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SIST EN 2475:2018

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EUROPEAN STANDARD

EN 2475

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2018

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English Version

**Aerospace series - Steel 30CrNiMo8 (1.6580) - Air melted -
Hardened and tempered - Bar for machining - $D_e \leq 100$
mm - $1\ 100\ \text{MPa} \leq R_m \leq 1\ 300\ \text{MPa}$**

Série aéronautique - Acier 30CrNiMo8 (1.6580) -
Élaboré à l'air - Durci par trempe et revenu - Barre
pour usinage - $D_e \leq 100\ \text{mm}$ - $1\ 100\ \text{MPa} \leq R_m \leq 1\ 300$
MPa

Luft- und Raumfahrt - Stahl 30CrNiMo8 (1.6580) -
Lufterschmolzen - Gehärtet und angelassen - Stangen
zur spanenden Bearbeitung - $D_e \leq 100\ \text{mm}$ - $1\ 100\ \text{MPa}$
 $\leq R_m \leq 1\ 300\ \text{MPa}$

This European Standard was approved by CEN on 27 May 2018.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents		Page
European foreword		3
Introduction		4
1	Scope	5
2	Normative references	5
3	Requirements	5

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[SIST EN 2475:2018](https://standards.iteh.ai/catalog/standards/sist/4ad90e3c-582b-45ce-bb07-13af972bc76c/sist-en-2475-2018)

<https://standards.iteh.ai/catalog/standards/sist/4ad90e3c-582b-45ce-bb07-13af972bc76c/sist-en-2475-2018>

European foreword

This document (EN 2475:2018) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

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

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 February 2019, and conflicting national standards shall be withdrawn at the latest by February 2019.

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.

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

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<https://standards.iteh.ai/catalog/standards/sist/4ad90e3c-582b-45ce-bb07-13af972bc76c/sist-en-2475-2018>

EN 2475:2018 (E)

Introduction

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

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1 Scope

This European Standard specifies the requirements relating to:

Steel 30CrNiMo8 (1.6580)
Air melted
Hardened and tempered
Bar for machining
 $D_e \leq 100$ mm
 $1\ 100\ \text{MPa} \leq R_m \leq 1\ 300\ \text{MPa}$

for aerospace applications.

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 2043, *Aerospace series — Metallic materials — General requirements for semi-finished product qualification (excluding forgings and castings)*

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

EN 4258, *Aerospace series — Metallic materials — General organization of standardization — Links between types of EN standards and their use*

EN 4500-005, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 005: Specific rules for steels*

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

3 Requirements

See Table 1.

EN 2475:2018 (E)

Table 1 — Requirements for steel 30CrNiMo8 (1.6580)

1	Material designation		Steel 30CrNiMo8 (1.6580)								
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Fe
		min.	0,26	0,15	0,30	–	–	1,80	0,30	1,80	Base
		max.	0,34	0,35	0,60	0,025	0,020	2,30	0,50	2,30	
3	Method of melting		Air melted								
4.1	Form		Bar for machining								
4.2	Method of production		–								
4.3	Limit dimension(s)	mm	$D_e \leq 100$								
5	Technical specification		EN 4700-002								

6.1	Delivery condition		Softened			Hardened and tempered $830\text{ °C} \leq \theta \leq 870\text{ °C} / \text{AC}$ or OQ $+ \theta \geq 555\text{ °C} / \text{AC}$					
	Heat treatment		–			–					
6.2	Delivery condition code		A			U					
7	Use condition		Hardened and tempered			Delivery condition					
	Heat treatment		Delivery condition $+ 830\text{ °C} \leq \theta \leq 870\text{ °C} / \text{AC}$ or OQ $+ \theta \geq 555\text{ °C} / \text{AC}$			–					

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Characteristics
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8.1	Test sample(s)		See EN 4700-002.								
8.2	Test piece(s)		See EN 4700-002. https://standards.iteh.ai/catalog/standards/sist/4ad90e3c-582b-45ce-bb07-13a912a06c/sist-en-2475-2018								
8.3	Heat treatment		Softened			Use condition					
9	Dimensions concerned	mm	a or $D \leq 100$			$D_e \leq 100$					
10	Thickness of cladding on each face	%	–			–					
11	Direction of test piece		–			L					
12	Temperature	θ	°C		–			Ambient			
13	Proof stress	$R_{p0,2}$	MPa		–			≥ 900			
14	T Strength	R_m	MPa		–			$1\ 100 \leq R_m \leq 1\ 300$			
15	Elongation	A	%		–			≥ 10			
16	Reduction of area	Z	%		–			–			
17	Hardness		$\leq 248\text{ HB}; \leq 261\text{ HV}^a$			$331 \leq \text{HB} \leq 388; 350 \leq \text{HV} \leq 410^a$					
18	Shear strength	R_c	MPa		–			–			
19	Bending	k	–		–			–			
20	Impact strength		–			$KU \geq 25\text{ J}$; Notch direction T					
21	Temperature	θ	°C		–			–			
22	Time		h		–			–			
23	Stress	σ_a	MPa		–			–			
24	Elongation	a	%		–			–			
25	Rupture stress	σ_R	MPa		–			–			
26	Elongation at rupture	A	%		–			–			
27	Notes (see line 98)		a			a					

44	External defects	-	See EN 4700-002.
50	Cleanliness/inclusion content (micro-cleanness)	-	See EN 4700-002.
		7	Category 1
61	Internal defects	-	See EN 4700-002.
		1	EN 4050-1
		6	May be tested either on the product or at an earlier stage of manufacturing.
		7	Class 2
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95	Marking inspection	-	See EN 4700-002.
96	Dimensional inspection	-	See EN 4700-002.
98	Notes	-	^a HV for $D \leq 5$ mm.
99	Typical use	-	-