

## ANNEXURES

### B.1. BALCONY, TERRACE AND WINDOWS

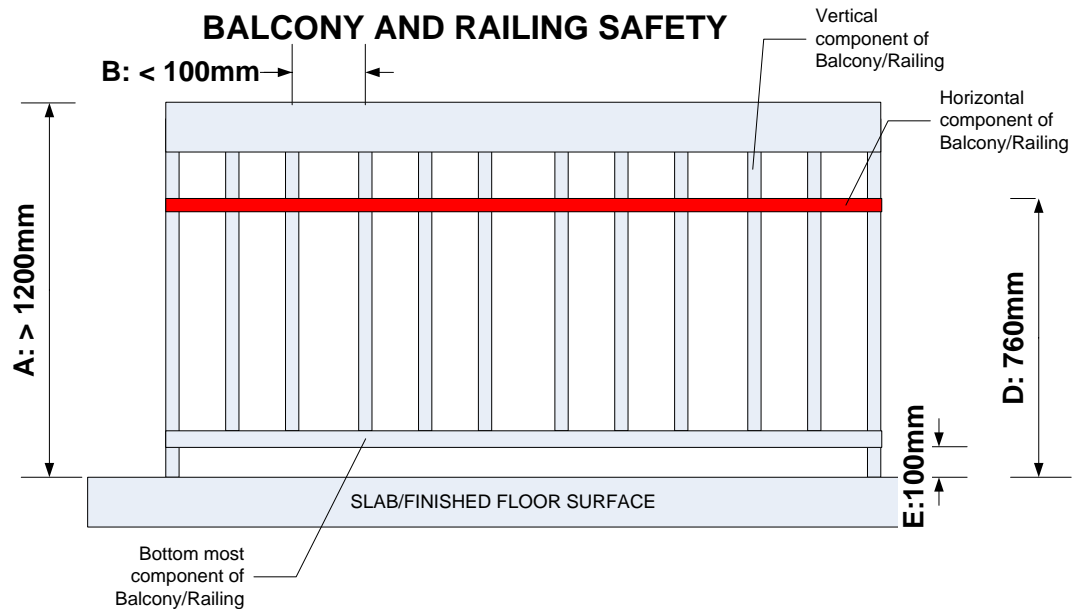
#### 1. AWARENESS

- 1.1. Annexure series B denotes new additions to the UAE Fire and Life Safety Code of Practice.
- 1.2. Codes and regulations cannot prevent falls and accidents involving balconies, windows, railings and terraces. Therefore, awareness of dangers caused by human negligence (Parents and Guardians) is of high importance, especially in these times of high-rise living and working spaces.
- 1.3. **NEVER LEAVE** children, special needs people, mentally challenged, mentally unstable and elderly people **UNATTENDED and UNSUPERVISED** at the balconies, near windows, railings and terraces.
- 1.4. **NEVER KEEP** furniture, bedding, articles or climbable objects near windows, balconies, railings and terraces, which can be translated into **'LADDER'** by innocent and unwary children.
- 1.5. **ALWAYS LOCK** access to terraces, balconies, railings and window panes when children, special needs people, mentally challenged, mentally unstable and elderly people are left unattended.
- 1.6. **ALCOHOL, DRUGS AND INTOXICATION** can cause accidents. As an Adult, behave safely and responsibly near balconies, windows, terraces and railings.

#### 2. MINIMUM CONSTRUCTION REQUIREMENTS FOR BALCONIES AND RAILINGS

- 2.1. Guards are required for any space, walking or standing which is elevated 760mm (30") above the finished grade level.
- 2.2. From the finished floor level, Height of the balcony, terrace railings, elevated space railings **(A)**, shall not be less than 1200mm (47.2").
- 2.3. Balusters openings, the separation distance between vertical posts or members **(B)**, of balcony, guardrail or handrail shall not be more than 100mm (4").
- 2.4. Any opening **(B)** formed by either vertical posts, curved frames or design features in the balcony or railings shall not be more than 100mm (4").

- 2.5. Horizontal elements, bars, climbable features shall not be installed upto 760mm (30"). i.e., upto **(D)**.
- 2.6. If the design demands any gap between finished floor surface and the bottom most horizontal component of the railing **(E)**, such gap shall not be more than 100mm (4")

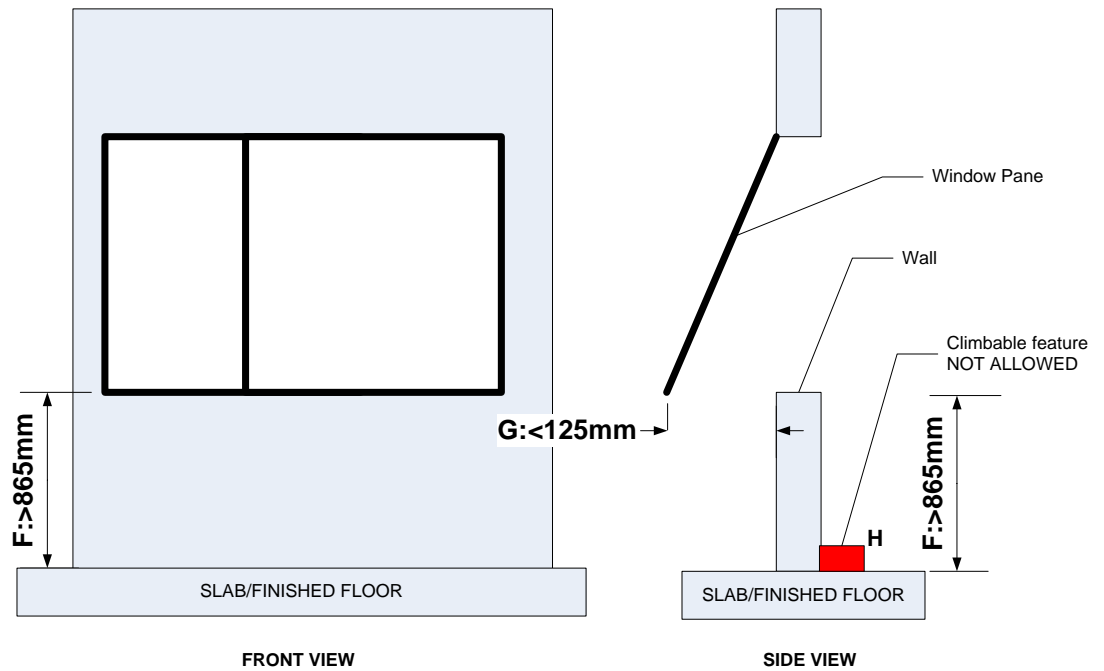


- 2.7. The balcony, Handrail, Guard assembly shall be able to withstand a single concentrated load of 200 pounds (0.89 kN), applied in any direction at any point.
- 2.8. If the design demands usage of glass panels in the balcony construction, such glass shall be reinforced glass which can withstand a load of 200 pounds (0.89kN), applied in any direction at any point.
- 2.9. Balconies and terraces shall not have accesses with self-closing or self-latching doors, which can accidentally lock people outside in the balcony or terrace, compelling them to misadventures such as climbing, descending or crossing over to other balconies.

### 3. MINIMUM CONSTRUCTION REQUIREMENTS FOR WINDOWS

- 3.1. Windows shall not be located at **(F)**, a height less than 865mm (34") from the finished floor surface level.
- 3.2. The window pane, if openable, shall not create a gap of more than **(G)**, 125 mm (5") from the wall, when opened.

- 3.3. The window assembly, shall have reinforced glass and shall be able to withstand a single concentrated load of 200 pounds (0.89 kN), applied in any direction at any point.
- 3.4. There should not be any construction features at the bottom of the window which can be translated into 'ladder or climbing feature' (H).



**WINDOWS**

**4. GLASS IN HANDRAILS AND GUARDS.**

- 4.1. Glass used as structural balustrade panels in railings shall be constructed of one of the following.
  - a. Single fully tempered glass
  - b. Laminated fully tempered glass
  - c. Laminated heat-strengthened glass
- 4.2. Glazing in railing in-fill panels shall meet the following requirements.
  - a. Glazing in railing in-fill panels shall be of an approved safety glazing material
  - b. For all glazing types, the minimum nominal thickness shall be ¼ in. (6.4 mm)
  - a. Fully tempered glass and laminated glass shall comply with Category II of CPSC 16 CFR 1201.

- 4.3.** Structural balustrade panels shall meet the following requirements.
- a.** The panels and their support system shall be designed to withstand the loads specified in ASCE (American Society of Civil Engineers).
  - b.** A safety factor of 4 shall be used.
- 4.4.** Each handrail or guard section shall be supported by a minimum of three glass balusters, or shall be otherwise supported to remain in place if one baluster panel fails, and one of the following criteria shall be met.
- a.** An attached handrail or guard shall be provided.
  - b.** The glass balusters shall be laminated glass with two or more glass plies of equal thickness and the same glass type, and the panels shall be designed to withstand the loads specified in ASCE (American Society of Civil Engineers) and any other structural requirements for a top rail.
- 4.5.** Glazing materials shall not be installed in railings in parking garages, except for pedestrian areas not exposed to impact from vehicles.

## **5. MAINTENANCE OF RAILINGS AND GUARDS**

- 5.1.** Both Facility management and the occupants are responsible for SAFETY of railings and guards.
- 5.2.** Balcony, Terrace and elevated spaces railings and guards shall be inspected regularly for damages and warning signs of wear and tear.
- 5.3.** Some of the warning signs could be corrosion, cracks, bending, loose and shaking members of the railings and guards, including nuts, bolts and fasteners.
- 5.4.** Any unsafe balcony, terrace or elevated spaces' railings and guards shall be replaced immediately.