



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 787-15:2019

# General methods of test for pigments and extenders - Part 15: Comparison of resistance to light of coloured pigments of similar types (ISO 787-15:2019)

**I.S. EN ISO 787-15:2019**

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## National Foreword

I.S. EN ISO 787-15:2019 is the adopted Irish version of the European Document EN ISO 787-15:2019, General methods of test for pigments and extenders - Part 15: Comparison of resistance to light of coloured pigments of similar types (ISO 787-15:2019)

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EUROPEAN STANDARD

EN ISO 787-15

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Supersedes EN ISO 787-15:1995

English Version

## General methods of test for pigments and extenders - Part 15: Comparison of resistance to light of coloured pigments of similar types (ISO 787-15:2019)

Méthodes générales d'essai des pigments et matières  
de charge - Partie 15: Comparaison de la résistance à la  
lumière des pigments colorés de types semblables (ISO  
787-15:2019)

Allgemeine Prüfverfahren für Pigmente und Füllstoffe -  
Teil 15: Vergleich der Beständigkeit bei Belichtung von  
Buntpigmenten ähnlichen Typs (ISO 787-15:2019)

This European Standard was approved by CEN on 11 August 2019.

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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-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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**EN ISO 787-15:2019 (E)**

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## **European foreword**

This document (EN ISO 787-15:2019) has been prepared by Technical Committee ISO/TC 256 "Pigments, dyestuffs and extenders" in collaboration with Technical Committee CEN/TC 298 "Pigments and extenders" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

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

This document supersedes EN ISO 787-15:1995.

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

## **Endorsement notice**

The text of ISO 787-15:2019 has been approved by CEN as EN ISO 787-15:2019 without any modification.

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# INTERNATIONAL STANDARD

**ISO  
787-15**

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## **General methods of test for pigments and extenders —**

Part 15:

### **Comparison of resistance to light of coloured pigments of similar types**

*Méthodes générales d'essai des pigments et matières de charge —*

*Partie 15: Comparaison de la résistance à la lumière des pigments  
colorés de types semblables*



Reference number  
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**ISO 787-15:2019(E)**



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## ISO 787-15:2019(E)

## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 256, *Pigments, dyestuffs and extenders*.

This second edition cancels and replaces the first edition (ISO 787-15:1986), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- [Clause 3](#) on “Terms and definitions”, with a general reference to ISO 18451-1, has been added;
- a bibliography has been added;
- the text has been editorially revised.

A list of all parts in the ISO 787 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

The terms “resistance to light” and “light fastness (or colour fastness)” describe the resistance of a material to change in its appearance as a result of exposure to light. The magnitude of the change, if any, is influenced by the quantity and quality of the light to which the material is exposed, and by the nature and composition of the material itself. Two compositions, each consisting of identical components but in different proportions, may not have the same resistance to light. Also, two compositions each consisting of the same proportions of similar, but not identical, components may not have the same resistance to light.

When exposed to natural light, the conditions of the test vary continuously because of the large number of variables (for example intensity and spectral distribution of the light, temperature, relative humidity, and the amount and nature of atmospheric contaminants) and therefore results cannot be related to similar tests carried out on other occasions. Consequently, expressing the results as a function of time alone is not recommended.

These considerations form the basis for the comparison of light fastness of two different samples of a coloured pigment. Each sample is incorporated in the same proportion in otherwise identical compositions and these compositions, in a suitable form, are examined for any difference in their change of appearance after exposure to the same quantity and quality of light. In order to comply with these exposure conditions, it is necessary for the compositions to be exposed side by side at the same time to the same light source for the same period of time.

In addition, the light fastness of a pigment may be affected by the presence of other pigments such as titanium dioxide. This important aspect may be accommodated in document by allowing the agreed binder (medium) to consist of a dispersion of such a pigment. The test procedure is then followed as described.

The extent, to which the change on exposure is allowed to proceed before the comparison is made, may be of importance. It is unrealistic to assess the exposures when the change is only equivalent to the first perceptible change, but it is also inadvisable to wait until the amount of change is large. Thus, it is recommended that comparisons of change of appearance be made when the amount of change of the pigment with known resistance to light (agreed reference pigment) is equal to fastness grade 4 and 3 of the grey scale in accordance with ISO 105-A02.

For any particular application, the method of test described in this document should be completed by the following supplementary information. This information should be derived, in part or totally, from a national or an international standard or other document related to the product under test or, if appropriate, should be agreed between the interested parties.

- a) Type and identification of the agreed reference pigment.
- b) The binder (medium) for dispersion of the test sample and the agreed reference pigment and details of the composition of the dispersion.
- c) The method of dispersion to be used.
- d) Whether the test is to be carried out under natural exposure (method A) or artificial light (method B).
- e) If method A is to be used, the exposure angle of the test specimens and glass cover.
- f) If method B is to be used, the details of the apparatus and of the light source.



# General methods of test for pigments and extenders —

## Part 15:

# Comparison of resistance to light of coloured pigments of similar types

## 1 Scope

This document describes a general method of test for comparing the resistance to light of samples of similar types of coloured pigments (agreed reference pigment and test sample).

Two methods of exposure are described in this document. In method A, the material is exposed under glass to natural light. In method B, the material is exposed to direct artificial light.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

ISO 18451-1, *Pigments, dyestuffs and extenders — Terminology — Part 1: General terms*

CIE PUBLICATION NO 20 (TC-2.2), *Recommendations for the integrated irradiance and the spectral distribution of simulated solar radiation for testing purposes*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 18451-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

## 4 Principle

The test sample and the agreed reference pigment are each dispersed in the same agreed binder (medium). The dispersions are applied to a substrate and dried. They are then exposed to natural daylight with protection from rain (method A) or to artificial light (method B) under specified conditions.

The resistance to light is assessed by comparing the change in colour of the test sample to that of the agreed reference pigment.

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