

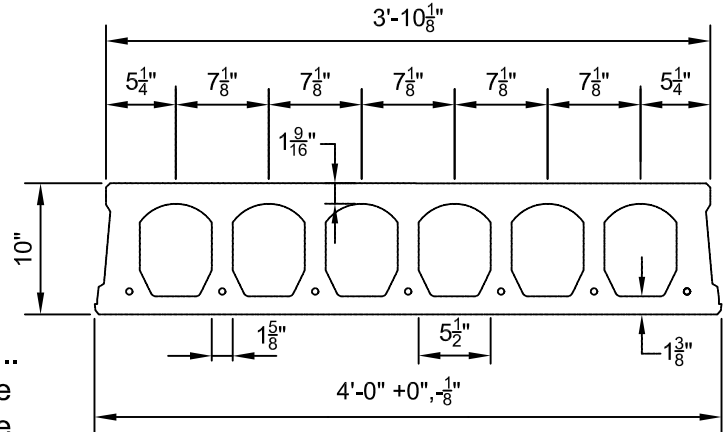
# Prestressed Concrete 10"x4'-0" NiCore Plank

2 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast	
A = 262 in. <sup>2</sup>	b <sub>w</sub> = 13.13 in.
I = 3196 in. <sup>4</sup>	S <sub>b</sub> = 640 in. <sup>3</sup>
Y <sub>b</sub> = 4.99 in.	S <sub>t</sub> = 638 in. <sup>3</sup>
Y <sub>t</sub> = 5.01 in.	Wt. = 272 PLF
e = 3.24 in.	Wt. = 68.00 PSF

## DESIGN DATA

- Precast Strength @ 28 days = 6000 PSI
- Precast Strength @ release = 3800 PSI
- Precast Density = 150 PCF
- Strand = 1/2"Ø and 0.6"Ø 270K Lo-Relaxation.
- Strand Height = 1.75 in.
- Ultimate moment capacity (when fully developed)...  
6-1/2"Ø, 270K = 142.3 k-ft at 60% jacking force  
7-1/2"Ø, 270K = 163.4 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 structural fire endurance.
- 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.
- 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)																			
		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
6 - 1/2"Ø	LOAD (PSF)	167	150	134	121	108	97	87	77	69	61	54	48	42	37	31	26	<del>XXXXXXXXXX</del>			
7 - 1/2"Ø	LOAD (PSF)	204	184	166	150	136	123	111	100	91	82	73	66	59	52	46	41				



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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.