

# INTERNATIONAL STANDARD

# ISO 4018

Fourth edition  
2011-04-01

---

---

## Hexagon head screws — Product grade C

*Vis à tête hexagonale entièrement filetées — Grade C*

STANDARDSISO.COM : Click to view the full PDF of ISO 4018:2011



Reference number  
ISO 4018:2011(E)

© ISO 2011

STANDARDSISO.COM : Click to view the full PDF of ISO 4018:2011



**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](mailto:copyright@iso.org)  
Web [www.iso.org](http://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 4018 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 4018:1999), of which it constitutes a minor revision.

STANDARDSISO.COM : Click to view the full PDF of ISO 4018:2011

## 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).

STANDARDSISO.COM : Click to view the full PDF of ISO 4018:2011

# Hexagon head screws — Product grade C

## 1 Scope

This International Standard specifies the characteristics of hexagon head screws with threads from M5 up to and including M64, of product grade C.

NOTE This type of product is the same as that covered by ISO 4016 with the exception of threading up to head.

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 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 4042, *Fasteners — Electroplated coatings*

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

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

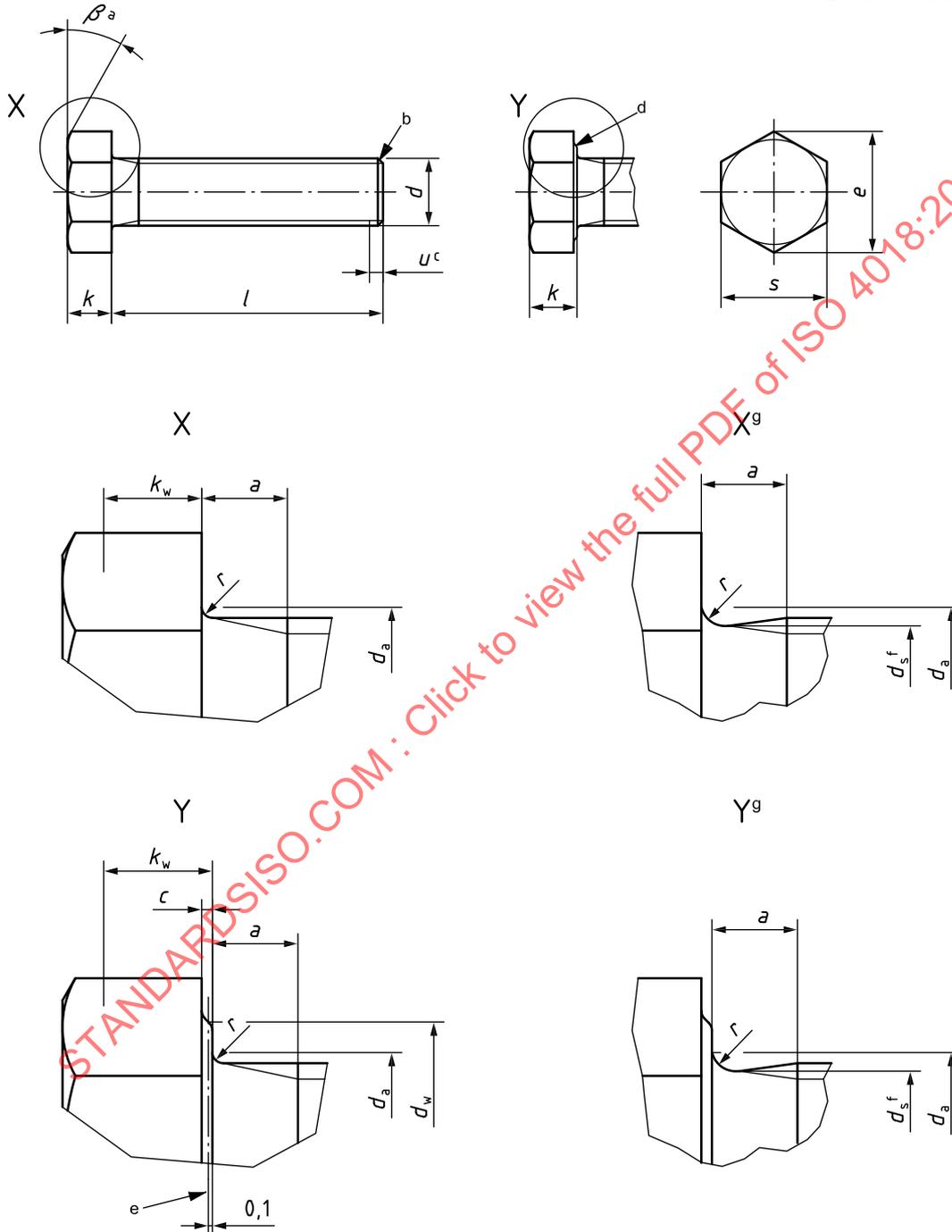
ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coatings*

### 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  $30^\circ$ .
- b End without special requirements.
- c Incomplete thread  $u \leq 2P$ .
- d Washer face permissible.
- e Reference datum for  $d_w$ .
- f  $d_s \approx$  pitch diameter.
- g Permissible shape.

Figure 1

Table 1 — Preferred threads

Dimensions in millimetres

Thread, <i>d</i>	M5	M6	M8	M10	M12	M16	M20	M24	M30	M36	M42	M48	M56	M64	
<i>p</i> <sup>a</sup>	0,8	1,0	1,25	1,5	1,75	2	2,5	3	3,5	4	4,5	5	5,5	6	
<i>a</i>	max. 2,4	3	4	4,5	5,3	6	7,5	9	10,5	12	13,5	15	16,5	18	
	min. 0,8	1	1,25	1,5	1,75	2	2,5	3	3,5	4	4,5	5	5,5	6	
<i>c</i>	max. 0,5	0,5	0,6	0,6	0,6	0,8	0,8	0,8	0,8	0,8	1	1	1	1	
<i>d</i> <sub>a</sub>	max. 6	7,2	10,2	12,2	14,7	18,7	24,4	28,4	35,4	42,4	48,6	56,6	67	75	
<i>d</i> <sub>w</sub>	min. 6,74	8,74	11,47	14,47	16,47	22	27,7	33,25	42,75	51,11	59,95	69,45	78,66	88,16	
<i>e</i>	min. 8,63	10,89	14,2	17,59	19,85	26,17	32,95	39,55	50,85	60,79	71,3	82,6	93,56	104,86	
	nom. 3,5	4	5,3	6,4	7,5	10	12,5	15	18,7	22,5	26	30	35	40	
<i>k</i>	max. 3,875	4,375	5,675	6,85	7,95	10,75	13,4	15,9	19,75	23,55	27,05	31,05	36,25	41,25	
	min. 3,125	3,625	4,925	5,95	7,05	9,25	11,6	14,1	17,65	21,45	24,95	28,95	33,75	38,75	
<i>k</i> <sub>w</sub> <sup>b</sup>	min. 2,19	2,54	3,45	4,17	4,94	6,48	8,12	9,87	12,36	15,02	17,47	20,27	23,63	27,13	
<i>r</i>	min. 0,2	0,25	0,4	0,4	0,6	0,6	0,8	0,8	1	1	1,2	1,6	2	2	
<i>s</i>	nom. = max. 8,00	10,00	13,00	16,00	18,00	24,00	30,00	36	46	55,0	65,0	75,0	85,0	95,0	
	min. 7,64	9,64	12,57	15,57	17,57	23,16	29,16	35	45	53,8	63,1	73,1	82,8	92,8	
<i>f</i> <sup>c</sup>															
nom.	10	12	16	20	25	30	35	40	45	50	55	60	65	70	80
min.	9,25	11,1	15,1	18,95	23,95	28,95	33,75	38,75	43,75	48,75	53,5	58,5	63,5	68,5	78,5
max.	10,75	12,9	16,9	21,05	26,05	31,05	36,25	41,25	46,25	51,25	56,5	61,5	66,5	71,5	81,5

Table 1 (continued)

Thread, $d$	$k^c$		Dimensions in millimetres														
	nom.	min.	max.	M5	M6	M8	M10	M12	M16	M20	M24	M30	M36	M42	M48	M56	M64
90	88,25	91,75															
100	98,25	101,75															
110	108,25	111,75															
120	118,25	121,75															
130	128	132															
140	138	142															
150	148	152															
160	156	164															
180	176	184															
200	195,4	204,6															
220	215,4	224,6															
240	235,4	244,6															
260	254,8	265,2															
280	274,8	285,2															
300	294,8	305,2															
320	314,3	325,7															
340	334,3	345,7															
360	354,3	365,7															
380	374,3	385,7															
400	394,3	405,7															
420	413,7	426,3															
440	433,7	446,3															
460	453,7	466,3															
480	473,7	486,3															
500	493,7	506,3															

STANDARDSISO.COM · Click to view the full PDF of ISO 4018:2011

a  $P$  is the pitch of the thread.  
 b  $k_{w,min} = 0,7 k_{min}$ .  
 c The range of preferred lengths is between the solid, bold, stepped lines.

Table 2 — Non-preferred threads

Dimensions in millimetres

Thread, <i>d</i>	M14	M18	M22	M27	M33	M39	M45	M52	M60
<i>p</i> <sup>a</sup>	2	2,5	2,5	3	3,5	4	4,5	5	5,5
<i>a</i>	6	7,5	7,5	9	10,5	12	13,5	15	16,5
max.									
min.	2	2,5	2,5	3	3,5	4	4,5	5	5,5
<i>c</i>	0,6	0,8	0,8	0,8	0,8	1	1	1	1
<i>d</i> <sub>a</sub>	16,7	21,2	26,4	32,4	38,4	45,4	52,6	62,6	71
<i>d</i> <sub>w</sub>	19,15	24,85	31,35	38	46,55	55,86	64,7	74,2	83,41
<i>e</i>	22,78	29,56	37,29	45,2	55,37	66,44	76,95	88,25	99,21
nom.	8,8	11,5	14	17	21	25	28	33	38
<i>k</i>	9,25	12,4	14,9	17,9	22,05	26,05	29,05	34,25	39,25
max.									
min.	8,35	10,6	13,1	16,1	19,95	23,95	26,95	31,75	36,75
<i>k</i> <sub>w</sub> <sup>b</sup>	5,85	7,42	9,17	11,27	13,97	16,77	18,87	22,23	25,73
<i>r</i>	0,6	0,6	0,8	1	1	1	1,2	1,6	2
<i>s</i>	21,00	27,00	34	41	50	60,0	70,0	80,0	90,0
nom. = max.									
min.	20,16	26,16	33	40	49	58,8	68,1	78,1	87,8
<i>l</i> <sup>c</sup>									
nom.									
min.									
max.									
30									
35									
40									
45									
50									
55									
60									
65									
70									
80									
90									
100									
110									
120									
130									
128									
132									



## 4 Specifications and reference International Standards

See Table 3.

**Table 3 — Specifications and reference International Standards**

<b>Material</b>		Steel
<b>General requirements</b>	International Standard	ISO 8992
<b>Thread</b>	Tolerance class	8g
	International Standard	ISO 724, ISO 965-1
<b>Mechanical property</b>	Property class <sup>a</sup>	$d \leq 39$ mm: 4.6, 4.8 $d > 39$ mm: as agreed
	International Standard	$d \leq 39$ mm: ISO 898-1 $d > 39$ mm: as agreed
<b>Tolerance</b>	Product grade	C
	International Standard	ISO 4759-1
<b>Finish — Coating</b>		As processed Requirements for electroplating are specified in ISO 4042. Requirements for non-electrolytically applied zinc flake coatings are specified in ISO 10683. Additional requirements or other finishes or coatings shall be agreed between the supplier and the purchaser.
<b>Acceptability</b>		Acceptance inspection is specified in ISO 3269.
<sup>a</sup> Other property classes are specified in ISO 898-1.		

## 5 Designation

**EXAMPLE** A hexagon head screw, product grade C, with thread M12, nominal length  $l = 80$  mm and property class 4.6 is designated as follows:

**Hexagon head screw ISO 4018 - M12 × 80 - 4.6**