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Third edition
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Elastomeric seismic-protection isolators —

Part 3: Applications for buildings — Specifications

Appareils d'appuis structuraux en élastomère pour protection sismique —

Partie 3: Applications pour bâtiments — Spécifications

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 4, *Products (other than hoses)*.

This third edition cancels and replaces the second edition (ISO 22762-3:2010), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the definitions of some symbols in Clause 4 have been changed;

— a column stipulating the minimum number of test pieces has been added to Table 4;

— a new subclause (6.9) has been added.

A list of all parts in the ISO 22762 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

ISO 22762 series includes two parts related to specifications for isolators, i.e. ISO 22762-2 for bridges and ISO 22762-3 for buildings. This is because the isolator requirements for bridges and buildings are quite different, although the basic concept of the two products is similar. Therefore, ISO 22762-2 and the relevant clauses in ISO 22762-1 are used when ISO 22762 (all parts) is applied to the design of bridge isolators whereas ISO 22762-3 and the relevant clauses of ISO 22762-1 are used when it is applied to building isolators.

The main differences to be noted between isolators for bridges and isolators for buildings are the following.

a) Isolators for bridges are mainly rectangular in shape and those for buildings are circular in shape.

b) Isolators for bridges are designed to be used for both rotation and horizontal displacement, while isolators for buildings are designed for horizontal displacement only.

c) Isolators for bridges are designed to perform on a daily basis to accommodate length changes of bridges caused by temperature changes as well as during earthquakes, while isolators for buildings are designed to perform only during earthquakes.

d) Isolators for bridges are designed to withstand dynamic loads caused by vehicles on a daily basis as well as earthquakes, while isolators for buildings are mainly designed to withstand dynamic loads caused by earthquakes only.

For structures other than buildings and bridges (e.g. tanks), the structural engineer uses either ISO 22762-2 or ISO 22762-3, depending on the requirements of the structure.

Elastomeric seismic-protection isolators —

Part 3:
Applications for buildings — Specifications

1 Scope

This document specifies minimum requirements and test methods for elastomeric seismic isolators used for buildings and the rubber material used in the manufacture of such isolators.

It is applicable to elastomeric seismic isolators used to provide buildings with protection from earthquake damage. The isolators covered consist of alternate elastomeric layers and reinforcing steel plates. They are placed between a superstructure and its substructure to provide both flexibility for decoupling structural systems from ground motion, and damping capability to reduce displacement at the isolation interface and the transmission of energy from the ground into the structure at the isolation frequency.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 630 (all parts), *Structural steels*

ISO 22762-1:2018, *Elastomeric seismic-protection isolators — Part 1: Test methods*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp/

— IEC Electropedia: available at http://www.electropedia.org/

3.1
breaking
rupture of *elastomeric isolator* (3.8) due to compression- (or tension-) shear loading

3.2
buckling
state when *elastomeric isolators* (3.8) lose their stability under compression-shear loading

3.3
compressive properties of elastomeric isolator
K_V
compressive stiffness for all types of rubber bearings