

Cylindrical helical springs made from round wire and bar - Calculation and design - Part 2: Extension springs

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13906-2:2002 sisaldab Euroopa standardi EN 13906-2:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 19.06.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13906-2:2002 consists of the English text of the European standard EN 13906-2:2001.</p> <p>This document is endorsed on 19.06.2002 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: This standard specifies the calculation and design of cold and hot coiled helical cylindrical helical extension springs made from round wire and bar with values according to Table 1, loaded in the direction of the spring axis and operating at normal ambient temperatures.</p>	<p>Scope: This standard specifies the calculation and design of cold and hot coiled helical cylindrical helical extension springs made from round wire and bar with values according to Table 1, loaded in the direction of the spring axis and operating at normal ambient temperatures.</p>
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ICS 21.160

Võtmesõnad: circular form, dimensions, dynamic loading, helical springs, hot-worked, hot-working, initial stressing, mathematical calculations, metal bars, ratings, springs, static loading, steels, stress, stress coefficient, stresses, tension springs, wires

ICS 21.160

English version

Cylindrical helical springs made from round wire and bar - Calculation and design - Part 2: Extension springs

Ressorts hélicoïdaux cylindriques fabriqués à partir de fils
ronds et de barres - Calcul et conception - Partie 2:
Ressorts de traction

Zylindrische Schraubenfedern aus runden Drähten und
Stäben - Berechnung und Konstruktion - Teil 2: Zugfedern

This European Standard was approved by CEN on 5 January 2001.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard has been prepared by CMC.

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 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This European Standard has been prepared by the initiative of the Association of the European Spring Federation ESF and is based on the German Standard DIN 2089-2 - "Helical springs made from round wire and rod; Extension springs; Calculation and design" edition 1992-11, which is known and used in many European countries.

1 Scope

This standard specifies the calculation and design of cold and hot coiled helical cylindrical helical extension springs made from round wire and bar with values according to Table 1, loaded in the direction of the spring axis and operating at normal ambient temperatures.

Table 1

Characteristic	Cold coiled extension springs	Hot coiled extension springs
Wire or bar diameter	$d \leq 17 \text{ mm}$	$10 \text{ mm} \leq d < 35 \text{ mm}$
Coil diameter	$D \leq 160 \text{ mm}$	$D \leq 300 \text{ mm}$
Number of active coils	$n \geq 3$	$n \geq 3$
Spring index	$4 \leq w \leq 20$	$4 \leq w \leq 12$

NOTE 1 In cases of substantially higher or lower working temperature, it is advisable to seek the manufacturer's advice.

NOTE 2 Quality Standards for cold coiled extension springs will be developed later.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13906-1, *Cylindrical helical springs made from round wire and bar - Calculation and design - Part 1: Compression springs.*

EN 10270-1:2001, *Steel wire for mechanical springs – Part 1: Patented cold drawn unalloyed spring steel wire.*

EN 10270-2:2001, *Steel wire for mechanical springs - Part 2: Oil hardened and tempered spring steel wire.*

EN 10270-3:2001, *Steel wire for mechanical springs - Part 3: Stainless spring steel wire.*

EN 12166, *Copper and copper alloys - Wire for general purposes.*

EN ISO 2162-1:1996, *Technical product documentation - Springs - Part 1: Simplified representation (ISO 2162-1:1993).*

EN ISO 2162-3:1996, *Technical product documentation - Springs - Part 3: Vocabulary (ISO 2162-3:1993).*

prEN 10089:1998, *Hot-rolled steels for quenched and tempered springs – Technical delivery conditions.*

3 Terms and definitions, symbols, units and abbreviated terms

3.1 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.