

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 877

PLASTICS

DETERMINATION OF RESISTANCE OF PLASTICS
TO COLOUR CHANGE
UPON EXPOSURE TO DAYLIGHT

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 877, *Plastics – Determination of resistance of plastics to colour change upon exposure to daylight*, was drawn up by Technical Committee ISO/TC 61, *Plastics*, the Secretariat of which is held by the United States of America Standards Institute (USASI).

Work on this question led, in 1963, to the adoption of a Draft ISO Recommendation.

In August 1964, this Draft ISO Recommendation (No. 757) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Argentina	Hungary	Romania
Austria	India	South Africa, Rep. of
Belgium	Israel	Switzerland
Canada	Japan	Turkey
Czechoslovakia	Korea, Rep. of	U.A.R.
Finland	Netherlands	United Kingdom
France	New Zealand	U.S.A.
Germany	Poland	U.S.S.R.

Two Member Bodies opposed the approval of the Draft :

Italy
Sweden

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in December 1968, to accept it as an ISO RECOMMENDATION.

PLASTICS

**DETERMINATION OF RESISTANCE OF PLASTICS
TO COLOUR CHANGE
UPON EXPOSURE TO DAYLIGHT**

1. SCOPE

This ISO Recommendation describes a procedure for assessing the resistance of plastics to colour change upon exposure to daylight, under glass.

2. PRINCIPLE OF METHOD

- 2.1 Test specimens of the plastics material to be tested are exposed to light, together with pieces of the dyed wool standards specified in ISO Recommendation R 105/1, *Tests for colour fastness of textiles (First series)*, Part 11 : "Colour fastness to light : Daylight". These standards vary in colour fastness to light, No. 8 being the most stable and No. 1 the least stable.

After specified exposure, the degree of contrast between exposed and unexposed portions of the test specimens is compared with that of the dyed wool standards, and the fastness rating obtained from the rating of the standard which shows a degree of contrast similar to that of the test specimen.

Provision is also made in this ISO Recommendation for the use of other standards and other means of measurement. Related methods are described in the following ISO Recommendations :

ISO Recommendation R 878, *Determination of resistance of plastics to colour change upon exposure to light of the enclosed carbon arc;*

ISO Recommendation R 879, *Determination of resistance of plastics to colour change upon exposure to light of a xenon lamp.*

- 2.2 The quality and intensity of solar radiation at the earth's surface vary with climate, location and time. The use of the dyed wool standards minimizes the effects of these variations on fastness ratings, but when plastics materials are to be compared it is preferable to expose them at the same time and place, under conditions approximating to those expected in service. While radiation may affect other properties of plastics, this method pertains only to its effect on colour.

3. APPARATUS**3.1 Exposure case**

The exposure case consists essentially of an open-bottomed box, covered with a framed lid of glass and containing a removable rectangular rack for carrying the test specimens and the wool standards. The rack rests upon a supporting screen made of wire cloth. Ventilating holes, 20 mm (0.75 in) in diameter, are provided in the upper side of the exposure case, their centres being approximately 75 mm (3 in) apart and 13 mm (0.5 in) above the upper surface of the battens. These holes are covered with wire mesh.