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Corrosion of metals and alloys — Corrosivity of atmospheres — Mapping areas of increased risk of corrosion

Corrosion des métaux et alliages — Corrosivité des atmosphères — Cartographie des zones présentant un risque accru de corrosion

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Foreword

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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 document 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).

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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*.

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

Corrosion maps have become more frequent, and to ensure transparency and ease of comparison of corrosion maps, this work was initiated.

This document describes procedures for calculating corrosivity maps based on arrays of environmental data organised in a grid and using a dose-response function. Corrosivity maps based on dose-response functions can be very useful for illustrating geographical variations, trends in time and the relative importance of different underlying parameters (climate, pollution) and to communicate these results to those not working in the field of corrosion. The result for an individual grid cell of a corrosivity map is, however, very uncertain. If a corrosivity assessment for a single location is needed, it is recommended to also consider direct measurements of corrosion according to ISO 9223.

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Corrosion of metals and alloys — Corrosivity of atmospheres — Mapping areas of increased risk of corrosion

1 Scope

This document gives guidelines for producing corrosivity maps and maps related to increased risk of corrosion in outdoor open atmospheres, but not sheltered or semi-sheltered positions.

The maps are calculated based on environmental data using specific relationships, so-called dose-response functions. Other means of producing corrosivity maps, for example using detailed measurements of corrosion and subsequent interpolation of measured corrosion values, are not within the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9223:2012, *Corrosion of metals and alloys — Corrosivity of atmospheres — Classification, determination and estimation*

ISO 9224:2012, *Corrosion of metals and alloys — Corrosivity of atmospheres — Guiding values for the corrosivity categories*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
dose-response function
relationship derived from results of field tests for calculation of corrosion loss from average values of environmental parameters

Note 1 to entry: The term is commonly used for all functions, including those where it is not mathematically correct to denote the combination of time and pollution by the word “dose”.

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