

SLOVENSKI STANDARD
SIST EN ISO 10062:2008
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BUXca Yý U.
SIST EN ISO 10062:1999

Korozijski preskusi v umetni atmosferi pri zelo majhnih koncentracijah škodljivih plinov (ISO 10062:2006)

Corrosion tests in artificial atmosphere at very low concentrations of polluting gas(es) (ISO 10062:2006)

Korrosionsprüfungen in künstlicher Atmosphäre mit sehr niedrigen Konzentrationen von Schadgas(en) (ISO 10062:2006)

Corrosion des métaux et alliages - Essais de corrosion en atmosphère artificielle à très faible concentration en gaz polluants (ISO 10062:2006)

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English Version

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This European Standard was approved by CEN on 29 December 2007.

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 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 Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of ISO 10062:2006 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 10062:2008 by Technical Committee CEN/TC 262 "Metallic and other inorganic coatings", 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of an identical text or by endorsement, at the latest by July 2008, and conflicting national standards shall be withdrawn at the latest by July 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 10062:1995.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

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The text of ISO 10062:2006 has been approved by CEN as EN ISO 10062:2008 without any modifications.

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

*Corrosion des métaux et alliages — Essais de corrosion en atmosphère
artificielle à très faible concentration en gaz polluants*

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 10062 was prepared by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*.

This second edition cancels and replaces the first edition (ISO 10062:1991), which has been technically revised.

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Introduction

Products with, for example, sensitive electrical functions, may, during storage or operation in indoor locations, be affected by atmospheric corrosion dependent on climatic factors such as temperature, relative humidity, air velocity and rate of change caused by temperature and humidity. Additionally, gaseous pollutants may seriously affect the rate of corrosion, as well as the occurrence of different corrosion mechanisms. Contaminants on the surface, such as salt, dust, oil and compounds liberated from plastics, may also affect the rate and mechanism of corrosion.

Different corrosion-promoting gaseous pollutants dominate in different field environments:

- sulfur dioxide and nitrogen oxides in atmospheres influenced by combustion of fossil fuels and in traffic environments,
- hydrogen sulfide in atmospheres in the vicinity of petrochemical and steel industry, decaying organic matter, stagnant waters and animal shelters, and
- hydrogen sulfide and chlorine compounds in the vicinity of pulp and paper industry; if chlorine is used for bleaching

Those gaseous pollutants are known to act as single corrosion-promoting factors. However, in atmospheres where more than one gaseous pollutant is present, synergistic effects may be initiated. As a result, a considerable increase in the corrosion rate may occur, compared to the case when the different gaseous pollutants act as single corrosion-promoting factors.

This International Standard is intended to ^{SIST EN ISO 10062:2008}
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- a) define a general method using atmospheres polluted by one or more gases at very low volume fractions $\leq 10^{-6}$ under specified conditions of temperature and relative humidity, so as to avoid condensation phenomena during the test,
- b) define the test apparatus and procedure required to achieve the best possible reproducibility,
- c) assess performance under test conditions which accelerate corrosion; as knowledge of operating conditions proceeds, more suitable pollutants or pollutant mixtures could be used.

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Corrosion tests in artificial atmosphere at very low concentrations of polluting gas(es)

WARNING — Safety rules for personnel: Handling of the gases used for testing can be hazardous and must be left to skilled chemists or conducted under their control. The test equipment must be used and maintained by skilled personnel, not only so that the tests can be performed correctly, but also because of the hazards to health and safety that are involved.

1 Scope

This International Standard specifies tests which are intended to determine the influence of one or more flowing polluting gas(es) at volume fractions less than or equal to 10^{-6} on test samples and/or articles of metals and alloys with or without corrosion protection under determined conditions of temperature and relative humidity.

These tests apply to

- a) metals and their alloys,
- b) metallic coatings (anodic and cathodic),
- c) metals with conversion coatings,
- d) metals with anodic oxide coatings, and
- e) metals with organic coatings.

2 Normative references

The following referenced documents are indispensable for the application 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 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 558, *Conditioning and testing — Standard atmospheres — Definitions*

ISO 7384, *Corrosion tests in artificial atmosphere — General requirements*

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