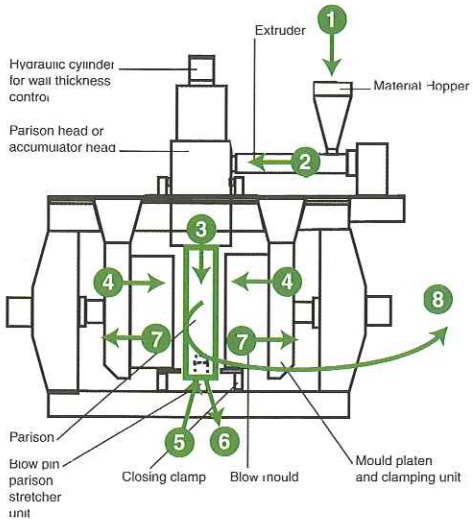
The Process



Cycle Sequence

1. Material (pellet form) fed to Material Hopper
2. Extrude polymer
3. Extrude parison
4. Close mould
   - pre-inflate parison with low volume of air
5. Blow to cavity shape
6. Exhaust air from moulding
7. Open mould
8. Remove the product

Repeat the cycle

Blow Mould Tools

The majority of blow mould tools are manufactured from aluminium (cast or plate) or steel, or a combination of these.

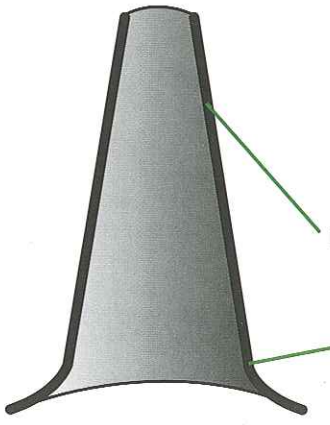
The actual material chosen depends on the following criteria:

- cooling (aluminium cools 4 times quicker than steel)
- life cycle of product
- cost of materials and subsequent machining time
- potential for modifications to be required during development or product life cycle
- the need for frequent adjustments during use
- requirement for chemical etch finish
- weight of completed tool

Markets

- packaging
- automotive
- technical

Wall Thickness Control



Typical Road Cone

Parison Control

- by introducing variations in parison thickness at specific points you can help maintain a more consistent wall thickness in the finished part.

Glossary

Bottom blown - Product blown from a blowpin located below the mould tool.
Blow out - A section of a moulding that has blown out into a hole.
Blow ratio - The relationship of width to depth of a particular form to be moulded.
Calibrated neck - A process by which the blowpin compresses the sealing face of a moulded form to produce a flat, smooth sealing face.
Compound - Raw material with its colour or other additives in pellet form.
Crease - A line seen on the finished product caused by a folded parison welding together during the moulding process.
Die - The outer element through which the parison is extruded.
Die lines - Longitudinal lines seen on the extruded parison.
Die swell - The amount that the parison swells after it is extruded from the die.
Feather edge - A sharp edge produced in a mould tool through poor design.
Flash relief - Clearance around the nip edge in the flash areas of the mould tool to allow the tool halves to close fully whilst lightly compressing the flash for re-granulation.
HDPE - High density polyethylene.
Joint line - The line around a product formed by the meeting of the mould tool halves.
LDPE - Low density polyethylene.
Masterbatch - Colour, UV stabiliser, anti-static and anti-bacterial additives to the virgin material.
Material mix - The proportion of virgin, regrind, masterbatch or other additives used in producing a particular moulding.
Moving cores - Additional moving sections of a mould tool to form undercuts on difficult moulded forms.
Needle blown - Product blown from one or more hollow pneumatically activated needles attached to the mould tool.
Nip edge - The joint edge of the mould tool that seals the parison whilst producing a thin knife line for flash removal.
Over blown - Product distorted due to the air not being completely evacuated from within the moulding prior to the mould opening.
% letdown - The percentage of masterbatch to be added to the virgin material.
PP - Polypropylene.
Parison - The extruded polymer tube from which products are formed.
Parison program - The profile by which the pin opens from the die whilst the parison is extruded.
Pin - The inner element through which the parison is extruded.
Regrind - The re-chipped flash from the blown products.
Sharking - Circumferential lines seen on the extruded parison.
Shrinkage - The amount the product shrinks from the actual mould cavity size.
Top Blown - Product blown from a blowpin located above the mould tool.
Trapped air - Air trapped between the mould and parison which causes lines or orange peel marks on the finished product.
Under blown - Product with poor definition caused by trapped air or insufficient blow pressure.
Virgin - Raw material in its natural pellet form.
Water marks - Irregular shaped deformations seen on the surface of the moulding caused by water present in the mould cavity during the moulding process.

All technical and other enquiries should be made to:

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