

BS EN ISO 7042:2012



BSI Standards Publication

# Prevailing torque type all-metal hexagon high nuts — Property classes 5, 8, 10 and 12

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This British Standard is the UK implementation of EN ISO 7042:2012. It supersedes BS EN ISO 7042:1998 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee FME/9, Fasteners.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

**Prevailing torque type all-metal hexagon high nuts - Property classes 5, 8, 10 and 12 (ISO 7042:2012)**

Écrous hexagonaux hauts autofreinés tout métal - Classes de qualité 5, 8, 10 et 12 (ISO 7042:2012)

Sechskantmuttern mit Klemmteil (Ganzmetallmuttern), Typ 2 - Festigkeitsklassen 5, 8, 10 und 12 (ISO 7042:2012)

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## Foreword

This document (EN ISO 7042:2012) has been prepared by Technical Committee ISO/TC 2 "Fasteners" in collaboration with Technical Committee CEN/TC 185 "Fasteners" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

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The text of ISO 7042:2012 has been approved by CEN as a EN ISO 7042:2012 without any modification.

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## 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.

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ISO 7042 was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 12, *Fasteners with metric internal thread*.

This third edition cancels and replaces the second edition (ISO 7042:1997), of which it constitutes a minor revision.

# Prevailing torque type all-metal hexagon high nuts — Property classes 5, 8, 10 and 12

## 1 Scope

This International Standard specifies the characteristics of prevailing torque type all-metal hexagon high nuts, with threads from M5 up to and including M36, in product grade A for threads up to and including M16 and product grade B for threads above M16, and with property classes 5, 8, 10 and 12.

NOTE 1 The dimensions of the nuts with the exception of the dimensions  $m_w$  and  $h_{max}$  correspond to those given in ISO 4033.

NOTE 2 Nuts of property class 9 are dealt with in ISO 7720.

If other specifications are required, they can be selected from existing International Standards, for example ISO 261, ISO 724, ISO 898-2, ISO 965-2, ISO 2320 and ISO 4759-1.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable to its application. 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 261, *ISO general purpose metric screw threads — General plan*

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

ISO 898-2, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified property classes — Coarse thread and fine pitch thread*

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

ISO 2320, *Prevailing torque type steel nuts — Mechanical and performance properties*

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 6157-2, *Fasteners — Surface discontinuities — Part 2: Nuts*

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

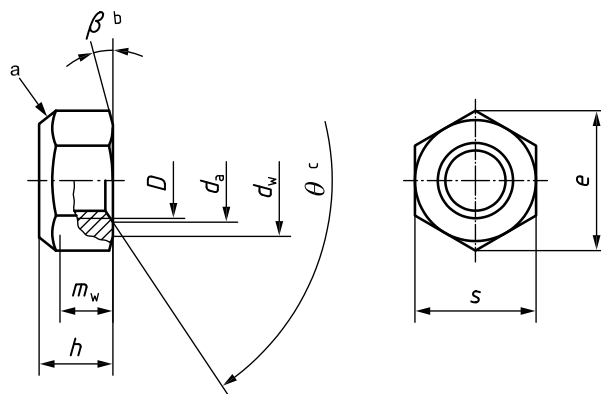
ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coatings*

ISO 10684, *Fasteners — Hot dip galvanized coatings*

### 3 Dimensions

See Figure 1 and Table 1

Symbols and descriptions of dimensions are specified in ISO 225.



- a Prevailing torque element, shape at the discretion of the manufacturer.
- b  $\beta = 15^\circ$  to  $30^\circ$ .
- c  $\theta = 90^\circ$  to  $120^\circ$ .

Figure 1

Table 1 — Dimensions

Dimensions in millimetres

Thread $D$	M5	M6	M8	M10	M12	(M14) <sup>a</sup>	M16	M20	M24	M30	M36	
$p^b$	0,8	1	1,25	1,5	1,75	2	2	2,5	3	3,5	4	
$d_a$	max.	5,75	6,75	8,75	10,80	13,00	15,10	17,30	21,60	25,90	32,40	38,90
	min.	5,00	6,00	8,00	10,00	12,00	14,00	16,00	20,00	24,00	30,00	36,00
$d_w$	min.	6,88	8,88	11,63	14,63	16,63	19,64	22,49	27,70	33,25	42,75	51,11
$e$	min.	8,79	11,05	14,38	17,77	20,03	23,36	26,75	32,95	39,55	50,85	60,79
$h$	max.	5,10	6,00	8,00	10,00	13,30	14,10	16,40	20,30	23,90	30,00	36,00
	min.	4,80	5,40	7,14	8,94	11,57	13,40	15,70	19,00	22,60	27,30	33,10
$m_w$	min.	3,52	3,92	5,15	6,43	8,30	9,68	11,28	13,52	16,16	19,44	23,52
$s$	max.	8,00	10,00	13,00	16,00	18,00	21,00	24,00	30,00	36,00	46,00	55,00
	min.	7,78	9,78	12,73	15,73	17,73	20,67	23,67	29,16	35,00	45,00	53,80

<sup>a</sup> The size in parentheses should be avoided, if possible.

<sup>b</sup>  $P$  is the pitch of the thread.



## 4 Requirements and reference International Standards

See Table 2.

**Table 2 — Requirements and reference International Standards**

<b>Material</b>		Steel
<b>General requirements</b>	International Standard	ISO 8992
<b>Thread</b>	Tolerance class	6H
	International Standards	ISO 261, ISO 724, ISO 965-2
<b>Mechanical and performance properties</b>	Property class	5, 8, 10, 12
	International Standards	ISO 898-2, ISO 2320
<b>Tolerance</b>	Product grade	For $D \leq M16$ : A For $D > M16$ : B
	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. Requirements for hot dip galvanizing are specified in ISO 10684. Additional requirements or other finishes or coatings shall be agreed between the supplier and the purchaser.
<b>Surface integrity</b>		Limits for surface discontinuities are specified in ISO 6157-2.
<b>Acceptability</b>		Acceptance inspection is specified in ISO 3269.

## 5 Designation

EXAMPLE A prevailing torque type all-metal hexagon high nut, with thread M12 and property class 8 is designated as follows:

**Prevailing torque type hexagon high nut ISO 7042 - M12 - 8**

## Bibliography

- [1] ISO 4033, *Hexagon high nuts (style 2) — Product grades A and B*
- [2] ISO 7720, *Prevailing torque type all-metal hexagon nuts, style 2 — Property class 9*







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