International Standard

ISO 14903

Refrigerating systems and heat pumps — Qualification of tightness of components and joints

Systèmes de réfrigération et pompes à chaleur — Qualification de l'étanchéité des composants et des joints

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Foreword

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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 document 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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This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 182, *Refrigerating systems, safety and environmental requirements*, in collaboration with ISO Technical Committee TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 1, *Safety and environmental requirements for refrigerating systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 14903:2017), which has been technically revised.

The main changes are as follows:

— update of the test procedure:

  — PTV test:

    — deletion of previous method 1 "Combined pressure-temperature cycle test with integrated vibration test";

    — update of previous method 2 "Combined pressure-temperature cycle test with a separate vibration test".

  — pressure test: modification of the test pressure specification;

— modification of Figure 2 "Test procedure": the compatibility test is moved out of the tightness test;

— deletion of previous Annex B "Test arrangements".

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

This document is intended to characterize the tightness stresses of joints of maximum DN 50 and components of internal volume of maximum 5 l and maximum weight of 50 kg met during their operations, following the fitting procedure specified by the manufacturer. This document is also intended to specify the minimal list of necessary information to be provided by the supplier of a component to the person in charge of carrying out this procedure.

Refrigerating systems and heat pumps — Qualification of tightness of components and joints

1 Scope

This document specifies the qualification procedure for type approval of the tightness of hermetically sealed and closed components, joints and parts used in refrigerating systems and heat pumps as described in relevant parts of the ISO 5149 series, including metal flexible piping. It specifies the level of tightness of the component as a whole and its assembly as specified by the manufacturer. It specifies additional requirements for mechanical joints that can be recognized as hermetically sealed joints.

This document is applicable to joints of maximum DN 50 and components of internal volume of maximum 5 l and maximum weight of 50 kg.

It is applicable to the hermetically sealed and closed components, joints and parts (e.g. fittings, bursting discs, flanged or fitted assemblies) used in the refrigerating installations, including those with seals, whatever their material and design are.

This document does not apply to the tightness of flexible piping made from non-metallic material. This is covered in ISO 13971.

Components tested before the date of publication of this document and found to comply with ISO 14903:2017 are considered to comply with this document.

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 175, *Plastics — Methods of test for the determination of the effects of immersion in liquid chemicals*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 5149-1, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 1: Definitions, classification and selection criteria*

ISO 20485:2017, *Non-destructive testing — Leak testing — Tracer gas method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5149-1 and the following apply.

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

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

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