

Thermoforming

What is thermoforming?

Thermoforming involves the process of heating plastic sheet to a pliable temperature and then stretching it over or into a former.

A preformed sheet of material is warmed and draped over a former. Neither high heat nor pressure is required so moulds can be made from cheap materials such as MDF. This process can also be used to form rods and tubes.

How does the process work?

- A sheet of plastics material is heated to become soft and flexible.
- The sheet is pressed into, or draped over, a simple former.
- After cooling, the sheet is removed and finished.

What plastics materials can be used?

Most sheet thermoplastic materials for example cellulose nitrate, cellulose acetate, polystyrene, polypropylene, polyvinyl chloride, acrylonitrile butadiene styrene, and polycarbonate.

What are the clues?



Gentle curves and folds.



Simple shapes.

When was the process first introduced?

1890 for use with cellulose nitrate.

Advantages:

- Low tooling cost. Neither high heat nor pressure is required so moulds can be made from cheap materials such as MDF.
- Particularly useful for low quantities or even one offs.
- Excess material can be reground, mixed with unused plastic and reformed into thermoplastic sheets.

Disadvantages:

- Each piece requires trimming, adding time and cost to the process.

Uses:

Open structures such as bowls and dishes, rods and tubes.