



SLOVENSKI STANDARD

SIST EN 2859:2009

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Aerospace series - Bolts, normal hexagonal head, close tolerance normal shank, short thread, in alloy steel, cadmium plated, metric series - Classification: 1 100 MPa (at ambient temperature) / 235 °C

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Luft- und Raumfahrt - Sechskant-Passschrauben, kurzes Gewinde, aus legiertem Stahl, verkadmet - Klasse: 1 100 MPa (bei Raumtemperatur) / 235 °C

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Série aérospatiale - Vis à tête hexagonale normale, fût normal à tolérance serrée, filetage court, en acier allié, cadmiées série métrique - Classification : 1 100 MPa (à température ambiante) / 235 °C

Ta slovenski standard je istoveten z: EN 2859:2006

ICS:

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

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en,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 2859

July 2006

ICS 49.030.20

Supersedes EN 2859:1995

English Version

Aerospace series - Bolts, normal hexagonal head, close tolerance normal shank, short thread, in alloy steel, cadmium plated, metric series - Classification: 1 100 MPa (at ambient temperature) / 235 °C

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This European Standard was approved by CEN on 13 January 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

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Foreword

This European Standard (EN 2859:2006) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 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 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

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.

This document supersedes EN 2859:1995.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 2859:2006 (E)**1 Scope**

This standard specifies the characteristics of bolts, normal hexagonal head, close tolerance normal shank, short thread, in alloy steel, cadmium plated, metric series.

Classification: 1 100 MPa ¹⁾ / 235 °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 3193, *Aerospace – Bolts, normal hexagonal 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 3353-1, *Aerospace – Lead and runout threads – Part 1: Rolled external threads.*

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

ISO 7689, *Aerospace – Alloy steel bolts with strength classification 1 100 MPa and MJ threads – Procurement specification.*

ISO 7913, *Aerospace – Bolts and screws, metric – Tolerances of form and position.*

EN 2133, *Aerospace series – Cadmium plating of steels with specified tensile strength $\leq 1\,450$ MPa, copper, copper alloys and nickel alloys.*

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

EN 4016, *Aerospace series – Oversized bolts.* ³⁾

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.*

TR 3775, *Aerospace series – Bolts and pins – Materials.* ⁴⁾

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 Prestandard at the date of publication of this standard.

4) Published as ASD 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 3193, expressed in millimetres and apply after surface treatment.

Details of form not stated are left to the manufacturer's discretion.

3.2 Tolerances of form and position

ISO 7913

3.3 Materials

TR 3775 (alloy steel, strength class 1 100 MPa).

3.4 Surface treatment

EN 2133, 6 µm to 10 µm, on all surfaces which can be contacted by a 20 mm diameter ball. On all other surfaces, a continuous cadmium plating shall be present, but no value is specified.

Black colour option: code B (EN 2133, except for corrosion resistance requirement).

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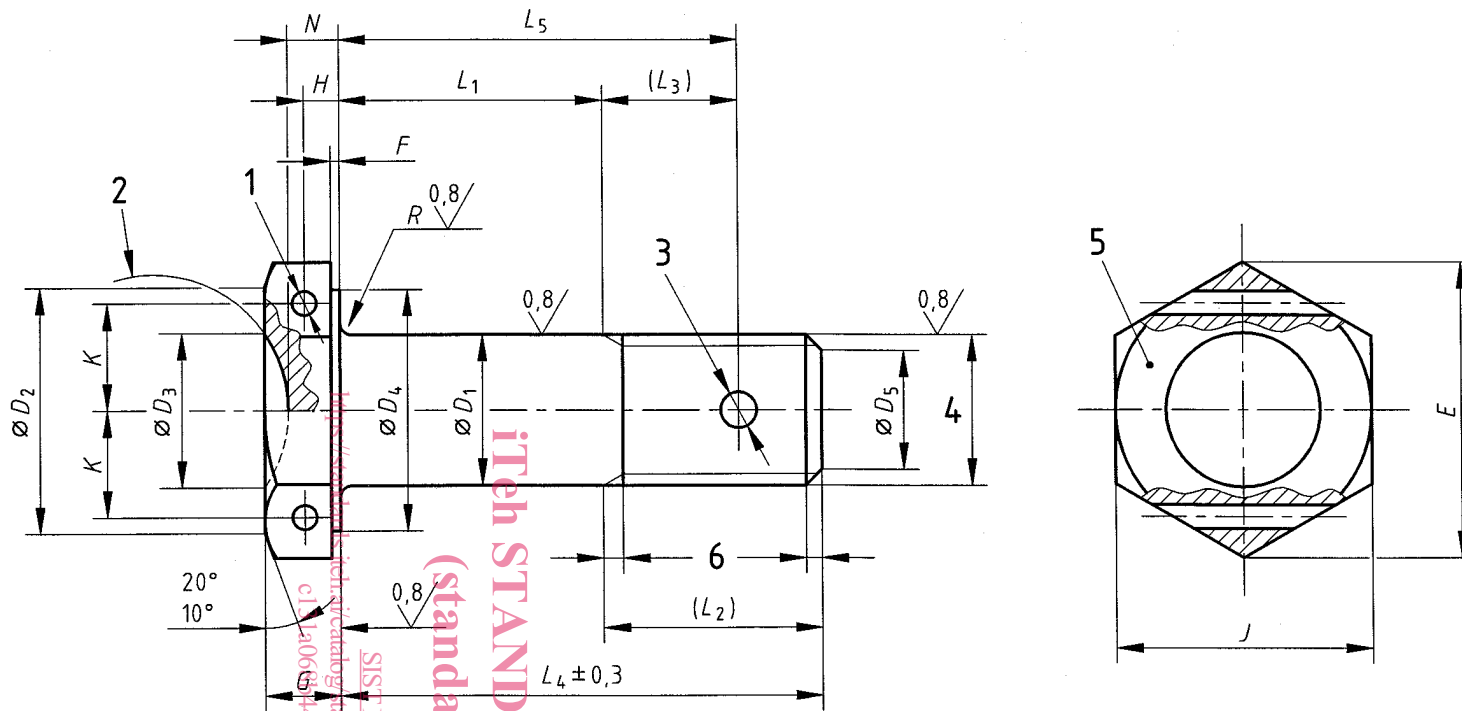
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Values in micrometres apply prior to surface treatment.

Break sharp edges 0,1 to 0,4.



Key

- 1 Two holes diameter D_6 (optional)
- 2 Continuous surface
- 3 One hole diameter D_7 (optional)
- 4 Thread
- 5 Marking
- 6 Conforms to ISO 3353-1

Figure 1

Table 1

Diameter code	Thread ^a	D ₁		D ₂ min.	D ₃ 0 -0,5	D ₄ ^b min.	D ₅		D ₆ H13	D ₇ H13	E min.	F		G 0 -0,3	
		nom.	Tol.				nom.	Tol.				max.	min.		
030	MJ3x0,5 - 4h6h	3	-0,006 -0,031	5,5	-	5,4	2,3	0 -0,5	-	-	6,5	0,4	0,2	2	
040	MJ4x0,7 - 4h6h	4	-0,010 -0,035	6,4	-	6,4	3	± 0,5	-	1,1	7,6	0,5		0,3	2,5
050	MJ5x0,8 - 4h6h	5		7,4	5,25	7,4	3,4		1	1,5	8,7				3
060	MJ6x1 - 4h6h	6		9,4	6,25	9,3	4,2		1,4	1,9	10,9				3,5
070	MJ7x1 - 4h6h	7		10,3	7,25	10,2	5,2				12				4
080	MJ8x1 - 4h6h	8	-0,013 -0,038	12,3	8,25	12,2	6,2		1,6	2,4	14,3				4,5
100	MJ10x1,25 - 4h6h	10	16,3	10,25	16	7,9	2,4				18,9				5
120	MJ12x1,25 - 4h6h	12	18,3	12,25	18	9,8				21,1	6				
140	MJ14x1,5 - 4h6h	14	-0,016 -0,041	21,3	14,25	21	11,5			3	24,5				7
160	MJ16x1,5 - 4h6h	16	23,3	16,25	23	13,5	26,8				8				
180	MJ18x1,5 - 4h6h	18	26,3	18,25	26	15,5	3,8			30,2	9				
200	MJ20x1,5 - 4h6h	20	-0,020 -0,045	29,3	20,25	29		17,5		33,6	10				

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