



NSAI
Standards

Irish Standard
I.S. EN ISO 4074:2015

Natural rubber latex male condoms - Requirements and test methods (ISO 4074:2015)

I.S. EN ISO 4074:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN ISO 4074:2015

Published:

2015-11-11

*This document was published
under the authority of the NSAI
and comes into effect on:*

2015-11-29

ICS number:

11.200

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN ISO 4074:2015 is the adopted Irish version of the European Document EN ISO 4074:2015, Natural rubber latex male condoms - Requirements and test methods (ISO 4074:2015)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

EN ISO 4074

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2015

ICS 11.200

Supersedes EN ISO 4074:2002

English Version

Natural rubber latex male condoms - Requirements and test methods (ISO 4074:2015)

Préservatifs masculins en latex de caoutchouc naturel -
Exigences et méthodes d'essai (ISO 4074:2015)

Kondome aus Naturkautschuklatex - Anforderungen
und Prüfverfahren (ISO 4074:2015)

This European Standard was approved by CEN on 16 July 2015.

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, 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
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 93/42/EEC on Medical Devices	5

European foreword

This document (EN ISO 4074:2015) has been prepared by Technical Committee ISO/TC 157 "Non-systemic contraceptives and STI barrier prophylactics" in collaboration with Technical Committee CEN/TC 205 "Non-active medical devices" 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 May 2016, and conflicting national standards shall be withdrawn at the latest by November 2017.

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

This document supersedes EN ISO 4074:2002.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The following referenced documents are indispensable for the application of this document. For undated references, the latest edition of the referenced document (including any amendments) applies. For dated references, only the edition cited applies. However, for any use of this standard 'within the meaning of Annex ZA', the user should always check that any referenced document has not been superseded and that its relevant contents can still be considered the generally acknowledged state-of-art.

When an IEC or ISO standard is referred to in the ISO standard text, this shall be understood as a normative reference to the corresponding EN standard, if available, and otherwise to the dated version of the ISO or IEC standard, as listed below.

NOTE The way in which these referenced documents are cited in normative requirements determines the extent (in whole or in part) to which they apply.

EN ISO 4074:2015 (E)**Table 1 — Correlation between normative references and dated EN and ISO or IEC standards**

Normative references as listed in Clause 2 of the ISO standard	Equivalent dated standard	
	EN	ISO or IEC
ISO 2859-1	---	ISO 2859-1:1999 + Cor1:2001
ISO 10993-1	EN ISO 10993-1:2009	ISO 10993-1:2009
ISO 10993-5	EN ISO 10993-5:2009	ISO 10993-5:2009
ISO 10993-10	EN ISO 10993-1:2013	ISO 10993-1:2010
ISO 15223-1	EN ISO 15223-1:2012	ISO 15223-1:2012
ISO 15223-2	---	ISO 15223-2:2010
ISO/IEC 17025	EN ISO/IEC 17025:2005	ISO/IEC 17025:2005

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4074:2015 has been approved by CEN as EN ISO 4074:2015 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 93/42/EEC on Medical Devices

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Medical Devices Directive 93/42/EEC.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZA.1— Correspondence between this European Standard and the Essential Requirements of EU Directive 93/42/EEC as amended for medical devices

Clause(s)/sub-clause(s) of this European Standard	Essential requirements (ERs) of EU Directive 93/42/EEC	Qualifying remarks/Notes
6, 7, 14, 15	7.2	Clauses 6, 7, 14 and 15 provide a presumption of conformity with the Essential Requirements relating to the risk posed by contaminants and residues to persons involved in the transport, storage and use of the devices.
6, 15.2.4.2	7.3	Clause 15.2.4.2 includes requirements for information to users regarding use of additional lubricants with condoms.
6, 15.2.4.2	7.4	This standard does not consider the systemic safety and usefulness of any ancillary medicinal substance that could be incorporated into the condom.
6	7.5	
7	8.1	Condoms are not sterile devices but manufacturers should take steps to control microbial contamination.
14, 15.1	8.6	
15.2	13.1	
15.2.2, 15.2.4.1, 15.2.4.2,	13.2	
15.2.3, 15.2.4.1, 15.2.4.2, 15.2.5	13.3	
15.2.4.1, 15.2.4.2	13.4	
15.2.3, 15.2.4.1	13.5	

EN ISO 4074:2015 (E)

15.2.4.2, 15.2.5	13.6	
Annexes, which provide details of test methods, have not been included as the all the requirements are included above.		

WARNING — Other requirements and other EU Directives may be applicable to the products falling within the scope of this European Standard.

INTERNATIONAL STANDARD

**ISO
4074**

Third edition
2015-10-15

Natural rubber latex male condoms — Requirements and test methods

Préservatifs masculins en latex de caoutchouc naturel — Exigences et méthodes d'essai



Reference number
ISO 4074:2015(E)

© ISO 2015

ISO 4074:2015(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, 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	v
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Quality verification	3
5 Lot size	3
6 Biocompatibility	4
7 Microbial contamination	4
8 Product claims	4
9 Design	4
9.1 Integral bead	4
9.2 Lubrication	4
9.3 Dimensions	5
9.3.1 Length	5
9.3.2 Width	5
9.3.3 Thickness	5
10 Bursting volume and pressure	5
11 Stability and shelf life	6
11.1 General	6
11.2 Minimum stability requirements	6
11.3 Procedure for determining shelf life by real-time stability studies	7
11.4 Estimating shelf life based upon accelerated stability studies	7
12 Freedom from holes	7
13 Visible defects	8
14 Package integrity of individual container	8
15 Packaging and labelling	8
15.1 Packaging	8
15.2 Labelling	8
15.2.1 General	8
15.2.2 Symbols	8
15.2.3 Individual container	8
15.2.4 Consumer package	9
15.2.5 Condoms not distributed in consumer packages	11
15.3 Inspection	11
16 Test report	11
Annex A (normative) Sampling plans intended for assessing compliance of a continuing series of lots of sufficient number to allow the switching rules to be applied	12
Annex B (informative) Sampling plans intended for assessing compliance of isolated lots	14
Annex C (normative) Determination of total lubricant for condoms in individual containers	16
Annex D (normative) Determination of length	20
Annex E (normative) Determination of width	22
Annex F (normative) Determination of thickness	23
Annex G (informative) Determination of microbial contamination	26

ISO 4074:2015(E)

Annex H (normative) Determination of bursting volume and pressure	31
Annex I (normative) Oven treatment for condoms	33
Annex J (informative) Determination of force and elongation at break of test pieces of condoms	34
Annex K (normative) Determination of shelf life by real-time stability studies	37
Annex L (informative) Guidance on conducting and analysing accelerated ageing studies	40
Annex M (normative) Testing for holes	42
Annex N (normative) Testing for package integrity	48
Annex O (informative) Calibration of air inflation equipment for determination of bursting volume and pressure	50
Annex P (informative) Recommendations for testing condoms that fall outside of the size ranges specified in ISO 4074	54
Bibliography	56

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 157, *Non-systemic contraceptives and STI barrier prophylactics*.

This third edition cancels and replaces the second edition (ISO 4074:2014), which has been technically revised. The modifications are as follows:

- a) The maximum lot size has been limited to 500 000.
- b) Specific requirements for biocompatibility assessments, as defined in ISO 10993-1, have been added.
- c) It is recommended that manufacturers establish procedures for the periodic monitoring of microbial contamination (bioburden) as part of their quality management system including requirements for the absence of specific pathogens and limits for total viable counts on finished condoms; methods of determining bioburden levels on condoms are given in [Annex G](#).
- d) Specific requirements for extra strength condoms have been deleted but there is now a general requirement for manufacturers to justify any additional claims made for their products; claims relating to improved efficacy or safety have to be substantiated by clinical investigation.
- e) A minimum airburst volume of 28,0 dm³ has been introduced for condoms with mid-body widths that are greater than or equal to 65,0 mm and not more than 75,0 mm.
- f) The radius of the inner edge of the clamping collar wherever it contacts the inflated condom has to be a minimum of 2 mm ([Annex H](#)).
- g) The volumes of electrolyte used in the electrical test for determining freedom from holes described in [Annex M](#) have been brought into line with the volumes used for the water leak test.
- h) The volumes of water or electrolyte specified in the freedom from holes test have been increased for condoms that have mid-body widths greater than or equal to 56 mm and/or are longer than 210 mm.
- i) When conducting the electrical test for freedom from holes, the voltage is now measured from the time that the condom is first immersed and for up to 10 s after full immersion.

ISO 4074:2015(E)

- j) The method of testing for freedom from holes specified in ASTM D3492[8] has been included by reference.
- k) A limit has been introduced for the number of individual containers with visibly open seals, to be evaluated when the containers are inspected during the freedom from holes test described in [Annex M](#).
- l) Recommended requirements for minimum airburst properties and freedom from holes testing for condoms narrower than 45 mm and/or shorter than 160 mm have been introduced in informative [Annex P](#) to provide guidance to regulatory authorities, notified bodies and other interested parties when assessing condoms that fall outside of the normative size range specified in this International Standard.
- m) Amendments have been made to the methods for determining the shelf life of condoms including a simplified procedure for determining the shelf life by accelerated stability studies based on fixed ageing periods at 50 °C.
- n) Testing for freedom from holes, airburst properties, and package integrity are required when conducting stability studies to establish that condoms meet the minimum stability requirements specified in this International Standard and when determining condom shelf lives.
- o) The procedure for determining the thickness of a condom by the micrometer method is described in detail.
- p) An alternative method of removing the lubricant from the condom using an aqueous surfactant solution has been introduced into the method for determining the amount of lubricant on the condom.
- q) Revisions have been made to labelling requirements including the additional information supplied with the condom.

Regulatory agencies, notified bodies, and purchasers should consider the need for a transition period when implementing the requirements of this International Standard to allow manufacturers to make the changes required to maintain compliance. This applies particularly to the changes in packaging and labelling specified in [Clause 15](#).

Introduction

Condoms made from intact latex film have been shown to be a barrier to human immunodeficiency virus (HIV), other infectious agents responsible for the transmission of sexually transmitted infections (STIs), and to spermatozoa. Numerous clinical studies have confirmed that male latex condoms are effective in helping to prevent pregnancy and reduce the risk of transmission of most STIs including HIV.

In order to help ensure that condoms are effective for contraceptive purposes and in assisting in the prevention of transmission of STIs, it is essential that condoms fit the penis properly, are free from holes, have adequate physical strength so as not to break during use, are correctly packaged to protect them during storage, and are correctly labelled to facilitate their use. All these issues are addressed in this International Standard.

Condoms are medical devices. To ensure high quality product, it is essential that condoms are produced under a good quality management system. See ISO 13485[4] for quality management requirements and ISO 14971[5] for risk management requirements.

Condoms are non-sterile medical devices but manufacturers are advised to take appropriate precautions to minimize microbiological contamination of the product throughout the manufacturing and packaging processes. Recommendations for manufacturers to periodically monitor microbial contamination during production are included in this International Standard. Methods that can be used to determine bioburden levels are included in [Annex G](#).

This International Standard requires manufacturers to conduct stability tests to estimate the shelf life of any new or modified condom before the product is placed on the market and to initiate real-time stability studies. These requirements are described in [Clause 11](#). The real-time stability test can be considered as part of the manufacturers' requirement to conduct post-marketing surveillance on their products. These requirements are intended to ensure that manufacturers have adequate data to support shelf life claims before products are placed on the market and that these data are available for review by regulatory authorities, third party test laboratories, and purchasers. They are also intended to limit the need for third parties to conduct long-term stability studies.

Condoms might be subject to specific local requirements as required by national regulatory bodies in addition to those specified in this International Standard.

ISO 16038[6] provides guidance for the application of this International Standard. It includes additional information on the test methods and requirements specified in this International Standard.

Natural rubber latex male condoms — Requirements and test methods

1 Scope

This International Standard specifies requirements and test methods for male condoms made from natural rubber latex.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 10993-1, *Biological evaluation of medical devices — Part 1: Evaluation and testing within a risk management process*

ISO 10993-5, *Biological evaluation of medical devices — Part 5: Tests for in vitro cytotoxicity*

ISO 10993-10, *Biological evaluation of medical devices — Part 10: Tests for irritation and skin sensitization*

ISO 15223-1, *Medical devices — Symbols to be used with medical device labels, labelling and information to be supplied — Part 1: General requirements*

ISO 15223-2, *Medical devices — Symbols to be used with medical device labels, labelling, and information to be supplied — Part 2: Symbol development, selection and validation*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2859-1 and the following apply.

3.1

acceptance quality limit

AQL

quality level that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling

[SOURCE: ISO 2859-1:1999, 3.1.26]

3.2

male condom

medical device used by consumers, which is intended to cover and be retained on the penis during sexual activity, for purposes of contraception and prevention of sexually transmitted infections

3.3

consumer package

package, intended for distribution to a consumer, containing one or more individual containers of condoms

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-