

STN	Letectvo a kozmonautika Oceľ X4CrNiMo16-5-1 (1.4418) Tavenie na vzduchu Kalená a popúšťaná tyč, De ≤ 200 mm, 900 MPa ≤ Rm ≤ 1 050 MPa	STN EN 4631 31 2170
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Aerospace series - Steel X4CrNiMo16-5-1 (1.4418) - Air melted - Hardened and tempered - Bars - De 200 mm - 900 MPa Rm 1 050 MPa

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/24

Obsahuje: EN 4631:2024

Oznámením tejto normy sa ruší
STN EN 4631 (31 2170) z augusta 2013

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EUROPEAN STANDARD

EN 4631

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2024

ICS 49.025.10

Supersedes EN 4631:2013

English Version

**Aerospace series - Steel X4CrNiMo16-5-1 (1.4418) - Air
melted - Hardened and tempered - Bars - $De \leq 200$ mm -
 $900 \text{ MPa} \leq Rm \leq 1\,050 \text{ MPa}$**

Série aérospatiale - Acier X4CrNiMo16-5-1 (1.4418) -
Élaboré à l'air - Trempé et revenu - Barres - $De \leq 200$
mm - $900 \text{ MPa} \leq Rm \leq 1\,050 \text{ MPa}$

Luft- und Raumfahrt - Stahl X4CrNiMo16-5-1 (1.4418)
- Lufterschmolzen - Gehärtet- und angelassen - Stangen
- $De \leq 200$ mm - $900 \text{ MPa} \leq Rm \leq 1\,050 \text{ MPa}$

This European Standard was approved by CEN on 26 May 2024.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

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EN 4631:2024 (E)

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European foreword

This document (EN 4631:2024) 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 February 2025, and conflicting national standards shall be withdrawn at the latest by February 2025.

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 4631:2013.

The main changes with respect to the previous edition are as follows:

- EN 4631 (P2), 02/2013 — General editorial improvements;
- Clause 2: EN 2950 removed from normative references;
- Table 1, line 11: correction of Direction of test piece (T instead of LT);
- Table 1, line 17: correction of values for Hardness (addition of optional HV criteria);
- Table 1, line 44: addition of the possibility to do an eddy current testing.

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, 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.

EN 4631:2024 (E)**Introduction**

This document is part of the series of EN metallic material standards for aerospace applications. The general organization of this series is described in EN 4258.

This document has been prepared in accordance with EN 4500-005.

1 Scope

This document specifies the requirements relating to:

Steel X4CrNiMo16-5-1 (1.4418)
Air melted
Hardened and tempered
Bars
 $D_e \leq 200$ mm
 $900 \text{ MPa} \leq R_m \leq 1\,050 \text{ MPa}$

for aerospace applications.

NOTE Other common designation:

- AIR: Z 8 CND 17-04;
- only the chemical composition of this document is considered.

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 2951, *Aerospace series — Metallic materials — Micrographic determination of content of non-metallic inclusions*

EN 4050-1, *Aerospace series — Test method for metallic materials — Ultrasonic inspection of bars, plates, forging stock and forgings — Part 1: General requirements*

EN 4050-4, *Aerospace series — Test method for metallic materials — Ultrasonic inspection of bars, plates, forging stock and forgings — Part 4: Acceptance criteria*

EN 4700-002, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 002: Bar and section*

EN ISO 643, *Steels — Micrographic determination of the apparent grain size (ISO 643:2019, corrected version 2023-11)*

AMS 2315,¹ *Determination of Delta Ferrite Content*

ASTM A604,² *Standard Practice for Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets*

ASTM E340,² *Standard Practice for Macroetching Metals and Alloys*

ASTM E381,² *Standard Method of Macroetch Testing Steel Bars, Billets, Blooms, and Forgings*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

¹ Published by: Society of Automotive Engineers (SAE), available at: <https://www.sae.org/>.

² Published by: American Society for Testing and Materials (ASTM International), available at: <https://www.astm.org/>.