UDC 621.882.211

February 1992

Hexagon head bolts with metric fine pitch thread

Product grades A and B
(ISO 8765 : 1988)
English version of DIN EN 28 765

DIN
EN 28 765

This standard incorporates the English version of ISO 8765

Sechskantschrauben mit Schaft, metrisches Feingewinde, Produktklassen A und B (ISO 8765 : 1988)

Supersedes DIN 960, January 1990 edition, and DIN ISO 8765, January 1990 edition.

European Standard EN 28 765 : 1991 has the status of a DIN Standard.

A comma is used as the decimal marker.

National foreword

The publication of this standard is in keeping with a decision made by CEN/TC 185 to adopt, without alteration, a series of ISO Standards covering hexagon head bolts and nuts as European Standards. The responsible German body involved in their publication is the *Normenausschuß Mechanische Verbindungselemente* (Fasteners Standards Committee).

As a consequence, all DIN ISO Standards covering hexagon head bolts and nuts have been superseded by the corresponding DIN EN Standards (see table overleaf), with no alteration having been made to the former ISO designation.

The DIN Standards corresponding to the ISO Standards referred to in clause 2 of the EN are as follows:

ISO 225	DIN EN 20 225
ISO 898-1	DIN EN 20 898 Part 1
ISO 3269	DIN ISO 3269 (at present at the stage of draft)
ISO 3506	DIN ISO 3506 (at present at the stage of draft)
ISO 4042	DIN ISO 4042 (at present at the stage of draft)
ISO 4759-1	DIN ISO 4759 Part 1
ISO 6157-1	DIN EN 26 157 Part 1
ISO 6157-3	DIN EN 26 157 Part 3
ISO 8839	DIN EN 28 839
ISO 8992	DIN ISO 8992 (at present at the stage of draft)

Continued overleaf.

EN comprises 10 pages.

DIN EN Standard	Title	Previous DIN ISO Standard	Withdrawn DIN Standard
24 014	Hexagon head bolts; product grades A and B	4014	931 Part 1
24 016	Hexagon head bolts; product grade C	4016	601
24 017	Hexagon head screws; product grades A and B	4017	933
24 018	Hexagon head screws; product grade C	4018	558
24 032	Hexagon nuts, style 1; product grades A and B	4032	934
24 034	Hexagon nuts; product grade C	4034	555
24 035	Hexagon thin nuts (chamfered); product grades A and B	4035	439 Part 2
24 036	Hexagon thin nuts; product grade B (unchamfered)	4036	439 Part 1
28 673	Hexagon nuts, style 1, with metric fine pitch thread; product grades A and B	8673	971 Part 1 934
28 674	Hexagon nuts, style 2, with metric fine pitch thread; product grades A and B	8674	971 Part 2
28 675	Hexagon thin nuts with metric fine pitch thread; product grades A and B	8675	439 Part 2
28 676	Hexagon head screws with metric fine pitch thread; product grades A and B	8676	961
28 765	Hexagon head bolts with metric fine pitch thread; product grades A and B	8765	960

Standards referred to

See clauses 0 and 2.

Other relevant document

Supplement 2 to DIN 918 Fasteners; synopsis of available ISO Standards and DIN Standards

Previous editions

DIN Kr 551: 09.35, 11.36; DIN 960: 04.42, 02.53, 03.63, 11.67, 11.70, 12.83, 01.90; DIN ISO 8765: 01.90.

Amendments

In comparison with the January 1990 editions of DIN 960 and DIN ISO 8765, the following amendments have been made.

a) Thread sizes greater than M 64 × 4 have been deleted

b) The values specified for l_{smin} have been changed.

c) The widths across flats specified in ISO 272 have been adopted for thread sizes M 10, M 12, M 14 and M 22.

d) The underhead fillet may now be slightly tapered

e) The technical delivery conditions have been revised

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 28 765

October 1991

UDC 621.882.211

Descriptors: Fasteners, bolts, hexagon head bolts, requirements, dimensions, designation

English version

Hexagon head bolts with metric fine pitch thread
Product grades A and B
(ISO 8765 : 1988)

Boulons à tête hexagonale, à filetage métrique à pas fin, grades A et B (ISO 8765 : 1988)

Sechskantschrauben mit Schaft; metrisches Feingewinde; Produktklassen A und B (ISO 8765 : 1988)

This European Standard was approved by CEN on 1991-10-10 and is identical to the ISO Standard as referred to. 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.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization

Comité Européen de Normalisation

Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Ref. No. EN 28 765 : 1991 E

Foreword

In 1990, ISO 8765 : 1988 was submitted to the CEN PQ procedure. Following the positive result of the PQ, CEN/BT agreed to submit ISO 8765 : 1988, with the following modifications, to Formal Vote.

In the French version, replace:

- 'boulon' by 'vis partiellement filetée';
- 'vis' by 'vis entièrement filetée'.

In accordance with the CEN/CENELEC Internal Regulations, 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 United Kingdom.

Endorsement notice

The text of the International Standard ISO 8765 1988 was approved by CEN as a European Standard with agreed common modifications as given above.

0 Introduction

This International Standard is part of the complete ISO product standard series on hexagon drive fasteners. The series comprises

a) hexagon head bolts (ISO 4014, ISO 4015, ISO 4016 and ISO 8765);

b) hexagon head screws (ISO 4017, ISO 4018 and ISO 8676);

c) hexagon nuts (ISO 4032, ISO 4033, ISO 4034, ISO 4035, ISO 4036, ISO 8673, ISO 8674 and ISO 8675);

d) hexagon flanged bolts (ISO 4162 and ISO 8102);

e) hexagon flanged screws;[1]

f) hexagon flanged nuts (ISO 4161, ISO 7043 and ISO 7044);

g) structural bolting (ISO 4775, ISO 7411 to ISO 7414 and ISO 7417).

1 Scope and field of application

This International Standard gives specifications for hexagon head bolts with metric fine pitch thread with nominal thread diameters *d* from 8 to 64 mm of product grade A for nominal thread diameters *d* from 8 to 24 mm and nominal lengths, *l*, up to and including 10 *d* or 150 mm, whichever is shorter, and of product grade B for nominal thread diameters *d* over 24 mm or nominal lengths over 10 *d* or 150 mm, whichever is shorter.

If, in special cases, specifications other than those listed in this International Standard are required, they should be selected from existing International Standards, for example ISO 261, ISO 888, ISO 898-1, ISO 965-2, ISO 3506 and ISO 4759-1.

Coarse thread bolts according to ISO 4014 should be first choice.

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1) These will form the subjects of future International Standards.

2 References

ISO 225, *Fasteners — Bolts, screws and nuts — Symbols and designations of dimensions.*

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 262, *ISO general purpose metric screw threads — Selected sizes for screws, bolts and nuts.*

ISO 888, *Bolts, screws and studs — Nominal lengths and thread lengths for general purpose bolts and screws.*

ISO 898-1, *Mechanical properties of fasteners — Part 1: Bolts, screws and studs.*

ISO 965-2, *ISO general purpose metric screw threads — Tolerances — Part 2 : Limits of sizes for general purpose bolt and nut threads — Medium quality.*

ISO 3269, *Fasteners — Acceptance inspection.*

ISO 3506, *Corrosion-resistant stainless steel fasteners — Specifications.*

ISO 4042, *Threaded components — Electroplated coatings.* [1]

ISO 4753, *Fasteners — Ends of parts with external metric ISO thread.*

ISO 4759-1, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters > 1,6 and < 150 mm and product grades A, B and C.*

ISO 6157-1, *Fasteners — Surface discontinuities — Part 1 : Bolts, screws and studs for general requirements.* [1]

ISO 6157-3, *Fasteners — Surface discontinuities — Part 3 : Bolts, screws and studs for special requirements.* [1]

ISO 8839, *Mechanical properties of fasteners — Bolts, screws, studs and nuts made of non-ferrous metals.*

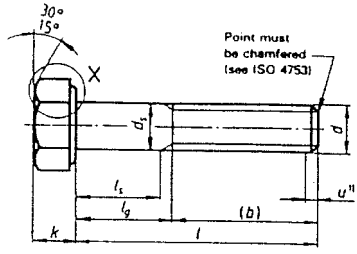
ISO 8992, *Fasteners — General requirements for bolts, screws, studs and nuts.*

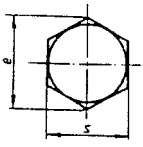
1) At present at the stage of draft.

3 Dimensions

NOTE – Symbols and designations of dimensions are specified in ISO 225.

Dimension in millimetres





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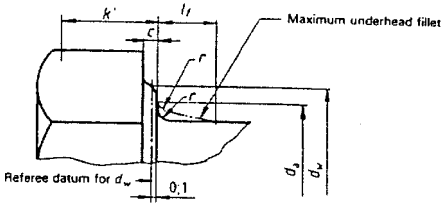

1) Incomplete thread $u \leq 2P$

Table 1 — Preferred threads

Dimensions in millimetres

Thread, $d \times P$			M8 × 1	M10 × 1	M12 × 1,5	M16 × 1,5	M20 × 1,5	M24 × 2	M30 × 2	M36 × 3	M42 × 3	M48 × 3	M56 × 4	M64 × 4
b ref.		1)	22	26	30	38	46	54	66	–	–	–	–	–
		2)	–	–	–	44	52	60	72	84	96	108	–	–
		3)	–	–	–	–	–	73	85	97	109	121	137	153
c		min.	0,15	0,15	0,15	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3
		max.	0,6	0,6	0,6	0,8	0,8	0,8	0,8	0,8	1	1	1	1
d_a		max.	9,2	11,2	13,7	17,7	22,4	26,4	33,4	39,4	45,6	52,6	63	71
d_s		nom. = max.	8	10	12	16	20	24	30	36	42	48	56	64
	Product grade A	min.	7,78	9,78	11,73	15,73	19,67	23,67	–	–	–	–	–	–
	Product grade B	min.	–	–	–	15,57	19,48	23,48	29,48	35,8	41,38	47,38	55,26	63,26
d_w	Product grade A	min.	11,63	14,63	16,63	22,49	28,19	33,61	–	–	–	–	–	–
	Product grade B	min.	–	–	–	22	27,7	33,25	42,75	51,11	59,95	69,45	78,66	88,16
e	Product grade A	min.	14,38	17,77	20,03	26,75	33,53	39,98	–	–	–	–	–	–
	Product grade B	min.	–	–	–	26,17	32,95	39,55	50,85	60,79	71,3	82,6	93,56	104,86
l_f		max.	2	2	3	3	4	4	6	6	8	10	12	13
k		nom.	5,3	6,4	7,5	10	12,5	15	18,7	22,5	26	30	35	40
	Product grade A	min.	5,15	6,22	7,32	9,82	12,285	14,785	–	–	–	–	–	–
		max.	5,45	6,58	7,68	10,18	12,715	15,215	–	–	–	–	–	–
	Product grade B	min.	–	–	–	9,71	12,15	14,65	18,28	22,08	25,58	29,58	34,5	39,5
		max.	–	–	–	10,29	12,85	15,35	19,12	22,92	26,42	30,42	35,5	40,5
k' 4)	Product grade A	min.	3,61	4,35	5,12	6,87	8,6	10,35	–	–	–	–	–	–
	Product grade B	min.	–	–	–	6,8	8,51	10,26	12,8	15,46	17,91	20,71	24,15	27,65
r		min.	0,4	0,4	0,6	0,6	0,8	0,8	1	1	1,2	1,6	2	2
s		nom. = max.	13	16	18	24	30	36	46	55	65	75	85	95
	Product grade A	min.	12,73	15,73	17,73	23,67	29,67	35,38	–	–	–	–	–	–
	Product grade B	min.	–	–	–	23,16	29,16	35	45	53,8	63,1	73,1	82,8	92,8

l_s and l_g 5), 6)

For sizes above the stepped line marked thus ———, ISO 8676 is recommended.

l nom.	l Product grade A min.	l Product grade A max.	l Product grade B min.	l Product grade B max.	M8 l_s min.	M8 l_g max.	M10 l_s min.	M10 l_g max.	M12 l_s min.	M12 l_g max.	M16 l_s min.	M16 l_g max.	M20 l_s min.	M20 l_g max.	M24 l_s min.	M24 l_g max.	M30 l_s min.	M30 l_g max.	M36 l_s min.	M36 l_g max.	M42 l_s min.	M42 l_g max.	M48 l_s min.	M48 l_g max.	M56 l_s min.	M56 l_g max.	M64 l_s min.	M64 l_g max.
35	34,5	35,5	–	–																								
40	39,5	40,5	–	–	11,75	18																						
45	44,5	45,5	–	–	16,75	23	11,5	19																				
50	49,5	50,5	–	–	21,75	28	16,5	24	11,25	20																		
55	54,4	55,6	–	–	26,75	33	21,5	29	16,25	25																		
60	59,4	60,6	–	–	31,75	38	26,5	34	21,25	30																		
65	64,4	65,6	–	–	36,75	43	31,5	39	26,25	35	17	27																
70	69,4	70,6	–	–	41,75	48	36,5	44	31,25	40	22	32																
80	79,4	80,6	–	–	51,75	58	46,5	54	41,25	50	32	42	21,5	34														

90	89,3	90,7		–			56,5	64	51,25	60	42	52	31,5	44														
100	99,3	100,7	–	–			66,5	74	61,25	70	52	62	41,5	54	31	46												
110	109,3	110,7	–	–					71,25	80	62	72	51,5	64	41	56												
120	119,3	120,7	118,25	121,75					81,25	90	72	82	61,5	74	51	66	36,5	54										
130	129,2	130,8	128	132							76	86	65,5	78	55	70	40,5	58										
140	139,2	140,8	138	142							86	96	75,5	88	65	80	50,5	68	36	56								
150	149,2	150,8	148	152							96	106	85,5	98	75	90	60,5	78	46	66								
160	–	–	158	162							106	116	95,5	108	85	100	70,5	88	56	76	41,5	64						
180	–	–	178	182									115,5	128	105	120	90,5	108	76	96	61,5	84						
200	–	–	197,7	202,3									135,5	148	125	140	110,5	128	96	116	81,5	104	67	92				
220	–	–	217,7	222,3											132	147	117,5	135	103	123	88,5	111	74	99	55,5	83		
240	–	–	237,7	242,3											152	167	137,5	155	123	143	108,5	131	94	119	75,5	103		
260	–	–	257,4	262,6													157,5	175	143	163	128,5	151	114	139	95,5	123	77	107
280	–	–	277,4	282,6													177,5	195	163	183	148,5	171	134	159	115,5	143	97	127
300	–	–	297,4	302,6													197,5	215	183	203	168,5	191	154	179	135,5	163	117	147
320	–	–	317,15	322,85															203	223	188,5	211	174	199	155,5	183	137	167
340	–	–	337,15	342,85															223	243	208,5	231	194	219	175,5	203	157	187
360	–	–	357,15	362,85															243	263	228,5	251	214	239	195,9	223	177	207
380	–	–	377,15	382,85																	248,5	271	234	259	215,5	243	197	227
400	–	–	397,15	402,85																	268,5	291	254	279	235,5	263	217	247
420	–	–	416,85	423,15																	288,5	311	274	299	256,5	283	237	267
440	–	–	436,85	443,15																	308,5	331	294	319	275,5	303	257	287
460	–	–	456,85	463,15																			314	339	295,5	323	277	307
480	–	–	476,85	483,15																			334	359	315,5	343	297	327
500	–	–	496,85	503,15																					335,5	363	317	347

1) For lengths $l_{nom} < 125$ mm.

2) For lengths 125 mm $< l_{nom} < 200$ mm.

3) For lengths $l_{nom} > 200$ mm.

4) $k'_{min} = 0,7\ k_{min}$

5) $l_{g\,max} = l_{nom} - b$
$l_{s\,min} = l_{g\,max} - 5P$
P = pitch of the coarse thread, specified in ISO 261.

6) l_g is the minimum grip length.

NOTES

1 The popular lengths are defined in terms of lengths l_s and l_g:
- product grade A above the stepped line, marked thus – – – – –
- product grade B below this stepped line.

2 Thread sizes M10 × 1 and M12 × 1,5 are popular sizes but not included in ISO 262.

Table 2 — Non-preferred threads

Dimensions in millimetres

Thread, $d \times P$			M10 × 1,25	M12 × 1,25	M14 × 1,5	M18 × 1,5	M20 × 2	M22 × 1,5	M27 × 2	M33 × 2	M39 × 3	M45 × 3	M52 × 4	M60 × 4
b ref.		[1]	26	30	34	42	46	50	60	–	–	–	–	–
		[2]	–	–	40	48	52	56	66	78	90	102	116	–
		[3]	–	–	–	–	–	69	79	91	103	115	129	145
r		min.	0,15	0,15	0,15	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3
		max.	0,6	0,6	0,6	0,8	0,8	0,8	0,8	0,8	1	1	1	1
d_a		max.	11,2	13,7	15,7	20,2	22,4	24,4	30,4	36,4	42,4	48,6	56,6	67
d_s		nom. = max.	10	12	14	18	20	22	27	33	39	45	52	60
	Product grade $\frac{A}{B}$	min.	9,78	11,73	13,73	17,73	19,67	21,67	–	–	–	–	–	–
			–	–	–	17,57	19,48	21,48	26,48	32,38	38,38	44,38	51,26	59,26
d_w	Product grade $\frac{A}{B}$	min.	14,63	16,63	19,37	25,34	28,19	31,71	–	–	–	–	–	–
			–	–	–	24,85	27,7	31,35	38	46,55	55,86	64,7	74,2	83,41
e	Product grade $\frac{A}{B}$	min.	17,77	20,03	23,36	30,14	33,53	37,72	–	–	–	–	–	–
			–	–	–	29,56	32,95	37,29	45,2	55,37	66,44	76,95	88,25	99,21
l_f		max.	2	3	3	3	4	4	6	6	6	8	10	12
		nom.	6,4	7,5	8,8	11,5	12,5	14	17	21	25	28	33	38
	Product grade A	min.	6,22	7,32	8,62	11,285	12,285	13,785	–	–	–	–	–	–
k		max.	6,58	7,68	8,98	11,715	12,715	14,215	–	–	–	–	–	–
	Product grade B	min.	–	–	–	11,15	12,15	13,65	16,65	20,58	24,58	27,58	32,5	37,5
		max.	–	–	–	11,85	12,85	14,35	17,35	21,42	25,42	28,42	33,5	38,5
k [4]	Product grade $\frac{A}{B}$	min.	4,35	5,12	6,03	7,9	8,6	9,65	–	–	–	–	–	–
			–	–	–	7,81	8,51	9,56	11,66	14,41	17,21	19,31	22,75	26,25
r		min.	0,4	0,6	0,6	0,6	0,8	0,8	1	1	1	1,2	1,6	2
		nom. = max.	16	18	21	27	30	34	41	50	60	70	80	90
s	Product grade $\frac{A}{B}$	min.	15,73	17,73	20,67	26,67	29,67	33,38	–	–	–	–	–	–
			–	–	–	26,16	29,16	33	40	49	58,8	68,1	78,1	87,8

Product grade		l		l_1 and l_2 [5], [6]																					
A	B			l_1	l_2	l_1	l_2	l_1	l_2	l_1	l_2	l_3	l_2	l_1	l_2	l_1	l_2	l_1	l_2	l_1	l_2	l_1	l_2	l_1	l_2	l_1	l_2
nom.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
45	44,5	45,5	–	–	11,5	19																						
50	49,5	50,5	–	–	16,5	24	11,25	20																				
55	54,4	55,6	–	–	21,5	29	16,25	25																				
60	59,4	60,6	–	–	26,5	34	21,25	30	16	26																		
65	64,4	65,6	–	–	31,5	39	26,25	35	21	31																		
70	69,4	70,6	–	–	36,5	44	31,25	40	26	36	15,5	28																

For sizes above the stepped line marked thus ——, ISO 8676 is recommended.

80	79,4	80,6	–	–	46,5	54	41,25	50	36	46	26,5	38	21,5	34																	
90	89,3	90,7	–	–	56,5	64	51,25	60	46	56	36,5	48	31,5	44	27,5	49															
100	99,3	100,7	–	–	66,5	74	61,25	70	56	66	45,5	58	41,5	54	37,5	50															
110	109,3	110,7	108,25	111,75			71,25	80	66	76	55,5	68	51,5	64	47,5	60	35	50													
120	119,3	120,7	118,25	121,75			81,25	90	76	86	65,5	78	61,5	74	57,5	70	45	60													
130	129,2	130,8	128	132					80	90	69,5	82	65,5	78	61,5	74	49	64	34,5	52											
140	139,2	140,8	138	142					90	100	79,5	92	75,5	88	71,5	84	59	74	44,5	62											
150	149,2	150,8	148	152							89,5	102	85,5	98	81,5	94	69	84	54,5	72	40	60									
160	–	–	158	162							99,5	122	95,5	108	91,5	104	79	94	64,5	82	50	70									
180	–	–	178	182							119,5	132	115,5	128	111,5	124	99	114	84,5	102	70	90	55,5	78							
200	–	–	197,7	202,3									135,5	148	131,5	144	119	134	104,5	122	90	110	75,5	98	59	84					
220	–	–	217,7	222,3											138,5	151	126	141	111,5	129	97	117	82,5	106	66	91					
240	–	–	237,7	242,3													146	161	131,5	149	117	137	102,5	125	86	111	67,5	95			
260	–	–	257,4	262,6													166	181	151,5	169	137	157	122,5	145	106	131	87,5	115			
280	–	–	277,4	282,6															171,5	189	157	177	142,5	165	126	151	107,5	135			
300	–	–	297,4	302,6															191,5	209	177	197	162,5	185	146	171	127,5	155			
320	–	–	317,15	322,85															211,5	229	197	217	182,5	205	166	191	147,5	175			
340	–	–	337,15	342,85																	217	237	202,5	225	186	211	167,5	195			
360	–	–	357,15	362,85																	237	257	222,5	245	206	231	187,5	215			
380	–	–	377,15	382,85																	257	277	242,5	265	226	251	207,5	235			
400	–	–	397,15	402,85																			262,5	285	246	271	227,5	255			
420	–	–	416,85	423,15																			282,5	305	266	291	247,5	275			
440	–	–	436,85	443,15																			302,5	325	286	311	267,5	295			
460	–	–	456,85	463,15																					306	331	287,5	315			
480	–	–	476,85	483,15																					326	351	307,5	335			
500	–	–	496,85	503,15																							327,5	355			

1) For lengths $l_{nom} < 125$ mm.

2) For lengths $125 \text{ mm} < l_{nom} < 200$ mm.

3) For lengths $l_{nom} > 200$ mm.

4) $k'_{min} = 0{,}7\ k_{min}$

5) $l_{g\,max} = l_{nom} - b$
$l_{1\,min} = l_{g\,max} - 5P$
P = pitch of the coarse thread, specified in ISO 261.

6) l_g is the minimum grip length.

NOTE – The popular lengths are defined in terms of lengths l_1 and l_g:
- product grade A above the stepped line, marked thus – – – – –
- product grade B below this stepped line.

4 Specifications and reference standards

Table 3 — Specifications and reference standards

Material		Steel	Stainless steel	Non ferrous metal
General requirements	International Standard	ISO 8992		
Thread	Tolerance	6g		
	International Standards	ISO 261, ISO 965-2		
Mechanical properties	Class[1]	$d < 39$ mm: 5.6, 8.8, 10.9 $d > 39$ mm: as agreed	$d < 20$ mm: A2-70 20 mm $< d < 39$ mm: A2-50 $d > 39$ mm: as agreed	
	International Standards	$d < 39$ mm: ISO 898-1 $d > 39$ mm: as agreed	$d < 39$ mm: ISO 3506 $d > 39$ mm: as agreed	ISO 8839
Tolerances	Product grades	For $d < 24$ mm and $l < 10\,d$ or 150 mm[2]: A For $d > 24$ mm or $l > 10\,d$ or 150 mm[2]: B		
	International Standard	ISO 4759-1		
Finish		as processed	plain	plain
		Requirements for electroplating are covered in ISO 4042. If different electroplating requirements are desired or if requirements are needed for other finishes, they should be agreed between customer and supplier.		
Acceptability		Limits for surface discontinuities are covered in ISO 6157-1 and ISO 6157-3. For acceptance procedure, see ISO 3269.		

1) The designation symbols for the property classes according to ISO 898-1 can also be used for thread sizes above M39 × 3, provided that the finished product has all the properties assigned to the designation symbols in ISO 898-1.

2) Whichever is shorter.

5 Designation

Example for the designation of a hexagon head bolt with thread M12 × 1,5, nominal length l = 80 mm and property class 8.8:

Hexagon head bolt ISO 8765 - M12 × 1,5 × 80 - 8.8