

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 898-2:2012)

EESTI STANDARDI EESSÕNA

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 15.03.2012.	Date of Availability of the European standard is 15.03.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 21.060.20

Võtmesõnad: coarse threads, designation, fasteners, marking, mechanical properties, nuts (fasteners), specifications, tests,

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Foreword

This document (EN ISO 898-2:2012) 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of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

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

This document supersedes EN 20898-2:1993, EN ISO 898-6:1995.

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Endorsement notice

The text of ISO 898-2:2012 has been approved by CEN as a EN ISO 898-2:2012 without any modification.

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	2
3 Symbols	2
4 Designation systems	2
4.1 Designation of nut styles	2
4.2 Designation of property classes	2
4.3 Ranges of nominal diameters in relation to nut style and property class	3
5 Design of bolt and nut assemblies	3
6 Materials	4
7 Mechanical properties	5
8 Inspection	8
8.1 Manufacturer's inspection	8
8.2 Supplier's inspection	8
8.3 Purchaser's inspection	8
9 Test methods	9
9.1 Proof load test	9
9.2 Hardness test	11
9.3 Surface integrity inspection	13
10 Marking	13
10.1 General	13
10.2 Identification mark of the manufacturer	13
10.3 Marking of property classes	13
10.4 Identification	14
10.5 Marking of left-hand thread	15
10.6 Marking of packages	15
Annex A (informative) Design principles of nuts	16
Annex B (informative) Thread dimensions for the test mandrel	19
Bibliography	21

Mechanical properties of fasteners made of carbon steel and alloy steel —

Part 2:

Nuts with specified property classes — Coarse thread and fine pitch thread

1 Scope

This part of ISO 898 specifies mechanical and physical properties of nuts with coarse thread and fine pitch thread made of carbon steel and alloy steel when tested at an ambient temperature range of 10 °C to 35 °C.

Nuts conforming to the requirements of this part of ISO 898 are evaluated at that ambient temperature range. It is possible that they do not retain the specified mechanical and physical properties at elevated and/or lower temperatures.

NOTE 1 Nuts conforming to the requirements of this part of ISO 898 have been used in applications ranging from –50 °C to +150 °C. It is the responsibility of users to consult an experienced fastener materials expert for temperatures outside the range of –50 °C to +150 °C and up to a maximum temperature of +300 °C to determine appropriate choices for a given application.

NOTE 2 Information for the selection and application of steels for use at lower and elevated temperatures is given for instance in EN 10269, ASTM F2281 and in ASTM A320/A320M.

This part of ISO 898 is applicable to nuts:

- a) made of carbon steel or alloy steel;
- b) with coarse thread $M5 \leq D \leq M39$, and fine pitch thread $M8 \times 1 \leq D \leq M39 \times 3$;
- c) with triangular ISO metric thread according to ISO 68-1;
- d) with diameter/pitch combinations according to ISO 261 and ISO 262;
- e) with specified property classes, including proof load;
- f) with different nut styles: thin nuts, regular nuts and high nuts;
- g) with minimum height $m \geq 0,45D$;
- h) with a minimum outside diameter or width across flats $s \geq 1,45D$ (see Annex A);
- i) able to mate with bolts, screws and studs with property classes according to ISO 898-1.

For hot dip galvanized nuts, see ISO 10684.

This part of ISO 898 does not specify requirements for properties such as:

- prevailing torque properties (see ISO 2320);
- torque/clamp force properties (see ISO 16047 for test method);
- weldability;
- corrosion resistance.

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

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 16426, *Fasteners — Quality assurance system*

3 Symbols

For the purposes of this document, the following symbols apply.

D	nominal thread diameter of the nut, in millimetres
d_h	hole diameter of the grip, in millimetres
F	load, in newtons
h	thickness of the grip, in millimetres
m	height of the nut, in millimetres
P	pitch of the thread, in millimetres
s	width across flats, in millimetres

4 Designation systems

4.1 Designation of nut styles

This part of ISO 898 specifies requirements for three styles of nuts according to their height:

- style 2: high nut with minimum height $m_{\min} \approx 0,9D$ or $m_{\min} > 0,9D$; see Table A.1;
- style 1: regular nut with minimum height $m_{\min} \geq 0,8D$; see Table A.1;
- style 0: thin nut with minimum height $0,45D \leq m_{\min} < 0,8D$.

4.2 Designation of property classes

4.2.1 General

The marking and labelling of nuts with property classes shall be as specified in Clause 10 for only those nuts which meet all applicable requirements of this part of ISO 898.