

SLOVENSKI STANDARD oSIST prEN 4900:2020

01-oktober-2020

Aeronavtika - Aluminijeve zlitine 5086 - H111 - Ekstrudirane palice - 10 mm ≤ D ≤ 300 mm

Aerospace series - Aluminium alloy 5086 - H111 - Extruded bars - 10 mm≤ D ≤ 300 mm

Luft- und Raumfahrt - Aluminiumlegierung 5086 - H111 - gezogene Stange - 10 mm ¿ D ¿ 300 mm

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Série aérospatiale - Alliage d'aluminium 5086 - H111 - Barres étirées - 10 mm ≤ D ≤ 300 mm

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Ta slovenski standard je istoveten z log/stanpren 4900 bf4-de21-456f-8fcb-fbef7a6bba4e/osist-pren-4900-2020

ICS:

49.025.20 Aluminij Aluminium

oSIST prEN 4900:2020 en,fr,de

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EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

DRAFT prEN 4900

July 2020

ICS

English Version

Aerospace series - Aluminium alloy 5086 - H111 - Extruded bars - 10 mm \leq D \leq 300 mm

Série aérospatiale - Alliage d'aluminium 5086 - H111 - Barres étirées - 10 mm \leq D \leq 300 mm

Luft- und Raumfahrt - Aluminiumlegierung 5086 - H111 - gezogene Stange - 10 mm \leq D \leq 300 mm

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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

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European foreword

This document (prEN 4900:2020) 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-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

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Introduction

This document is part of the series of 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 4500-2.

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1 Scope

This document specifies the requirements relating to:

- Aluminium alloy 5086
- H111
- Extruded bars
- $10 \text{ mm} \le D \le 300 \text{ mm}$

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 4400-3, Aerospace series — Aluminium and aluminium— and magnesium— alloys — Technical specification — Part 3: Aluminium and aluminium alloy bar and section

3 Terms and definitions STANDARD PREVIEW

No terms and definitions are listed in this document. iteh.ai)

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at http://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

4 Requirements

See Table 1.

 ${\bf Table~1-Requirements~for~aluminium~alloy~5086}$

Chemical composition	1	Material designation				Aluminium alloy 5086												
Method of melting	2	Chemical			Others													
min.		composition		Element		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total	Al		
max			%	min.		_	_	_	0,20	3,5	0,05	_	_	_	_	_		
4.1 Form			ma			0,40	0,50	0,10	0,7	4,5	0,25	0,25	0,15	0,05	0,15	Rem.		
4.2 Method of production	3	Me	ethod of melting				I			I	_					I		
Limit dimension(s) mm 10 ≤ D ≤ 300	4.1	Fo	orm	Bars														
Technical specification	4.2	Method of production			Extruded													
6.1 Delivery condition	4.3	Liı	mit dimension(s	ension(s) mm			$10 \le D \le 300$											
Heat treatment	5	Те	Technical specification			EN 4400-3												
Heat treatment	<i>c</i> 1	Da	linome oon diti on															
6.2 Delivery condition Delivery condition H1111	6.1		-	1			H111											
The condition	6.0																	
Heat treatment Delivery condition Teh STANDARD characteristics EW				code														
STANDARD Characteristics EW	7																	
8.1 Test sample(s) 8.2 Test piece(s) 8.3 Heat treatment 9 Dimensions concerned num 10 Thickness of cladding on each face 11 Direction of test piece 12 Temperature 13 Proof stress 14 Proof stress 15 Reduction 16 Reduction 17 Hardness 18 HB 19 HB = 10 Temperature 19 Bending 10 Reduction 10 Thickness 10 Temperature 10 Temperature 11 Direction of test piece 12 Temperature 13 Proof stress 14 Proof stress 15 Reduction 16 Reduction 17 Hardness 18 HB 19 HB = 10 Temperature 19 Bending 10 Temperature 10 Proof stress 10 Proof stress 10 Proof stress 10 Proof stress 11 Proof stress 12 Proof stress 12 Proof stress 13 Proof stress 14 Proof stress 15 Proof stress 16 Proof stress 17 Reduction 18 Shear strength 19 Reduction 10 Proof stress 10 Proof stress 10 Proof stress 11 Proof stress 12 Proof stress 12 Proof stress 13 Proof stress 14 Proof stress 15 Proof stress 16 Proof stress 16 Proof stress 17 Proof stress 18 Proof stress 19 Proof stress 10 Proof stress 11 Proof stress 12 Proof stress 12 Proof stress 13 Proof stress 14 Proof stress 15 Proof stress 16 Proof stress 16 Proof stress 16 Proof stress 17 Proof stress 18 Proof stress 10 Proof		Не	eat treatment			iTal	ь с п		DAT				X 7					
8.2 Test piece(s) EN 4400-3		1				116	11 2 1	AIN.	DAR				V V					
8.3 Heat treatment	-					(Standards.iten.ar)												
8.3 Heat treatment	8.2					GICT mrFN 4000,2020												
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	8.3	Heat treatment				tps://standards.iteh.ai/catalog/standards/sist/1bd51bf4-de21-456f-8fcb-												
10 each face 90	9				fb40 €0 €425 sist-pren-4900-20 20 125 ≤ D ≤ 300													
12 Temperature θ $^{\circ}$ C Ambient 13 Proof stress $R_{p0,2}$ MPa* ≥ 110 ≥ 100 14 T Strength R_m MPa* ≥ 250 ≥ 230 15 Elongation A 96 ≥ 12 ≥ 12 16 Reduction $^{\circ}$ f $^{\circ}$ g $^{\circ}$ g	10	Thickness of cladding on each face			_													
13 Proof stress $R_{p0.2}$ MPa* ≥ 110 ≥ 100 14 Total Strength R_m MPa* ≥ 250 ≥ 230 15 Elongation A % ≥ 12 ≥ 12 16 Reduction area G % — — 17 Hardness HB — 70 (for information) 18 Shear strength R_c MPa* — 19 Bending k — — 20 Impact strength — — 21 Temperature θ °C — 22 Time h — 23 Stress G_a MPa* — 24 C Elongation G MPa* — 26 Elongation at rupture G MPa* —	11	Direction of test piece			L													
14 T Strength R_m MPa* ≥ 250 ≥ 230 15 Elongation A % ≥ 12 ≥ 12 16 Reduction area of Z % — 17 Hardness HB — 70 (for information) 18 Shear strength R _c MPa* — 19 Bending k — — 20 Impact strength — — 21 Temperature θ °C — 22 Time h — Stress σa MPa* — 24 Clongation a % — 25 Elongation a % — 26 Elongation at rupture A % —	12	Temperature $ heta$ $^{\circ}$ C			Ambient													
15 Elongation A % ≥ 12 ≥ 12 16 Reduction area of Z % — 17 Hardness HB — 70 (for information) 18 Shear strength R _c MPa* — 19 Bending k — — 20 Impact strength — — 21 Temperature θ °C — 22 Time h — Stress σ _a MPa* — 24 C Elongation a % — Rupture stress σ _R MPa* — Elongation at rupture A % —	13		Proof stress	$R_{\rm p0,2}$	MPa*			≥ 11	0				2	≥ 100				
Reduction area Reduction	14	Т	Strength	$R_{ m m}$	MPa*			≥ 250	0				2	≥ 230				
16 area 2 % — 17 Hardness HB — 70 (for information) 18 Shear strength R_c MPa* — 19 Bending k — — 20 Impact strength — — 21 Temperature θ °C — 22 Time h — Stress σ_a MPa* — 24 C Elongation a % — 25 Rupture stress σ_R MPa* — 26 Elongation at rupture A % —	15		Elongation	A	%			≥ 12						≥ 12				
18 Shear strength R_c MPa^* — 19 Bending k — — 20 Impact strength — — 21 Temperature θ $^{\circ}$ C — 22 Time θ θ — 23 Stress θ θ — 24 Congation θ θ — 25 Rupture stress θ θ — 26 Elongation at rupture θ θ —	16			z	%	_												
19 Bending k — — 20 Impact strength — — 21 Temperature θ °C — 22 Time θ θ — 23 Stress θ θ θ 24 Center of Elongation at rupture θ θ θ 25 Elongation at rupture θ θ θ 26 Elongation at rupture θ θ θ	17	На	ırdness	НВ	_	70 (for information)												
20 Impact strength	18	Sh	Shear strength R _c MPa*		_													
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	19	Ве	Bending k —		_													
Time	20	Impact strength			_													
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	21								_									
24 C Elongation a % — 25 Rupture stress σ _R MPa* — 26 Elongation at rupture A % —	22		Time h		_													
24 Elongation d 70 — 25 Rupture stress σ_R MPa* — 26 Elongation at rupture A % —	23		Stress σ _a MPa*		_													
26 Elongation at rupture — — —	24	С	Elongation	а	%						_							
rupture A 90 —	25		Rupture stress	σ_{R}	MPa*						_							
	26			t A	%						_							
	27	Notes (see line 98)																

28	28 —			_	
32	Electrical	Υ	Ms/m	_	_
	conductivity				_
44	4 External imperfections (visual testing – VT)				See EN 4400-3.
61	Internal (ultrasonic testir	impe ng - U	rfections T)	_	See EN 4400-3.
95	Marking inspecti				STANDARD PREVIEW (standards.iteh.ai) oSIST prEN 4900:2020 s.iteh.ai/catalog/standards/sist/1bd51bf4-de21-456f-8fcb-fbef7a6bba4e/osist-pren-4900-2020 See EN 4400-3.
96 98	Dimensional insp	pectio	11		See EN 4400-3. * 1 MPa = 1 N/mm ² .
					1 M a - 1 M mm .
99	Typical use			_	_