

## 1.4 PRODUCTION

The location of pre casting yards consist of storage facilities suitable for transporting and erection equipment's and availability of raw materials are the critical factors which should be carefully planned and provided for effective and economic use of pre-cast concrete components in construction.

The manufacture of the components can be done in a centrally located factor of in a site where pre casting yards set-up at or near the site of work.

### SYSTEMS PRODUCTION

The term production of systems is describes a series of operation directly concerned In the process of making or more apply of molding precast units on the face of it there are very many techniques since almost every type prefabricates requires a Specific series of operation in its production.

These techniques however may be grouped into three basic method of production. These are

1. The stand system
2. The conveyor belt or production line system
3. The aggregate system

#### Stand system

In the stand system the prefabricates mature at the point where they were molded While the production team moves to successive stands the bed on which prefabricates.

#### Conveyor belt

The conveyor belt system of production splits the whole production process in to a series of operation carried out at a separate successive and permanent point to the heat may be by means of conveyor belt trolleys & crane etc.

#### Aggregate system

The word aggregates describes a large, complex permanently installed set of machines and mechanical application which can carry out most of the separate operation involved in casting concrete components.

### **1.4.2 FACTORY PREFABRICATION**

Factory prefabrication is restored in a centrally located plant for manufacture of standardized components on a long form basis.

It is a capital intensive production where work is done throughout the year preferably under a covered shed to avoid the effects of seasonal variations high level of mechanization can always be introduced in this system where the work can be organized in a factory like manner with the help of constant team of workmen.

The basic disadvantage in factory prefabricated, is the extra cost in occurred in transportation of elements from plant to site of work sometimes the shape and size of prefabricable are to be limited due to lack of suitable transportation equipment roads controls etc.

### **1.4.3 SITE PREFABRICATION**

In this scheme, the components are manufactured at site near the site of work as possible. This system is normally adopted for a specific job order for a short period. The work is normally carried out in open space with locally a valuable labour force. The equipment machinery and moulds are of mobile nature.

Therefore there is a definite economy with respect to cost of transportation. This system suffers from basic drawback of its non-suitability to any high degree of mechanization. It has no elaborate arrangements for quality control.

### **1.4.4 PROCESS OF MANUFACTURE**

The various processes involved in the manufacture of precast elements are classified as follows:

1) Main process

2) Secondary (auxiliary) process

3) Subsidiary process

### **MAIN PROCESS**

It involves the following steps.

- 1) Providing and assembling the moulds, placing reinforcement cage in position for reinforced concrete work, and
- 2) Fixing of inserts and tubes where necessary.
- 3) Depositing the concrete in to the moulds.
- 4) Vibrating the deposited concrete into the moulds.
- 5) Demoulding the forms.
- 6) Curing (steam curing if necessary)
- 7) Stacking the precast products.

### **SECONDARY (AUXILLARY) PROCESS**

This process is necessary for the successful completion of the process covered by the main process.

- 1) Mixing or manufacture of fresh concrete (done in a mixing station or by a mixing plant).
- 2) Prefabrication of reinforcement cage (done in a steel yard or workshop)
- 3) Manufacture of inserts and other finishing items to be incorporated in the main precast products.
- 4) Finishing the precast products.
- 5) Testing the precast products.

### **STAGES OF PREFABRICATED CONCRETE PRODUCT**

## FLOW DIAGRAM OF STAGES OF PROCESSING



