Table 5.5 – II. Partial effective width b_e of slab for evaluation of plastic moment resistance

Sign of bending moment M	Location	Transverse element	b_e for M_{Rd} (plastic)
Negative M	Interior column	Seismic re-bars	0.1 l
Negative M	Exterior column	All layouts with re-bars anchored to façade beam or to concrete cantilever edge strip	0.1 l
Negative M	Exterior column	All layouts with re-bars not anchored to façade beam or to concrete cantilever edge strip	0
Positive M	Interior column	Seismic re-bars	0.075 l
Positive M	Exterior column	Steel transverse beam with connectors. Concrete slab up to exterior face of column of H section with strong axis or beyond (concrete edge strip). Seismic re-bars	0.075 l
Positive M	Exterior column	No steel transverse beam or steel transverse beam without connectors. Concrete slab up to exterior face of column of H section with strong axis or beyond (edge strip). Seismic re-bars	$b_b/2$ + 0.7 $h_c/2$
Positive M	Exterior column	All other layouts. Seismic re-bars	$b_b/2 \le b_{e,max}$ $b_{e,max}$=0.05 l

5.4.4. Fully encased composite columns

5.4.4.1 – In dissipative structures, critical regions are present at both ends of all column clear lengths in moment frames and in the portion of columns adjacent to links in eccentrically braced frames. The lengths l_{cr} of these critical regions (in metres) are specified by **Eq.(3.12)**, with h_c in these expressions denoting the depth of the composite section (in metres).

5.4.4.2 – To satisfy plastic rotation demands and to compensate for loss of resistance due to spalling of cover concrete, the following expression should be satisfied within the critical regions defined above:

$$\alpha\omega_{wd} = 30\, \mu_\varphi \nu_d\, \varepsilon_{sy,d} \frac{b_c}{b_o} - 0.035 \quad \textbf{(5.5)}$$

in which confinement effectiveness factor α is as defined in **3.3.3.6** and the normalised design axial force ν_d is defined as:

$$\nu_d = \frac{N_{Ed}}{N_{pl,Rd}} = \frac{N_{Ed}}{A_a f_{yd} + A_c f_{cd} + A_s f_{sd}} \quad \textbf{(5.6)}$$

5.4.4.3 – The spacing, s, (in millimetres) of confining hoops in critical regions should not exceed

$$s \le \min\{b_o/2\,,\, 260\,,\, 9d_{bL}\} \quad \textbf{(5.7)}$$