
**Hexagon head screws — Product grades
A and B**

Vis à tête hexagonale entièrement filetées — Grades A et B



Reference number
ISO 4017:2011(E)

© ISO 2011



COPYRIGHT PROTECTED DOCUMENT

© ISO 2011

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 4017 was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 10, *Product standards for fasteners*.

This fourth edition cancels and replaces the third edition (ISO 4017:1999), of which it constitutes a minor revision.

www.iso.org

Introduction

This International Standard belongs to a complete family of product standards developed by ISO on external hexagon drive fasteners. It comprises the following:

- 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 7040, ISO 7041, ISO 7042, ISO 7719, ISO 7720, ISO 8673, ISO 8674, ISO 8675, ISO 10511, ISO 10512 and ISO 10513);
- d) hexagon bolts with flange (ISO 4162, ISO 15071 and ISO 15072);
- e) hexagon nuts with flange (ISO 4161, ISO 7043, ISO 7044, ISO 10663, ISO 12125, ISO 12126 and ISO 21670).

Hexagon head screws — Product grades A and B

1 Scope

This International Standard specifies the characteristics of hexagon head screws with threads from M1,6 up to and including M64, of product grade A for threads M1,6 to M24 and nominal lengths up to and including $10d$ or 150 mm, whichever is the shorter, and product grade B for threads over M24 or nominal lengths over $10d$ or 150 mm, whichever is the shorter.

NOTE This type of product is the same as that covered by ISO 4014 with the exception of threading up to head and nominal lengths up to and including 200 mm as preferred lengths.

If, in special cases, specifications other than those listed in this International Standard are required, they can be selected from existing International Standards, for example ISO 724, ISO 888, ISO 898-1, ISO 965-1, ISO 3506-1, ISO 4753 and ISO 4759-1.

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 225, *Fasteners — Bolts, screws, studs and nuts — Symbols and descriptions of dimensions*

ISO 724, *ISO general-purpose metric screw threads — Basic dimensions*

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread*

ISO 965-1, *ISO general-purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

ISO 3269, *Fasteners — Acceptance inspection*

ISO 3506-1, *Mechanical properties of corrosion-resistant stainless steel fasteners — Part 1: Bolts, screws and studs*

ISO 3508, *Thread run-outs for fasteners with thread in accordance with ISO 261 and ISO 262*

ISO 4042, *Fasteners — Electroplated coatings*

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

ISO 4759-1, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*

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

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*

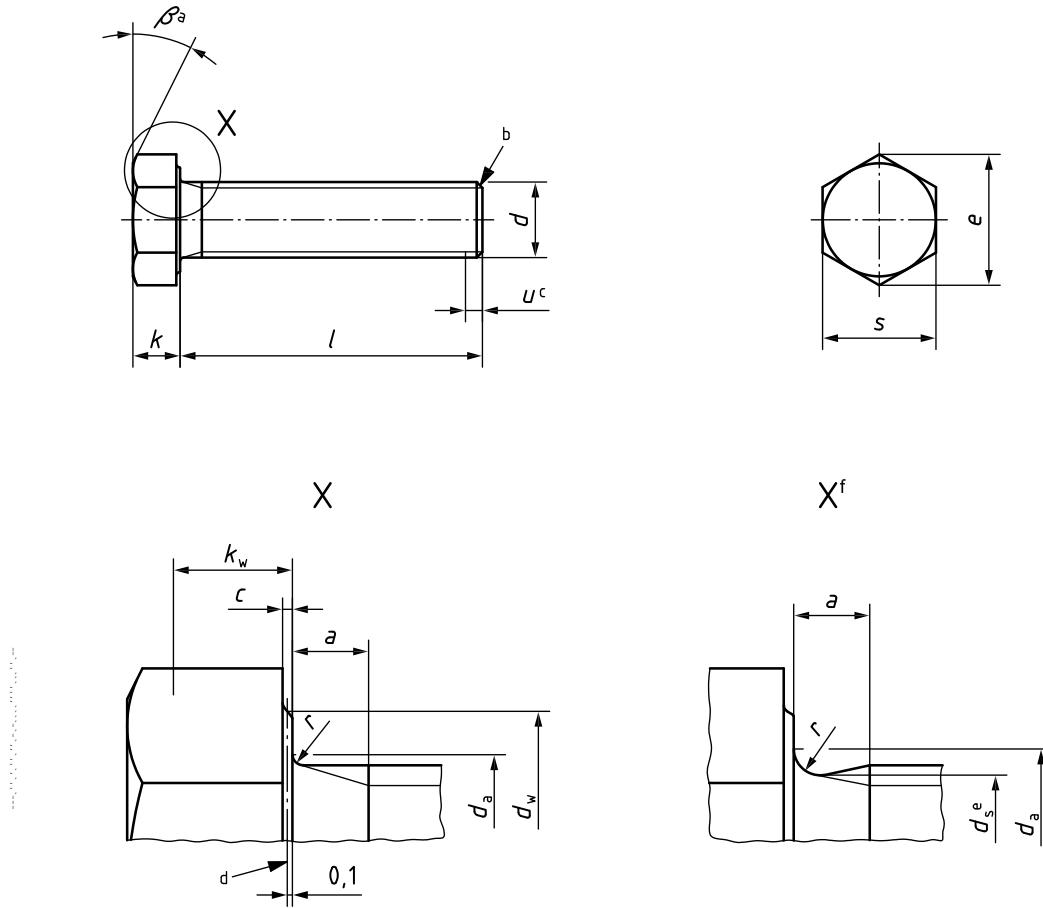
ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coatings*

3 Dimensions

See Figure 1 and Tables 1 and 2.

Symbols and descriptions of dimensions are specified in ISO 225.

Dimensions in millimetres



- a $\beta = 15^\circ$ to 30° .
- b Point shall be chamfered or for threads $\leq M4$ may be as-rolled (sheared end) in accordance with ISO 4753.
- c Incomplete thread $u \leq 2P$.
- d Reference datum for d_w .
- e $d_s \approx$ pitch diameter.
- f Permissible shape.

Figure 1

Table 1 — Preferred threads

Dimensions in millimetres

Thread, <i>d</i>				M1,6	M2	M2,5	M3	M4	M5	M6	
<i>p^a</i>				0,35	0,4	0,45	0,5	0,7	0,8	1	
<i>a</i>			max. ^b	1,05	1,2	1,35	1,5	2,1	2,4	3	
			min.	0,35	0,4	0,45	0,5	0,7	0,8	1	
<i>c</i>			max.	0,25	0,25	0,25	0,40	0,40	0,50	0,50	
			min.	0,10	0,10	0,10	0,15	0,15	0,15	0,15	
<i>d_a</i>			max.	2	2,6	3,1	3,6	4,7	5,7	6,8	
<i>d_w</i>	Product grade	A	min.	2,27	3,07	4,07	4,57	5,88	6,88	8,88	
		B		2,30	2,95	3,95	4,45	5,74	6,74	8,74	
<i>e</i>	Product grade	A	min.	3,41	4,32	5,45	6,01	7,66	8,79	11,05	
		B		3,28	4,18	5,31	5,88	7,50	8,63	10,89	
<i>k</i>	Product grade	A	nom.	1,1	1,4	1,7	2	2,8	3,5	4	
			max.	1,225	1,525	1,825	2,125	2,925	3,65	4,15	
		B	min.	0,975	1,275	1,575	1,875	2,675	3,35	3,85	
			max.	1,3	1,6	1,9	2,2	3,0	3,74	4,24	
<i>k_w^c</i>	Product grade	A	min.	0,68	0,89	1,10	1,31	1,87	2,35	2,70	
		B		0,63	0,84	1,05	1,26	1,82	2,28	2,63	
<i>r</i>			min.	0,1	0,1	0,1	0,1	0,2	0,2	0,25	
<i>s</i>	Product grade	A	nom. = max.	3,20	4,00	5,00	5,50	7,00	8,00	10,00	
			B	min.	3,02	3,82	4,82	5,32	6,78	7,78	9,78
				min.	2,90	3,70	4,70	5,20	6,64	7,64	9,64
Product grade											
A											
B											
<i>l</i>											
nom.	min.	max.	min.	max.							
2	1,8	2,2	—	—							
3	2,8	3,2	—	—							
4	3,76	4,24	—	—							
5	4,76	5,24	—	—							
6	5,76	6,24	—	—							
8	7,71	8,29	—	—							
10	9,71	10,29	—	—							
12	11,65	12,35	—	—							
16	15,65	16,35	—	—							
20	19,58	20,42	18,95	21,05							
25	24,58	25,42	23,95	26,05							
30	29,58	30,42	28,95	31,05							
35	34,5	35,5	33,75	36,25							
40	39,5	40,5	38,75	41,25							
45	44,5	45,5	43,75	46,25							
50	49,5	50,5	48,75	51,25							
55	54,4	55,6	53,5	56,5							
60	59,4	60,6	58,5	61,5							
65	64,4	65,6	63,5	66,5							
70	69,4	70,6	68,5	71,5							
80	79,4	80,6	78,5	81,5							
90	89,3	90,7	88,25	91,75							
100	99,3	100,7	98,25	101,75							
110	109,3	110,7	108,25	111,75							
120	119,3	120,7	118,25	121,75							
130	129,2	130,8	128	132							
140	139,2	140,8	138	142							
150	149,2	150,8	148	152							
160	—	—	158	162							
180	—	—	178	182							
200	—	—	197,7	202,3							

Table 1 (continued)

Dimensions in millimetres

Thread, <i>d</i>				M8	M10	M12	M16	M20	M24	
<i>p</i> ^a				1,25	1,5	1,75	2	2,5	3	
<i>a</i>			max. ^b	4	4,5	5,3	6	7,5	9	
			min.	1,25	1,5	1,75	2	2,5	3	
<i>c</i>			max.	0,15	0,15	0,15	0,2	0,2	0,2	
			min.	0,6	0,6	0,6	0,8	0,8	0,8	
<i>d</i> _a				max.	9,2	11,2	13,7	17,7	22,4	26,4
<i>d</i> _w	Product grade	A	min.	11,63	14,63	16,63	22,49	28,19	33,61	
				B	11,47	14,47	16,47	22	27,7	33,25
<i>e</i>	Product grade	A	min.	14,38	17,77	20,03	26,75	33,53	39,98	
				B	14,20	17,59	19,85	26,17	32,95	39,55
<i>k</i>	Product grade	A	nom.	5,3	6,4	7,5	10	12,5	15	
			max.	5,45	6,58	7,68	10,18	12,715	15,215	
			min.	5,15	6,22	7,32	9,82	12,285	14,785	
			B	max.	5,54	6,69	7,79	10,29	12,85	15,35
<i>k</i> _w ^c	Product grade	A	min.	3,61	4,35	5,12	6,87	8,6	10,35	
				B	3,54	4,28	5,05	6,8	8,51	10,26
<i>r</i>			min.	0,4	0,4	0,6	0,6	0,8	0,8	
			nom. = max.	13,00	16,00	18,00	24,00	30,00	36,00	
<i>s</i>	Product grade	A	min.	12,73	15,73	17,73	23,67	29,67	35,38	
				B	12,57	15,57	17,57	23,16	29,16	35
Product grade										
A										
B										
<i>l</i>										
nom.	min.	max.	min.	max.						
2	1,8	2,2	—	—						
3	2,8	3,2	—	—						
4	3,76	4,24	—	—						
5	4,76	5,24	—	—						
6	5,76	6,24	—	—						
8	7,71	8,29	—	—						
10	9,71	10,29	—	—						
12	11,65	12,35	—	—						
16	15,65	16,35	—	—						
20	19,58	20,42	18,95	21,05						
25	24,58	25,42	23,95	26,05						
30	29,58	30,42	28,95	31,05						
35	34,5	35,5	33,75	36,25						
40	39,5	40,5	38,75	41,25						
45	44,5	45,5	43,75	46,25						
50	49,5	50,5	48,75	51,25						
55	54,4	55,6	53,5	56,5						
60	59,4	60,6	58,5	61,5						
65	64,4	65,6	63,5	66,5						
70	69,4	70,6	68,5	71,5						
80	79,4	80,6	78,5	81,5						
90	89,4	90,7	88,25	91,75						
100	99,3	100,7	98,25	101,75						
110	109,3	110,7	108,25	111,75						
120	119,3	120,7	118,25	121,75						
130	129,2	130,8	128	132						
140	139,2	140,8	138	142						
150	149,2	150,8	148	152						
160	—	—	158	162						
180	—	—	178	182						
200	—	—	197,7	202,3						

Table 1 (continued)

Dimensions in millimetres

Thread, <i>d</i>			M30	M36	M42	M48	M56	M64
<i>P</i> ^a			3,5	4	4,5	5	5,5	6
<i>a</i>		max. ^b	10,5	12	13,5	15	16,5	18
		min.	3,5	4	4,5	5	5,5	6
<i>c</i>		max.	0,2	0,2	0,3	0,3	0,3	0,3
		min.	0,8	0,8	1	1	1	1
<i>d_a</i>		max.	33,4	39,4	45,6	52,6	63	71
<i>d_w</i>	Product grade	A	—	—	—	—	—	—
		B	min.	42,75	51,11	59,95	69,45	78,66
<i>e</i>	Product grade	A	—	—	—	—	—	—
		B	min.	50,85	60,79	71,3	82,6	93,56
<i>k</i>	Product grade	nom.	18,7	22,5	26	30	35	40
		max.	—	—	—	—	—	—
	Product grade	A	min.	—	—	—	—	—
		B	max.	19,12	22,92	26,42	30,42	35,5
		min.	18,28	22,08	25,58	29,58	34,5	39,5
<i>k_w</i> ^c	Product grade	A	—	—	—	—	—	—
		B	min.	12,8	15,46	17,91	20,71	24,15
<i>r</i>		min.	1	1	1,2	1,6	2	2
		nom. = max.	46	55,0	65,0	75,0	85,0	95,0
<i>s</i>	Product grade	A	—	—	—	—	—	—
		B	min.	45	53,8	63,1	73,1	82,8
Product grade								
A								
B								
<i>l</i>								
nom.	min.	max.	min.	max.				
2	1,8	2,2	—	—				
3	2,8	3,2	—	—				
4	3,76	4,24	—	—				
5	4,76	5,24	—	—				
6	5,76	6,24	—	—				
8	7,71	8,29	—	—				
10	9,71	10,29	—	—				
12	11,65	12,35	—	—				
16	15,65	16,35	—	—				
20	19,58	20,42	18,95	21,05				
25	24,58	25,42	23,95	26,05				
30	29,58	30,42	28,95	31,05				
35	34,5	35,5	33,75	36,25				
40	39,5	40,5	38,75	41,25				
45	44,5	45,5	43,75	46,25				
50	49,5	50,5	48,75	51,25				
55	54,4	55,6	53,5	56,5				
60	59,4	60,6	58,5	61,5				
65	64,4	65,6	63,5	66,5				
70	69,4	70,6	68,5	71,5				
80	79,4	80,6	78,5	81,5				
90	89,3	90,7	88,25	91,75				
100	99,3	100,7	98,25	101,75				
110	109,3	110,7	108,25	111,75				
120	119,3	120,7	118,25	121,75				
130	129,2	130,8	128	132				
140	139,2	140,8	138	142				
150	149,2	150,8	148	152				
160	—	—	158	162				
180	—	—	178	182				
200	—	—	197,7	202,3				
<p>NOTE The range of preferred lengths is between the solid, bold, stepped line: — for product grade A, above the discontinuous, stepped line; — for product grade B, below this line.</p>								
<p>^a <i>P</i> is the pitch of the thread. ^b Values in accordance with <i>a_{max}</i>, normal series, in ISO 3508. ^c <i>k_{w,min}</i> = 0,7 <i>k_{min}</i></p>								

Table 2 — Non-preferred threads

Dimensions in millimetres

Thread, <i>d</i>					M3,5	M14	M18	M22	M27
<i>p</i> ^a					0,6	2	2,5	2,5	3
<i>a</i>	max. ^b				1,8	6	7,5	7,5	9
	min.				0,6	2	2,5	2,5	3
<i>c</i>	max.				0,15	0,15	0,2	0,2	0,2
	min.				0,4	0,6	0,8	0,8	0,8
<i>d</i> _a					max.				
<i>d</i> _w	Product grade	A		min.	5,07	19,64	25,34	31,71	—
		B			4,95	19,15	24,85	31,35	38
<i>e</i>	Product grade	A		min.	6,58	23,36	30,14	37,72	—
		B			6,44	22,78	29,56	37,29	45,2
<i>k</i>	nom.				2,4	8,8	11,5	14	17
	Product grade	A		max.	2,525	8,98	11,715	14,215	—
		B			2,275	8,62	11,285	13,785	—
	Product grade	A		min.	2,6	9,09	11,85	14,35	17,35
B		2,2	8,51		11,15	13,65	16,65		
<i>k</i> _w ^c	Product grade	A		min.	1,59	6,03	7,9	9,65	—
		B			1,54	5,96	7,81	9,56	11,66
<i>r</i>					min.				
<i>s</i>	nom. = max.				6,00	21,00	27,00	34,00	41,00
	Product grade	A		min.	5,82	20,67	26,67	33,38	—
		B			5,70	20,16	26,16	33	40
Product grade									
A									
B									
<i>l</i>									
nom.	min.	max.	min.	max.					
8	7,71	8,29	—	—					
10	9,71	10,29	—	—					
12	11,65	12,35	—	—					
16	15,65	16,35	—	—					
20	19,58	20,42	—	—					
25	24,58	25,42	—	—					
30	29,58	30,42	—	—					
35	34,5	35,5	—	—					
40	39,5	40,5	38,75	41,25					
45	44,5	45,5	43,75	46,25					
50	49,5	50,5	48,75	51,25					
55	54,4	55,6	53,5	56,5					
60	59,4	60,6	58,5	61,5					
65	64,4	65,6	63,5	66,5					
70	69,4	70,6	68,5	71,5					
80	79,4	80,6	78,5	81,5					
90	89,3	90,7	88,25	91,75					
100	99,3	100,7	98,25	101,75					
110	109,3	110,7	108,25	111,75					
120	119,3	120,7	118,25	121,75					
130	129,2	130,8	128	132					
140	139,2	140,8	138	142					
150	149,2	150,8	148	152					
160	—	—	158	162					
180	—	—	178	182					
200	—	—	197,7	202,3					

Table 2 (continued)

Dimensions in millimetres

Thread, <i>d</i>					M33	M39	M45	M52	M60
<i>p</i> ^a					3,5	4	4,5	5	5,5
<i>a</i>	max. ^b				10,5	12	13,5	15	16,5
	min.				3,5	4	4,5	5	5,5
<i>c</i>	max.				0,2	0,3	0,3	0,3	0,3
	min.				0,8	1	1	1	1
<i>d_a</i>					36,4	42,4	48,6	56,6	67
<i>d_w</i>	Product grade	A		min.	—	—	—	—	—
		B			46,55	55,86	64,7	74,2	83,41
<i>e</i>	Product grade	A		min.	—	—	—	—	—
		B			55,37	66,44	76,95	88,25	99,21
<i>k</i>	Product grade	A		nom.	21	25	28	33	38
		A		max.	—	—	—	—	—
	B		min.	—	—	—	—	—	
	B		max.	21,42	25,42	28,42	33,5	38,5	
B		min.	20,58	24,58	27,58	32,5	37,5		
<i>k_w</i> ^c	Product grade	A		min.	—	—	—	—	—
		B			14,41	17,21	19,31	22,75	26,25
<i>r</i>					1	1	1,2	1,6	2
nom. = max.					50	60,0	70,0	80,0	90,0
<i>s</i>	Product grade	A		min.	—	—	—	—	—
		B			49	58,8	68,1	78,1	87,8
Product grade									
A B									
<i>l</i>									
nom.	min.	max.	min.	max.					
8	7,71	8,29	—	—					
10	9,71	10,29	—	—					
12	11,65	12,35	—	—					
16	15,65	16,35	—	—					
20	19,58	20,42	—	—					
25	24,58	25,42	—	—					
30	29,58	30,42	—	—					
35	34,5	35,5	—	—					
40	39,5	40,5	38,75	41,25					
45	44,5	45,5	43,75	46,25					
50	49,5	50,5	48,75	51,25					
55	54,4	55,6	53,5	56,5					
60	59,4	60,6	58,5	61,5					
65	64,4	65,6	63,5	66,5					
70	69,4	70,6	68,5	71,5					
80	79,4	80,6	78,5	81,5					
90	89,3	90,7	88,25	91,75					
100	99,3	100,7	98,25	101,75					
110	109,3	110,7	108,25	111,75					
120	119,3	120,7	118,25	121,75					
130	129,2	130,8	128	132					
140	139,2	140,8	138	142					
150	149,2	150,8	148	152					
160	—	—	158	162					
180	—	—	178	182					
200	—	—	197,7	202,3					

NOTE The range of preferred lengths is between the solid, bold, stepped line:
 — for product grade A, above the discontinuous, stepped line;
 — for product grade B, below this line.

^a *P* is the pitch of the thread.
^b Values in accordance with *a_{max}*, normal series, in ISO 3508.
^c *k_{w,min}* = 0,7 *k_{min}*

4 Specifications and reference International Standards

See Table 3.

Table 3 — Specifications and reference International Standards

Material		Steel	Stainless steel	Non-ferrous metal
General requirements	International Standard	ISO 8992		
	Tolerance class	6g		
Thread	International Standard	ISO 724, ISO 965-1		
	Property class ^a	$d < 3$ mm: as agreed $3 \text{ mm} \leq d \leq 39$ mm: 5.6, 8.8, 9.8, 10.9 $d > 39$ mm: as agreed	$d \leq 24$ mm: A2-70, A4-70 $24 \text{ mm} < d \leq 39$ mm: A2-50, A4-50 $d > 39$ mm: as agreed	Materials specified in ISO 8839.
International Standard	$d \leq 39$ mm: ISO 898-1 $d < 3$ mm and $d > 39$ mm: as agreed	$d \leq 39$ mm: ISO 3506-1 $d > 39$ mm: as agreed		
Tolerance	Product grade	For $d \leq 24$ mm and $l \leq 10d$ or 150 mm ^b : A For $d > 24$ mm or $l > 10d$ or 150 mm ^b : B		
	International Standard	ISO 4759-1		
Finish — Coating		As processed Requirements for electroplating are specified in ISO 4042. Requirements for non-electrolytically applied zinc flake coatings are specified in ISO 10683.	As processed	As processed Requirements for electroplating are specified in ISO 4042.
		Additional requirements or other finishes or coatings shall be agreed between the supplier and the purchaser.		
Surface integrity		Limits for surface discontinuities are specified in ISO 6157-1.		
Acceptability		Acceptance inspection is specified in ISO 3269.		
^a Other property classes are specified in ISO 898-1 for steel and ISO 3506-1 for stainless steel, respectively. ^b Whichever is the shorter.				

5 Designation

EXAMPLE A hexagon head screw with thread size M12, nominal length $l = 80$ mm and property class 8.8 is designated as follows:

Hexagon head screw ISO 4017 - M12 × 80 - 8.8

Bibliography

- [1] ISO 888, *Bolts, screws and studs — Nominal lengths, and thread lengths for general purpose bolts*
- [2] ISO 4014, *Hexagon head bolts — Product grades A and B*
- [3] ISO 4015, *Hexagon head bolts — Product grade B — Reduced shank (shank diameter approximately equal to pitch diameter)*
- [4] ISO 4016, *Hexagon head bolts — Product grade C*
- [5] ISO 4018, *Hexagon head screws — Product grade C*
- [6] ISO 4032, *Hexagon nuts, style 1 — Product grades A and B*
- [7] ISO 4033, *Hexagon nuts, style 2 — Product grades A and B*
- [8] ISO 4034, *Hexagon nuts — Product grade C*
- [9] ISO 4035, *Hexagon thin nuts (chamfered) — Product grades A and B*
- [10] ISO 4036, *Hexagon thin nuts (unchamfered) — Product grade B*
- [11] ISO 4161, *Hexagon nuts with flange — Coarse thread*
- [12] ISO 4162, *Hexagon flange bolts — Small series*
- [13] ISO 7040, *Prevailing torque type hexagon nuts (with non-metallic insert), style 1 — Property classes 5, 8 and 10*
- [14] ISO 7041, *Prevailing torque type hexagon nuts (with non-metallic insert), style 2 — Property classes 9 and 12*
- [15] ISO 7042, *Prevailing torque type all-metal hexagon nuts, style 2 — Property classes 5, 8, 10 and 12*
- [16] ISO 7043, *Prevailing torque type hexagon nuts with flange (with non-metallic insert) — Product grades A and B*
- [17] ISO 7044, *Prevailing torque type all-metal hexagon nuts with flange — Product grades A and B*
- [18] ISO 7719, *Prevailing torque type all-metal hexagon nuts, style 1 — Property classes 5, 8 and 10*
- [19] ISO 7720, *Prevailing torque type all-metal hexagon nuts, style 2 — Property class 9*
- [20] ISO 8673, *Hexagon nuts, style 1, with metric fine pitch thread — Product grades A and B*
- [21] ISO 8674, *Hexagon nuts, style 2, with metric fine pitch thread — Product grades A and B*
- [22] ISO 8675, *Hexagon thin nuts (chamfered) with metric fine pitch thread — Product grades A and B*
- [23] ISO 8676, *Hexagon head screws with metric fine pitch thread — Product grades A and B*
- [24] ISO 8765, *Hexagon head bolts with metric fine pitch thread — Product grades A and B*
- [25] ISO 10511, *Prevailing torque type hexagon thin nuts (with non-metallic insert)*

ISO 4017:2011(E)

- [26] ISO 10512, *Prevailing torque type hexagon nuts (with non-metallic insert), style 1, with metric fine pitch thread — Property classes 6, 8 and 10*
- [27] ISO 10513, *Prevailing torque type all-metal hexagon nuts, style 2, with metric fine pitch thread — Property classes 8, 10 and 12*
- [28] ISO 10663, *Hexagon nuts with flange — Fine pitch thread*
- [29] ISO 12125, *Prevailing torque type hexagon nuts with flange (with non-metallic insert) with metric fine pitch thread — Product grades A and B*
- [30] ISO 12126, *Prevailing torque type all-metal hexagon nuts with flange with metric fine pitch thread — Product grades A and B*
- [31] ISO 15071, *Hexagon bolts with flange — Small series — Product grade A*
- [32] ISO 15072, *Hexagon bolts with flange with metric fine pitch thread — Small series — Product grade A*
- [33] ISO 21670, *Hexagon weld nuts with flange*

www.iso.org

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

ICS 21.060.10

Price based on 10 pages