
Aeronavtika - Aluminijeva zlitina AL-P7175 - T73511 - Ekstrudirane palice in profili - a ali $D \leq 150$ mm

Aerospace series - Aluminium alloy AL-P7175 - T73511 - Extruded bar and section - a or $D \leq 150$ mm

Luft- und Raumfahrt - Aluminiumlegierung AL-P7175 - T73511 - Stranggepreßte Stangen und Profile - a oder $D \leq 150$ mm

Série aérospatiale - Alliage d'aluminium AL-P7175 - T73511 - Barres et profilés filés - a ou $D \leq 150$ mm

[SIST EN 4293:2014](https://standards.iteh.ai/catalog/standards/sist/0f2d4842-8ea4-427e-b24a-6c9bfa7712c0/sist-en-4293-2014)

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Ta slovenski standard je istoveten z: EN 4293:2014

ICS:

49.025.20

Aluminij

Aluminium

SIST EN 4293:2014

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4293

April 2014

ICS 49.025.20

English Version

**Aerospace series - Aluminium alloy AL-P7175 - T73511 -
Extruded bar and section - a or D $\leq$ 150 mm**

Série aérospatiale - Alliage d'aluminium AL-P7175 - T73511
- Barres et profilés filés - a ou D $\leq$ 150 mm

Luft- und Raumfahrt - Aluminiumlegierung AL-P7175 -
T73511 - Stranggepresste Stangen und Profile - a oder D $\leq$
150 mm

This European Standard was approved by CEN on 4 January 2014.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 4293:2014) 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 October 2014, and conflicting national standards shall be withdrawn at the latest by October 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 4293:2014 (E)**Introduction**

This 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 standard has been prepared in accordance with EN 4500-2.

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1 Scope

This European Standard specifies the requirements relating to:

Aluminium alloy AL-P7175-
T73511
Extruded bar and section
 a or $D \leq 150$ mm

for aerospace applications.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

EN 4400-3, *Aerospace series — Aluminium and aluminium alloy wrought products — Technical specification — Part 3: Bar and section* ¹⁾

EN 4500-2, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 2: Specific rules for aluminium, aluminium alloys and magnesium alloys* ¹⁾

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¹⁾ Published as ASD-STAN Prestandard at the date of publication of this standard (www.asd-stan.org).

EN 4293:2014 (E)

1	Material designation		Aluminium alloy AL-P7175-										
2	Chemical composition %	Element	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others		Al
											Each	Total	
		min.	–	–	1,2	–	2,1	0,18	5,1	–	–	–	Base
		max.	0,15	0,20	2,0	0,10	2,9	0,28	6,1	0,10	0,05	0,15	
3	Method of melting		–										
4.1	Form		Bar and section										
4.2	Method of production		Extruded										
4.3	Limit dimension(s)	mm	a or $D \leq 150$										
5	Technical specification		EN 4400-3										

6.1	Delivery condition	T73511											
	Heat treatment	$455\text{ °C} \leq \theta \leq 475\text{ °C}$ / WQ $\theta \leq 40\text{ °C}$ + 1 % $\leq$ controlled stretched $\leq 3\%$ + minor straightening + $105\text{ °C} \leq \theta \leq 125\text{ °C}$ / $6\text{ h} \leq t \leq 24\text{ h}$ + $172\text{ °C} \leq \theta \leq 182\text{ °C}$ / $6\text{ h} \leq t \leq 16\text{ h}$											
6.2	Delivery condition code	U											
7	Use condition	T73511											
	Heat treatment	Delivery condition											

Characteristics

8.1	Test sample(s)			See EN 4400-3.					
8.2	Test piece(s)			See EN 4400-3.					
8.3	Heat treatment			Use condition					
9	Dimensions concerned	mm	a or $D \leq 10$	$10 < a$ or $D \leq 20$	$20 < a$ or $D \leq 50$	$50 < a$ or $D \leq 75$	$75 < a$ or $D \leq 120$	$120 < a$ or $D \leq 150$	
10	Thickness of cladding on each face	%	–						
11	Direction of test piece		L	L	L	L	L	L	
12	Temperature	θ	°C	Ambient	Ambient	Ambient	Ambient	Ambient	
13	Proof stress	$R_{p0,2}$	MPa	≥ 400	≥ 420	≥ 415	≥ 410	≥ 390	
14	Strength	R_m	MPa	≥ 470	≥ 485	≥ 485	≥ 475	≥ 470	
15	Elongation	A	%	$\geq 8^a$	≥ 8	≥ 8	≥ 8	≥ 7	
16	Reduction of area	Z	%	–	–	–	–	–	
17	Hardness	HB	–	–					
18	Shear strength	R_c	MPa	–					
19	Bending	k	–	–					
20	Impact strength		–						
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						

32	Electrical conductivity	–	See EN 4400-3.			
		3	Measurement on the surface of the sample from which tensile specimens are taken.			
		7	$\gamma \geq 23 \text{ MS/m}$	Acceptable		
			$22 \text{ MS/m} \leq \gamma < 23 \text{ MS/m}$	Acceptable if $R_{p0,2} L \leq R_{p0,2} \text{ min. } L + 85 \text{ MPa}$ or if stress corrosion test acceptable		
			$\gamma < 22 \text{ MS/m}$	Non acceptable		
39	Stress corrosion for qualification	–	See EN 4400-3.			
		3	$a \text{ or } D > 25 \text{ mm}$			
		6	$\sigma = 70 \% R_{p0,2} \text{ min. } L$			
		7	$t = 20 \text{ days}$			
40	Fracture toughness (K_{1C}) for qualification	–	See EN 4400-3.			
		7	Dimensions (mm)	$T - L$ $\text{MPa}\sqrt{\text{m}}$		
			$40 \leq a \text{ or } D \leq 150$	≥ 25		
44	External defects	–	See EN 4400-3.			
51	Macrostructure	–	See EN 4400-3.			
61	Internal defects	–	See EN 4400-3.			
82	Batch uniformity	–	See EN 4400-3.			
		7	Electrical conductivity			
			or			
			Hardness	–	HBW	140 (typical value)
				δ		$\leq 20 \text{ per product}$
Δ	$\leq 30 \text{ per batch}$					
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95	Marking inspection	–	See EN 4400-3.			
96	Dimensional inspection	–	See EN 4400-3.			
98	Notes	–	^a Or $A_{50\text{mm}} \geq 7 \%$.			
99	Typical use	–	–			