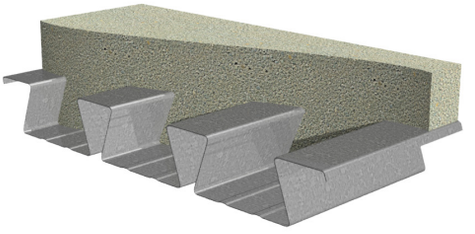
3.5DS-24 FL FORMLOK® DOVETAIL DECK
GRADE 50 STEEL

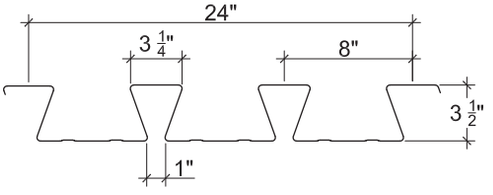
Imperial LSD

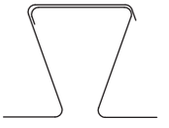
3.5DS-24 FL DOVETAIL DECK

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



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		Factored Moment		Vertical Web Shear
				I_d+ (in⁴/ft)	I_d- (in⁴/ft)	S_e+ (in³/ft)	S_e- (in³/ft)	øM_n+ (lb-ft/ft)	øM_n- (lb-ft/ft)	øV_n (lb/ft)
20	3.4	0.0359	50	1.951	1.805	0.714	0.757	2677	2840	4805
18	4.5	0.0478	50	2.681	2.505	1.052	1.108	3947	4156	8721
16	5.6	0.0598	50	3.421	3.243	1.414	1.505	5301	5645	12520

Factored Reactions at Supports Based on Web Crippling, øR_n (lb/ft)

Deck Gage	Bearing Length of Webs											
	One-Flange Loading						Two-Flange Loading					
	End Bearing				Interior Bearing		End Bearing				Interior Bearing	
	2"	3"	4"	5"	4"	6"	2"	3"	4"	5"	4"	6"
20	1168	1339	1484	1611	2277	2605	1071	1195	1298	1390	2686	3102
18	1992	2269	2502	2708	3850	4376	2006	2220	2400	2559	4650	5337
16	3015	3416	3754	4051	5794	6552	3232	3557	3831	4072	7102	8110

Standard Features

- ASTM A653/A653M SS GR50 Min., with Z275/G90 galvanized or ZF75/A25 galvannealed
- Standard lengths – 6'-0" to 40'-0"
- UL Listed
- Cold-formed steel deck conforms to AISI S100-16 and meets the guidelines of CSSBI 12M-2024.

Optional Features

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

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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'-4"	13'-8"	14'-2"
		18	14'-4"	16'-7"	16'-6"
		16	15'-2"	18'-8"	17'-7"
5¾”	2¼”	20	13'-0"	13'-5"	13'-11"
		18	14'-2"	16'-3"	16'-4"
		16	15'-0"	18'-5"	17'-4"
6”	2½”	20	12'-9"	13'-2"	13'-7"
		18	14'-0"	16'-0"	16'-2"
		16	14'-10"	18'-3"	17'-2"

Composite Deck-Slab Properties

Concrete + Deck	Deflection $I_d = (I_{cr}+I_u)/2$	Moment ϕM_{no}	Shear ϕV_{no}
(psf)	(in^4/ft)	(kip-ft/ft)	(kip/ft)
58.6	14.12	11.50	6.01
59.7	15.73	14.76	6.01
60.8	17.27	17.30	6.01
61.6	15.95	11.94	6.28
62.7	17.72	15.34	6.28
63.8	19.36	18.63	6.28
64.7	17.93	12.40	6.56
65.8	19.89	15.93	6.56
66.9	21.69	19.34	6.56

Notes:

1. Maximum unshored spans are based on 20.9 psf uniform construction live load and 151 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 Factored Load, ϕW_n, / Deflection at L/360 (psf)

NWC (145 pcf), f'_c = 3000 psi

Total Slab Depth	Deck Gage	Span (ft-in.)							
		15'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	23'-0"	25'-0"
5½"	20	335/182	245/125	210/105	181/89	156/77	135/66	100/50	73/39
	18	450/203	333/139	289/117	252/100	220/85	193/74	148/56	114/43
	16	538/223	402/153	351/129	307/110	269/94	237/81	185/62	145/48
5¾"	20	347/206	253/141	217/119	187/101	161/87	139/75	103/57	75/44
	18	467/229	346/157	300/132	261/112	228/96	199/83	153/63	117/49
	16	582/250	435/172	380/145	332/123	292/105	258/91	201/69	158/54
6"	20	359/232	262/159	225/134	193/114	167/97	144/84	106/64	77/50
	18	484/257	358/176	311/149	270/126	236/108	206/93	158/71	121/55
	16	604/280	451/192	393/162	344/138	303/118	267/102	208/77	163/60

Notes:

1. The composite deck-slab design is based on tested performance and engineering analysis in accordance Section 7.6.1 of CSSBI 12M-2024.
2. For high loads long term concrete creep should be considered.
3. Use Composite Deck-Slab Strength Web Based Solutions for alternate slabs.