

# International Standard



# 3270

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

## Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing

*Peintures et vernis et leurs matières premières — Températures et humidités pour le conditionnement et l'essai*

Third edition — 1984-03-01

UDC 667.6 : 551.584 : 620.1

Ref. No. ISO 3270-1984 (E)

**Descriptors :** paints, varnishes, raw materials, conditioning, temperature, test atmospheres, humidity.

Price based on 2 pages

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3270 was developed by Technical Committee ISO/TC 35, *Paints and varnishes*, and was circulated to the member bodies in November 1982.

It has been approved by the member bodies of the following countries :

Australia	India	Poland
Belgium	Iran	Romania
Brazil	Iraq	South Africa, Rep. of
Bulgaria	Israel	Sri Lanka
China	Italy	Sweden
Czechoslovakia	Jamaica	Switzerland
France	Kenya	Thailand
Germany, F. R.	Netherlands	United Kingdom
Hungary	Norway	USSR

The member body of the following country expressed disapproval of the document on technical grounds :

Canada

This third edition cancels and replaces the second edition (i.e. ISO 3270-1980).

# Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing

## 0 Introduction

The physical and mechanical properties of paints, varnishes and their raw materials are generally dependent on the test environmental conditions, the most important variables being temperature and humidity.

The degree to which each of these variables needs to be controlled is determined by the significance of the effect of the variable on the property being measured. Thus for measurement of viscosity, refractive index and density, it is essential to specify and control the temperature of the test portion to much closer limits than those required for the conditioning and testing atmosphere (see the note to 4.2).

It is recognized that many data on, for example, viscosity, flow times and density have been determined, historically, at temperatures different from that specified in this International Standard. In order to preserve the validity of such data and since much laboratory apparatus (for example burettes, pipettes, pycnometers) is not calibrated at 23 °C, specific deviation from this International Standard may be necessary.

It is strongly recommended that in these cases physical data should also be determined at the conditions specified in this International Standard in order to facilitate a progressive move towards general adoption of the standard conditions at some future date.

## 1 Scope and field of application

This International Standard specifies conditions of temperature and relative humidity for general use in the conditioning and testing of paints and varnishes and their raw materials. It is applicable to paints and varnishes in liquid or powder form, to wet or dry films, and their raw materials.

## 2 Reference

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

## 3 Definitions (derived from ISO 558)

**3.1 conditioning atmosphere :** The atmosphere in which a sample or test piece is kept before being subjected to test. It is characterized by specified values for either one or both parameters : temperature and relative humidity, which are kept within the prescribed tolerances for a given period of time. The selected values and period of time depend on the nature of the sample or test piece to be tested.

### NOTES

1 The term "conditioning" refers to the operation as a whole designed to bring a sample or test piece, before testing, into a specified condition in relation to temperature and humidity, by keeping it for a given period of time in the conditioning atmosphere.

2 The conditioning can be done either in the laboratory or in a special enclosure termed "the conditioning chamber" or in the test chamber.

**3.2 test atmosphere :** The atmosphere to which a sample or test piece is exposed throughout the test. It is characterized by specified values for either one or both parameters : temperature and relative humidity, which are kept within the prescribed tolerances.

NOTE — The test may be carried out either in the laboratory or in a special chamber termed "the test chamber", or in the conditioning chamber, the choice depending on the nature of the sample or test piece and on the test itself. For example, close control of the test atmosphere may not be necessary if the change of properties of the sample or test piece is insignificant in the test period.

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## 4 Temperatures and humidities for conditioning and testing

### 4.1 Standard conditions (to be used whenever possible)

$23 \pm 2$  °C and  $50 \pm 5$  % relative humidity.

### 4.2 Standard temperature

$23 \pm 2$  °C and ambient relative humidity.

NOTE — For some tests the limits for control of temperature are more strict. For example when determining viscosity or consistency, control limits of at most  $\pm 0,5$  °C are recommended.

### 4.3 Other conditions

**4.3.1** For countries where the standard conditions of 4.1 and 4.2 are difficult to maintain, and for other than referee purposes, other conditions may be specified, and these shall be noted in the test report.

**4.3.2** Ambient conditions, where neither the temperature nor relative humidity have to be controlled, but these conditions, if known, should be noted in the test report.

## 5 Conditioning

**5.1** The period of conditioning shall be as specified in the particular test method under consideration.

**5.2** The products to be tested shall be placed in the conditioning atmosphere so that they reach equilibrium with the atmosphere as soon as possible. The relevant parts of the apparatus shall also be placed in the conditioning atmosphere so that they reach equilibrium. The products shall be protected from direct sunlight and the atmosphere should be clean.

Test panels shall be separated from each other and from the walls of the enclosure by a distance of at least 20 mm.

## 6 Testing

Unless otherwise specified, the products shall be tested under the same conditions as those in which they have been conditioned.

If the standard conditions, specified in 4.1, have been used for conditioning and testing, the test report shall state :

Conditioned, for ... h, and tested under the standard conditions conforming to ISO 3270.

If the standard conditions specified in 4.1 have not been used, but other conditions have been chosen, the test report shall state those conditions.