INTERNATIONAL STANDARD

ISO 1413

Third edition
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Horology — Shock-resistant wrist watches

Horlogerie — Montres-bracelet résistant aux chocs

Reference number
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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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 114, *Horology*, Subcommittee SC 1, *Shock resistant watches*.

This third edition cancels and replaces the second edition (ISO 1413:1984), which has been technically revised with the following changes:

a) added a third shock on the watch head (on the crown);

b) added two free-fall shocks, including the bracelet.

Introduction

This International Standard is intended to allow the homologation test of watches rather than the individual control of all watches of a production batch. Indeed, assuming that each watch could comply with the minimum requirements without apparent damage, readjustment could still be made necessary because the test can lead to an alteration of the initial functions and rate of a complete watch.

Horology — Shock-resistant wrist watches

1 Scope

This International Standard specifies the minimum requirements for shock-resistant wrist watches and describes the corresponding test method.

It is based on the simulation of the shock received by a wrist watch while falling from a height of 1 m onto a horizontal wooden floor (an equivalent surface is described in B.1.1).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3158, *Timekeeping instruments — Symbolization of control positions*

ISO 22810, *Horology — Water-resistant watches*

3 Terms and definitions

For the purpose of this document, the following definitions apply.

3.1
shock-resistance
ability to sustain impacts without damage

3.2
shock-resistant watch
watch that resists mechanical shocks according to this International Standard's requirements

3.3
display components
elements of the watch which determine and display a physical value to the consumer

EXAMPLE Hands, calendar disks, rotating cylinders, pointers or any other mechanical devices.

Note 1 to entry: This includes any electro-optical display elements of the watch which determine or display, through their position, contrast, polarity, colour, sound or other properties, a physical value to the consumer.

3.4
residual effect
occurrence of failures or changes in the watch functions as a result of exposure to shocks

Note 1 to entry: Any kind of failures are considered as residual effects. In order to determine the degree of shock resistance, residual effects are divided into *permanent residual effect* (3.5) and *reversible residual effects* (3.6).

3.5
permanent residual effect
changes in the display information and in the watch functions which remain present after the test

Note 1 to entry: The consumer does not have the ability to remedy said failures or reset the functions without the intervention of a professional watch service. These failures may include the following:

— disconnected or repressed gear train of the hour and/or minute mechanism;