SLOVENSKI STANDARD
SIST EN 4215:2005

01-november-2005

Aerospace series - Aluminium alloy AL-P7175-T651 - Plate - 6 mm <a <80 mm

Aerospace series - Aluminium alloy AL-P7175-T651 - Plate - 6 mm <a <80 mm

Luft- und Raumfahrt - Aluminiumlegierung AL-P7175-T651 - Platten - 6 mm <a <80 mm

Série aérospatiale - Alliage d'aluminium AL-P7175-T651 - Tôles épaisses - 6 mm <a <80 mm

Ta slovenski standard je istoveten z: **EN 4215:2005**

ICS:

49.025.20	Aluminij	Aluminium

SIST EN 4215:2005 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4215

June 2005

ICS 49.025.20

English version

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

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Ref. No. EN 4215:2005: E

Foreword

This document (EN 4215:2005) 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of an identical text or by endorsement, at the latest by December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

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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-P7175-
T651
Plate
6 mm < *a* ≤ 80 mm

for aerospace application.

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 4400-1, *Aerospace series — Aluminium and aluminium alloy wrought products — Technical specification — Part 1: Plate.* [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-P7175-										
2	Chemical composition %	Element	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total	Al
		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		Plate										
4.2	Method of production		Rolled										
4.3	Limit dimension(s)	mm	$6 < a \leq 80$										
5	Technical specification		EN 4400-1										

6.1	Delivery condition	T651
	Heat treatment	460 °C ≤ θ ≤ 500 °C / WQ θ ≤ 40 °C + 1,5 % ≤ controlled stretched ≤ 3 % + 115 °C ≤ θ ≤ 125 °C / 20 h ≤ t ≤ 30 h or 125 °C ≤ θ ≤ 138 °C / 12 h ≤ t ≤ 18 h
6.2	Delivery condition code	U
7	Use condition	T651
	Heat treatment	Delivery condition

8.1	Test sample(s)				See EN 4400-1.						
8.2	Test piece(s)				See EN 4400-1.						
8.3	Heat treatment				Use condition.						
9	Dimensions concerned			mm	$6 < a \leq 12{,}5$		$12{,}5 < a \leq 25$		$25 < a \leq 40$		
10	Thickness of cladding on each face			%	–				–		
11	Direction of test piece				L	LT	L	LT	L	LT	ST
12	T	Temperature	θ	°C	Ambient		Ambient		Ambient		
13		Proof stress	$R_{p0,2}$	MPa	≥ 470	≥ 460	≥ 470	≥ 470	≥ 470	≥ 460	≥ 420
14		Strength	R_m	MPa	≥ 540	≥ 540	≥ 540	≥ 540	≥ 530	≥ 530	≥ 490
15		Elongation	A	%	$A_{50\,mm}$ ≥ 8	$A_{50\,mm}$ ≥ 8	≥ 6	≥ 6	≥ 5	≥ 5	≥ 2 [a]
16		Reduction of area	Z	%	–						

continued

9	Dimensions concerned			mm	$40 < a \leq 60$			$60 < a \leq 80$		
10	Thickness of cladding on each face			%	–			–		
11	Direction of test piece				L	LT	ST	L	LT	ST
12	T	Temperature	θ	°C	Ambient			Ambient		
13		Proof stress	$R_{p0,2}$	MPa	≥ 455	≥ 440	≥ 420	≥ 430	≥ 420	≥ 400
14		Strength	R_m	MPa	≥ 520	≥ 520	≥ 490	≥ 490	≥ 490	≥ 470
15		Elongation	A	%	≥ 6	≥ 5	≥ 2 [a]	≥ 5	≥ 4	≥ 2 [a]
16		Reduction of area	Z	%	–					
17	Hardness				–					
18	Shear strength		R_c	MPa	–					
19	Bending		k	–	–					
20	Impact strength				–					
21	C	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]					

44	External defects	–	See EN 4400-1.			
61	Internal defects	–	See EN 4400-1.			
82	Batch uniformity	–	See EN 4400-1.			
		7	Electrical conductivity	γ	MS/m	19,0 (Typical value)
95	Marking inspection	–	See EN 4400-1.			
96	Dimensional inspection	–	See EN 4400-1.			
98	Notes	–	[a] Alternatively $A_{4D} \geq 2,5$ if required by the purchaser.			
99	Typical use	–	–			

100	–	Product qualification	–	See EN 4400-1.
				Qualification programme to be agreed between manufacturer and purchaser.