

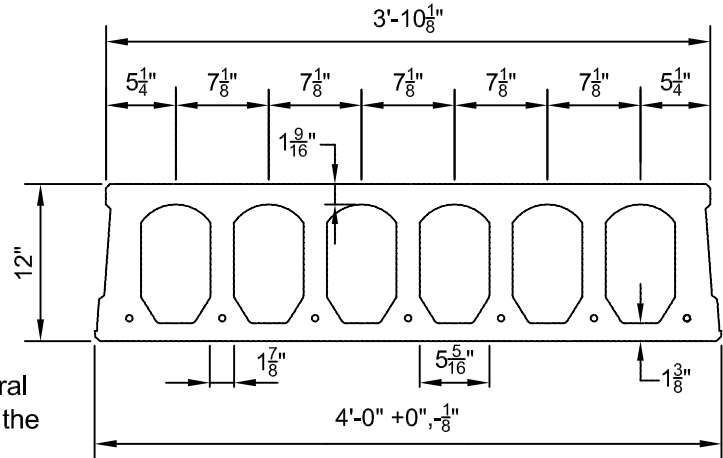
Prestressed Concrete 12"x4'-0" NiCore Plank

1 Hour Fire Resistance Rating (Untopped)

PHYSICAL PROPERTIES Precast	
A = 296 in. ²	b _w = 14.25 in.
I = 5191 in. ⁴	S _b = 867 in. ³
Y _b = 5.99 in.	S _t = 863 in. ³
Y _t = 6.01 in.	Wt. = 308 PLF
e = 4.24 in.	Wt. = 77.00 PSF

DESIGN DATA

1. Precast Strength @ 28 days = 6000 PSI
2. Precast Strength @ release = 3800 PSI
3. Precast Density = 150 PCF
4. Strand = 1/2"Ø 270K Lo-Relaxation.
5. Strand Height = 1.75 in.
6. Ultimate moment capacity (when fully developed)..
6-1/2"Ø, 270K = 180.4 k-ft at 60% jacking force
7-1/2"Ø, 270K = 207.5 k-ft at 60% jacking force
7. Maximum bottom tensile stress is $10\sqrt{f'_c} = 775$ PSI
8. 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...



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

9. If the above conversion is used then allowable stress limits must be checked so they are not exceeded.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Deflection limits were not considered when determining allowable loads in this table.
12. Load values to the left of the solid line are controlled by ultimate shear strength.
13. Load values to the right are controlled by ultimate flexural strength or allowable service stresses.
14. 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.

Strand Pattern		SAFE SUPERIMPOSED SERVICE LOADS																		
		SPAN (FEET)																		
		29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
6 - 1/2"Ø	LOAD (PSF)	208	191	175	161	148	137	126	116	106	98	90	83	76	70	64	58	53	48	44
7 - 1/2"Ø	LOAD (PSF)	247	229	211	194	179	166	154	142	131	121	112	104	96	89	82	76	70	64	59