SLOVENSKI STANDARD
SIST EN 2280:2018

01-oktober-2018

Aeronavtika - Jeklo FE-PM37 - 900 MPa ≤ Rm ≤ 1 100 MPa - Pločevina - a ≤ 6 mm

Aerospace series - Steel FE-PM37 - 900 MPa ≤ Rm ≤ 1 100 MPa - Sheet - a ≤ 6 mm

Luft- und Raumfahrt - Stahl FE-PM37 - 900 MPa ≤ Rm ≤ 1 100 MPa - Bleche - a ≤ 6 mm

Série aérospatiale - Acier FE-PM37 - 900 MPa ≤ Rm ≤ 1 100 MPa - Tôles - a ≤ 6 mm

Ta slovenski standard je istoveten z: EN 2280:2018

ICS:

49.025.10 Jekla Steels

SIST EN 2280:2018 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 2280

July 2018

ICS 49.025.10

English Version

Aerospace series - Steel FE-PM37 - 900 MPa ≤ Rm ≤ 1 100 MPa - Sheet - a ≤ 6 mm

Série aérospatiale - Acier FE-PM37 - 900 MPa ≤ Rm ≤ 1 100 MPa - Tôles - a ≤ 6 mm

Luft- und Raumfahrt - Stahl FE-PM37 - 900 MPa ≤ Rm ≤ 1 100 MPa - Bleche - a ≤ 6 mm

This European Standard was approved by CEN on 6 November 2017.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 2280:2018 E

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European foreword

This document (EN 2280:2018) has been prepared by the Aerospace and Defence 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of an identical text or by endorsement, at the latest by January 2019, and conflicting national standards shall be withdrawn at the latest by January 2019.

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

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Introduction

This European 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 European Standard has been prepared in accordance with EN 4500-005.

1 Scope

This European Standard specifies the requirements relating to:

Steel FE-PM37
900 MPa ≤ R_m ≤ 1 100 MPa
Sheet
a ≤ 6 mm

for aerospace applications.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 4500-005, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 005: Specific rules for steels*

EN 4700-001, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 001: Plate, sheet and strip*

3 Requirements

See Table 1.

Table 1 — Requirements for steel FE-PM37

1	Material designation		Steel FE-PM37									
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	V	N_2
		min.	0,08	–	0,50	–	–	11,0	1,50	2,00	0,25	0,020
		max.	0,13	0,35	0,90	0,030	0,025	12,5	2,00	3,00	0,40	0,040
3	Method of melting		Air melted									
4.1	Form		Sheet									
4.2	Method of production		–									
4.3	Limit dimension(s)	mm	$a \leq 6$ mm									
5	Technical specification		EN 4700-001									

6.1	Delivery condition	Softened	Hardened and tempered
	Heat treatment	–	1 035 °C ≤ θ ≤ 1 065 °C/OQ or AC + tempered θ ≥ 640 °C
6.2	Delivery condition code	–	–
7	Use condition	Hardened and tempered	Hardened and tempered
	Heat treatment	Delivery condition + 1 035 °C ≤ θ ≤ 1 065 °C/OQ or AC + tempered θ ≥ 640 °C	Delivery condition

Characteristics

8.1	Test sample(s)			–	–			Bar: D = 16 mm
8.2	Test piece(s)			–	–			Reference [a]
8.3	Heat treatment			Softened	Hardened and tempered			See line 29.
9	Dimensions concerned		mm	≤ 6	≤ 1,6	1,6 < a ≤ 3	3 < a ≤ 6	≤ 6
10	Thickness of cladding on each face		%	–				
11	Direction of test piece			–	L [b] or LT			–
12	T	Temperature θ	°C	Ambient temperature				
13	T	Proof stress $R_{p0,2}$	MPa*	–	≥ 750			≥ 780
14	T	Strength R_m	MPa*	–	900 ≤ R_m ≤ 1 100			930 ≤ R_m ≤ 1 130
15	T	Elongation A	%	–	A_{50mm} ≥ 10		$A_{5,65\sqrt{S}}$ ≥ 10	$A_{5,65\sqrt{S}}$ ≥ 14
16	T	Reduction of area Z	%	–	–			≥ 40
17	Hardness			HV ≤ 328	301 ≤ HV ≤ 360			285 ≤ HV ≤ 331
18	Shear strength R_c		MPa*	–				
19	Bending k		–	3,0	2,0	–		–
20	Impact strength			–	–			≥ 35
21	C	Temperature θ	°C	–				
22	C	Time	h	–				
23	C	Stress σ_a	MPa*	–				
24	C	Elongation a	%	–				
25	C	Rupture stress σ_R	MPa*	–				
26	C	Elongation at rupture A	%	–				
27	Notes (see line 98)			*, a, b				

28	–	–	–
29	Reference heat treatment	–	Hardened and tempered (1 050 ± 10) °C/OQ + tempered (650 ± 5) °C
95	Marking inspection	–	–
96	Dimensional inspection	–	–
98	Notes	–	* 1 MPa = 1 N/mm^2. a Optional test. b Longitudinal for pieces of width $b \leq 200$ mm.
99	Typical use	–	–