

THERMOFORMING

In Gestión de Compras we have an extensive experience manufacturing parts by thermoforming, using common or special plastic materials.

PROCESS:

In thermoforming, a flat thermoplastic sheet of specific size is clamped in place, heated to its softening temperature, and then forced against the contours of a mold or form by either air or vacuum, pressure or by mechanical means. Once cooled, the thermoformed part retains the shape of the mold or form. The part is then trimmed and separated from the remaining sheet material, which is recycled for reuse.

There are three general types, which are:

- **Vacuum forming:** a sheet of plastic is heated to a forming temperature and forced against the mold by a vacuum.
- **Pressure forming:** In addition to utilizing a vacuum, air pressure is applied on the back side of the sheet to help force it onto the mold. This additional force allows the forming of thicker sheets and creating finer details, textures and sharp corners.
- **Mechanical forming:** A core is in this process who force the material to get the die form. This process is usually combined with pressure or vacuum to obtain better results.

PRODUCTION:

In **Gestión de Compras** we have an extensive experience manufacturing parts by thermoforming, using common or special plastic materials, different process of thermoforming and finishing operations to obtain the desired product efficiently and competitively.



We carry out different thermoforming processes:

- **Drape Thermoforming**, in which the plastic sheet is stretched over a positive mold. Once the plastic seals against the mold edges, a vacuum is introduced pulling the material tightly against the mold contour.
- **Cavity Thermoforming**, in which a heated sheet of plastic is laid over a negative or concave mold. Once the materials seals at the mold edges, it is subjected to a vacuum pulling the material tightly into the mold.
- **Pressure Thermoforming**, in which material is positioned between a pressure plate and a mold. Air pressure is then introduced through the pressure plate forcing the plastic against the mold surface. Pressure thermoforming is used for finely detailed parts and requires strongly made molds.
- **Plug Assist Thermoforming**, which is similar to cavity forming but with a male plug forcing the material partially into the mold cavity. A vacuuming completes the thermoforming and is sometimes aided by positive air pressure.
- **Twin Sheet Thermoforming**, which is used to produce hollow parts. Typically two preheated thermoplastic sheets are positioned between mold halves. These mold halves are brought into position with their respective preheated sheets, sealing their top edges. A vacuum is then applied, forming the two individual part halves.

MATERIALS AND PRODUCTS:

The most widely used plastic materials in thermoforming are the amorphous plastics. Additionally, thermoplastic sheets with multiple layers may be used. These are the most common thermoplastic materials conforming by thermoforming:

- Acrylic (PMMA)
- Acrylonitrile Butadiene Styrene (ABS)
- Cellulose Acetate
- Low Density Polyethylene (LDPE)
- High Density Polyethylene (HDPE)
- Polypropylene (PP)
- Polystyrene (PS)
- Polyvinyl Chloride (PVC)

Thermoforming is used to produce parts for many industries including food, medical, appliance, signage, and automotive.



TOLERANCES:

Tolerances are greatly affected by part geometry and material selection. Obviously, core and die quality will affect to part tolerances. Tolerances on trimming operations used to be tighter than thermoforming tolerances.

STANDARD AND CERTIFICATES:

Our factories have the most demanding certifications for customers to ensure product quality as:

- ISO 9001, ISO 14001 and OHSAS 18001.
- TS 16949 - automotive components.
- ISO 13485 - medical devices.
- ISO 15593 - packaging for foodstuffs.



CONTACT:

In Purchasing Management work with a wide range of customers from different sectors but have in common the search for products that suit your needs at the best Price and the guaranteed maximum quality. Check with us about any product. We have a qualified staff who will advise you.

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