

SLOVENSKI STANDARD
SIST EN 4137:2009**01-september-2009**

Aeronavtika - Sorniki, normalna dvanajstroba glava, tanko steblo, dolg navoj, iz titanove zlitine, anodizirani, namazani z MoS2 - Klasifikacija: 1100 MPa (pri temperaturi okolice)/315 °C

Aerospace series - Bolts, normal bi-hexagonal head, stepped shank, long thread, in titanium alloy, anodized, MoS2 lubricated - Classification: 1100 MPa (at ambient temperature)/315 °C

Luft- und Raumfahrt - Zwölfkantschrauben, Dünnschaft, langes Gewinde, aus Titanlegierung, anodisiert, MoS2-geschmiert - Klasse: 1100 MPa (bei Raumtemperatur)/315 °C

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

Ta slovenski standard je istoveten z: EN 4137:2009

ICS:

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

SIST EN 4137:2009**en,de**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4137

July 2009

ICS 49.030.20

English Version

Aerospace series - Bolts, normal bi-hexagonal head, stepped shank, long thread, in titanium alloy, anodized, MoS2 lubricated - Classification: 1 100 MPa (at ambient temperature) / 315 °C

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

Luft- und Raumfahrt - Zwölfkantschrauben, Dünnschaft, langes Gewinde, aus Titanlegierung, anodisiert, MoS2-geschmiert - Klasse: 1 100 MPa (bei Raumtemperatur) / 315 °C

This European Standard was approved by CEN on 6 June 2009.

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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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Foreword

This document (EN 4137:2009) 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 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

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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EN 4137:2009 (E)**1 Scope**

This standard specifies the characteristics of bolts, normal bi-hexagonal head, stepped shank, long thread, in titanium alloy, anodized, MoS₂ lubricated.

Classification: 1 100 MPa ¹⁾ / 315 °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.

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

EN 2491, *Aerospace series — Molybdenum disulphide dry lubricants — Coating methods.*

EN 9100, *Aerospace series — Quality management systems — Requirements (based on ISO 9001:2000) and Quality systems — Model for quality assurance in design, development, production, installation and servicing (based on ISO 9001:1994).*

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

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

ISO 4095, *Aerospace — Bihexagonal drives — Wrenching configuration — Metric series.*

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 — Bolts, with MJ threads, in titanium alloys, strength class 1 100 MPa — Procurement specification.*

TR 3775, *Aerospace series — Bolts and pins — Materials.* ³⁾

TR 4070, *Aerospace series — Molybdenum disulphide coatings — List of commercial products.* ³⁾

3 Required characteristics**3.1 Configuration — Dimensions — Masses**

See Figure 1 and Table 1.

Dimensions and tolerances are expressed in millimetres and apply after anodizing but before lubricating.

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) Published as ASD Technical Report at the date of publication of this standard.

3.2 Tolerances of form and position

ISO 7913

3.3 Materials

TR 3775 (titanium alloy, classification 1 100 MPa)

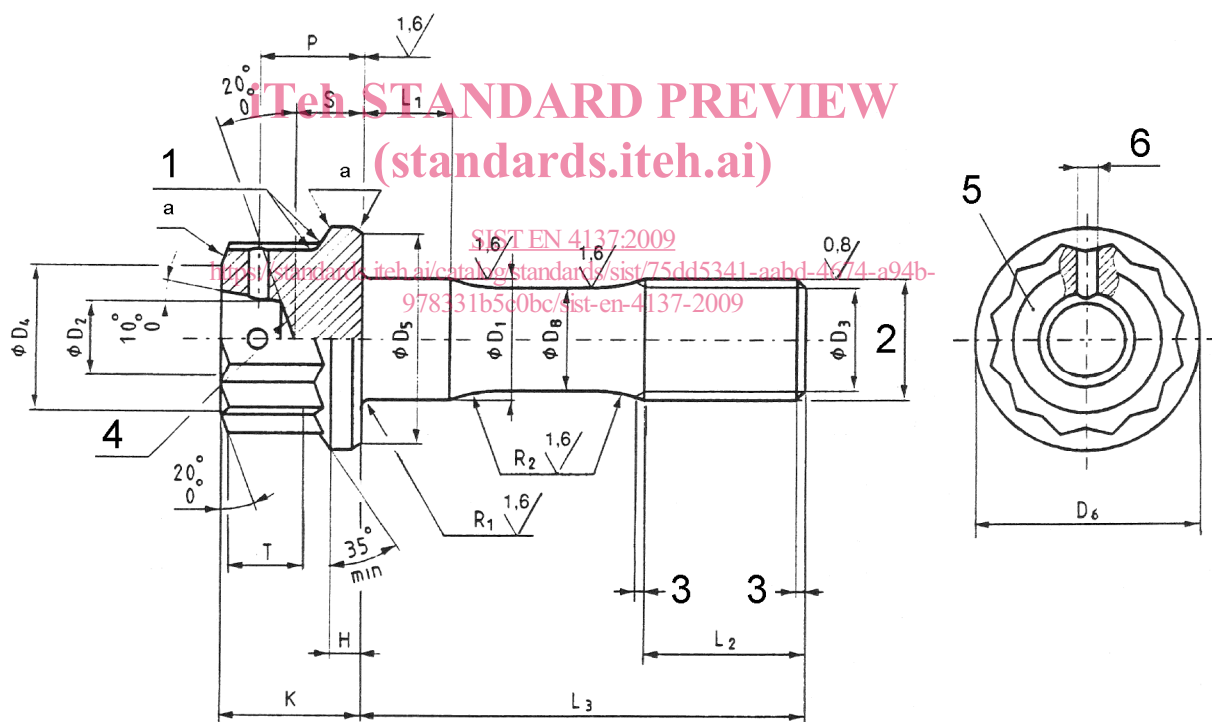
3.4 Surface treatment

Lubrication:

- a) lubricant: see Clause 4;
- b) application: EN 2491: 5 μm to 10 μm .

$\sqrt{3,2} \left[\sqrt{0,8} \sqrt{1,6} \right]$ Values in micrometres apply prior to surface treatment.

Break sharp edges 0,1 to 0,4.



Key

- 1 Radius 0,3 min.
 - 2 Thread
 - 3 Conforms to ISO 3353-1
 - 4 Shape optional
 - 5 Marking
 - 6 4 holes $\varnothing D_7$ equidistant optional
- a Rounded or chamfered in this area.

Figure 1

Table 1

Diameter code	Thread ^a	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	H	K	L_1	L_2
		h12	$+0,5$ 0	$\pm 0,5$	min.	min.	max.	H13	h12	min.	h15	0 $-0,5$	
070	MJ7×1 - 4h6h	7	4,9	5,2	8,8	11,3	12,1	1,4	5,6	1,4	8,2	3,5	20
080	MJ8×1 - 4h6h	8	5,2	6,2	9,8	12,8	13,6		6,6	1,6	8,6		22
100	MJ10×1,25 - 4h6h	10	6,7	7,9	11,8	15,7	16,7	1,6	8,3	2	10,1		26
120	MJ12×1,25 - 4h6h	12	8	9,8	13,7	18,8	19,9		10,3	2,4	11,4		30

Diameter code	$L_3 \pm 0,3$ ^{b, c}		P	R_1		R_2	S	T	Wrenching dash number ^d	Mass ^e	
	Length code	nom.		max.	min.					$+0,3$ 0	$+0,4$ 0
070	036 to 098	36 to 98	5,9	0,7	0,5	6	3,3	3,8	09	5,508	0,342
080	038 to 112	38 to 112	6,3				3,7	3,9	10	7,911	0,448
100	042 to 140	42 to 140	7,7	0,8	4,7		4,2	12	14,542	0,698	
120	046 to 168	46 to 168	8,8	0,9	5,6		4,5	14	23,999	1,006	

^a In accordance with ISO 5855-2.

^b Increments:

- 2 for $L_3 \leq 100$;
- 4 for $L_3 > 100$.

^e If greater lengths are required, they shall be chosen using the above increments. The length code corresponds to the length L_3 , completed by one or two zeros to the left, where necessary, to obtain a three digit code.

^f In accordance with ISO 4095 over T min.

^g 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.

^h value for head and first L_3 .

ⁱ Increase for each additional 2 mm of L_3 .

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4 Designation

EXAMPLE

Description block

BOLT

Identity block

EN4137H070040F

Number of this standard

Hole code (see Table 2)

Diameter code (see Table 1)

Length code (see Table 1)