

5.2. STRUCTURAL ANALYSIS

5.2.1. Scope

The following rules apply to the analysis of the structure under earthquake action with *Equivalent Seismic Load Method* given in 2.3 and with the *Multi-Mode Response Spectrum Analysis Method* given in 2.4.

5.2.2. Stiffness of sections

5.2.2.1 – The stiffness of composite sections in which the concrete is in compression shall be computed using a modular ratio n given in **Eq.(5.1)**.

$$n = \frac{E_a}{E_{cm}} = 7 \quad (5.1)$$

5.2.2.2 – For composite beams with slab in compression, the second moment of area of the section, referred to as I_1 , shall be computed taking into account the effective width of slab defined in 5.4.3.

5.2.2.3 – The stiffness of composite sections in which the concrete is in tension shall be computed assuming that the concrete is cracked and that only the steel parts of the section are active.

5.2.2.4 – For composite beams with slab in tension, the second moment of area of the section, referred to as I_2 , shall be computed taking into account the effective width of slab defined in 5.4.3

5.2.2.5 – The structure should be analysed taking into account the presence of concrete in compression in some zones and concrete in tension in other zones; the distribution of the zones is given in 5.5 to 5.9 for the various structural types.