

SLOVENSKI STANDARD

SIST EN 4163:2016

01-maj-2016

Nadomešča:
SIST EN 4163:2010

Aeronavtika - Vijaki, 100° ugrezna glava, križna zarez, polno steblo, ozka toleranca, dolg navoj, iz legiranega jekla, prevlečeni s kadmijem - Klasifikacija: 1100 MPa (pri temperaturi okolice) / 235 °C

Aerospace series - Screws 100° countersunk normal head, offset cruciform recess, coarse tolerance normal shank, long thread, in alloy steel, cadmium plated - Classification: 1 100 MPa (at ambient temperature) / 235 °C

Luft- und Raumfahrt - 100° Senkschrauben mit Flügelkreuzschlitz, langes Gewinde, aus legiertem Stahl, verkadmet - Klasse: 1 100 MPa (bei Raumtemperatur) / 235 °C

Série aéronautique - Vis à tête fraisée 100° normale, à empreinte cruciforme déportée, tige normale à tolérance large, filetage long, en acier allié, cadmiées - Classification: 1 100 MPa (à température ambiante) / 235 °C

Ta slovenski standard je istoveten z: EN 4163:2016

ICS:

49.025.10	Jekla	Steels
49.030.20	Sorniki, vijaki, stebelni vijaki	Bolts, screws, studs

SIST EN 4163:2016 en,fr,de

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EUROPEAN STANDARD

EN 4163

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 49.030.20

Supersedes EN 4163:2009

English Version

**Aerospace series - Screws 100° countersunk normal head,
offset cruciform recess, coarse tolerance normal shank,
long thread, in alloy steel, cadmium plated - Classification:
1 100 MPa (at ambient temperature) / 235 °C**

Série aérospatiale - Vis à tête fraisée 100° normale, à
empreinte cruciforme déportée, tige normale à
tolérance large, filetage long, en acier allié, cadmiées -
Classification: 1 100 MPa (à température ambiante) /
235 °C

Luft- und Raumfahrt - 100° Senkschrauben mit
Flügelkreuzschlitz, langes Gewinde, aus legiertem
Stahl, verkadmet - Klasse: 1 100 MPa (bei
Raumtemperatur) / 235 °C

This European Standard was approved by CEN on 27 September 2015.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European Foreword

This document (EN 4163:2016) 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 September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

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 4163:2009.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 4163:2016 (E)**1 Scope**

This European Standard specifies the characteristics of screws, 100° countersunk normal head, offset cruciform recess, coarse tolerance normal shank, long thread, in alloy steel, cadmium plated.

Classification: 1 100 MPa¹⁾ / 235 °C²⁾.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

EN 2137, *Steel FE-PL75 — $1100\text{ MPa} \leq R_m \leq 1250\text{ MPa}$ — Bars $D_e \leq 100\text{ mm}$*

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

EN 2442, *Steel FE-PL711 — $1100\text{ MPa} \leq R_m \leq 1300\text{ MPa}$ — Bars and wires — $D_e \leq 25\text{ mm}$ ³⁾*

EN 3514, *Steel FE-PL711 — Hardened and tempered — $1100\text{ MPa} \leq R_m \leq 1300\text{ MPa}$ — Bar and wire for bolts — $D_e \leq 25\text{ mm}$*

EN 9100, *Quality Management Systems — Requirements for Aviation, Space and Defense Organizations*

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

ISO 7689, *Aerospace — Bolts, with MJ threads, made of alloy steel, strength class 1 100 MPa — Procurement specification*

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

ISO 14275, *Aerospace — Drives, internal, offset cruciform, ribbed — Metric series*

ISO 14276, *Aerospace — Drives, internal, offset cruciform — Metric series*

TR 3775, *Aerospace series — Bolts and pins — Materials*

¹⁾ Minimum tensile strength of the material at ambient temperature.

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

³⁾ For new design, see EN 3514.

3 Required characteristics

3.1 Configuration – Dimensions – Masses

See Figure 1 and Table 1.

Dimensions and tolerances are expressed in millimetres and apply after surface treatment.

3.2 Tolerances of form and position

ISO 7913.

3.3 Materials

EN 2137 and EN 2442.

or

TR 3775: alloy steel, classification 1 100 MPa.

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Table 1

Diameter code	Thread ^a	D_1	D_2	D_3	D_4	D_5		E	F	G	H
		h12		min.		nom.	Tol.	min.	0 -0,08		
050	MJ5×0,8-4h6h	5	10	9,0	7,71	3,4	±0,5	0,1	0,96	0,5	2,12
060	MJ6×1-4h6	6	12	10,8	9,00	4,2			1,26	0,6	2,54
070	MJ7×1-4h6h	7	14	12,8	10,28	5,2			1,57		
080	MJ8×1-4h6h	8	16	14,8	12,21	6,2			1,60		
100	MJ10×1,25-4h6h	10	20	18,8	15,43	7,9			1,93		
120	MJ12×1,25-4h6h	12	24	22,8	18,00	9,8			2,53		

Diameter code	$L_1^{b,c}$		L_2	$L_3 \pm 0,3^{c,d}$		R		Mass ^e	
	nom.	Tol.		Length code	nom.	max.	min.	f	g
050	6	0 -0,8	16	022 to 070	22 to 70	0,5	0,3	3,009	0,306
060	6	0 -1	18	024 to 084	24 to 84	0,7	0,5	4,699	0,444
070	8	0 -1	20	028 to 098	28 to 98			7,682	0,604
080	8	0 -1	22	030 to 112	30 to 112			10,535	0,790
100	8	0 -1,25	26	034 to 140	34 to 140	0,8	0,6	19,337	1,232
120	10	0 -1,25	30	040 to 168	40 to 168	0,9		33,504	1,774

^a In accordance with ISO 5855-2.

^b First length corresponding to first L_3 length.

^c Increments:
2 for $L_3 \leq 100$;
4 for $L_3 > 100$.

^d 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.

^e Approximate values (kg/1 000 pieces), calculated on the basis of 7,85 kg/dm³, given for information purposes only.

^f Value for first L_3 .

^g Increase for each additional 2 mm of L_3 .