CHAPTER II

LITERATURE REVIEW

1.4 Imposition of Structural Components

In planning a building structure must meet the applicable regulations to obtain a safe building structure in construction. The building structure is planned to be able to withstand dead loads, live loads and seismic loads acting on the building structure the. According to PBI, 1983, understanding of the burdens is:

1. The dead load is the weight of all the parts of a building are fixed, including any additional elements, settlement-completion (finishing), machinery and equipment fixed is an integral part of the building.
2. The burden of life is all costs incurred as a result of residential or the use of a building, and including the loads on the floor that comes from moving goods, machinery andequipment that is not an integral part ofbuilding and can be replaced during the lifetime of the building, soresulting in a change in the loading of the roof and floor.
3. Load the earthquake is equivalent static loads all the work inbuildings or parts of buildings that mimic the effect of movementground by the earthquake, it is interpreted by the earthquake hereare forces within the structure that occurs by movementsoil caused by the earthquake.
4. Wind load is all of the load acting on the building orpart of the building caused by the difference in air pressure.

2.2 Beam

The beam is a structural component of the duty to continue the load supported itself and from the plate to the support columns. Beam resists the forces at work in a direction transverse to the axis that causes bending.

According Nawy (1990), based on the type of collapse, collapse occurs in the beam can be classified into 3 groups (see Figure 2.1).

1. Balanced section.

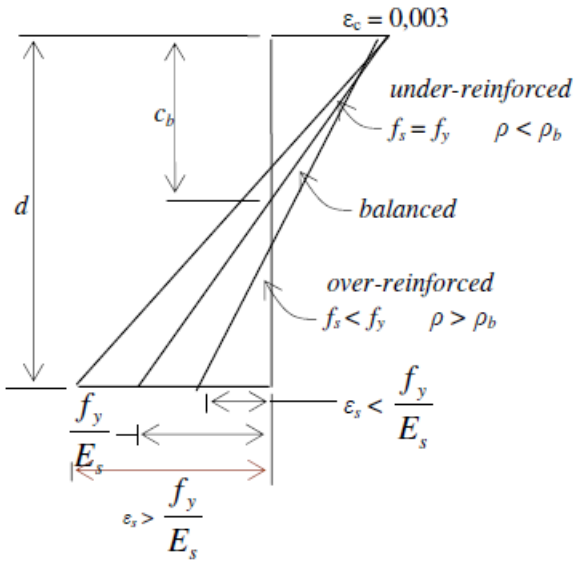
   Reinforcement pulls start yielding right when the concrete reaches the strain limit and will be destroyed because of press. At the beginning of the collapse, the allowable compressive strain at the time of the distressed edge fiber is 0.003 whereas the same strain to strain melting steel is $\varepsilon_y = f_y / E_s$.

2. Over-reinforced section.

   The collapse marked by the destruction of concrete depressed. At the beginning of the collapse, the steel strain ε_s happens is still smaller than its melting ε_y strain. Thus the steel voltage f_s also smaller than its melting voltage f_y. This condition occurs when reinforcement is used more than necessary in a balanced state.

3. Under-reinforced section.

   The collapse marked by melting the steel reinforcement. Such cross-sectional condition can occur if the tensile reinforcement used in the beam is less than that required for the conditionbalanced.



Picture 2.1 . Strain distribution beam section

2.3 Column

Columns are compression members whose cross-sectional dimentions are small compared with their length in the direction of the compressive force. Failure of such members occurs because of instability when a certain load (called the critical or Euler load) is equaled or exceeded. The member may bend or buckle, suddenly and collapse.

2.4 Floor Plate

Floor plate is the main horizontal elements that distribute the loadliving and dead load to the vertical supporting framework of a system structure. These elements can be made so that it works in one directionor work in two directions (Nawy, 1990).