

**Värvid ja lakid. Vastupidavuse määramine  
vääveldioksiidi sisaldavale niiskusele**

Paints and varnishes - Determination of resistance  
to humid atmospheres containing sulphur dioxide

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 3231:2000 sisaldab Euroopa standardi EN ISO 3231:1997 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 20.03.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 3231:2000 consists of the English text of the European standard EN ISO 3231:1997.</p> <p>This document is endorsed on 20.03.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>See rahvusvaheline standard on üks standardiseeriast, mis käsitleb värvide, lakkide ja nendega seotud materjalide katsetamist. See rahvusvaheline standard esitab meetodi värvide või nendega seotud materjalide ühe- või mitmekihilise kelme vastupidavuse määramiseks niiskes keskkonnas, mis sisaldab vääveldioksiidi.</p>	<p><b>Scope:</b></p>
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**ICS** 87.040

**Võtmesõnad:** katsed, keemiakatsed, keemiline püsivus, lakid, määramine, niiskus, värvid, vääveldioksiid, õhk

ICS 87.040

Descriptors: Coating materials, resistance to SO<sub>2</sub> containing atmospheres, testing.

**English version**

**Paints and varnishes**

Determination of resistance to humid atmospheres  
containing sulfur dioxide  
(ISO 3231 : 1993)

Peintures et vernis – Détermination  
de la résistance aux atmosphères  
humides contenant du dioxyde de  
soufre (ISO 3231 : 1993)

Beschichtungsstoffe – Bestimmung  
der Beständigkeit gegen feuchte,  
Schwefeldioxid enthaltende  
Atmosphären (ISO 3231 : 1993)

This European Standard was approved by CEN on 1997-10-30.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

## Foreword

International Standard

ISO 3231 Paints and varnishes – Determination of resistance to humid atmospheres containing sulfur dioxide, which was prepared by ISO/TC 35 'Paints and varnishes' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 139 'Paints and varnishes', the Secretariat of which is held by DIN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by May 1998 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 3231 : 1993 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

## 1 Scope

This International Standard is one of a series of standards dealing with the testing of paints, varnishes and related products. This International Standard specifies a procedure for determining the resistance of a single-coat film or a multi-coat system of paints or related products to humid atmospheres containing sulfur dioxide.

The test method allows for different amounts of sulfur dioxide; a volume of 0,2 litre, measured at atmospheric pressure, is generally recommended for testing coatings of thickness not exceeding approximately 40  $\mu\text{m}$ .

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1512:1991, *Paints and varnishes — Sampling of products in liquid or paste form*.

ISO 1513:1992, *Paints and varnishes — Examination and preparation of samples for testing*.

ISO 1514:1984, *Paints and varnishes — Standard panels for testing*.

ISO 2808:1991, *Paints and varnishes — Determination of film thickness*.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*.

ISO 4628-2:1982, *Paints and varnishes — Evaluation of degradation of paint coatings — Designation of intensity, quantity and size of common types of defect — Part 2: Designation of degree of blistering*.

ISO 4628-3:1982, *Paints and varnishes — Evaluation of degradation of paint coatings — Designation of intensity, quantity and size of common types of defect — Part 3: Designation of degree of rusting*.

## 3 Principle

A coated test panel is exposed to specified humid atmospheres containing sulfur dioxide and the effects of exposure are evaluated by criteria agreed in advance between the interested parties, these criteria usually being of a subjective nature.

## 4 Required supplementary information

For any particular application, the test method specified in this International Standard needs to be completed by supplementary information. The items of supplementary information are given in annex A.

## 5 Reagent

**5.1 Sulfur dioxide**, either supplied from a gas cylinder or gas-generating device fitted with appropriate regulating and measuring apparatus to ensure the supply of the correct volume of gas, or generated within the cabinet, for example by mixing analytical-grade sodium sulfite,  $\text{Na}_2\text{SO}_3$ , with an excess of analytical-grade sulfuric acid ( $\rho = 1,84 \text{ g/ml}$ ).

NOTE 1 To obtain 0,2 (or 1,0) litre of sulfur dioxide, use  $(1 \pm 0,025) \text{ g}$  [or  $(5,25 \pm 0,12) \text{ g}$ ] of sodium sulfite and at least 0,9 g (or 4,2 g) of sulfuric acid. It is recommended to dissolve the sodium sulfite in 50 ml of water of at least grade 3 as specified in ISO 3696, to dilute the sulfuric acid 1:1 by adding it to the water, to place both reagents in the cabinet, to shut the door or hood and to add the diluted sulfuric acid to the sodium sulfite solution with the aid of a tilting device.