This is a free page sample. Access the full version online.

NSAI Standards

Irish Standard
I.S. EN ISO 11844-1:2020

Corrosion of metals and alloys - Classification of low corrosivity of indoor atmospheres - Part 1: Determination and estimation of indoor corrosivity (ISO 11844-1:2020)

© CEN 2020 No copying without NSAI permission except as permitted by copyright law.

This is a free page sample. Access the full version online.

I.S. EN ISO 11844-1:2020

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:	*Published:*
EN ISO 11844-1:2020	2020-06-10

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2020-06-28	77.060
	NOTE: If blank see CEN/CENELEC cover page

NSAI	T +353 1 807 3800	Sales:
1 Swift Square,	F +353 1 807 3838	T +353 1 857 6730
Northwood, Santry	E standards@nsai.ie	F +353 1 857 6729
Dublin 9	W NSAI.ie	W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

National Foreword

I.S. EN ISO 11844-1:2020 is the adopted Irish version of the European Document EN ISO 11844-1:2020, Corrosion of metals and alloys - Classification of low corrosivity of indoor atmospheres - Part 1: Determination and estimation of indoor corrosivity (ISO 11844-1:2020)

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

For relationships with other publications refer to the NSAI web store.

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 is a free page sample. Access the full version online.

This page is intentionally left blank

This is a free page sample. Access the full version online.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 11844-1

June 2020

ICS 77.060

Supersedes EN ISO 11844-1:2008

English Version

Corrosion of metals and alloys - Classification of low corrosivity of indoor atmospheres - Part 1: Determination and estimation of indoor corrosivity (ISO 11844-1:2020)

Corrosion des métaux et alliages - Classification de la corrosivité faible des atmosphères d'intérieur - Partie 1: Détermination et estimation de la corrosivité des atmosphères d'intérieur (ISO 11844-1:2020)

Korrosion von Metallen und Legierungen - Einteilung der Korrosivität in Räumen mit geringer Korrosivität - Teil 1: Bestimmung und Abschätzung der Korrosivität in Räumen (ISO 11844-1:2020)

This European Standard was approved by CEN on 25 May 2020.

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

© 2020 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN ISO 11844-1:2020 E

This is a free page sample. Access the full version online.

Contents

Page

European foreword **3**

This is a free page sample. Access the full version online.

European foreword

This document (EN ISO 11844-1:2020) has been prepared by Technical Committee ISO/TC 156 "Corrosion of metals and alloys" in collaboration with 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 2020, and conflicting national standards shall be withdrawn at the latest by December 2020.

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 ISO 11844-1:2008.

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 11844-1:2020 has been approved by CEN as EN ISO 11844-1:2020 without any modification.

This is a free page sample. Access the full version online.

This page is intentionally left blank

This is a free page sample. Access the full version online.

INTERNATIONAL STANDARD

ISO 11844-1

Second edition
2020-05

Corrosion of metals and alloys — Classification of low corrosivity of indoor atmospheres —

Part 1: Determination and estimation of indoor corrosivity

Corrosion des métaux et alliages — Classification de la corrosivité faible des atmosphères d'intérieur —

Partie 1: Détermination et estimation de la corrosivité des atmosphères d'intérieur

Reference number
ISO 11844-1:2020(E)

© ISO 2020

This is a free page sample. Access the full version online.

COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, 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
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

This is a free page sample. Access the full version online.

Contents

Page

Foreword ..... **iv**

Introduction ..... **v**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Symbols and abbreviated terms **2**

5 Classification of corrosivity **2**

5.1 General 2

5.2 Categories of indoor corrosivity 3

6 Determination of indoor atmospheric corrosivity **3**

7 Characterization of indoor atmospheres with respect to indoor corrosivity **3**

7.1 General 3

7.2 Estimation of indoor corrosivity 5

Annex A (informative) **Relationship between ISO, IEC and ISA classification systems** **8**

Annex B (informative) **Outdoor and indoor concentrations of some of the most important pollutants in different types of environments** **11**

Annex C (informative) **General characterization of metal corrosion in indoor atmospheres** **12**

Annex D (informative) **Guidelines for the estimation of indoor corrosivity** **15**

Bibliography **19**

© ISO 2020 – All rights reserved

This is a free page sample. Access the full version online.

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 of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 262, *Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 11844-1:2006), which has been technically revised. The main changes compared with the previous edition are as follows:

— a reference to the ISO 16000 series in Clause 7 has been added;

— a model that estimates the indoor concentration and deposition of pollutants originating from outdoors has been added;

— lead has been included as a standard specimen with high sensitivity to vapour organic acids.

A list of all parts in the ISO 11844 series can be found on the ISO website.

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.

© ISO 2020 – All rights reserved

This is a free page sample. Access the full version online.

Introduction

Metals, alloys and metallic coatings are subject to atmospheric corrosion under the impact of air humidity, especially when gaseous and solid substances of atmospheric pollution co-impact. Corrosivity data are of fundamental importance for derivation of suitable corrosion protection, or for evaluation of serviceability of metal elements of a product.

ISO 9223 classifies the atmospheric environment into six corrosivity categories.

Low corrosivity indoor atmospheres are indoor atmospheres with C 1 (very low) or C 2 (low) corrosivity categories in accordance with ISO 9223.

The classification in ISO 9223 is too broad for some purposes in low corrosivity indoor atmospheres, e.g. places where electronic devices, sophisticated technical products, or works of art and historical objects are stored.

For such purposes, it is necessary to subdivide the corrosivity categories C 1 (very low) and C 2 (low) into the indoor corrosivity categories given in this document.

The evaluation of low corrosivity indoor atmospheres can be accomplished by direct determination of corrosion attack of selected metals (see ISO 11844-2) or by measurement of environmental parameters (see ISO 11844-3) that can cause corrosion on metals and alloys.

This document describes general procedures for derivation and estimation of indoor corrosivity categories.

The aim of this document is to characterize indoor atmospheric environments of low corrosivity that can affect metals and metallic coatings during storage, transport, installation or operational use, to set a consistent way of indoor corrosivity classification, and to prescribe procedures for derivation and estimation of indoor corrosivity categories.

A general approach to the classification of corrosivity of indoor atmospheres is given in the scheme shown in Figure 1.

© ISO 2020 – All rights reserved

This is a free page sample. Access the full version online.

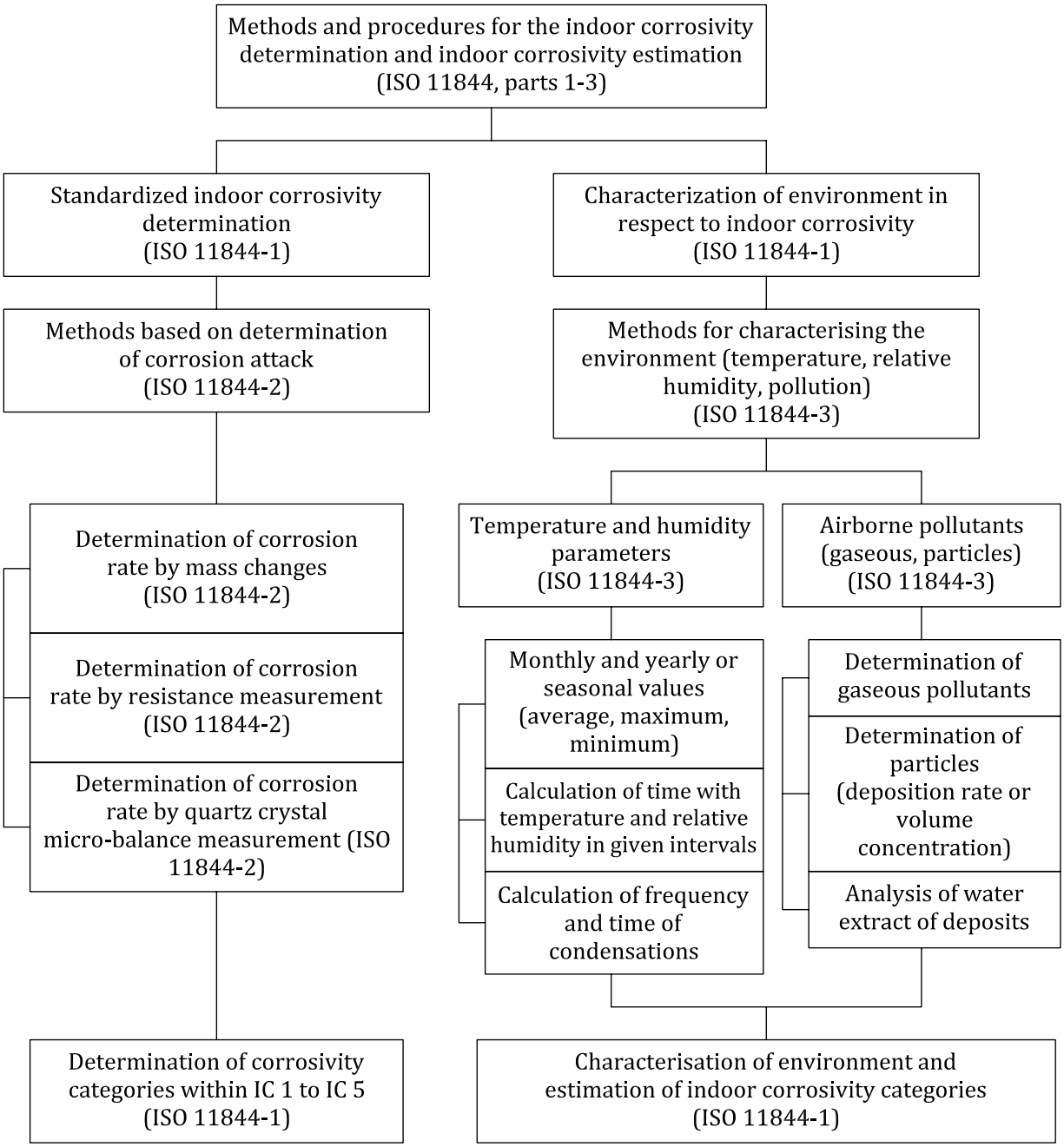

Figure 1 — Scheme for classification of low corrosivity of indoor atmospheres

© ISO 2020 – All rights reserved

This is a free page sample. Access the full version online.

Corrosion of metals and alloys — Classification of low corrosivity of indoor atmospheres —

Part 1: Determination and estimation of indoor corrosivity

1 Scope

This document establishes a classification of low corrosivity of indoor atmospheres.

It specifies the reference metals for which a corrosion attack after a defined exposure period is used for determining corrosivity categories of indoor atmospheres of low corrosivity.

It defines corrosivity categories of indoor atmospheres according to corrosion attack on standard specimens.

It indicates important parameters of indoor atmospheres that can serve as a basis for an estimation of indoor corrosivity.

The selection of a method for the determination of corrosion attack, description of standard specimens, exposure conditions and evaluation are given in ISO 11844-2. The measurement of environmental parameters affecting indoor corrosivity is given in ISO 11844-3.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/

3.1
climate
statistics of temperature, humidity, atmospheric pressure, wind, rainfall, and other meteorological elements in a given location over a long period of time

[SOURCE: EN 15759-1:2011, 3.1]

3.2
atmosphere
mixture of gases, aerosols and particles that surrounds a given material, object or structure

3.3
indoor atmosphere
environment [combined effect of *climate* (3.1) and *atmosphere* (3.2)] inside a box, a room or a building

© ISO 2020 – All rights reserved

SAI GLOBAL

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