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Industrial valves — Measurement, test and qualification procedures for fugitive emissions — Classification system and qualification procedures for type testing of stem seals for valves

Robinetterie industrielle — Mesurage, essais et modes opératoires de qualification pour émissions fugitives — Système de classification et modes opératoires de qualification pour les essais de type des dispositifs d'étanchéité de la tige des appareils de robinetterie

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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 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 Technical Committee ISO/TC 153, *Valves*.

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.

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Introduction

The objective of this document is to establish test methods to evaluate the performance of different designs and constructions of stem sealing for valves in order to reduce fugitive emissions.

The results from the testing provide a means of classification and qualification under various test conditions.

This classification will help valve manufacturers to choose a suitable stem seal system to allow valve testing in accordance with ISO 15848-1.

The procedures of this document can only be used with the application of necessary precautions for testing with flammable or inert gas at temperature and under pressure.

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Industrial valves — Measurement, test and qualification procedures for fugitive emissions — Classification system and qualification procedures for type testing of stem seals for valves

1 Scope

This document covers the type testing of valve stem seals using a test fixture that is designed and fully defined to be representative of the performance of a valve using similar geometry.

This document is applicable to stem seals for multi-turn, linear and quarter turn valves. It is intended to provide comparative type test results confirming the performance of seal manufacturers' stem seal designs.

This document is not intended to replace type testing of complete valve assemblies or valve production testing.

Compliance with this document is not intended to be a mandatory qualification test to be completed for a stem seal design prior to testing a valve to the requirements of ISO 15848-1.

Compressible seals with and without live loading, elastomers and pressure energized seals are in the scope of this document.

Corrosion tests are not included in 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 15848-1:2015, *Industrial valves — Measurement, test and qualification procedures for fugitive emissions — Part 1: Classification system and qualification procedures for type testing of valves*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15848-1 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/

3.1
live loading
application of a load to the gland follower of adjustable compression stem seals using a stored energy device such as a spring

3.2
quarter-turn stem
QT
test fixture designed to simulate movement of a valve to the fully open or close position with approximately 90° rotation of the stem

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