

SLOVENSKI STANDARD

SIST EN 2931:2001

01-januar-2001

Aerospace series - Bolts, T-head, relieved shank, long thread, in heat resisting steel FE-PA92HT (A286) - Classification: 900 MPa (at ambient temperature) / 650 °C

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Luft- und Raumfahrt - T-Kopfschrauben, Dünnschaft, langes Gewinde, aus hochwärmfestem Stahl FE-PA92HT (A286) - Klasse 900 MPa (bei Raumtemperatur) / 650 °C

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Série aérospatiale - Vis a tete, en T, fut dégagé, filetage long, en acier résistant a chaud FE-PA92HT (A286) - Classification: 900 MPa (a température ambiante)/650 °C

Ta slovenski standard je istoveten z: EN 2931:1994

ICS:

49.030.20 Sorniki, vijaki, stebelni vijaki Bolts, screws, studs

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en

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EUROPEAN STANDARD

EN 2931

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 1994

UDC 621.882.2-034.018.44:629.7

Descriptors: Aircraft industry, fastener, screw, heat resistant steel, classification, characteristic, dimension, screw thread, code, designation, marking

English version

**Aerospace series - Bolts, T-head, relieved shank,
long thread, in heat resisting steel FE-PA92HT
(A286) - Classification: 900 MPa (at ambient
temperature)/650°C**

Série aéronautique - Vis à tête en T, fût
dégagé, filetage long, en acier résistant à
chaud FE-PA92HT (A286) - Classification: 900
MPa (à température ambiante)/650°C

Luft- und Raumfahrt - T-Kopfschrauben,
Dünnschaft, langes Gewinde, aus hochwarmfestem
Stahl FE-PA92HT (A286) - Klasse: 900 MPa (bei
Raumtemperatur)/650°C

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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.

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CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries and votes carried out in accordance with the rules of this Association, this Standard has successively received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This standard was submitted for Formal Vote, and the result was positive.

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 February 1995, and conflicting national standards shall be withdrawn at the latest by February 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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BYTICADJASAH NCTEM 09 1994/94

1 Scope

This standard specifies the characteristics of T-headed bolts with relieved shank, long thread, in FE-PA92HT, for aerospace applications.

Classification : 900 MPa ¹⁾ / 650 °C ²⁾

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 3353 Aerospace - Rolled threads for bolts - Lead and runout requirements

ISO 5855-2 Aerospace - MJ threads - Part 2 : Limit dimensions for bolts and nuts

EN 2399 Heat resisting steel FE-PA92-HT - $R_m \geq 900$ MPa - Bars for forged bolts - $D \leq 25$ mm - Aerospace series ³⁾

EN 2424 Aerospace series - Marking of aerospace products ³⁾

EN 2576 Aerospace series - Bolts in heat resisting steel FE-PA92HT (A286) - Classification : 900 MPa / 650 °C - Technical specification ⁴⁾

EN 3639 Aerospace series - Heat resisting alloy FE-PA2601 - Softened and cold worked - Wire for forged fasteners - $D \leq 15$ mm - $900 \text{ MPa} \leq R_m \leq 1\,100 \text{ MPa}$ ⁴⁾

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 Materials

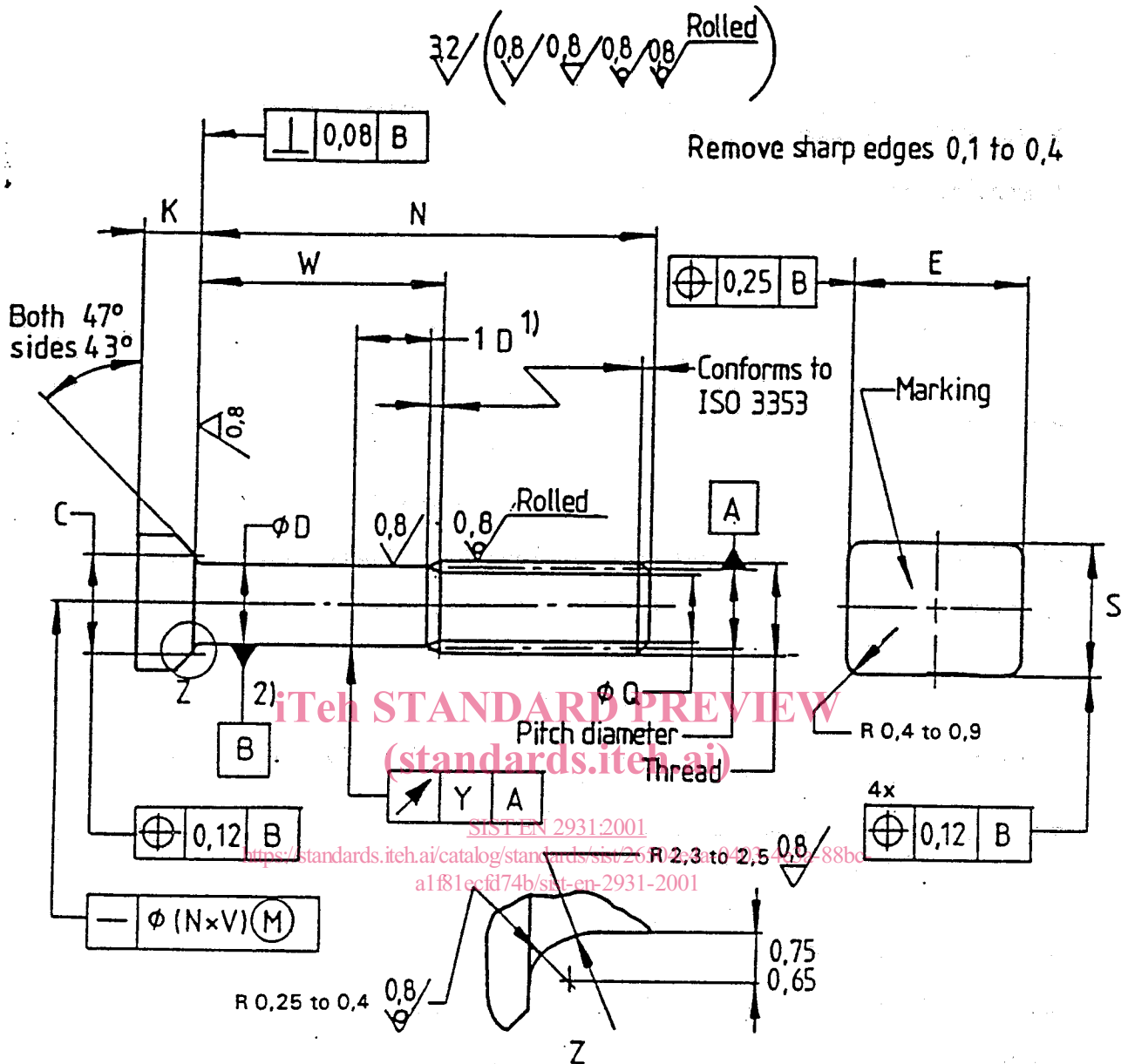
EN 2399 or EN 3639

1) Minimum tensile strength of the material at ambient temperature

2) Maximum test temperature of the parts

3) Published as AECMA Standard at the date of publication of this standard

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



- 1) 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 actual shank length.
- 2) For bolts having a shank length less than one times the nominal value of the shank diameter D , and for those threaded to head, the pitch diameter axis shall be used as the datum.

Figure 1

Table 1

Code	Thread 1) Designation	C	D	E	K	Q	S	V	Y
		$\pm 0,1$	$\pm 0,13$	$+ 0,5$ 0	$+ 0,5$ 0	$\pm 0,5$	$+ 0,3$ 0		
050	MJ5x0,8-4h6h	6,2	4,48	11,1	2,9	3,4	8,1	0,003	0,12
060	MJ6x1-4h6h	7,2	5,35	12	3,4	4,2	9,2		
070	MJ7x1-4h6h	8,3	6,35	13,4	4	5,2	10,2		
080	MJ8x1-4h6h	9,3	7,35	14	4,5	6,2	11,2		
100	MJ10x1,25-4h6h	11,1	9,19	16,5	5,3	7,9	13	0,0025	

1) In accordance with ISO 5855-2

Table 2

Length code	N ± 0,3	Thread code																					
		050				060				070				080				100					
		W max.	W min.	Mass ¹⁾		W max.	W min.	Mass ¹⁾		W max.	W min.	Mass ¹⁾		W max.	W min.	Mass ¹⁾		W max.	W min.	Mass ¹⁾			
014	14			4,26																			
016	16			4,51																			
018	18			4,76																			
020	20			5,01																			
022	22			5,26																			
024	24			5,51																			
026	26			5,76																			
028	28			6,01																			
030	30			6,26																			
032	32			6,51																			
034	34			6,76																			
036	36			7,01																			
038	38			7,26																			
040	40			7,51																			
042	42			7,75																			
044	44			8,00																			
046	46			8,25																			
048	48			8,50																			
050	50			8,75																			
052	52			9,00																			
054	54			9,25																			
056	56			9,50																			
058	58			9,75																			
060	60			10,00																			
062	62			10,25																			
064	64			10,50																			
066	66			10,75																			
068	68			11,00																			

(continued)

Table 2 (concluded)

Length code	N ± 0,3	Thread code														
		050			060			070			080			100		
		W max.	W min.	Mass ¹⁾	W max.	W min.	Mass ¹⁾	W max.	W min.	Mass ¹⁾	W max.	W min.	Mass ¹⁾	W max.	W min.	Mass ¹⁾
070	70	54	52,5	11,25	52	50,5	15,99	50	48,5	22,24	48	46,5	29,90	44	42,5	46,78
072	72				54	52,5	16,34	52	50,5	22,74	50	48,5	30,57	46	44,5	47,83
074	74				56	54,5	16,70	54	52,5	23,24	52	50,5	31,25	48	46,5	48,88
076	76				58	56,5	17,05	56	54,5	23,75	54	52,5	31,92	50	48,5	49,93
078	78				60	58,5	17,41	58	56,5	24,25	56	54,5	32,59	52	50,5	50,97
080	80				62	60,5	17,77	60	58,5	24,75	58	56,5	33,26	54	52,5	52,02
082	82				64	62,5	18,12	62	60,5	25,25	60	58,5	33,93	56	54,5	53,07
084	84				66	64,5	18,48	64	62,5	25,75	62	60,5	34,61	58	56,5	54,12
086	86							66	64,5	26,25	64	62,5	35,28	60	58,5	55,17
088	88							68	66,5	26,76	66	64,5	35,95	62	60,5	56,22
090	90							70	68,5	27,26	68	66,5	36,62	64	62,5	57,27
092	92							72	70,5	27,76	70	68,5	37,30	66	64,5	58,31
094	94							74	72,5	28,26	72	70,5	37,97	68	66,5	59,36
096	96							76	74,5	28,76	74	72,5	38,64	70	68,5	60,41
098	98							78	76,5	29,26	76	74,5	39,31	72	70,5	61,46
100	100										78	76,5	39,98	74	72,5	62,51
104	104										82	80,5	41,33	78	76,5	64,60
108	108										86	84,5	42,67	82	80,5	66,70
112	112										90	88,5	44,02	86	84,5	68,80
116	116													90	88,5	70,90
120	120													94	92,5	72,99
124	124													98	96,5	75,09
128	128													102	100,5	77,19
132	132													106	104,5	79,28
136	136													110	108,5	81,38
140	140													114	112,5	83,48
144	144													118	116,5	85,58

1) Mass ≈ quoted in kg/1 000 parts