



SLOVENSKI STANDARD SIST ISO 15242-2:2005

01-januar-2005

Rolling bearings -- Measuring methods for vibration -- Part 2: Radial ball bearings with cylindrical bore and outside surface

Roulements -- Méthodes de mesure des vibrations -- Partie 2: Roulements à billes radiaux, à alésage et surface extérieure cylindriques

iTeh STANDARD PREVIEW

(standards.iteh.ai)

Roulements -- Méthodes de mesure des vibrations -- Partie 2: Roulements à billes radiaux, à alésage et surface extérieure cylindriques

[SIST ISO 15242-2:2005](https://standards.iteh.ai/catalog/standards/sist/9e7bf11-59d3-44a4-98b5-01822a05406/sist-iso-15242-2-2005)

Ta slovenski standard je istoveten z: [ISO 15242-2:2004](https://standards.iteh.ai/catalog/standards/sist/9e7bf11-59d3-44a4-98b5-01822a05406/sist-iso-15242-2-2005)

ICS:

21.100.20 Kotalni ležaji Rolling bearings

SIST ISO 15242-2:2005

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ISO 15242-2:2005](https://standards.iteh.ai/catalog/standards/sist/f9e7bf11-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005)

<https://standards.iteh.ai/catalog/standards/sist/f9e7bf11-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005>

INTERNATIONAL
STANDARD

ISO
15242-2

First edition
2004-10-01

**Rolling bearings — Measuring methods
for vibration —**

Part 2:

**Radial ball bearings with cylindrical bore
and outside surface**

iTeh STANDARD PREVIEW

(standards.iteh.ai)

Roulements — Méthodes de mesure des vibrations —

*Partie 2: Roulements à billes radiaux, à alésage et surface extérieure
cylindriques*

[SIST ISO 15242-2:2005](https://standards.iteh.ai/catalog/standards/sist/f9e7bf11-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005)

<https://standards.iteh.ai/catalog/standards/sist/f9e7bf11-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005>



Reference number
ISO 15242-2:2004(E)

© ISO 2004

ISO 15242-2:2004(E)**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST ISO 15242-2:2005](https://standards.iteh.ai/catalog/standards/sist/f9e7bf11-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005)

<https://standards.iteh.ai/catalog/standards/sist/f9e7bf11-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005>

© ISO 2004

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

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	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Measurement process	2
4.1 Speed of rotation	2
4.2 Bearing axial load	2
5 Measurement and evaluation methods	2
5.1 Physical quantity measured	2
5.2 Frequency range	2
5.3 Peak measurement	3
5.4 Testing sequence	3
6 Conditions for measurement	4
6.1 Bearing conditions for measurement	4
6.2 Conditions of the test environment	4
6.3 Conditions for the test device	4
6.4 Requirements for the operator	7
Annex A (normative) Measurement of external axial loading alignment	8
Bibliography	9

ISO 15242-2:2004(E)**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 15242-2 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 double-row spherical and tapered 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 that, 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 the current edition 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 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 ball bearings with cylindrical bore and outside surface on a test rig.

[SIST ISO 15242-2:2005](https://standards.iteh.ai/catalog/standards/sist/f9e7bfl1-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005)

<https://standards.iteh.ai/catalog/standards/sist/f9e7bfl1-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ISO 15242-2:2005](#)

<https://standards.iteh.ai/catalog/standards/sist/f9e7b11-59d3-44a4-98b5-0ff822a05406/sist-iso-15242-2-2005>

Rolling bearings — Measuring methods for vibration —

Part 2:

Radial ball bearings with cylindrical bore and outside surface

1 Scope

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

It covers radial ball bearings with cylindrical bore and outside surface, except bearings with filling slots and three- and four-point-contact ball bearings.

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 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.