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Acoustics and vibration — Laboratory measurement of vibro-acoustic transfer properties of resilient elements —

Part 4: Dynamic stiffness of elements other than resilient supports for translatory motion

Acoustique et vibrations — Mesurage en laboratoire des propriétés de transfert vibro-acoustique des éléments élastiques —

Partie 4: Raideur dynamique en translation des éléments autres que les supports élastiques

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
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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.

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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.

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ISO 10846-4 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*, in collaboration with ISO/TC 108, *Mechanical vibration and shock*.

ISO 10846 consists of the following parts, under the general title *Acoustics and vibration — Laboratory measurement of vibro-acoustic transfer properties of resilient elements*:

— *Part 1: Principles and guidelines*

— *Part 2: Dynamic stiffness of elastic supports for translatory motion — Direct method*

— *Part 3: Indirect method for determination of the dynamic stiffness of resilient supports for translatory motion*

— *Part 4: Dynamic stiffness of elements other than resilient supports for translatory motion*

— *Part 5: Driving point method for the determination of the low frequency dynamic stiffness of elastic supports for translatory motion*

Introduction

Passive vibration isolators of various kinds are used to reduce the transmission of vibrations. Examples are automobile engine mounts, resilient supports for buildings, resilient mounts and flexible shaft couplings for shipboard machinery, and small isolators in household appliances.

This part of ISO 10846 specifies a direct and an indirect method for measuring the dynamic transfer stiffness function of linear resilient elements (other than resilient supports) such as resilient bellows, hoses, shaft couplings, power supply cables and pipe hangers. This part of ISO 10846 belongs to a series of International Standards on methods for the laboratory measurement of the vibro-acoustic properties of resilient elements, which also includes documents on measurement principles and on a direct, an indirect and a driving point method for resilient supports. ISO 10846-1 provides global guidance for the selection of the appropriate International Standard.

The laboratory conditions described in this part of ISO 10846 include the application of static preload, where appropriate.

The results of the method described in this part of ISO 10846 are useful for resilient elements that are used to reduce the transmission of structure-borne sound (primarily frequencies above 20 Hz). The method does not characterize completely elements that are used to attenuate low-frequency vibration or shock excursions.