

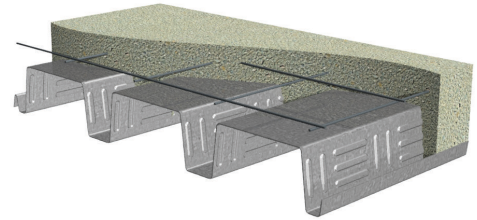
PLN™-24/N-24 FORMLOK® COMPOSITE DECKS

GRADE 50 STEEL

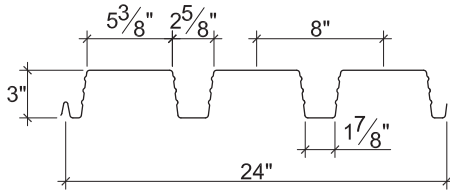
ASD

N-24 FORMLOK DECKS

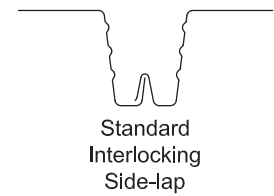
- PLN-24 FormLok Deck used with PunchLok® II System
- N-24 FormLok Deck used with TSWs or BPs
- N-24-SS FormLok Deck used with Side-lap Screws



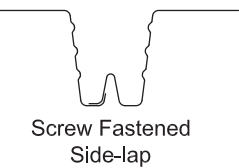
Nominal Dimensions



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 V_n/Ω (lb/ft)
				I_{d+} (in ⁴ /ft)	I_{d-} (in ⁴ /ft)	S_{e+} (in ³ /ft)	S_{e-} (in ³ /ft)	
22	2.2	0.0299	50	0.733	0.857	0.344	0.429	2648
20	2.6	0.0359	50	0.907	1.031	0.443	0.531	4011
18	3.5	0.0478	50	1.267	1.369	0.652	0.735	7087
16	4.2	0.0598	50	1.642	1.706	0.837	0.914	8835

Allowable Reactions at Supports Based on Web Crippling, R_n/Ω (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	595	654	753	836	1299	1517	575	620	694	757	1530	1803
20	840	921	1055	1169	1822	2259	867	931	1038	1128	2181	2741
18	1436	1566	1783	1966	3084	3859	1619	1729	1914	2070	3769	4792
16	2179	2367	2681	2946	4647	5757	2609	2775	3054	3289	5754	7247

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)

ASD

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 ⁴ /ft)	Moment M_{no}/Ω (kip-ft/ft)	Shear V_{no}/Ω (kip/ft)
Total	Topping		1	2	3				
5"	2"	22	9'-11"	11'-7"	11'-8"	36.6	6.13	3.04	2.05
		20	11'-7"	13'-3"	13'-7"	37.0	6.57	3.55	2.05
		18	13'-3"	15'-6"	15'-9"	37.9	7.38	4.50	2.05
		16	14'-1"	17'-2"	16'-7"	38.6	8.12	5.40	2.05
6½"	3½"	22	8'-7"	10'-0"	10'-1"	54.7	13.34	4.31	2.87
		20	10'-0"	11'-7"	11'-9"	55.1	14.27	5.05	2.87
		18	12'-1"	13'-7"	14'-1"	56.0	15.95	6.43	2.87
		16	12'-10"	15'-1"	15'-2"	56.7	17.47	7.74	2.87
7½"	4½"	22	8'-0"	9'-3"	9'-4"	66.8	20.60	5.30	3.47
		20	9'-3"	10'-9"	10'-10"	67.2	21.99	6.23	3.47
		18	11'-6"	12'-8"	13'-1"	68.1	24.51	7.99	3.47
		16	12'-3"	14'-1"	14'-6"	68.8	26.82	9.60	3.47

Note:

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

Superimposed Allowable Load, W_n/Ω , 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"	22	343	263	206	164	132	107	87	71	58
	20	407	313	247	197	160	130	104	85	70
	18	475	406	322	242	186	146	117	95	78
	16	474	417	354	266	205	161	129	105	86
6½"	22	483	370	289	230	184	149	121	98	79
	20	575	443	348	278	225	183	150	124	102
	18	661	579	458	369	301	248	206	172	144
	16	660	581	517	454	373	309	259	218	185
7½"	22	596	457	357	283	227	184	149	121	98
	20	712	548	431	345	279	227	187	154	127
	18	798	702	570	459	375	309	257	215	181
	16	797	701	624	561	464	385	322	272	231

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.

PLN™-24/N-24 FORMLOK® DECK-SLABS

LIGHT WEIGHT CONCRETE (110 pcf)

ASD

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 ⁴ /ft)	Moment M_{no}/Ω (kip-ft/ft)	Shear V_{no}/Ω (kip/ft)
Total	Topping		1	2	3				
5"	2"	22	10'-11"	12'-9"	12'-10"	28.3	4.79	2.88	2.05
		20	12'-9"	14'-5"	14'-11"	28.7	5.18	3.35	2.05
		18	14'-1"	16'-10"	16'-10"	29.6	5.88	4.22	2.05
		16	15'-0"	18'-8"	17'-8"	30.3	6.52	5.04	2.05
5½"	2½"	22	10'-4"	12'-1"	12'-3"	32.9	6.31	3.26	2.32
		20	12'-2"	13'-10"	14'-3"	33.3	6.82	3.79	2.32
		18	13'-8"	16'-2"	16'-3"	34.2	7.71	4.78	2.32
		16	14'-6"	17'-11"	17'-1"	34.9	8.52	5.70	2.32
6¼"	¾"	22	9'-9"	11'-4"	11'-5"	39.7	9.21	3.88	2.73
		20	11'-4"	13'-0"	13'-4"	40.1	9.93	4.52	2.73
		18	13'-1"	15'-3"	15'-7"	41.0	11.21	5.72	2.73
		16	13'-10"	16'-11"	16'-5"	41.7	12.35	6.83	2.73

Note:

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

Superimposed Allowable Load, W_n/Ω , 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"	22	331	255	201	157	121	95	76	62	51
	20	390	302	226	170	131	103	82	67	55
	18	483	352	257	193	148	117	93	76	62
	16	483	390	284	214	164	129	103	84	69
5½"	22	374	288	227	182	148	121	100	81	67
	20	440	341	270	217	172	135	108	88	72
	18	544	437	337	253	195	153	122	99	82
	16	544	479	372	279	215	169	135	110	90
6¼"	22	445	343	270	216	175	143	118	98	81
	20	525	406	321	258	211	174	144	120	101
	18	640	523	416	336	276	222	178	145	119
	16	640	564	503	405	312	245	196	159	131

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.

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

Total Slab Depth (in.)	Theoretical Concrete Volume (yd ³ /100 ft ²)	Min. A _s for T&S (in. ²)	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
Normal Weight Concrete (145 pcf)							
5	0.88	0.028	6x6-W1.4xW1.4	27	22	33	34
5½	1.03	0.028	6x6-W1.4xW1.4	22	14	33	34
6	1.19	0.028	6x6-W1.4xW1.4	19	14	33	34
6½	1.34	0.032	6x6-W2.1xW2.1	18	14	33	34
7½	1.65	0.041	6x6-W2.1xW2.1	18	14	33	34
Light Weight Concrete (110 pcf)							
5	0.88	0.028	6x6-W1.4xW1.4	N/A	33	33	34
5½	1.03	0.028	6x6-W1.4xW1.4	30	27	33	34
6¼	1.26	0.029	6x6-W2.1xW2.1	22	23	33	34
7¼	1.57	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.
6. DRAMIX is a registered trademark of Bekaert.

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