
INTERNATIONAL STANDARD



4607

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

● Plastics — Methods of exposure to natural weathering

Plastiques — Méthodes d'exposition aux intempéries

First edition — 1978-11-01

UDC 678.5/.8 : 678.019.32

Ref. No : ISO 4607-1978 (E)

Descriptors : plastics, tests, environmental tests, weather resistance, climatic conditions, geographic distribution, climate, exposure time

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 4607 was developed by Technical Committee ISO/TC 61, *Plastics*, and was circulated to the member bodies in November 1976.

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

Australia	India	Philippines
Austria	Iran	Poland
Belgium	Ireland	Portugal
Brazil	Israel	Romania
Bulgaria	Italy	Spain
Canada	Japan	Sweden
Czechoslovakia	Korea, Rep. of	Switzerland
Finland	Mexico	Turkey
France	Netherlands	United Kingdom
Germany, F.R.	New Zealand	U.S.A.
Hungary	Peru	Yugoslavia

No member body expressed disapproval of the document.

Plastics — Methods of exposure to natural weathering

0 INTRODUCTION

Weathering tests of the type specified in this International Standard are needed to evaluate the performance of materials intended for outdoor use. The results of such tests should be regarded only as an indication of the effect of weathering. Results obtained at one time may not be strictly comparable with those obtained at another, although, in general, samples exposed for any period of several years and examined at the same time of year will show comparable behaviour. Even in long-term tests, the results may be affected by the season in which the tests are started.

The results of short-term exposure tests can give an indication of the relative outdoor performance but should not be used to predict the absolute long-term performance of a material. The results of tests carried out for less than 12 months will depend on the particular season of the year in which they are commenced.

It should be noted that the method of exposure is usually designed to expose the material to the most severe effects associated with any particular climate. It should therefore be borne in mind that the severity of exposure in actual use is, in most cases, likely to be less than that recommended in this International Standard, and allowance should be made accordingly when interpreting the results. For example, vertical exposure is considerably less severe in its effect on plastics, particularly in tropical regions, where the sun is at a high angle when it is most powerful, and also because rain-water drains more rapidly from samples. In the northern hemisphere, north-facing surfaces are likely to be less severely degraded than south-facing ones because they are less exposed to solar radiation, but the fact that they may remain wet for longer periods may be of significance for materials that are affected by moisture.

1 SCOPE AND FIELD OF APPLICATION

This International Standard describes procedures for exposing plastics to natural weathering in order to assess changes produced after specified stages of such exposure.

The methods are applicable to plastic materials of all kinds and to products or portions of products.

For the method of determination of changes in properties after exposure, reference is made to ISO 4582.

A system of classifying and characterizing climates in different parts of the world is given in 8.1.

2 REFERENCES

ISO 105, *Textiles — Tests for colour fastness.*

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

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

ISO 294, *Plastics — Injection moulding test specimens of thermoplastic materials.*

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

ISO 2557, *Plastics — Amorphous thermoplastic moulding materials — Preparation of test specimens with a defined level of shrinkage.*

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

ISO 3167, *Plastics — Preparation and use of multipurpose test specimens.*

ISO 4582, *Plastics — Determination of changes in colour and variations in properties after exposure to daylight under glass, natural weathering or artificial light.¹⁾*

ISO 4892, *Plastics — Methods of exposure to laboratory light sources.¹⁾*

3 TEST SPECIMENS

If the material to be tested is an extrusion or moulding compound in granules or in chips or in another raw state, specimens shall be produced directly from it by an appropriate method, or a sheet shall be made from it by an appropriate method and the specimens cut from this sheet. The method used shall be agreed by the interested parties and should be closely related to the method by which the material is to be processed by the user.

NOTE — For the preparation of test specimens attention is drawn to ISO 293, ISO 294, ISO 295, ISO 2557 and ISO 3167.

¹⁾ At present at the stage of draft.