

INTERNATIONAL STANDARD

**ISO
6446**

First edition
1994-10-15

Rubber products — Bridge bearings — Specification for rubber materials

*Produits en caoutchouc — Appuis de pont — Spécification des matériaux
en caoutchouc*



Reference number
ISO 6446:1994(E)



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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.

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.

International Standard ISO 6446 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 4, *Miscellaneous products*.

Annex A forms an integral part of this International Standard. Annex B is for information only.

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Case Postale 56 • CH-1211 Genève 20 • Switzerland
Printed in Switzerland

Introduction

This International Standard has been prepared in order to assist national standards organizations and other bodies wishing to devise a material specification for rubbers used in elastomeric bridge bearings. It represents a consensus viewpoint, and in doing so recognizes that practices and conditions of service are not the same, and in many cases cannot be the same, in all areas of the world. For this reason, it includes a number of options among its requirements, for example with regard to low-temperature performance. The intention is that the user of this International Standard will select and specify the options most appropriate to his particular needs.

The requirements of this specification may be divided into two general categories, namely basic and optional.

The basic requirements are those relating to choice of rubber type, overall hardness range, specification of shear modulus or nominal hardness, ozone resistance and source and preparation of test pieces. Furthermore, an ability to form a strong adhesion bond is an essential requirement of a rubber used in a laminated bearing. These requirements are essential for a material specification based on this International Standard, although there is an option within each requirement. In addition, tensile strength, elongation at break, compression set and an accelerated-ageing test are specified as quality control requirements; in these cases, the test conditions and limits vary with rubber type.

Those tests relating to tear strength and resistance to creep are optional and may be added to the specification as appropriate.

It is acknowledged that requirements for the rubber constitute only part of a specification for elastomeric bridge bearings. A complete specification will include statements on the characteristics and quality of reinforcement in laminated bearings and on sampling and frequency of testing as well as load/deflection tests conducted on the complete bearing.

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1 Scope

This International Standard specifies requirements for rubber materials used in elastomeric bridge bearings, which may be of the plain-pad or laminated type. It also specifies methods of test and describes procedures for the preparation of test pieces from finished bearings.

This International Standard does not contain aspects relating to design properties and quality control of the complete bearing, except where the complete bearing is used as the source of samples and test pieces to determine properties of the rubber material. Dimensions and tolerances are therefore not included in this International Standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 34-1:1994, *Rubber, vulcanized or thermoplastic — Determination of tear strength — Part 1: Trouser, angle and crescent test pieces.*

ISO 36:1993, *Rubber, vulcanized or thermoplastic — Determination of adhesion to textile fabric.*

ISO 37:1994, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties.*

ISO 48:1994, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD).*

ISO 188:1982, *Rubber, vulcanized — Accelerated ageing or heat-resistance tests.*

ISO 471:—¹⁾, *Rubber — Times, temperatures and humidities for conditioning and testing.*

ISO 812:1991, *Rubber, vulcanized — Determination of low-temperature brittleness.*

ISO 813:1986, *Rubber, vulcanized — Determination of adhesion to metal — One-plate method.*

ISO 815:1991, *Rubber, vulcanized or thermoplastic — Determination of compression set at ambient, elevated or low temperatures.*

ISO 1431-1:1989, *Rubber, vulcanized or thermoplastic — Resistance to ozone cracking — Part 1: Static strain test.*

ISO 1827:1991, *Rubber, vulcanized or thermoplastic — Determination of modulus in shear or adhesion to rigid plates — Quadruple shear method.*

ISO 4661-1:1993, *Rubber, vulcanized or thermoplastic — Preparation of samples and test pieces — Part 1: Physical tests.*

ISO 8013:1988, *Rubber, vulcanized — Determination of creep in compression or shear.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

1) To be published. (Revision of ISO 471:1983 and ISO 1826:1979)