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# INTERNATIONAL STANDARD



# 3678

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

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## Paints and varnishes — Print-free test

*Peintures et vernis — Essai de séchage «apparent complet»*

First edition — 1976-07-01

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UDC 667.613 : 620.178.6

Ref. No. ISO 3678-1976 (E)

**Descriptors** : paints, varnishes, tests, drying.

Price based on 2 pages

## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (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 set up 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 3678 was drawn up by Technical Committee ISO/TC 35, *Paints and varnishes*, and was circulated to the Member Bodies in December 1974.

It has been approved by the Member Bodies of the following countries :

Australia	Iran	Spain
Austria	Ireland	Sweden
Brazil	Israel	Switzerland
Bulgaria	Netherlands	Turkey
Denmark	New Zealand	United Kingdom
Egypt, Arab Rep. of	Portugal	Yugoslavia
France	Romania	
Germany	South Africa, Rep. of	

The Member Body of the following country expressed disapproval of the document on technical grounds :

Canada

# Paints and varnishes — Print-free test

## 0 INTRODUCTION

This International Standard is one of a series of standards dealing with the sampling and testing of paints, varnishes and related products. It should be read in conjunction with ISO 1512, ISO 1513, ISO 1514, ISO 2808 and ISO 3270.

This International Standard specifies an empirical test procedure for assessing the performance of a coating of paint, varnish or related product in relation to a stage of drying which is described as “print-free”.

The method of test described below requires to be completed, for any particular application, by the following supplementary information. This information should be derived from the national standard or other document relating to the product under test or, where appropriate, should be the subject of agreement between the interested parties.

- a) Material and surface preparation of the substrate.
- b) Method of application of the test coating to the substrate.
- c) Thickness, in micrometres, of the dry coating and method of measurement in accordance with ISO 2808, and whether it is a single coating or a multicoat system.
- d) Duration and conditions of drying the coated panel (or conditions of stoving and ageing, if applicable) before testing.
- e) Intervals between tests where print-free time is required.
- f) Details of the grade of nylon gauze used and the force applied in carrying out the test.

NOTE — The results of tests may only be compared if the test conditions are the same for each test.

## 1 SCOPE AND FIELD OF APPLICATION

1.1 This International Standard specifies a method for assessing, by means of a simple empirical test, the resistance of a coat of paint, varnish or related product to imprinting by a nylon gauze under a specified force applied for a specified time.

1.2 The method may be carried out

either as a “pass/fail” test by determining whether the print-free state has been reached after a specified period of drying or, in the case of stoving coatings, after stoving and ageing under specified conditions,

or by repeating the print-free test at suitable intervals until the print-free time is obtained.

## 2 REFERENCES

ISO 48, *Vulcanized rubber — Determination of hardness (hardness between 30 and 85 IRHD)*.

ISO 1512, *Paints and varnishes — Sampling*.

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

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

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

ISO 3270, *Paints and varnishes and their raw materials — Atmospheres for conditioning and testing*.

## 3 DEFINITIONS

For the purposes of this International Standard, the following definitions apply.

**3.1 print-free** : The state of a coating of paint or varnish when gauze of a specified grade under a specified force during a specified time does not leave on the surface an imprint, visible under normal corrected vision.

**3.2 print-free state** : A general term describing the state of the surface of a coating, i.e. whether “print-free” or not.

**3.3 print-free time** : The period of time elapsing between the moment at which a coating is applied to a prepared test panel and that at which the coating is assessed as just print-free, using the test procedure specified.

## 4 APPARATUS AND MATERIALS

**4.1 Squares** of woven monofilament polyamide gauze, minimum size 25 mm × 25 mm.

Unless otherwise specified, the gauze shall be of 0,120 mm thread diameter and of approximately 0,2 mm aperture.<sup>1)</sup> Depending upon the type of coating under test, other grades of similar construction may be used if necessary, subject to agreement between the interested parties.

1) A suitable grade of gauze is obtainable commercially. Details may be obtained from the Secretariat of ISO/TC 35 or from the ISO Central Secretariat.