Parts Involved In Casting Process:

- Cores: Used to create complex shapes and hollow sections in the mold.
- Gating System: Channels and gates control molten material flow.
- Risers: Additional cavities compensate for shrinkage during solidification.
- Venting System: Allows air and gases to escape from the mold cavity.
- Molding Flasks: Rigid frames support the mold during casting.
- Molding Tools: Used for packing, shaping, and smoothing the mold.
- Pouring Equipment: Transfers molten material into the mold.
- Cooling and Heating Elements: Control solidification and maintain temperature.

Classification of Casting Process: Based on moulds

Casting moulds are an important part of the casting process. One of the most crucial components of equipment used in the casting manufacturing process, casting moulds significantly impact the quality of the casting. The creation of innovative castings, better casting quality, and higher near-net processing levels will all benefit greatly from advancements in casting mould technology. The casting mould can be classified as:

Expendable mould

Casting process in which the mould can not be reused is called as Expendable mould type of casting. For low-volume or single production of metal components, the method of expendable mould casting makes use of reusable moulds. There are four main types of expandable mould casting techniques: gravity, slush, low-pressure, and vacuum.

Gravity Mould

One of the earliest known methods of making metals and metal alloys is gravity casting. It entails using nothing but gravity to ladle molten metal into a mould from a crucible.

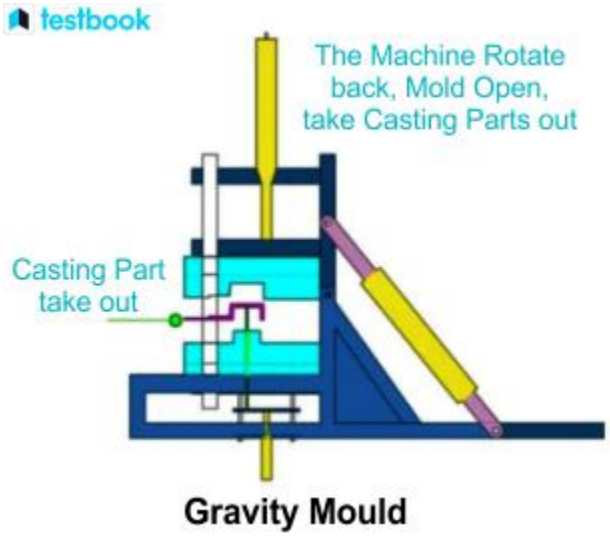

Figure 1: Gravity Mould

Slush Mould

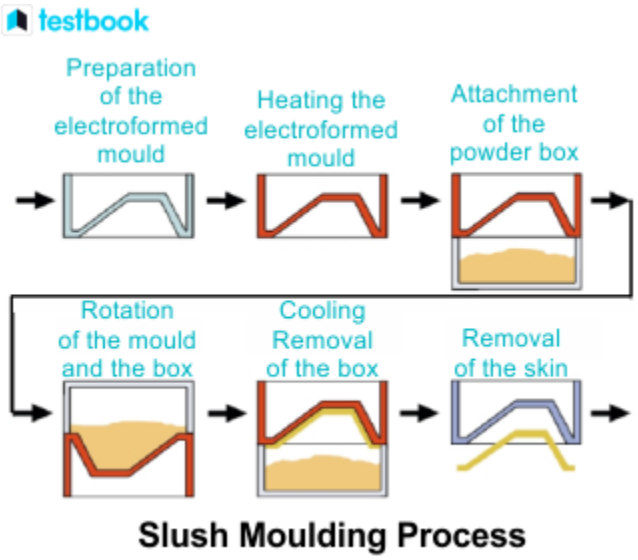

Figure 2: Slush Mould

If the cast needs to be more thicker, once again, molten metal is poured into the mould and poured out. This process is repeated until the desired thickness is achieved. In some slush castings, bronze moulds are used.

Traditional mould casting techniques like "slush casting" prevent the molten metal from fully solidifying in the model. The remaining molten metal is poured out after the required thickness has been achieved. Slush casting is useful for casting hollow objects like ornaments, components, and decorative parts.

The metal fully melted before being poured into the mould and given the desired shape. To coat the edges, rotate the mould. The remaining liquid metal is poured out of the container once the metal has settled in the mould. Consequently, inside the mould, a hollow shell metal is created.

Molten metal is once more put into the mould and poured out if the cast needs to be thicker. Up until the appropriate thickness is reached, this procedure is repeated.