

# **SLOVENSKI STANDARD**

## **SIST EN ISO 4892-1:2001**

**01-junij-2001**

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**Polimerni materiali - Metode izpostave laboratorijskim virom svetlobe - 1. del:  
Splošna navodila (ISO 4892-1:1999)**

Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance  
(ISO 4892-1:1999)

Kunststoffe - Künstliches Bestrahlen oder Bewittern in Geräten - Teil 1: Allgemeine  
Anleitung (ISO 4892-1:1999)

Plastiques - Méthodes d'exposition a des sources lumineuses de laboratoire - Partie 1:  
Guide général (ISO 4892-1:1999)

[SIST EN ISO 4892-1:2001](https://standards.iteh.ai/catalog/standards/sist/d217935b-c796-4bbb-a39b-6e8e116bf0e4/sist-en-iso-4892-1-2001)

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**Ta slovenski standard je istoveten z: EN ISO 4892-1:2000**

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**ICS:**

83.080.01

Polimerni materiali na  
splošno

Plastics in general

**SIST EN ISO 4892-1:2001**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN ISO 4892-1

September 2000

ICS 83.080.01

English version

Plastics - Methods of exposure to laboratory light sources - Part  
1: General guidance (ISO 4892-1:1999)

Plastiques - Méthodes d'exposition à des sources  
lumineuses de laboratoire - Partie 1: Guide général (ISO  
4892-1:1999)

Kunststoffe - Künstliches Bestrahlen oder Bewittern in  
Geräten - Teil 1: Allgemeine Anleitung (ISO 4892-1:1999)

This European Standard was approved by CEN on 8 September 2000.

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 Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

## Foreword

The text of the International Standard from Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

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 2001, and conflicting national standards shall be withdrawn at the latest by March 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 4892-1:1999 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

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## Annex ZA (normative)

### Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 291	1997	Plastics – Standard atmospheres for conditioning and testing	EN ISO 291	1997
ISO 294-1	1996	Plastics – Injection moulding of test specimens of thermoplastic materials – Part 1: General principles, and moulding of multipurpose and bar test specimens	EN ISO 294-1	1998
ISO 294-2	1996	Plastics – Injection moulding of test specimens of thermoplastic materials – Part 2: Small tensile	EN ISO 294-2	1998
ISO 294-3	1998	Plastics – Injection moulding of test specimens of thermoplastic materials – Part 3: Small plates	EN ISO 294-3	1998
ISO 295	1991	Plastics – Compression moulding of test specimens of thermosetting materials	EN ISO 295	1998
ISO 2818	1994	Plastics – Preparation of test specimens by machining	EN ISO 2818	1996
ISO 3167	1993	Plastics – Multipurpose test specimens	EN ISO 3167	1996
ISO 4892-2	1994	Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc sources	EN ISO 4892-2	1999
ISO 4892-3	1994	Plastics – Methods of exposure to laboratory light sources – Part 3: Fluorescent UV lamps	EN ISO 4892-3	1999

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# INTERNATIONAL STANDARD

**ISO**  
**4892-1**

Second edition  
1999-07-01

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## Plastics — Methods of exposure to laboratory light sources —

### Part 1: General guidance

*Plastiques — Méthodes d'exposition à des sources lumineuses  
de laboratoire —  
Partie 1: Guide général*

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Reference number  
ISO 4892-1:1999(E)

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4892-1 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 6, *Ageing, chemical and environmental resistance*.

This second edition cancels and replaces the first edition (ISO 4892-1:1994), of which it constitutes a technical revision.

ISO 4892 consists of the following parts, under the general title *Plastics — Methods of exposure to laboratory light sources*:

— *Part 1: General guidance*

— *Part 2: Xenon-arc sources*

— *Part 3: Fluorescent UV lamps*

— *Part 4: Open-flame carbon-arc lamps*

Annex B forms a normative part of this part of ISO 4892. Annex A is for information only.

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## Introduction

Plastics are often used outdoors or in indoor locations where they are exposed to daylight or to daylight behind glass for long periods. It is therefore very important to determine the effects of daylight, heat, moisture and other climatic stresses on the colour and other properties of plastics. Outdoor exposures to daylight and to daylight filtered by window glass are described in ISO 877:1994, *Plastics — Methods of exposure to direct weathering, to weathering using glass-filtered daylight, and to intensified weathering by daylight using Fresnel mirrors*. However, it is often necessary to determine more rapidly the effects of light, heat and moisture on the physical, chemical and optical properties of plastics with accelerated laboratory exposure tests that use specific laboratory light sources. Exposures in these laboratory devices are conducted under more controlled conditions than found in natural environments and are designed to accelerate polymer degradation and product failures.

Relating results from accelerated laboratory exposures to those obtained in actual-use conditions is difficult because of variability in both types of exposure and because laboratory tests often do not reproduce all the exposure stresses experienced by plastics exposed in actual-use conditions. No single laboratory exposure test can be specified as a total simulation of actual-use exposures.

The relative durability of materials in actual-use exposures can be very different depending on the location of the exposure because of differences in UV radiation, time of wetness, temperature, pollutants and other factors. Therefore, even if results from a specific accelerated laboratory test are found to be useful for comparing the relative durability of materials exposed in a particular outdoor location or in particular actual-use conditions, it cannot be assumed that they will be useful for determining the relative durability of materials exposed in a different outdoor location or in different actual-use conditions.

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# Plastics — Methods of exposure to laboratory light sources —

## Part 1: General guidance

### 1 Scope

**1.1** This part of ISO 4892 provides information and general guidance relevant to the selection and operation of the methods of exposure described in detail in subsequent parts. It also describes and recommends procedures for determining irradiance and radiant exposure. Requirements for devices used to monitor chamber air temperature and surface temperature of dark and light materials are also described.

**1.2** This part of ISO 4892 also provides information on the interpretation of data from accelerated exposure tests. More specific information about methods for determining the change in plastic properties after exposure and reporting these results is described in ISO 4582.

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### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 4892. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 4892 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 291:1997, *Plastics — Standard atmospheres for conditioning and testing*.

ISO 293:1986, *Plastics — Compression moulding test specimens of thermoplastic materials*.

ISO 294-1:1996, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 1: General principles, and moulding of multipurpose and bar test specimens*.

ISO 294-2:1996, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 2: Small tensile bars*.

ISO 294-3:1996, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 3: Small plates*.

ISO 295:1991, *Plastics — Compression moulding of test specimens of thermosetting materials*.

ISO 2557-1:1989, *Plastics — Amorphous plastics — Preparation of test specimens with a specified maximum reversion — Part 1: Bars*.

ISO 2818:1994, *Plastics — Preparation of test specimens by machining*.

ISO 3167:1993, *Plastics — Multipurpose test specimens*.

ISO 4582:1998, *Plastics — Determination of changes in colour and variations in properties after exposure to daylight under glass, natural weathering or laboratory light sources*.

ISO 4892-2:1994, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc sources*.

ISO 4892-3:1994, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps*.