



Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 683-2:2024

**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

04/2024



National Foreword

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EUROPEAN STANDARD ^{ILNAS-EN 683-2:2024} **EN 683-2**
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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 27 February 2024.

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

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European foreword

This document (EN 683-2:2024) 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of an identical text or by endorsement, at the latest by October 2024, and conflicting national standards shall be withdrawn at the latest by October 2024.

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

This document supersedes EN 683-2:2006.

EN 683-2:2024 includes the following significant technical changes with respect to EN 683-2:2006:

- replacement of former and cancelled normative reference EN 10002-1 with replacing normative reference EN ISO 6892-1;
- addition of mandatory Clause 3 from the latest CCMC template;
- introduction of alloy EN AW-5052 in Table 2.

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
- Part 3: Tolerances on dimensions and form

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the 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 document are specified in EN 573-3, and the temper designations are defined in EN 515.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 ISO 6892-1, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12258-1 apply. No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Tensile testing

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 ISO 6892-1 noting the following:

- applies to gauges between 60 μm and 400 μm ;
- 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.

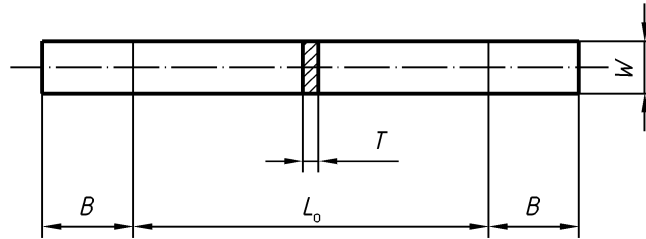
Parallel sided test pieces shall have a width of $(15 \pm 0,1)$ mm and a gauge length of (50 ± 1) mm or (100 ± 1) mm.

Shouldered test pieces shall be in accordance with EN ISO 6892-1.

During the part of the test to determine proof stress, the stress 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.

Dimensions in millimetres



Key

- L_0 gauge length = (50 ± 1) mm or (100 ± 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

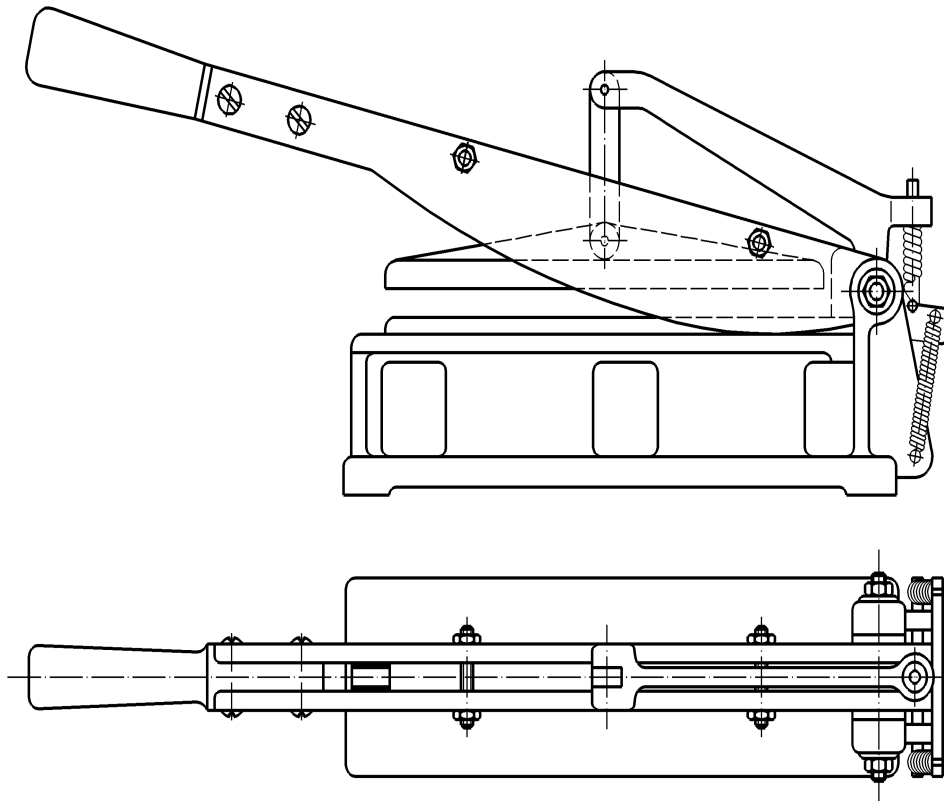


Figure 2 — Example of double-bladed cutter

5 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 ISO 6892-1 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.

6 Rounding of test results

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