



SLOVENSKI STANDARD SIST EN 2209:2009

01-januar-2009

5 YfcbUj h_U!>Y_c': 9!D@) \$&fB) 7fAc(L!'-\$ \$'ADU®Fa ®%\$\$'ADU!'D`c Yj jbyŽ
hU_cj]]b'd`cy Y! \$ž`a a ®U®&\$`a a

OE! [•] æ^Á^!ã•ÄÜc^!ÁOÈÜŠFÍ €GAGÍ Ô:T [I DĚŮ ěÁT ÚaĎŮ { ĀŦĀĚĚÁT ÚaĚŮ@^•É
•dā•Āæ āĀ|æ^•ĚĚĚ Ā { ĀĀĀĀĀĚĀ {

Š -ĚĀ } āŮæ { -æ@ĚŮca@ÁOÈÜŠFÍ €GAGÍ Ô:T [I DĚŮ ěÁT ÚaĎŮ { ĀŦĀĚĚÁT ÚaĚ
Ó^&@ĚŮè) ā^!Ā } āŮ|æ^ } /ĚĚĚ Ā { ĀĀĀĀĀĚĀ {

Ů..!ā Āe..! [•] æĀĀĀĚŮBa!ÁOÈÜŠFÍ €GAGÍ Ô:T [I DĚŮ ěÁT ÚaĎŮ { ĀŦĀĚĚÁT ÚaĚŮf|^•É
āæ ā^•ĀĀ|æ ~^•ĚĚĚ Ā { ĀĀĀĀĀĚĀ {

<https://standards.itech.ai/catalog/standards/sist/85caa4ea-67aa-4b6d-9279-6a6be52ac7e4/sist-en-2209-2009>

Ta slovenski standard je istoveten z: EN 2209:2008

ICS:

49.025.10 Jekla Steels

SIST EN 2209:2009 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 2209:2009

<https://standards.iteh.ai/catalog/standards/sist/85caa4ea-67aa-4b6d-9279-6a6be52ac7e4/sist-en-2209-2009>

EUROPEAN STANDARD

EN 2209

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2008

ICS 49.025.10

English Version

Aerospace series - Steel FE-PL1502 (25CrMo4) - 900 MPa \leq Rm \leq 1 100 MPa - Sheets, strips and plates - 0,5 mm \leq a \leq 20 mm

Série aérospatiale - Acier FE-PL1502 (25CrMo4) - 900 MPa \leq Rm \leq 1 100 MPa - Tôles, bandes et plaques - 0,5 mm \leq a \leq 20 mm

Luft- und Raumfahrt - Stahl FE-PL1502 (25CrMo4) - 900 MPa \leq Rm \leq 1 100 MPa - Bleche, Bänder und Platten - 0,5 mm \leq a \leq 20 mm

This European Standard was approved by CEN on 16 August 2008.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

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

<https://standards.iteh.ai/catalog/standards/sist/85c4a4ea-67aa-4b6d-9279-6a6be52ac7e4/sist-en-2209-2009>



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

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

EN 2209:2008 (E)**Foreword**

This document (EN 2209:2008) 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 May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

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, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

ITEH STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 2209:2009

<https://standards.iteh.ai/catalog/standards/sist/85caa4ea-67aa-4b6d-9279-6a6be52ac7e4/sist-en-2209-2009>

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 4500-5.

1 Scope

This standard specifies the requirements relating to:

Steel FE-PL1502 (25CrMo4)
 $900 \text{ MPa} \leq R_m \leq 1\,100 \text{ MPa}$
 Sheets, strips and plates
 $0,5 \text{ mm} \leq a \leq 20 \text{ mm}$

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

EN 4500-5, *Aerospace series — Metallic materials — Rules for drafting and presentation of material standards — Part 5: Specific rules for steels.* ¹⁾

EN 4700-1, *Aerospace series — Steel and heat resisting alloys — Wrought products — Technical specification — Part 1: Plate, sheet and strip.* ¹⁾

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts.*

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

EN 2209:2008 (E)

1	Material designation	Steel FE-PL1502 (25CrMo4)									
2	Chemical composition %	Element	C	Si	Mn	P	S	Cr	Mo	Ni	Fe
		min.	0,22	0,10	0,50	–	–	0,90	0,15	–	Base
		max.	0,29	0,35	0,80	0,020	0,015	1,20	0,25	0,30	
3	Method of melting	Air melted									
4.1	Form	Sheets, strips and plates									
4.2	Method of production	–									
4.3	Limit dimension(s)	mm	0,5 ≤ a ≤ 20								
5	Technical specification	EN 4700-1									

6.1	Delivery condition	Annealed	Normalized (and tempered) ^a	Hardened and tempered
	Heat treatment	–	–	850 °C ≤ θ ≤ 880 °C / OQ + Temper θ ≥ 520 °C
6.2	Delivery condition code	A	B	U
7	Use condition	Hardened and tempered	Hardened and tempered	Hardened and tempered
	Heat treatment	Delivery condition + 850 °C ≤ θ ≤ 880 °C / OQ + Temper θ ≥ 520 °C	Delivery condition + 850 °C ≤ θ ≤ 880 °C / OQ + Temper θ ≥ 520 °C	Delivery condition

iTeh STANDARD PREVIEW
Characteristics
(standards.iteh.ai)

8.1	Test sample(s)	See EN 4700-1.									
8.2	Test piece(s)	See EN 4700-1.									
8.3	Heat treatment	Annealed			Normalized (and tempered) ^a			Hardened and tempered			Reference ^b See line 29
9	Dimensions concerned	mm	0,5 ≤ a ≤ 6	6 < a ≤ 12	12 < a ≤ 20	≤ 3	3 < a ≤ 12	12 < a ≤ 20	≤ 3	3 < a ≤ 20	0,5 ≤ a ≤ 20
10	Thickness of cladding on each face	%	–								
11	Direction of test piece	LT			LT			LT ^c			L
12	Temperature	θ	°C								
		Ambient									
13	Proof stress	R _{p0,2}	MPa*			–	–	≥ 700			≥ 750
14	T Strength	R _m	MPa*			–	–	900 ≤ R _m ≤ 1 100			900 ≤ R _m ≤ 1 100
15	Elongation	A	%			–	–	A _{50 mm} ≥ 10			A _{5,65 √S} ≥ 10
16	Reduction of area	Z	%			–	–	–			–
17	Hardness	HV ^d ≤ 183 HRB ≤ 90			207 ≤ HV ^d ≤ 268 92 ≤ HRB ≤ 100			284 ≤ HV ≤ 350			284 ≤ HV ≤ 350
18	Shear strength	R _c	MPa*								
19	Bending	k	–	180° k = 0,5	90° k = 0,5	–	180° k = 2	180° k = 1,5	90° k = 1,5	–	–
20	Impact strength	KV	J			–	–	–			≥ 40 ^e
21	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)	a, b, c, d, e									

29	Reference heat treatment	–	Hardened and tempered + (870 ± 10) °C / OQ + Temper (545 ± 5) °C
<p>iTeh STANDARD PREVIEW (standards.iteh.ai)</p> <p>SIST EN 2209:2009 https://standards.iteh.ai/catalog/standards/sist/85caa4ea-67aa-4b6d-9279-6a6be52ac7e4/sist-en-2209-2009</p>			
95	Marking inspection	–	See EN 4700-1.
96	Dimensional inspection	–	See EN 4700-1.
97	Designation	–	See EN 4700-1.
98	Notes	–	<ul style="list-style-type: none"> * 1 MPa = 1 N/mm². a Temper if necessary. b Optional test. c Longitudinal for widths ≤ 200 mm. d Method to be used in case of conflict. e For a ≥ 10 mm.
99	Typical use	–	General purpose steel; weldable.

EN 2209:2008 (E)

100	-	Product qualification	-	See EN 9133.
				Qualification programme to be agreed between manufacturer and purchaser.
<p>iTeh STANDARD PREVIEW (standards.iteh.ai)</p> <p><u>SIST EN 2209:2009</u> https://standards.iteh.ai/catalog/standards/sist/85caa4ea-67aa-4b6d-9279-6a6be52ac7e4/sist-en-2209-2009</p>				