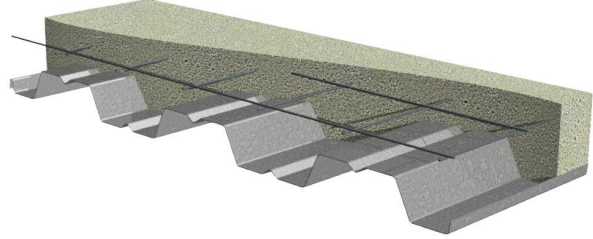
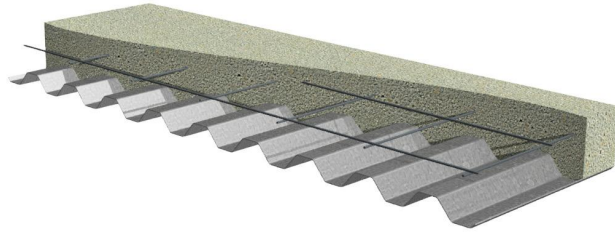


# NON-COMPOSITE SLAB DESIGN



## Design Notes for Reinforced Concrete Slabs

**Concrete Design** - Design of concrete slabs in accordance with ACI is the responsibility of the structural engineer of record. Values listed in these tables are provided as an aid in selecting the appropriate deck and Vulcraft does not assume responsibility for the design of the slab.

**Temperature and Shrinkage Reinforcing** - Temperature and shrinkage effects in the concrete shall be controlled by methods permitted by ACI 318. The designer shall be permitted to consider only the area of concrete above the deck.

**Shoring** - Slabs temporarily shored during construction must deduct the weight of the slab from the calculated capacity of the reinforced concrete slab.

**Deck Finish** - Galvanized form deck can be considered a permanent support in most applications. When uncoated or painted deck is used, the weight of the concrete slab shall be deducted from the calculated capacity of the reinforced concrete slab.

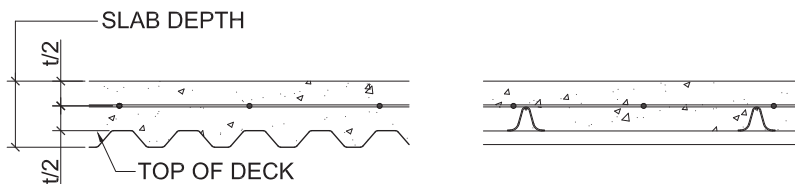
**Allowable Slab Loads** - These tables are based on an interior three span condition using moment coefficients from ACI 318- 14 Section 6.5.2. Moment coefficients must be adjusted for end spans, single spans, or double spans.

$f'_c = 3,000 \text{ psi}$	$\phi = 0.90$	$b = 12 \text{ in}$	$+ M = 1/16W L^2$	$+ M_c = T (d-a/2)/12$
$f_y = 60,000 \text{ psi}$	$T = A_s f_y$	$a = T/0.85 f'_c b$	$- M = 1/12W L^2 (L \leq 10 \text{ ft.})$	$- M_c = T (d-na)/12$
			$- M = 1/10W L^2 (L > 10 \text{ ft.})$	$M_L = \phi M_c / 1.6$

**Serviceability** - Tabulated values are not evaluated for deflection.

**Span Ratio** - The tabulated concrete cover thicknesses (t) for the table values shown meet the ratio of span/28 per ACI 318-14 Section 7.3.1.5.

**Reinforcing Placement** - Reinforcing shall be located at center of topping.



**Venting Non-Composite Deck** - Check with Vulcraft representative for availability.



**SLOT VENTS**

- 0.6C, 1.0C and 1.3C – Do not include slot vents in bottom flange. Sidelap vents optional.
- 0.6CSV, 1.0CSV and 1.3CSV – Specify if bottom flange slot vents are required.

NOTICE: Design defects that could cause injury or death may result from relying on the information in this document without independent verification by a qualified professional. The information in this document is provided "AS IS". Nucor Corporation and its affiliates expressly disclaim: (i) any and all representations, warranties and conditions and (ii) all liability arising out of or related to this document and the information in it.

# REINFORCED CONCRETE SLABS ON NC DECK

## ALLOWABLE SUPERIMPOSED UNIFORM LOADS (psf) FOR 0.6C DECK

3 Span Condition

Slab Depth		Reinforcement		Clear Span (ft-in.)											
Total	Topping	WWR	A <sub>s</sub>	2'-0"	2'-3"	2'-6"	2'-9"	3'-0"	3'-3"	3'-6"	3'-9"	4'-0"	4'-6"	5'-0"	
2"	1½"	6x6-W2.1xW2.1	0.042	251	198	161	133	112	95	82					
		6x6-W2.9xW2.9	0.058	339	268	217	179	151	128	111					
		6x6-W4.0xW4.0	0.080	400	358	290	240	201	172	148					
2½"	2"	6x6-W2.9xW2.9	0.058	400	365	295	244	205	175	151	131	115	91		
		6x6-W4.0xW4.0	0.080	400	400	398	329	276	236	203	177	156	123		
		4x4-W2.9xW2.9	0.087	400	400	400	355	298	254	219	191	168	133		
3"	2½"	6x6-W2.9xW2.9	0.058	400	400	374	309	260	221	191	166	146	115	93	
		6x6-W4.0xW4.0	0.080	400	400	400	400	351	299	258	225	198	156	127	
		4x4-W2.9xW2.9	0.087	400	400	400	400	380	324	279	243	214	169	137	
3½"	3"	6x6-W4.0xW4.0	0.080	400	400	400	400	400	363	313	273	240	190	154	
		4x4-W2.9xW2.9	0.087	400	400	400	400	400	393	339	295	260	205	166	
		4x4-W4.0xW4.0	0.120	400	400	400	400	400	400	400	398	350	276	224	
4"	3½"	6x6-W4.0xW4.0	0.080	400	400	400	400	400	400	368	321	282	223	181	
		4x4-W2.9xW2.9	0.087	400	400	400	400	400	400	399	348	305	241	196	
		4x4-W4.0xW4.0	0.120	400	400	400	400	400	400	400	400	400	326	264	
4½"	4"	4x4-W2.9xW2.9	0.087	400	400	400	400	400	400	400	400	351	278	225	
		4x4-W4.0xW4.0	0.120	400	400	400	400	400	400	400	400	400	376	305	
		#3 @ 9" o.c.	0.147	400	400	400	400	400	400	400	400	400	400	400	368

## ALLOWABLE SUPERIMPOSED UNIFORM LOADS (psf) FOR 1.0C DECK

3 Span Condition

Slab Depth		Reinforcement		Clear Span (ft-in.)											
Total	Topping	WWR	A <sub>s</sub>	3'-0"	3'-3"	3'-6"	3'-9"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	
2½"	1½"	6x6-W2.1xW2.1	0.042	112	95	82	71								
		6x6-W2.9xW2.9	0.058	151	128	111	96								
		6x6-W4.0xW4.0	0.080	201	172	148	129								
3"	2"	6x6-W2.9xW2.9	0.058	205	175	151	131	115	91						
		6x6-W4.0xW4.0	0.080	276	236	203	177	156	123						
		4x4-W4.0xW4.0	0.120	397	338	292	254	223	176						
3½"	2½"	6x6-W2.9xW2.9	0.058	260	221	191	166	146	115	93	77				
		6x6-W4.0xW4.0	0.080	351	299	258	225	198	156	127	105				
		4x4-W4.0xW4.0	0.120	400	400	374	326	287	226	183	152				
4"	3"	6x6-W4.0xW4.0	0.080	400	363	313	273	240	190	154	127	107	91	78	
		4x4-W2.9xW2.9	0.087	400	393	339	295	260	205	166	137	115	98	85	
		4x4-W4.0xW4.0	0.120	400	400	400	398	350	276	224	185	156	133	114	
4½"	3½"	6x6-W4.0xW4.0	0.080	400	400	368	321	282	223	181	149	125	107	92	
		4x4-W2.9xW2.9	0.087	400	400	399	348	305	241	196	162	136	116	100	
		4x4-W4.0xW4.0	0.120	400	400	400	400	400	326	264	219	184	156	135	
5"	4"	4x4-W2.9xW2.9	0.087	400	400	400	400	351	278	225	186	156	133	115	
		4x4-W4.0xW4.0	0.120	400	400	400	400	400	376	305	252	212	180	156	
		#3 @ 9" o.c.	0.147	400	400	400	400	400	400	368	304	256	218	188	

# REINFORCED CONCRETE SLABS ON NC DECK

## ALLOWABLE SUPERIMPOSED UNIFORM LOADS (psf) FOR 1.3C DECK

3 Span Condition

Slab Depth		Reinforcement		Clear Span (ft-in.)										
Total	Topping	WWR	A <sub>s</sub>	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"
3 <sup>5</sup> / <sub>16</sub> "	2"	6x6-W2.9xW2.9	0.058	115	91									
		6x6-W4.0xW4.0	0.080	156	123									
		4x4-W2.9xW2.9	0.087	168	133									
3 <sup>13</sup> / <sub>16</sub> "	2½"	6x6-W2.9xW2.9	0.058	146	115	93	77							
		6x6-W4.0xW4.0	0.080	198	156	127	105							
		4x4-W2.9xW2.9	0.087	214	169	137	113							
4 <sup>5</sup> / <sub>16</sub> "	3"	6x6-W4.0xW4.0	0.080	240	190	154	127	107	91	78				
		4x4-W2.9xW2.9	0.087	260	205	166	137	115	98	85				
		4x4-W4.0xW4.0	0.120	350	276	224	185	156	133	114				
4 <sup>13</sup> / <sub>16</sub> "	3½"	6x6-W4.0xW4.0	0.080	282	223	181	149	125	107	92	80	71		
		4x4-W2.9xW2.9	0.087	305	241	196	162	136	116	100	87	76		
		4x4-W4.0xW4.0	0.120	400	326	264	219	184	156	135	118	103		
5 <sup>5</sup> / <sub>16</sub> "	4"	4x4-W2.9xW2.9	0.087	351	278	225	186	156	133	115	100	88	78	69
		4x4-W4.0xW4.0	0.120	400	376	305	252	212	180	156	136	119	106	94
		#3 @ 9" o.c.	0.147	400	400	368	304	256	218	188	164	144	127	114
5 <sup>13</sup> / <sub>16</sub> "	4½"	4x4-W4.0xW4.0	0.120	400	400	345	285	240	204	176	154	135	120	107
		#3 @ 9" o.c.	0.147	400	400	400	345	290	247	213	186	163	145	129
		#4 @ 12" o.c.	0.196	400	400	400	400	378	322	278	242	213	188	168

## ALLOWABLE SUPERIMPOSED UNIFORM LOADS (psf) FOR 1.5C DECK

3 Span Condition

Slab Depth		Reinforcement		Clear Span (ft-in.)										
Total	Topping	WWR	A <sub>s</sub>	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"
3½"	2"	6x6-W2.9xW2.9	0.058	115	91									
		6x6-W4.0xW4.0	0.080	156	123									
		4x4-W2.9xW2.9	0.087	168	133									
4"	2½"	6x6-W2.9xW2.9	0.058	146	115	93	77							
		6x6-W4.0xW4.0	0.080	198	156	127	105							
		4x4-W2.9xW2.9	0.087	214	169	137	113							
4½"	3"	6x6-W4.0xW4.0	0.080	240	190	154	127	107	91	78				
		4x4-W2.9xW2.9	0.087	260	205	166	137	115	98	85				
		4x4-W4.0xW4.0	0.120	350	276	224	185	156	133	114				
5"	3½"	6x6-W4.0xW4.0	0.080	282	223	181	149	125	107	92	80	71		
		4x4-W2.9xW2.9	0.087	305	241	196	162	136	116	100	87	76		
		4x4-W4.0xW4.0	0.120	400	326	264	219	184	156	135	118	103		
5½"	4"	4x4-W2.9xW2.9	0.087	351	278	225	186	156	133	115	100	88	78	69
		4x4-W4.0xW4.0	0.120	400	376	305	252	212	180	156	136	119	106	94
		#3 @ 9" o.c.	0.147	400	400	368	304	256	218	188	164	144	127	114
6"	4½"	4x4-W4.0xW4.0	0.120	400	400	345	285	240	204	176	154	135	120	107
		#3 @ 9" o.c.	0.147	400	400	400	345	290	247	213	186	163	145	129
		#4 @ 12" o.c.	0.196	400	400	400	400	378	322	278	242	213	188	168

# REINFORCED CONCRETE SLABS ON NC DECK

## ALLOWABLE SUPERIMPOSED UNIFORM LOADS (psf) FOR 2C DECK

3 Span Condition

Slab Depth		Reinforcement		Clear Span (ft-in.)										
Total	Topping	WWR	A <sub>s</sub>	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"
4½"	2½"	6x6-W2.9xW2.9	0.058	93	77									
		6x6-W4.0xW4.0	0.080	127	105									
		4x4-W2.9xW2.9	0.087	137	113									
5"	3"	6x6-W2.9xW2.9	0.058	113	93	78	67	58						
		6x6-W4.0xW4.0	0.080	154	127	107	91	78						
		4x4-W2.9xW2.9	0.087	166	137	115	98	85						
5½"	3½"	6x6-W4.0xW4.0	0.080	181	149	125	107	92	80	71				
		4x4-W2.9xW2.9	0.087	196	162	136	116	100	87	76				
		4x4-W4.0xW4.0	0.120	264	219	184	156	135	118	103				
6"	4"	4x4-W2.9xW2.9	0.087	225	186	156	133	115	100	88	78	69		
		4x4-W4.0xW4.0	0.120	305	252	212	180	156	136	119	106	94		
		#3 @ 9" o.c.	0.147	368	304	256	218	188	164	144	127	114		
6½"	4½"	4x4-W4.0xW4.0	0.120	345	285	240	204	176	154	135	120	107	96	86
		#3 @ 9" o.c.	0.147	400	345	290	247	213	186	163	145	129	116	104
		#4 @ 12" o.c.	0.196	400	400	378	322	278	242	213	188	168	151	136
7"	5"	4x4-W4.0xW4.0	0.120	386	319	268	228	197	172	151	134	119	107	96
		#3 @ 9" o.c.	0.147	400	386	325	277	239	208	183	162	144	130	117
		#4 @ 12" o.c.	0.196	400	400	400	361	312	271	239	211	188	169	153

## ALLOWABLE SUPERIMPOSED UNIFORM LOADS (psf) FOR 3C DECK

3 Span Condition

Slab Depth		Reinforcement		Clear Span (ft-in.)										
Total	Topping	WWR	A <sub>s</sub>	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"
5"	2"	6x6-W2.9xW2.9	0.058	44	38	33	29	26	23					
		6x6-W4.0xW4.0	0.080	59	51	44	39	34	31					
		4x4-W2.9xW2.9	0.087	64	55	48	42	37	33					
5½"	2½"	6x6-W2.9xW2.9	0.058	55	48	42	36	32	29	26	23			
		6x6-W4.0xW4.0	0.080	75	65	56	49	44	39	35	32			
		4x4-W4.0xW4.0	0.120	109	94	82	72	63	57	51	46			
6"	3"	6x6-W4.0xW4.0	0.080	91	78	68	60	53	47	43	38	29	26	24
		4x4-W2.9xW2.9	0.087	98	85	74	65	57	51	46	42	31	29	26
		4x4-W4.0xW4.0	0.120	133	114	100	87	77	69	62	56	42	39	35
6½"	3½"	6x6-W4.0xW4.0	0.080	107	92	80	71	62	56	50	45	34	31	28
		4x4-W2.9xW2.9	0.087	116	100	87	76	68	60	54	49	37	34	31
		4x4-W4.0xW4.0	0.120	156	135	118	103	92	82	73	66	50	46	42
7"	4"	4x4-W2.9xW2.9	0.087	133	115	100	88	78	69	62	56	42	39	35
		4x4-W4.0xW4.0	0.120	180	156	136	119	106	94	84	76	58	53	48
		#3 @ 9" o.c.	0.147	218	188	164	144	127	114	102	92	70	63	58
7½"	4½"	4x4-W4.0xW4.0	0.120	204	176	154	135	120	107	96	86	65	59	54
		#3 @ 9" o.c.	0.147	247	213	186	163	145	129	116	104	79	72	66
		#4 @ 12" o.c.	0.196	322	278	242	213	188	168	151	136	103	94	86