



**SLOVENSKI STANDARD**  
**SIST EN 683-2:2007**

**01-marec-2007**

**BUXca Yý U**  
**SIST EN 683-2:1998**

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**Aluminij in aluminijeve zlitine - Hladno valjani polizdelki za toplotne izmenjevalnike**  
**- 2. del: Mehanske lastnosti**

Aluminium and aluminium alloys - Finstock - Part 2: Mechanical properties

Aluminium und Aluminiumlegierungen - Vormaterial für Wärmeaustauscher (Finstock) -  
Teil 2: Mechanische Eigenschaften

Aluminium et alliages d'aluminium - Bandes pour échangeurs thermiques - Partie 2 :  
Caractéristiques mécaniques

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**Ta slovenski standard je istoveten z: EN 683-2:2006**

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**ICS:**

77.150.10      Aluminijski izdelki      Aluminium products

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English Version

## Aluminium and aluminium alloys - Finstock - Part 2: Mechanical properties

Aluminium et alliages d'aluminium - Bandes pour échangeurs thermiques - Partie 2 : Caractéristiques mécaniques

Aluminium und Aluminiumlegierungen - Vormaterial für Wärmeaustauscher (Finstock) - Teil 2: Mechanische Eigenschaften

This European Standard was approved by CEN on 25 November 2006.

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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 Central Secretariat has the same status as the official versions.

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## Foreword

This document (EN 683-2:2006) 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of an identical text or by endorsement, at the latest by June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

This document supersedes EN 683-2:1996.

Within its program of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 6 "Foil and finstock" to revise EN 683-2:1996.

The following modifications have been made:

- Table 1 has been split into Table 1 and Table 2;
- Table 1 and Table 2 give the mechanical properties for gauge ranges from 60  $\mu\text{m}$  to 400  $\mu\text{m}$ . Mechanical properties have been amended. Alloys EN AW-6060 and EN AW 6951 have been deleted.

EN 683 comprises the following parts under the general title "*Aluminium and aluminium alloys — Finstock*":

- *Part 1: Technical conditions for inspection and delivery*
- *Part 2: Mechanical properties* [SIST EN 683-2:2007](https://standards.iteh.ai/catalog/standards/sist/c4b7aa12-b29d-49fb-85a0-095cce875f24/sist-en-683-2-2007)
- *Part 3: Tolerances on dimensions and form* <https://standards.iteh.ai/catalog/standards/sist/c4b7aa12-b29d-49fb-85a0-095cce875f24/sist-en-683-2-2007>

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

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.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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.

## 1 Scope

This document specifies the mechanical properties of wrought aluminium and wrought aluminium alloy finstock.

The chemical composition limits of these materials are specified in EN 573-3, unless otherwise agreed between supplier and purchaser.

The designations of wrought aluminium and wrought aluminium alloys and the temper designations used in this standard are specified in EN 573-3, and the temper designations are defined in EN 515.

## 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 683-1, *Aluminium and aluminium alloys — Finstock — Part 1: Technical conditions for inspection and delivery*

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

## 3 Tensile testing

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The selection and number of specimens and test pieces shall be as specified in EN 683-1.

Tensile testing shall be carried out according to EN 10002-1 noting the following:

- applies to gauges between 60  $\mu\text{m}$  and 400  $\mu\text{m}$  ;
- test pieces shall be either parallel-sided (see Figure 1) or with shoulders and a reduced parallel section.

Parallel sided test pieces shall be prepared using a double bladed cutter (see Figure 2) or a precision ground sample shear of "punch and die" construction.

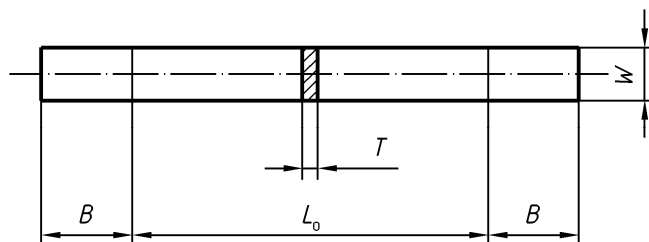
Shouldered test pieces shall have a similar sample shear or can be machined in packs using a milling-type cutter.

Parallel sided test pieces shall have a width of  $(15 \pm 0,1)$  mm and a gauge length of  $(50 \pm 1)$  mm or  $(100 \pm 1)$  mm.

Shouldered test pieces shall be in accordance with EN 10002-1.

During the part of the test to determine proof stress, the strain rate shall not exceed 10 MPa/s. The strain rate can then be increased until rupture but it shall not exceed 50 % of the gauge length per minute.

Considering the difficulty in marking thin gauge material, the gauge length may be measured by the distance between the grips of the testing machine. The elongation is then determined from the difference in the distance between the grips before testing and at fracture, or by direct reading from the load vs crosshead displacement diagram when available. This provision only applies to parallel-sided test pieces.



### Key

- $L_0$  Gauge length =  $(50 \pm 1)$  mm or  $(100 \pm 1)$  mm
- $W$  Width =  $(15 \pm 0,1)$  mm
- $T$  Thickness of strip
- $B$  Length of grip section = minimum value 25 mm

Figure 1 — Parallel sided test piece

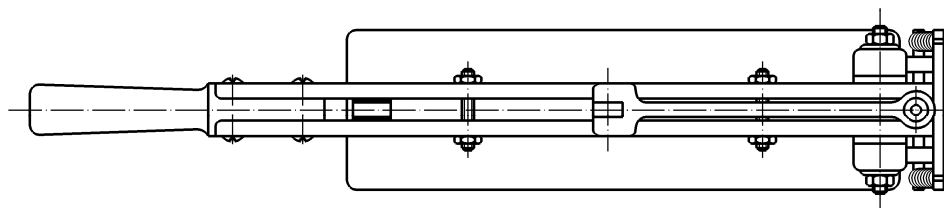
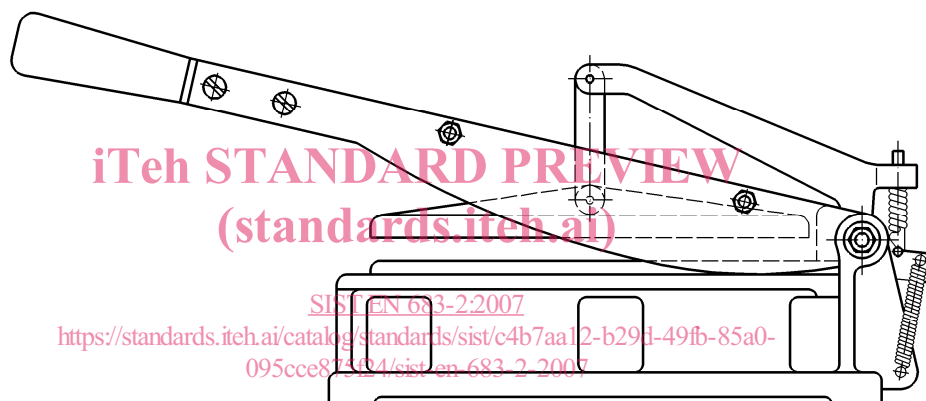


Figure 2 — Example of double-bladed cutter

#### 4 Mechanical properties

Mechanical property limits for aluminium and aluminium alloys for finstock are specified in Table 1 and Table 2. For the elongation measurement, two different gauge lengths may be used. The choice of the gauge length used, either 50 mm or 100 mm, or according to EN 10002-1 and the form of the specimen (i.e. parallel, or with shoulders) shall be at the discretion of the supplier unless otherwise agreed; nevertheless, the supplier shall inform the purchaser of the length, and of the specimen used.

#### 5 Rounding of test results

Test results shall be rounded in accordance with the rounding rules given in Annex A.

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Table 1 — Mechanical properties for finstock (H14, H16, H18, H19)

Material	Gauge range $\mu\text{m}$		Temper													
			H14			H16			H18			H19				
	Yield strength $R_{p0,2}$	Tensile strength $R_m$		Elongation $A_{50\text{mm}}$ or $A_{100\text{mm}}$	Yield strength $R_{p0,2}$	Tensile strength $R_m$		Elongation $A_{50\text{mm}}$ or $A_{100\text{mm}}$	Yield strength $R_{p0,2}$	Tensile strength $R_m$		Elongation $A_{50\text{mm}}$ or $A_{100\text{mm}}$	Yield strength $R_{p0,2}$	Tensile strength $R_m$		Elongation $A_{50\text{mm}}$ or $A_{100\text{mm}}$
		MPa	MPa			%	MPa			MPa				%	MPa	
Over	Up to and including	min.	min.	max.	min.	min.	min.	max.	min.	min.	min.	min.	min.	min.	min.	min.
EN AW-1050A [Al 99,5]	$\geq 60$	140	85	105	145	1	100	120	160	1	120	135	1	130	155	1
	140	200	85	105	145	1	100	120	160	1	120	135	1	130	155	1
	200	400	85	105	145	2	100	120	160	1	120	135	1	130	155	1
EN AW-1100 [Al 99,0Cu]	$\geq 60$	140	100	110	160	1	115	125	175	1	135	145	1	160	180	1
	140	200	100	110	160	1	115	125	175	1	135	145	1	160	180	1
	200	400	100	110	160	1	115	125	175	1	135	145	1	160	180	1
EN AW-1200 [Al 99,0]	$\geq 60$	140	95	105	155	1	110	120	170	1	130	140	1	150	170	1
	140	200	95	105	155	1	110	120	170	1	130	140	1	150	170	1
	200	400	95	105	155	1	110	120	170	1	130	140	1	150	170	1
EN AW-3003 [Al Mn1Cu]	$\geq 60$	140	120	145	185	1	145	165	205	1	160	190	1	180	210	0,5
	140	200	120	145	185	1	145	165	205	1	160	190	1	180	210	0,5
	200	400	120	145	185	1	145	165	205	1	160	190	1	180	210	0,5
EN AW-3103 [Al Mn1]	$\geq 60$	140	115	140	180	1	140	160	200	1	160	185	1	180	200	0,5
	140	200	115	140	180	1	140	160	200	1	160	185	1	180	200	0,5
	200	400	115	140	180	1	140	160	200	1	160	185	1	180	200	0,5
EN AW-5005 [Al Mn1(B)]	$\geq 60$	140	125	145	190	1	-	-	-	-	165	185	0,5	-	-	-
	140	200	125	145	190	1	-	-	-	-	165	185	0,5	-	-	-
	200	400	125	145	190	1	-	-	-	-	165	185	0,5	-	-	-
EN AW-6063 [Al Mn0,7Si]	$\geq 60$	140	110	120	170	2	-	-	-	-	160	180	1	180	200	1
	140	200	110	120	170	2	-	-	-	-	160	180	1	180	200	1
	200	400	110	120	170	2	-	-	-	-	160	180	1	180	200	1