SLOVENSKI STANDARD
oSIST prEN ISO 11844-2:2019

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Korozija kovin in zlitin - Klasifikacija notranjih atmosfer z nizko korozivnostjo - 2. del: Ugotavljanje napada korozije v zaprtih prostorih (ISO/DIS 11844-2:2018)

Corrosion of metals and alloys - Classification of low corrosivity of indoor atmospheres - Part 2: Determination of corrosion attack in indoor atmospheres (ISO/DIS 11844-2:2018)

Korrosion von Metallen und Legierungen - Einteilung der Korrosivität in Räumen mit geringer Korrosivität - Teil 2: Bestimmung der korrosiven Belastung in Räumen (ISO/DIS 11844-2:2018)

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 (ISO/DIS 11844-2:2018)

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ICS:

77.060	Korozija kovin	Corrosion of metals

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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

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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

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ISO 11844-2 was prepared by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*.

ISO 11844 consists of the following parts, under the general title *Corrosion of metals and alloys — Classification of low corrosivity of indoor atmospheres*:

— *Part 1: Determination and estimation of indoor corrosivity;*

— *Part 2: Determination of corrosion attack in indoor atmospheres;*

— *Part 3: Measurement of environmental parameters affecting indoor corrosivity.*

This second edition cancels and replaces the first edition (ISO 11844-2:2006), which has been technically revised.

Introduction

ISO 11844 – Part 2 describes standard specimens, its exposure and evaluation for the derivation of the 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 evaluation of corrosivity taking into account all main local environmental influences.

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

Part 2: Determination of corrosion attack in indoor atmospheres

1 Scope

This International Standard specifies methods for determination of corrosion rate 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

The following referenced documents are indispensable for the application of this document. For datedreferences, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60654-4:1987, *Operating conditions for industrial-process measurement and control equipment — Part 4: Corrosive and erosive influences*

ANSI/ISA-S71.04:1985, *Environmental conditions for Process, Measurement and Control Systems: Airborne Contaminants*

3 Principle

The corrosivity of the indoor location, e.g. control rooms, electric boxes, storage rooms, during transportation, in museums, etc., 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.

4 Methods

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

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

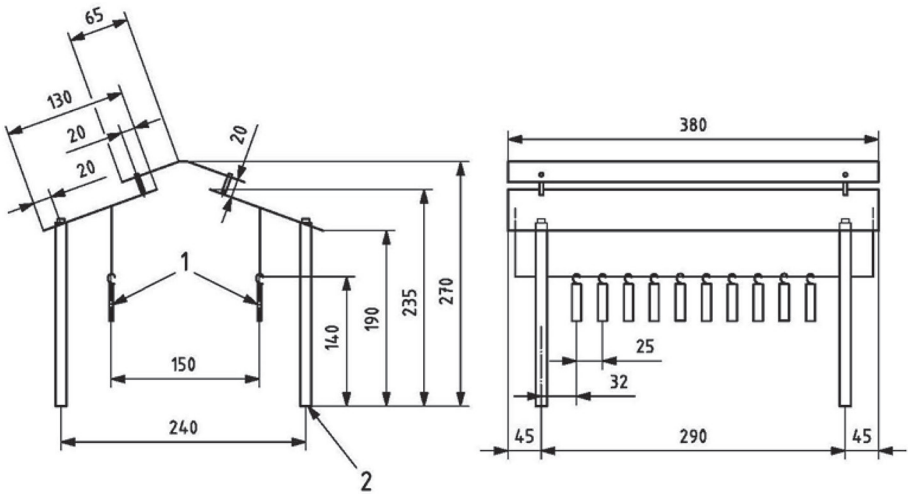
— Determination of corrosion rate by electrolytic cathodic reduction (Annex B).

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

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

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

Special features of the methods, such as sensitivity, possibility for continuous or periodic assessment of corrosion attack, available space, etc., should be considered when choosing the most suitable methods. Examples of suitable racks for exposure of specimens are given in Figures 1 and 2.

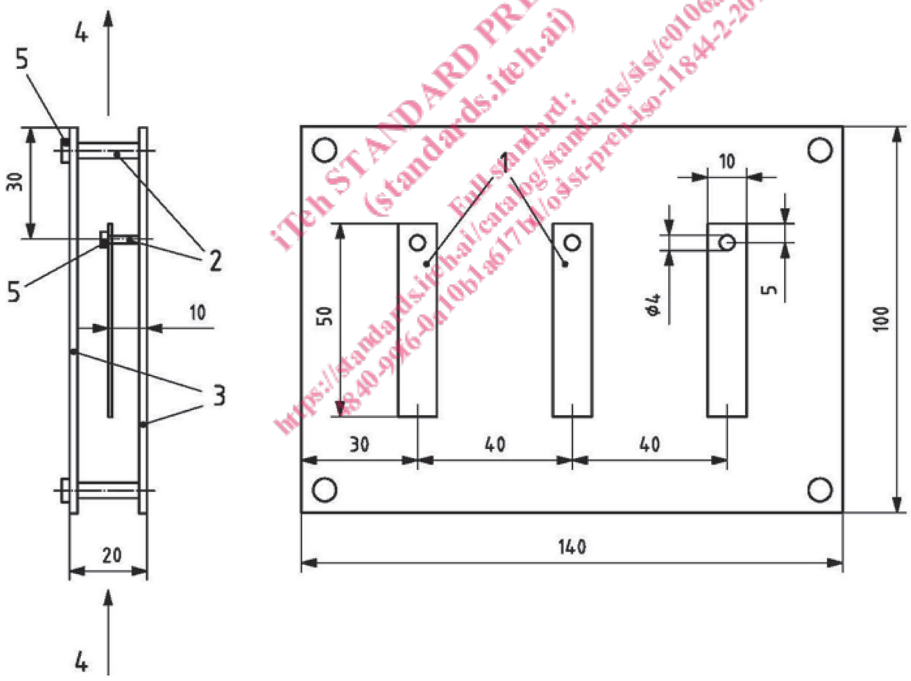


Key

1 specimens

2 support Ø ~ 15

Figure 1 — Examples of exposure racks for sheltered exposure of specimens



Key

1 Specimens

2 Distance pins

3 Plastic plates

4 Open air flow

5 Distance pins

6 Plastic screws

Figure 2 — A mounting plate for unsheltered exposure of specimens