



SLOVENSKI STANDARD

SIST EN 2731:2005

01-december-2005

Aerospace series - Magnesium alloy MG-C46001 - T6 - Sand casting

Aerospace series - Magnesium alloy MG-C46001 - T6 - Sand casting

Luft- und Raumfahrt - Magnesiumlegierung MG-C46001 - T6 - Sandgussstück

Série aérospatiale - Alliage de magnésium MG-C46001 - T6 - Produit coulé en sable

Ta slovenski standard je istoveten z: EN 2731:2005

SIST EN 2731:2005
<https://standards.iteh.ai/catalog/standards/sist/a1a58761-ceed-4447-a9f1-75160b99c662/sist-en-2731-2005>

ICS:

49.025.15	Neželezove zlitine na splošno	Non-ferrous alloys in general
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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 2731

August 2005

ICS 49.025.15

English Version

Aerospace series - Magnesium alloy MG-C46001 - T6 - Sand casting

Série aérospatiale - Alliage de magnésium MG-C46001 -
T6 - Produit coulé en sable

Luft- und Raumfahrt - Magnesiumlegierung MG-C46001 -
T6 - Sandgußstück

This European Standard was approved by CEN on 22 April 2005.

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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.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 2731:2005) 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 February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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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:

Magnesium alloy MG-C46001
T6
Sand casting

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 2076-3, Aerospace series — Aluminium and magnesium alloy ingots and castings — Technical specification — Part 3: Pre-production and production castings

EN 4258, Aerospace series — Metallic materials — General organization of standardization — Links between types of EN standards and their use.

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		Magnesium alloy MG – C46001 ^a											
2	Chemical composition %	Element	Ag	Cu	Fe	Mn	Ni	Rear Earth	Si	Zn	Zr	Others		Mg
												Each	Total	
		min.	2,0	–	–	–	–	1,8	–	–	0,40	–	–	Base
max.	3,0	0,03	0,01	0,15	0,005	3,0	0,01	0,20	1,0	0,05	0,20			
3	Method of melting		–											
4.1	Form		Sand casting											
4.2	Method of production		Sand casting											
4.3	Limit dimension(s)	mm	–											
5	Technical specification		EN 2076-3											

6.1	Delivery condition		T6										
	Heat treatment		510 °C ≤ θ ≤ 545 °C / 4 h ≤ t ≤ 8 h / WQ 60 °C ≤ θ ≤ 80 °C ^b + 195 °C ≤ θ ≤ 205 °C / 8 h ≤ t ≤ 16 h / Air cool										
6.2	Delivery condition code		U										
7	Use condition		T6										
	Heat treatment		Delivery condition										

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Characteristics
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8.1	Test sample(s)		Separately cast				Cut-up, undesignated location, gated or integral				Cut-up, designated location							
8.2	Test piece(s)		See EN 2076-3.				See EN 2076-3.				See EN 2076-3.							
8.3	Heat treatment		Use condition.				Use condition.				Use condition.							
9	Dimensions concerned	mm	See EN 2076-3.				a ≤ 20				a ≤ 20							
10	Thickness of cladding on each face	%	–				–				–							
11	Direction of test piece		–				–				–							
12	Temperature	θ	°C		Ambient				Ambient				Ambient					
13	Proof stress	R _{p0.2}	MPa		≥ 185				≥ 140 °C				≥ 175 °C					
14	T	Strength	R _m		MPa		≥ 240				≥ 200 °C				≥ 240 °C			
15		Elongation	A		%		≥ 2				≥ 1 °C				≥ 2 °C			
16		Reduction of area	Z		%		–				–							
17	Hardness		–															
18	Shear strength	R _c	MPa		–													
19	Bending	k	–		–													
20	Impact strength		–															
21	Temperature	θ	°C		–													
22	Time		h		–													
23	C	Stress	σ_a		MPa		–											
24		Elongation	a		%		–											
25		Rupture stress	σ_R		MPa		–											
26		Elongation at rupture	A		%		–											
27	Notes (see line 98)		a, b, c															

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44	External defects	–	See EN 2076-3.		
61	Internal defects	–	See EN 2076-3.		
82	Batch uniformity	–	See EN 2076-3.		
		7	Hardness	HB	70 (Typical value)
					$\Delta \leq 20$ per batch
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95	Marking inspection	–	See EN 2076-3.		
96	Dimensional inspection	–	See EN 2076-3.		
98	Notes	–	<p>^a Similar to alloys MSR-B and QE22A</p> <p>^b Unless otherwise advised by the purchaser, the manufacturer may, at his discretion, and especially to minimize distortion in thin sections, alternatively air cool to ambient temperature from the solution heat treatment temperature or use water with quench additives (polymer quench) at $\theta \leq 30$ °C.</p> <p>^c The tensile properties stated may not be consistently achievable in all parts of all castings. Any differing requirements stated on the drawing shall take precedence over those of this material standard.</p>		
99	Typical use	–	–		