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Horology — Magnetic resistant watches

Horlogerie — Montres résistantes au magnétisme

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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).

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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 114, *Horology*, Subcommittee SC 12, *Antimagnetism*.

This fourth edition cancels and replaces the third edition (ISO 764:2002), which has been technically revised. The main changes compared to the previous edition are as follows:

— additions of enhanced magnetic resistant watches and relationship with the distance from products generating magnetic fields in Annex C.

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

Before all, we are exposed to various magnetic fields in daily life and, the watches we wear are also exposed to magnetic fields.

Unfortunately, the exposure of watches to strong magnetic fields may influence their accuracy.

In the case of mechanical watches, the motion of the spring balance oscillator responsible for the accuracy of the watch may be adversely affected, resulting in an influence on their accuracy. In the case of electronic watches, the rotation of the motor(s) that moves the hand(s) is affected.

Also, as magnetic fields are invisible, they are not easily understood by consumers. Furthermore, the strengths of magnetic fields are closely related to the distances between the watch and the sources of magnetic fields generated by products. For the effect on the accuracy of watches, since the strengths of magnetic fields differ with the distances from the sources of magnetic fields, it is advisable to make consumers understand magnetic fields encountered in daily life and their strengths, and the distance relationship between watches and the sources of magnetic fields.

Based on the above, products generating magnetic fields encountered in daily life, and the relationship between the strengths of magnetic fields generated by these products and the distances from the sources of magnetic fields are summarized in Annex C.

Also, the following two types are defined: magnetic resistant watches that can withstand the strengths of magnetic fields encountered in normal daily life and enhanced magnetic resistant watches that can withstand strong magnetic fields.

Horology — Magnetic resistant watches

1 Scope

This document specifies the minimum requirements and test methods for magnetic resistant watches.

This document applies to magnetic resistant watches designed to withstand daily magnetic fields.

Moreover, it indicates the marking which the manufacturer is authorized to apply to them.

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 3158, *Timekeeping instruments — Symbolization of control positions*

3 Terms and definitions

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

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

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

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

3.1
magnetic resistant watch
watch designed to withstand a homogeneous and continuous direct current magnetic field of 4 800 A/m encountered on a daily basis

3.2
enhanced magnetic resistant watch
watch designed to withstand a homogeneous and continuous strong direct current magnetic field equal or higher than 16 000 A/m encountered in close proximity

3.3
residual effect
difference of rates before and after the magnetic resistance test

4 Requirements

4.1 General

Magnetic resistant watches shall meet the requirements of 4.2 or 4.3 when applying magnetic fields of 4 800 A/m. Enhanced magnetic resistant watches shall meet the requirements of Annex A.

4.2 Requirements for mechanical watches

4.2.1 Running conditions of mechanical watches during magnetic fields application

When observed during the magnetic fields application, watches shall not stop.