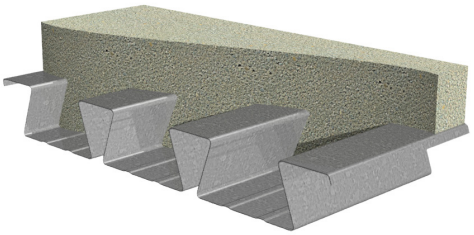
3.5DS-24 FL DOVETAIL DECK
GRADE 50 STEEL

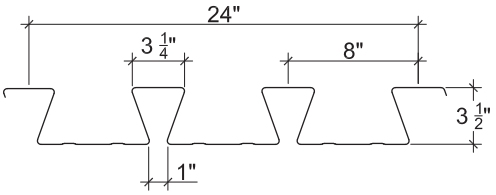
ASD

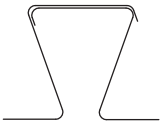
3.5DS-24 FL DOVETAIL DECK

- **Enhanced 2-Coat Polyester Paint**
- **White Factory Primer Paint**
- **Galvanized Finish**
- **UL Listed**



Nominal Dimensions





Nested
Side-lap

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 $I_d = (2I_e+I_g)/3$ I_d+ (in⁴/ft)	I_d- (in⁴/ft)	Effective Section Modulus at F_y = 50 ksi S_e+ (in³/ft)	S_e- (in³/ft)	Allowable Moment M_n+/Ω (lb-ft/ft)	M_n-/Ω (lb-ft/ft)	Vertical Web Shear V_n/Ω (lb/ft)
20	3.4	0.0359	50	1.951	1.805	0.714	0.757	1781	1889	3754
18	4.5	0.0478	50	2.681	2.505	1.052	1.108	2626	2765	6813
16	5.6	0.0598	50	3.421	3.243	1.414	1.505	3527	3756	9781

Allowable Reactions at Supports Based on Web Crippling, R_n/Ω (lb/ft)

Deck Gage	Bearing Length of Webs: One-Flange Loading, End Bearing 2"	3"	4"	5"	Interior Bearing 4"	6"	Two-Flange Loading, End Bearing 2"	3"	4"	5"	Interior Bearing 4"	6"
20	859	985	1091	1184	1735	1985	850	948	1030	1103	2046	2363
18	1465	1668	1840	1991	2933	3334	1592	1762	1905	2031	3542	4066
16	2217	2512	2760	2979	4415	4992	2565	2823	3040	3232	5411	6179

Standard Features

- ASTM A653 SS GR 50 Min. with G90
- Standard lengths – 6'-0" to 40'-0"
- Tables conform to ANSI/SDI C-2017
- IAPMO UES ER-423 and UL Listed

Optional Features

- Inquire regarding cost and lead times for:
  - -19 or 17 gage
  - -Alternative metallic and painted finishes

3.5DS-24 FL DOVETAIL DECK-SLAB
NORMAL WEIGHT CONCRETE (145 pcf)

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Maximum Unshored Spans

Slab Depth		Deck	Maximum Unshored Construction Clear Span		
Total	Topping	Gage	1	2	3
5½"	2"	20	13'-0"	13'-6"	13'-11"
		18	14'-4"	16'-3"	16'-6"
		16	15'-2"	18'-8"	17'-6"
5¾"	2¼"	20	12'-8"	13'-3"	13'-8"
		18	14'-2"	16'-0"	16'-4"
		16	15'-0"	18'-5"	17'-4"
6"	2½"	20	12'-6"	13'-0"	13'-5"
		18	14'-0"	15'-9"	16'-1"
		16	14'-10"	18'-3"	17'-2"

Composite Deck-Slab Properties

Concrete + Deck (psf)	Deflection $I_d = (I_{cr}+I_u)/2$ (in⁴/ft)	Moment M_{no}/Ω (kip-ft/ft)	Shear V_{no}/Ω (kip/ft)
58.6	14.12	8.21	4.29
59.7	15.73	10.54	4.29
60.8	17.27	12.35	4.29
61.6	15.95	8.53	4.49
62.7	17.72	10.96	4.49
63.8	19.36	13.3	4.49
64.7	17.93	8.85	4.68
65.8	19.89	11.38	4.68
66.9	21.69	13.81	4.68

Notes:

1. Maximum unshored spans are based on 20 psf uniform construction live load and 150 plf concentrated construction live load.
2. 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.)								
		15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	23'-0"	25'-0"
5½"	20	182	150	125	105	89	77	66	50	39
	18	203	167	139	117	100	85	74	56	43
	16	223	184	153	129	110	94	81	62	48
5¾"	20	206	170	141	119	101	87	75	57	44
	18	229	189	157	132	112	96	83	63	49
	16	250	206	172	145	123	105	91	69	54
6"	20	232	191	159	134	114	97	84	64	48
	18	257	212	176	149	126	108	93	71	55
	16	280	231	192	162	138	118	102	77	60

Notes:

1. For high loads long term concrete creep should be considered.
2. See Composite Deck-Slab Superimposed Load tool for alternate slabs or LRFD design.

3.5DS-24 FL DOVETAIL DECK-SLAB
LIGHT WEIGHT CONCRETE (110 pcf)

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Maximum Unshored Spans

Slab Depth		Deck	Maximum Unshored Construction Clear Span		
Total	Topping	Gage	1	2	3
5½"	2"	20	14'-2"	14'-11"	15'-5"
		18	15'-3"	17'-11"	17'-7"
		16	16'-2"	19'-10"	18'-8"
5¾"	2¼"	20	14'-0"	14'-8"	15'-1"
		18	15'-1"	17'-8"	17'-5"
		16	16'-0"	19'-8"	18'-6"
8"	4½"	20	12'-3"	12'-10"	13'-3"
		18	13'-10"	15'-6"	16'-0"
		16	14'-8"	18'-0"	17'-0"

Composite Deck-Slab Properties

Concrete + Deck (psf)	Deflection $I_d = (I_{cr}+I_u)/2$ (in⁴/ft)	Moment M_{no}/Ω (kip-ft/ft)	Shear V_{no}/Ω (kip/ft)
45.3	10.97	7.66	4.29
46.4	12.49	9.46	4.29
47.5	13.99	11.27	4.29
47.6	12.33	8.14	4.49
48.7	13.90	10.06	4.49
49.8	15.44	11.82	4.49
68.2	30.55	11.27	5.77
69.3	34.03	14.45	6.24
70.4	37.15	17.51	6.24

Notes:

1. Maximum unshored spans are based on 20 psf uniform construction live load and 150 plf concentrated construction live load.
2. 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.)								
		15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	23'-0"	25'-0"
5½"	20	142	117	97	82	69	59	51	39	30
	18	161	133	111	93	79	68	58	44	34
	16	181	149	124	104	89	76	66	50	39
5¾"	20	159	131	109	92	78	67	58	44	34
	18	180	148	123	104	88	75	65	49	38
	16	199	164	137	115	98	84	72	55	43
8"	20	332	283	243	210	181	157	136	102	76
	18	440	363	302	254	216	185	160	122	95
	16	481	396	330	278	236	202	175	133	103

Notes:

1. For high loads long term concrete creep should be considered.
2. See Composite Deck-Slab Superimposed Load tool for alternate slabs or LRFD design.

3.5DS-24 FL DOVETAIL DECK-SLAB

ASD

3.5DS-24 FL Deck-Slab Information

f'_c = 3000 psi

Total Slab Depth (in.)	Cover 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 Alternate to WWR (lb/yd^3)
					4D 65/60BG
Normal Weight Concrete (145 pcf)					
5½	2	1.41	0.028	6x6-W1.4xW1.4	23
5¾	2¼	1.49	0.028	6x6-W1.4xW1.4	20
6	2½	1.56	0.028	6x6-W1.4xW1.4	18
6½	3	1.72	0.028	6x6-W1.4xW1.4	15
7	3½	1.87	0.032	6x6-W2.1xW2.1	15
7¼	3¾	1.95	0.034	6x6-W2.1xW2.1	15
7½	4	2.03	0.036	6x6-W2.1xW2.1	15
8	4½	2.18	0.041	6x6-W2.1xW2.1	15
Light Weight Concrete (110 pcf)					
5½	2	1.41	0.028	6x6-W1.4xW1.4	33
5¾	2¼	1.49	0.028	6x6-W1.4xW1.4	28
6	2½	1.56	0.028	6x6-W1.4xW1.4	25
6½	3	1.72	0.028	6x6-W1.4xW1.4	20
7	3½	1.87	0.032	6x6-W2.1xW2.1	20
7½	4	2.03	0.036	6x6-W2.1xW2.1	20
8	4½	2.18	0.041	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@bekaert.com.

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