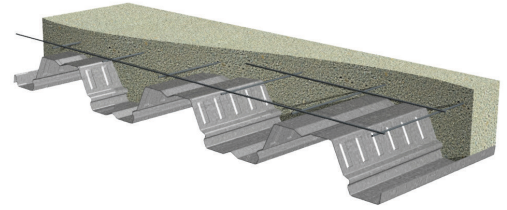


# PLW3™-36/W3-36 FORMLOK® COMPOSITE DECKS GRADE 50 STEEL

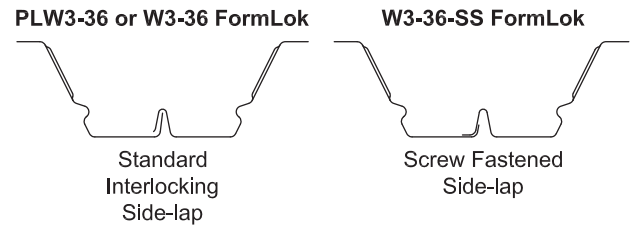
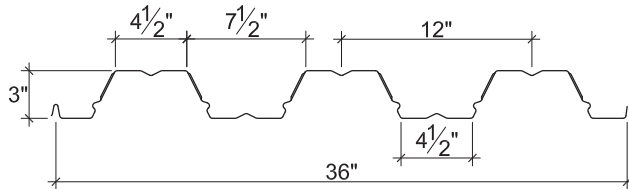
LRFD

## W3 FORMLOK DECKS

- PLW3-36 FormLok Deck used with PunchLok® II System
- W3-36 FormLok Deck used with TSWs or BPs
- W3-36-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 $\phi V_n$ (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	1.9	0.0299	50	0.736	0.730	0.393	0.410	2074
20	2.3	0.0359	50	0.907	0.899	0.510	0.528	3587
18	2.9	0.0478	50	1.213	1.211	0.752	0.768	6515
16	3.5	0.0598	50	1.516	1.516	0.968	0.966	9422

## 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	533	586	675	749	1157	1351	503	542	607	662	1341	1581
20	754	827	947	1049	1622	2010	763	819	913	992	1914	2405
18	1293	1410	1606	1771	2744	3436	1435	1532	1696	1834	3315	4218
16	1966	2135	2419	2658	4134	5130	2321	2469	2718	2927	5066	6392

## 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

# PLW3™-36/W3-36 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	10'-1"	10'-6"	11'-0"	44.2	7.52	5.13	4.73
		20	11'-8"	12'-3"	12'-8"	44.6	7.98	6.03	5.75
		18	12'-7"	14'-10"	14'-8"	45.2	8.83	7.74	5.75
		16	13'-3"	16'-6"	15'-6"	45.8	9.61	9.37	5.75
6½"	3½"	22	8'-10"	8'-2"	9'-4"	62.3	15.90	6.76	5.99
		20	10'-3"	10'-9"	11'-2"	62.7	16.81	7.96	7.35
		18	11'-7"	13'-1"	13'-6"	63.3	18.50	10.25	8.28
		16	12'-3"	14'-8"	14'-4"	63.9	20.05	12.46	8.28
7½"	4½"	22	8'-3"	7'-2"	8'-2"	74.4	24.07	7.92	6.94
		20	9'-7"	10'-0"	10'-4"	74.8	25.40	9.35	8.29
		18	11'-1"	12'-2"	12'-7"	75.4	27.87	12.07	10.17
		16	11'-9"	13'-8"	13'-9"	76.0	30.15	14.70	10.17

**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	587/641	453/450	357/328	285/246	231/190	189/149	156/119	107/80
	20	700/681	541/478	428/348	345/261	281/201	231/158	192/127	134/85
	18	912/753	709/529	564/385	457/289	375/223	311/175	261/140	187/94
	16	1116/820	870/575	694/419	564/315	465/242	388/191	327/153	237/102
6½"	22	769/1357	592/953	465/694	372/522	300/402	245/316	201/253	136/169
	20	919/1435	711/1008	561/734	451/552	367/425	301/334	249/267	173/179
	18	1205/1578	936/1108	744/808	601/607	493/467	409/367	342/294	244/197
	16	1480/1711	1153/1202	919/876	746/658	615/507	512/398	431/319	312/213
7½"	22	900/2054	693/1442	544/1051	434/790	350/608	285/478	234/383	158/256
	20	1078/2168	833/1522	658/1110	528/834	429/642	352/505	291/404	202/271
	18	1418/2379	1101/1670	875/1218	707/915	580/704	481/554	402/443	286/297
	16	1746/2573	1361/1807	1085/1317	880/990	725/762	604/599	508/480	368/321

**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.

# PLW3™-36/W3-36 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'-2"	11'-9"	12'-2"	34.0	5.73	4.91	4.01
		20	12'-6"	13'-6"	13'-11"	34.4	6.14	5.76	5.37
		18	13'-5"	16'-4"	15'-8"	35.0	6.88	7.35	5.75
		16	14'-1"	17'-7"	16'-6"	35.6	7.56	8.88	5.75
5½"	2½"	22	10'-8"	11'-3"	11'-8"	38.6	7.49	5.42	4.31
		20	12'-2"	12'-11"	13'-4"	39.0	8.01	6.35	5.67
		18	13'-0"	15'-8"	15'-3"	39.6	8.95	8.11	6.55
		16	13'-9"	17'-1"	16'-1"	40.2	9.80	9.79	6.55
6¼"	¾"	22	10'-0"	10'-6"	10'-11"	45.4	10.75	6.22	4.79
		20	11'-8"	12'-3"	12'-7"	45.8	11.48	7.31	6.15
		18	12'-6"	14'-9"	14'-8"	46.4	12.79	9.35	7.83
		16	13'-3"	16'-5"	15'-6"	47.0	13.99	11.30	7.83

**Note:**

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

### Superimposed Design Load, $\phi W_p$ , / 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	573/489	444/343	352/250	284/188	232/145	191/114	159/91	112/61
	20	678/524	527/368	419/268	339/201	278/155	231/122	193/97	138/65
	18	877/587	684/412	546/300	444/225	366/174	306/136	258/109	187/73
	16	1066/645	833/453	667/330	544/248	450/191	377/150	319/120	234/80
5½"	22	630/639	488/448	387/327	311/245	254/189	210/148	174/119	122/79
	20	747/683	580/480	461/349	373/262	306/202	253/159	212/127	151/85
	18	966/763	753/536	601/391	488/293	403/226	336/177	283/142	206/95
	16	1175/836	918/587	734/428	599/321	495/247	415/195	351/156	257/104
6¼"	22	723/917	560/644	443/469	356/353	291/271	240/213	199/171	139/114
	20	858/979	666/688	529/501	427/376	350/290	290/228	243/182	173/122
	18	1112/1092	867/767	692/559	562/420	463/323	386/254	325/203	236/136
	16	1355/1194	1059/838	847/611	690/459	571/353	478/278	404/222	296/149

**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.

## PLW3-36/W3-36 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	1.08	0.028	6x6-W1.4xW1.4	27	22	33	34
5½	1.24	0.028	6x6-W1.4xW1.4	22	14	33	34
6	1.39	0.028	6x6-W1.4xW1.4	19	14	33	34
6½	1.54	0.032	6x6-W2.1xW2.1	18	14	33	34
7½	1.85	0.041	6x6-W2.1xW2.1	18	14	33	34
<b>Light Weight Concrete (110 pcf)</b>							
5	1.08	0.028	6x6-W1.4xW1.4	N/A	33	33	34
5½	1.24	0.028	6x6-W1.4xW1.4	30	27	33	34
6¼	1.47	0.029	6x6-W2.1xW2.1	22	23	33	34
7¼	1.78	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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