

# Rotational moulding

## What is rotational moulding?

Rotational moulding involves the raw plastics material being poured into a mould which is then heated and rotated so that as the material melts, it covers the inner surface.

The technique produces hollow, products with uniform wall thickness, usually large simple forms such as storage tanks and traffic bollards. The inner surface of the product can be inferior to its outer surface as it is never seen.

## How does the process work?

- A measured amount of the raw plastic material (normally in powder form) is placed into a hollow mould.
- The mould is closed and then rotated on two axis at low speed within an oven.
- As the plastic melts into liquid form, it coats the inner surface of the mould.
- The mould is then cooled while still rotating until the material has fully solidified.
- The product is released.

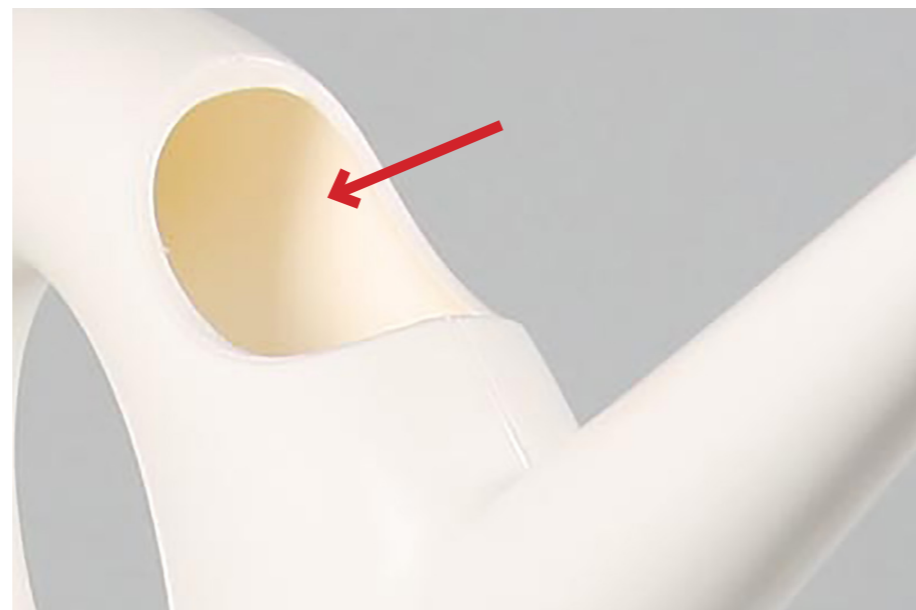
## What plastics materials can be used?

Commonly low or medium density polyethylene; polypropylene can be used if the end product needs to withstand high temperatures; polyamides may also be used but rarely, because they are expensive.

## What are the clues?



Mould lines are sometimes visible although they can be polished off by hand.



Inner surface is often inferior to the outer surface.

## When was the process first introduced?

1940s.

## Advantages:

- Relatively low cost as the moulds can be fairly simple and do not have to withstand pressure.
- Short production runs can be made very economically.
- A hollow part can be made in one piece with no joints.
- No material wastage is produced as it is all consumed in making the product.

## Disadvantages:

- Many variables can affect the production and end product, eg. temperature and humidity.

## Uses:

Only for products with uniform wall thickness and where the inner surface of the product can be inferior to its outer surface which replicates the surface of the mould. Usually large simple forms: storage tanks; traffic bollards.