

4" x 8" Architectural Colored Lintels — Technical Design Information

Design Data:

$f'_c = 3,000$ psi (minimum)

$F_y = 60,000$ psi (per **ASTM-A615**)

Average weight per lineal foot of beam - 28 lbs.

Design formulas as per ACI 318-95:

$M_n =$ Moment governed by ultimate strength $= 0.9 (A_s) (f_y) (d-a/2)$

$V_n =$ Shear governed by ultimate strength $\leq 1/2 \phi (2\sqrt{f'_c} b_w d)$

$M_n = 1/8 W_n (L_2)^2$

$V_n = 1/2 W_n L_2$

max = Maximum allowable deflection $= L_2/360 \leq 0.3"$

UL Fire Ratings= 1 1/2 hour

Typical Section:

Width (W) = 3.625 inches

Height (H) = 7.625 inches

Eff. Depth (d) = H - 1 1/2" 1/2 bar dia.

As a minimum, the lintels carry the apex area above the span. An example of the uniform equivalent apex load calculation follows.

Hollow masonry block weights for determining uniform equivalent apex load on lintel:

8" block weight - 35 psf (Hollow)

12" block weight - 50 psf (Hollow)

Equivalent load of apex area - .33 WL

Effective span "L" of lintel (centerline of bearing to centerline of bearing).

Weight of masonry block, "W" PSF

EXAMPLE

Equivalent apex load for 4" X 8" Lintel with effective span of 48"

Apex Load = (.33) (W) (L) = .33 (35 psf/2) (48" /12) = **23#/FT**

Capacity of 4 X 8 lintel with effective span of 48"

(from load table for live loads) = 852 #/FT

Therefore, the lintel has significant excess capacity. If superimposed load is located within apex area, then

refer to the load tables to ensure sufficient capacity.

1. Reinforcement Rods (A_s)	Top	Not Required							1#3				1#3				
	Bottom	1#3							1#3				1#4				
2. Nom. lintel length (inches)		32	36	40	42	44	48	54	58	60	64	66	72	78	80	84	88
3. Masonry Opening L_1 (inches)		16	20	24	26	28	32	38	40	44	48	50	56	62	64	68	72
4. Effective Span L_2 (inches)		24	28	32	34	36	40	46	48	52	56	58	64	70	72	76	80
5. Maximum allowable load**	(lbs./ft.)	5797	4271	3701	3253	2957	2091	1606	1449	1236	1063	1006	816	1165	1088	980	881
Dead Load	(lbs./ft.)	4141	3051	2644	2324	2112	1494	1147	1035	883	759	719	583	832	777	700	629
Live Load	(lbs./ft.)	3410	2512	2177	1914	1739	1230	945	852	727	625	592	480	685	640	576	518
6. Maximum bending moment capacity, M_n ***	(lbs./ft.)	2898	2898	2898	2898	2898	2898	2898	2898	2898	2898	2898	2898	4900	4900	4900	4900

** Maximum allowable superimposed W_n uniformly distributed load covered by bending (lbs./ft.)

*** For special loading conditions compare actual moment to M_n

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