
Aeronavtika - Kovinski materiali - Preskusne metode - 001. del: Natezni preskus pri temperaturi okolice

Aerospace series - Metallic materials - Test methods - Part 001: Tensile testing at ambient temperature

Luft- und Raumfahrt - Metallische Werkstoffe - Prüfverfahren - Teil 001: Zugversuch bei Umgebungstemperatur.

Série aérospatiale - Matériaux métalliques - Méthodes d'essais - Partie 001: Essais de traction à température ambiante

Ta slovenski standard je istoveten z: EN 2002-001:2026

SIST EN 2002-001:2026

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**Aerospace series - Metallic materials - Test methods - Part
001: Tensile testing at ambient temperature**

Série aérospatiale - Matériaux métalliques - Méthodes
d'essais - Partie 001: Essais de traction à température
ambiante

Luft- und Raumfahrt - Metallische Werkstoffe -
Prüfverfahren - Teil 001: Zugversuch bei
Umgebungstemperatur.

This European Standard was approved by CEN on 10 November 2025.

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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 2002-001:2026) has been prepared by ASD-STAN.

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2026, and conflicting national standards shall be withdrawn at the latest by July 2026.

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 2002-001:2005.

EN 2002-001:2026 includes the following significant technical changes with respect to EN 2002-001:2005:

- overall editorial improvements;
- subclause 6.3.6.2: “0,003 to 0,007 (0,3 % to 0,7 %) per min., a strain rate of 0,005 (0,5 %) per min is preferred” changed to “The test shall be performed at a strain rate as required in Table 2 and Table 3”.

The strain-rate, mentioned in 6.3.6.2, of 0,003/min to 0,007/min is too low for aluminium and aluminium alloys. ASTM B557 work with a rate of stress application of maximum 11,5 MPa/s. For aluminium with an E-Modulus of about 72 000 MPa this results to a strain-rate of 0,01/min. All testing machines work with a stressing rate in this range of 11,5 MPa/s. So consequently, beginning with leaving the Hooke's line (linear relationship between stress and strain) up to achieving the yield strength $R_{p0,2}$ significant higher strain rates of 0,04/min to 0,05/min at simultaneously significant decreasing stressing rates are determined.

EN ISO 6892-1 allows for materials with an E-Modulus less than 150 000 MPa a stress rate up to 20 MPa/s. The preferred strain rate is 0,015/min for all materials.

- subclause 6.3.6.3: if the test is to be continued to fracture, the strain rate of the parallel length may be increased beyond the proof stress but shall not exceed a value of 0,1 (10 %) per min. Changed to: “If the test is to be continued to fracture, the strain rate of the parallel length may be increased beyond the proof stress but shall not exceed a value required in Table 2 and Table 3”.

The strain-rate, mentioned in 6.3.6.3, of 0,1 (10 %)/min is significantly too low for aluminium and aluminium alloys. All other relevant specifications (ASTM B557 or EN ISO 6892-1) allow a strain rate up to 0,5 (50 %)/min. That means conversely, one tensile test would take five times longer by application of EN 2002-001. The throughput of one test-machine would decrease to 1/5;

- subclauses 6.3.6.2 and 6.3.6.3: Table 2 shows the required test speeds implemented for aluminium and aluminium alloys. Table 3 contains the unchanged requirements for all other metallic materials.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: Austria, Belgium, Bulgaria, Croatia, Cyprus,