INTERNATIONAL STANDARD

ISO 22762-6

First edition
2022-07

Elastomeric seismic-protection isolators —

Part 6: High-durability and high-performance specifications and test methods

Reference number
ISO 22762-6:2022(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: 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.

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)*.

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

This document specifies requirements and test conditions for elastomeric seismic isolators used for important buildings and buildings which can be subjected to frequent, large earthquakes; the requirements and test conditions for the rubber material used in the manufacture of such isolators are also specified.

Three grades of requirements for each test item are introduced. Grade I requirements for each test item conform with the requirements given in ISO 22762-3 and are appropriate for standard buildings unlikely to be subjected to frequent, large earthquakes. Grade II and grade III requirements for each test item have to meet the more stringent requirements and be subjected to the more severe test conditions given in this document. Grade III requirements for each test item are intended for the most important buildings, and sites where large earthquakes can be particularly frequent.

There are a wide variety of requirements for seismic isolated buildings; there is no need to request the same grade for all test items in the same project. Structural engineers may select grade II or III for each test item in their requirements in order to perform the optimum building design.

Instances where this document differs from ISO 22762-3 include:

a) the number of test pieces to be used in type testing;

b) smaller tolerances allowed between measured properties and design characteristics;

c) smaller variations, due to effects such as temperature and compressive load, allowed in shear properties.

Elastomeric seismic-protection isolators —

Part 6: High-durability and high-performance specifications and test methods

1 Scope

This document specifies specifications and test methods for elastomeric seismic isolators used for buildings to guarantee high durability and high performance.

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 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

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

ISO 22762-3:2018, *Elastomeric seismic-protection isolators — Part 3: Applications for buildings — Specifications*

3 Terms and definitions

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

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

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

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

3.1
allowable tensile strain
tensile strain whose influence on shear properties does not exceed a certain range

3.2
breaking
rupture of *elastomeric isolator* (3.8) due to compression- (or tension-) shear loading

3.3
buckling
state when *elastomeric isolators* (3.8) lose their stability under compression-shear loading