SLOVENSKI STANDARD
SIST EN 2087:2006

01-julij-2006

Aeronavtika ï Aluminijeva zlitina AL-P2014A ï T6 ali T62 ï Ploļ evine in trakovi, platirani ï 0,4 mm ? a ? 6 mm

Aerospace series - Aluminium alloy AL-P2014A - T6 or T62 - Clad sheet and strip - 0,4 mm <or= a <or= 6 mm

Luft- und Raumfahrt - Aluminiumlegierung AL-P2014A - T6 oder T62 - Bleche und Bänder, plattiert - 0,4 mm <or= a <or= 6 mm

Série aérospatiale - Alliage d'aluminium AL-P2014A - T6 ou T62 - Tôles et bandes plaquées - 0,4 mm <or= a <or= 6 mm

Ta slovenski standard je istoveten z: EN 2087:2005

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49.025.20 Aluminij Aluminium

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EUROPEAN STANDARD

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EN 2087

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English Version

Aerospace series - Aluminium alloy AL-P2014A - T6 or T62 - Clad sheet and strip - 0,4 mm ≤ a ≤ 6 mm

Série aérospatiale - Alliage d'aluminium AL-P2014A - T6 ou T62 - Tôles et bandes plaquées - 0,4 mm ≤ a ≤ 6 mm

Luft- und Raumfahrt - Aluminiumlegierung AL-P2014A - T6 oder T62 - Bleche und Bänder, plattiert - 0,4 mm ≤ a ≤ 6 mm

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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 Central Secretariat has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This European Standard (EN 2087:2005) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 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of an identical text or by endorsement, at the latest by April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

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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.

1 Scope

This standard specifies the requirements relating to:

Aluminium alloy AL-P2014A
T6 or T62
Clad sheet and strip
0,4 mm ≤ *a* ≤ 6 mm

for aerospace applications.

2 Normative references

The following referenced documents are indispensable for the application 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 4258, *Aerospace series — Metallic materials — General organization of standardization — Links between types of EN standards and their use.*

EN 4400-2, *Aerospace series — Aluminium and aluminium alloy wrought products — Technical specification — Part 2: Sheet and strip.*[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)]

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

1	Material designation		Aluminium alloy AL-P2014A												
2	Chemical composition %	Element	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Zr + Ti	Others		Al
													Each	Total	
		min.	0,50	–	3,9	0,40	0,20	–	–	–	–	–	–	–	Base
		max.	0,90	0,50	5,0	1,20	0,80	0,10	0,10	0,25	0,15	0,02	0,05	0,15	
3	Method of melting		–												
4.1	Form		Clad sheet and strip												
4.2	Method of production		Rolled												
4.3	Limit dimension(s)	mm	$0,4 \leq a \leq 6$												
5	Technical specification		EN 4400-2												

6.1	Delivery condition	F	T4	T6
	Heat treatment	–	500 °C ≤ θ ≤ 510 °C / WQ θ ≤ 40 °C + θ = ambient / t ≥ 5 d	500 °C ≤ θ ≤ 510 °C / WQ θ ≤ 40 °C + 157 °C ≤ θ ≤ 163 °C / 18 h ≤ t ≤ 22 h or + 170 °C ≤ θ ≤ 180 °C / 7 h ≤ t ≤ 12 h
6.2	Delivery condition code	F	K	U
7	Use condition	T62	T6	T6
	Heat treatment	Delivery condition + 500 °C ≤ θ ≤ 510 °C / WQ θ ≤ 40 °C + 157 °C ≤ θ ≤ 163 °C / 18 h ≤ t ≤ 22 h or + 170 °C ≤ θ ≤ 180 °C / 7 h ≤ t ≤ 12 h	Delivery condition + 157 °C ≤ θ ≤ 163 °C / 18 h ≤ t ≤ 22 h or + 170 °C ≤ θ ≤ 180 °C / 7 h ≤ t ≤ 12 h	Delivery condition

Characteristics

8.1	Test sample(s)			See EN 4400-2.						
8.2	Test piece(s)			See EN 4400-2.						
8.3	Heat treatment			Delivery condition : T4			Use condition : T6 or T62			
9	Dimensions concerned		mm	$0,4 \leq a \leq 1,6$	$1,6 < a \leq 3,2$	$3,2 < a \leq 6$	$0,4 \leq a \leq 0,8$	$0,8 < a \leq 1,6$	$1,6 < a \leq 6$	
10	Thickness of cladding on each face		%	≥ 4	≥ 2	≥ 2	≥ 4	≥ 4	≥ 2	
11	Direction of test piece			–	–	–	LT	LT	LT	
12	T	Temperature	θ °C	–	–	–	Ambient	Ambient	Ambient	
13	T	Proof stress	$R_{p0,2}$ MPa	–	–	–	≥ 345	≥ 345	≥ 355	
14	T	Strength	R_m MPa	–	–	–	≥ 415	≥ 420	≥ 420	
15	T	Elongation	A %	–	–	–	$A_{50\ mm}$ ≥ 7	$A_{50\ mm}$ ≥ 7	$A_{50\ mm}$ ≥ 8	
16	T	Reduction of area	Z %	–						
17	Hardness			–						
18	Shear strength	R_c	MPa	–						
19	Bending	k	–	1,5 ; α = 180°	1,5 ; α = 180°	2 ; α = 180°	–			
20	Impact strength			–						
21	C	Temperature	θ °C	–						
22	C	Time	h	–						
23	C	Stress	σ_a MPa	–						
24	C	Elongation	a %	–						
25	C	Rupture stress	σ_R MPa	–						
26	C	Elongation at rupture	A %	–						
27	Notes (see line 98)			–						

44	External defects	–	See EN 4400-2.
62	Diffusion in the cladding	–	See EN 4400-2.

72	Cladding chemical composition %	Material designation	Aluminium AL-P1050A									
		Element	Si	Fe	Cu	Mn	Mg	Zn	Ti	Others		Al
										Each	Total	
		min.	–	–	–	–	–	–	–	–	–	99,50
		max.	0,25	0,40	0,05	0,05	0,05	0,07	0,05	0,03	–	–
		or as an alternative, if agreed between manufacturer and purchaser										
		Material designation	Aluminium AL-P1145-									
		Element	Si + Fe	Cu	Mn	Mg	Zn	V	Ti	Others		Al
										Each	Total	
		min.	–	–	–	–	–	–	–	–	–	99,45
		max.	0,55	0,05	0,05	0,05	0,05	0,05	0,03	0,03	–	–

82	Batch uniformity	–	See EN 4400-2.		
		5	–	T4	T6
		7	Electrical conductivity	See EN 4400-2.	See EN 4400-2.

95	Marking inspection	–	See EN 4400-2.
96	Dimensional inspection	–	See EN 4400-2.
98	Notes	–	–
99	Typical use	–	–