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STANDARD

8570

First edition
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**Plastics — Film and sheeting — Determination
of cold-crack temperature**

*Plastiques — Film et feuille — Détermination de la température de
fragilité à froid*



Reference number
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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.

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 8570 was prepared by Technical Committee ISO/TC 61, *Plastics*, Sub-Committee SC 11, *Products*.

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Plastics — Film and sheeting — Determination of cold-crack temperature

1 Scope

This International Standard specifies a method for assessing the brittleness of plastic film and sheeting at low temperature.

The assessment is given in the form of a conventional cold-crack temperature which serves as a guideline for comparing the low-temperature behaviour of plastic film and sheeting.

This method characterizes a finished product of given thickness and texture, but not its raw-material composition. Data derived using this International Standard cannot be transposed without limitation to any other shapes or conditions of application.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 291:1977, *Plastics — Standard atmospheres for conditioning and testing*.

ISO 4593:1979, *Plastics — Film and sheeting — Determination of thickness by mechanical scanning*.

3 Definition

For the purposes of this International Standard, the following definition applies.

3.1 cold-crack temperature: The temperature at which 50 % of test specimens break or exhibit

damage when tested by the method specified in this International Standard.

4 Principle

Specimens bowed in the shape of a loop are placed in a cooling chamber and subjected to sudden folding under the impact of a free-falling mass.

The test is repeated at temperatures scaled in increments of 5 °C, commencing when no specimen breaks or is damaged and ending when all specimens are broken or damaged.

5 Apparatus

The following description is an example of a typical test apparatus design (see figure 1). Other designs can be used provided that the physical principles are equivalent. Figure 2 shows another appropriate design.

5.1 Impact device, comprising the following elements:

5.1.1 Specimen holder, permitting the fastening of one or more specimens on a platen by means of clamps (e.g. leaf springs) to clench each specimen along its entire width (15 mm) and to secure 10 mm of each end of the loop (see figure 1) so that the length of the loop section subjected to folding is 40 mm.

The platen may be equipped with a mechanism (revolving type) that allows each specimen to be placed successively in the test position under the guide tube (5.1.4) which guides the impact mass (5.1.3).

Another possibility is to equip the test apparatus with guide tubes each provided with its own impact mass. The guide tubes may be arranged in a line or in a circle, depending on the space available in the cooling chamber (5.2).