



**SLOVENSKI STANDARD**  
**SIST EN 4616:2006**  
**01-julij-2006**

---

**Aeronavtika – Magnezijeva zlitina MG-C18002 - T4 – Kokilno litje**

Aerospace series - Magnesium alloy MG-C18002 - T4 - Chill casting

Luft- und Raumfahrt - Magnesiumlegierung MG-C18002 - T4 - Kokillengussstück

Série aérospatiale - Alliage de magnésium MG-C18002 - T4 - Produit coulé en coquille

**iTeh STANDARD PREVIEW**

**Ta slovenski standard je istoveten z: EN 4616:2006**

---

[SIST EN 4616:2006](https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-af6a-7a229cf2d7ff/sist-en-4616-2006)

<https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-af6a-7a229cf2d7ff/sist-en-4616-2006>

**ICS:**

49.025.15

**SIST EN 4616:2006**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 4616:2006

<https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-affa-7a229cf2d7ff/sist-en-4616-2006>

ICS 49.025.15

English Version

## Aerospace series - Magnesium alloy MG-C18002 - T4 - Chill casting

Série aérospatiale - Alliage de magnésium MG-C18002 -  
T4 - Produit coulé en coquille

Luft- und Raumfahrt - Magnesiumlegierung MG-C18002 -  
T4 - Kokillengußstück

This European Standard was approved by CEN on 26 September 2005.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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.

[SIST EN 4616:2006](https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-af6a-7a229cf2d7ff/sist-en-4616-2006)

<https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-af6a-7a229cf2d7ff/sist-en-4616-2006>



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

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

<b>Contents</b>		<b>Page</b>
<b>Foreword</b> .....		<b>3</b>
<b>Introduction</b> .....		<b>4</b>
<b>1 Scope</b> .....		<b>4</b>
<b>2 Normative references</b> .....		<b>4</b>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 4616:2006  
<https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-af6a-7a229cf2d7ff/sist-en-4616-2006>

## Foreword

This European Standard (EN 4616:2005) 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.

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.

**ITeH STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 4616:2006

<https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-afba-7a229cf2d7ff/sist-en-4616-2006>

## 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-C18002  
T4  
Chill 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* <https://standards.iteh.ai/catalog/standards/sist/en-4616-2006/229c2d7f/sist-en-4616-2006>

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*.<sup>1)</sup>

---

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

1	Material designation		Magnesium alloy MG – C18002 <sup>a</sup>											
2	Chemical composition %	Element	Al	Cu	Fe	Mn	Ni	Si	Zn	Sn	Pb	Others		Mg
												Each	Total	
		min.	7,5	–	–	0,12	–	–	–	0,20	–	–	–	–
max.	9,2	0,005	0,003	0,7	0,001	0,01	1,0	0,001	0,005	0,05	0,30			
3	Method of melting		–											
4.1	Form		Chill casting											
4.2	Method of production		Chill casting											
4.3	Limit dimension(s)	mm	–											
5	Technical specification		EN 2076-3											

6.1	Delivery condition		T4										
	Heat treatment		425 °C ≤ $\theta$ ≤ 435 °C / 12 h ≤ t ≤ 20 h / WQ 60 °C ≤ $\theta$ ≤ 80 °C <sup>b</sup>										
6.2	Delivery condition code		U										
7	Use condition		T4										
	Heat treatment		Delivery condition										

**iTeh STANDARD PREVIEW**  
Characteristics  
(standards.iteh.ai)

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.				$a \leq 20$				$a \leq 20$			
10	Thickness of cladding on each face		%		–				–				–			
11	Direction of test piece		–				–				–					
12	Temperature	$\theta$	°C		Ambient				Ambient				Ambient			
13	Proof stress	$R_{p0,2}$	MPa		≥ 80				≥ 60 <sup>c</sup>				≥ 60 <sup>c</sup>			
14	T	Strength	$R_m$		MPa				≥ 200				≥ 120 <sup>c</sup>			
15		Elongation	A		%				≥ 7				≥ 5 <sup>c</sup>			
16		Reduction of area	Z		%				–				–			
17	Hardness		–													
18	Shear strength	$R_c$	MPa		–											
19	Bending	k	–		–											
20	Impact strength		–													
21	Temperature	$\theta$	°C		–											
22	Time	h		–												
23	C	Stress	$\sigma_a$		MPa				–				–			
24		Elongation	a		%				–				–			
25		Rupture stress	$\sigma_R$		MPa				–				–			
26		Elongation at rupture	A		%				–				–			
27	Notes (see line 98)		a b c													

**EN 4616:2005 (E)**

44	External defects	–	See EN 2076-3.		
61	Internal defects	–	See EN 2076-3.		
82	Batch uniformity	–	See EN 2076-3.		
		7	Hardness	HB	55 (Typical value)
					≤ 20 per batch
<p><b>iTeh STANDARD PREVIEW</b>  <b>(standards.iteh.ai)</b></p> <p>SIST EN 4616:2006  <a href="https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-af6a-7a229cf2d7ff/sist-en-4616-2006">https://standards.iteh.ai/catalog/standards/sist/fd44be73-3158-42a4-af6a-7a229cf2d7ff/sist-en-4616-2006</a></p>					
95	Marking inspection	–	See EN 2076-3.		
96	Dimensional inspection	–	See EN 2076-3.		
98	Notes	–	<p><sup>a</sup> Similar to alloy designation ISO – MgAl8Zn and alloy designations AZ81A and AZ80 but has tighter controls on impurity elements in order to promote maximum corrosion resistance.</p> <p><sup>b</sup> 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 <math>\theta \leq 30</math> °C.</p> <p><sup>c</sup> 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	–	–		