



**International
Standard**

ISO 22785-2

**Paints and varnishes — Coatings on
plastics and composites —**

**Part 2:
Weathering and irradiation testing**

*Peintures et vernis — Revêtements sur plastiques et
composites —*

Partie 2: Essais de vieillissement et d'irradiation

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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.

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 document 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).

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

A list of all parts in the ISO 22785 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.

Introduction

The ISO 22785 series explains the characteristics of plastics and the differences between plastics substrates and metallic substrates.

This document gives an overview of the common weathering test methods used to test the durability of coatings on plastics. Many of the existing test methods have been developed for coatings on metals. This document specifies the test methods that can lead to a deviating behaviour of the coating on plastics substrates and the measures that can be taken to correct that behaviour, where appropriate. It is possible that the substrate has an effect on the behaviour of the coating during the test. At times, it can be useful to select test conditions which are based on standards from the plastics sector and not on standards from the coating sector, in order to take into account the thermal conductivity of a plastics substrate, which is normally lower.

The methods listed in this document refer to simple, flat test specimens for material ageing. For three-dimensional samples, deviations in the homogeneity of irradiance and surface temperature can occur during artificial weathering. This is taken into account during the testing of three-dimensional samples.

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Paints and varnishes — Coatings on plastics and composites —

Part 2: Weathering and irradiation testing

1 Scope

This document specifies the weathering and irradiation testing of coatings on plastics, plastics composites and similar substrates, hereinafter collectively referred to as plastics.

This document shows the potential effect of plastics on the behaviour of the coating during weathering and irradiation testing.

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 4618, *Paints and varnishes — Vocabulary*

ISO 22785-1, *Paints and varnishes — Coatings on plastics and composites — Part 1: General introduction*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618, ISO 22785-1 and the following apply.

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

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

3.1 weathering

stress due to natural or simulated environmental influences to which a material is exposed, in particular solar radiation (natural or artificial), heat and humidity

3.1.1 natural weathering

stress to which a material is exposed when outdoors

3.1.2 artificial accelerated weathering

exposure (3.2) of a material in a laboratory *weathering* (3.1) device to conditions which can be cyclic and intensified compared with those encountered in outdoor or in-service exposure

Note 1 to entry: This involves a laboratory radiation source, heat and moisture (in the form of relative humidity and/or water spray, condensation or immersion) in an attempt to produce more rapidly the same changes that occur in long-term outdoor exposure.