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

## Part 2: Determination of corrosion attack in indoor atmospheres

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

*Partie 2: Détermination de l'attaque par corrosion dans les atmosphères d'intérieur*

Reference number
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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

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# 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 11844-2:2005), which has been technically revised. The main changes compared with the previous edition are as follows:

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

— Annex D has been added.

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.


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# Introduction

This document describes standard specimens, exposure and evaluation for the derivation of indoor corrosivity categories.

The determination of the corrosion attack is, at the present state of knowledge, the most reliable and, usually, also an economical way for evaluating corrosivity, taking into account all the main local environmental influences.

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

# Part 2: Determination of corrosion attack in indoor atmospheres

## 1 Scope

This document specifies methods for determining corrosion rates with standard specimens of metals in indoor atmospheres with low corrosivity. For this direct method of evaluation corrosivity, different sensitive methods can be applied using standard specimens of the following metals: copper, silver, zinc, steel and lead. The values obtained from the measurements are used as classification criteria for the determination of indoor atmospheric corrosivity.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

No terms and definitions are listed in this document.

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/

## 4 Principle

The corrosivity of the indoor location (e.g. control rooms, electric boxes, storage rooms, during transportation, in museums) is determined from the corrosion rate calculated from the mass change or resistance change per unit area of standard specimens of metals after exposure for a certain time period. Different materials are sensitive to different environmental parameters or their combinations.

## 5 Methods

The following methods, described in Annexes A and B, are available for the evaluation of the corrosion attack:

— determination of corrosion rate by mass change measurements (see Annex A);

— determination of corrosion rate by electrolytic cathodic reduction (see Annex B).

The methods described in Annexes C and D are suitable for continuous or periodic monitoring of the corrosion attack:

— determination of corrosion rate by resistance measurements (see Annex C);

— determination of corrosion rate by quartz crystal micro-balance methodology (see Annex D).

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