
**Prevailing torque type all-metal hexagon
nuts, style 2, with metric fine pitch thread —
Property classes 8, 10 and 12**

*Écrous hexagonaux autofreinés tout métal, style 2, à filetage métrique
à pas fin — Classes de qualité 8, 10 et 12*

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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.

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.

International Standard ISO 10513 was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 1, *Mechanical properties of fasteners*.

Annex A of this International Standard is for information only.

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Prevailing torque type all-metal hexagon nuts, style 2, with metric fine pitch thread — Property classes 8, 10 and 12

1 Scope

This International Standard specifies the characteristics of prevailing torque type all-metal hexagon nuts, of style 2, with metric fine pitch thread, with nominal thread diameters d from 8 mm up to and including 36 mm, in product grade A for sizes d up to and including 16 mm and product grade B for sizes d above 16 mm, and with property classes 8, 10 and 12.

NOTE — The dimensions of the nuts with the exception of the dimensions m_w and h_{\max} correspond to those given in ISO 8674.

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

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2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 225:1983, *Fasteners – Bolts, screws, studs and nuts – Symbols and designations of dimensions.*

ISO 261:–¹⁾, *ISO general purpose metric screw threads – General plan.*

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

ISO 2320:1997, *Prevailing torque type steel hexagon nuts – Mechanical and performance properties.*

ISO 3269:1988, *Fasteners – Acceptance inspection.*

ISO 4042:–³⁾, *Fasteners – Electroplated coatings.*

ISO 4759-1:–⁴⁾, *Tolerances for fasteners – Part 1: Bolts, screws, studs and nuts – Product grades A, B and C.*

ISO 6157-2:1995, *Fasteners – Surface discontinuities – Part 2: Nuts.*

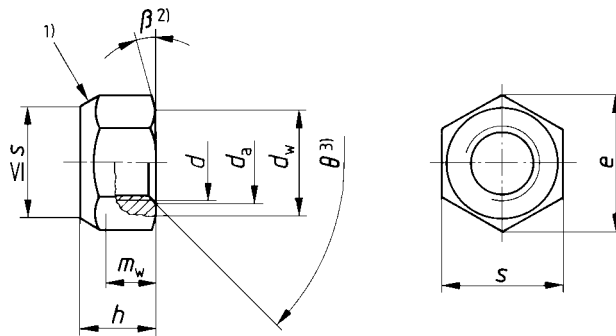
ISO 8992:1986, *Fasteners – General requirements for bolts, screws and nuts.*

1) To be published. (Revision of ISO 261:1973)
2) To be published. (Revision of ISO 965-2:1980)
3) To be published. (Revision of ISO 4042:1989)
4) To be published. (Revision of ISO 4759-1:1978)

3 Dimensions

See figure 1 and table 1.

Symbols and designations of dimensions are specified in ISO 225.



- 1) Prevailing torque element, shape optional
- 2) $\beta = 15^\circ$ to 30°
- 3) $\theta = 90^\circ$ to 120°

Figure 1

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Table 1 — Dimensions

ISO 10513:1997

Dimensions in millimetres

Thread ($d \times P^1$)		M8×1	M10×1 M10×1,25	M12×1,25 M12×1,5	(M14×1,5) ²	M16×1,5	M20×1,5	M24×2	M30×2	M36×3
d_b	max.	8,75	10,8	13	15,1	17,3	21,6	25,9	32,4	38,9
	min.	8,00	10,0	12	14,0	16,0	20,0	24,0	30,0	36,0
d_w	min.	11,63	14,63	16,63	19,64	22,49	27,7	33,25	42,75	51,11
e	min.	14,38	17,77	20,03	23,36	26,75	32,95	39,55	50,85	60,79
	max.	8,00	10,00	12,00	14,1	16,4	20,3	23,9	30,0	36,0
h	min.	7,14	8,94	11,57	13,4	15,7	19,0	22,6	27,3	33,1
	min.	5,15	6,43	8,3	9,68	11,28	13,52	16,16	19,44	23,52
s	max.	13,00	16,00	18,00	21,00	24,00	30,00	36	46	55,0
	min.	12,73	15,73	17,73	20,67	23,67	29,16	35	45	53,8

1) P is the pitch of the thread.
 2) The size in brackets should be avoided if possible.
 3) Minimum wrenching height.

4 Requirements and reference International Standards

See table 2.

Table 2 — Requirements and reference International Standards

Material		Steel			
General requirements	International Standard	ISO 8992			
Thread	Tolerance	6H			
	International Standards	ISO 261, ISO 965-2			
Mechanical and performance properties	Property class	8		10	12
	Style decisive for mechanical properties ¹⁾	d	$d > 16$ mm style 1	style 2	$d \leq 16$ mm ²⁾ style 2
	International Standard	ISO 2320			
Tolerances	Product grade	For $d \leq 16$ mm : A For $d > 16$ mm : B			
	International Standard	ISO 4759-1			
Finish	As processed				
		<p>Requirements for electroplated coatings are covered in ISO 4042.</p> <p>If different electroplating requirements are desired or if requirements are needed for other finishes, they should be negotiated between customer and supplier.</p> <p>Limits for surface discontinuities are covered in ISO 6157-2.</p>			
Acceptability	For acceptance procedure, see ISO 3269.				
<p>1) Based on the nut height (dimensions h_{min}) nuts in accordance with this International Standard are of style 2. However, since for style 2 ISO 2320 does not specify mechanical properties for all property classes and sizes as specified in this International Standard, in some cases nuts have to be tested according to style 1.</p> <p>2) For $d > 16$ mm property class 12 is not specified.</p>					

5 Designation

EXAMPLE

A prevailing torque type all-metal hexagon nut, style 2, with fine pitch thread M12 × 1,5 and property class 8 is designated as follows:

Prevailing torque type hexagon nut ISO 10513 – M12 × 1,5 – 8

Annex A
(informative)

Bibliography

[1] ISO 8674:1988, *Hexagon nuts, style 2, with metric fine pitch thread – Product grades A and B.*

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ICS 21.060.20

Descriptors: fasteners, fine pitch threads, nuts (fasteners), self-locking nuts, hexagonal nuts, specifications, dimensions, designation.

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