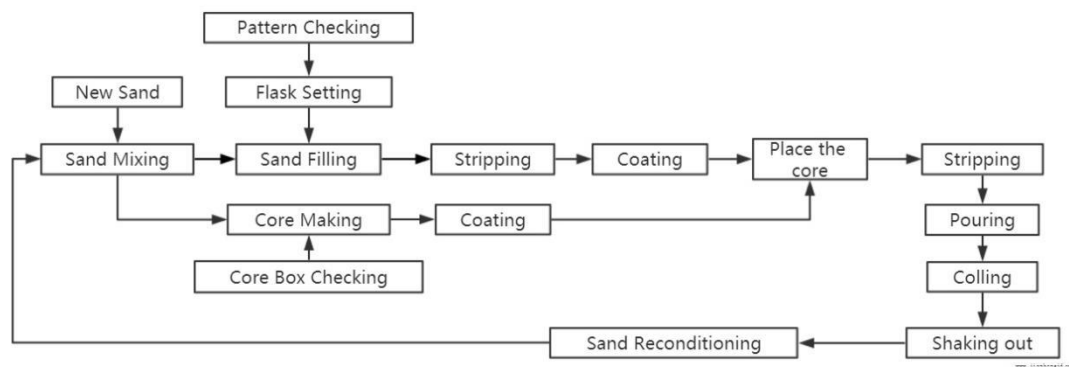


What's no-bake process

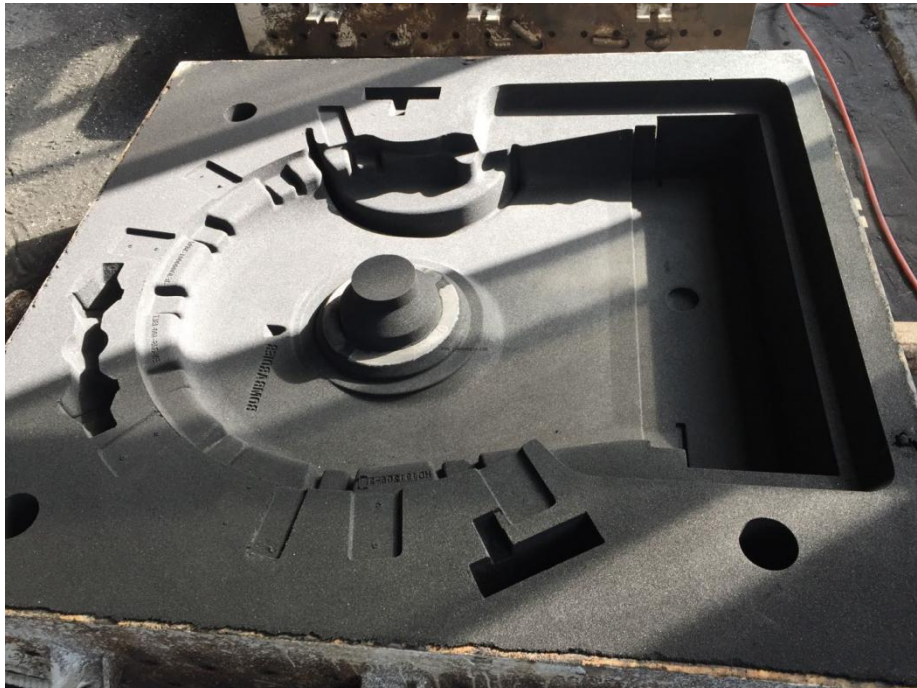
Sand is auto mixed in a mixer with the chemical binder, and forms a strong mixture. The presence of binder in the mixture, helps to keep the sand to remain strongly bound at room temperature. This strong and hard non-reusable sand mixture is then packed around the pattern or multiple patterns made of wood, metal or plastic. Then the casting mold is set, the pattern removed by the roll over process. In the mold cavity, molten metal is poured from the crucible guided by the sprue and the gating.

According to different type of the binder, no-bake process is divided into two types generally: resin sand process and ester hardening sodium silicate sand process, and each type has various applicability and characteristics.



1. Resin sand process

Resin sand process adopt resin as the binder, use chemical as a catalyst to promote the reaction, and make the sand mixture reach enough strength and hardness at room temperature. At present, there are two main types of resins commonly used: Furan resin and Phenolic resin, each of them is applied with specific catalyst.



Advantages:

1. The casting has high dimensional accuracy and smooth surface

- 2.High molding efficiency, improve productivity and site utilization, shorten the production cycle
- 3.Can meet complex shape and internal quality requirements of the casting
- 4.High recovery rate of old sand

Disadvantage:

- 1.The production cost of resin sand is high.
- 2.The production process will discharge toxic gas, cause environment pollution.
- 3.Gas volume is large, and the casting is prone to porosity defects.

2.Ester hardening sodium silicate sand process

The process use sodium silicate water modified by metal reactive ions as biner, organic ester as hardening agent. Casting quality and dimensional accuracy are comparable to resin sand, and overcome the defects such as cracks and pores in the production of resin sand process.



Advantages:

- 1.Lower production cost than resin sand process.
- 2.The rate of hardening can be controlled by selecting different types of curing agent.
- 3.No pollution, the workshop conditions are better.

Disadvantages:

The recovery of old sand is difficult and the recovery rate is lower than resin sand.