



SLOVENSKI STANDARD
SIST EN 3325:2008
01-marec-2008

Aeronavtika - Sorniki, glava T, tanko steblo, dolg navoj, iz toplotnoodpornega jekla, FE-PM1708 (FV535) - Klasifikacija: 1 000 MPa/550 °C - Brez prevleke

Aerospace series - Bolts, T-head, relieved shank, long thread, in heat resisting steel, FE-PM1708 (FV535) - Classification: 1 000 MPa/550 °C - Unplated

Luft- und Raumfahrt - T-Kopfschrauben, Dünnschaft, langes Gewinde, aus hochwarmfestem Stahl FE-PM1708 (FV535) - Klasse: 1 000 MPa/550 °C - Blank

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Série aérospatiale - Vis à tête anti-rotation T fût dégagé, filetage long, en acier résistant à chaud FE-PM1708 (FV535) - Classification: 1 000 MPa/550 °C - Non revêtues

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Ta slovenski standard je istoveten z: EN 3325:2007

ICS:

49.030.20

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ICS 49.030.20

English Version

Aerospace series - Bolts, T-head, relieved shank, long thread, in
heat resisting steel, FE-PM1708 (FV535) - Classification: 1 000
MPa/550 °C - Unplated

Série aéronautique - Vis à tête anti-rotation "T", fût dégagé,
filetage long, en acier résistant à chaud FE-PM1708
(FV535) - Classification: 1 000 MPa/550 °C - Non revêtues

Luft- und Raumfahrt - T-Kopfschrauben, Dünnschaft,
langes Gewinde, aus hochwarmfestem Stahl FE-PM1708
(FV535) - Klasse: 1 000 MPa/550 °C - Blank

This European Standard was approved by CEN on 5 November 2007.

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.

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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

Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Required characteristics	4
4 Designation	8
5 Marking	8
6 Technical specification	8

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Foreword

This document (EN 3325:2007) 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 June 2008, and conflicting national standards shall be withdrawn at the latest by June 2008.

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.

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1 Scope

This standard specifies the characteristics of T-head bolts with relieved shank and long thread, in FE-PM1708 (FV535), for aerospace applications.

Classification: 1 000 MPa ¹⁾ / 550 °C ²⁾.

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.

ISO 3353-1, *Aerospace — Lead and runout threads — Part 1: Rolled external threads.*

ISO 5855-2, *Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts.*

EN 2424, *Aerospace series — Marking of aerospace products.*

EN 2493 ³⁾, *Heat resisting steel FE-PM38 — 1 000 MPa ≤ R_m ≤ 1 140 MPa — Bars — Aerospace series.* ⁴⁾

EN 3302, *Aerospace series — Bolts in heat resisting steel FE-PM1708 (FV535) — Classification: 1 000 MPa / 550 °C — Technical specification.*

EN 4244, *Aerospace series — Heat resisting alloy FE-PM1708 — Vacuum arc remelted — Hardened and tempered — Bar — a or D ≤ 200 mm — 1 000 MPa ≤ R_m ≤ 1 140 MPa.* ⁵⁾

EN 4245, *Aerospace series — Heat resisting alloy FE-PM1708 — Vacuum arc remelted — As forged — Forging stock — D_e ≤ 300 mm.* ⁵⁾

3 Required characteristics

3.1 Configuration – Dimensions – Tolerances – Masses

See Figure 1 and Tables 1 and 2.

Dimensions and tolerances are in millimetres.

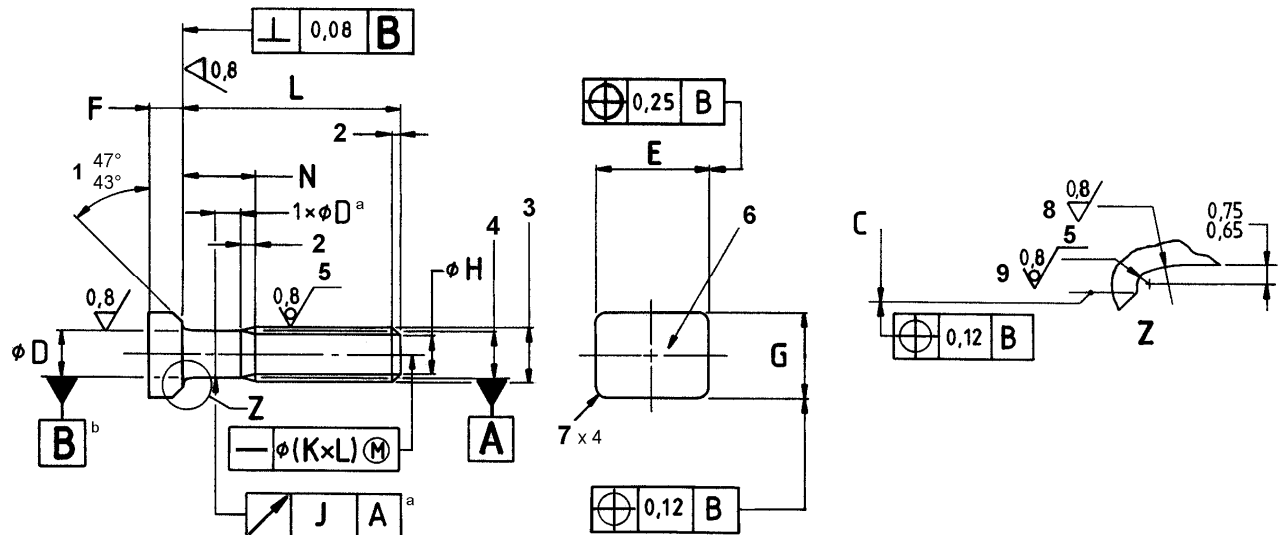
3.2 Material

EN 2493

-
- 1) Minimum tensile strength of material at ambient temperature.
 - 2) Maximum test temperature of the parts.
 - 3) Inactive for new designation, see EN 4244 and EN 4245.
 - 4) Published as ASD Standard at the date of publication of this standard.
 - 5) Published as ASD Prestandard at the date of publication of this standard.



Remove sharp edges 0,1 to 0,4



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Key

- 1 Both sides
- 2 Conforms to ISO 3353-1
- 3 Thread \emptyset
- 4 Thread pitch \emptyset
- 5 Rolled
- 6 Marking
- 7 R 0,40 to 0,9
- 8 R 2,30 to 2,50
- 9 R 0,25 to 0,40

^a When the length of the shank is less than one times the nominal value of the shank diameter, D , the run out is measured at a distance equal to half the length.

^b For bolts having a shank length less than one times the nominal value of the shank diameter, D , the pitch diameter axis shall be used as the datum.

Figure 1

Table 1

Code	Thread ^a	C	D	E	F	G	H	K	J
	Designation	$\pm 0,1$	$\pm 0,13$	$+0,5$ 0	$+0,5$ 0	$+0,3$ 0	$\pm 0,5$		
050	MJ 5 × 0,8 - 4h6h	6,2	4,48	11,1	2,9	8,1	3,4	0,003	0,12
060	MJ 6 × 1,0 - 4h6h	7,2	5,35	12,0	3,4	9,2	4,2		
070	MJ 7 × 1,0 - 4h6h	8,3	6,35	13,4	4,0	10,2	5,2		0,15
080	MJ 8 × 1,0 - 4h6h	9,11	7,35	14,0	4,5	11,2	6,2		
100	MJ 10 × 1,25 - 4h6h	11,1	9,19	16,5	5,3	13,0	7,9	0,0025	

^a In accordance with ISO 5855-2.

Table 2 — Dimensional codes, lengths

Length code	L ± 0,3	Thread code														
		050			060			070			080			100		
		N		Mass ^a	N		Mass ^a	N		Mass ^a	N		Mass ^a	N		Mass ^a
		max.	min.		max.	min.		max.	min.		max.	min.		max.	min.	
014	14	4,0	2,5	4,17												
016	16	4,0	2,5	4,42	4,0	2,5	6,25									
018	18	4,0	2,5	4,67	4,0	2,5	6,60	4,0	2,5	9,4						
020	20	4,0	2,5	4,92	4,0	2,5	6,95	4,0	2,5	9,53	4,0	2,5	12,87			
022	22	6,0	4,5	5,17	4,0	2,5	7,30	4,0	2,5	10,02	4,0	2,5	13,53			
024	24	8,0	6,5	5,41	6,0	4,5	7,65	4,0	2,5	10,51	4,0	2,5	14,19			
026	26	10,0	8,5	5,66	8,0	6,5	8,01	6,0	4,5	11,00	4,0	2,5	14,85	4,0	2,7	23,28
028	28	12,0	10,5	5,90	10,0	8,5	8,36	8,0	6,5	11,50	6,0	4,5	15,50	4,0	2,7	24,31
030	30	14,0	12,5	6,13	12,0	10,5	8,71	10,0	8,5	11,99	8,0	6,5	16,16	4,0	2,7	25,34
032	32	16,0	14,5	6,39	14,0	12,5	9,06	12,0	10,5	12,48	10,0	8,5	16,82	6,0	4,5	26,37
034	34	18,0	16,5	6,63	16,0	14,5	9,41	14,0	12,5	12,97	12,0	10,5	17,49	8,0	6,5	27,40
036	36	20,0	18,5	6,88	18,0	16,5	9,76	16,0	14,5	13,46	14,0	12,5	18,14	10,0	8,5	28,43
038	38	22,0	20,5	7,13	20,0	18,5	10,11	18,0	16,5	13,96	16,0	14,5	18,80	12,0	10,5	29,47
040	40	24,0	22,5	7,37	22,0	20,5	10,46	20,0	18,5	14,45	18,0	16,5	19,46	14,0	12,5	30,50
042	42	26,0	24,5	7,62	24,0	22,5	10,81	22,0	20,5	14,94	20,0	18,5	20,13	16,0	14,5	31,53
044	44	28,0	26,5	7,86	26,0	24,5	11,16	24,0	22,5	15,43	22,0	20,5	20,78	18,0	16,5	32,55
046	46	30,0	28,5	8,11	28,0	26,5	11,51	26,0	24,5	15,93	24,0	22,5	21,44	20,0	18,5	33,58
048	48	32,0	30,5	8,36	30,0	28,5	11,86	28,0	26,5	16,42	26,0	24,5	22,10	22,0	20,5	34,61
050	50	34,0	32,5	8,60	32,0	30,5	12,21	30,0	28,5	16,92	28,0	26,5	22,77	24,0	22,5	35,64
052	52	36,0	34,5	8,84	34,0	32,5	12,55	32,0	30,5	17,41	30,0	28,5	23,43	26,0	24,5	36,68
054	54	38,0	36,5	9,08	36,0	34,5	12,90	34,0	32,5	17,90	32,0	30,5	24,08	28,0	26,5	37,71
056	56	40,0	38,5	9,33	38,0	36,5	13,25	36,0	34,5	18,39	34,0	32,5	24,74	30,0	28,5	38,73
058	58	42,0	40,5	9,58	40,0	38,5	13,60	38,0	36,5	18,89	36,0	34,5	25,41	32,0	30,5	39,76
060	60	44,0	42,5	9,82	42,0	40,5	13,95	40,0	38,5	19,38	38,0	36,5	26,07	34,0	32,5	40,79
062	62	46,0	44,5	10,07	44,0	42,5	14,30	42,0	40,5	19,87	40,0	38,5	26,72	36,0	34,5	41,82
064	64	48,0	46,5	10,31	46,0	44,5	14,65	44,0	42,5	20,36	42,0	40,5	27,38	38,0	36,5	42,85
066	66	50,0	48,5	10,56	48,0	46,5	15,00	46,0	44,5	20,85	44,0	42,5	28,05	40,0	38,5	43,89
068	68	52,0	50,5	10,81	50,0	48,5	15,35	48,0	46,5	21,35	46,0	44,5	28,71	42,0	40,5	44,91
070	70	54,0	52,5	11,05	52,0	50,5	15,70	50,0	48,5	21,84	48,0	46,5	29,36	44,0	42,5	45,94

continued

Table 2 (concluded)

Length code	L ± 0,3	Thread code														
		050			060			070			080			100		
		N		Mass ^a	N		Mass ^a	N		Mass ^a	N		Mass ^a	N		Mass ^a
		max.	min.		max.	min.		max.	min.		max.	min.		max.	min.	
072	72				54,0	52,5	16,05	52,0	50,5	22,33	50,0	48,5	30,02	46,0	44,5	46,97
074	74				56,0	54,5	16,40	54,0	52,5	22,82	52,0	50,5	30,69	48,0	44,5	48,00
076	76				58,0	56,5	16,75	56,0	54,5	23,32	54,0	52,5	31,35	50,0	48,5	49,03
078	78				60,0	58,5	17,10	58,0	56,5	23,82	56,0	54,5	32,00	52,0	50,5	50,06
080	80				62,0	60,5	17,45	60,0	58,5	24,31	58,0	56,5	32,66	54,0	52,5	51,09
082	82				64,0	62,5	17,80	62,0	60,5	24,80	60,0	58,5	33,33	56,0	54,5	52,12
084	84				66,0	64,5	18,15	64,0	62,5	25,29	62,0	60,5	33,99	58,0	56,5	53,15
086	86							66,0	64,5	25,78	64,0	62,5	34,65	60,0	58,5	54,18
088	88							68,0	66,5	26,28	66,0	64,5	35,30	62,0	60,4	55,21
090	90							70,0	68,5	26,77	68,0	66,5	35,97	64,0	62,5	56,23
092	92							72,0	70,5	27,26	70,0	68,5	36,63	66,0	64,5	57,27
094	94							74,0	72,5	27,75	72,0	70,5	37,29	68,0	66,5	58,30
096	96							76,0	74,5	28,24	74,0	72,5	37,94	70,0	68,5	59,33
098	98							78,0	76,5	28,74	76,0	74,5	38,61	72,0	70,5	60,36
100	100										78,0	76,5	39,27	74,0	72,5	61,39
104	104										82,0	80,5	40,58	78,0	76,5	63,44
108	108										86,0	84,5	41,91	82,0	80,5	65,51
112	112										90,0	88,5	43,22	86,0	84,5	67,57
116	116													90,0	88,5	69,62
120	120													94,0	92,5	71,69
124	124													98,0	96,5	73,74
128	128													102,0	100,5	75,80
132	132													106,0	104,5	77,87
136	136													110,0	108,5	79,92
140	140													114,0	112,5	81,98
144	144													118,0	116,5	84,04

^a Mass ≈ quoted in kg/1 000 pieces.

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