



Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN ISO 14903:2017

Refrigerating systems and heat pumps - Qualification of tightness of components and joints (ISO 14903:2017)

Kälteanlagen und Wärmepumpen -
Qualifizierung der Dichtheit der Bauteile
und Verbindungen (ISO 14903:2017)

Systèmes de réfrigération et pompes à
chaleur - Qualification de l'étanchéité
des composants et des joints (ISO
14903:2017)

08/2017



National Foreword

This European Standard EN ISO 14903:2017 was adopted as Luxembourgish Standard ILNAS-EN ISO 14903:2017.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

ILNAS-EN ISO 14903:2017

EUROPEAN STANDARD **EN ISO 14903**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2017

ICS 27.080; 27.200

Supersedes EN 16084:2011

English Version

**Refrigerating systems and heat pumps - Qualification of
tightness of components and joints (ISO 14903:2017)**

Systèmes de réfrigération et pompes à chaleur -
Qualification de l'étanchéité des composants et des
joints (ISO 14903:2017)

Kälteanlagen und Wärmepumpen - Qualifizierung der
Dichtheit der Bauteile und Verbindungen (ISO
14903:2017)

This European Standard was approved by CEN on 10 June 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 14903:2017) has been prepared by Technical Committee ISO/TC 86 “Refrigeration and air-conditioning” in collaboration with Technical Committee CEN/TC 182 “Refrigerating systems, safety and environmental requirements” the secretariat of which is held by DIN.

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 February 2018 and conflicting national standards shall be withdrawn at the latest by February 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 16084:2011.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 14903:2017 has been approved by CEN as EN ISO 14903:2017 without any modification.

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*

**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols	3
5 Test requirements	3
6 Requirements for hermetically sealed systems	8
7 Test procedures	8
7.1 General	8
7.2 Sampling	8
7.3 Test temperature	8
7.4 Tightness test	8
7.4.1 General	8
7.4.2 Tightness level control	9
7.5 Requirements for joints	11
7.5.1 Test samples	11
7.5.2 Torque	11
7.5.3 Reusable joint	12
7.5.4 Requirements for hermetically sealed joints	12
7.6 Pressure-temperature vibration tests (PTV)	12
7.6.1 General	12
7.6.2 Samples	12
7.6.3 Test method	12
7.6.4 Method 1: Combined pressure-temperature cycle test with integrated vibration test	13
7.6.5 Method 2: Combined pressure-temperature cycle test with a separate vibration test	15
7.7 Operation simulation	20
7.8 Freezing test	20
7.9 Additional pressure test for hermetically-sealed joints	21
7.10 Vacuum test	21
7.11 Compatibility screening test	22
7.11.1 General	22
7.11.2 Test fluids	22
7.11.3 Test specimens	22
7.11.4 Test setup parameters	22
7.11.5 Test procedure	23
7.11.6 Pass/fail criteria for sealing elements	23
7.12 Fatigue test for hermetically sealed joints	24
8 Test report	25
9 Information to the user	25
Annex A (informative) Equivalent tightness control levels	26
Annex B (normative) Test arrangements	32
Bibliography	34