

Methods of testing

Plastics

Part 9. Sampling and test specimen preparation

Method 910A. Injection moulding test specimens of thermoplastic materials

ICS 83.080.20

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PRI/21, Testing of plastics, upon which the following bodies were represented:

- British Apparel and Textile Confederation
- British Plastics Federation
- Department of the Environment (Building Research Establishment)
- Department of Trade and Industry (National Physical Laboratory)
- Electrical and Electronic Insulation Association (BEAMA Ltd.)
- GAMBICA (BEAMA Ltd.)
- Institute of Materials
- Ministry of Defence
- Packaging and Industrial Films Association
- PIRA International
- RAPRA Technology Ltd.
- Royal Society of Chemistry

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National foreword

This British Standard has been prepared by Technical Committee PRI/21 and is identical with ISO 294 : 1995 *Plastics — Injection moulding of test specimens of thermoplastic materials*. It supersedes BS 2782 : Part 9 : Method 910A : 1977 which is withdrawn.

Cross-references

International standard	Corresponding British Standard
ISO 179 : 1993	BS 2782 <i>Methods of testing plastics</i> Part 3 <i>Mechanical properties</i> Method 359 : 1993 <i>Determination of Charpy impact strength</i> (Identical)
ISO 180 : 1993	Method 350 : 1993 <i>Determination of Izod impact strength</i> (Identical)
ISO 527-1 : 1993	Method 321 : 1994 <i>Determination of tensile properties. General principles</i> (Identical)
ISO 527-2 : 1993	Method 322 : 1994 <i>Determination of tensile properties, test conditions for moulding and extrusion plastics</i> (Identical)
ISO 3167 : 1993	Part 9 <i>Sampling and test specimen preparation</i> Method 931A : 1993 <i>Preparation and use of multipurpose test specimens</i> (Identical)

The Technical Committee has reviewed the provisions of ISO 5725-1 : 1994 to which normative reference is made in the text and has decided that they are acceptable for use in conjunction with this standard.

NOTE. International and European Standards, as well as overseas standards, are available from Customer Services, BSI, 389 Chiswick High Road, London, W4 4AL.

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Introduction

Many factors in the injection-moulding process can influence the properties of moulded test specimens and hence the results of tests using such specimens. The mechanical properties, in particular, of test specimens are strongly dependent on the conditions of the moulding process used to prepare the specimens.

An exact definition of each parameter of the moulding process is essential to ensure reproducible and comparable operating conditions.

It is important in defining the moulding conditions for a thermoplastic material to consider any dependence of the properties to be determined and the conditions used in the moulding process. Thermoplastics may exhibit molecular orientation (important mainly with heterogeneous polymers) or differences in crystallinity (for crystalline or semi-crystalline polymers). Residual ('frozen-in') stresses in the moulded specimens and thermal degradation of the polymer during moulding may also influence the properties of the specimens.

Each of these phenomena must be controlled to avoid fluctuation in the numerical values of test results.

General correlations between the properties of test specimens and basic injection-moulding parameters are given, for information only, in Annex A.

