SLOVENSKI STANDARD
SIST EN 3872:2005

01-november-2005

Aerospace series - Aluminium alloy AL-R39002-H112 - Die forgings - a <200 mm

Aerospace series - Aluminium alloy AL-R39002-H112 - Die forgings - a <200 mm

Luft- und Raumfahrt - Aluminiumlegierung AL-R39002-H112 - Gesenkschmiedestücke - a <200 mm

Série aérospatiale - Alliage d'aluminium AL-R39002-H112 - Pieces matricées - a <200 mm

Ta slovenski standard je istoveten z: **EN 3872:2005**

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English version

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 3872:2005) 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of an identical text or by endorsement, at the latest by December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.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-R39002
H112
Die forgings
$a \leq 200$ 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 2082-3, *Aerospace series — Aluminium alloy forging stock and forgings — Technical specification — Part 3: Pre-production and production forgings.*

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

EN 4292, *Aerospace series — Aluminium alloy AL-R39002 — Forging stock.* [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)]

EN 6018, *Aerospace series — Test methods for metallic materials — Determination of density according to displacement method.* [1)]

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

1	Material designation		Aluminium alloy AL-R39002								
2	Chemical composition %	Element	C	Si	O	Fe	Mg	Li	Others		Al
									Each	Total	
		min.	0,25	–	0,20	–	4,0	1,2	–	–	Base
		max.	0,45	0,20	0,7	0,30	5,5	1,4	0,05	0,15	
3	Method of melting		–								
4.1	Form		Die forgings								
4.2	Method of production		Forged from forging stock EN 4292								
4.3	Limit dimension(s)	mm	$a \leq 200$								
5	Technical specification		EN 2082-3								

6.1	Delivery condition	H112
	Heat treatment	–
6.2	Delivery condition code	U
7	Use condition	H112
	Heat treatment	Delivery condition

Characteristics

8.1	Test sample(s)				See EN 2082-3.		
8.2	Test piece(s)				See EN 2082-3.		
8.3	Heat treatment				Use condition.		
9	Dimensions concerned			mm	$a \leq 200$		
10	Thickness of cladding on each face			%	–		
11	Direction of test piece				L	LT	ST
12	T	Temperature	θ	°C	Ambient	Ambient	Ambient
13		Proof stress	$R_{p0,2}$	MPa	≥ 370	≥ 360	≥ 350
14		Strength	R_m	MPa	≥ 455	≥ 445	≥ 435
15		Elongation	A	%	≥ 6	≥ 5	≥ 3
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)				–		

39	Stress corrosion	–	See EN 2082-3.			
		2	The "capability clause" applies			
		3	$a > 25$ mm			
		6	$\sigma = 290$ MPa			
		7	$t \geq 20$ d			
40	Fracture toughness K_{IC}	–	See EN 2082-3.			
		7	Dimensions mm	L-T MPa$\sqrt{m}$	T-L MPa$\sqrt{m}$	S-L MPa$\sqrt{m}$
			$a \leq 200$	≥ 26	≥ 25	≥ 24
44	External defects	–	See EN 2082-3.			
61	Internal defects	–	See EN 2082-3.			
68	Density	1	EN 6018			
		2	The "capability clause" applies			
		7	$\rho \leq 2{,}60$ kg/dm^3			
82	Batch uniformity	–	See EN 2082-3.			
		7	Hardness	HB	150 (typical value)	
					$\delta \leq 10$ per product	$\Delta \leq 15$ per batch
95	Marking inspection	–	See EN 2082-3.			
96	Dimensional inspection	–	See EN 2082-3.			
98	Notes	–	–			
99	Typical use	–	–			

100	–	Product qualification	–	See EN 2082-3.
				Qualification programme to be agreed between manufacturer and purchaser.