

## **Polyolefin Product Conversion Processes**

Basis for all conversion processes is the polyolefin compound which consists in polyolefin resin, additives, stabilizers and color.

### **Extrusion**

Molten material is pressed through a mould die and afterwards cooled in a cooling container or cooling bath.

Product size	Small to very large
Product weight	Very high
Products examples	Pipes, Sheets, Profiles
Equipment costs	Very High
Mould costs	Very High
Surface quality	Good

### **Injection moulding**

Molten material is injected into a cooled mould. When the material solidified, the finished product is ejected from the mould.

Product size	Very small to large
Product weight	up to 600 Kg
Products examples	Bottles, Car bumpers, Pipeline-fittings, Toys
Equipment costs	High
Mould costs	High
Surface quality	Perfect

### **Blow moulding**

A bubble of molten material is blown up inside a mould filling the form of the cavity. After material is solidified the finished product is ejected from the mould.

(Blow Moulding)

Product size	Very small to middle
Product weight	up to 30 Kg
Products examples	Bottles, Containers, fuel tanks, canisters packaging
Equipment costs	High
Mould costs	High
Surface quality	Perfect

### Rotation moulding

Heated powder material is injected in a rotating mould and due to the centrifugal force pressed to the form of the cavity. After material is solidified the finished product is ejected from the mould.

Product size	Middle to large
Product weight	up to 200 Kg
Products examples	Containers, fuel tanks, canisters
Equipment costs	Middle
Mould costs	Middle
Surface quality	Fair

### Blow Extrusion

Molten material is squeezed through a narrow operator slit. No additional cooling process required. In following processes the films might be stretched for strengthening or the films might be printed.

Product size	Very small to small
Product weight	Very low
Products examples	Packaging
Equipment costs	Very High
Mould costs	Very High
Surface quality:	Perfect

### **Fibre Extrusion**

Liquid material is squeezed through many tiny holes. No additional cooling required.

Product size	Very small
Product weight	Very low
Products examples	Textiles,, garments, diapers, membranes, geotextiles
Equipment costs	Very High
Mould costs	Very High
Surface quality	Perfect

### **Hot dip coating**

Black steel products are dipped in liquid powder material bath unless required wallthickness is achieved. No additional cooling required.

Product size	Small to middle
Product weight	Low to middle
Products examples	Steel product coating
Equipment costs	Middle
Mould costs	Low
Surface quality	Fair

### **Compacting pressing**

Heated powder material in a mould is pressed under load to the form of the cavity. After material is solidified the finished product is ejected from the mould.

Product size	Middle to large
Product weight	Middle to large
Products examples	Sheets
Equipment costs	Middle
Mould costs	Low
Surface quality	Fair