

Plastic Injection Molding Glossary

Injection Molding Term	Definition
Barrel	The part of the molding press where resin is melted.
Boss	The round protrusions on plastic parts and molds, often designed for fasteners.
Bubbles	Air pockets that have formed in the material of the component. Bubbles may vary in size.
Cavity	Concave in mold, which usually forms the outer surface of the molded part; depending on number of such depressions, molds are designated as a single cavity or multi-cavity.
Core	The pressure applied to the mold to keep it closed during a cycle, usually expressed in tons.
Cycle	The complete sequence of operations in a process to complete one set of moldings. The cycle is taken at a point in the operation and ends when this point is again reached and moving platens of the clamp unit in the fully open position.
Draft	The degree of taper of a mold-cavity sidewall or the angle of clearance designed to facilitate removal of parts from a mold. Generally all plastic components should be designed with draft where possible.
Durometer	The hardness of a material as measured by the Shore Durometer.
EDM	Electric Discharge Machining. Sometimes colloquially also referred to as spark machining, spark eroding, burning, die sinking or wire erosion, is a manufacturing process whereby a desired shape is obtained using electrical discharges. Material is removed from the workpiece by a series of rapidly recurring current discharges between two electrodes, separated by a dielectric liquid and subject to an electric voltage.
Ejector Pins	Pins that are pushed into a mold cavity from the rear as the mold opens to force the finished part out of the mold. Also called knockout pins.
Family Mold	A multi-cavity mold where each of the cavities forms one of the component parts of an assembled finished part.
Flash	Any excess material that is formed with and attached to the component along a

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	seam or mold parting line.
Flow Line	Marks visible on the finished items that indicate the direction of the flow of the melt into the mold.
Flow Marks	Wavy surface appearances on a molded part caused by improper flow of the melt into the mold.
Gate	An orifice through which the melt enters the mold cavity.
Gate Trim	Remnant of plastic left over from cutting the component from the runner or sprue, usually to be cut flush with the edge of the component.
Hot-Runner Mold	A mold in which the runners are insulated from the chilled cavities and are kept hot. Hot-runner molds make parts that have no scrap.
Insert Molding	Insert molding is the process of molding plastic around preformed metal inserts. This process is compatible with both thermoplastic and thermoset materials.
Jetting	Turbulent flow in the melt caused by an undersized gate or where a thin section rapidly becomes thicker.
Knit Lines	Where melted material flows together to form a line or lines that may cause weakening or breaking of the component.
Living Hinge	A thin flexible hinge made from the same material as the two rigid pieces it connects. It is typically thinned to allow the rigid pieces to bend along the line of the hinge to allow them to open and close. They require careful design and gate placement. A typical application would be the top and bottom of a box.
Mold Frame	A series of steel plates which contain mold components, including cavities, cores, runner system, cooling system, ejection system, etc.
Multi-Cavity Mold	A mold having two or more impressions for forming finished items in one machine cycle.
Over Molding	A process in which a mold cavity is first partially filled with one plastic and then a second shot is injected to encapsulate the first shot.
Packing	The filling of the mold cavity or cavities as full as possible without causing undue stress on the molds or causing flash to appear on the finished parts.

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	Over-packing or under-packing results in less than optimum fill.
Parting Line	On a finished part, this line shows where the two mold halves met when they were closed.
Purging	The forcing one molding material out of the injection machine with another material prior to molding a new material. Special purging compounds are used.
Ribs	A thin support features (usually triangle shape) on a part that are used for strengthening wall sections and bosses.
Runner	The channel that connects the sprue with the gate for transferring the melt to the cavities.
Shear	Refers to when plastic enters into the mold and the melt is maintained by friction produced by speed and pressure. Too much shear can cause the plastic material to burn, too little can cause the material to freeze off causing short shot.
Short Shot	Failure to completely fill the mold or cavities of the mold. Edges may appear melted.
Shrink Rate	The dimensional differences between a molded part and the actual mold dimensions.
Single-Cavity Mold	A mold having only one cavity and producing only one finished part per cycle.
Sink Marks	A shallow depression or dimple on the surface of a finished part created by shrinkage or low fill of the cavity.
Slide	Area of the custom plastic injection molds that is used for creating undercuts. Required for automatic injection molds
Slide Action	A sliding mechanism in the mold designed for the molding of parts with undercuts. The undercut-steel fixture is held in place during the injection process and then slides out of the way prior to ejection.
Sprue	The feed opening provided in injection molding between the nozzle and cavity or runner system.
Steel (Metal)	Part design change will only require to remove metal from mold instead of “weld-

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Safe	add” metal on the mold.
Straight Pull	No side actions.
Undercuts	A protuberance or indentation that impedes withdrawal from a two-piece rigid mold.
Vent	A shallow channel or opening cut in the cavity to allow air or gases to escape as the melt fills the cavity.
Vestige	A mark created by trimming the injection molded part gate.
Wall Thickness	The thickness of the cross section of the plastic part.
Warp	Dimensional distortion in a molded object. Caused by internal stresses via uneven material flow, cooling, and compression
Weld-Line	Where melted material flows together during molding to form a visible line or lines on a finished part that may cause weakening or breaking of the component.