BRITISH STANDARD

BS EN
3998:2007

Aerospace series — Aluminium alloy AL-P2024-T4 or T42 — Sheet and strip 0,3 mm ≤ a ≤ 6 mm

The European Standard EN 3998:2007 has the status of a British Standard

ICS 77.150.10

BSI
British Standards

National foreword

This British Standard was published by BSI. It is the UK implementation of EN 3998:2007.

The UK participation in its preparation was entrusted by Technical Committee ACE/61, Metallic materials for aerospace purposes, to Panel ACE/61/-/24, Light alloys.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2007

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English Version

Aerospace series - Aluminium alloy AL-P2024-T4 or T42 - Sheet and strip 0,3 mm ≤ a ≤ 6 mm

Série aérospatiale - Alliage d'aluminium AL-P2024-T4 ou T42 - Tôles et bandes 0,3 mm ≤ a ≤ 6 mm

Luft- und Raumfahrt - Aluminiumlegierung AL-P2024-T4 oder T42 - Bleche und Bänder 0,3 mm ≤ a ≤ 6 mm

This European Standard was approved by CEN on 12 June 2006.

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

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Ref. No. EN 3998:2007: E

Contents

Foreword

This document (EN 3998:2007) has been prepared by the AeroSpace and Defense 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of an identical text or by endorsement, at the latest by September 2007, and conflicting national standards shall be withdrawn at the latest by September 2007.

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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-P2024-T4 or T42 — Sheet and strip 0,3 mm ≤ *a* ≤ 6 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 4400-2, *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 ASD Prestandard at the date of publication of this standard.

1	Material designation		Aluminium alloy AL-P2024-										
2	Chemical composition %	Element	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others		Al
											Each	Total	
		min.	—	—	3,8	0,30	1,2	—	—	—	—	—	Base
		max.	0,50	0,50	4,9	0,9	1,8	0,10	0,25	0,15	0,05	0,15	
3	Method of melting		—										
4.1	Form		Sheet and strip										
4.2	Method of production		Rolled										
4.3	Limit dimension(s)	mm	$0,3 \leq a \leq 6$										
5	Technical specification		EN 4400-2										

6.1	Delivery condition	F	O	T4
	Heat treatment	—	—	490 °C ≤ θ ≤ 500 °C / WQ θ ≤ 40 °C + θ = ambient / t ≥ 5 d
6.2	Delivery condition code	F	A	U
7	Use condition	T42		T4
	Heat treatment	Delivery condition + 490 °C ≤ θ ≤ 500 °C / WQ θ ≤ 40°C + θ = ambient / t ≥ 5 d		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: O			Use condition: T4 or T42
9	Dimensions concerned		mm	$0,3 \leq a \leq 1,6$	$1,6 < a \leq 3,2$	$3,2 < a \leq 6$	$0,4 \leq a \leq 6$
10	Thickness of cladding on each face		%	—	—	—	—
11	Direction of test piece			LT	LT	LT	LT
12	T	Temperature	θ °C	Ambient	Ambient	Ambient	Ambient
13		Proof stress	$R_{p0,2}$ MPa	≤ 110	≤ 110	≤ 110	≥ 265
14		Strength	R_m MPa	≤ 220	≤ 220	≤ 220	≥ 430
15		Elongation	A %	$A_{50\ mm} \geq 12$	$A_{50\ mm} \geq 12$	$A_{50\ mm} \geq 12$	$A_{50\ mm} \geq 15$
16		Reduction of area	Z %	—	—	—	—
17	Hardness			—	—	—	—
18	Shear strength		R_c MPa	—	—	—	—
19	Bending		k —	0,5; α = 180°	2; α = 180°	3; α = 180°	—
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)			—			

38	Intergranular corrosion	—	See EN 4400-2.			
		5	T4			
		7	Dimensions (mm)	$0,3 \leq a \leq 1,6$	$1,6 < a \leq 3,2$	$3,2 < a \leq 6$
			Depth of penetration (μm)	≤ 125	≤ 150	≤ 200
44	External defects	—	See EN 4400-2.			
82	Batch uniformity	—	See EN 4400-2			
		5	T4			
		7	Electrical conductivity	γ	MS/m	17,5 (Typical value)
			or			
		7	Hardness	HB	120 (Typical value)	
					$\delta \leq 16$ per product	$\Delta \leq 24$ per batch
95	Marking inspection	—	See EN 4400-2.			
96	Dimensional inspection	—	See EN 4400-2.			
98	Notes	—	—			
99	Typical use	—	—			

100	—	Product qualification	—	See EN 4400-2. Qualification programme to be agreed between manufacturer and purchaser.

BSI — British Standards Institution

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