

Glossary of

Terms used in the plastics industry —

Part 2: Manufacturing processes

UDC 001.4:678.5.002.2

Co-operating organizations

The Plastics Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- British Plastics Federation*
- British Resin Manufacturers' Association
- Building Research Establishment
- Chemical Industries Association Ltd.
- Department of Trade and Industry
- Electrical and Electronic Insulation Association
- Electrical Installation Equipment Manufacturers' Association
- Electrical Research Association
- Engineering Equipment Users' Association
- Ministry of Defence
- Ministry of Defence, Navy Department
- Ministry of Defence — Procurement Executive
- Plastics Institute*
- Post Office
- Royal Institute of British Architects
- Royal Institute of Public Health and Hygiene
- Rubber and Plastics Research Association of Great Britain
- Society of Motor Manufacturers and Traders Ltd.

The scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- Leathercloth and Coated Fabric Manufacturers Association'
- Individual experts

This British Standard, having been approved by the Plastics Industry Standards Committee, was published under the authority of the Executive Board on 11 July 1974

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First published as BS 1755 July 1951
First revision Part 1 February 1962
Part 2 July 1974

The following BSI references relate to the work on this standard:
Committee reference PLC/12
Drafts for comment 69/6206, 70/27567 and 72/52363

ISBN 0 580 08275 X

Amendments issued since publication

Amd. No.	Date of issue	Comments
3935	May 1982	Indicated by a sideline in the margin

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Foreword

This Part of this British Standard was prepared under the authority of the Plastics Industry Standards Committee and constitutes the second stage of a full revision of the complete glossary of terms published as BS 1755:1951.

There are now available

— *Part 1: Polymer and plastics technology;*

— *Part 2: Manufacturing processes.*

Further Parts of the revision are in preparation and will include terms relating to certain manufacturing processes (e.g. cellular plastics, reinforced plastics) which were not covered in BS 1755:1951.

BS 1755-1:1982, which is technically equivalent to ISO 472:1979, supersedes both BS 1755:1951 and BS 1755-1:1967. Terms that are given in BS 1755-1:1982 have been deleted from this Part by Amendment No. 1 (AMD 3935).

Terms and definitions adopted by Technical Committee 61 — Plastics, of the International Organization for Standardization (ISO) have been taken into account as far as possible in the preparation of this glossary.

Where terms are used with different meanings in different parts of the plastics industry, definitions for these are given in appropriate sections of the glossary. Such definitions only apply in their proper context. The branch of the plastics industry to which a particular term applies is included in brackets in the index.

NOTE Where a definition is applicable to more than one term, the preferred term is that printed in bold type.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 16 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.

21 Compounding

No.	Term	Definition
2104	powder mixing	A method of mixing resin, in powder form, and additives to produce a free flowing powder.
2105	gelation	A stage in compounding material, at which it first becomes a coherent mass. NOTE See also 2717 for the definition of this term as applied to fabric and paper coating.
2106	masterbatch	A compounding ingredient comprising resin and additives, with the additives present in higher concentrations than are required in the final plastics material.
2107	processing aid	An additive to, or a component in, a resin to facilitate processing.
2108	phr	Parts by mass of an additive per 100 parts by mass of resin.
2109	internal mixer	A mixer consisting of specially shaped rotors operated in a closed chamber.
2110	mill	A machine with two roles forming a nip for masticating, mixing, warming or rough sheeting.

22 & 23 Moulding

2203	compression moulding press	A device for applying the mechanical effort needed in compression moulding to shape the plastics material into the form of the mould and to keep the mould impression closed during the setting period.
2204	mechanical press	A press operated by mechanical power.
2205	hydraulic press	A press operated by hydraulic power.
2206	self-contained press	A hydraulic press in which the power necessary to operate the press is obtained from a pump attached to the press.
2207	hand press	A press in which the mechanical effort is applied by hand, the force being amplified by mechanical or hydraulic means.
2210	tilting head press	A press so designed that the head of the press tilts during the opening movement of the press.
2212	semi-automatic moulding machine	A press or moulding machine which performs some operations automatically.
2213	fully-automatic moulding machine	A press for compression or transfer moulding or an injection moulding machine, which operates continuously, the operations being performed automatically.
2216	platen	One of a number of steel plates which are part of the press and which transmit force, and if necessary heat, to the mould or sheet assembly.
2218	press table	The lower table of a vertical hydraulic press.
2219	moving table	The table attached to the ram of a press.

No.	Term	Definition
2220	fixed table	The upper table of an upstroke press or the lower table of a downstroke press.
2222	transfer chamber transfer pot	The heating chamber used in transfer moulding.
2223	moulding charge load	The quantity of material used to load a mould cavity.
2228	moulding pressure	The force applied by a compression moulding press divided by the projected area of the mouldings.
2231	injection moulding machine	A device comprising a heating cylinder for plastics material with means for forcing material into a closed mould, which can be opened, and the necessary ancillary equipment for the process of injection moulding.
2232	plunger-type injection moulding machine	An injection moulding machine in which the heated plastics material is forced into the mould by means of a plunger in the cylinder.
2233	screw-plunger injection moulding machine reciprocating screw injection moulding machine	An injection moulding machine in which the heated plastics material is conveyed through the heating chamber by means of a rotating feed screw; when the material is to be forced into the mould, the screw is moved axially in the heating cylinder as a plunger.
2234	injection plunger	The plunger which operates in the cylinder of an injection moulding machine to apply the injection pressure.
2235	heating cylinder	The chamber of an injection moulding machine wherein materials are softened by heat before being injected into the mould.
2237	nozzle	A component at the end of the cylinder containing an orifice, through which the heated plastics material passes into the sprue channel.
2238	shut-off nozzle	A nozzle incorporating a valve which is closed when the nozzle is not in contact with the mould.
2239	ejector	An attachment to a press or injection moulding machine, used to operate ejector pins.
2240	ejector ram	A small hydraulic or pneumatic ram fitted to a press for the purpose of operating the ejector mechanism.
2241	balance tray	In automatic moulding, a catchment tray on which the ejected moulding falls, so controlling the operation of the sequence switch.
2245	injection pressure	The pressure applied to the moulding material to inject it into the mould.
2246	ram pressure	Used colloquially for the total force applied by a hydraulic ram; equal to the hydraulic pressure multiplied by the ram area.
2247	flow moulding	A method of using a screw-plunger injection moulding machine in which the screw continues to rotate during the injection period, thus enabling items of a greater size than the normal shot capacity to be moulded.

No.	Term	Definition
2249	mould impression mould form	The space in which the moulding material hardens and takes its form.
2250	single impression mould single cavity mould	A mould which produces one moulding per moulding cycle.
2251	multi-impression mould multi-cavity mould	A mould which produces more than one moulding per moulding cycle.
2253	portable mould hand mould loose mould	A mould designed to be removed from the press for stripping and loading.
2257	cored mould	A mould incorporating passages for carrying heating or cooling media.
2258	bar mould gang mould	A multi-impression mould in which the impressions are arranged in rows on separate bars which may be removed individually from the press.
2260	three-plate tool	An injection moulding tool having an additional daylight, usually to enable removal of a feed system not on the main tool parting line.
2264	insulated runner mould	An injection mould in which the runner is of sufficient cross-sectional area for the solidified material in contact with the walls to insulate the material at the centre so that it remains fluid.
2266	direct feed sprue gating	A method of feed with no gate or runner, the material being injected directly into the mould impression through the sprue.
2267	side gate	A gate at the die parting line where the width of the gate is no greater at the cavity than at the runner.
2268	fan gate	A gate at the die parting line where the width of the gate is greater at the cavity than at the runner.
2269	pin gate	A gate essentially circular of very small cross-sectional area.
2270	tunnel gate submarine gate	A gate which enters the moulding cavity away from the die parting line, but where the runner is on the die parting line.
2271	flash gate	A gate which feeds material from one mould impression to another.
2272	ring gate	A gate which extends along the whole periphery of the moulding.
2273	bar gate	A gate which, with its associated runner, extends along a substantial part of the periphery of the moulding.
2274	diaphragm gate	A gate which covers the whole area but not the whole depth of an aperture in a moulding and is subsequently machined out.
2275	extended nozzle gate	An injection moulding machine nozzle extended to enter the mould as far as the mould cavity and acting as a gate.
2276	tab gate	A gate feeding into a tab which is subsequently removed from the moulding.
2277	degating	Separating a moulding from its feed system.
2278	mould force	The top or bottom part of a compression mould.