Irish Standard
I.S. EN 4161:2009

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

I.S. EN 4161:2009

Incorporating amendments/corrigenda/National Annexes issued since publication:
EN 4161:2009/AC:2010

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:	*This document is based on:* EN 4161:2009	*Published:* 11 November, 2009

This document was published under the authority of the NSAI and comes into effect on: 27 November, 2009	ICS number:

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W **NSAI.ie**

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

I.S. EN 4161:2009

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4161:2009/AC

April 2010
Avril 2010
April 2010

ICS 49.030.20

English version
Version Française
Deutsche Fassung

Aerospace series - Screws, pan 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 cylindrique, 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 - Flachkopfschrauben, mit Flügelkreuzschlitz, langes Gewinde, aus legiertem Stahl, verkadmet - Klasse: 1 100 MPa (bei Raumtemperatur) / 235 °C

This corrigendum becomes effective on 28 April 2010 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 28 avril 2010 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 28.April 2010 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No.:EN 4161:2009/AC:2010 D/E/F

1 Modification to Clause 2

Delete references EN 2000 and ISO 7994.

Add the following references:

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

and

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

ISO 14277, *Aerospace — Drivers, ribbed, for internal offset cruciform ribbed or unribbed drives — Metric series*

ISO 14278, *Aerospace — Gauges, for internal offset cruciform ribbed or unribbed drives — Metric series*".

2 Modification to Table 1

Replace Table 1 with the following: "

Table 1

Diameter code	Threads [a]	D_1 h12	D_2 O -0,3	D_3 min.	D_4		E		L_1 [b c d] min.	L_2 [b c d] max.	L_3
					nom.	Tol.	nom.	Tol.			
030	MJ3x0,5 – 4h6h	3	6	4,7	2,3	0 - 0,5	1,8	0 - 0,2	0,4	2	12
040	MJ4x0,7 – 4h6h	4	8	6,7	3		2,4				14
050	MJ5x0,8 – 4h6h	5	10	8,7	3,4	± 0,5	3	0 - 0,3	0,5	4	16
060	MJ6x1 – 4h6h	6	12	10,7	4,2		3,6		0,7		18
070	MJ7x1 – 4h6h	7	14	12,7	5,2		4,2				20
080	MJ8x1 – 4h6h	8	16	14,7	6,2		4,8				22
100	MJ10x1,25 – 4h6h	10	20	18,7	7,9		6		0,8	6	26
120	MJ12x1,25 – 4h6h	12	24	22,7	9,8		7,2		0,9		30

Diameter code	L4 ± 0,2 [d e]		R		S		Mass [f]	
	Length code	nom.	nom.	Tol.	max.	min.	[g]	[h]
030	014 to 042	14 to 42	0,4	0 - 0,2	1,2	0,3	0,979	0,110
040	016 to 056	16 to 56			1,6	0,4	2,242	0,198
050	020 to 070	20 to 70	0,5		2	0,5	4,528	0,306
060	022 to 084	22 to 84	0,7		2,4	0,6	7,457	0,444
070	024 to 098	24 to 98			2,8	0,7	12,095	0,604
080	026 to 112	26 to 112			3,2	0,8	16,923	0,790
100	032 to 140	32 to 140	0,8		4	1	33,023	1,232
120	036 to 168	36 to 168	0,9	0 -0,3	4,8	1,2	57,123	1,774

[a] In accordance with ISO 5855-2.
[b] First length corresponding to first L_4 length.
[c] Condition L_1 min. and L_2 max. cannot be obtained simultaneously.
[d] Increments:
2 for $L_4 < 100$;
4 for $L_4 > 100$.
[e] If greater lengths are required, they shall be chosen using the above increments. The length code corresponds to the length L_4, completed by one or two zeros to the left, where necessary, to obtain a three digit code.
[f] Approximate values (kg/1 100 pieces), calculated on the basis of 7,85 kg/dm³, given for information purposes only.
[g] Value for head and first L_4.
[h] Increase for each additional 2 mm of L_4.

".

3 Modification to Table 2

Replace Table 2 with the following: "

Table 2

Drive	Code
ISO 14275	None
ISO 14277 ISO 14278 unribbed	A

".

4 Modification to Clause 6

In a), replace "EN 2000" *with* "EN 9100".

I.S. EN 4161:2009

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4161

November 2009

ICS 49.030.20

English Version

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

Série aérospatiale - Vis à tête cylindrique, 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 - Flachkopfschrauben, mit Flügelkreuzschlitz, langes Gewinde, aus legiertem Stahl, verkadmet - Klasse : 1 100 MPa (bei Raumtemperatur) / 235 °C

This European Standard was approved by CEN on 15 September 2009.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 4161:2009: E

Contents

Page

Foreword

This document (EN 4161:2009) 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 May 2010, and conflicting national standards shall be withdrawn at the latest by May 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.

1 Scope

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

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.

EN 2000, *Aerospace series — Quality assurance — EN aerospace products — Approval of the quality system manufacturers*

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

EN 2137, *Aerospace series — Steel Fe-PL75 — 1 100 MPa ≦ R_m ≦ 1 250 MPa — Bars — D_e ≤ 100 mm*[3]

EN 2424, *Aerospace series — Marking of aerospace products*[3]

EN 2442, *Aerospace series — Steel FE-PL711 — 1 100 MPa ≦ R_m ≦ 1 300 MPa — Bars and wires — D_e ≦ 25 mm*[3]

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

TR 3775, *Aerospace series — Bolts and pins — Materials*[4]

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*

ISO 7994, *Aerospace — Internal drive, offset cruciform recess (Torq-Set®) for rotary fastening devices — Metric series*

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) Published as ASD-STAN Pre-Standard at the date of publication of this standard.

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