluminium and aluminium alloys — Cold drawn rod/bar and tube — Part 1: Technical conditions for inspection and delivery*

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

3 Mechanical property limits

3.1 General

The mechanical properties shall be in conformity with those specified in Table 1 to Table 37 or those agreed upon between supplier and purchaser and stated in the order document.

For all alloys the condition F (as fabricated) can be used, but without guaranteed mechanical properties.

Table 1 to Table 37 contain limits of mechanical property values obtained by tensile testing according to EN ISO 6892-1 after sampling and test piece preparation according to EN 754-1.

NOTE The mechanical properties refer to test pieces taken in the longitudinal direction. Mechanical properties of test pieces taken in other directions can differ from those for the longitudinal direction quoted in this standard.

Brinell hardness values given in Table 1 to Table 37 expressed as HBW values are for information only.

3.2 Elongation

If not otherwise agreed, the *A* value shall be used.

The *A* value for elongation is the % elongation measured over a gauge length of $5,65\sqrt{S_0}$ (where S_0 is the initial cross-sectional area of the test-piece), and expressed in percent.

For certain products the supplier may choose (if not otherwise specified in the order documents) to use the elongation based on A_{50mm}. Consequently, values for the A_{50mm} are included in the following tables.

The A_{50mm} value is the elongation measured over a gauge length of 50 mm and expressed in percent.

Test pieces and their location in the specimen are given in EN 754-1.

3.3 Reference list of the tables of mechanical properties of the relevant aluminium and aluminium alloys

3.4 Detailed tables of mechanical properties

Table 1 — Aluminium EN AW-1050A [Al 99,5]

Drawn rod/bar									
Temper	Dimensions mm		R_m MPa		$R_{p0,2}$ MPa		A %	A_{50mm} %	HBW Typical value
	D [a]	S [b]	min.	max.	min.	max.	min.	min.	
O, H111	≤ 80	≤ 60	60	95	-	-	25	22	20
H14	≤ 40	≤ 10	100	135	70	-	6	5	30
H16	≤ 15	≤ 5	120	160	105	-	4	3	35
H18	≤ 10	≤ 3	145	-	125	-	3	3	43
Drawn tube									
Temper	Wall thickness t mm		R_m MPa		$R_{p0,2}$ MPa		A %	A_{50mm} %	HBW Typical value
			min.	max.	min.	max.	min.	min.	
O, H111	≤ 20		60	95	-	-	25	22	20
H14	≤ 10		100	135	70	-	6	5	30
H16	≤ 5		120	160	105	-	4	3	35
H18	≤ 3		145	-	125	-	3	3	43

a D = Diameter for round bar.

b S = Width across flats for square and hexagonal bar, thickness for rectangular bar.

Table 2 — Aluminium EN AW-1200 [Al 99,0]

Drawn rod/bar									
Temper	Dimensions mm		R_m MPa		$R_{p0,2}$ MPa		A %	A_{50mm} %	HBW Typical value
	D a	S b	min.	max.	min.	max.	min.	min.	
O, H111	≤ 80	≤ 60	70	105	-	-	20	16	23
H14	≤ 40	≤ 10	110	145	80	-	5	4	37
H16	≤ 15	≤ 5	135	170	115	-	3	3	45
H18	≤ 10	≤ 3	150	-	130	-	3	3	50
Drawn tube									
Temper	Wall thickness t mm		R_m MPa		$R_{p0,2}$ MPa		A %	A_{50mm} %	HBW Typical value
			min.	max.	min.	max.	min.	min.	
O, H111	≤ 20		70	105	-	-	20	16	23
H14	≤ 10		110	145	80	-	5	4	37
H16	≤ 5		135	170	115	-	3	3	45
H18	≤ 3		150	-	130	-	3	3	50

a D = Diameter for round bar.

b S = Width across flats for square and hexagonal bar, thickness for rectangular bar.