
International Standard



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Vibration and shock — Isolators — Procedure for specifying characteristics

Vibrations et chocs — Isolateurs — Dispositions pour la spécification des caractéristiques

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2017 was developed by Technical Committee ISO/TC 108, *Mechanical vibration and shock*.

This second edition was submitted directly to the ISO Council, in accordance with clause 5.10.1 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 2017-1972), which had been approved by the member bodies of the following countries:

Australia	Greece	Sweden
Belgium	Israel	Switzerland
Brazil	Japan	Thailand
Czechoslovakia	Netherlands	United Kingdom
Denmark	New Zealand	USA
Egypt, Arab Rep. of	Norway	USSR
France	South Africa, Rep. of	
Germany, F.R.	Spain	

No member body had expressed disapproval of the document.

Vibration and shock — Isolators — Procedure for specifying characteristics

0 Introduction

This International Standard is limited to consideration of resilient devices.

Some manufacturers of shock and vibration isolators (resilient mounts) have experience covering a wide variety of applications. The manufacturers, in most instances, are willing to use their background information for solving the users' isolation problems. However, it is frequently difficult for the manufacturer to provide this service, because the user has not furnished sufficient information to the manufacturer regarding the application.

On the other hand, the user is sometimes handicapped in applying isolators properly because sufficient technical information is not furnished by the manufacturer. Consequently, the user must conduct his own experimental evaluation of isolators and may unknowingly duplicate work already carried out by the manufacturer. The user must acquire proficiency in the art of applying resilient isolators, and needs appropriate technical information from the manufacturer. In some circumstances, the vibration or shock can be reduced at the source. This will be considered in other International Standards.

This International Standard is intended to serve as guide for the exchange of technical information between the user and supplier of resilient devices, as required for their proper application.

For the purposes of this International Standard, a resilient device is defined as a flexible element or system used between an equipment item and its supporting structure to attenuate the transmission of shock or vibration from the equipment to the structure or from the structure to the equipment.

1 Scope and field of application

This International Standard specifies the subject matter and format for describing isolators (resilient mounts), the equipment to be isolated, supporting structure and environment so that there will be a clear understanding by both the user and the manufacturer. Since the intention of this International Standard is to encourage better communication between the manufacturer and the user, it is strongly recommended that its provisions be adhered to unless there are good reasons for departing from them.

2 Reference

ISO 2041, *Vibration and shock — Vocabulary*.

3 Definitions

For the purpose of this International Standard, the following definitions apply in addition to the definitions given in ISO 2041.

3.1 isolation system: Items or support arrangements that secure an equipment to its supporting structure, and provide protection from shock and/or vibration.

NOTE — The characteristics of the system are influenced by the supported and supporting structures.

3.2 load range: Range of operation limited by the maximum and minimum continuous loads at which an isolator can perform its intended function.

3.3 static stiffness: Ratio of change in force to change in displacement under slowly applied increasing and decreasing loads. This information is normally presented in the form of a load-deflection curve.

NOTE — The static stiffness may be dependent upon temperature, rate of change of load on other conditions.

4 Specifications

4.1 Information supplied by the user

For the selection of a design of an isolation system, the following information, as applicable, is necessary:

4.1.1 General description of the isolation problem

A brief description of the information required for a complete understanding of the technical details of the proposed system shall be provided. This information shall include:

- the type of equipment to be isolated;
- the type of structure in which the equipment is to be mounted (ship, steel building, concrete building, power plant, etc.);
- the location in the structure (engine room, main deck, roof, etc.);
- the isolation efficiency — user's criteria for acceptance.