SLOVENSKI STANDARD

SIST ISO 15242-3:2006

01-julij-2006

Kotalni leģaji ï Metode za merjenje vibracij ï 3. del: Dvoredni radialni krogliļ ni in radialni stoģļ asti kotalni leģaji z valjasto luknjo in valjasto zunanjo ploskvijo

Rolling bearings - Measuring methods for vibration - Part 3: Radial spherical and tapered roller bearings with cylindrical bore and outside surface

Ta slovenski standard je istoveten z:

ICS:

21.100.20

SIST ISO 15242-3:2006 **en**

INTERNATIONAL STANDARD

ISO 15242-3

First edition
2006-01-15

Rolling bearings — Measuring methods for vibration —

Part 3: Radial spherical and tapered roller bearings with cylindrical bore and outside surface

Roulements — Méthodes de mesurage des vibrations — Partie 3: Roulements à rotule sur rouleaux et à rouleaux coniques, à alésage et surface extérieure cylindriques

Reference number
ISO 15242-3:2006(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 15242-3 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

ISO 15242 consists of the following parts, under the general title *Rolling bearings — Measuring methods for vibration*:

— *Part 1: Fundamentals*

— *Part 2: Radial ball bearings with cylindrical bore and outside surface*

— *Part 3: Radial spherical and tapered roller bearings with cylindrical bore and outside surface*

— *Part 4: Radial cylindrical roller bearings with cylindrical bore and outside surface*

Introduction

Vibration of rotating rolling bearings is a complex physical phenomenon dependent on the conditions of operation. Measuring the vibration output of an individual bearing under a certain set of conditions does not necessarily characterize the vibration output under a different set of conditions or when the bearing becomes part of a larger assembly. Assessment of the audible sound generated by the mechanical system incorporating the bearing is complicated further by the influence of the interface conditions, the location and orientation of the sensing device, and the acoustical environment in which the system operates. Assessment of airborne noise, which for the purpose of this document can be defined as any disagreeable and undesired sound, is further complicated by the subjective nature of the terms "disagreeable" and "undesired". Structure-borne vibration can be considered the driving mechanism that ultimately results in the generation of airborne noise. Only selected methods for the measurement of the structure-borne vibration of rotating rolling bearings are addressed in this part of ISO 15242.

Vibration of rotating rolling bearings can be assessed by any of a number of means using various types of transducers and test conditions. No simple set of values characterizing vibration of a bearing is adequate for the evaluation of the vibratory performance in all possible applications. Ultimately, a knowledge of the type of bearing, its application and the purpose of the vibration testing (e.g. as a manufacturing process diagnostic or an assessment of the product quality) is required to select the most suitable method for testing. The field of application for standards on bearing vibration is, therefore, not universal. However, certain methods have established a wide enough level of application to be considered as standard methods for the purposes of this part of ISO 15242.

This part of ISO 15242 serves to define the detailed method for assessing vibration of radial spherical and tapered roller bearings with cylindrical bore and outside surface on a test rig.

Rolling bearings — Measuring methods for vibration —

Part 3: Radial spherical and tapered roller bearings with cylindrical bore and outside surface

1 Scope

This part of ISO 15242 specifies vibration measuring methods for double-row radial spherical roller bearings and single-row and double-row radial tapered roller bearings, with a contact angle up to and including 45°, under established test conditions.

It covers double-row radial spherical roller bearings as well as single-row and double-row radial tapered roller bearings with cylindrical bore and outside surface.

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 reference document (including any amendments) applies.

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

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 558, *Conditioning and testing — Standard atmospheres — Definitions*

ISO 1132-1, *Rolling bearings — Tolerances — Part 1: Terms and definitions*

ISO 2041, *Vibration and shock — Vocabulary*

ISO 3205, *Preferred test temperatures*

ISO 3448, *Industrial liquid lubricants — ISO viscosity classification*

ISO 5593, *Rolling bearings — Vocabulary*

ISO 15242-1:2004, *Rolling bearings — Measuring methods for vibration — Part 1: Fundamentals*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1132-1, ISO 2041, ISO 5593 and ISO 15242-1 apply.