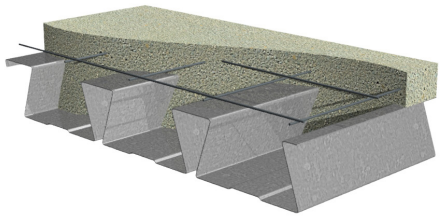
3.5D FORMLOK® DOVETAIL DECK
GRADE 40 STEEL

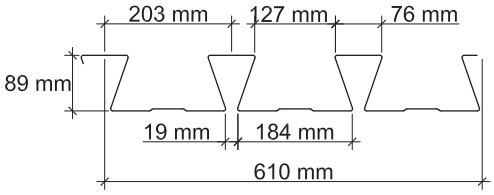
Metric LSD

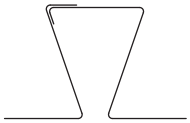
3.5D FORMLOK DOVETAIL DECK

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



Nominal Dimensions





Section Properties

Deck Gage	Deck Weight w_{dd} (kg/m²)	Base Metal Thickness t (mm)	Yield Strength F_y (MPa)	Effective Moment of Inertia at Service Load* $I_d = (2I_e+I_g)/3$ I_d+ (mm⁴x10³)	I_d- (mm⁴x10³)	Effective Section Modulus* at F_y = 276 MPa S_e+ (mm³x10³)	S_e- (mm³x10³)	Factored Moment* $øM_n+$ (N-m)	$øM_n-$ (N-m)	Vertical Web Shear* $øV_n$ (kN)
20	16.11	**0.91**	276	2406.2	2247.8	36.34	41.99	9020	10421	64
18	20.99	**1.20**	276	3297.9	3102.6	52.69	57.53	13079	14280	112
16	26.37	**1.52**	276	4278.4	4053.1	70.81	74.03	17575	18376	155

*Physical Properties per meter (m) of width

Factored Reactions at Supports Based on Web Crippling, $øR_n$ (kN/m)

Deck Gage	Bearing Length of Webs (mm) One-Flange Loading End Bearing 50	75	100	125	One-Flange Loading Interior Bearing 100	150	Two-Flange Loading End Bearing 50	75	100	125	Two-Flange Loading Interior Bearing 100	150
20	13.7	15.7	17.4	18.9	27.8	31.8	13.1	14.6	15.8	16.9	32.8	37.9
18	23.1	26.3	29.0	31.3	46.2	52.5	24.0	26.6	28.7	30.6	55.8	64.0
16	35.4	40.1	44.1	47.6	70.2	79.3	39.2	43.1	46.4	49.3	86.1	98.2

Standard Features

- ASTM A653/A653M SS GR40 Min., with Z275/G90 galvanized or ZF75/A25 galvannealed
- Standard lengths – 1.83 m to 12.8 m
- UL Listed
- Cold-formed steel deck conforms to CAN/CSA S136-16 and meets the guidelines of CSSBI 12M-2018.

Optional Features

- Inquire regarding cost and lead times for:
  - -Short cuts < 1.83 m
  - -Sheet Lengths > 12.8 m
  - -Alternative metallic and painted finishes

3.5D FORMLOK® DOVETAIL DECK-SLABS
NORMAL WEIGHT CONCRETE (2325 kg/m³)

Metric LSD

Maximum Unshored Spans

Slab Depth		Deck	Maximum Unshored Construction Clear Span (mm)		
Total (mm)	Topping (mm)	Gage	1	2	3
140	51	20	3722	4004	4137
		18	4505	4686	4843
		16	5066	5290	5467
145	56	20	3663	3948	4079
		18	4444	4622	4777
		16	5018	5219	5393
150	61	20	3607	3895	4024
		18	4386	4561	4713
		16	4973	5150	5323

Composite Deck-Slab Properties

Concrete + Deck (kPa)	Deflection $I_d = (I_{cr}+I_u)/2$ (mm^4x10^3/m)	Moment ϕM_{no} (kN-m/m)	Shear ϕV_{no} (kN/m)
2.9	19593.88	42.79	91
2.9	21764.82	54.40	91
3.0	23978.12	64.22	91
3.0	21567.75	44.04	94
3.0	23921.31	56.42	94
3.1	26220.05	67.91	94
3.1	23672.20	45.33	97
3.2	26223.76	58.07	97
3.2	28699.24	71.07	97

Note:

1. 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 (kPa)

NWC (2325 kg/m³), f'_c = 20 MPa

Total Slab Depth	Deck Gage	Span (mm)							
		4500	5100	5400	5700	6000	6300	6900	7500
140	20	13.3/9.3	9.5/6.4	8.1/5.4	6.9/4.5	5.9/3.9	5/3.4	4.3/2.9	2.5/2
	18	17.8/10.3	13.1/7.1	11.3/6	9.7/5.1	8.4/4.4	7.3/3.7	6.3/3.3	4.1/2.2
	16	21.6/11.4	16/7.8	13.9/6.6	12.1/5.6	10.5/4.8	9.2/4.1	8/3.6	5.4/2.4
145	20	13.6/10.2	9.8/7	8.3/5.9	7.1/5	6/4.3	5.1/3.7	3.6/2.8	2.5/2.2
	18	18.5/11.3	13.6/7.8	11.6/6.6	10.1/5.6	8.7/4.8	7.6/4.1	5.6/3.1	4.2/2.4
	16	22.9/12.4	17/8.6	14.7/7.2	12.8/6.1	11.2/5.3	9.8/4.5	7.5/3.4	5.8/2.7
150	20	14/11.3	10.1/7.7	8.5/6.5	7.3/5.5	6.2/4.7	5.2/4.1	3.7/3.1	2.5/2.4
	18	19/12.4	13.9/8.6	12/7.2	10.3/6.1	9/5.3	7.8/4.5	5.8/3.4	4.3/2.7
	16	24/13.6	17.8/9.4	15.5/7.9	13.5/6.7	11.8/5.7	10.3/5	7.9/3.8	6.1/2.9

Notes:

1. The composite deck-slab design is based on tested performance and engineering analysis in accordance Section 7.6.1 of CSSBI 12M-2018.
2. For high loads long term concrete creep should be considered.
3. Use Composite Deck-Slab Strength Web Based Solutions for alternate slabs.

3.5D FORMLOK® DOVETAIL DECK-SLABS
LIGHT WEIGHT CONCRETE (1840 kg/m³)

Metric LSD

Maximum Unshored Spans

Slab Depth			Maximum Unshored Construction Clear Span (mm)		
Total (mm)	Topping (mm)	Deck Gage	1	2	3
140	51	20	4056	4322	4466
		18	4851	5049	5218
		16	5340	5693	5883
145	58	20	4005	4266	4408
		18	4791	4986	5152
		16	5292	5622	5811
205	116	20	3440	3731	3854
		18	4207	4373	4519
		16	4836	4941	5107

Composite Deck-Slab Properties

Concrete + Deck (kPa)	Deflection $I_d = (I_{cr}+I_u)/2$ (mm^4x10^3/m)	Moment $ØM_{no}$ (kN-m/m)	Shear $ØV_{no}$ (kN/m)
2.3	16873.40	41.70	102
2.4	18957.75	50.96	102
2.4	21138.08	60.78	102
2.4	18550.56	42.93	104
2.4	20724.69	53.86	105
2.5	22956.34	63.46	105
3.5	48199.89	59.51	120
3.5	53361.90	76.32	149
3.6	58311.37	93.48	149

Note:

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

Superimposed Factored Load, $øW_n$, / Deflection at L/360 (kPa)

LWC (1840 kg/m³), f'_c = 25 MPa

Total Slab Depth	Deck Gage	Span (mm)							
		4500	5100	5400	5700	6000	6300	6900	7500
140	20	13.6/8	9.9/5.5	8.5/4.6	7.4/3.9	6.4/3.4	5.5/2.9	4.1/2.2	3/1.7
	18	17.1/9	12.7/6.2	11/5.2	9.6/4.4	8.3/3.8	7.3/3.3	5.6/2.5	4.3/1.9
	16	21/10.1	15.7/6.9	13.6/5.8	11.9/4.9	10.5/4.2	9.2/3.6	7.2/2.8	5.6/2.2
145	20	13.9/8.8	10.2/6	8.8/5.1	7.6/4.3	6.5/3.7	5.6/3.2	4.2/2.4	3.1/1.9
	18	18.2/9.9	13.5/6.8	11.7/5.7	10.2/4.8	8.9/4.1	7.8/3.6	6/2.7	4.6/2.1
	16	21.9/10.9	16.4/7.5	14.3/6.3	12.5/5.4	11/4.6	9.6/4	7.5/3	5.9/2.3
205	20	19.2/22.9	13.9/15.8	12/13.3	10.3/11.3	8.9/9.7	7.6/8.3	5.6/6.3	4.1/4.9
	18	25.7/25.4	19.1/17.4	16.5/14.7	14.4/12.5	12.5/10.7	11/9.2	8.4/7	6.4/5.5
	16	32.4/27.7	24.2/19.1	21.2/16	18.5/13.6	16.3/11.7	14.3/10.1	11.2/7.7	8.8/6

Notes:

1. The composite deck-slab design is based on tested performance and engineering analysis in accordance Section 7.6.1 of CSSBI 12M-2018.
2. For high loads long term concrete creep should be considered.
3. Use Composite Deck-Slab Strength Web Based Solutions for alternate slabs.

3.5D FormLok Deck-Slab Information

Total Slab Depth (mm)	Cover Depth (mm)	Theoretical Concrete Volume (m^3/m^2)	Min. A_s for T&S (mm^2/m)	Recommended WWR for Temperature and Shrinkage
Normal Weight Concrete (2325 kg/m³)				
140	**51**	0.119	60	152x152-MW9.1xMW9.1
145	**56**	0.125	60	152x152-MW9.1xMW9.1
155	**66**	0.132	60	152x152-MW9.1xMW9.1
165	**76**	0.144	60	152x152-MW9.1xMW9.1
180	**91**	0.157	93	152x152-MW16xMW16
185	**96**	0.163	108	152x152-MW16xMW16
190	**101**	0.170	123	152x152-MW18.7xMW18.7
205	**116**	0.183	168	102x102-MW18.7xMW18.7
Light Weight Concrete (1840 kg/m³)				
140	**51**	0.119	60	152x152-MW9.1xMW9.1
145	**56**	0.125	60	152x152-MW9.1xMW9.1
155	**66**	0.132	60	152x152-MW9.1xMW9.1
165	**76**	0.144	60	152x152-MW9.1xMW9.1
180	**91**	0.157	93	152x152-MW16xMW16
190	**101**	0.170	123	152x152-MW18.7xMW18.7
205	**116**	0.183	168	152x152-MW25.8xMW25.8

Notes:

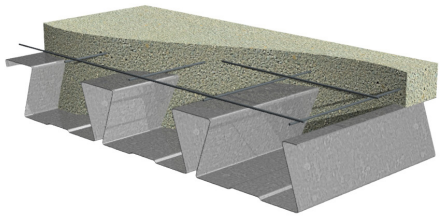
1. Recommended temperature and shrinkage reinforcement in accordance with CSSBI S3-08, Table 2.

3.5D FORMLOK® DOVETAIL DECK
GRADE 40 STEEL

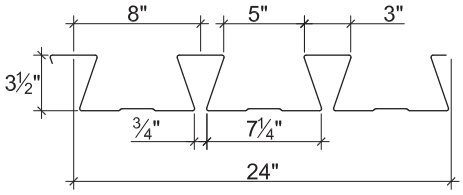
Imperial LSD

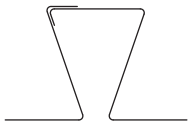
3.5D FORMLOK DOVETAIL DECK

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



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 $I_d = (2Ie+Ig)/3$ I_d+ (in⁴/ft)	I_d- (in⁴/ft)	Effective Section Modulus at F_y = 40 ksi S_e+ (in³/ft)	S_e- (in³/ft)	Design Moment øM_n+ (lb-ft/ft)	øM_n- (lb-ft/ft)	Vertical Web Shear øV_n (lb/ft)
20	3.3	0.0358	40	1.762	1.646	0.676	0.781	2028	2343	4397
18	4.3	0.0474	40	2.415	2.272	0.980	1.070	2940	3210	7695
16	5.4	0.0598	40	3.133	2.968	1.317	1.377	3951	4131	10640

Factored Reactions at Supports Based on Web Crippling, øR$_n$ (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	942	1080	1197	1299	1915	2192	900	1003	1090	1167	2263	2613
18	1588	1809	1995	2159	3178	3614	1650	1827	1976	2107	3841	4410
16	2439	2763	3036	3277	4831	5462	2693	2964	3192	3393	5926	6768

Standard Features

- ASTM A653/A653M SS GR40 Min., with Z275/G90 galvanized or ZF75/A25 galvannealed
- Standard lengths – 6'-0" to 42'-0"
- UL Listed
- Cold-formed steel deck conforms to CAN/CSA S136-16 and meets the guidelines of CSSBI 12M-2018.

Optional Features

- Inquire regarding cost and lead times for:
  - -Short cuts < 6'-0"
  - -Sheet Lengths > 42'-0"
  - -Alternative metallic and painted finishes

3.5D FORMLOK® DOVETAIL DECK-SLABS
NORMAL WEIGHT CONCRETE (145 pcf)

Imperial LSD

Maximum Unshored Spans

Slab Depth		Deck	Maximum Unshored Construction Clear Span		
Total	Topping	Gage	1	2	3
5½"	2"	20	12'-3"	13'-2"	13'-7"
		18	14'-9"	15'-5"	15'-11"
		16	16'-8"	17'-4"	17'-11"
5¾"	2¼"	20	12'-0"	12'-11"	13'-4"
		18	14'-6"	15'-1"	15'-7"
		16	16'-5"	17'-1"	17'-8"
6"	2½"	20	11'-9"	12'-8"	13'-1"
		18	14'-4"	14'-10"	15'-4"
		16	16'-3"	16'-9"	17'-4"

Composite Deck-Slab Properties

Concrete + Deck	Deflection	Moment	Shear
	$I_d = (I_{cr}+I_u)/2$	ϕM_{no}	ϕV_{no}
(psf)	(in^4/ft)	(kip-ft/ft)	(kip/ft)
59.9	14.40	9.62	6.33
60.9	15.99	12.24	6.33
62.0	17.61	14.45	6.33
62.9	16.27	9.98	6.61
63.9	18.03	12.78	6.61
65.0	19.75	15.54	6.61
65.9	18.29	10.35	6.90
66.9	20.24	13.26	6.90
68.0	22.14	16.23	6.90

Note:

1. 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	267/186	191/128	162/107	138/91	117/78	99/67	70/51	48/40
	18	359/207	262/142	226/119	195/101	168/87	145/75	108/57	80/44
	16	436/228	322/156	279/131	242/112	211/96	184/83	141/63	107/49
5¾"	20	276/210	197/144	167/121	142/103	120/88	102/76	72/58	49/45
	18	374/233	273/160	235/135	203/114	175/98	152/85	113/64	83/50
	16	471/255	348/175	302/147	263/125	229/107	200/93	153/70	117/55
6"	20	285/236	204/162	173/137	146/116	124/99	105/86	74/65	50/51
	18	387/262	283/180	243/151	210/128	181/110	156/95	116/72	86/56
	16	492/286	364/196	315/165	274/141	239/120	209/104	160/79	122/61

Notes:

1. The composite deck-slab design is based on tested performance and engineering analysis in accordance Section 7.6.1 of CSSBI 12M-2018.
2. For high loads long term concrete creep should be considered.
3. Use Composite Deck-Slab Strength Web Based Solutions for alternate slabs.

3.5D FORMLOK® DOVETAIL DECK-SLABS
LIGHT WEIGHT CONCRETE (115 pcf)

Maximum Unshored Spans

Slab Depth		Deck	Maximum Unshored Construction Clear Span		
Total	Topping	Gage	1	2	3
5½"	2"	20	13'-4"	14'-2"	14'-8"
		18	15'-11"	16'-7"	17'-1"
		16	17'-6"	18'-8"	19'-4"
5¾"	2¼"	20	13'-1"	13'-11"	14'-5"
		18	15'-8"	16'-4"	16'-10"
		16	17'-4"	18'-5"	19'-0"
8"	4½"	20	11'-4"	12'-3"	12'-8"
		18	13'-10"	14'-5"	14'-10"
		16	15'-11"	16'-3"	16'-10"

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)
48.2	12.67	9.41	7.14
49.2	14.20	11.57	7.30
50.3	15.80	13.78	7.30
50.6	14.30	9.76	7.26
51.6	15.94	12.47	7.64
52.7	17.59	14.62	7.64
72.1	35.60	13.33	8.38
73.1	39.36	17.10	10.63
74.2	42.98	20.95	10.63

Note:

1. 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)

LWC (115 pcf), f'_c = 4000 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	274/164	200/112	172/94	148/80	128/69	110/59	82/45	60/35
	18	349/183	258/126	224/106	194/90	169/77	148/67	113/51	86/39
	16	427/204	318/140	277/118	242/100	212/86	187/74	145/56	113/44
5¾"	20	283/185	207/127	177/107	153/91	132/78	113/67	84/51	61/39
	18	378/206	280/141	243/119	211/101	184/87	161/75	124/57	95/44
	16	453/227	338/156	295/131	258/112	226/96	199/82	155/63	121/49
8"	20	383/460	278/316	238/266	205/226	176/194	151/167	111/127	80/99
	18	516/509	381/350	330/294	287/250	250/215	218/185	167/141	127/110
	16	652/556	487/382	424/322	371/273	326/234	287/202	224/154	175/120

Notes:

1. The composite deck-slab design is based on tested performance and engineering analysis in accordance Section 7.6.1 of CSSBI 12M-2018.
2. For high loads long term concrete creep should be considered.
3. Use Composite Deck-Slab Strength Web Based Solutions for alternate slabs.

3.5D FormLok Deck-Slab Information

Total Slab Depth (in.)	Cover Depth (in.)	Theoretical Concrete Volume ($yd^3/100\ ft^2$)	Min. A_s for T&S ($in.^2$)	Recommended WWR for Temperature and Shrinkage
Normal Weight Concrete (145 pcf)				
5½	**2**	1.44	0.028	6x6-W1.4xW1.4
5¾	**2¼**	1.52	0.028	6x6-W1.4xW1.4
6	**2½**	1.60	0.028	6x6-W1.4xW1.4
6½	**3**	1.75	0.028	6x6-W1.4xW1.4
7	**3½**	1.91	0.044	6x6-W2.5xW2.5
7¼	**3¾**	1.98	0.051	6x6-W2.5xW2.5
7½	**4**	2.06	0.058	6x6-W2.9xW2.9
8	**4½**	2.22	0.079	6x6-W4.0xW4.0
Light Weight Concrete (110 pcf)				
5½	**2**	1.44	0.028	6x6-W1.4xW1.4
5¾	**2¼**	1.52	0.028	6x6-W1.4xW1.4
6	**2½**	1.60	0.028	6x6-W1.4xW1.4
6½	**3**	1.75	0.028	6x6-W1.4xW1.4
7	**3½**	1.91	0.044	6x6-W2.5xW2.5
7½	**4**	2.06	0.058	6x6-W2.9xW2.9
8	**4½**	2.22	0.079	6x6-W4.0xW4.0

Notes:

1. Recommended temperature and shrinkage reinforcement in accordance with CSSBI S3-08, Table 2.