

3.4.3. Seismic detailing of structural walls

3.4.3.1 – Height of the critical region h_{cr} above the base of the wall is given by Eq.(3.21):

$$h_{cr} = \max \{l_w, h_w / 6\} \quad (3.21)$$

However, the *critical wall height* h_{cr} shall satisfy the following limitations:

$$\begin{aligned} h_{cr} &\leq 2l_w \\ h_{cr} &\leq h_s \quad (n \leq 6 \text{ storeys}) \\ h_{cr} &\leq 2h_s \quad (n \geq 7 \text{ storeys}) \end{aligned} \quad (3.22)$$

3.4.3.2 – Boundary elements shall be appropriately defined at the extremities of the wall cross section. The length of each boundary element along the *critical wall height* shall not be less than 20% of the total plan length of the wall, nor shall it be less than two times the wall thickness. The plan length of each boundary element along the wall section above the *critical wall height* shall not be less than 10% of the total plan length of the wall, nor shall it be less than the wall thickness.

3.4.3.3 – The thickness b_w of the confined parts of the wall section (boundary elements) shall not be less than 200 mm. Moreover, if the length of the confined part does not exceed the maximum of $2 b_w$ and $0.2 l_w$, b_w shall not be less than $h_s/15$. If the length of the confined part exceeds the maximum of $2 b_w$ and $0.2 l_w$, b_w shall not be less than $h_s/10$.

3.4.3.4 – Mechanical volumetric ratio of the required confining reinforcement ω_{wd} in boundary elements is given by Eq.(3.23):

$$\alpha \omega_{wd} = 30 \mu_{\phi} (v_d + \omega_v) \epsilon_{sy,d} \frac{b_c}{b_o} - 0.035 \quad (3.23)$$

where ω_v is the mechanical ratio of vertical web reinforcement ($\omega_v = \rho_v f_{yd,v} / f_{cd}$).

3.4.3.5 – The longitudinal reinforcement ratio in the boundary elements shall be not less than 0.5%.