* Midspan moment in a rectangular slab supported at the Corners

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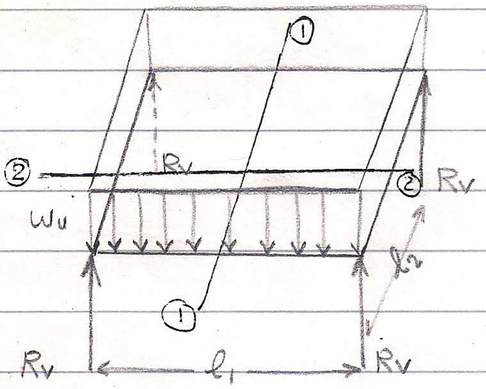
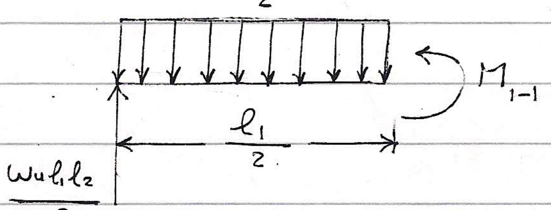
w_u (uniform distributed load / area)



$$R_v = \frac{w_u \cdot l_1 \cdot l_2}{4}$$

$$W = \frac{w_u l_2 l_1}{2}$$



$$M_{1-1} = \frac{w_u \cdot l_1 l_2}{2} * \frac{l_1}{2} - \frac{w_u \cdot l_2 l_1}{2} * \frac{1}{2} * \frac{l_1}{2}$$

$$= \frac{w_u l_1^2 l_2}{4} - \frac{w_u l_1^2 l_2}{8}$$

$$\therefore \boxed{M_{1-1} = \frac{w_u l_1^2 l_2}{8}} \quad \text{Also} \quad \boxed{M_{2-2} = \frac{w_u l_2^2 l_1}{8}}$$

* Minimum thickness of two-way slabs to control deflections.

ACI 9-5-3

(I) slabs w/o interior beams (Table 9-5 (C) in the Code).

f_y MPa	w/o drop panels ≥ 125mm			$\bar{w}$ drop panels ≥ 100mm		
	Exterior Panel		Interior panels	Exterior Panels		Interior panels
	w/o Edge beam	$\bar{w}$ Edge beam*		w/o Edge beam	$\bar{w}$ Edge beam*	
280	$l_n/33$	$l_n/36$	$l_n/36$	$l_n/36$	$l_n/40$	$l_n/40$
420	$l_n/30$	$l_n/33$	$l_n/33$	$l_n/33$	$l_n/36$	$l_n/36$
520	$l_n/28$	$l_n/31$	$l_n/31$	$l_n/31$	$l_n/34$	$l_n/34$

* Slab $\bar{w}$ beams along ext. edges, $\alpha \geq 0.8$ for the edge beam.

l_n = clear distance between columns.

$$\boxed{\alpha = \frac{E_{cb} I_b}{E_{cs} I_s}}$$

α = ratio of flexural stiffness of a beam section to flexural stiffness of the slab