

SLOVENSKI STANDARD
SIST EN 2870:2001**01-januar-2001**

Aerospace series - Bolts, normal bihexagonal head, close tolerance normal shank, short thread, in titanium alloy, anodized, MoS2 lubricated - Classification: 1 100 MPa (at ambient temperature)/315 °C

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Luft- und Raumfahrt - Zwölfkant-Paßschrauben, kurzes Gewinde, aus Titanlegierung, anodisiert, MoS2-geschmiert - Klasse 1 100 MPa (bei Raumtemperatur)/315°C

Série aérospatiale - Vis à tête bihexagonale normale, tige normale à tolérance serrée, filetage court, en alliage de titane, anodisées, lubrifiées MoS2 - Classification: 1100 MPa (à température ambiante)/315°C

Ta slovenski standard je istoveten z: EN 2870:1996

ICS:

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

SIST EN 2870:2001**en**

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EUROPEAN STANDARD

EN 2870

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 1996

ICS 49.040.20

Descriptors: aircraft industry, screw, double hexagonal head screw, titanium alloy, specification, dimension, dimensional tolerance, surface treatment, designation, marking

English version

Aerospace series - Bolts, normal bihexagonal head, close tolerance normal shank, short thread, in titanium alloy, anodized, MoS₂ lubricated - Classification : 1100 MPa (at ambient temperature)/315 °C

iTech STANDARD PREVIEW

Série aéronautique - Vis à tête bihexagonale normale, tige normale à tolérance serrée, filetage court, en alliage de titane, anodisées, lubrifiées MoS₂ - Classification : 1 100 MPa (à température ambiante)/315 °C

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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 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of an identical text or by endorsement, at the latest by January 1997, and conflicting national standards shall be withdrawn at the latest by January 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of 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 and the United Kingdom.



1 Scope

This standard specifies the characteristics of bolts, normal bihexagonal head, close tolerance normal shank, short thread, in titanium alloy, anodized, MoS₂ lubricated.

Classification : 1 100 MPa ¹⁾ / 315 °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 3185	Aerospace - Bolts, normal bihexagonal head, normal shank, short or medium length MJ threads, metallic material, coated or uncoated, strength classes less than or equal to 1 100 MPa - Dimensions
ISO 3353	Aerospace - Rolled threads for bolts - Lead and runout requirements
ISO 4095	Fasteners for aerospace construction - Bi-hexagonal wrenching configuration
ISO 5855-2	Aerospace - MJ threads - Part 2 : Limit dimensions for bolts and nuts
ISO 7913	Aerospace - Bolts and screws, metric - Tolerances of form and position
ISO 9152	Aerospace - Titanium alloy bolts, strength class 1 100 MPa, MJ threads - Procurement specification ³⁾
EN 2000	Aerospace series - Quality assurance - EN aerospace products - Approval of the quality system of manufacturers
EN 2424	Aerospace series - Marking of aerospace products
EN 2491	Aerospace series - Molybdenum disulphide dry lubricants - Coating methods ⁴⁾
EN 3042	Aerospace series - Quality assurance - EN aerospace products - Qualification procedure
EN 4016	Aerospace series - Oversized bolts ⁵⁾
TR 3775	Aerospace series - Bolts and pins - National materials ⁶⁾
TR 4070	Aerospace series - Molybdenum disulphide dry lubricants - List of commercial products ³⁾

1) Minimum tensile strength of the material at ambient temperature

2) Maximum temperature that the bolt can withstand without continuous change in its original characteristics, after return to ambient temperature. The maximum temperature is determined by the surface treatment.

3) In preparation at the date of publication of this standard

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

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

6) Published as AECMA Technical Report at the date of publication of this standard

3 Required characteristics

3.1 Configuration - Dimensions - Masses

See figure 1 and table 1.

Dimensions and tolerances are : in conformity with ISO 3185, expressed in millimetres and apply after anodizing but before lubricating.

3.2 Tolerances of form and position

ISO 7913

3.3 Materials

TR 3775 (titanium alloy, strength class 1 100 MPa)

3.4 Surface treatment

Lubrication :

- lubricant : see TR 4070
- application : EN 2491 : 5 μm to 10 μm .

Table 1

Diameter code	Thread 1)	D_1 f7	D_2 +0,5 0	D_3		D_4 min.	D_5 min.	D_6 max.	D_7 H13	H min.	K h15	$L_1 \pm 0,2$ 2) 3)		L_2	P theo.	R		S +0,4 0	T min.	Wrenching dash number 4)	Mass 5)	
				nom.	Tol.							Code	nom.			nom.	nom.				Tol.	6)
040	MJ4x0,7 - 4h6h	4	—	3	0 -0,5	5,8	7,5	8,3	1	0,8	5,5	002 to 040	2 to 40	7,5	3,5	0,4	—	2,5	06	0,970	0,056	
050	MJ5x0,8 - 4h6h	5	3,2	3,4		6,8	8,3	9,1		1	6,5	003 to 050	3 to 50	9	4,5	0,5	2,5	07	2,346	0,087		
060	MJ6x1 - 4h6h	6	4,1	4,2		7,8	9,8	10,6		1,2	7,5	003 to 060	3 to 60	10	5,2	0,7	2,8	08	3,639	0,126		
070	MJ7x1 - 4h6h	7	4,9	5,2		8,8	11,3	12,1	1,4	1,4	8,2	004 to 070	4 to 70	11	5,9	0,7	3,3	09	4,702	0,171		
080	MJ8x1 - 4h6h	8	5,2	6,2	$\pm 0,5$	9,8	12,8	13,6		1,6	8,6	004 to 080	4 to 80	11,5	6,3		3,7	10	7,510	0,224		
100	MJ10x1,25 - 4h6h	10	6,7	7,9		11,8	15,7	16,7		2	10,1	005 to 100	5 to 100	14,5	7,7	0,8	4,7	12	13,848	0,349		
120	MJ12x1,25 - 4h6h	12	8	9,8		13,7	18,8	19,9	1,6	2,4	11,4	006 to 120	6 to 120	16	8,8	0,9	5,6	14	22,336	0,503		

1) In accordance with ISO 5855-2, except the thread major diameter "d max." which shall be equal to D_1 min. - 0,025.

2) Increments :

1 for $L_1 \leq 30$

2 for $30 < L_1 \leq 100$

4 for $L_1 > 100$

3) If greater lengths are required, they shall be chosen using the above increments. The length code corresponds to the length L_1 , completed by one or two zeros to the left, where necessary, to obtain a three digit code.

4) In accordance with ISO 4095 over 7 min.

5) Approximate values (kg/1 000 pieces), calculated on the basis of 4,45 kg/dm³, given for information purposes only. They apply to bolts without holes.

6) Value for head and first L_3

7) Increase for each additional millimetre of L_3 .