

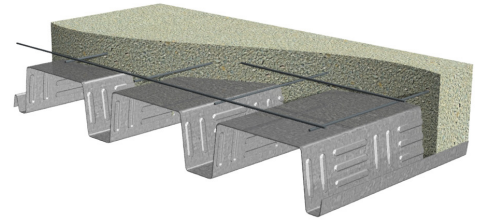
# PLN™-24/N-24 FORMLOK® COMPOSITE DECKS

## GRADE 50 STEEL

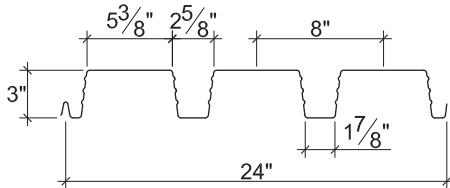
LRFD

### N-24 FORMLOK DECKS

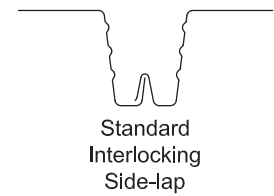
- PLN-24 FormLok Deck used with PunchLok® II System
- N-24 FormLok Deck used with TSWs or BPs
- N-24-SS FormLok Deck used with Side-lap Screws



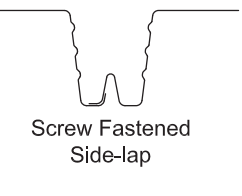
### Nominal Dimensions



PLN-24 or N-24 FormLok



N-24-SS FormLok



### Section Properties

Deck Gage	Deck Weight $w_{dd}$ (psf)	Base Metal Thickness $t$ (in.)	Yield Strength $F_y$ (ksi)	Effective Moment of Inertia at Service Load $I_d = (2I_e + I_g)/3$		Effective Section Modulus at $F_y = 50$ ksi		Vertical Web Shear $\phi V_n$ (lb/ft)
				$I_{d+}$ (in <sup>4</sup> /ft)	$I_{d-}$ (in <sup>4</sup> /ft)	$S_{e+}$ (in <sup>3</sup> /ft)	$S_{e-}$ (in <sup>3</sup> /ft)	
22	2.2	0.0299	50	0.733	0.857	0.344	0.429	4024
20	2.6	0.0359	50	0.907	1.031	0.443	0.531	6097
18	3.5	0.0478	50	1.267	1.369	0.652	0.735	10772
16	4.2	0.0598	50	1.642	1.706	0.837	0.914	13429

### Design Reactions at Supports Based on Web Crippling, $\phi R_n$ (lb/ft)

Deck Gage	Bearing Length of Webs											
	One-Flange Loading						Two-Flange Loading					
	End Bearing				Interior Bearing		End Bearing				Interior Bearing	
	1 1/2"	2"	3"	4"	4"	8"	1 1/2"	2"	3"	4"	4"	8"
22	911	1001	1152	1279	1933	2257	880	948	1062	1158	2275	2683
20	1286	1409	1615	1789	2711	3360	1327	1424	1588	1726	3244	4077
18	2197	2395	2728	3008	4587	5740	2477	2646	2928	3166	5607	7128
16	3334	3621	4102	4507	6912	8563	3991	4246	4672	5032	8559	10780

### Standard Features

- ASTM A653 SS GR50 Min., with G60 or G90, white or gray primer bottom optional
- ASTM A1008 SS GR50 Min. with gray primer bottom
- Standard lengths – 6'-0" to 40'-0"
- IAPMO UES ER-2018 and UL Listed
- Tables conform to ANSI/SDI C-2017

### Optional Features

- Inquire regarding cost and lead times for:
  - Short cuts < 6'-0"
  - Sheet Lengths > 40'-0"
  - Alternative metallic and painted finishes
- Factory Vent Tabs

# PLN™-24/N-24 FORMLOK® DECK-SLABS

## NORMAL WEIGHT CONCRETE (145 pcf)

LRFD

Slab Depth		Maximum Unshored Spans			Composite Deck-Slab Properties				
		Deck Gage	Maximum Unshored Construction Clear Span			Concrete + Deck (psf)	Deflection $I_d = (I_{cr} + I_u)/2$ (in <sup>4</sup> /ft)	Moment $\phi M_{no}$ (kip-ft/ft)	Shear $\phi V_{no}$ (kip/ft)
Total	Topping		1	2	3				
5"	2"	22	9'-11"	11'-6"	11'-8"	36.6	6.13	4.52	3.08
		20	11'-7"	13'-2"	13'-7"	37.0	6.57	5.28	3.08
		18	13'-3"	15'-5"	15'-9"	37.9	7.38	6.70	3.08
		16	14'-1"	17'-2"	16'-7"	38.6	8.12	8.03	3.08
6½"	3½"	22	8'-7"	9'-11"	10'-1"	54.7	13.34	6.41	4.31
		20	9'-11"	11'-6"	11'-8"	55.1	14.27	7.51	4.31
		18	12'-1"	13'-6"	13'-11"	56.0	15.95	9.56	4.31
		16	12'-10"	15'-0"	15'-2"	56.7	17.47	11.51	4.31
7½"	4½"	22	7'-11"	9'-2"	9'-4"	66.8	20.60	7.89	5.20
		20	9'-2"	10'-8"	10'-9"	67.2	21.99	9.27	5.20
		18	11'-6"	12'-6"	12'-11"	68.1	24.51	11.88	5.20
		16	12'-3"	13'-11"	14'-4"	68.8	26.82	14.28	5.20

**Note:**

- Maximum unshored spans do not consider web-crippling. Required bearing should be determined based on specific span conditions.

### Superimposed Design Load, $\phi W_n$ , / Deflection at L/360 (psf)

NWC (145 pcf),  $f'_c = 3000$  psi

Total Slab Depth	Deck Gage	Span (ft-in.)							
		8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	16'-0"
5"	22	521/523	402/367	317/267	255/201	207/154	170/121	140/97	97/65
	20	616/561	477/394	378/287	304/215	249/166	205/130	171/104	120/70
	18	724/629	616/442	490/322	397/242	326/186	271/146	228/117	163/78
	16	723/693	638/486	569/354	484/266	400/205	334/161	281/129	204/86
6½"	22	735/1138	567/799	446/582	357/438	290/337	237/265	195/212	134/142
	20	872/1217	675/855	534/623	430/468	351/360	289/283	240/227	168/152
	18	1009/1361	877/956	697/696	565/523	464/403	385/317	323/253	231/170
	16	1008/1491	888/1047	793/763	692/573	571/441	476/347	401/278	291/186
7½"	22	906/1758	699/1234	551/900	441/676	358/520	293/409	241/328	166/219
	20	1078/1876	835/1318	661/960	532/721	434/556	358/437	297/350	209/234
	18	1218/2092	1073/1469	868/1071	703/804	578/619	480/487	403/390	289/261
	16	1217/2288	1072/1607	957/1171	861/880	710/678	593/533	500/427	363/286

**Notes:**

- For high loads long term concrete creep should be considered.
- Use Composite Deck-Slab Strength Web Based Solutions for alternate slabs or ASD design.

# PLN™-24/N-24 FORMLOK® DECK-SLABS

## LIGHT WEIGHT CONCRETE (110 pcf)

LRFD

Slab Depth		Maximum Unshored Spans			Composite Deck-Slab Properties				
		Deck Gage	Maximum Unshored Construction Clear Span			Concrete + Deck (psf)	Deflection $I_d = (I_{cr} + I_u)/2$ (in <sup>4</sup> /ft)	Moment $\phi M_{no}$ (kip-ft/ft)	Shear $\phi V_{no}$ (kip/ft)
Total	Topping		1	2	3				
5"	2"	22	11'-0"	12'-9"	12'-11"	28.3	4.79	4.28	3.08
		20	12'-10"	14'-5"	14'-11"	28.7	5.18	4.98	3.08
		18	14'-1"	16'-11"	16'-10"	29.6	5.88	6.28	3.08
		16	15'-0"	18'-9"	17'-8"	30.3	6.52	7.50	3.08
5½"	2½"	22	10'-5"	12'-1"	12'-3"	32.9	6.31	4.84	3.47
		20	12'-2"	13'-9"	14'-3"	33.3	6.82	5.64	3.47
		18	13'-8"	16'-2"	16'-3"	34.2	7.71	7.11	3.47
		16	14'-6"	17'-11"	17'-1"	34.9	8.52	8.48	3.47
6¼"	¾"	22	9'-9"	11'-4"	11'-5"	39.7	9.21	5.77	4.09
		20	11'-4"	12'-11"	13'-4"	40.1	9.93	6.73	4.09
		18	13'-1"	15'-2"	15'-7"	41.0	11.21	8.50	4.09
		16	13'-10"	16'-10"	16'-5"	41.7	12.35	10.16	4.09

**Note:**

- Maximum unshored spans do not consider web-crippling. Required bearing should be determined based on specific span conditions.

		Superimposed Design Load, $\phi W_n$ , / Deflection at L/360 (psf)					LWC (110 pcf), $f'_c = 3000$ psi			
Total Slab Depth	Deck Gage	Span (ft-in.)								
		8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	16'-0"	
5"	22	501/408	388/287	308/209	249/157	203/121	168/95	140/76	99/51	
	20	588/442	457/310	364/226	295/170	242/131	201/103	169/82	121/55	
	18	734/502	585/352	467/257	379/193	313/148	261/117	220/93	160/62	
	16	733/556	648/390	563/284	459/214	380/164	318/129	269/103	198/69	
5½"	22	565/538	438/378	348/275	280/207	229/159	189/125	158/100	111/67	
	20	665/581	517/408	411/297	332/223	273/172	227/135	190/108	136/72	
	18	827/658	661/462	527/337	429/253	353/195	295/153	249/122	181/82	
	16	826/727	730/510	636/372	518/279	429/215	359/169	304/135	223/90	
6¼"	22	673/785	522/552	413/402	333/302	272/232	225/183	187/146	132/98	
	20	792/847	616/595	490/433	396/325	325/251	270/197	226/158	162/105	
	18	973/956	790/671	630/489	512/368	423/283	353/222	297/178	216/119	
	16	972/1054	859/740	762/539	621/405	514/312	430/245	364/196	267/131	

**Notes:**

- For high loads long term concrete creep should be considered.
- Use Composite Deck-Slab Strength Web Based Solutions for alternate slabs or ASD design.

## PLN-24/N-24 FormLok Deck-Slab Information

$f'_c = 3000$  psi

### Recommended Reinforcing for Temperature and Shrinkage

Total Slab Depth (in.)	Cover Depth (in.)	Theoretical Concrete Volume (yd <sup>3</sup> /100 ft <sup>2</sup> )	Min. A <sub>s</sub> for T&S (in. <sup>2</sup> )	WWR	(OR)	Bekaert Dramix® Steel Fiber Alternate to WWR (lb/yd <sup>3</sup> )
						4D 65/60BG
<b>Normal Weight Concrete (145 pcf)</b>						
5	2	0.88	0.028	6x6-W1.4xW1.4		23
5½	2½	1.03	0.028	6x6-W1.4xW1.4		18
6	3	1.19	0.028	6x6-W1.4xW1.4		15
6½	3½	1.34	0.032	6x6-W2.1xW2.1		15
7½	4½	1.65	0.041	6x6-W2.1xW2.1		15
<b>Light Weight Concrete (110 pcf)</b>						
5	2	0.88	0.028	6x6-W1.4xW1.4		33
5½	2½	1.03	0.028	6x6-W1.4xW1.4		25
6¼	3¼	1.26	0.029	6x6-W2.1xW2.1		20
7¼	4¼	1.57	0.038	6x6-W2.1xW2.1		20

**Notes:**

1. FRC reinforcement is based on IAPMO UES ER-465.
2. Dramix® fibers may be used in UL or ULC fire rated assemblies in lieu of WWR. See UL file R19307 for additional information.

For information on Bekaert Dramix® fibers contact 770-514-2295 or [infobuilding@beckaert.com](mailto:infobuilding@beckaert.com)

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