

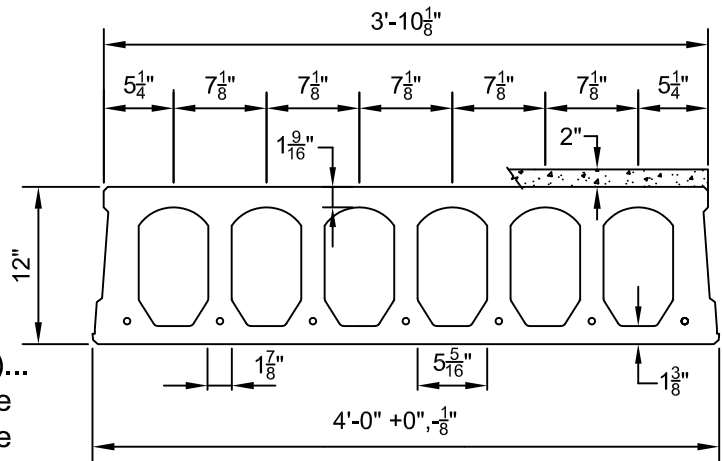
Prestressed Concrete 12"x4'-0" NiCore Plank

2 Hour Fire Resistance Rating With 2" Topping

PHYSICAL PROPERTIES Composite Section	
$A_c = 361 \text{ in.}^2$	Precast $b_w = 14.25 \text{ in.}$
$I_c = 7840 \text{ in.}^4$	Precast $S_{bcp} = 1081 \text{ in.}^3$
$Y_{bcp} = 7.26 \text{ in.}$	Topping $S_{tct} = 1644 \text{ in.}^3$
$Y_{tcp} = 4.74 \text{ in.}$	Precast $S_{tcp} = 1653 \text{ in.}^3$
$Y_{tct} = 6.74 \text{ in.}$	Precast Wt. = 308 PLF
	Precast Wt. = 77.00 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 = 205.4 k-ft at 60% jacking force
7-1/2"Ø, 270K = 235.4 k-ft at 60% jacking force
- Maximum bottom tensile stress is $10 \sqrt{f'_c} = 775 \text{ PSI}$
- 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.
- Topping Strength @ 28 days = 3000 PSI. Topping Weight = 25 PSF.
- These tables are based upon the topping having a uniform 2" thickness over the entire span. A lesser thickness might occur if camber is not taken into account during design, thus reducing the load capacity.
- All load values are controlled by ultimate flexural strength or fire endurance limits.
- 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)	242	217	194	174	156	140	125	111	99	87	77	68	59	51	43	36	29	23	18
7 - 1/2"Ø	LOAD (PSF)	295	266	240	217	196	177	160	144	130	117	105	94	84	74	65	57	50	43	36

NITTERHOUSE
CONCRETE PRODUCTS



2655 Molly Pitcher Hwy. South, Box 2013
Chambersburg, PA 17202-9203
717-267-4505 Fax 717-267-4518

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.