

Method of specifying

# Thermoplastics injection mouldings —

Part 2: Additional requirements for  
polycarbonate, polyamide and  
polyethylene mouldings

# Committees responsible for this British Standard

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- Association of Electronics, Telecommunications and Business Equipment Industries (EEA)
- British Plastics Federation
- British Telecommunications plc
- Department of Trade and Industry (National Physical Laboratory)
- ERA Technology Limited
- Electrical Installation Equipment Manufacturers' Association (BEAMA)
- Ministry of Defence
- PERA International
- RAPRA Technology Limited
- Society of Motor Manufacturers and Traders Limited

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## Foreword

This Part of BS 7029 has been prepared under the direction of the Plastics and Rubber Standards Policy Committee from an initial draft submitted by the Ministry of Defence. Together with BS 7029-1 it forms a standard for the method of specifying thermoplastics injection mouldings made from polycarbonate, polyamide and polyethylene materials.

It describes a method of specifying only and should not be used or quoted as a specification for thermoplastics injection mouldings. References to this standard should indicate that the method of specifying thermoplastics injection mouldings is in accordance with BS 7029.

Certain parameters covered by this standard are fixed and the manufacturer is required to confirm that the product conforms to them while the value of other parameters may be taken from a range of values and is required to be stated.

Part 1 gives the method of specifying for general requirements applicable to all mouldings whilst Part 2 (this Part), which should be used in conjunction with Part 1, details the methods of specifying additional requirements for mouldings made from polycarbonate, polyamide and polyethylene materials.

It is intended that Part 3 will give methods of specifying the additional requirements of mouldings made from the following materials:

- acrylonitrile-butadiene-styrene (ABS);
- polyoxymethylene (polyacetal) (POM);
- polyether sulfone (PES);
- modified polyphenylene oxide (PPO);
- polypropylene (PP).

**WARNING. This standard calls for the use of substances and/or test procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and in no way absolves either the supplier or the user from statutory obligations relating to health and safety at any stage of manufacture of use.**

NOTE Attention is drawn to several references in the text and in notes to the need to apply to Customer Services, Information Services Group, BSI, Linford Wood, Milton Keynes, MK14 6LE, for information on suitable equipment.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

## 1 Scope

This Part of BS 7029 describes methods of specifying thermoplastics mouldings made from individual plastic materials by injection moulding. These requirements are additional to the general requirements, for which a method of specifying is given in Part 1, and which apply to all thermoplastic injection mouldings.

## 2 References

### 2.1 Normative references

This Part of BS 7029 incorporates by reference, provisions from specific editions of other publications. These normative references are cited in the appropriate parts in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this Part of BS 7029 only when incorporated by updating or revision.

### 2.2 Informative references

This Part of BS 7029 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover but reference should be made to the latest editions.

## 3 Definitions

For the purposes of this Part of BS 7029, the definitions given in BS 1755-1:1982 and BS 1755-2:1974 apply.

## 4 Polycarbonate mouldings

### 4.1 Freedom from residual stress

The manufacturer shall confirm the following.

- a) Samples are tested in accordance with the method given in Annex A.
- b) Batches represented by samples which correspond to category 1 are rejected. Those corresponding to category 3 are accepted. Those corresponding to category 2 are referred to the testing authority (see clause 9 of BS 7029-1:1993).

**NOTE** The acceptability of category 2 batches will depend upon the particular end use of the mouldings and the testing authority, in consultation with the specifier, needs to decide whether such batches are acceptable or not.

- c) The mouldings used for this test are discarded subsequently.

### 4.2 Relative viscosity reduction

The manufacturer shall confirm that the reduction of relative viscosity of material sampled from the mouldings compared with the value for the polymer, when both are measured by the method described in Annex B, is not greater than 0.03, unless otherwise stated by the purchaser.

### 4.3 Dimensional stability

#### 4.3.1 Dimension requirements

The manufacturer shall confirm that the particular dimensions noted on the drawing are measured after testing by the procedure given in 4.3.2 and are within the tolerances noted.

#### 4.3.2 Method of test for the determination of dimensional stability

Support the entire moulding, as defined in the specification or relevant drawing, and place it in a hot air circulating oven maintained at  $(135 \pm 2)^\circ\text{C}$  for 1 h.

**NOTE** It is normal practice to support the moulding uniformly on a bed of inert material which permits free movement, e.g. talc or fine sand.

Remove the moulding and allow it to cool naturally at room temperature in a draught free atmosphere while still supported as defined in the relevant drawing.

Discard the mouldings which have been used for this test.

## 5 Polyamide mouldings

### 5.1 Viscosity number

In the absence of any minimum requirement from the purchaser, the viscosity number of material taken from the moulding shall be not less than 85 % of the viscosity number of moulding material from which it was made when tested in accordance with Annex C.

### 5.2 Determination of water content

The manufacturer shall confirm that a representative sample of material with a mass of not less than 20 g is taken from a cross section of the moulding for the determination of the water content by the method described in Annex D and that the water content is within the limits stated in the specification or on the drawing.