

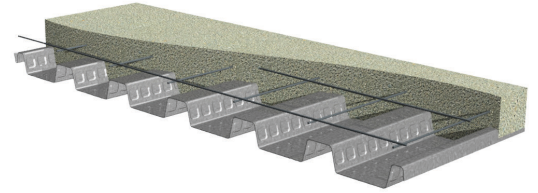
# BR-36 FORMLOK® COMPOSITE DECKS

## GRADE 50 STEEL

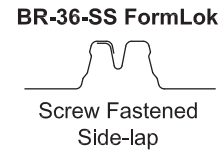
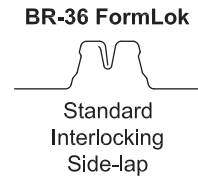
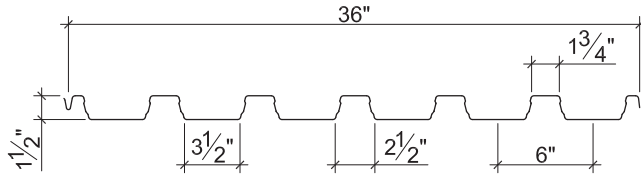
LRFD

### BR FORMLOK DECKS

- BR-36 FormLok Deck used with Welded Side-laps
- BR-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	0.192	0.178	0.188	0.176	4085
20	2.3	0.0359	50	0.231	0.219	0.237	0.230	4894
18	2.9	0.0478	50	0.306	0.302	0.331	0.314	6481
16	3.5	0.0598	50	0.381	0.381	0.410	0.399	8059

### 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"	3"	4"	1 1/2"	2"	3"	4"	3"	4"
22	1301	1430	1645	1779	2318	2484	1366	1472	1648	1757	2876	3097
20	1817	1991	2282	2461	3256	3479	2014	2162	2410	2562	4081	4383
18	3062	3338	3801	4080	5524	5874	3653	3902	4318	4569	7010	7493
16	4599	4994	5658	6049	8336	8828	5775	6144	6761	7125	10656	11345

### 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

# BR-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				
3½"	2"	22	6'-8"	7'-6"	7'-9"	37.8	3.49	4.02	5.03
		20	7'-9"	8'-7"	8'-11"	38.2	3.73	4.71	5.03
		18	8'-7"	10'-0"	10'-4"	38.8	4.16	6.03	5.03
		16	9'-3"	11'-3"	11'-4"	39.4	4.55	7.27	5.03
5"	3½"	22	5'-10"	6'-7"	6'-9"	55.9	9.49	5.92	7.56
		20	6'-9"	7'-6"	7'-9"	56.3	10.11	6.99	7.81
		18	7'-8"	8'-9"	9'-0"	56.9	11.22	9.02	7.81
		16	8'-2"	9'-10"	10'-2"	57.5	12.22	10.97	7.81
6"	4½"	22	5'-5"	6'-1"	6'-4"	68.0	15.87	7.55	8.40
		20	6'-3"	7'-0"	7'-2"	68.4	16.85	8.92	9.13
		18	7'-2"	8'-1"	8'-5"	69.0	18.64	11.57	9.49
		16	7'-9"	9'-2"	9'-5"	69.6	20.27	14.11	9.49

**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.)							
		4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	12'-0"
3½"	22	1963/2383	1240/1220	847/706	610/444	456/297	351/209	276/152	177/88
	20	2310/2548	1462/1304	1001/755	723/475	543/318	419/223	331/163	215/94
	18	2470/2843	1882/1456	1292/842	937/530	706/355	548/249	435/182	288/105
	16	2470/3105	1966/1589	1567/920	1139/579	861/388	670/272	534/198	356/115
5"	22	2894/6481	1828/3318	1249/1920	899/1209	673/810	517/568	406/414	261/240
	20	3425/6900	2168/3533	1484/2044	1073/1287	805/862	622/605	491/441	320/255
	18	3835/7662	2818/3923	1936/2270	1404/1429	1059/957	822/672	653/490	432/283
	16	3834/8346	3053/4273	2368/2472	1722/1557	1302/1043	1014/732	808/534	540/309
6"	22	3693/10839	2334/5549	1596/3211	1150/2022	862/1354	664/951	522/693	337/401
	20	4380/11508	2773/5892	1901/3410	1374/2147	1033/1438	799/1010	631/736	413/426
	18	4663/12731	3618/6518	2487/3772	1805/2375	1363/1591	1059/1117	842/814	559/471
	16	4662/13840	3713/7086	3052/4100	2220/2582	1680/1730	1310/1215	1045/885	700/512

**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.

# BR-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				
3½"	2"	22	7'-3"	8'-3"	8'-6"	29.1	2.71	3.84	5.03
		20	8'-6"	9'-5"	9'-9"	29.5	2.91	4.49	5.03
		18	9'-5"	10'-11"	11'-4"	30.1	3.27	5.71	5.03
		16	10'-1"	12'-4"	12'-1"	30.7	3.58	6.84	5.03
4"	2½"	22	6'-11"	7'-11"	8'-2"	33.7	3.92	4.42	5.87
		20	8'-1"	9'-0"	9'-4"	34.1	4.21	5.18	5.92
		18	9'-0"	10'-6"	10'-10"	34.7	4.72	6.61	5.92
		16	9'-8"	11'-9"	11'-9"	35.3	5.17	7.95	5.92
4¾"	¾"	22	6'-7"	7'-5"	7'-8"	40.6	6.32	5.32	6.40
		20	7'-7"	8'-6"	8'-9"	41.0	6.78	6.25	7.12
		18	8'-6"	9'-10"	10'-2"	41.6	7.59	8.02	7.32
		16	9'-1"	11'-1"	11'-3"	42.2	8.31	9.70	7.32

**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.)								
		4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	12'-0"	
3½"	22	1885/1847	1194/946	818/547	592/344	445/230	344/162	272/118	178/68	
	20	2208/1986	1401/1017	962/588	697/370	525/248	407/174	323/127	213/73	
	18	2481/2231	1789/1142	1231/661	895/416	677/278	527/195	420/142	280/82	
	16	2480/2444	1976/1251	1484/724	1080/456	818/305	639/214	510/156	343/90	
4"	22	2171/2674	1375/1369	942/792	681/499	512/334	396/234	313/171	205/99	
	20	2549/2873	1616/1471	1110/851	804/536	606/359	470/252	373/183	246/106	
	18	2917/3223	2072/1650	1426/955	1037/601	784/402	611/283	487/206	325/119	
	16	2916/3528	2324/1806	1724/1045	1255/658	951/441	742/309	593/225	399/130	
4¾"	22	2611/4313	1653/2208	1133/1277	819/804	616/539	476/378	376/276	246/159	
	20	3076/4627	1951/2369	1340/1371	971/863	732/578	568/406	450/296	298/171	
	18	3609/5185	2517/2655	1732/1536	1259/967	952/648	742/455	591/331	395/192	
	16	3609/5674	2877/2905	2105/1681	1533/1058	1161/709	907/498	725/363	488/210	

**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.

## BR-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>							
3½	0.91	0.028	6x6-W1.4xW1.4	27	22	33	34
4	1.07	0.028	6x6-W1.4xW1.4	22	14	33	34
4½	1.22	0.028	6x6-W1.4xW1.4	19	14	33	34
5	1.37	0.032	6x6-W2.1xW2.1	18	14	33	34
6	1.68	0.041	6x6-W2.1xW2.1	18	14	33	34
<b>Light Weight Concrete (110 pcf)</b>							
3½	0.91	0.028	6x6-W1.4xW1.4	N/A	33	33	34
4	1.07	0.028	6x6-W1.4xW1.4	30	27	33	34
4¾	1.30	0.029	6x6-W2.1xW2.1	22	23	33	34
5¾	1.61	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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