



# SLOVENSKI STANDARD

## SIST EN 2127:2001

01-januar-2001

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**Aerospace series - Aluminium alloy AL-P7075-T73511 - Extruded bars and sections a or D < or = 100 mm**

Aerospace series - Aluminium alloy AL-P7075-T73511 - Extruded bars and sections a or D < or = 100 mm

Luft- und Raumfahrt - Aluminiumlegierung AL-P7075-T73511 - Stranggepreßte Stangen und Profile a oder D < oder = 100 mm

Série aérospatiale - Alliage d'aluminium AL-P7075-T73511 - Barres et profilés filés a ou D < ou = 100 mm

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**Ta slovenski standard je istoveten z: EN 2127:1992**

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**ICS:**

49.025.20      Aluminij

Aluminium

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**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 2127**

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Key words : Aircraft industry, metal bars, metal sections, aluminium alloys, specifications, chemical composition, dimensions, characteristics

English version

**Aerospace series**  
**Aluminium alloy AL-P7075-**  
**T73511**  
**Extruded bars and sections**  
**a or D ≤ 100 mm**

**Série aéronautique**  
**Alliage d'aluminium AL-P7075-**  
**T73511**

**Barres et profilés filetés**  
**a ou D ≤ 100 mm**

**Luft- und Raumfahrt**  
**Aluminiumlegierung AL-P7075-**  
**T73511**

**Stranggeprägte Stangen und Profile**  
**a oder D ≤ 100 mm**

This European Standard was accepted by CEN on 1992-03-09. CEN members are bound to comply with the requirements of CEN 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 Central Secretariat 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 CEN Central Secretariat has the same status as the official versions.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat : Rue de Stassart, 36, B—1050 Bruxelles

### Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries and votes carried out in accordance with the rules of this Association, this Standard has successively received the approval of the National Associations and the Official Services of the member countries of AECMA, 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 March 1993, and conflicting national standards shall be withdrawn at the latest by March 1993.

## iTeh STANDARD PREVIEW

In accordance with the Common CEN/CENELEC Rules the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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## 0 Introduction

For the use of this standard, see EN 2500-2.

## 1 Scope

This standard specifies the requirements relating to extruded bars and sections in aluminium alloy AL-P7075-, for use in the T73511 <sup>1)</sup> condition, a or D  $\leq$  100 mm, for aerospace applications.

This standard may also be used to supply material in the T73510 or T6510 condition, if the purchaser specifies this condition on the order. In this case the designation of line 97 shall not be used.

## 2 References

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- EN 2004-1 Aerospace series - Test methods for aluminium and aluminium alloy products - Part 1 - Determination of electrical conductivity of wrought aluminium alloys <sup>2)</sup>
- EN 2047 Beaded L-section aluminium alloy extrusions - Dimensions - Aerospace series <sup>2)</sup>
- EN 2048 L-section aluminium alloy extrusions - Dimensions - Aerospace series<sup>2)</sup>
- EN 2049 Channel section aluminium alloy extrusions - Dimensions - Aerospace series<sup>2)</sup>
- EN 2050 T-section aluminium alloy extrusions - Dimensions - Aerospace series <sup>2)</sup>
- EN 2070-3 Aerospace series - Aluminium and aluminium alloy wrought products - Technical specification - Part 3 - Bars and sections
- EN 2134 Round aluminium alloy bars - Dimensions - Aerospace series <sup>2)</sup>
- EN 2341 Aluminium and aluminium alloy square and rectangular extruded bars - Dimensions - Aerospace series <sup>2)</sup>
- EN 2500-2 Aerospace series - Instructions for the drafting and use of metallic material standards - Part 2 - Specific requirements for aluminium, aluminium alloys and magnesium alloys <sup>3)</sup>
- EN 2600 Aerospace series - Designation of metallic semi-finished products - Rules <sup>3)</sup>.

1) Formerly incompletely designated as T7351.

2) Published as AECMA standard at the date of publication of this standard.

3) Published as AECMA pre-standard at the date of publication of this standard.

1	Material designation	Aluminium alloy AL-P7075-												
2	Chemical composition %	Element	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti+Zr	Ti	Others		Al
												Each	Total	
		min.	-	-	1,2	-	2,1	0,18	5,1	-	-	-	-	-
max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,25	0,20	0,05	0,15			
3	Method of melting	-												
4	Form Method of production Limit dimensions (mm)	Bars and sections Extruded a or D ≤ 100												
5	5.1 Technical specification	EN 2070-3												
	5.2 Dimensional standards	EN 2047, EN 2048, EN 2049, EN 2050, EN 2134, EN 2341												

6	6.1 Delivery condition and heat treatment	T6511 $460^{\circ}\text{C} \leq \theta \leq 470^{\circ}\text{C} / \text{WQ } \theta \leq 40^{\circ}\text{C}$ $+ 1\% \leq \text{stretched} \leq 3\%$ and minor straightening allowable $+ 105^{\circ}\text{C} \leq \theta \leq 125^{\circ}\text{C} / 20 \text{ h} \leq t \leq 30 \text{ h}$					T73511 $460^{\circ}\text{C} \leq \theta \leq 470^{\circ}\text{C} / \text{WQ } \theta \leq 40^{\circ}\text{C}$ $+ 1\% \leq \text{stretched} \leq 3\%$ and minor straightening allowable $+ 105^{\circ}\text{C} \leq \theta \leq 125^{\circ}\text{C} / 6 \text{ h} \leq t \leq 24 \text{ h}$ $+ 172^{\circ}\text{C} \leq \theta \leq 182^{\circ}\text{C} / 5 \text{ h} \leq t \leq 12 \text{ h}$				
	6.2 Delivery condition code	P					U				
7	Use condition and heat treatment	T73511									
		Delivery condition $+ 172^{\circ}\text{C} \leq \theta \leq 182^{\circ}\text{C} / 5 \text{ h} \leq t \leq 12 \text{ h}$					Delivery condition				

## Characteristics

8	Sample Test piece Heat treatment	(standards.iteh.ai) Use condition: T73511												
9	Dimensions concerned	mm	$a \leq 10$	$10 < a \leq 20$	$20 < a \text{ or } D \leq 50$	$50 < a \text{ or } D \leq 75$	$75 < a \text{ or } D \leq 100$							
10	Thickness of cladding on each face	%	-											
11	Direction of test piece	L												
12	T	Temperature	$\theta$	$^{\circ}\text{C}$	Ambient temperature									
13		Proof stress	$R_{p0,2}$	MPa	$\geq 400$	$\geq 420$	$\geq 415$	$\geq 410$	$\geq 390$					
14		Strength	$R_m$	MPa	$\geq 470$	$\geq 485$	$\geq 485$	$\geq 475$	$\geq 470$					
15		Elongation	A	%	$\geq 8^{1)}$	$\geq 8$	$\geq 8$	$\geq 8$	$\geq 7$					
16		Reduction of area	Z	%	-									
17	Hardness	-												
18	Shear strength	$R_c$	MPa	-										
19	Bending	k	-	-										
20	Impact strength	-												
21	C	Temperature	$\theta$	$^{\circ}\text{C}$	-									
22		Time		h	-									
23		Stress	$\sigma_a$	MPa	-									
24		Elongation	a	%	-									
25		Rupture stress	$\sigma_R$	MPa	-									
26		Elongation at rupture	A	%	-									
27	Notes (see line 98)	1)												

32	Electrical conductivity	1	See EN 2004-1			
		6	Measurement on specimen for tensile test (flat machined surface if necessary)			
		7	$\gamma \geq 23,0 \text{ MS/m}$	Acceptable		
			$22,0 \text{ MS/m} \leq \gamma < 23,0 \text{ MS/m}$	Acceptable if $R_{p0,2} L \leq R_{p0,2} \text{ min. } L + 85 \text{ MPa}$ or if $\gamma$ measured within 15 min of a re-solution treatment shows a loss of at least 3,5 MS/m from its initial value. Not acceptable otherwise.		
	$\gamma < 22,0 \text{ MS/m}$	Not acceptable				
39	Stress corrosion	2	In case of dispute			
		3	a or D $\geq 20 \text{ mm}$			
		6	$\sigma = 75\% R_{p0,2} \text{ min. } L / t = 20 \text{ d}$			
44	External defects	-	See EN 2070-3			
51	Macrostructure	7	Back end defects : see EN 2070-3			
61	Internal defects	-	See EN 2070-3			
82	Batch uniformity	1	See EN 2070-3			
		5		T6511	T73511	
		7	Electrical conductivity	$\gamma = 19 \text{ MS/m}$ (typical value)	See EN 2070-3	
			or			
		7	Hardness	150 HB (typical value)	140 HB (typical value)	
		$\delta = \leq 20 \text{ HB}$ per product $\Delta = \leq 30 \text{ HB}$ per batch	$\delta = \leq 20 \text{ HB}$ per product $\Delta = \leq 30 \text{ HB}$ per batch			
			SIST EN 2127:2001 <a href="https://standards.iteh.ai/catalog/standards/sist/e6b1b011-d4ce-4e6f-81e2-101bcb8203c/sist-en-2127-2001">https://standards.iteh.ai/catalog/standards/sist/e6b1b011-d4ce-4e6f-81e2-101bcb8203c/sist-en-2127-2001</a>			
97	Designation		For extruded bars, see EN 2600. For extruded sections, see relevant drawing			
98	Notes		1) or $A_{50 \text{ mm}} \geq 7\%$			
99	Typical use					