

SUBJECT:-PRODUCTION TECHNOLOGY (MECH. 2ND YEAR)

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MOULDING PROCESS

In general moulding methods can be classified in following six categories:

1. Floor Moulding
2. Bench Moulding
3. Pit Moulding
4. Stack moulding
5. Sweep Moulding
6. Machine Moulding.

1. Floor Moulding:

The moulding done on the floor of the foundry is called floor moulding. In this method, one flask is avoided and the foundry floor itself act as a drag.

Uses:

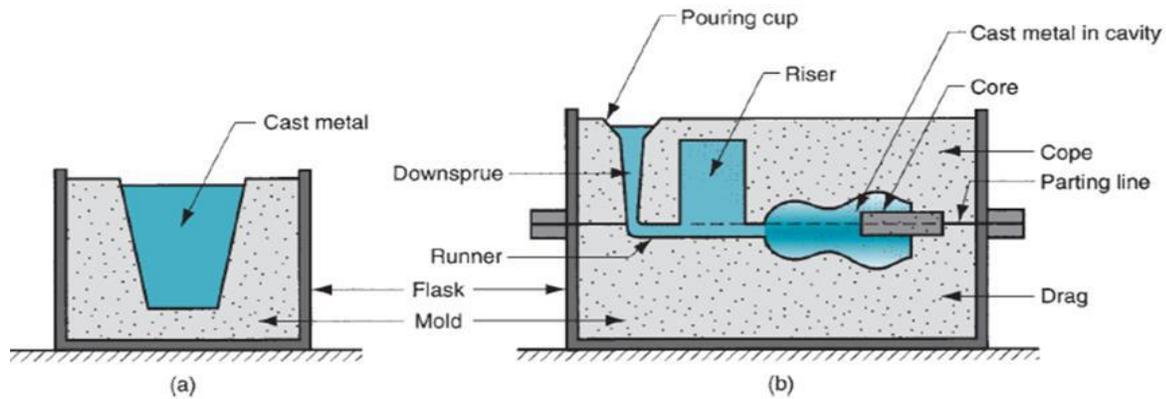
Floor moulding method is used for all medium and heavy castings of metals, having a considerable depth or area.

2. Bench Moulding:

The moulding done on a bench of a convenient height to the moulder, is called bench moulding. The moulder can work while standing.

Uses:

Bench moulding method is used for identical castings of small size for mass production. It is best suitable for non-ferrous castings and light weight castings of metals, in green sand mould.



3. Pit Moulding:

The moulding is done in specially prepared pits in the ground of the foundry, is called pit moulding. The bottom of the pit is often covered with a layer of coke that is 2 to 3 inches thick.

Then a layer of sand is rammed onto the coke to act as a bed for the mould. Vent pipes connect the coke layer to the ground surface.

Moulding of metals is carried out as usual and moulds are almost always dried before pouring the molten metal. A portable mould drier is used to achieve the drying of mould.

A cope is also dried and placed on the pit. A suitable weight or a group of weights are located on the cope to prevent it from floating when the molten metal is poured.

Uses:

Pit moulding method is used for extremely large castings of metals. It is usually employed for producing a single casting of large size that would be difficult to handle patterns of such a size in moulding flasks.

4. Stack Moulding:

The moulding done with 10 to 12 flasks at a time and them all have common sprue for feeding all cavities, is called stack moulding. There are two types of stack moulding: upright and stepped, as shown in Fig. 4.9. In upright stack moulding, 10 to 12 flask sections are stacked up.

The drag cavity is always moulded in the upper surface of the flask section, whereas the cope cavity is moulded in the lower surface. In stepped stack moulding, each section has its own sprue and is, therefore, offset from the one another and provided with the pouring basins. In this, each mould is cast separately.

Uses:

Stack moulding method is best suited for producing a large number of small light castings while using a limited amount of floor area in the foundry.

5. Sweep Moulding:

The moulding is done by using a sweep pattern, is called sweep moulding. A sweep that can be rotated around an axis is used for producing a surface of revolution. The casting produced involves less time and reduced expenses in making a full pattern.

Uses:

Sweep moulding is best suited for large size moulds which are symmetrical in shape and particularly of circular sections.

6. Machine Moulding:

The moulding is done by using a moulding machine, is called machine moulding. A moulding machine performs number of operations which does by moulder hands. The function of these machines is to pack the sand onto the pattern and draw the pattern out from the mould.

Some other operations performed by machine are ; ramming of sand, compressing the sand, forming the gate, forming the runner, drawing out the pattern without enlarging the mould cavity, etc. Machine moulding increases the production rate and productivity.

Uses:

Machine moulding method is employed for high production rate castings of large and medium sized moulds. It is used for producing better quality of moulds.

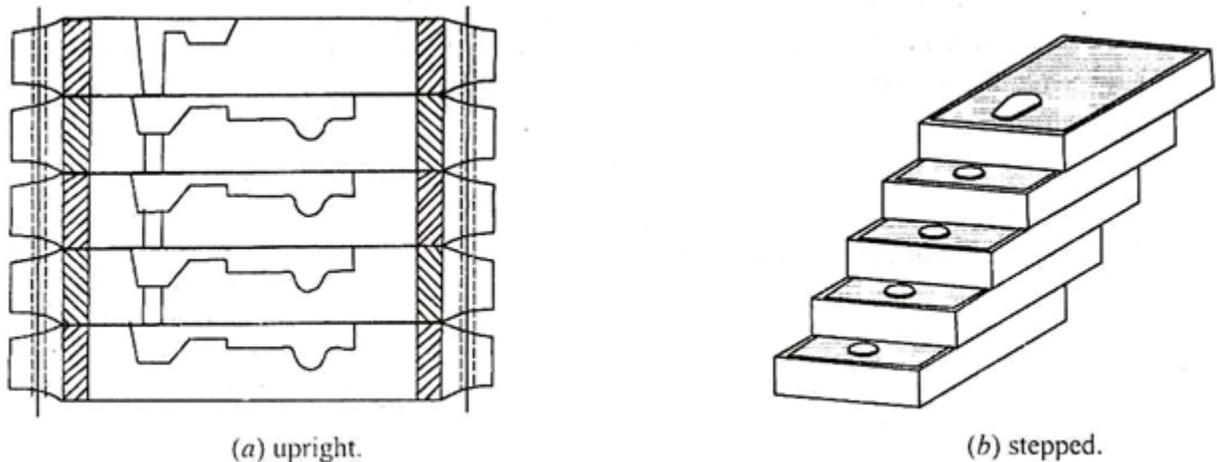


Fig. 4.9. The two types of stack moulding.