ICC-ES Evaluation Report

ESR-4866

Reissued February 2025

Subject to renewal February 2026

This report also contains:

- **City of LA Supplement**
- **CA Supplement**

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DIVISION: 05 00 00—METALS Section: 05 31 00—Steel Decking Section: 05 31 13—Steel Floor Decking	REPORT HOLDER: COLD-ROLLED STEEL, LLC	EVALUATION SUBJECT: STEEL DECK PANELS	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018 and 2015 *International Building Code®* (IBC)

Property evaluated:

Structural

2.0 USES

Cold-Rolled Steel, LLC steel deck panels are used as floor and roof decks to support vertical loads.

3.0 DESCRIPTION

3.1 Steel Decks:

The 1.5WR roof deck (B-Deck), 1.5WR floor deck (Nestable B-Deck, Interlocking B-Deck), and 2.0 floor deck (2-inch Floor Deck) are cold-formed from steel sheets complying with ASTM A653 Structural Steel (SS) Grade 40 and 50 with a minimum G30 galvanized coating. For size and dimension of panels, see Figures 1-3.

3.2 Concrete Fill:

Concrete must be in accordance with the IBC and must have a minimum 28-day compressive strength of 3000 psi (20.7 MPa). Lightweight concrete fill must be 110 pcf (1762 kg/m^3). Normal weight concrete fill must be 145 pcf (2323 kg/m^3).

4.0 DESIGN AND INSTALLATION

4.1 Vertical Load Design:

4.1.1 General:

The design values included in the tables of this report have been determined in accordance with SDI NC, RD, and C, as applicable, and as required by IBC Section 2210.

4.1.2 Shear and Web Crippling Strength:

The shear and web crippling strength of deck panels to resist support reactions and concentrated loads are provided in the tables of this report.

4.2 Horizontal Load (Diaphragm) Design:

When used to support horizontal loads as components of diaphragms, the diaphragm shear strength and stiffness of steel deck panels must be determined in accordance with AISI S310 using the section properties noted in this report.

4.3 Installation:

The deck panels must be installed in accordance with this report and also with Cold-Rolled Steel, LLC's published installation guidelines and instructions. If there is a conflict between Cold-Rolled Steel, LLC's published installation guidelines and instructions and this report, this report governs.

5.0 CONDITIONS OF USE:

The Cold-Rolled Steel, LLC steel deck panels described in this report comply with, or are suitable alternatives to what is specified in, the code noted in Section 1.0 of this report, subject to the following conditions:

5.1 The thickness delivered to the jobsite must be at least 95 percent of the design base-metal thickness.

5.2 The minimum loads and deflection limits of IBC Chapter 16 in addition to the construction loads required by references in IBC Section 2210.1.1 must be considered by the design professional based on the specific occupancy or use, as applicable.

5.3 Special inspection must be provided in accordance with Chapter 17 of the IBC.

5.4 When the steel deck panels are used as roof decks, the panels must be covered with an approved code-complying roof covering.

5.5 Fasteners used in connections are outside the scope of this report.

5.6 Calculations and details demonstrating that the loads applied to the decks comply with this report must be submitted to the code official for approval. Calculations and drawings must be prepared, signed, and sealed by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.7 Concrete-filled sections must not be used to support loads that are predominantly vibratory, such as those for operation of heavy machinery, reciprocating motors or moving loads.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with ICC-ES Acceptance Criteria for Steel Deck Roof and Floor Systems (AC43), dated February 2021.

7.0 IDENTIFICATION

7.1 Each bundle of the Cold-Rolled Steel, LLC steel deck panels described in this report is identified by labeling bearing the manufacturer's name (Cold-Rolled Steel, LLC) and the manufacturing location (Caldwell, Idaho); the deck panel profile name; the design thickness; the minimum specified yield strength; the cover width of the panel; and the evaluation report number (ESR-4866).

7.2 The report holder's contact information is the following:

COLD-ROLLED STEEL, LLC
19212 GOLDFINCH WAY
CALDWELL, IDAHO 83605
(208) 455-7477
www.crolledsteel.com

General Notes for Tables

Gage (design base metal thickness)
I_{d+} – Positive Moment of Inertia used for deflections
I_{d-} – Negative Moment of Inertia used for deflections
S_{e+} – Effective Positive Section Modulus
S_{e-} – Effective Negative Section Modulus

M_p/Ω - ASD Allowable Positive Moment
M_n/Ω - ASD Allowable Negative Moment
R_n/Ω – ASD Allowable Web Crippling
V_n/Ω - ASD Allowable Shear
ASD – Allowable Strength Design

TABLES 1-3 - 1.5WR ROOF DECK (40 ksi) TABLES

TABLE 1A – SECTION PROPERTIES - 1.5WR ROOF DECK (40 ksi)[1]

PROFILE	GAGE NUMBER	DESIGN BASE METAL THICKNESS (inches)	WEIGHT (psf)	F_y (ksi)	S_{e+} (in.^{3}/ft)	S_{e-} (in.^{3}/ft)	M_p/Ω (in.-lbs/ft)	M_n/Ω (in.-lbs/ft)	I_{d+} (in.^{4}/ft)	I_{d-} (in.^{4}/ft)
1.5WR	22	0.0295	1.6	40	0.185	0.191	4428	4578	0.162	0.182
1.5WR	20	0.0358	2.0	40	0.245	0.244	5868	5852	0.204	0.227
1.5WR	18	0.0474	2.6	40	0.333	0.331	7968	7928	0.288	0.303
1.5WR	16	0.0598	3.0	40	0.426	0.419	10204	10028	0.379	0.386

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All section properties and ASD flexural strengths have been calculated in accordance with ANSI/SDI RD-2017 and AISI S100-2016 S2/20.

TABLE 1B – ASD SHEAR AND WEB CRIPPLING- 1.5WR ROOF DECK (40 ksi)[1,2]

PROFILE	GAGE NUMBER	V_n/Ω (lbs per ft)	WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING END BEARING			WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING INTERIOR BEARING		
			BEARING WIDTH			BEARING WIDTH		
			1-1/2”	2”	3”	1-1/2”	2”	3”
1.5WR	22	2242	645	708	816	959	1040	1177
1.5WR	20	2711	919	1007	1154	1386	1499	1687
1.5WR	18	3568	1535	1673	1906	2359	2538	2837
1.5WR	16	4471	2346	2548	2886	3660	3920	4357

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All web crippling strengths are calculated in accordance with ANSI/SDI RD-2017and AISI S100-2016 S2/20.
2. Web crippling strength is calculated assuming the deck is attached to the support.

TABLE 2A – ASD UNIFORM DOWNWARD LOADS (psf) - 1.5WR ROOF DECK (40ksi)[1,2,3,4]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	118	98	82	70	60	52	46	41	36	33	30
	20	156	129	109	93	80	70	61	54	48	43	39
	18	212	176	148	126	108	94	83	74	66	59	53
	16	272	225	189	161	139	121	106	94	84	75	68
Double	22	122	101	85	72	62	54	48	42	38	34	31
	20	156	129	108	92	80	69	61	54	48	43	39
	18	211	175	147	125	108	94	83	73	65	59	53
	16	267	221	186	158	136	119	104	93	83	74	67
Triple	22	153	126	106	90	78	68	60	53	47	42	38
	20	195	161	135	115	100	87	76	68	60	54	49
	18	264	218	184	156	135	117	103	91	82	73	66
	16	334	276	232	198	171	149	131	116	103	93	84

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 2B – ASD UNIFORM UPLIFT LOADS (psf) - 1.5WR ROOF DECK (40 ksi)[1,2,3,4]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	122	101	85	72	62	54	48	42	38	34	31
	20	156	129	108	92	80	69	61	54	48	43	39
	18	211	175	147	125	108	94	83	73	65	59	53
	16	267	221	186	158	136	119	104	93	83	74	67
Double	22	118	98	82	70	60	52	46	41	36	33	30
	20	156	129	109	93	80	70	61	54	48	43	39
	18	212	176	148	126	108	94	83	74	66	59	53
	16	272	225	189	161	139	121	106	94	84	75	68
Triple	22	148	122	102	87	75	66	58	51	46	41	37
	20	196	162	136	116	100	87	76	68	60	54	49
	18	266	220	184	157	136	118	104	92	82	74	66
	16	340	281	236	201	174	151	133	118	105	94	85

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

Tables 2A and 2B notes

1. All section properties and ASD ($\Omega = 1.67$) uniform loads are calculated in accordance with ANSI/SDI RD-2017 and AISI S100-2016 S2/20.
2. Loads shown in tables are uniformly distributed superimposed loads in psf. Span length assumes center-to-center spacing of supports. Tabulated loads shall not be increased by assuming clear span dimensions.
3. Bending Moment formulae used for flexural stress limitations are:

Simple and Two Span $M = \frac{w\ell^2}{8}$

Three Span or More $M = \frac{w\ell^2}{10}$

4. Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.

TABLE 2C – UNIFORM SERVICE LOAD THAT CAUSES L/240 DEFLECTION (psf) - 1.5WR ROOF DECK (40 ksi)[1]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	85	64	49	39	31	25	21	17	15	12	11
	20	107	81	62	49	39	32	26	22	18	16	13
	18	151	114	87	69	55	45	37	31	26	22	19
	16	199	150	115	91	73	59	49	41	34	29	25
Double	22	205	154	119	93	75	61	50	42	35	30	26
	20	259	194	150	118	94	77	63	53	44	38	32
	18	364	273	211	166	133	108	89	74	62	53	45
	16	480	360	278	218	175	142	117	98	82	70	60
Triple	22	161	121	93	73	59	48	39	33	28	23	20
	20	202	152	117	92	74	60	49	41	35	29	25
	18	285	214	165	130	104	84	70	58	49	42	36
	16	375	282	217	171	137	111	92	76	64	55	47

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. For loads that cause L/120 Deflection, multiply by 2.0. For loads that cause L/180 Deflection, multiply by 1.5. For loads that cause L/360 Deflection, multiply by 0.667.

TABLE 3 – ASD ROOF DECK CONSTRUCTION SPANS - 1.5WR ROOF DECK (40 ksi)[1,2]
(ANSI/SDI RD-2017 Section 2.4.A.3 and 2.4.A.4)

SPAN COND.	GAGE NUMBER	ASD SPAN
Single	22	7'-05"
	20	9'-09"
	18	13'-03"
	16	17'-00"
Double or Triple	22	9'-01"
	20	12'-00"
	18	16'-04"
	16	20'-11"

ASD CANTILEVER SPAN
1'-11"
2'-05"
3'-03"
4'-01"

1. All construction load spans are calculated using a 200-pound service load on a 1-foot width of deck, in accordance with ANSI/SDI RD-2017.
2. All cantilever construction load spans are calculated using a 200-pound service load on a 1-foot width of deck and a 10 psf uniform distributed load, in accordance with ANSI/SDI RD-2017.

TABLES 4-6 - 1.5WR ROOF DECK (50 ksi)

TABLE 4A – SECTION PROPERTIES – 1.5WR ROOF DECK (50 ksi)[1]

PROFILE	GAGE NUMBER	DESIGN BASE METAL THICKNESS (inches)	WEIGHT (psf)	F_y ksi	S_{e+} (in.^{3}/ft)	S_{e-} (in.^{3}/ft)	M_p/Ω (in.-lbs/ft)	M_n/Ω (in.-lbs/ft)	I_{d+} (in.^{4}/ft)	I_{d-} (in.^{4}/ft)
1.5WR	22	0.0295	1.6	50	0.176	0.184	5258	5506	0.160	0.180
1.5WR	20	0.0358	2.0	50	0.233	0.236	6966	7064	0.200	0.222
1.5WR	18	0.0474	2.6	50	0.328	0.327	9830	9800	0.281	0.303
1.5WR	16	0.0598	3.0	50	0.422	0.416	12625	12465	0.372	0.383

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All section properties and ASD flexural strengths are calculated in accordance with ANSI/SDI RD-2017and AISI S100-2016 S2/20.

TABLE 4B – ASD SHEAR AND WEB CRIPPLING - 1.5WR ROOF DECK (50 ksi)[1,2]

PROFILE	GAGE NUMBER	V_n/Ω (lbs per ft)	WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING END BEARING			WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING INTERIOR BEARING		
			BEARING WIDTH			BEARING WIDTH		
			1-1/2”	2”	3”	1-1/2”	2”	3”
1.5WR	22	2802	806	886	1019	1199	1301	1471
1.5WR	20	3389	1149	1258	1443	1733	1873	2109
1.5WR	18	4460	1918	2092	2383	2949	3172	3546
1.5WR	16	5589	2933	3185	3608	4574	4900	5446

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All web crippling strengths are calculated in accordance with ANSI/SDI RD-2017 and AISI S100-2016 S2/20.
2. Web crippling strength is calculated assuming the deck is attached to the support.

TABLE 5A - ASD UNIFORM DOWNWARD LOADS (psf)- 1.5WR ROOF DECK (50 ksi)[1,2,3,4]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5”-06"	6'-00"	6’-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	140	116	97	83	72	62	55	49	43	39	35
	20	186	154	129	110	95	83	73	64	57	51	46
	18	262	217	182	155	134	117	102	91	81	73	66
	16	337	278	234	199	172	150	132	116	104	93	84
Double	22	147	121	102	87	75	65	57	51	45	41	37
	20	188	156	131	111	96	84	74	65	58	52	47
	18	261	216	181	155	133	116	102	90	81	72	65
	16	332	275	231	197	170	148	130	115	103	92	83
Triple	22	184	152	127	109	94	82	72	64	57	51	46
	20	235	195	164	139	120	105	92	81	73	65	59
	18	327	270	227	193	167	145	128	113	101	90	82
	16	416	343	289	246	212	185	162	144	128	115	104

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 5B - ASD UNIFORM UPWARD LOADS (psf) - 1.5WR ROOF DECK (50 ksi)[1,2,3,4]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	147	121	102	87	75	65	57	51	45	41	37
	20	188	156	131	111	96	84	74	65	58	52	47
	18	261	216	181	155	133	116	102	90	81	72	65
	16	332	275	231	197	170	148	130	115	103	92	83
Double	22	140	116	97	83	72	62	55	49	43	39	35
	20	186	154	129	110	95	83	73	64	57	51	46
	18	262	217	182	155	134	117	102	91	81	73	66
	16	337	278	234	199	172	150	132	116	104	93	84
Triple	22	175	145	122	104	89	78	68	61	54	49	44
	20	232	192	161	137	118	103	91	80	72	64	58
	18	328	271	228	194	167	146	128	113	101	91	82
	16	421	348	292	249	215	187	164	146	130	117	105

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

Tables 5A and 5B notes:

1. All section properties and ASD (Ω = 1.67) uniform loads are calculated in accordance with ANSI/SDI RD-2017 and AISI S100-2016 S2/20.
2. Loads shown in tables are uniformly distributed superimposed loads in psf. Span length assumes center-to-center spacing of supports. Tabulated loads shall not be increased by assuming clear span dimensions.
3. Bending Moment formulae used for flexural stress limitations are:

Simple and Two Span $M = \frac{w\ell^2}{8}$

Three Span or More $M = \frac{w\ell^2}{10}$

4. Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.

TABLE 5C - UNIFORM SERVICE LOAD THAT CAUSES L/240 DEFLECTION (psf) - 1.5WR ROOF DECK (50 ksi)[1]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	84	63	49	38	31	25	21	17	14	12	11
	20	105	79	61	48	38	31	26	21	18	15	13
	18	148	111	85	67	54	44	36	30	25	22	18
	16	196	147	113	89	71	58	48	40	34	29	24
Double	22	202	152	117	92	74	60	49	41	35	29	25
	20	253	190	146	115	92	75	62	51	43	37	32
	18	355	267	206	162	130	105	87	72	61	52	44
	16	471	354	272	214	172	139	115	96	81	69	59
Triple	22	158	119	92	72	58	47	39	32	27	23	20
	20	198	149	115	90	72	59	48	40	34	29	25
	18	278	209	161	127	101	82	68	57	48	41	35
	16	368	277	213	168	134	109	90	75	63	54	46

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. For loads that cause L/120 Deflection, multiply by 2.0. For loads that cause L/180 Deflection, multiply by 1.5. For loads that cause L/360 Deflection, multiply by 0.667.

TABLE 6 – ASD ROOF DECK CONSTRUCTION SPANS - 1.5WR ROOF DECK (50 ksi) [1,2]
(ANSI/SDI RD-2017 Section 2.4.A.3 and 2.4.A.4)

SPAN COND.	GAGE NUMBER	ASD SPAN
Single	22	8'-09"
	20	11'-07"
	18	16'-05"
	16	21'-00"
Double or Triple	22	10'-09"
	20	14'-03"
	18	20'-02"
	16	25'-11"

ASD CANTILEVER SPAN
2'-03"
2'-11"
4'-00"
5'-01"

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm

1. All construction load spans are calculated using a 200-pound service load on a 1-foot width of deck, in accordance with ANSI/SDI RD-2017.
2. All cantilever construction load spans are calculated using a 200-pound service load on a 1-foot width of deck and a 10 psf uniform distributed load, in accordance with ANSI/SDI RD-2017.

TABLES 7-10 – 1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

TABLE 7A – SECTION PROPERTIES
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)[1]

PROFILE	GAGE NUMBER	DESIGN BASE METAL THICKNESS (inches)	WEIGHT (psf)	F_y ksi	S_{e+} (in.^{3}/ft)	S_{e-} (in.^{3}/ft)	M_p/Ω (in.-lbs/ft)	M_n/Ω (in.-lbs/ft)	I_{d+} (in.^{4}/ft)	I_{d-} (in.^{4}/ft)
1.5x6	22	0.0295	1.6	40	0.185	0.191	4428	4578	0.162	0.182
1.5x6	20	0.0358	2.0	40	0.245	0.244	5868	5852	0.204	0.227
1.5x6	18	0.0474	2.6	40	0.333	0.331	7968	7928	0.288	0.303
1.5x6	16	0.0598	3.0	40	0.426	0.419	10204	10028	0.379	0.386

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All section properties and ASD flexural strengths are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, and AISI S100-2016 S2/20.

TABLE 7B – ASD SHEAR AND WEB CRIPPLING
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)[1,2]

PROFILE	GAGE NUMBER	V_n/Ω (lbs per ft)	WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING END BEARING			WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING INTERIOR BEARING		
			BEARING LENGTH			BEARING LENGTH		
			1-1/2"	2"	3"	1-1/2"	2"	3"
1.5x6	22	2242	645	708	816	959	1040	1177
1.5x6	20	2711	919	1007	1154	1386	1499	1687
1.5x6	18	3568	1535	1673	1906	2359	2538	2837
1.5x6	16	4471	2346	2548	2886	3660	3920	4357

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All web crippling strengths are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, and AISI S100-2016 S2/20.
2. Web crippling strength is calculated assuming the deck is attached to the support.

TABLE 8A - ASD UNIFORM SUPERIMPOSED DOWNWARD LOADS (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	118	98	82	70	60	52	46	41	36	33	30
	20	156	129	109	93	80	70	61	54	48	43	39
	18	212	176	148	126	108	94	83	74	66	59	53
	16	272	225	189	161	139	121	106	94	84	75	68
Double	22	122	101	85	72	62	54	48	42	38	34	31
	20	156	129	108	92	80	69	61	54	48	43	39
	18	211	175	147	125	108	94	83	73	65	59	53
	16	267	221	186	158	136	119	104	93	83	74	67
Triple	22	153	126	106	90	78	68	60	53	47	42	38
	20	195	161	135	115	100	87	76	68	60	54	49
	18	264	218	184	156	135	117	103	91	82	73	66
	16	334	276	232	198	171	149	131	116	103	93	84

For **SI:** 1 i2n. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

Tables 8A and 8B Notes:

1. All section properties and ASD (Ω = 1.67) uniform loads are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017 and AISI S100-2016 S2/20.
2. Loads shown in tables are uniformly distributed superimposed loads in psf. Span length assumes center-to-center spacing of supports. Tabulated loads shall not be increased by assuming clear span dimensions.
3. Bending Moment formulae used for flexural stress limitations are:

Simple and Two Span $M = \frac{W\ell^2}{8}$ Three Span or More $M = \frac{W\ell^2}{10}$

3. Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.

TABLE 8B - UNIFORM SUPERIMPOSED SERVICE LOAD THAT CAUSES L/240 DEFLECTION (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)[1]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	85	64	49	39	31	25	21	17	15	12	11
	20	107	81	62	49	39	32	26	22	18	16	13
	18	151	114	87	69	55	45	37	31	26	22	19
	16	199	150	115	91	73	59	49	41	34	29	25
Double	22	205	154	119	93	75	61	50	42	35	30	26
	20	259	194	150	118	94	77	63	53	44	38	32
	18	364	273	211	166	133	108	89	74	62	53	45
	16	480	360	278	218	175	142	117	98	82	70	60
Triple	22	161	121	93	73	59	48	39	33	28	23	20
	20	202	152	117	92	74	60	49	41	35	29	25
	18	285	214	165	130	104	84	70	58	49	42	36
	16	375	282	217	171	137	111	92	76	64	55	47

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. For loads that cause L/120 Deflection, multiply by 2.0. For loads that cause L/180 Deflection, multiply by 1.5. For loads that cause L/360 Deflection, multiply by 0.667.

TABLE 9 – CONSTRUCTION SPAN TABLE – 20 PSF CONSTRUCTION LOAD
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)[1,2]

NORMAL WEIGHT CONCRETE (145 pcf)

SLAB THICKNESS	DECK TYPE	MAXIMUM UNSHORED CLEAR SPAN		
		1 SPAN	2 SPAN	3 SPAN
3.50” (t=2.00”) 31 PSF	1.5x6x22 ga	6' 1"	7' 2"	7' 3"
	1.5x6x20 ga	7' 5"	8' 8"	8' 10"
	1.5x6x18 ga	9' 1"	10' 2"	10' 6"
	1.5x6x16 ga	10' 3"	11' 5"	11' 10"
4.00” (t=2.50”) 37 PSF	1.5x6x22 ga	5' 9"	6' 9"	6' 10"
	1.5x6x20 ga	7' 0"	8' 2"	8' 4"
	1.5x6x18 ga	8' 7"	9' 8"	9' 11"
	1.5x6x16 ga	9' 8"	10' 10"	11' 2"
4.50” (t=3.00”) 43 PSF	1.5x6x22 ga	5' 6"	6' 6"	6' 7"
	1.5x6x20 ga	7' 2"	8' 1"	8' 4"
	1.5x6x18 ga	8' 2"	9' 2"	9' 6"
	1.5x6x16 ga	9' 2"	10' 4"	10' 8"
5.00” (t=3.50”) 49 PSF	1.5x6x22 ga	5' 3"	6' 2"	6' 3"
	1.5x6x20 ga	6' 5"	7' 6"	7' 7"
	1.5x6x18 ga	7' 10"	8' 9"	9' 1"
	1.5x6x16 ga	8' 9"	9' 10"	10' 2"
5.50” (t=4.00”) 55 PSF	1.5x6x22 ga	5' 1"	6' 0"	6' 0"
	1.5x6x20 ga	6' 2"	7' 2"	7' 3"
	1.5x6x18 ga	7' 6"	8' 5"	8' 8"
	1.5x6x16 ga	8' 5"	9' 5"	9' 9"
6.00” (t=4.50”) 61 PSF	1.5x6x22 ga	4' 11"	5' 9"	5' 10"
	1.5x6x20 ga	5' 11"	6' 11"	7' 0"
	1.5x6x18 ga	7' 2"	8' 1"	8' 4"
	1.5x6x16 ga	8' 2"	9' 1"	9' 5"

LIGHTWEIGHT CONCRETE (115 pcf)

SLAB THICKNESS	DECK TYPE	MAXIMUM UNSHORED CLEAR SPAN		
		1 SPAN	2 SPAN	3 SPAN
3.50” (t=2.00”) 23 PSF	1.5x6x22 ga	6' 3"	7' 5"	7' 6"
	1.5x6x20 ga	7' 8"	9' 1"	9' 2"
	1.5x6x18 ga	9' 6"	10' 7"	11' 0"
	1.5x6x16 ga	10' 9"	11' 11"	12' 4"
4.00” (t=2.50”) 28 PSF	1.5x6x22 ga	6' 0"	7' 1"	7' 2"
	1.5x6x20 ga	7' 4"	8' 7"	8' 8"
	1.5x6x18 ga	9' 0"	10' 1"	10' 5"
	1.5x6x16 ga	10' 1"	11' 4"	11' 9"
4.50” (t=3.00”) 33 PSF	1.5x6x22 ga	5' 9"	6' 9"	6' 10"
	1.5x6x20 ga	7' 9"	8' 8"	9' 0"
	1.5x6x18 ga	8' 7"	9' 8"	9' 11"
	1.5x6x16 ga	9' 8"	10' 10"	11' 2"
5.00” (t=3.50”) 37 PSF	1.5x6x22 ga	5' 7"	6' 7"	6' 8"
	1.5x6x20 ga	6' 9"	7' 11"	8' 0"
	1.5x6x18 ga	8' 4"	9' 4"	9' 7"
	1.5x6x16 ga	9' 4"	10' 6"	10' 10"
5.50” (t=4.00”) 42 PSF	1.5x6x22 ga	5' 5"	6' 4"	6' 5"
	1.5x6x20 ga	6' 6"	7' 8"	7' 9"
	1.5x6x18 ga	8' 0"	8' 11"	9' 3"
	1.5x6x16 ga	9' 0"	10' 1"	10' 5"
6.00” (t=4.50”) 46 PSF	1.5x6x22 ga	5' 3"	6' 2"	6' 3"
	1.5x6x20 ga	6' 4"	7' 5"	7' 6"
	1.5x6x18 ga	7' 9"	8' 8"	9' 0"
	1.5x6x16 ga	8' 9"	9' 9"	10' 1"

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions. The concrete topping thickness is defined as *t*.

TABLE 10A – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

1.5 x 6	22 ga	F_y 40 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	31	400	400	343	289	246	211	183
4	37	400	400	400	362	308	265	229
4.5	43	400	400	400	400	373	321	278
5	49	400	400	400	400	400	379	329
5.5	55	400	400	400	400	400	400	380
6	61	400	400	400	400	400	400	400

1.5 x 6	22 ga	F_y 40 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	159	139	123	108	96	86	76	68
4	200	175	155	137	121	108	97	87
4.5	243	213	188	166	148	132	118	106
5	287	252	222	197	175	156	140	126
5.5	332	292	258	228	203	182	163	146
6	378	332	293	260	232	207	186	167

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 10B – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

1.5 x 6	20 ga	F_y 40 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	31	400	400	400	347	296	255	221
4	37	400	400	400	400	371	320	278
4.5	43	400	400	400	400	400	388	337
5	49	400	400	400	400	400	400	399
5.5	55	400	400	400	400	400	400	400
6	61	400	400	400	400	400	400	400

1.5 x 6	20 ga	F_y 40 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	193	170	150	133	119	106	95	85
4	243	214	189	168	150	134	120	108
4.5	295	260	230	204	182	163	147	132
5	349	307	272	242	216	194	174	157
5.5	400	356	315	280	251	225	202	182
6	400	400	359	320	286	256	231	208

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 10C – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

1.5 x 6	18 ga	F_y 40 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	Weight (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	31	400	400	400	400	383	331	288
4	37	400	400	400	400	400	400	363
4.5	43	400	400	400	400	400	400	400
5	49	400	400	400	400	400	400	400
5.5	55	400	400	400	400	400	400	400
6	61	400	400	400	400	400	400	400

1.5 x 6	18 ga	F_y 40 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	253	223	198	176	157	141	127	115
4	318	281	249	222	199	179	161	146
4.5	387	342	303	271	243	218	197	178
5	400	400	360	321	288	259	234	212
5.5	400	400	400	373	334	301	272	246
6	400	400	400	400	382	344	311	281

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 10D – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

1.5 x 6	16 ga	F_y 40 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	31	400	400	400	400	400	400	356
4	37	400	400	400	400	400	400	400
4.5	43	400	400	400	400	400	400	400
5	49	400	400	400	400	400	400	400
5.5	55	400	400	400	400	400	400	400
6	61	400	400	400	400	400	400	400

1.5 x 6	16 ga	F_y 40 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	313	276	246	219	197	177	160	145
4	394	349	310	277	249	224	203	184
4.5	400	400	379	339	304	274	248	225
5	400	400	400	400	361	326	295	268
5.5	400	400	400	400	400	379	343	312
6	400	400	400	400	400	400	393	357

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 10E – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

1.5 x 6	22 ga	F_y 40 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	23	400	393	326	275	234	200	173
4	28	400	400	400	346	294	253	219
4.5	33	400	400	400	400	358	308	267
5	37	400	400	400	400	400	365	316
5.5	42	400	400	400	400	400	400	367
6	46	400	400	400	400	400	400	400

1.5 x 6	22 ga	F_y 40 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	151	132	116	103	91	81	72	64
4	191	167	147	130	115	103	92	82
4.5	232	204	180	159	141	126	112	101
5	276	242	213	189	168	150	134	120
5.5	320	281	248	220	195	174	156	140
6	365	321	283	251	223	200	179	160

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 10F – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

1.5 x 6	20 ga	F_y 40 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	23	400	400	390	329	281	241	209
4	28	400	400	400	400	354	305	264
4.5	33	400	400	400	400	400	371	322
5	37	400	400	400	400	400	400	382
5.5	42	400	400	400	400	400	400	400
6	46	400	400	400	400	400	400	400

1.5 x 6	20 ga	F_y 40 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	183	161	142	126	112	100	89	80
4	231	203	179	159	142	127	114	102
4.5	282	248	219	195	174	155	139	125
5	334	294	260	231	206	185	166	149
5.5	389	342	303	269	240	215	194	174
6	400	391	346	308	275	246	222	200

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 10G – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

1.5 x 6	18 ga	F_y 40 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	23	400	400	400	400	362	312	271
4	28	400	400	400	400	400	394	343
4.5	33	400	400	400	400	400	400	400
5	37	400	400	400	400	400	400	400
5.5	42	400	400	400	400	400	400	400
6	46	400	400	400	400	400	400	400

1.5 x 6	18 ga	F_y 40 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	238	210	186	165	148	133	119	108
4	301	265	235	210	188	168	152	137
4.5	368	325	288	257	230	207	186	168
5	400	386	343	306	274	246	222	201
5.5	400	400	399	356	320	287	260	235
6	400	400	400	400	366	329	297	269

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 10H – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (40 ksi)

1.5 x 6	16 ga	F_y 40 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	23	400	400	400	400	400	371	323
4	28	400	400	400	400	400	400	400
4.5	33	400	400	400	400	400	400	400
5	37	400	400	400	400	400	400	400
5.5	42	400	400	400	400	400	400	400
6	46	400	400	400	400	400	400	400

1.5 x 6	16 ga	F_y 40 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	284	251	223	199	178	160	145	131
4	371	328	292	261	234	211	190	173
4.5	400	400	358	320	287	259	234	212
5	400	400	400	382	343	309	280	254
5.5	400	400	400	400	400	361	327	297
6	400	400	400	400	400	400	375	341

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

Tables 11-14 - 1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)

TABLE 11A – SECTION PROPERTIES
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

PROFILE	GAGE NUMBER	DESIGN BASE METAL THICKNESS (inches)	WEIGHT (psf)	F_y ksi	S_{e+} (in.^{3}/ft)	S_{e-} (in.^{3}/ft)	M_p/Ω (in.-lbs/ft)	M_n/Ω (in.-lbs/ft)	I_{d+} (in.^{4}/ft)	I_{d-} (in.^{4}/ft)
1.5x6	22	0.0295	1.6	50	0.176	0.184	5258	5506	0.160	0.180
1.5x6	20	0.0358	2.0	50	0.233	0.236	6966	7064	0.200	0.222
1.5x6	18	0.0474	2.6	50	0.328	0.327	9830	9800	0.281	0.303
1.5x6	16	0.0598	3.0	50	0.422	0.416	12625	12465	0.372	0.383

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All section properties and ASD flexural strengths are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, and AISI S100-2016 S2/20.

TABLE 11B – ASD SHEAR AND WEB CRIPPLING
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1,2]

PROFILE	GAGE NUMBER	V_n/Ω lbs per ft	WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING END BEARING			WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING INTERIOR BEARING		
			BEARING LENGTH			BEARING LENGTH		
			1-1/2”	2”	3”	1-1/2”	2”	3”
1.5x6	22	2802	806	886	1019	1199	1301	1471
1.5x6	20	3389	1149	1258	1443	1733	1873	2109
1.5x6	18	4460	1918	2092	2383	2949	3172	3546
1.5x6	16	5589	2933	3185	3608	4574	4900	5446

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All web crippling strengths are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, and AISI S100-2016 S2/20.
2. Web crippling strength is calculated assuming the deck is attached to the support.

TABLE 12A- ASD UNIFORM SUPERIMPOSED DOWNWARD LOADS (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1,2,3,4]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	140	116	97	83	72	62	55	49	43	39	35
	20	186	154	129	110	95	83	73	64	57	51	46
	18	262	217	182	155	134	117	102	91	81	73	66
	16	337	278	234	199	172	150	132	116	104	93	84
Double	22	147	121	102	87	75	65	57	51	45	41	37
	20	188	156	131	111	96	84	74	65	58	52	47
	18	261	216	181	155	133	116	102	90	81	72	65
	16	332	275	231	197	170	148	130	115	103	92	83
Triple	22	184	152	127	109	94	82	72	64	57	51	46
	20	235	195	164	139	120	105	92	81	73	65	59
	18	327	270	227	193	167	145	128	113	101	90	82
	16	416	343	289	246	212	185	162	144	128	115	104

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

Tables 2.1 and 2.2 Notes:

1. All section properties and ASD (Ω = 1.67) uniform loads are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017 and AISI S100-2016 S2/20.
2. Loads shown in tables are uniformly distributed superimposed loads in psf. Span length assumes center-to-center spacing of supports. Tabulated loads shall not be increased by assuming clear span dimensions.
3. Bending Moment formulae used for flexural stress limitations are:

Simple and Two Span $M = \frac{W\ell^2}{8}$ Three Span or More $M = \frac{W\ell^2}{10}$

3. Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.

TABLE 12B - UNIFORM SUPERIMPOSED SERVICE LOAD THAT CAUSES L/240 DEFLECTION (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		5'-00"	5"-06"	6'-00"	6'-06"	7'-00"	7'-06"	8'-00"	8'-06"	9-00"	9'-06"	10'-00"
Single	22	84	63	49	38	31	25	21	17	14	12	11
	20	105	79	61	48	38	31	26	21	18	15	13
	18	148	111	85	67	54	44	36	30	25	22	18
	16	196	147	113	89	71	58	48	40	34	29	24
Double	22	202	152	117	92	74	60	49	41	35	29	25
	20	253	190	146	115	92	75	62	51	43	37	32
	18	355	267	206	162	130	105	87	72	61	52	44
	16	471	354	272	214	172	139	115	96	81	69	59
Triple	22	158	119	92	72	58	47	39	32	27	23	20
	20	198	149	115	90	72	59	48	40	34	29	25
	18	278	209	161	127	101	82	68	57	48	41	35
	16	368	277	213	168	134	109	90	75	63	54	46

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. For loads that cause L/120 Deflection, multiply by 2.0. For loads that cause L/180 Deflection, multiply by 1.5. For loads that cause L/360 Deflection, multiply by 0.667.

TABLE 13 – CONSTRUCTION SPAN TABLE – 20 psf CONSTRUCTION LOAD
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1,2]

NORMAL WEIGHT CONCRETE (145 pcf)

SLAB THICKNESS	Deck Type	MAXIMUM UNSHORED CLEAR SPAN		
		1 SPAN	2 SPAN	3 SPAN
3.50” (t=2.00”) 31 PSF	1.5x6x22 ga	6' 10"	8' 1"	8' 2"
	1.5x6x20 ga	8' 3"	9' 7"	9' 11"
	1.5x6x18 ga	9' 3"	11' 4"	11' 8"
	1.5x6x16 ga	10' 2"	12' 9"	13' 2"
4.00” (t=2.50”) 37 PSF	1.5x6x22 ga	6' 6"	7' 8"	7' 9"
	1.5x6x20 ga	7' 10"	9' 1"	9' 4"
	1.5x6x18 ga	8' 9"	10' 8"	11' 1"
	1.5x6x16 ga	9' 7"	12' 1"	12' 6"
4.50” (t=3.00”) 43 PSF	1.5x6x22 ga	6' 2"	7' 3"	7' 4"
	1.5x6x20 ga	7' 5"	9' 0"	9' 3"
	1.5x6x18 ga	8' 4"	10' 2"	10' 6"
	1.5x6x16 ga	9' 1"	11' 6"	11' 10"
5.00” (t=3.50”) 49 PSF	1.5x6x22 ga	5' 11"	6' 11"	7' 0"
	1.5x6x20 ga	7' 1"	8' 3"	8' 5"
	1.5x6x18 ga	7' 11"	9' 9"	10' 1"
	1.5x6x16 ga	8' 9"	11' 0"	11' 4"
5.50” (t=4.00”) 55 PSF	1.5x6x22 ga	5' 9"	6' 8"	6' 9"
	1.5x6x20 ga	6' 10"	7' 11"	8' 1"
	1.5x6x18 ga	7' 8"	9' 4"	9' 8"
	1.5x6x16 ga	8' 5"	10' 6"	10' 11"
6.00” (t=4.50”) 61 PSF	1.5x6x22 ga	5' 6"	6' 5"	6' 6"
	1.5x6x20 ga	6' 7"	7' 8"	7' 9"
	1.5x6x18 ga	7' 5"	8' 12"	9' 3"
	1.5x6x16 ga	8' 1"	10' 1"	10' 6"

LIGHTWEIGHT CONCRETE (115 pcf)

SLAB THICKNESS	Deck Type	MAXIMUM UNSHORED CLEAR SPAN		
		1 SPAN	2 SPAN	3 SPAN
3.50” (t=2.00”) 23 PSF	1.5x6x22 ga	7' 5"	8' 10"	8' 11"
	1.5x6x20 ga	9' 1"	10' 6"	10' 10"
	1.5x6x18 ga	10' 3"	12' 4"	12' 9"
	1.5x6x16 ga	11' 3"	13' 11"	14' 4"
4.00” (t=2.50”) 28 PSF	1.5x6x22 ga	7' 1"	8' 4"	8' 5"
	1.5x6x20 ga	8' 7"	9' 11"	10' 3"
	1.5x6x18 ga	9' 7"	11' 8"	12' 1"
	1.5x6x16 ga	10' 6"	13' 2"	13' 7"
4.50” (t=3.00”) 33 PSF	1.5x6x22 ga	6' 9"	7' 11"	8' 0"
	1.5x6x20 ga	8' 1"	9' 11"	10' 3"
	1.5x6x18 ga	9' 1"	11' 1"	11' 6"
	1.5x6x16 ga	9' 11"	12' 6"	12' 11"
5.00” (t=3.50”) 37 PSF	1.5x6x22 ga	6' 6"	7' 8"	7' 9"
	1.5x6x20 ga	7' 10"	9' 1"	9' 4"
	1.5x6x18 ga	8' 9"	10' 8"	11' 1"
	1.5x6x16 ga	9' 7"	12' 1"	12' 6"
5.50” (t=4.00”) 42 PSF	1.5x6x22 ga	6' 3"	7' 4"	7' 5"
	1.5x6x20 ga	7' 6"	8' 9"	8' 11"
	1.5x6x18 ga	8' 4"	10' 3"	10' 7"
	1.5x6x16 ga	9' 2"	11' 7"	12' 0"
6.00” (t=4.50”) 46 PSF	1.5x6x22 ga	6' 1"	7' 1"	7' 2"
	1.5x6x20 ga	7' 3"	8' 5"	8' 8"
	1.5x6x18 ga	8' 1"	9' 11"	10' 3"
	1.5x6x16 ga	8' 11"	11' 3"	11' 7"

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.
2. The concrete topping thickness is defined as *t*.

TABLE 14A – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

1.5 x 6	22 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	31	400	400	400	366	312	269	234
4	37	400	400	400	400	392	338	293
4.5	43	400	400	400	400	400	400	356
5	49	400	400	400	400	400	400	400
5.5	55	400	400	400	400	400	400	400
6	61	400	400	400	400	400	400	400

1.5 x 6	22 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	204	180	159	141	126	113	101	91
4	257	226	200	178	159	142	128	115
4.5	311	274	243	216	193	173	155	140
5	368	324	287	255	228	205	184	166
5.5	400	375	332	296	264	237	214	193
6	400	400	378	337	301	270	243	220

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 14B – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

1.5 x 6	20 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	31	400	400	400	400	375	323	282
4	37	400	400	400	400	400	400	354
4.5	43	400	400	400	400	400	400	400
5	49	400	400	400	400	400	400	400
5.5	55	400	400	400	400	400	400	400
6	61	400	400	400	400	400	400	400

1.5 x 6	20 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	247	218	193	172	154	138	124	112
4	310	274	243	216	194	174	157	142
4.5	376	332	295	263	236	212	191	173
5	400	393	349	311	279	251	226	205
5.5	400	400	400	361	323	291	263	238
6	400	400	400	400	368	332	299	271

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 14C – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

1.5 x 6	18 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	31	400	400	400	400	400	400	366
4	37	400	400	400	400	400	400	400
4.5	43	400	400	400	400	400	400	400
5	49	400	400	400	400	400	400	400
5.5	55	400	400	400	400	400	400	400
6	61	400	400	400	400	400	400	400

1.5 x 6	18 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	321	284	253	226	203	183	165	150
4	400	358	318	285	256	230	208	189
4.5	400	400	387	346	311	281	254	231
5	400	400	400	400	369	333	301	274
5.5	400	400	400	400	400	386	350	318
6	400	400	400	400	400	400	400	363

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 14D – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED Load (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

1.5 x 6	16 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	31	400	400	400	400	400	400	400
4	37	400	400	400	400	400	400	400
4.5	43	400	400	400	400	400	400	400
5	49	400	400	400	400	400	400	400
5.5	55	400	400	400	400	400	400	400
6	61	400	400	400	400	400	400	400

1.5 x 6	16 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	396	351	313	280	252	227	206	187
4	400	400	394	353	318	287	260	237
4.5	400	400	400	400	388	351	318	289
5	400	400	400	400	400	400	378	344
5.5	400	400	400	400	400	400	400	400
6	400	400	400	400	400	400	400	400

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 14E – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

1.5 x 6	22 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	23	400	400	400	355	303	262	228
4	28	400	400	400	400	381	329	287
4.5	33	400	400	400	400	400	400	349
5	37	400	400	400	400	400	400	400
5.5	42	400	400	400	400	400	400	400
6	46	400	400	400	400	400	400	400

1.5 x 6	22 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	200	177	157	140	125	113	102	92
4	252	222	197	176	158	142	128	116
4.5	306	270	240	214	192	173	156	141
5	363	320	285	254	228	205	185	168
5.5	400	371	330	295	264	238	215	195
6	400	400	376	336	302	272	246	223

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 14F – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

1.5 x 6	20 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	23	400	400	400	400	362	313	273
4	28	400	400	400	400	400	394	343
4.5	33	400	400	400	400	400	400	400
5	37	400	400	400	400	400	400	400
5.5	42	400	400	400	400	400	400	400
6	46	400	400	400	400	400	400	400

1.5 x 6	20 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	240	212	188	168	151	136	123	112
4	302	267	237	212	191	172	155	141
4.5	367	325	289	258	232	209	189	172
5	400	386	343	307	276	249	225	205
5.5	400	400	398	356	320	289	262	238
6	400	400	400	400	366	331	299	272

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 14G – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

1.5 x 6	18 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	23	400	400	400	400	400	400	351
4	28	400	400	400	400	400	400	400
4.5	33	400	400	400	400	400	400	400
5	37	400	400	400	400	400	400	400
5.5	42	400	400	400	400	400	400	400
6	46	400	400	400	400	400	400	400

1.5 x 6	18 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	309	274	244	218	197	178	161	146
4	390	345	308	276	248	224	203	185
4.5	400	400	376	337	303	274	248	226
5	400	400	400	400	361	326	296	270
5.5	400	400	400	400	400	379	344	314
6	400	400	400	400	400	400	395	360

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 14H – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
1.5 COMPOSITE AND INVERTED FLOOR DECK TABLES (50 ksi)[1]

1.5 x 6	16 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		5'-0	5'-6	6'-0	6'-6	7'-0	7'-6	8'-0
3.5	23	400	400	400	400	400	400	400
4	28	400	400	400	400	400	400	400
4.5	33	400	400	400	400	400	400	400
5	37	400	400	400	400	400	400	400
5.5	42	400	400	400	400	400	400	400
6	46	400	400	400	400	400	400	400

1.5 x 6	16 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0	11'-6	12'-0
3.5	366	325	290	260	234	212	192	175
4	400	400	378	339	306	277	251	229
4.5	400	400	400	400	374	339	308	281
5	400	400	400	400	400	400	368	335
5.5	400	400	400	400	400	400	400	391
6	400	400	400	400	400	400	400	400

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLES 15-18 - 2.0 FORM AND COMPOSITE FLOOR DECK

TABLE 15A – SECTION PROPERTIES
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

PROFILE	GAGE NUMBER	DESIGN BASE METAL THICKNESS (inches)	WEIGHT (psf)	F_y ksi	S_{e+} (in.^{3}/ft)	S_{e-} (in.^{3}/ft)	M_p/Ω (in.-lbs/ft)	M_n/Ω (in.-lbs/ft)	I_{d+} (in.^{4}/ft)	I_{d-} (in.^{4}/ft)
2x12	22	0.0295	1.6	50	0.237	0.244	7105	7311	0.294	0.273
2x12	20	0.0358	1.9	50	0.317	0.324	9481	9701	0.371	0.350
2x12	18	0.0474	2.5	50	0.471	0.479	14102	14351	0.513	0.500
2x12	16	0.0598	3.2	50	0.622	0.629	18633	18822	0.662	0.653

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All section properties and ASD flexural strengths are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, AISI S100-2016 S2/20.

TABLE 15B – ASD SHEAR AND WEB CRIPPLING
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1,2]

PROFILE	GAGE NUMBER	V_n/Ω lbs per ft	WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING END BEARING			WEB CRIPPLING (R_N/Ω), lbs/ft AISI S100 ONE FLANGE LOADING INTERIOR BEARING		
			BEARING LENGTH			BEARING LENGTH		
			2”	3”	4”	2”	3”	4”
2x12	22	2033	417	480	533	649	735	806
2x12	20	2815	594	681	754	932	1049	1148
2x12	18	3709	991	1129	1245	1571	1757	1913
2x12	16	4641	1513	1714	1884	2420	2690	2917

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All web crippling strengths are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, and AISI S100-2016 S2/20.
2. Web crippling strength is calculated assuming the deck is attached to the support.

TABLE 16A - ASD UNIFORM SUPERIMPOSED DOWNWARD LOADS (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1,2,3,4]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		6'-00"	7'-00"	8'-00"	9'-00"	10'-00"	11'-00"	12'-00"	13'-00"	14-00"	15'-00"	16'-00"
Single	22	132	97	74	58	47	39	33	28	24	21	19
	20	176	129	99	78	63	52	44	37	32	28	25
	18	261	192	147	116	94	78	65	56	48	42	37
	16	345	254	194	153	124	103	86	74	63	55	49
Double	22	135	99	76	60	49	40	34	29	25	22	19
	20	180	132	101	80	65	53	45	38	33	29	25
	18	266	195	149	118	96	79	66	57	49	43	37
	16	349	256	196	155	125	104	87	74	64	56	49
Triple	22	169	124	95	75	61	50	42	36	31	27	24
	20	225	165	126	100	81	67	56	48	41	36	32
	18	332	244	187	148	120	99	83	71	61	53	47
	16	436	320	245	194	157	130	109	93	80	70	61

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. All section properties and ASD (Ω = 1.67) uniform loads are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, and AISI S100-2016 S2/20.
2. Loads shown in tables are uniformly distributed superimposed loads in psf. Span length assumes center-to-center spacing of supports. Tabulated loads shall not be increased by assuming clear span dimensions.
3. Bending Moment formulae used for flexural stress limitations are:

Simple and Two Span $M = \frac{w\ell^2}{8}$ Three Span or More $M = \frac{w\ell^2}{10}$

4. Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.

TABLE 16B - UNIFORM SUPERIMPOSED SERVICE LOAD THAT CAUSES L/240 DEFLECTION (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

SPAN COND.	GAGE NUMBER	SPAN LENGTH										
		6'-00"	7'-00"	8'-00"	9'-00"	10'-00"	11'-00"	12'-00"	13'-00"	14-00"	15'-00"	16'-00"
Single	22	83	52	35	25	18	13	10	8	7	5	4
	20	106	67	45	32	23	17	13	10	8	7	6
	18	152	96	64	45	33	25	19	15	12	10	8
	16	199	125	84	59	43	32	25	20	16	13	10
Double	22	200	126	84	59	43	32	25	20	16	13	11
	20	256	161	108	76	55	42	32	25	20	16	14
	18	366	230	154	108	79	59	46	36	29	23	19
	16	478	301	202	142	103	78	60	47	38	31	25
Triple	22	157	99	66	46	34	25	20	15	12	10	8
	20	200	126	85	59	43	33	25	20	16	13	11
	18	286	180	121	85	62	46	36	28	23	18	15
	16	374	236	158	111	81	61	47	37	29	24	20

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. For loads that cause L/120 Deflection, multiply by 2.0. For loads that cause L/180 Deflection, multiply by 1.5. For loads that cause L/360 Deflection, multiply by 0.667.

TABLE 17 – CONSTRUCTION SPAN TABLE – 20 PSF CONSTRUCTION LOAD
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1,2]

NORMAL WEIGHT CONCRETE (145 pcf)

SLAB THICKNESS	DECK TYPE	MAXIMUM UNSHORED CLEAR SPAN		
		1 SPAN	2 SPAN	3 SPAN
4.00” (t=2.00”) 39 PSF	2x12x22 ga	7' 10"	9' 1"	9' 3"
	2x12x20 ga	9' 5"	10' 6"	10' 10"
	2x12x18 ga	10' 6"	12' 9"	13' 2"
	2x12x16 ga	11' 5"	14' 7"	15' 1"
4.50” (t=2.50”) 45 PSF	2x12x22 ga	7' 5"	8' 8"	8' 10"
	2x12x20 ga	9' 0"	9' 12"	10' 4"
	2x12x18 ga	9' 12"	12' 2"	12' 6"
	2x12x16 ga	10' 11"	13' 11"	14' 4"
5.00” (t=3.00”) 51 PSF	2x12x22 ga	7' 2"	8' 3"	8' 5"
	2x12x20 ga	8' 8"	10' 4"	10' 9"
	2x12x18 ga	9' 7"	11' 7"	12' 0"
	2x12x16 ga	10' 5"	13' 4"	13' 9"
5.50” (t=3.50”) 57 PSF	2x12x22 ga	6' 10"	7' 11"	8' 1"
	2x12x20 ga	8' 3"	9' 2"	9' 6"
	2x12x18 ga	9' 3"	11' 2"	11' 6"
	2x12x16 ga	10' 1"	12' 9"	13' 2"
6.00” (t=4.00”) 63 PSF	2x12x22 ga	6' 7"	7' 8"	7' 9"
	2x12x20 ga	7' 11"	8' 10"	9' 1"
	2x12x18 ga	8' 11"	10' 9"	11' 1"
	2x12x16 ga	9' 9"	12' 4"	12' 9"
6.50” (t=4.50”) 69 PSF	2x12x22 ga	6' 5"	7' 5"	7' 6"
	2x12x20 ga	7' 8"	8' 6"	8' 10"
	2x12x18 ga	8' 8"	10' 4"	10' 9"
	2x12x16 ga	9' 5"	11' 10"	12' 3"

LIGHTWEIGHT CONCRETE (115 pcf)

SLAB THICKNESS	DECK TYPE	MAXIMUM UNSHORED CLEAR SPAN		
		1 SPAN	2 SPAN	3 SPAN
4.00” (t=2.00”) 31 PSF	2x12x22 ga	8' 5"	9' 9"	10' 0"
	2x12x20 ga	10' 2"	11' 3"	11' 8"
	2x12x18 ga	11' 4"	13' 8"	14' 2"
	2x12x16 ga	12' 4"	15' 8"	16' 3"
4.50” (t=2.50”) 35 PSF	2x12x22 ga	8' 1"	9' 5"	9' 7"
	2x12x20 ga	9' 9"	10' 10"	11' 2"
	2x12x18 ga	10' 10"	13' 2"	13' 8"
	2x12x16 ga	11' 10"	15' 1"	15' 7"
5.00” (t=3.00”) 39 PSF	2x12x22 ga	7' 10"	9' 1"	9' 3"
	2x12x20 ga	9' 6"	11' 5"	11' 10"
	2x12x18 ga	10' 6"	12' 9"	13' 2"
	2x12x16 ga	11' 5"	14' 7"	15' 1"
5.50” (t=3.50”) 44 PSF	2x12x22 ga	7' 6"	8' 9"	8' 11"
	2x12x20 ga	9' 0"	10' 1"	10' 5"
	2x12x18 ga	10' 1"	12' 3"	12' 8"
	2x12x16 ga	11' 0"	14' 0"	14' 6"
6.00” (t=4.00”) 48 PSF	2x12x22 ga	7' 3"	8' 6"	8' 7"
	2x12x20 ga	8' 9"	9' 9"	10' 1"
	2x12x18 ga	9' 9"	11' 10"	12' 3"
	2x12x16 ga	10' 8"	13' 7"	14' 0"
6.50” (t=4.50”) 53 PSF	2x12x22 ga	7' 0"	8' 2"	8' 4"
	2x12x20 ga	8' 5"	9' 5"	9' 9"
	2x12x18 ga	9' 6"	11' 5"	11' 10"
	2x12x16 ga	10' 4"	13' 1"	13' 7"

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

1. Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.
2. The concrete topping thickness is defined as *t*.

TABLE 18A – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

2 x 12	22 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	322	277	241	211	186	165	146
4.5	45	391	337	293	257	226	200	178
5	51	400	399	347	304	268	238	212
5.5	57	400	400	400	353	311	276	246
6	63	400	400	400	400	356	316	281
6.5	69	400	400	400	400	400	356	317

2 x 12	22 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	131	117	105	95	86	77	70	64
4.5	159	143	129	116	105	95	86	78
5	189	170	153	138	125	113	103	94
5.5	220	198	178	161	146	132	120	110
6	252	226	204	184	167	152	138	126
6.5	284	255	230	208	189	172	156	143

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 18B – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

2 x 12	20 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	388	335	292	256	226	201	179
4.5	45	400	400	355	311	275	244	218
5	51	400	400	400	369	326	289	258
5.5	57	400	400	400	400	378	336	300
6	63	400	400	400	400	400	384	343
6.5	69	400	400	400	400	400	400	387

2 x 12	20 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	159	160	144	130	117	106	97	88
4.5	193	195	175	158	143	130	118	108
5	230	232	208	188	170	155	141	129
5.5	267	269	243	219	199	180	164	150
6	306	308	277	251	227	207	188	172
6.5	345	347	313	283	257	234	213	195

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 18C – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

2 x 12	18 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	400	400	382	336	297	265	237
4.5	45	400	400	400	400	361	321	288
5	51	400	400	400	400	400	381	341
5.5	57	400	400	400	400	400	400	397
6	63	400	400	400	400	400	400	400
6.5	69	400	400	400	400	400	400	400

2 x 12	18 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	213	192	174	158	143	131	120	110
4.5	258	233	211	192	175	160	146	134
5	307	277	251	228	208	190	174	160
5.5	357	322	292	266	242	221	203	186
6	400	369	334	304	278	254	233	214
6.5	400	400	378	344	314	287	263	242

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 18D – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

2 x 12	16 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	400	400	400	400	370	330	295
4.5	45	400	400	400	400	400	400	359
5	51	400	400	400	400	400	400	400
5.5	57	400	400	400	400	400	400	400
6	63	400	400	400	400	400	400	400
6.5	69	400	400	400	400	400	400	400

2 x 12	16 ga	F_y 50 ksi		f'_c 3000 psi		NORMAL WEIGHT CONCRETE (145 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	266	240	218	198	181	166	152	140
4.5	323	292	265	241	220	202	185	171
5	384	347	315	287	262	240	221	203
5.5	400	400	367	334	306	280	257	237
6	400	400	400	383	350	321	295	272
6.5	400	400	400	400	396	363	334	308

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 18E – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

2 x 12	22 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	313	270	235	206	182	162	144
4.5	35	381	329	287	252	222	198	176
5	39	400	391	341	299	265	235	210
5.5	44	400	400	396	348	308	274	244
6	48	400	400	400	398	352	313	280
6.5	53	400	400	400	400	397	354	316

2 x 12	22 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	129	116	105	95	86	78	71	65
4.5	158	142	129	116	106	96	88	80
5	189	170	153	139	126	115	105	96
5.5	219	198	179	162	147	134	123	112
6	252	227	205	186	169	155	141	130
6.5	284	256	232	210	191	175	160	146

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 18F – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

2 x 12	20 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	376	325	283	249	220	196	175
4.5	35	400	395	345	303	268	239	214
5	39	400	400	400	361	319	284	254
5.5	44	400	400	400	400	371	331	296
6	48	400	400	400	400	400	379	339
6.5	53	400	400	400	400	400	400	383

2 x 12	20 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	157	142	128	116	106	96	88	81
4.5	192	173	157	142	130	118	108	99
5	229	206	187	170	155	141	130	119
5.5	266	240	218	198	180	165	151	139
6	305	276	250	227	207	190	174	160
6.5	345	311	282	257	234	214	196	181

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 18G – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

2 x 12	18 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	400	400	368	324	**287**	256	229
4.5	35	400	400	400	394	350	312	279
5	39	400	400	400	400	400	371	333
5.5	44	400	400	400	400	400	400	387
6	48	400	400	400	400	400	400	400
6.5	53	400	400	400	400	400	400	400

2 x 12	18 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	206	186	169	154	140	128	118	108
4.5	252	227	206	188	172	157	144	133
5	300	271	246	224	205	188	172	159
5.5	349	316	287	261	239	219	201	185
6	400	362	329	300	274	252	231	213
6.5	400	400	372	339	310	285	262	241

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

TABLE 18H – ASD COMPOSITE DECK-SLAB ALLOWABLE SUPERIMPOSED LOAD (psf)
2.0 FORM AND COMPOSITE FLOOR DECK (50 ksi)[1]

2 x 12	16 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	WEIGHT (psf)	SPAN LENGTH						
		7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	400	400	400	400	355	317	284
4.5	35	400	400	400	400	400	386	346
5	39	400	400	400	400	400	400	400
5.5	44	400	400	400	400	400	400	400
6	48	400	400	400	400	400	400	400
6.5	53	400	400	400	400	400	400	400

2 x 12	16 ga	F_y 50 ksi		f'_c 3000 psi		LIGHTWEIGHT CONCRETE (115 pcf)		
SLAB THICKNESS (inches)	SPAN LENGTH							
	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	256	232	211	192	176	161	148	136
4.5	312	283	257	234	214	197	181	167
5	372	337	306	279	256	235	216	199
5.5	400	393	357	326	298	274	252	233
6	400	400	400	375	343	315	290	268
6.5	400	400	400	400	388	357	329	303

For **SI:** 1 in. = 25.4 mm; 1 ft. = 305 mm; 1 lb. = 4.45 N

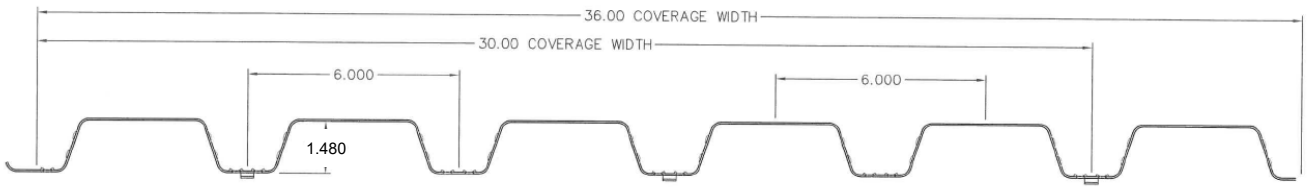

FIGURE 1 – 1.5 WR ROOF DECK(NESTABLE B-DECK, SPECIFY WITH EMBOSSING OR WITHOUT)

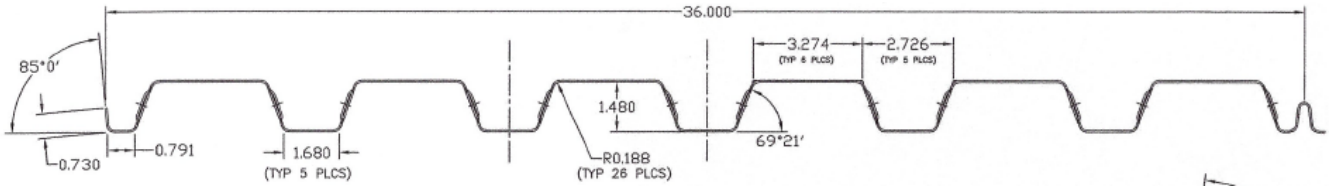

FIGURE 2 – 1.5 WR FLOOR DECK (INTERLOCKING B-DECK, SPECIFY WITH EMBOSSING OR WITHOUT)

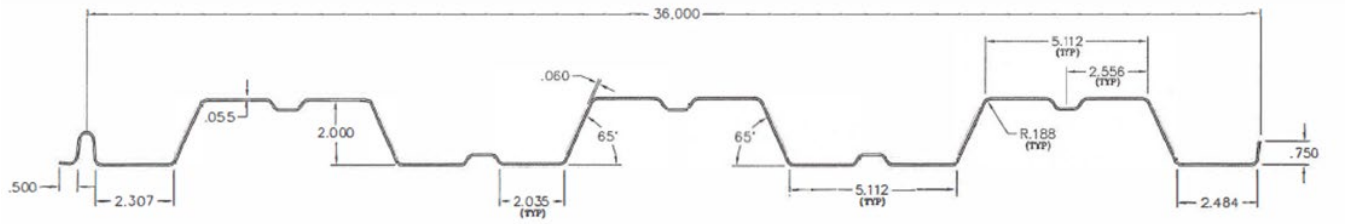

FIGURE 3 – 2.0 FLOOR DECK (2 INCH FLOOR DECK)

DIVISION: 05 00 00—METALS
Section: 05 31 00—Steel Decking
Section: 05 31 13—Steel Floor Decking

REPORT HOLDER:

COLD-ROLLED STEEL, LLC

EVALUATION SUBJECT:

STEEL DECK PANELS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Cold-Rolled Steel, LLC steel deck panels, described in ICC-ES evaluation report ESR-4866, have also been evaluated for compliance with the code noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code edition:

2020 *City of Los Angeles Building Code (LABC)*

2.0 CONCLUSIONS

The Cold-Rolled Steel, LLC steel deck panels, described in Sections 2.0 through 7.0 of the ICC-ES evaluation report ESR-4866, comply with the LABC Chapter 22, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Cold-Rolled Steel, LLC steel deck panels described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-4866.
- The design, installation, conditions of use and identification are in accordance with the 2018 *International Building Code®* (IBC) provisions noted in the ICC-ES evaluation report ESR-4866.
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- When exposed to weather, the steel deck panels shall be galvanized.

This supplement expires concurrently with the evaluation report, reissued February 2025.

DIVISION: 05 00 00—METALS
Section: 05 31 00—Steel Decking
Section: 05 31 13 – Steel Floor Decking

REPORT HOLDER:

COLD-ROLLED STEEL, LLC

EVALUATION SUBJECT:

STEEL DECK PANELS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Cold-Rolled Steel, LLC steel deck panels evaluated in ICC-ES evaluation report ESR-4866 have also been evaluated for compliance with the code noted below.

Applicable code edition:

2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of the State Architect (DSA), see Sections 2.1 and 2.2 below.

2.0 CONCLUSIONS

The Cold-Rolled Steel, LLC steel deck panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-4866, comply with CBC Chapter 22, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of the CBC Chapters 16 and 17, as applicable.

2.1 OSHPD: The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.2 DSA: The applicable DSA Sections of the CBC are beyond the scope of this supplement.

This supplement expires concurrently with the evaluation report, reissued February 2026.