Heat-treated steels, alloy steels and free-cutting steels - Part 17: Ball and roller bearing steels

Heat-treated steels, alloy steels and free-cutting steels - Part 17: Ball and roller bearing steels

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 683-17:2000 sisaldab Euroopa standardi EN ISO 683-17:1999 ingliskeelset teksti. Käesolev dokument on jõustatud 17.03.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 683-17:2000 consists of the English text of the European standard EN ISO 683-17:1999. This document is endorsed on 17.03.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This part of ISO 683 gives the technical delivery requirements for five groups of wrought ball and roller bearing steels, namely: through hardening bearing steels (steels with about 1% C and 1 to 2% Cr), case hardening bearing steels, induction hardening bearing steels (unalloyed and alloyed), stainless bearing steels, high temperature bearing steels.	**Scope:** This part of ISO 683 gives the technical delivery requirements for five groups of wrought ball and roller bearing steels, namely: through hardening bearing steels (steels with about 1% C and 1 to 2% Cr), case hardening bearing steels, induction hardening bearing steels (unalloyed and alloyed), stainless bearing steels, high temperature bearing steels.

ICS 77.140.10, 77.140.20

Võtmesõnad: alloy steels, ball bearings, chemical composition, free machining steels, hardenability, hardness, heat treatable steels, iron and steel products, materials specifications, mechanical properties, microstructure, non-metallic inc, roller bearings, soecifications, steels

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 683-17

October 1999

ICS 77.140.10; 77.140.20

English version

Heat-treated steels, alloy steels and free-cutting steels

Part 17: Ball and roller bearing steels
(ISO 683-17 : 1999)

Aciers pour traitement thermique, aciers alliés et aciers pour décolletage – Partie 17: Aciers pour roulements (ISO 683-17 : 1999)

Für eine Wärmebehandlung bestimmte Stähle, legierte Stähle und Automatenstähle – Teil 17: Wälzlagerstähle (ISO 683-17 : 1999)

This European Standard was approved by CEN on 1999-09-05.

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.

The European Standards exist 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.

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

CEN

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

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 683-17 : 1999 Heat-treated steels, alloy steels and free-cutting steels – Part 17: Ball and roller bearing steels,

which was prepared by ISO/TC 17 'Steel' of the International Organization for Standardization, has been adopted by Technical Committee ECISS/TC 23 'Steels for heat treatment, alloy steels and free-cutting steels – Qualities and dimensions', the Secretariat of which is held by DIN, 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 April 2000 at the latest.

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

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

Endorsement notice

The text of the International Standard ISO 683-17 : 1999 was approved by CEN as a European Standard without any modification.

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

Contents

1 Scope

1.1 This part of ISO 683 applies to the products and heat-treatment conditions given in Table 1 and the surface conditions given in Table 2.

1.2 This part of ISO 683 gives the technical delivery requirements for five groups of wrought ball and roller bearing steels as listed in Table 3, namely:

a) through-hardening bearing steels (steels with about 1 % C and 1 % to 2 % Cr);

b) case-hardening bearing steels;

c) induction-hardening bearing steels (unalloyed and alloyed);

d) stainless bearing steels;

e) high temperature bearing steels.

1.3 In special cases variations in these technical delivery requirements or additions to them may form the subject of an agreement at the time of inquiry and order (see annex A).

1.4 In addition to this part of ISO 683, the general technical delivery requirements of ISO 404 are applicable.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 683. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 683 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 377:1997, *Steel and steel products — Location and preparation of samples and test pieces for mechanical testing.*

ISO 404:1992, *Steel and steel products — General technical delivery requirements.*

ISO 642:1999, *Steels — Hardenability test by end quenching (Jominy test).*

ISO 643:1983, *Steels — Micrographic determination of the ferritic or austenitic grain size.*

ISO 1035-1:1980, *Hot-rolled steel bars — Part 1: Dimensions of round bars.*

ISO 1035-4:1982, *Hot-rolled steel bars — Part 4: Tolerances.*

ISO 3763:1976, *Wrought steels — Macroscopic methods for assessing the content of non-metallic inclusions.*

ISO 3887:1976, *Steel, non-alloy and low-alloy — Determination of depth of decarburization.*

ISO 4948-1:1982, *Steels — Classification — Part 1: Classification of steels into unalloyed and alloy steels based on chemical composition.*

ISO 4967:1998, *Steel — Determination of content of nonmetallic inclusions — Micrographic method using standard diagrams.*

ISO 4969:1980, *Steel — Macroscopic examination by etching with strong mineral acids.*

ISO 5949:1983, *Tool steels and bearing steels — Micrographic method for assessing the distribution of carbides using reference photomicrographs.*

ISO 6506:1981[1)], *Metallic materials — Hardness test — Brinell test.*

ISO 6929:1987, *Steel products — Definitions and classification.*

ISO 9443:1991, *Heat-treatable and alloy steels — Surface quality classes for hot-rolled round bars and wire rods — Technical delivery conditions.*

ISO/TR 9769:1991, *Steel and iron — Review of available methods of analysis.*

ISO 10474:1991, *Steel and steel products — Inspection documents.*

ISO 14284:1996, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition.*

ENV 10247:1996, *Metallographic test methods — Examination of steels using standard diagrams to assess the content of non-metallic inclusions.*

3 Terms and definitions

For the purposes of this part of ISO 683, the terms and definitions for the product forms given in ISO 6929 apply. The terms "unalloyed steel" and "alloyed steel" are as defined in ISO 4948-1.

4 Ordering and designation

The designation of the product on an order shall cover the following.

a) The designation of the product form (e. g. bar) followed by
   1) either the designation of the dimensional standard and the dimensions and tolerances selected from it (see 5.6) or
   2) the designation of any other document covering the dimensions and tolerances required for the product.

b) If a surface condition other than "hot worked" or a special surface quality is required
   1) the surface condition (see Table 2), and
   2) the surface quality (see 5.5).

c) A description of the steel comprising
   1) a reference to this part of ISO 683;
   2) the designation of the steel type (see Table 3);
   3) the symbol for the heat-treatment condition on delivery (see Table 1);
   4) the standard designation for the required type of inspection document (see ISO 10474);
   5) the symbol and, where necessary, the details of this supplementary requirement (see annex A), if any supplementary requirement shall be complied with.

[1)] This International Standard has been replaced by ISO 6506-1, ISO 6506-2 and ISO 6506-3.