

STN	Korózne skúšky v umelých atmosférach Zrýchlené korózne skúšky alternatívnym vystavovaním koróznym plynom, neutrálnej soľnej hmle a sušení (ISO 21207: 2015)	STN EN ISO 21207 03 8117
------------	--	--

Corrosion tests in artificial atmospheres - Accelerated corrosion tests involving alternate exposure to corrosion-promoting gases, neutral salt-spray and drying (ISO 21207:2015)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/22

Obsahuje: EN ISO 21207:2022, ISO 21207:2015

135479

EUROPEAN STANDARD

EN ISO 21207

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2022

ICS 77.060

English Version

Corrosion tests in artificial atmospheres - Accelerated corrosion tests involving alternate exposure to corrosion-promoting gases, neutral salt-spray and drying (ISO 21207:2015)

Essais de corrosion en atmosphères artificielles - Essais de corrosion accélérée par expositions alternées à des gaz oxydants ou au brouillard salin neutre et à un séchage (ISO 21207:2015)

Korrosionsprüfungen in künstlichen Atmosphären - Beschleunigte Korrosionstests mit alternativer Einwirkung von korrosionsfördernden Gasen, neutraler Salzsprühung und Trocknung (ISO 21207:2015)

This European Standard was approved by CEN on 20 June 2022.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, 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: Rue de la Science 23, B-1040 Brussels

EN ISO 21207:2022 (E)

Contents	Page
European foreword.....	3

European foreword

The text of ISO 21207:2015 has been prepared by Technical Committee ISO/TC 156 "Corrosion of metals and alloys" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 21207:2022 by Technical Committee CEN/TC 262 "Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys" the secretariat of which is held by BSI.

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 December 2022, and conflicting national standards shall be withdrawn at the latest by December 2022.

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.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 21207:2015 has been approved by CEN as EN ISO 21207:2022 without any modification.

**INTERNATIONAL
STANDARD****ISO
21207**Second edition
2015-12-15

**Corrosion tests in artificial
atmospheres — Accelerated corrosion
tests involving alternate exposure to
corrosion-promoting gases, neutral
salt-spray and drying***Essais de corrosion en atmosphères artificielles — Essais de corrosion
accélérée par expositions alternées à des gaz oxydants ou au
brouillard salin neutre et à un séchage*Reference number
ISO 21207:2015(E)

© ISO 2015

ISO 21207:2015(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	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Apparatus and reagents	1
4 Evaluation of the corrosivity of the tests	2
4.1 Reference test panels.....	2
4.2 Arrangement of the reference panels during testing.....	3
4.3 Determination of mass loss after testing.....	3
4.4 Satisfactory performance of test.....	3
5 Test objects	4
6 Procedure	4
6.1 Test method A.....	4
6.1.1 Test cycle.....	4
6.1.2 Salt spray testing followed by drying (step a).....	4
6.1.3 Exposure to corrosive gases followed by drying (step b).....	5
6.1.4 Test duration.....	5
6.2 Test method B.....	5
6.2.1 Test cycle.....	5
6.2.2 Salt spray testing followed by drying (step a or step c).....	6
6.2.3 Exposure to corrosive gases (step b or step d).....	6
6.2.4 Test duration.....	6
7 Evaluation of results	6
8 Test report	7
Annex A (informative) Recommended test periods	8
Bibliography	9

ISO 21207:2015(E)

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 156, *Corrosion of metals and alloys*.

This second edition cancels and replaces the first edition (ISO 21207:2004), of which it constitutes a minor revision. It also incorporates the Technical Corrigendum ISO 21207:2004/Cor 1:2008.

Introduction

Corrosion of metallic materials with or without corrosion protection is influenced by many environmental factors, the importance of which can vary with the type of metallic material and with the type of environment. Laboratory tests are designed to simulate the effects of the most important factors that enhance the corrosion of metallic materials.

The accelerated corrosion test methods described in this International Standard, methods A and B, are designed to simulate and enhance the environmental influence of exposure to an outdoor climate where salt-contaminated conditions and corrosion-promoting gases from an industrial or a traffic environment occur which might promote corrosion. Test method A simulates a moderately aggressive traffic environment while test method B simulates a more severe industrial or traffic environment.

Test method A involves exposure of the test objects to the following test cycle:

- a) neutral salt spray testing (ISO 9227) for 2 h in a mist of a sodium chloride salt solution of mass fraction 5 % at 35 °C, followed by drying for 22 h in a standard laboratory climate;
- b) exposure for 120 h in a test atmosphere containing a mixture of corrosion-promoting gases, volume fraction of NO₂ equal to $1,5 \times 10^{-6}$ and of SO₂ equal to $0,5 \times 10^{-6}$, at a relative humidity of 95 % and at a temperature of 25 °C, followed by drying for 24 h in a standard laboratory climate.

Test method B involves exposure of the test objects to the following test cycle:

- a) neutral salt spray testing (ISO 9227) for 2 h in a mist of a sodium chloride salt solution of mass fraction 5 % at 35 °C, followed by drying for 22 h in a standard laboratory climate;
- b) exposure for 48 h in a test atmosphere containing a mixture of corrosion-promoting gases, volume fraction of NO₂ equal to 10×10^{-6} and of SO₂ equal to 5×10^{-6} , at a relative humidity of 95 % and at a temperature of 25 °C;
- c) neutral salt spray testing (ISO 9227) for 2 h in a mist of a sodium chloride salt solution of mass fraction 5 % at 35 °C, followed by drying for 22 h in a standard laboratory climate;
- d) exposure for 72 h in a test atmosphere containing a mixture of corrosion-promoting gases, volume fraction of NO₂ equal to 10×10^{-6} and of SO₂ equal to 5×10^{-6} , at a relative humidity of 95 % and at a temperature of 25 °C.

The results obtained do not permit far-reaching conclusions on the corrosion resistance of the tested product under the whole range of environmental conditions in which it may be used.

Corrosion tests in artificial atmospheres — Accelerated corrosion tests involving alternate exposure to corrosion-promoting gases, neutral salt-spray and drying

1 Scope

This International Standard defines two accelerated corrosion test methods to be used in assessing the corrosion resistance of products with metals in environments where there is a significant influence of chloride ions, mainly as sodium chloride from a marine source or by winter road de-icing salt, and of corrosion-promoting gases from industrial or traffic air pollution.

This International Standard specifies both the test apparatus and test procedures to be used in executing the accelerated corrosion tests.

The methods are especially suitable for assessing the corrosion resistance of sensitive products with metals, e.g. electronic components, used in traffic and industrial environments.

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 8407, *Corrosion of metals and alloys — Removal of corrosion products from corrosion test specimens*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 10062, *Corrosion tests in artificial atmosphere at very low concentrations of polluting gas(es)*

ISO 10289, *Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates — Rating of test specimens and manufactured articles subjected to corrosion tests*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN