Irish Standard
I.S. EN ISO 20486:2018

Non-destructive testing - Leak testing - Calibration of reference leaks for gases (ISO 20486:2017)

I.S. EN ISO 20486:2018

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN ISO 20486:2018 is the adopted Irish version of the European Document EN ISO 20486:2018, Non-destructive testing - Leak testing - Calibration of reference leaks for gases (ISO 20486:2017)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 20486

February 2018

ICS 19.100

Supersedes EN 13192:2001

English Version

Non-destructive testing - Leak testing - Calibration of reference leaks for gases (ISO 20486:2017)

Essais non destructifs - Contrôle d'étanchéité - Étalonnage des fuites de référence des gaz (ISO 20486:2017)

Zerstörungsfreie Prüfung - Dichtheitsprüfung - Kalibrieren von Referenzlecks für Gase (ISO 20486:2017)

This European Standard was approved by CEN on 23 December 2017.

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European foreword

This document (EN ISO 20486:2018) has been prepared by Technical Committee ISO/TC 135 "Non-destructive testing" in collaboration with Technical Committee CEN/TC 138 “Non-destructive testing”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13192:2001.

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Endorsement notice

The text of ISO 20486:2017 has been approved by CEN as EN ISO 20486:2018 without any modification.

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I.S. EN ISO 20486:2018

INTERNATIONAL STANDARD

ISO 20486

First edition
2017-12

Non-destructive testing — Leak testing — Calibration of reference leaks for gases

Essais non destructifs — Contrôle d'étanchéité — Étalonnage des fuites de référence des gaz

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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 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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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 6, *Leak testing*.

Non-destructive testing — Leak testing — Calibration of reference leaks for gases

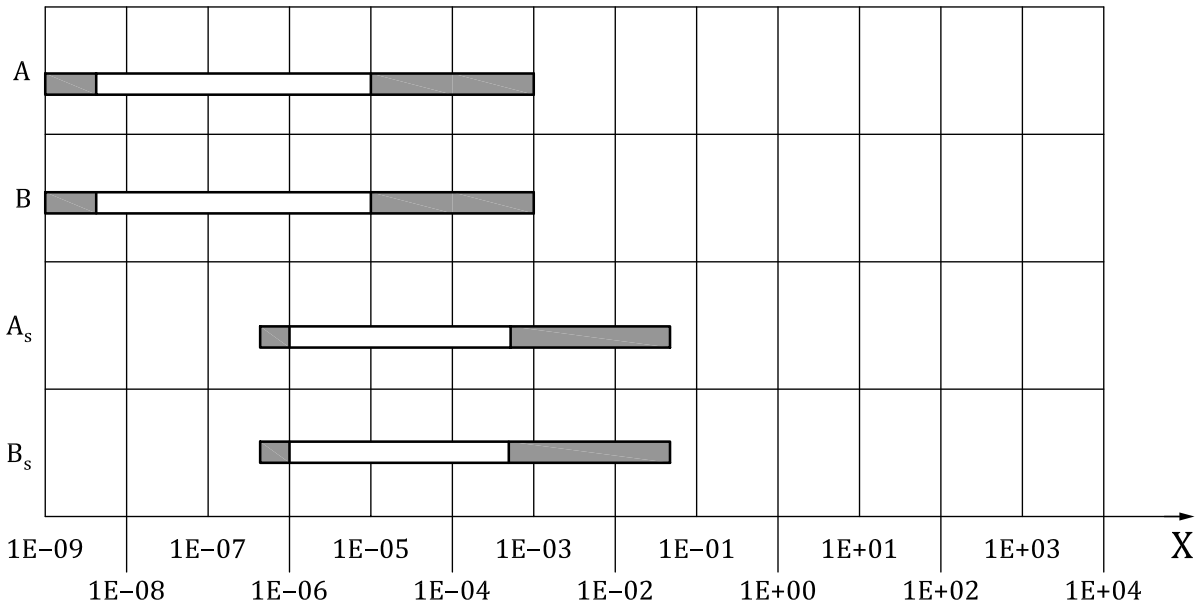
1 Scope

This document specifies the calibration of those leaks that are used for the adjustment of leak detectors for the determination of leakage rate in everyday use. One type of calibration method is a comparison with a reference leak. In this way, the leaks used for routine use become traceable to a primary standard. In other calibration methods, the value of vapour pressure was measured directly or calculated over a known volume.

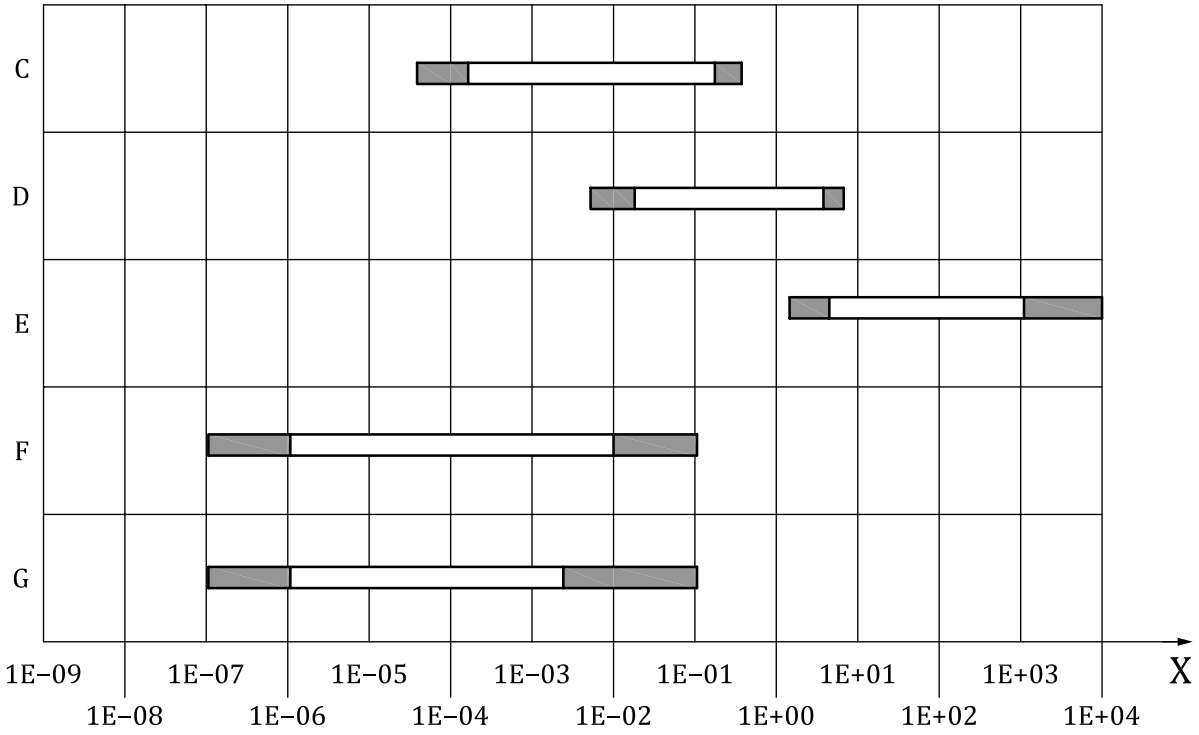
The comparison procedures are preferably applicable to helium leaks, because this test gas can be selectively measured by a mass spectrometer leak detector (MSLD) (the definition of MSLD is given in ISO 20484).

Calibration by comparison (see methods A, A_S, B and B_S below) with known reference leaks is easily possible for leaks with reservoir and leakage rates below 10^{-7} Pa·m^3/s.

Figure 1 gives an overview of the different recommended calibration methods.



a) Calibration by comparison



b) Calibration by direct measurement

Key

X	leakage rate in Pa·m³/s	C	Method C
A	Method A	D	Method D
B	Method B	E	Method E
A_S	Method A_S	F	Method F
B_S	Method B_S	G	Method G
	normal range		possible range

Figure 1 — Calibration ranges

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 20484, *Non-destructive testing — Leak testing — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20484 and the following 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/