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First edition
2012-07-15

**Metallic materials — Dynamic force
calibration for uniaxial fatigue testing —
Part 2:
Dynamic calibration device (DCD)
instrumentation**

*Matériaux métalliques — Étalonnage de la force dynamique uniaxiale
pour les essais de fatigue —*

Partie 2: Instrumentation pour équipement d'étalonnage dynamique



Reference number
ISO 4965-2:2012(E)

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Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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.

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.

ISO 4965-2 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 5, *Fatigue testing*.

This first edition of ISO 4965-2, together with ISO 4965-1, cancels and replaces ISO 4965:1979, which has been technically revised.

ISO 4965 consists of the following parts, under the general title *Metallic material — Dynamic force calibration for uniaxial fatigue testing*:

- *Part 1: Testing systems*
- *Part 2: Dynamic calibration device (DCD) instrumentation*

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Introduction

In a dynamic test, the force experienced by the test-piece may differ significantly from the intended force indicated by the testing system. The dynamic errors result from inertial forces acting on the force transducer and any dynamic errors in the electronics of the force indicating system. Inertial forces equate to the grip mass (interposed between the force transducer and the test-piece) multiplied by its local acceleration, and therefore depend on

- a) the amplitude of motion,
- b) the frequency of motion, and
- c) the grip mass.

The amplitude of motion will, in turn, depend on the applied force and the mechanical configuration of the testing system, including the compliances of the load train, the test-piece, the reaction frame, and the base mounting.

ISO 4965-1 describes two methods of determining the testing system's performance. Both of these methods require that the DCD instrumentation has previously been calibrated in accordance with this part of ISO 4965.