



SLOVENSKI STANDARD
SIST EN 1301-2:2008

01-november-2008

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SIST EN 1301-2:1998

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Aluminium and aluminium alloys — Drawn wire — Part 2: Mechanical properties

Aluminium und Aluminiumlegierungen - Gezogene Drähte - Teil 2: Mechanische Eigenschaften

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Aluminium et alliages d'aluminium — Fil étiré — Partie 2 : Caractéristiques mécaniques

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Ta slovenski standard je istoveten z: EN 1301-2:2008

ICS:

77.150.10

Aluminijski izdelki

Aluminium products

SIST EN 1301-2:2008

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1301-2

September 2008

ICS 77.150.10

Supersedes EN 1301-2:1997

English Version

Aluminium and aluminium alloys - Drawn wire - Part 2: Mechanical properties

Aluminium et alliages d'aluminium - Fil étiré - Partie 2:
Caractéristiques mécaniques

Aluminium und Aluminiumlegierungen - Gezogene Drähte -
Teil 2: Mechanische Eigenschaften

This European Standard was approved by CEN on 16 August 2008.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This document (EN 1301-2:2008) 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 March 2009, and conflicting national standards shall be withdrawn at the latest by March 2009.

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.

CEN/TC 132 affirms it is its policy that in the case when a patentee refuses to grant licenses on standardised standard products under reasonable and not discriminatory conditions, then this product shall be removed from the corresponding standard.

This document supersedes EN 1301-2:1997.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 4 "Wires and drawing stock" to revise EN 1301-2:1997.

Besides editorial adjustments in the text and update of normative references the following changes have been made:

- Foreword amended;
- Clause 2: EN 573-3 deleted and included in Bibliography;
- Tables 1 to 6: Footnotes modified;
- Table 2: Tempers H13 and H18 added for alloy EN AW-2011 and temper H18 added for alloys EN AW-2014A, EN AW-2017A, EN AW-2117 and EN AW-2024;
- Table 5: Alloy EN AW-6056 added and temper H18 added for alloys EN AW-6061 and EN AW-6082;
- Table 6: Temper H18 added.

EN 1301 comprises the following parts under the general title: "Aluminium and aluminium alloys – Drawn wire":

- *Part 1: Technical conditions for inspection and delivery*
- *Part 2: Mechanical properties*
- *Part 3: Tolerances on dimensions*

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

EN 1301-2:2008 (E)**1 Scope**

This document specifies the mechanical properties of aluminium and aluminium alloy drawn wires for general engineering applications (except aeronautical rivets).

It applies to drawn wires, except for electrical or welding purposes.

It does not apply to drawing stock.

The designation of aluminium and aluminium alloys, their chemical composition and the temper designations used in this standard are in accordance with EN 573- 3 and EN 515 respectively.

2 Normative references

The following referenced documents are indispensable for the application 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 515:1993, *Aluminium and aluminium alloys — Wrought products — Temper designations*

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

EN 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature*

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3 Tensile test

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The conditions for the sampling shall be in accordance with EN 1301-1, <https://standards.iteh.ai/catalog/standards/sist/3707749f-006b-4dd2-9049-30da754e71b7/sist-en-1301-2-2008>

The testing conditions specified in EN 10002-1 shall apply together with the following additional conditions:

- full section test pieces shall be used;
- elongation shall be measured on a reference length of 100 mm.

Tensile strength shall conform to Tables 1 to 6.

NOTE Typical values for proof stress and elongation, are given for information only.

Tensile strength values shall be rounded in accordance with Annex A.

For rivet wire in non heat treatable alloys delivered in H13 temper the mechanical properties shall be determined in the temper of delivery.

For rivet wire in heat treatable alloys delivered in H13 temper, the mechanical properties shall be determined:

- a) in the delivered temper H13;
- b) and also in tempers:
 - 1) T4 for EN AW-2017A, EN AW-2117 and EN AW-2024 alloys;
 - 2) T6 for EN AW-2014A, EN AW-6061, EN AW-6082 and EN AW-7075 alloys.

Testing may also be made in T42 temper or T62 temper (EN 515:1993, 7.3.2), instead of T4 or T6 respectively. In this case the mechanical properties limits are those given for the corresponding T4 and T6 tempers.

Table 1 — Series 1 000 (Al)

Material designation	Temper	Diameter <i>d</i> up to and including mm	Tensile strength		Proof stress $R_{p0,2}$ ^a MPa typical	Elongation ^a $A_{100\text{ mm}}$ %
			R_m			
			min.	max.		
EN AW-1098 [Al 99,98]	O	20	-	70	-	25
	H14	18	85	-	80	3
	H18	10	115	-	110	2
EN AW-1080A [Al 99,8 (A)]	O	20	-	80	-	35
	H14	18	90	-	85	5
	H18	10	120	-	115	3
EN AW-1070A [Al 99,7]	O	20	-	85	-	35
	H14	18	95	-	90	5
	H18	10	125	-	120	3
EN AW-1050A [Al 99,5]	O	20	-	95	-	35
	H14	18	100	-	95	5
	H16	15	120	-	115	3
	H18	10	140	-	135	3

^a The typical proof stress and elongation values are for information only and are influenced by the wire diameter and the method of drawing.

Table 2 — Series 2 000 (Al Cu)

Material designation	Temper	Diameter <i>d</i> up to and including mm	Tensile strength		Proof stress	Elongation ^a
			<i>R_m</i>		<i>R_{p0,2}</i> ^a	<i>A_{100 mm}</i>
			MPa		MPa	%
			min.	max.	typical	typical
EN AW-2011 [Al Cu6BiPb]	T3	18	310	-	295	6
	T8	18	370	-	310	4
	H13	18	155	225	-	-
	H18	10	240	-	-	-
EN AW-2014A [Al Cu4SiMg (A)]	H13 ^b	18	210	280	190	5
	T4	18	380	-	255	18
	T6	18	440	-	415	9
	H18	10	295	-	-	-
EN AW-2017A [Al Cu4MgSi (A)]	H13 ^b	18	210	300	190	5
	T4	18	380	-	255	18
	H18	10	315	-	-	-
EN AW-2117 [Al Cu2,5Mg]	H13 ^b	18	170	240	110	5
	T4	18	260	-	160	20
	H18	10	260	-	-	-
EN AW-2024 [Al Cu4Mg1]	H13 ^b	18	230	300	200	5
	T4	18	420	-	315	18
	H18	10	320	-	-	-

^a The typical proof stress and elongation values are for information only and are influenced by the wire diameter and the method of drawing.

^b Mechanical properties shall also be tested in T4 temper (alloys EN AW-2017A, EN AW-2117 and EN AW-2024) or T6 temper (alloy EN AW-2014A). Testing may also be made in T42 temper or T62 temper (EN 515:1993, 7.3.2), instead of T4 or T6 respectively. In this case the mechanical properties limits are those given for the corresponding T4 and T6 tempers.

Table 3 — Series 3 000 (Al Mn)

Material designation	Temper	Diameter <i>d</i> up to and including mm	Tensile strength <i>R_m</i>		Proof stress <i>R_{p0,2}</i> ^a MPa typical	Elongation ^a <i>A</i> _{100 mm} % typical
			MPa			
			min.	max.		
EN AW-3003 [Al Mn1Cu]	O	20	-	130	60	35
	H14	18	135	180	120	5
	H18	10	180	-	175	3
EN AW-3103 [Al Mn1]	O	20	-	130	60	35
	H14	18	135	180	120	5
	H18	10	170	-	165	3

^a The typical proof stress and elongation values are for information only and are influenced by the wire diameter and the method of drawing.

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