

**Kinnitusdetailide mehaanilised
omadused. Osa 6: Etteantud
proovikoormusnäitajatega mutrid.
Peenkeere**

Mechanical properties of fasteners - Part 6: Nuts
with specified proof load values - Fine pitch thread

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 898-6:1999 sisaldab Euroopa standardi EN ISO 898-6:1995 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 898-6:1999 consists of the English text of the European standard EN ISO 898-6:1995.</p> <p>This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: ISO 898 see osa määrab kindlaks etteantud proovikoormusnähtajatega mutrite mehaanilised omadused katsetatuna õhutemperatuuril +10...+35 °C.</p>	<p>Scope:</p>
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ICS 21.060.20

Võtmesõnad: katsed, kinnitusdetailid, materjali tehnilised andmed, mehaanilised omadused, mutrid, märgistamine, peenkeere, tehnilised andmed, tähistus

Descriptors: Fasteners, nuts, mechanical properties, testing.

English version

Mechanical properties of fasteners

Part 6: Nuts with specified proof load values

Fine pitch thread

(ISO 898-6:1994)

Caractéristiques mécaniques des éléments de fixation. Partie 6: Ecrous avec charges d'épreuve spécifiées; filetage à pas fin (ISO 898-6:1994)

Mechanische Eigenschaften von Verbindungselementen. Teil 6: Muttern mit festgelegten Prüfkraften; Feingewinde (ISO 898-6:1994)

This European Standard was approved by CEN on 1995-11-04 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

International Standard

ISO 898-6:1994 Mechanical properties of fasteners; nuts with specified proof load values; fine pitch thread, which was prepared by ISO/TC 2 'Fasteners' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 185 'Threaded and non-threaded mechanical fasteners and accessories' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by May 1996 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 898-6:1994 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

1 Scope

This part of ISO 898 specifies the mechanical properties of nuts with specified proof load values when tested at an ambient temperature range of + 10 °C to + 35 °C. Mechanical and physical properties will vary with respect to temperature and property class.

Products conforming to the requirements of this part of ISO 898 are evaluated only at the ambient temperature range and may not retain the specified physical properties at higher and lower temperatures.

At temperatures higher or lower than the ambient temperature range, a significant change in properties may occur. When fasteners are to be used above or below the ambient temperature range, it is the responsibility of the user to ensure that the mechanical and physical properties are suitable for his particular service conditions.

This part of ISO 898 applies to nuts

- with nominal thread diameters, d , from 8 mm up to and including 39 mm (fine pitch thread);
- of triangular ISO thread and with diameters and pitches in accordance with ISO 68 and ISO 262 (fine pitch thread);
- with diameter/pitch combinations in accordance with ISO 261 (fine pitch thread);

- with thread tolerances 6H in accordance with ISO 965-1 and 965-2 (see note 2);
- with specific mechanical requirements;
- with widths across flats as specified in ISO 272;
- with nominal heights greater than or equal to $0,5d^{1)}$;
- made of carbon steel or alloy steel (see note 1).

It does not apply to nuts requiring special properties such as

- weldability;
- prevailing torque performance (see ISO 2320);
- corrosion resistance (see ISO 3506);
- ability to withstand temperatures above + 300 °C or below – 50 °C. (However, see note 1.)

NOTES

1 Nuts made from free-cutting steel should not be used above + 250 °C.

2 With thread tolerances other or larger than 6H, a decrease in the stripping strength should be considered (see table 1).

1) In ISO 898:1988, the symbol D was used.

Table 1 — Reduction in thread strength

Nominal thread diameter d mm	Test load, %		
	Thread tolerances		
	6H	7H	6G
$8 \leq d \leq 16$	100	96	97,5
$16 < d \leq 39$	100	98	98,5

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 898. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 898 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 68:1973, *ISO general purpose screw threads — Basic profile*.

ISO 261:1973, *ISO general purpose metric screw threads — General plan*.

ISO 262:1973, *ISO general purpose metric screw threads — Selected sizes for screws, bolts and nuts*.

ISO 272:1982, *Fasteners — Hexagon products — Widths across flats*.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*.

ISO 724:1993, *ISO general-purpose metric screw threads — Basic dimensions*.

ISO 898-2:1992, *Mechanical properties of fasteners — Part 2: Nuts with specified proof load values — Coarse thread*.

ISO 965-1:1980, *ISO general purpose metric screw threads — Tolerances — Part 1: Principles and basic data*.

ISO 965-2:1980, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose bolt and nut threads — Medium quality*.

ISO 4964:1984, *Steel — Hardness conversions*.

ISO 6157-2:—²⁾, *Fasteners — Surface discontinuities — Part 2: Nuts with threads M5 to M39*.

ISO 6506:1981, *Metallic materials — Hardness test — Brinell test*.

ISO 6507-1:1982, *Metallic materials — Hardness test — Vickers test — Part 1: HV 5 to HV 100*.

ISO 6508:1986, *Metallic materials — Hardness test — Rockwell test (scales A - B - C - D - E - F - G - H - K)*.

3 Designation system

3.1 Nuts with nominal heights $\geq 0,8d$ (effective lengths of thread $\geq 0,6d$): Nuts of style 1 and style 2

Nuts with nominal heights $\geq 0,8d$ (effective lengths of thread $\geq 0,6d$) are designated by a number to indicate the maximum appropriate property class of bolts with which they may be mated.

Failure of threaded fasteners due to over-tightening can occur by bolt shank fracture or by stripping of the threads of the nut and/or bolt. Shank fracture is sudden and therefore easily noticed. Stripping is gradual and therefore difficult to detect and this introduces the danger of partly failed fasteners being left in assemblies.

It would therefore be desirable to design threaded connections so that their mode of failure would always be by shank fracture but, unfortunately, because of the many variables which govern stripping strength (nut and bolt material strengths, thread clearances, across-flats dimensions, etc.), nuts would have to be excessively thick to guarantee this mode in all cases.

A bolt or screw of thread diameter 8 mm to 39 mm assembled with a nut of the appropriate property class, in accordance with table 2, is intended to provide an assembly capable of being tightened to the bolt proof load without thread stripping occurring.

2) To be published.