

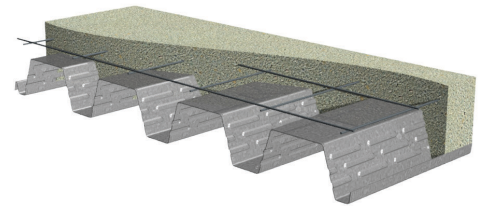
# PLN3™-32/N3-32 FORMLOK® COMPOSITE DECKS

## GRADE 50 STEEL

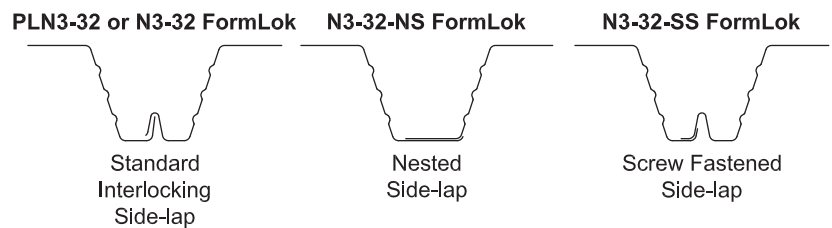
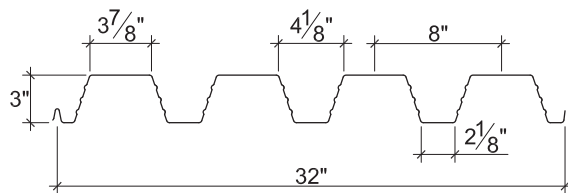
ASD

### N3 FORMLOK DECKS

- PLN3-32 FormLok Deck used with PunchLok® II System
- N3-32 FormLok Deck used with TSWs or BPs
- N3-32-NS FormLok Deck used with Side-lap Screws
- N3-32-SS FormLok Deck used with Side-lap Screws



### Nominal Dimensions



### 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 $V_n/\Omega$ (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)	
20	2.4	0.0359	50	0.890	0.953	0.452	0.509	3829
18	3.1	0.0478	50	1.229	1.273	0.671	0.722	6823
16	3.9	0.0598	50	1.570	1.587	0.883	0.932	9108

### Allowable Reactions at Supports Based on Web Crippling, $R_n/\Omega$ (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"
20	794	870	997	1104	1737	2153	811	871	971	1055	2065	2596
18	1359	1481	1687	1860	2940	3682	1520	1623	1797	1943	3573	4547
16	2062	2240	2537	2788	4428	5495	2453	2609	2871	3092	5455	6883

### 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

# PLN3™-32/N3-32 FORMLOK® DECK-SLABS

## NORMAL WEIGHT CONCRETE (145 pcf)

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		Maximum Unshored Spans			Composite Deck-Slab Properties				
Slab Depth	Deck Gage	Maximum Unshored Construction Clear Span			Concrete + Deck (psf)	Deflection $I_d = (I_{cr} + I_u)/2$ (in <sup>4</sup> /ft)	Moment $M_{no}/\Omega$ (kip-ft/ft)	Shear $V_{no}/\Omega$ (kip/ft)	
		1	2	3					
Total	Topping								
5"	2"	20	11'-4"	12'-7"	13'-0"	40.7	7.31	3.80	3.12
		18	12'-10"	14'-11"	15'-2"	41.4	8.12	4.84	3.12
		16	13'-7"	16'-10"	16'-0"	42.2	8.87	5.83	3.12
6½"	3½"	20	9'-11"	11'-1"	11'-5"	58.9	15.64	5.23	4.59
		18	11'-10"	13'-2"	13'-7"	59.6	17.32	6.70	4.59
		16	12'-6"	14'-11"	14'-8"	60.4	18.86	8.10	4.59
7½"	4½"	20	9'-2"	10'-4"	10'-8"	71.0	23.86	6.27	5.70
		18	11'-3"	12'-4"	12'-9"	71.7	26.37	8.07	5.70
		16	12'-0"	13'-11"	14'-1"	72.5	28.66	9.78	5.70

**Note:**

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

### Superimposed Allowable Load, $W_n/\Omega$ , Limited by 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"	15'-0"	16'-0"
5"	20	433	334	262	210	170	138	114	94	77
	18	563	436	345	266	205	161	129	105	86
	16	686	531	387	291	224	176	141	114	94
6½"	20	595	457	359	287	231	188	154	127	104
	18	778	602	476	383	312	257	214	178	149
	16	952	739	587	475	389	323	270	227	192
7½"	20	713	548	430	343	277	225	185	152	125
	18	936	725	573	461	376	310	257	215	180
	16	1149	893	709	573	470	390	326	275	233

**Notes:**

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

# PLN3™-32/N3-32 FORMLOK® DECK-SLABS

## LIGHT WEIGHT CONCRETE (110 pcf)

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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 $M_{no}/\Omega$ (kip-ft/ft)	Shear $V_{no}/\Omega$ (kip/ft)
Total	Topping		1	2	3				
5"	2"	20	12'-6"	13'-9"	14'-2"	31.5	5.67	3.60	3.12
		18	13'-9"	16'-3"	16'-3"	32.2	6.38	4.56	3.12
		16	14'-6"	18'-1"	17'-0"	33.0	7.03	5.47	3.12
5½"	2½"	20	11'-11"	13'-2"	13'-7"	36.1	7.43	4.03	3.58
		18	13'-4"	15'-8"	15'-9"	36.8	8.34	5.11	3.58
		16	14'-1"	17'-7"	16'-6"	37.6	9.16	6.13	3.58
6¼"	¾"	20	11'-3"	12'-5"	12'-10"	43.0	10.75	4.74	4.32
		18	12'-9"	14'-9"	15'-1"	43.7	12.05	6.02	4.32
		16	13'-6"	16'-8"	15'-10"	44.5	13.21	7.23	4.32

**Note:**

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

### Superimposed Allowable Load, $W_n/\Omega$ , Limited by 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"	15'-0"	16'-0"
5"	20	418	323	247	186	143	112	90	73	60
	18	538	382	278	209	161	126	101	82	68
	16	599	421	307	230	177	139	111	90	74
5½"	20	467	361	286	230	187	147	118	96	79
	18	602	468	364	274	211	165	132	108	89
	16	728	549	400	300	231	182	145	118	97
6¼"	20	549	424	335	270	220	181	150	125	105
	18	709	551	438	354	290	239	191	155	128
	16	859	669	533	433	333	262	210	171	140

**Notes:**

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

## PLN3-32/N3-32 FormLok Deck-Slab Information

Total Slab 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> )	Recommended Reinforcing for Temperature and Shrinkage				
			WWR (OR)	Bekaert Dramix® Steel Fiber Alternates to WWR (pcy)			
				3D 65/60BG	3D 80/60BG	4D 65/60BG	4D 80/60BG or 5D 65/60BG
<b>Normal Weight Concrete (145 pcf)</b>							
5	0.98	0.028	6x6-W1.4xW1.4	27	22	33	34
5½	1.13	0.028	6x6-W1.4xW1.4	22	14	33	34
6	1.29	0.028	6x6-W1.4xW1.4	19	14	33	34
6½	1.44	0.032	6x6-W2.1xW2.1	18	14	33	34
7½	1.75	0.041	6x6-W2.1xW2.1	18	14	33	34
<b>Light Weight Concrete (110 pcf)</b>							
5	0.98	0.028	6x6-W1.4xW1.4	N/A	33	33	34
5½	1.13	0.028	6x6-W1.4xW1.4	30	27	33	34
6¼	1.37	0.029	6x6-W2.1xW2.1	22	23	33	34
7¼	1.67	0.038	6x6-W2.1xW2.1	22	23	33	34

### Notes:

1. Recommended WWR reinforcing is for minimum temperature and shrinkage per SDI-C. Larger WWR may be required to comply with UL Fire Resistant Designs.
2. FRC reinforcement is based on IAPMO UES ER-497 and ER-465.
3. Dramix® 4D 65/60BG, 4D 80/60BG and 5D 65/60BG should only be used when both required for diaphragm reinforcement and with minimum  $f'_c = 4000$  psi.
4. Dramix® fibers may be used in UL or ULC fire rated assemblies in lieu of WWR. See UL file R13907 for additional information.
5. For information on Bekaert Dramix® fibers contact 770-514-2295 or [infobuilding@bekaert.com](mailto:infobuilding@bekaert.com).
6. DRAMIX is a registered trademark of Bekaert.

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