2.8. ANALYSIS REQUIREMENTS FOR NONSTRUCTURAL SYSTEMS

2.8.1 – Analysis requirements for nonstructural elements in low- to medium rise buildings are given in the following paragraphs. The relevant requirements for tall buildings are given in **5.4**.

2.8.2 – Equivalent seismic loads to be applied to structural appendages such as balconies, parapets, chimneys, etc. and to all architectural elements such as façade and partition panels, etc. as well as the seismic loads to be used for the connections of mechanical and electrical equipment to the structural system elements are given by **Eq.(2.25)**.

$$f_e = 0.2\, S_{SD}\, I_e\, m_e \left(1 + 2 \frac{H_i}{H_N} \right) \qquad \textbf{(2.25)}$$

Seismic load shall be applied horizontally to the mass centre of the element concerned in a direction to result in most unfavourable internal forces. The seismic loads to be applied to non-vertical elements shall be half the equivalent seismic load calculated by **Eq.(2.25)**.

2.8.3 – For the following non-structural elements the, the *Element Importance Factor* I_e shall not be less than 1.5:

(a) Anchorage elements of machinery and equipment required for life safety systems,

(b) Tanks and vessels containing toxic or explosive substances considered to be hazardous to the safety of the general public.

In all other cases, the *Element Importance Factor* I_e may be assumed to be equal to unity.

2.8.4 – In the case where the sum of mechanical or electrical equipment masses, as denoted by m_e in **Eq.(2.25)**, exceeds $0.2m_i$ at any i'th storey, equipment masses and stiffness properties of their connections to the building shall be taken into account in the earthquake analysis of the building structural system.

2.8.5 – In the case where *floor acceleration spectrum* is determined by appropriate methods to define the peak acceleration at the floor where mechanical or electrical equipment is located, **Eq.(2.25)** may not be applied.

2.8.6 – Twice the seismic load calculated by **Eq.(2.25)** or determined according to **2.8.5** shall be considered for fire extinguishing systems, emergency electrical systems as well as for equipments connecting to infill walls and for their connections