3.2 JOINT FLEXIBILITY

In precast concrete construction the joint between the element are of very important.

- Dry joint
- Wet joint

The wet joints are by using mortar or in-situ concrete where as the dry joint is done by welding or bolting. The following consideration shall be taken into account.

Structural requirements: The connection must with all requirements regarding the transmission of forces, moment and permissible deformation or rotation.

Tolerances: The measure to which deviates must be taken up in the joint. It is called joint flexibility.

Aesthetical requirements : The joints remains completely or in part exposed.

Mode of Erection: With regard to available erection equipment fastest possible erection, and avoidance or minimizing ob bracing, support, etc

Necessity of checking and adjusting : The joint must be checked whether it is proper dimensioned or not . Therefore the adjustment may be possible.

Design of joint:

While designing of joints following points are considered:

It must be based on relevant standard specific codes of practice or recommendation must be relevant

- Loading under working condition
- Stability of structures
- Loading condition during construction
- Effect of shrinkage, creep and temperature
- Unequal settlement

Loading under working condition

The entire structure as well as each unit own must be designed to resist all loads, forces and moments acting there on when the structure is in the use.

Stability of structures

The overall stability of the structure must be need during each phase of construction.

Loading condition during construction

Loading condition during construction my causes higher stresses than those through normal usage. Temperature loads are erected due to erection , material and temperature supports.

Effect of shrinkage, creep and temperature

The fixed end beam connection the stresses and moments due to shrinkage , creep and temperature drop of the beam must be considered or the connection proper and for the structure as a whole.

Unequal settlement

In case of fixed end joint the possibility of settlement at the supports should be investigated.

Reinforcement anchorages:

In general the connection will require additional reinforcement bars and anchorage which must be so designed that a sound fill and proper compaction of the concrete can be realized.

Threaded and non threaded reinforcement inside :

All insert whether Threaded and non threaded reinforcement including those for the securing of piping and of erection aids must be calculated to meet the forces acting there on and must be indicated on the drawing with the relevant measurement.

Chamfers:

Square edges of all precast elements are liable to sapling or chipping and also causes accident.

Bond:

The bond surface which should transmit vertical shear must either be roughed or ribbed

Bolted Connection:

When using bolted connection , tolerance can be increased by either providing one of the plates of each pair with a slot or by drilling the bolt hole.