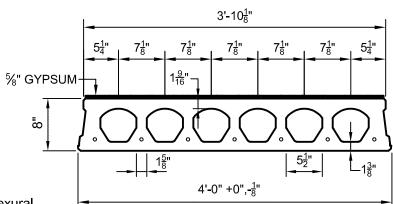
Prestressed Concrete 8"x4'-0" NiCore Plank

3 Hour Fire Resistance Rating (Gypsum Topping)

 $\begin{array}{ccc} \text{PHYSICAL PROPERTIES} \\ & \text{Precast} \\ \text{A = 235 in.}^2 & \text{b}_{\text{w}} = 13.13 \text{ in.} \\ \text{I = 1838 in.}^4 & \text{S}_{\text{b}} = 459 \text{ in.}^3 \\ \text{Y}_{\text{b}} = 4.00 \text{ in.} & \text{S}_{\text{t}} = 459 \text{ in.}^3 \\ \text{Y}_{\text{f}} = 4.00 \text{ in.} & \text{Wt.= 245 PLF} \\ \text{e = 2.25 in.} & \text{Wt.= 61.25 PSF} \\ \end{array}$

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).. 7-3/8"Ø, 270K = 70.6 k-ft at 60% jacking force 6-1/2"Ø, 270K = 104.7 k-ft at 60% jacking force 7-1/2"Ø, 270K = 119.8 k-ft at 60% jacking force
- 7. Maximum bottom tensile stress is $10\sqrt{fc}$ = 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...



Allowable Live Load = (1.6)(Load Table Value) - (1.2)(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 are controlled by ultimate flexural strength or structural fire endurance.
- 13. 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.
- 14. 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.
- 15. At 3 hours the calculated strand temperature is 925 degrees Farenheit @ 32% of yield strength

SAFE SUPERIMPOSED SERVICE LOADS																				
Strand Pattern		SPAN (FEET)																		
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6 - 1/2"ø	LOAD (PSF)	212	183	158	136	118	102	88	76	65	55	47	39	32	26	21	16	$/ \setminus$	><	<
7 - 1/2"ø	LOAD (PSF)	256	221	192	168	146	128	112	98	85	74	64	55	47	40	34	28	22	18	13



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.