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OLEIN PALM OIL AS A BINDER
IN CORE MAKING PROCESS - A STUDY.

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PREFACE

Casting is one of the most important of the manufacturing processes. In many cases, cast parts are ready for use as they come from the casting process, but more often they require subsequent machining and finishing. Machining a block of metal to an intricate shape can be very expensive. High rates of production, good surface finish, small dimensional tolerances and improved properties of materials have enabled both large and small intricate parts to be cast of almost all metals and their alloys.

Casting are made of many different metals and alloys which each metal requires the use of a specific shrinkage allowance in the construction of the pattern. The type and the number of casting that are to be made from a pattern are factors which determine the kind of material to be used for the construction of the pattern.

When a casting is to have a cavity or recess in it such as a hole for a bolt, some form of core must be introduced into the mold. A core is sometimes defined as "any projection of the sand into the mold". This projection may be formed by the pattern itself or made elsewhere and introduced into the mold after the pattern is withdrawn. Either internal or external surface of a casting can be formed by a core.

In many shops, coremaking is considered to be a trade in itself. This highly specialized trade is closely related to both patternmaking and foundry. As is the case in the moulding, core can be made by machine. Core are made in almost as many sizes and shapes as are metal castings. Notice the complex shapes, each of which must have a corresponding core box.

The core is formed by being rammed into a core box or by the use of sweeps. Fragile and medium - sized cores should be reinforced with wires for added strength to with stand deflection and the hydrostatic action of the metal. In large cores, perforated pipes or arbors are used. In addition to giving the core strength , they also served as a large vent. Cores having round section are often made in halves and glued together after baking. A core must have sufficient strength to support itself. Porosity or permeability is also an important consideration in making cores. As the hot metal pours over the cores, gases are generated by the heat being in contact with the binding material. Provision must be made to carry away these gases.

The core must have a smooth surface to ensure a smooth casting. Cores require refractoriness to resist the action of the heat until the hot metal has stabilized.

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