

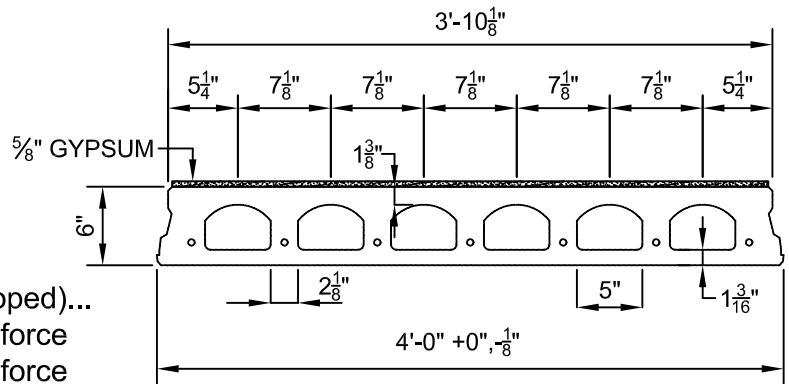
Prestressed Concrete 6"x4'-0" NiCore Plank

2 Hour Fire Resistance Rating (Gypsum Topping)

PHYSICAL PROPERTIES Precast	
A = 187 in. ²	b _w = 16.13 in.
I = 757 in. ⁴	S _b = 245 in. ³
Y _b = 3.09 in.	S _t = 260 in. ³
Y _t = 2.91 in.	Wt. = 195 PLF
e = 1.34 in.	Wt. = 48.75 PSF

DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)...
 - 7-3/8"Ø, 270K = 46.4 k-ft at 60% jacking force
 - 6-1/2"Ø, 270K = 67.2 k-ft at 60% jacking force
 - 7-1/2"Ø, 270K = 75.5 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10\sqrt{f'_c} = 775$ PSI
- All superimposed load is treated as live load in the strength analysis of flexure and shear.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Load values to the left of the solid line are controlled by ultimate shear strength.
- Load values to the right are controlled by ultimate flexural strength or fire endurance limits.
- A minimum of 5/8" thick gypsum topping is needed to achieve the 2 Hour & 0 Minute fire resistance rating.
- Camber is inherent in all prestressed hollow core slabs and is a function of the amount of eccentric prestressing force needed to carry the superimposed design loads along with a number of other variables. Because prediction of camber is based on empirical formulas it is at best an estimate, with the actual camber usually higher than calculated values.
- The safe superimposed service loads listed below are on top of the gypsum. The weight of the gypsum has already been taken into account with the hollow core slab weight.
- At 2 hours the calculated strand temperature is 790 degrees Fahrenheit @ 49% of yield strength.



SAFE SUPERIMPOSED SERVICE LOADS																	IBC 2012 & ACI 318-11 (1.2 D + 1.6 L)									
Strand Pattern		SPAN (FEET)																								
		16																								
		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						
6 - 1/2"Ø	LOAD (PSF)	353	322	295	273	244	215	189	165	143	125	110	96	84	73	64	55	48	41	35						
7 - 1/2"Ø	LOAD (PSF)	407	372	341	303	269	244	225	197	172	152	133	118	104	92	81	71	63	55	48						



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This table is for simple spans and uniform loads. Design data for any of these span-load conditions is available on request. Individual designs may be furnished to satisfy unusual conditions of heavy loads, concentrated loads, cantilevers, flange or stem openings and narrow widths. The allowable loads shown in this table reflect a 2 Hour & 0 Minute fire resistance rating.