

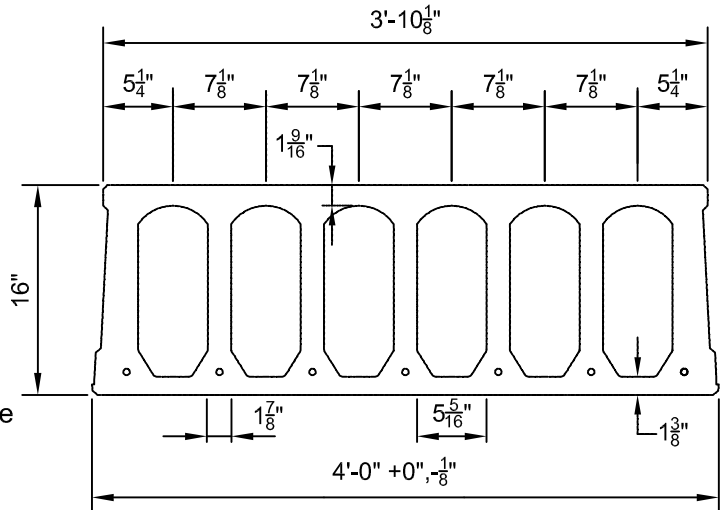
Prestressed Concrete 16"x4'-0" NiCore Plank

3 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast	
A = 352 in. ²	b _w = 14.25 in.
I = 10,985 in. ⁴	S _b = 1,379 in. ³
Y _b = 7.97 in.	S _t = 1,367 in. ³
Y _t = 8.03 in.	Wt. = 367 PLF
e = 6.19 in.	Wt. = 91.75 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)..
7-1/2"Ø, 270K = 295.8 k-ft at 60% jacking force
7-0.6"Ø, 270K = 406.8 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 flexural strength analysis. To determine the allowable live load if the amount of superimposed dead load is known use the following conversion method...



$$\text{Allowable Live Load} = \frac{(1.6)(\text{Load Table Value}) - (1.2)(\text{Superimposed Dead Load})}{1.6}$$

- If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
- Flexural strength capacity is based on stress/strain strand relationships.
- Deflection limits were not considered when determining allowable loads in this table.
- Span/strand combinations to the left of and below the solid line require 3/8"Ø top strands.
- Load values are controlled by ultimate flexural strength, structural fire endurance, or ultimate web shear.
- Some load values are controlled by ultimate web shear strength per ACI Equation 11-1 and Section 11.4.6.1(b). Shear capacity can be increased by partially filling cores in order to achieve flexural capacity.
- 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		SPAN (FEET)																										
Strand Pattern		24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60								
7 - 1/2"Ø	LOAD (PSF)	251	225	182	147	118	94	74	57	42	30	19	9	/							/							
7 - 0.6"Ø	LOAD (PSF)	254	227	205	186	169	154	141	117	97	79	64	51	39	29	20	11	/							/			



This load table is for general information only for preliminary design. It is not intended for final design without competent professional examination and verification of its accuracy, suitability, and applicability by a licensed professional engineer, designer, or architect. It 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.