

BS 3692:2014



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ISO metric precision hexagon bolts, screws and nuts – Specification

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Contents

Foreword *iii*

1	Scope	1
2	Normative references	1
3	Information and requirements to be agreed and documented	2
4	General dimensions	3
5	Length of bolts and screws	3
6	Ends of bolts and screws	4
7	Screw threads	5
8	Length of thread on bolts and screws	5
9	Dimensions of bolts and screws	6
10	Angularity and eccentricity of bolts, screws and nuts	11
11	Dimensions of nuts	11
12	Chamfering, washer facing and countersinking bolts, screws and nuts	17
13	Material and manufacture of steel bolts and screws	17
14	Mechanical properties of steel bolts and screws	18
15	Strength grade designation system for steel nuts	19
16	Material and manufacture of steel nuts	19
17	Mechanical properties of steel nuts (excluding thin nuts)	20
18	Drilled bolts with split pin holes	23
19	Finishes	23
20	Marking and identification	23
21	Inspection and testing	24

Annexes

Annex A (informative)	Strength grade designation system for steel bolts and screws	25
Annex B (informative)	Recommended gauge for checking squareness of thread to face of nut	25
Annex C (normative)	Testing of mechanical properties of steel nuts	26
Annex D (informative)	Association of bolt and screw lengths and diameters (see Clause 8)	27
Annex E (informative)	Basis for the derivation of tolerances	33
Annex F (informative)	Manufacturer's recommended range of sizes	38

Bibliography 40

List of figures

Figure 1	– Rounded end	5
Figure 2	– Rolled thread end	5
Figure 3	– Hexagon head bolt, washer-faced	6
Figure 4	– Hexagon head screw, washer-faced	7
Figure 5	– Full bearing head	7
Figure 6	– Normal thickness nut	11
Figure 7	– Thin nut	12
Figure 8	– Enlarged view of nut countersunk	12
Figure 9	– Slotted nut. Sizes M4 to M39 only (six slots)	15
Figure 10	– Castle nut. Sizes M12 to M39 only (six slots)	15
Figure 11	– Castle nut. Sizes M42 to M68 only (eight slots)	15
Figure 12	– Depth of decarburization on steel bolts and screws	18
Figure B.1	– Nut squareness gauge	25
Figure C.1	– Proof load test for nut	26
Figure E.1	– Widths across flats	33
Figure E.2	– Widths across corners	33
Figure E.3	– Heights of heads	33
Figure E.4	– Shank diameter of full size bolts	33
Figure E.5	– Nominal length	34
Figure E.6	– Thread lengths	34
Figure E.7	– Eccentricity of the head	34

Figure E.8 – Angularity of the head	34
Figure E.9 – Eccentricity between shank and thread	34
Figure E.10 – Eccentricity of split pin hole	35
Figure E.11 – Widths across flats	35
Figure E.12 – Widths across corners	35
Figure E.13 – Thicknesses of nuts	36
Figure E.14 – Dimensions of slots	36
Figure E.15 – Eccentricity of the hexagon	36
Figure E.16 – Eccentricity of the slots	37
Figure E.17 – Angularity of the nuts	37

List of tables

Table 1 – Tolerances on the standard nominal lengths of bolts and screws	4
Table 2 – Thread tolerance classes	5
Table 3 – Basis for standard thread lengths	5
Table 4a – ISO metric precision hexagon bolts and screws	8
Table 4b – ISO metric precision hexagon bolts and screws	9
Table 5 – ISO metric precision hexagon nuts and thin nuts	13
Table 6 – ISO metric precision hexagon slotted nuts and castle nuts	16
Table 7 – Strength grade designation of steel nuts	19
Table 8 – Recommended bolt and nut combinations	19
Table 9 – Chemical composition of steel nuts	20
Table 10 – Mechanical properties of steel nuts	20
Table 11 – Proof loads for steel nuts (coarse pitch series)	21
Table 12 – Finishes	23
Table 13 – Marking of nuts	24
Table A.1 — Strength grade designations of steel bolts and screws	25
Table D.1a – Preferred standard sizes of ISO metric precision hexagon bolts and screws	28
Table D.1b – Preferred standard sizes of ISO metric precision hexagon bolts and screws	30
Table D.2 – Standard thread lengths and the shortest lengths designated as bolts, related to diameter	32
Table F.1 – Hexagon head bolts	38
Table F.2 – Hexagon head screws	39

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 40, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 October 2014. It was prepared by Technical Committee FME/9, *Nuts and accessories*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 3692:2001, which is withdrawn.

Relationship with other publications

This British Standard should be read in conjunction with BS EN ISO 898-1 as it contains tables that reflect up-to-date best practice for mechanical properties of bolts.

Information about this document

The mechanical properties of the nuts in this British Standard do not conform to BS EN ISO 898-2. Higher proof load values have been allocated to the revised property classes in BS EN ISO 898-2 in order to ensure that fracture of the bolt generally occurs in the case of overloading.

CAUTION. Nuts in accordance with this standard cannot be fully loaded with sufficient assurance up to the yield point of the appropriate bolt, or beyond this, without the possibility of the nut thread being stripped, and for this reason it is essential that new designs of nuts for use with BS 3692 bolts and studs conforming to this standard conform to BS EN ISO 898-2.

In order to differentiate nuts that conform to this British standard from those that conform to BS EN ISO 898-2 vertical bars have been added to the symbols for strength grade designations e.g. I8I instead of 8.

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Requirements in this standard are drafted in accordance with *Rules for the structure and drafting of UK standards*, subclause J.1.1, which states, "Requirements should be expressed using wording such as: 'When tested as described in Annex A, the product shall ...'". This means that only those products that are capable of passing the specified test will be deemed to conform to this standard.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This standard gives the general dimensions and tolerances of precision hexagon bolts, screws and nuts with ISO metric threads in diameters from 1.6 mm to 68 mm inclusive.

This standard specifies mechanical properties of bolts, screws and nuts made of carbon steel and alloy steel when tested at an ambient temperature range of 10 °C to 35 °C.

NOTE 1 Fasteners (the term used when bolts, screws and nuts are considered all together) that conform to the requirements of this standard are evaluated at this ambient temperature range. They might not retain the specified mechanical and physical properties at elevated temperatures and/or lower temperatures.

This standard is not applicable to fasteners used in applications outside of the range –50 °C to +150 °C.

NOTE 2 Fasteners conforming to the requirements of this standard are used in applications ranging from –50 °C to +150 °C. The use of fasteners in applications outside of this range, and up to a maximum temperature of +300 °C, might need to be based on the advice of an experienced fastener metallurgist for determining appropriate choices for a given application.

NOTE 3 Nuts in accordance with this standard cannot be fully loaded with sufficient assurance up to the yield point of the appropriate bolt, or beyond this, without the possibility of the nut thread being stripped, and for this reason it is essential that new designs of nuts for use with BS 3692 bolts and studs conforming to this standard conform to BS EN ISO 898-2.

NOTE 4 Nuts with an effective height of less than 0.6d and/or with a width across flats or outside diameter of less than 1.4d are excluded from the mechanical requirements specified.

The dimensional requirements of this British Standard are also applicable to non-ferrous and stainless steel bolts, screws and nuts.

Information on strength grade designation system for steel bolts and screws can be found in Annex A.

NOTE 5 The range of nominal sizes included in this British Standard is likely to be adequate for most of the applications for which this series is likely to be employed, but for the convenience of users requiring larger sizes, further information in relation to the derivation of tolerances is in Annex E.

NOTE 6 In addition to the definitive requirements, this standard also requires the items detailed in Clause 3 to be documented. For compliance with this standard, both the definitive requirements and the documented items have to be met.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 3643-1, *ISO metric screw threads – Part 1: Principles and basic data*

BS 3643-2, *ISO metric screw threads – Part 2: Specification for selected limits of size*

BS EN ISO 898-1:2013, *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*

BS EN ISO 1234, *Split pins*