

- 8- List of projects already completed successfully with the same product/s.

3.6.2 PRE CAST DESIGN GUIDELINES

3.6.2.1 DESIGN CODES:

The following codes and reports are permitted to be used in pre cast design:

- 1. BS 8110-1997
- 2. ACI 318 – latest edition
- 3. PCI Design handbook fifth edition.
- 4. CPCI design manual 4.
- 5. UBC 1997 and ASCE 7-7 (Seismic loads).
- 6. ASCE 7 – latest edition (Wind loads).
- 7. IBC-latest edition (International Building Code)

3.6.2.2 **Durability:** Material strength of factory produced pre cast reinforced and pre-tensioned concrete components shall comply with design performance of the structure during its life span. Concrete cover, fire resistance, crack and deflection control and resistant to chloride ion attack should be maintained within the relevant codes limitations.

3.6.2.3 **Concrete strength:** The 28-day design strength of concrete used in pre cast and pre stressed products shall be 40 MPa minimum. The transfer strength (when the pre stress force is transferred to the concrete) can be 25 MPa or as required by the design.

3.6.2.4 **Span to depth ratio:** as a guidance for span to depth ratios of flexural elements, the following figures could be adopted:

- 1. Hollow core floor slabs: 30 to 40
- 2. Double tee floor slabs: 25 to 35
- 3. Beams: 10 to 20

3.6.2.5 STORAGE, TRANSPORTATION, HANDLING AND ERECTION

Pre cast units shall be designed to resist all kinds of stresses induced by storage, handling, transport and erection, without permanent deformation and shall be braced for handling and transportation when necessary, Figs (3.14 a - f).

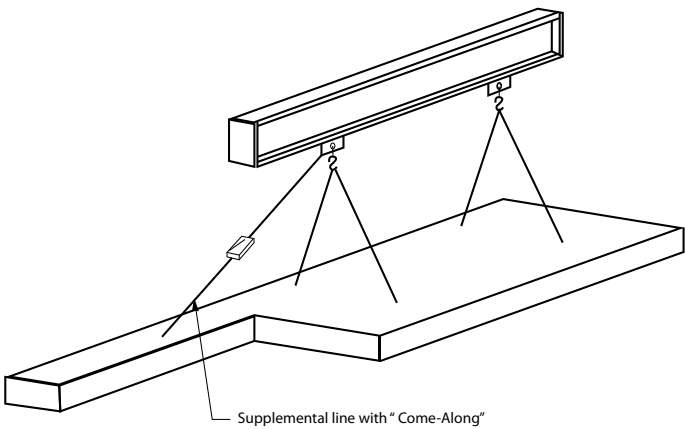
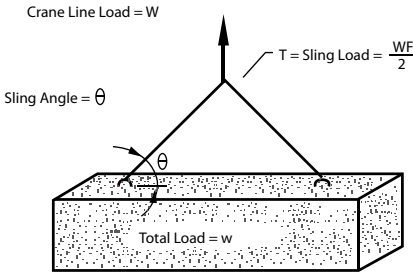


Fig. (3.14a) Supplemental Lifting Points



Multiplication Factor "F" for the Total Load on Sling With a Sling Angle of θ					
θ	90°	75°	60°	45°	30° ^a
F	1.00	1.04	1.16	1.41	2.00
NOTE: θ is usually not less than 60° check bi-directional sling angle.					
^a A 30° sling angle is not recommended.					

Fig. (3.14b) Force in Lift Lines