4.5" Composite Deep-Dek® Cellular (4.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.57	50	1.344	4.159	4.234	0.967	1.513	43516	68088	2843	2384	1729
20/18	24	5.15	50	1.512	4.444	4.768	0.974	1.581	43818	71125	2843	2384	1729
18/20	24	5.48	50	1.611	5.576	5.576	1.589	1.964	71498	88398	6616	4077	2891
18/18	24	6.05	50	1.779	6.027	6.027	1.590	2.043	71541	91947	6616	4077	2891

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	15	16	17	18	19	20	21	22	20	21	22	23	24	25	26
4000 PSI Normal Weight Concrete (145 PCF)	6 5/8	20/20	16 - 11	13 - 7	14 - 2	5 - 8	114	101	89	79	65	49			79	71	64	56	48	42	
	43 PSF	20/18	16 - 11	13 - 6	14 - 1	5 - 8	114	100	89	79	65	49			78	70	63	55	48	41	
	1.09 cu.yd/(100sq.ft)	18/20	18 - 4	22 - 6	21 - 6	7 - 6	179	162	127	100	78	60	45		84	73	63	55	48	41	
	6x6 - W1.4 x W1.4	18/18	18 - 8	22 - 4	21 - 11	7 - 5	179	162	127	99	77	59	44		84	73	63	55	47	41	
	7 1/8	20/20	16 - 2	12 - 5	12 - 11	5 - 5	128	113	100	88	79	65	49		88	79	71	64	58	51	45
	49 PSF	20/18	16 - 2	12 - 4	12 - 10	5 - 5	127	112	99	88	78	65	49		87	78	71	63	57	51	44
	1.25 cu.yd/(100sq.ft)	18/20	17 - 10	20 - 6	20 - 11	7 - 0	201	184	161	127	100	78	60	45	102	89	77	67	59	51	44
	6x6 - W1.4 x W1.4	18/18	18 - 2	20 - 5	21 - 3	7 - 1	200	183	161	127	99	77	59	45	102	88	77	67	58	50	43
	7 5/8	20/20	15 - 6	11 - 5	11 - 11	5 - 2	141	124	110	98	87	78	65	49	97	87	78	71	64	57	52
	55 PSF	20/18	15 - 6	11 - 4	11 - 10	5 - 2	141	124	110	97	87	77	64	48	97	87	78	70	63	57	51
	1.4 cu.yd/(100sq.ft)	18/20	17 - 4	18 - 11	19 - 8	6 - 7	222	203	187	159	127	100	78	60	122	106	93	81	71	62	54
	6x6 - W1.4 x W1.4	18/18	17 - 8	18 - 10	19 - 7	6 - 6	222	203	186	159	126	99	78	60	121	106	92	81	70	61	53
	8 1/8	20/20	14 - 11	10 - 7	11 - 0	4 - 11	155	136	120	107	95	85	76	64	106	95	86	77	70	63	57
	61 PSF	20/18	14 - 11	10 - 6	10 - 11	4 - 11	154	136	120	106	95	85	76	64	106	95	85	77	69	62	56
	1.55 cu.yd/(100sq.ft)	18/20	17 - 0	17 - 6	18 - 3	6 - 1	244	223	204	189	158	126	100	78	144	126	110	96	84	74	65
	6x6 - W2.0 x W2.0	18/18	17 - 3	17 - 5	18 - 2	6 - 1	243	222	204	188	157	125	99	77	143	125	110	96	84	74	64
	8 5/8	20/20	14 - 4	9 - 10	10 - 3	4 - 6	168	148	131	116	103	92	83	74	115	104	93	84	76	68	61
	67 PSF	20/18	14 - 4	9 - 10	10 - 2	4 - 5	168	148	130	116	103	92	82	74	115	103	93	83	75	68	61
	1.71 cu.yd/(100sq.ft)	18/20	16 - 7	16 - 4	17 - 0	5 - 8	265	242	222	205	190	156	124	99	167	147	129	113	99	87	77
	6x6 - W2.0 x W2.0	18/18	16 - 11	16 - 3	16 - 11	5 - 8	265	242	222	205	189	155	124	98	167	146	128	113	99	87	76
	8 7/8	20/20	14 - 0	9 - 6	9 - 11	4 - 3	175	154	136	121	108	96	86	77	120	108	97	87	78	71	64
	70 PSF	20/18	14 - 1	9 - 6	9 - 10	4 - 2	175	154	136	120	107	96	85	76	120	107	96	87	78	70	63
	1.79 cu.yd/(100sq.ft)	18/20	16 - 5	15 - 9	16 - 5	5 - 6	276	252	231	213	197	172	138	111	180	158	139	122	107	95	83
	6x6 - W2.0 x W2.0	18/18	16 - 9	15 - 9	16 - 5	5 - 7	275	252	231	213	197	171	138	110	179	157	138	122	107	94	83
	9 5/8	20/20	13 - 4	8 - 8	9 - 0	3 - 8	195	172	152	135	120	107	96	86	134	120	108	97	87	79	71
	79 PSF	20/18	13 - 4	8 - 7	9 - 0	3 - 7	195	171	151	134	119	107	95	85	133	120	107	97	87	78	71
	2.02 cu.yd/(100sq.ft)	18/20	16 - 0	14 - 4	15 - 0	5 - 4	308	281	258	238	220	204	186	151	216	194	171	151	133	118	104
	6x6 - W2.9 x W2.9	18/18	16 - 3	14 - 4	14 - 11	5 - 5	307	281	258	238	220	204	185	150	216	193	170	150	133	118	104

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular (4.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.67	50	1.959	6.415	6.419	1.594	2.118	71752	95289	6616	4077	2891
16/18	24	7.02	50	2.064	7.477	7.477	2.319	2.532	104368	113951	11426	6334	4423
16/16	24	7.64	50	2.244	7.995	7.995	2.366	2.618	106490	117793	11426	6334	4423
14/16	24	8.80	50	2.585	9.545	9.545	3.198	3.211	143907	144476	17829	9635	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
							15	16	17	18	19	20	21	22	20	21	22	23	24	25	26
4000 PSI Normal Weight Concrete (145 PCF)	6 5/8	18/16	18 - 11	22 - 2	22 - 2	7 - 5	179	161	126	98	76	58	44		83	72	63	54	47	40	
	43 PSF	16/18	19 - 7	24 - 5	23 - 0	8 - 2	232	183	144	114	89	69	53		83	72	62	54	46		
	1.09 cu.yd/(100sq.ft)	16/16	19 - 11	24 - 9	23 - 4	8 - 3	232	182	143	113	88	69	52		83	72	62	53	46		
	6x6 - W1.4 x W1.4	14/16	20 - 8	25 - 9	24 - 3	8 - 7	262	207	164	130	103	81	63	48	82	71	61	52	45		
	7 1/8	18/16	18 - 4	20 - 3	21 - 2	7 - 0	200	183	160	126	99	77	59	44	101	88	76	66	58	50	43
	49 PSF	16/18	19 - 1	23 - 9	22 - 4	7 - 11	278	229	181	144	114	90	70	54	101	88	76	66	57	50	43
	1.25 cu.yd/(100sq.ft)	16/16	19 - 4	24 - 1	22 - 8	8 - 0	278	228	181	143	113	89	69	53	101	87	76	66	57	49	42
	6x6 - W1.4 x W1.4	14/16	20 - 1	25 - 0	23 - 7	8 - 4	323	256	204	163	130	103	81	63	100	86	75	65	56	48	41
	7 5/8	18/16	17 - 11	18 - 8	19 - 6	6 - 6	221	202	186	158	125	99	77	59	121	105	92	80	70	61	53
	55 PSF	16/18	18 - 7	23 - 2	21 - 9	7 - 9	308	282	225	180	144	114	90	70	121	105	92	80	70	61	53
	1.4 cu.yd/(100sq.ft)	16/16	18 - 10	23 - 6	22 - 1	7 - 10	308	282	224	179	143	114	90	70	120	105	91	80	69	60	52
	6x6 - W1.4 x W1.4	14/16	19 - 7	24 - 5	23 - 0	8 - 2	395	315	252	202	162	130	104	82	119	104	90	79	68	59	51
	8 1/8	18/16	17 - 6	17 - 4	18 - 1	6 - 0	243	222	204	188	156	124	98	77	143	125	109	96	84	73	64
	61 PSF	16/18	18 - 2	22 - 7	21 - 3	7 - 6	338	315	275	221	178	143	114	91	142	124	109	95	83	73	63
	1.55 cu.yd/(100sq.ft)	16/16	18 - 5	22 - 11	21 - 7	7 - 8	337	314	275	221	177	142	114	90	142	124	108	95	83	72	63
	6x6 - W2.0 x W2.0	14/16	19 - 2	23 - 11	22 - 6	8 - 0	450	383	308	248	201	162	131	104	141	123	108	94	82	71	62
	8 5/8	18/16	17 - 1	16 - 2	16 - 10	5 - 9	264	241	221	204	189	154	123	98	166	146	128	112	99	87	76
	67 PSF	16/18	17 - 9	22 - 2	20 - 10	7 - 5	368	342	320	269	218	176	142	114	166	145	128	112	98	86	76
	1.71 cu.yd/(100sq.ft)	16/16	18 - 0	22 - 6	21 - 1	7 - 6	367	342	319	268	217	175	141	113	165	145	127	111	98	86	75
	6x6 - W2.0 x W2.0	14/16	18 - 9	23 - 5	22 - 0	7 - 9	491	443	371	301	245	199	161	131	165	144	126	111	97	85	74
	8 7/8	18/16	16 - 11	15 - 8	16 - 3	5 - 8	275	251	230	212	196	171	137	109	179	157	138	121	107	94	82
	70 PSF	16/18	17 - 7	21 - 11	20 - 7	7 - 4	383	356	333	295	240	194	157	127	178	156	137	121	106	93	82
	1.79 cu.yd/(100sq.ft)	16/16	17 - 10	22 - 3	20 - 11	7 - 5	382	356	332	295	239	194	157	126	178	156	137	120	106	93	82
	6x6 - W2.0 x W2.0	14/16	18 - 7	23 - 2	21 - 9	7 - 9	500	481	406	330	269	219	179	145	177	155	136	120	105	92	81
	9 5/8	18/16	16 - 6	14 - 3	14 - 10	5 - 6	307	280	257	237	219	204	185	150	215	193	170	150	132	117	103
	79 PSF	16/18	17 - 1	21 - 4	20 - 0	7 - 1	427	398	372	348	314	257	210	172	219	192	170	150	132	117	103
	2.02 cu.yd/(100sq.ft)	16/16	17 - 4	21 - 8	20 - 4	7 - 3	427	397	371	348	313	256	210	171	218	192	169	149	132	116	103
	6x6 - W2.9 x W2.9	14/16	18 - 1	22 - 6	21 - 2	7 - 6	500	500	499	428	351	288	237	195	217	191	168	148	131	115	102

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
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11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

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4.5" Composite Deep-Dek® Cellular (4.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.57	50	1.344	4.159	4.234	0.967	1.513	43516	68088	2843	2384	1729
20/18	24	5.15	50	1.512	4.444	4.768	0.974	1.581	43818	71125	2843	2384	1729
18/20	24	5.48	50	1.611	5.576	5.576	1.589	1.964	71498	88398	6616	4077	2891
18/18	24	6.05	50	1.779	6.027	6.027	1.590	2.043	71541	91947	6616	4077	2891

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
6 5/8	19 - 4	19 - 0	15 - 3	24 - 4	23 - 1	23 - 5	22 - 2	19 - 1	17 - 0	16 - 11	13 - 7	14 - 2	5 - 8
7 1/8	20 - 4	20 - 0	16 - 1	25 - 10	24 - 6	24 - 11	23 - 3	20 - 6	17 - 11	16 - 2	12 - 5	12 - 11	5 - 5
7 5/8	21 - 4	21 - 0	16 - 11	27 - 4	25 - 5	26 - 4	24 - 2	21 - 10	18 - 9	15 - 6	11 - 5	11 - 11	5 - 2
8 1/8	22 - 3	22 - 0	17 - 8	28 - 9	26 - 3	27 - 9	25 - 0	23 - 2	19 - 7	14 - 11	10 - 7	11 - 0	4 - 11
8 5/8	23 - 2	22 - 11	18 - 4	30 - 1	27 - 1	29 - 1	25 - 10	24 - 5	20 - 4	14 - 4	9 - 10	10 - 3	4 - 6
8 7/8	23 - 8	23 - 5	18 - 8	30 - 9	27 - 5	29 - 9	26 - 2	24 - 10	20 - 8	14 - 0	9 - 6	9 - 11	4 - 3
9 5/8	25 - 1	24 - 9	19 - 8	32 - 9	28 - 5	31 - 9	27 - 3	26 - 1	21 - 8	13 - 4	8 - 8	9 - 0	3 - 8
20/18 GA Deck													
6 5/8	19 - 3	19 - 0	15 - 2	24 - 3	23 - 0	23 - 4	22 - 1	19 - 1	16 - 11	16 - 11	13 - 6	14 - 1	5 - 8
7 1/8	20 - 3	20 - 0	16 - 1	25 - 10	24 - 5	24 - 10	23 - 2	20 - 6	17 - 10	16 - 2	12 - 4	12 - 10	5 - 5
7 5/8	21 - 3	21 - 0	16 - 10	27 - 3	25 - 4	26 - 3	24 - 1	21 - 10	18 - 9	15 - 6	11 - 4	11 - 10	5 - 2
8 1/8	22 - 3	21 - 11	17 - 8	28 - 8	26 - 2	27 - 8	25 - 0	23 - 1	19 - 7	14 - 11	10 - 6	10 - 11	4 - 11
8 5/8	23 - 2	22 - 11	18 - 4	30 - 0	27 - 0	29 - 1	25 - 9	24 - 4	20 - 4	14 - 4	9 - 10	10 - 2	4 - 5
8 7/8	23 - 8	23 - 4	18 - 8	30 - 8	27 - 4	29 - 9	26 - 2	24 - 10	20 - 8	14 - 1	9 - 6	9 - 10	4 - 2
9 5/8	25 - 0	24 - 9	19 - 7	32 - 8	28 - 4	31 - 8	27 - 2	26 - 0	21 - 8	13 - 4	8 - 7	9 - 0	3 - 7
18/20 GA Deck													
6 5/8	20 - 0	19 - 8	17 - 5	24 - 3	23 - 0	23 - 4	22 - 1	19 - 1	18 - 1	18 - 4	22 - 6	21 - 6	7 - 6
7 1/8	21 - 0	20 - 8	18 - 5	25 - 9	24 - 5	24 - 10	23 - 6	20 - 5	19 - 5	17 - 10	20 - 6	20 - 11	7 - 0
7 5/8	22 - 0	21 - 8	19 - 5	27 - 3	25 - 10	26 - 3	24 - 11	21 - 9	20 - 8	17 - 4	18 - 11	19 - 8	6 - 7
8 1/8	23 - 0	22 - 8	20 - 5	28 - 8	27 - 2	27 - 8	26 - 3	23 - 1	21 - 11	17 - 0	17 - 6	18 - 3	6 - 1
8 5/8	24 - 0	23 - 8	21 - 4	30 - 0	28 - 6	29 - 0	27 - 6	24 - 5	23 - 2	16 - 7	16 - 4	17 - 0	5 - 8
8 7/8	24 - 5	24 - 2	21 - 10	30 - 8	29 - 1	29 - 8	28 - 2	25 - 0	23 - 9	16 - 5	15 - 9	16 - 5	5 - 6
9 5/8	25 - 11	25 - 7	23 - 3	32 - 7	30 - 11	31 - 8	30 - 0	26 - 10	25 - 6	16 - 0	14 - 4	15 - 0	5 - 4
18/18 GA Deck													
6 5/8	19 - 11	19 - 8	17 - 5	24 - 2	22 - 11	23 - 3	22 - 1	19 - 0	18 - 1	18 - 8	22 - 4	21 - 11	7 - 5
7 1/8	21 - 0	20 - 8	18 - 5	25 - 8	24 - 5	24 - 9	23 - 6	20 - 5	19 - 4	18 - 2	20 - 5	21 - 3	7 - 1
7 5/8	22 - 0	21 - 8	19 - 5	27 - 2	25 - 9	26 - 2	24 - 10	21 - 9	20 - 8	17 - 8	18 - 10	19 - 7	6 - 6
8 1/8	23 - 0	22 - 8	20 - 4	28 - 7	27 - 1	27 - 7	26 - 2	23 - 1	21 - 11	17 - 3	17 - 5	18 - 2	6 - 1
8 5/8	23 - 11	23 - 8	21 - 4	29 - 11	28 - 5	29 - 0	27 - 6	24 - 4	23 - 1	16 - 11	16 - 3	16 - 11	5 - 8
8 7/8	24 - 5	24 - 2	21 - 10	30 - 7	29 - 1	29 - 8	28 - 1	25 - 0	23 - 8	16 - 9	15 - 9	16 - 5	5 - 7
9 5/8	25 - 10	25 - 7	23 - 3	32 - 7	30 - 11	31 - 7	29 - 11	26 - 10	25 - 5	16 - 3	14 - 4	14 - 11	5 - 5

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular (4.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.67	50	1.959	6.415	6.419	1.594	2.118	71752	95289	6616	4077	2891
16/18	24	7.02	50	2.064	7.477	7.477	2.319	2.532	104368	113951	11426	6334	4423
16/16	24	7.64	50	2.244	7.995	7.995	2.366	2.618	106490	117793	11426	6334	4423
14/16	24	8.80	50	2.585	9.545	9.545	3.198	3.211	143907	144476	17829	9635	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
6 5/8	19 - 11	19 - 7	17 - 5	24 - 1	22 - 11	23 - 2	22 - 0	19 - 0	18 - 0	18 - 11	22 - 2	22 - 2	7 - 5
7 1/8	20 - 11	20 - 8	18 - 5	25 - 8	24 - 4	24 - 8	23 - 5	20 - 5	19 - 4	18 - 4	20 - 3	21 - 2	7 - 0
7 5/8	21 - 11	21 - 8	19 - 4	27 - 1	25 - 9	26 - 2	24 - 10	21 - 9	20 - 7	17 - 11	18 - 8	19 - 6	6 - 6
8 1/8	22 - 11	22 - 8	20 - 4	28 - 6	27 - 1	27 - 7	26 - 2	23 - 0	21 - 10	17 - 6	17 - 4	18 - 1	6 - 0
8 5/8	23 - 11	23 - 7	21 - 4	29 - 11	28 - 4	28 - 11	27 - 5	24 - 4	23 - 1	17 - 1	16 - 2	16 - 10	5 - 9
8 7/8	24 - 5	24 - 1	21 - 9	30 - 7	29 - 0	29 - 7	28 - 1	24 - 11	23 - 8	16 - 11	15 - 8	16 - 3	5 - 8
9 5/8	25 - 10	25 - 6	23 - 2	32 - 6	30 - 10	31 - 6	29 - 11	26 - 9	25 - 5	16 - 6	14 - 3	14 - 10	5 - 6
16/18 GA Deck													
6 5/8	20 - 7	20 - 3	17 - 11	24 - 1	22 - 10	23 - 2	22 - 0	19 - 0	18 - 0	19 - 7	24 - 5	23 - 0	8 - 2
7 1/8	21 - 7	21 - 3	19 - 0	25 - 7	24 - 3	24 - 8	23 - 5	20 - 4	19 - 4	19 - 1	23 - 9	22 - 4	7 - 11
7 5/8	22 - 7	22 - 4	20 - 0	27 - 1	25 - 8	26 - 1	24 - 9	21 - 8	20 - 7	18 - 7	23 - 2	21 - 9	7 - 9
8 1/8	23 - 8	23 - 4	21 - 0	28 - 6	27 - 0	27 - 6	26 - 1	23 - 0	21 - 10	18 - 2	22 - 7	21 - 3	7 - 6
8 5/8	24 - 8	24 - 4	21 - 11	29 - 10	28 - 4	28 - 11	27 - 5	24 - 4	23 - 1	17 - 9	22 - 2	20 - 10	7 - 5
8 7/8	25 - 1	24 - 10	22 - 5	30 - 6	28 - 11	29 - 7	28 - 0	24 - 11	23 - 8	17 - 7	21 - 11	20 - 7	7 - 4
9 5/8	26 - 7	26 - 3	23 - 11	32 - 5	30 - 10	31 - 6	29 - 10	26 - 9	25 - 5	17 - 1	21 - 4	20 - 0	7 - 1
16/16 GA Deck													
6 5/8	20 - 6	20 - 3	17 - 11	24 - 0	22 - 10	23 - 1	21 - 11	18 - 11	18 - 0	19 - 11	24 - 9	23 - 4	8 - 3
7 1/8	21 - 7	21 - 3	18 - 11	25 - 7	24 - 3	24 - 7	23 - 4	20 - 4	19 - 3	19 - 4	24 - 1	22 - 8	8 - 0
7 5/8	22 - 7	22 - 3	19 - 11	27 - 0	25 - 7	26 - 1	24 - 9	21 - 8	20 - 7	18 - 10	23 - 6	22 - 1	7 - 10
8 1/8	23 - 7	23 - 3	20 - 11	28 - 5	27 - 0	27 - 6	26 - 1	23 - 0	21 - 10	18 - 5	22 - 11	21 - 7	7 - 8
8 5/8	24 - 7	24 - 4	21 - 11	29 - 9	28 - 3	28 - 10	27 - 4	24 - 3	23 - 0	18 - 0	22 - 6	21 - 1	7 - 6
8 7/8	25 - 1	24 - 9	22 - 5	30 - 5	28 - 11	29 - 6	28 - 0	24 - 11	23 - 7	17 - 10	22 - 3	20 - 11	7 - 5
9 5/8	26 - 7	26 - 3	23 - 11	32 - 5	30 - 9	31 - 5	29 - 10	26 - 9	25 - 4	17 - 4	21 - 8	20 - 4	7 - 3
14/16 GA Deck													
6 5/8	21 - 2	20 - 10	18 - 6	23 - 11	22 - 8	23 - 0	21 - 10	18 - 11	17 - 11	20 - 8	25 - 9	24 - 3	8 - 7
7 1/8	22 - 2	21 - 11	19 - 6	25 - 5	24 - 2	24 - 6	23 - 3	20 - 3	19 - 3	20 - 1	25 - 0	23 - 7	8 - 4
7 5/8	23 - 3	22 - 11	20 - 7	26 - 11	25 - 6	26 - 0	24 - 8	21 - 7	20 - 6	19 - 7	24 - 5	23 - 0	8 - 2
8 1/8	24 - 3	24 - 0	21 - 7	28 - 4	26 - 10	27 - 4	26 - 0	22 - 11	21 - 9	19 - 2	23 - 11	22 - 6	8 - 0
8 5/8	25 - 4	25 - 0	22 - 7	29 - 8	28 - 2	28 - 9	27 - 3	24 - 2	22 - 11	18 - 9	23 - 5	22 - 0	7 - 9
8 7/8	25 - 10	25 - 6	23 - 1	30 - 4	28 - 9	29 - 5	27 - 11	24 - 10	23 - 7	18 - 7	23 - 2	21 - 9	7 - 9
9 5/8	27 - 4	27 - 0	24 - 7	32 - 3	30 - 7	31 - 4	29 - 9	26 - 8	25 - 4	18 - 1	22 - 6	21 - 2	7 - 6

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular (4.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.57	50	1.344	4.159	4.234	0.967	1.513	43516	68088	2843	2384	1729
20/18	24	5.15	50	1.512	4.444	4.768	0.974	1.581	43818	71125	2843	2384	1729
18/20	24	5.48	50	1.611	5.576	5.576	1.589	1.964	71498	88398	6616	4077	2891
18/18	24	6.05	50	1.779	6.027	6.027	1.590	2.043	71541	91947	6616	4077	2891

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
							15	16	17	18	19	20	21	22	20	21	22	23	24	25	26
4000 PSI Lightweight Concrete (110 PCF)	6 5/8	20/20	18 - 3	16 - 3	16 - 11	6 - 1	122	108	86	66	51				86	78	70	57	45		
	32 PSF	20/18	18 - 5	16 - 1	16 - 9	6 - 2	122	108	85	66	50				86	78	69	56	45		
	1.09 cu.yd/(100sq.ft)	18/20	19 - 6	24 - 4	22 - 10	8 - 1	165	130	102	80	62	48			92	81	71	63	55	45	
	6x6 - W1.4 x W1.4	18/18	19 - 10	24 - 8	23 - 3	8 - 3	165	129	101	79	62	47			92	80	71	62	55	44	
	7 1/8	20/20	17 - 8	14 - 11	15 - 7	5 - 11	137	121	108	85	66	51			97	88	80	73	59	48	
	37 PSF	20/18	17 - 8	14 - 10	15 - 5	5 - 11	136	121	108	85	66	50			96	87	79	72	59	47	
	1.25 cu.yd/(100sq.ft)	18/20	19 - 0	23 - 7	22 - 3	7 - 10	205	161	127	101	79	62	48		111	98	86	76	67	58	47
	6x6 - W1.4 x W1.4	18/18	19 - 3	24 - 0	22 - 7	8 - 0	204	161	127	100	79	61	47		111	97	86	76	67	58	47
	7 5/8	20/20	17 - 0	13 - 10	14 - 5	5 - 8	151	134	120	107	84	66	50		107	97	88	80	74	62	50
	42 PSF	20/18	17 - 0	13 - 9	14 - 4	5 - 8	151	134	119	107	84	65	50		107	97	88	80	73	61	49
	1.4 cu.yd/(100sq.ft)	18/20	18 - 6	22 - 11	21 - 8	7 - 8	232	199	158	126	100	79	62	48	132	116	103	91	81	72	61
	6x6 - W1.4 x W1.4	18/18	18 - 9	22 - 9	22 - 0	7 - 7	232	198	157	125	99	78	61	47	131	116	102	91	80	71	61
	8 1/8	20/20	16 - 5	12 - 11	13 - 5	5 - 6	166	147	131	118	105	83	65	50	117	106	97	88	81	74	64
	46 PSF	20/18	16 - 5	12 - 10	13 - 4	5 - 6	165	147	131	117	105	83	64	49	117	106	96	88	80	73	64
	1.55 cu.yd/(100sq.ft)	18/20	18 - 1	21 - 4	21 - 2	7 - 1	255	234	194	155	124	99	78	62	155	137	121	107	96	85	76
	6x6 - W2.0 x W2.0	18/18	18 - 4	21 - 2	21 - 6	7 - 2	254	233	193	154	123	98	78	61	154	136	121	107	95	85	75
	8 5/8	20/20	15 - 11	12 - 1	12 - 7	5 - 4	180	160	143	128	116	104	82	64	128	116	105	96	88	80	73
	51 PSF	20/18	15 - 11	12 - 0	12 - 6	5 - 4	180	160	143	128	115	103	81	63	127	115	105	95	87	80	73
	1.71 cu.yd/(100sq.ft)	18/20	17 - 8	20 - 0	20 - 9	6 - 11	277	254	234	189	152	122	98	78	179	159	141	125	112	100	89
	6x6 - W2.0 x W2.0	18/18	18 - 0	19 - 10	20 - 8	6 - 11	277	254	234	188	151	122	97	77	179	158	140	125	111	99	88
	8 7/8	20/20	15 - 8	11 - 8	12 - 2	5 - 3	188	167	149	133	120	109	91	72	133	120	109	100	91	83	76
	53 PSF	20/18	15 - 8	11 - 7	12 - 1	5 - 3	187	166	148	133	120	108	91	71	132	120	109	99	91	83	76
	1.79 cu.yd/(100sq.ft)	18/20	17 - 6	19 - 4	20 - 2	6 - 9	288	265	244	207	167	135	109	87	192	170	151	135	120	107	96
	6x6 - W2.0 x W2.0	18/18	17 - 10	19 - 3	20 - 1	6 - 8	288	264	244	207	167	135	108	86	192	170	151	134	120	107	95
	9 5/8	20/20	15 - 0	10 - 8	11 - 2	5 - 0	210	186	166	149	134	121	110	99	148	134	122	111	102	93	85
	60 PSF	20/18	15 - 0	10 - 8	11 - 1	5 - 0	209	186	166	149	134	121	109	99	148	134	122	111	101	93	85
	2.02 cu.yd/(100sq.ft)	18/20	17 - 0	17 - 9	18 - 6	6 - 2	322	296	273	252	220	179	146	118	231	208	185	165	148	132	119
	6x6 - W2.9 x W2.9	18/18	17 - 4	17 - 8	18 - 4	6 - 1	322	295	272	252	219	179	145	118	230	207	185	165	147	132	118

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular (4.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.67	50	1.959	6.415	6.419	1.594	2.118	71752	95289	6616	4077	2891
16/18	24	7.02	50	2.064	7.477	7.477	2.319	2.532	104368	113951	11426	6334	4423
16/16	24	7.64	50	2.244	7.995	7.995	2.366	2.618	106490	117793	11426	6334	4423
14/16	24	8.80	50	2.585	9.545	9.545	3.198	3.211	143907	144476	17829	9635	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
							15	16	17	18	19	20	21	22	20	21	22	23	24	25	26
4000 PSI Lightweight Concrete (110 PCF)	6 5/8	18/16	20 - 1	25 - 0	23 - 6	8 - 4	164	128	101	79	61	47			91	80	70	62	54	44	
	32 PSF	16/18	20 - 9	25 - 11	24 - 4	8 - 8	190	149	118	93	73	57	44		91	80	70	62	54	48	42
	1.09 cu.yd/(100sq.ft)	16/16	21 - 1	26 - 3	24 - 8	8 - 9	189	149	117	92	73	57	43		90	79	70	61	54	47	41
	6x6 - W1.4 x W1.4	14/16	21 - 10	27 - 3	25 - 7	9 - 1	218	173	137	109	86	68	53	41	90	78	69	60	53	46	40
	7 1/8	18/16	19 - 6	24 - 4	22 - 10	8 - 1	204	160	126	99	78	61	46		110	97	85	75	66	57	46
	37 PSF	16/18	20 - 3	25 - 2	23 - 8	8 - 5	231	183	145	115	91	72	56	43	110	97	85	75	66	58	52
	1.25 cu.yd/(100sq.ft)	16/16	20 - 6	25 - 6	24 - 0	8 - 6	230	182	144	115	91	71	56	43	109	96	85	75	66	58	51
	6x6 - W1.4 x W1.4	14/16	21 - 3	26 - 6	24 - 11	8 - 10	261	207	165	132	105	84	66	52	109	95	84	74	65	57	50
	7 5/8	18/16	19 - 0	22 - 7	22 - 3	7 - 6	231	198	157	125	99	78	61	46	131	115	102	90	80	71	60
	42 PSF	16/18	19 - 9	24 - 7	23 - 1	8 - 2	283	224	179	143	114	91	72	56	131	115	102	90	80	71	62
	1.4 cu.yd/(100sq.ft)	16/16	20 - 0	24 - 11	23 - 5	8 - 4	282	224	178	143	114	91	72	56	130	115	101	89	79	70	62
	6x6 - W1.4 x W1.4	14/16	20 - 9	25 - 11	24 - 4	8 - 8	317	252	202	162	130	105	83	66	129	114	100	89	78	69	61
	8 1/8	18/16	18 - 7	21 - 1	21 - 9	7 - 3	254	233	192	154	123	98	77	60	154	136	120	107	95	84	75
	46 PSF	16/18	19 - 3	24 - 0	22 - 7	8 - 0	342	273	219	176	141	114	91	72	153	135	120	106	94	84	74
	1.55 cu.yd/(100sq.ft)	16/16	19 - 7	24 - 4	22 - 11	8 - 1	342	272	218	175	141	113	90	72	153	135	119	106	94	83	74
	6x6 - W2.0 x W2.0	14/16	20 - 4	25 - 4	23 - 10	8 - 5	357	306	246	198	160	130	105	84	152	134	119	105	93	82	73
	8 5/8	18/16	18 - 3	19 - 9	20 - 7	6 - 10	276	253	233	187	151	121	97	77	178	158	140	124	111	99	88
	51 PSF	16/18	18 - 11	23 - 6	22 - 2	7 - 10	380	328	264	213	173	140	113	91	178	157	140	124	110	98	88
	1.71 cu.yd/(100sq.ft)	16/16	19 - 2	23 - 10	22 - 5	8 - 0	379	327	263	213	172	139	112	90	178	157	139	124	110	98	87
	6x6 - W2.0 x W2.0	14/16	19 - 11	24 - 10	23 - 4	8 - 3	381	354	296	240	195	159	129	105	177	156	138	123	109	97	86
	8 7/8	18/16	18 - 0	19 - 2	19 - 11	6 - 8	287	264	243	206	166	134	108	86	191	169	150	134	119	106	95
	53 PSF	16/18	18 - 9	23 - 4	21 - 11	7 - 9	395	358	289	234	190	154	125	101	191	169	150	134	119	106	95
	1.79 cu.yd/(100sq.ft)	16/16	19 - 0	23 - 8	22 - 3	7 - 11	395	358	288	233	189	154	124	100	191	169	150	133	118	106	94
	6x6 - W2.0 x W2.0	14/16	19 - 9	24 - 7	23 - 2	8 - 2	393	365	324	263	214	175	143	116	190	168	149	132	118	105	93
	9 5/8	18/16	17 - 7	17 - 6	18 - 3	6 - 1	321	295	272	251	219	178	145	117	230	207	184	164	147	131	118
	60 PSF	16/18	18 - 3	22 - 8	21 - 4	7 - 7	431	401	373	304	248	203	166	136	233	207	184	164	147	131	117
	2.02 cu.yd/(100sq.ft)	16/16	18 - 6	23 - 0	21 - 8	7 - 8	431	400	372	303	248	203	166	135	233	206	183	164	146	131	117
	6x6 - W2.9 x W2.9	14/16	19 - 3	24 - 0	22 - 6	8 - 0	429	399	372	340	279	230	189	155	232	205	183	163	145	130	116

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular (4.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p (in^3/ft)	S_n (in^3/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.57	50	1.344	4.159	4.234	0.967	1.513	43516	68088	2843	2384	1729
20/18	24	5.15	50	1.512	4.444	4.768	0.974	1.581	43818	71125	2843	2384	1729
18/20	24	5.48	50	1.611	5.576	5.576	1.589	1.964	71498	88398	6616	4077	2891
18/18	24	6.05	50	1.779	6.027	6.027	1.590	2.043	71541	91947	6616	4077	2891

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
6 5/8	18 - 5	18 - 1	15 - 9	25 - 5	22 - 9	24 - 4	22 - 4	19 - 8	17 - 7	18 - 3	16 - 3	16 - 11	6 - 1
7 1/8	19 - 5	19 - 1	16 - 9	27 - 2	23 - 11	26 - 0	23 - 7	21 - 1	18 - 7	17 - 8	14 - 11	15 - 7	5 - 11
7 5/8	20 - 4	20 - 0	17 - 8	28 - 9	25 - 2	27 - 8	24 - 9	22 - 7	19 - 7	17 - 0	13 - 10	14 - 5	5 - 8
8 1/8	21 - 4	21 - 0	18 - 7	30 - 5	26 - 4	29 - 3	25 - 11	24 - 0	20 - 6	16 - 5	12 - 11	13 - 5	5 - 6
8 5/8	22 - 3	21 - 11	19 - 4	31 - 11	27 - 6	30 - 9	27 - 1	25 - 5	21 - 5	15 - 11	12 - 1	12 - 7	5 - 4
8 7/8	22 - 9	22 - 5	19 - 9	32 - 8	28 - 1	31 - 6	27 - 8	26 - 1	21 - 10	15 - 8	11 - 8	12 - 2	5 - 3
9 5/8	24 - 1	23 - 10	20 - 11	34 - 11	29 - 10	33 - 8	29 - 5	27 - 7	23 - 0	15 - 0	10 - 8	11 - 2	5 - 0
20/18 GA Deck													
6 5/8	18 - 4	18 - 1	15 - 9	25 - 4	22 - 8	24 - 4	22 - 4	19 - 7	17 - 6	18 - 5	16 - 1	16 - 9	6 - 2
7 1/8	19 - 4	19 - 0	16 - 9	27 - 1	23 - 11	26 - 0	23 - 6	21 - 1	18 - 7	17 - 8	14 - 10	15 - 5	5 - 11
7 5/8	20 - 4	20 - 0	17 - 8	28 - 9	25 - 1	27 - 7	24 - 9	22 - 6	19 - 7	17 - 0	13 - 9	14 - 4	5 - 8
8 1/8	21 - 3	21 - 0	18 - 6	30 - 4	26 - 3	29 - 2	25 - 11	23 - 11	20 - 6	16 - 5	12 - 10	13 - 4	5 - 6
8 5/8	22 - 3	21 - 11	19 - 4	31 - 10	27 - 5	30 - 8	27 - 1	25 - 4	21 - 4	15 - 11	12 - 0	12 - 6	5 - 4
8 7/8	22 - 8	22 - 4	19 - 9	32 - 7	28 - 0	31 - 5	27 - 8	26 - 0	21 - 9	15 - 8	11 - 7	12 - 1	5 - 3
9 5/8	24 - 1	23 - 9	20 - 10	34 - 10	29 - 9	33 - 8	29 - 4	27 - 7	23 - 0	15 - 0	10 - 8	11 - 1	5 - 0
18/20 GA Deck													
6 5/8	19 - 2	18 - 10	16 - 6	25 - 4	23 - 8	24 - 3	23 - 0	19 - 7	18 - 7	19 - 6	24 - 4	22 - 10	8 - 1
7 1/8	20 - 1	19 - 10	17 - 5	27 - 0	24 - 10	25 - 11	24 - 6	21 - 1	20 - 0	19 - 0	23 - 7	22 - 3	7 - 10
7 5/8	21 - 1	20 - 10	18 - 5	28 - 8	26 - 1	27 - 7	25 - 8	22 - 6	21 - 4	18 - 6	22 - 11	21 - 8	7 - 8
8 1/8	22 - 1	21 - 9	19 - 4	30 - 3	27 - 4	29 - 2	26 - 11	23 - 11	22 - 8	18 - 1	21 - 4	21 - 2	7 - 1
8 5/8	23 - 1	22 - 9	20 - 3	31 - 10	28 - 6	30 - 8	28 - 1	25 - 4	24 - 0	17 - 8	20 - 0	20 - 9	6 - 11
8 7/8	23 - 7	23 - 3	20 - 9	32 - 7	29 - 1	31 - 5	28 - 9	26 - 0	24 - 8	17 - 6	19 - 4	20 - 2	6 - 9
9 5/8	25 - 0	24 - 8	22 - 2	34 - 9	30 - 11	33 - 7	30 - 6	28 - 0	26 - 7	17 - 0	17 - 9	18 - 6	6 - 2
18/18 GA Deck													
6 5/8	19 - 1	18 - 9	16 - 6	25 - 3	23 - 7	24 - 3	23 - 0	19 - 7	18 - 7	19 - 10	24 - 8	23 - 3	8 - 3
7 1/8	20 - 1	19 - 9	17 - 5	27 - 0	24 - 10	25 - 11	24 - 5	21 - 0	19 - 11	19 - 3	24 - 0	22 - 7	8 - 0
7 5/8	21 - 1	20 - 9	18 - 4	28 - 7	26 - 1	27 - 6	25 - 8	22 - 6	21 - 4	18 - 9	22 - 9	22 - 0	7 - 7
8 1/8	22 - 1	21 - 9	19 - 4	30 - 2	27 - 3	29 - 1	26 - 10	23 - 11	22 - 8	18 - 4	21 - 2	21 - 6	7 - 2
8 5/8	23 - 0	22 - 9	20 - 3	31 - 9	28 - 6	30 - 7	28 - 1	25 - 3	24 - 0	18 - 0	19 - 10	20 - 8	6 - 11
8 7/8	23 - 6	23 - 2	20 - 9	32 - 6	29 - 1	31 - 4	28 - 8	26 - 0	24 - 8	17 - 10	19 - 3	20 - 1	6 - 8
9 5/8	24 - 11	24 - 8	22 - 1	34 - 9	30 - 10	33 - 6	30 - 5	28 - 0	26 - 7	17 - 4	17 - 8	18 - 4	6 - 1

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular (4.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.67	50	1.959	6.415	6.419	1.594	2.118	71752	95289	6616	4077	2891
16/18	24	7.02	50	2.064	7.477	7.477	2.319	2.532	104368	113951	11426	6334	4423
16/16	24	7.64	50	2.244	7.995	7.995	2.366	2.618	106490	117793	11426	6334	4423
14/16	24	8.80	50	2.585	9.545	9.545	3.198	3.211	143907	144476	17829	9635	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
6 5/8	19 - 1	18 - 9	16 - 5	25 - 2	23 - 7	24 - 2	22 - 11	19 - 6	18 - 6	20 - 1	25 - 0	23 - 6	8 - 4
7 1/8	20 - 0	19 - 9	17 - 5	26 - 11	24 - 9	25 - 10	24 - 5	21 - 0	19 - 11	19 - 6	24 - 4	22 - 10	8 - 1
7 5/8	21 - 0	20 - 9	18 - 4	28 - 6	26 - 0	27 - 5	25 - 7	22 - 5	21 - 4	19 - 0	22 - 7	22 - 3	7 - 6
8 1/8	22 - 0	21 - 8	19 - 4	30 - 2	27 - 3	29 - 0	26 - 10	23 - 10	22 - 8	18 - 7	21 - 1	21 - 9	7 - 3
8 5/8	23 - 0	22 - 8	20 - 3	31 - 8	28 - 5	30 - 6	28 - 0	25 - 3	23 - 11	18 - 3	19 - 9	20 - 7	6 - 10
8 7/8	23 - 6	23 - 2	20 - 8	32 - 5	29 - 0	31 - 3	28 - 7	25 - 11	24 - 7	18 - 0	19 - 2	19 - 11	6 - 8
9 5/8	24 - 11	24 - 7	22 - 1	34 - 8	30 - 9	33 - 6	30 - 5	27 - 11	26 - 6	17 - 7	17 - 6	18 - 3	6 - 1
16/18 GA Deck													
6 5/8	19 - 10	19 - 6	17 - 1	25 - 2	23 - 10	24 - 1	22 - 11	19 - 6	18 - 6	20 - 9	25 - 11	24 - 4	8 - 8
7 1/8	20 - 9	20 - 5	18 - 0	26 - 10	25 - 6	25 - 9	24 - 6	21 - 0	19 - 11	20 - 3	25 - 2	23 - 8	8 - 5
7 5/8	21 - 9	21 - 5	19 - 0	28 - 6	26 - 11	27 - 5	26 - 0	22 - 5	21 - 3	19 - 9	24 - 7	23 - 1	8 - 2
8 1/8	22 - 9	22 - 5	19 - 11	30 - 1	28 - 2	29 - 0	27 - 6	23 - 10	22 - 7	19 - 3	24 - 0	22 - 7	8 - 0
8 5/8	23 - 9	23 - 5	20 - 11	31 - 8	29 - 4	30 - 6	28 - 11	25 - 3	23 - 11	18 - 11	23 - 6	22 - 2	7 - 10
8 7/8	24 - 3	23 - 11	21 - 5	32 - 5	30 - 0	31 - 3	29 - 7	25 - 11	24 - 7	18 - 9	23 - 4	21 - 11	7 - 9
9 5/8	25 - 9	25 - 5	22 - 10	34 - 7	31 - 10	33 - 5	31 - 5	27 - 11	26 - 6	18 - 3	22 - 8	21 - 4	7 - 7
16/16 GA Deck													
6 5/8	19 - 9	19 - 5	17 - 1	25 - 1	23 - 10	24 - 1	22 - 10	19 - 6	18 - 6	21 - 1	26 - 3	24 - 8	8 - 9
7 1/8	20 - 8	20 - 5	18 - 0	26 - 9	25 - 5	25 - 9	24 - 5	20 - 11	19 - 10	20 - 6	25 - 6	24 - 0	8 - 6
7 5/8	21 - 9	21 - 5	18 - 11	28 - 5	26 - 10	27 - 4	25 - 11	22 - 5	21 - 3	20 - 0	24 - 11	23 - 5	8 - 4
8 1/8	22 - 9	22 - 5	19 - 11	30 - 0	28 - 1	28 - 11	27 - 5	23 - 10	22 - 7	19 - 7	24 - 4	22 - 11	8 - 1
8 5/8	23 - 9	23 - 5	20 - 11	31 - 7	29 - 4	30 - 5	28 - 10	25 - 2	23 - 11	19 - 2	23 - 10	22 - 5	8 - 0
8 7/8	24 - 3	23 - 11	21 - 4	32 - 4	29 - 11	31 - 2	29 - 6	25 - 10	24 - 7	19 - 0	23 - 8	22 - 3	7 - 11
9 5/8	25 - 8	25 - 4	22 - 10	34 - 6	31 - 9	33 - 4	31 - 4	27 - 11	26 - 5	18 - 6	23 - 0	21 - 8	7 - 8
14/16 GA Deck													
6 5/8	20 - 6	20 - 2	17 - 9	25 - 0	23 - 8	23 - 11	22 - 9	19 - 5	18 - 5	21 - 10	27 - 3	25 - 7	9 - 1
7 1/8	21 - 5	21 - 1	18 - 7	26 - 8	25 - 3	25 - 7	24 - 3	20 - 11	19 - 10	21 - 3	26 - 6	24 - 11	8 - 10
7 5/8	22 - 5	22 - 1	19 - 7	28 - 4	26 - 10	27 - 3	25 - 10	22 - 4	21 - 2	20 - 9	25 - 11	24 - 4	8 - 8
8 1/8	23 - 5	23 - 1	20 - 7	29 - 11	28 - 4	28 - 9	27 - 4	23 - 9	22 - 6	20 - 4	25 - 4	23 - 10	8 - 5
8 5/8	24 - 5	24 - 1	21 - 7	31 - 5	29 - 10	30 - 4	28 - 9	25 - 1	23 - 10	19 - 11	24 - 10	23 - 4	8 - 3
8 7/8	24 - 11	24 - 7	22 - 1	32 - 2	30 - 6	31 - 1	29 - 5	25 - 10	24 - 6	19 - 9	24 - 7	23 - 2	8 - 2
9 5/8	26 - 6	26 - 2	23 - 6	34 - 5	32 - 7	33 - 3	31 - 6	27 - 10	26 - 5	19 - 3	24 - 0	22 - 6	8 - 0

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular Acoustical (4.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.22	50	1.240	3.927	3.995	0.964	1.488	43367	66965	2843	2384	1729
20/18	24	4.68	50	1.374	4.195	4.467	0.969	1.550	43616	69761	2843	2384	1729
18/20	24	5.13	50	1.506	5.225	5.225	1.584	1.937	71302	87147	6616	4077	2891
18/18	24	5.58	50	1.641	5.632	5.632	1.589	2.008	71493	90351	6616	4077	2891

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	15	16	17	18	19	20	21	22	20	21	22	23	24	25	26
4000 PSI Normal Weight Concrete (145 PCF)	6 5/8	20/20	16 - 11	13 - 8	14 - 3	5 - 8	115	101	89	79	66	50			79	71	64	56	48	42	
	43 PSF	20/18	16 - 11	13 - 7	14 - 2	5 - 8	114	101	89	79	65	49			79	71	63	56	48	42	
	1.09 cu.yd/(100sq.ft)	18/20	18 - 1	22 - 7	21 - 3	7 - 6	180	163	128	100	78	60	45		85	73	64	55	48	41	
	6x6 - W1.4 x W1.4	18/18	18 - 5	22 - 5	21 - 7	7 - 6	179	162	127	100	77	59	45		84	73	63	55	47	41	
	7 1/8	20/20	16 - 2	12 - 5	13 - 0	5 - 5	128	113	100	89	79	66	50		88	79	71	64	58	52	45
	49 PSF	20/18	16 - 2	12 - 5	12 - 11	5 - 5	128	112	99	88	79	65	49		88	79	71	64	58	51	44
	1.25 cu.yd/(100sq.ft)	18/20	17 - 7	20 - 7	20 - 7	6 - 10	201	184	161	128	100	78	60	45	102	89	78	68	59	51	44
	6x6 - W1.4 x W1.4	18/18	17 - 10	20 - 6	20 - 11	7 - 0	201	183	161	127	100	78	60	45	102	89	77	67	58	51	44
	7 5/8	20/20	15 - 6	11 - 6	11 - 11	5 - 2	142	125	110	98	87	78	65	49	97	87	79	71	64	58	52
	55 PSF	20/18	15 - 6	11 - 5	11 - 11	5 - 2	141	124	110	98	87	78	65	49	97	87	78	70	64	57	52
	1.4 cu.yd/(100sq.ft)	18/20	17 - 1	19 - 0	19 - 9	6 - 7	222	203	187	160	127	100	78	60	122	107	93	81	71	62	54
	6x6 - W1.4 x W1.4	18/18	17 - 5	18 - 11	19 - 8	6 - 7	222	203	186	159	126	100	78	60	122	106	93	81	71	62	54
	8 1/8	20/20	14 - 11	10 - 7	11 - 1	5 - 0	155	137	121	107	95	85	76	65	107	96	86	77	70	63	57
	61 PSF	20/18	14 - 11	10 - 7	11 - 0	4 - 11	155	136	120	107	95	85	76	64	106	95	86	77	69	63	57
	1.55 cu.yd/(100sq.ft)	18/20	16 - 9	17 - 7	18 - 4	6 - 1	244	223	205	189	158	126	100	78	144	126	110	97	85	74	65
	6x6 - W2.0 x W2.0	18/18	17 - 0	17 - 6	18 - 3	6 - 1	244	223	204	188	157	126	99	78	143	126	110	96	84	74	65
	8 5/8	20/20	14 - 4	9 - 10	10 - 3	4 - 6	169	148	131	116	104	93	83	74	116	104	93	84	76	68	62
	67 PSF	20/18	14 - 4	9 - 10	10 - 3	4 - 5	168	148	131	116	103	92	83	74	115	103	93	84	75	68	61
	1.71 cu.yd/(100sq.ft)	18/20	16 - 4	16 - 5	17 - 1	5 - 8	265	242	223	205	190	156	125	99	167	147	129	113	100	88	77
	6x6 - W2.0 x W2.0	18/18	16 - 8	16 - 4	17 - 0	5 - 8	265	242	222	205	190	155	124	99	167	146	129	113	99	87	77
	8 7/8	20/20	14 - 0	9 - 7	9 - 11	4 - 3	175	154	136	121	108	96	86	77	120	108	97	87	79	71	64
	70 PSF	20/18	14 - 1	9 - 6	9 - 11	4 - 3	175	154	136	121	107	96	86	77	120	108	97	87	78	71	64
	1.79 cu.yd/(100sq.ft)	18/20	16 - 2	15 - 10	16 - 6	5 - 6	276	252	232	214	198	172	139	111	180	158	139	122	108	95	83
	6x6 - W2.0 x W2.0	18/18	16 - 6	15 - 9	16 - 5	5 - 6	276	252	231	213	197	172	138	110	180	158	139	122	107	95	83
	9 5/8	20/20	13 - 4	8 - 8	9 - 0	3 - 8	196	172	152	135	120	107	96	86	134	120	108	97	88	79	71
	79 PSF	20/18	13 - 4	8 - 8	9 - 0	3 - 8	195	172	152	135	120	107	96	86	134	120	108	97	87	79	71
	2.02 cu.yd/(100sq.ft)	18/20	15 - 9	14 - 5	15 - 0	5 - 3	308	282	259	238	221	205	186	151	217	194	171	151	134	118	105
	6x6 - W2.9 x W2.9	18/18	16 - 0	14 - 4	15 - 0	5 - 4	308	281	258	238	220	204	186	151	216	194	171	151	133	118	104

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular Acoustical (4.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.07	50	1.784	6.012	6.012	1.591	2.076	71600	93409	6616	4077	2891
16/18	24	6.55	50	1.925	6.991	6.991	2.272	2.492	102241	112162	11426	6334	4423
16/16	24	7.04	50	2.069	7.458	7.458	2.317	2.570	104287	115632	11426	6334	4423
14/16	24	8.20	50	2.410	8.917	8.917	3.133	3.157	140970	142075	17829	9635	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
							15	16	17	18	19	20	21	22	20	21	22	23	24	25	26
4000 PSI Normal Weight Concrete (145 PCF)	6 5/8	18/16	18 - 8	22 - 4	21 - 10	7 - 5	179	162	127	99	77	59	44		84	73	63	54	47	41	
	43 PSF	16/18	19 - 4	24 - 1	22 - 8	8 - 0	233	183	145	114	90	70	54	40	84	72	63	54	47	40	
	1.09 cu.yd/(100sq.ft)	16/16	19 - 7	24 - 5	23 - 0	8 - 2	232	183	144	114	89	69	53		83	72	62	54	46		
	6x6 - W1.4 x W1.4	14/16	20 - 5	25 - 5	23 - 11	8 - 6	262	207	164	130	103	81	63	48	82	71	61	53	45		
	7 1/8	18/16	18 - 2	20 - 5	21 - 3	7 - 1	200	183	160	127	99	77	59	45	102	88	77	67	58	50	43
	49 PSF	16/18	18 - 9	23 - 5	22 - 0	7 - 10	279	229	182	144	115	90	70	54	101	88	77	67	58	50	43
	1.25 cu.yd/(100sq.ft)	16/16	19 - 1	23 - 9	22 - 4	7 - 11	278	229	181	144	114	90	70	54	101	88	76	66	57	50	43
	6x6 - W1.4 x W1.4	14/16	19 - 10	24 - 8	23 - 3	8 - 3	324	257	204	163	130	104	82	64	100	87	75	65	56	49	42
	7 5/8	18/16	17 - 8	18 - 10	19 - 7	6 - 6	222	203	186	159	126	99	78	59	121	106	92	81	70	61	53
	55 PSF	16/18	18 - 4	22 - 10	21 - 5	7 - 7	308	283	225	180	144	115	91	71	121	106	92	80	70	61	53
	1.4 cu.yd/(100sq.ft)	16/16	18 - 7	23 - 1	21 - 9	7 - 9	308	282	225	180	144	114	90	70	121	105	92	80	70	61	53
	6x6 - W1.4 x W1.4	14/16	19 - 4	24 - 1	22 - 8	8 - 0	395	316	253	203	163	131	104	83	120	104	91	79	69	60	52
	8 1/8	18/16	17 - 3	17 - 5	18 - 2	6 - 1	243	222	204	188	157	125	99	77	143	125	110	96	84	74	64
	61 PSF	16/18	17 - 11	22 - 3	20 - 11	7 - 5	338	315	276	222	178	143	115	91	143	125	109	96	84	73	64
	1.55 cu.yd/(100sq.ft)	16/16	18 - 2	22 - 7	21 - 3	7 - 6	338	315	275	221	178	143	114	91	142	124	109	95	83	73	63
	6x6 - W2.0 x W2.0	14/16	18 - 11	23 - 6	22 - 2	7 - 10	451	384	308	249	201	163	131	105	142	124	108	94	82	72	63
	8 5/8	18/16	16 - 11	16 - 3	16 - 11	5 - 8	265	242	222	205	189	155	124	98	167	146	128	113	99	87	76
	67 PSF	16/18	17 - 6	21 - 10	20 - 6	7 - 3	368	343	320	270	218	177	143	114	166	146	128	112	99	87	76
	1.71 cu.yd/(100sq.ft)	16/16	17 - 9	22 - 1	20 - 10	7 - 4	368	342	320	269	218	176	142	114	166	145	128	112	98	86	76
	6x6 - W2.0 x W2.0	14/16	18 - 6	23 - 0	21 - 8	7 - 8	492	444	372	301	245	199	162	131	165	144	127	111	97	85	75
	8 7/8	18/16	16 - 9	15 - 9	16 - 4	5 - 7	275	252	231	213	197	171	138	110	179	157	138	122	107	94	83
	70 PSF	16/18	17 - 4	21 - 7	20 - 3	7 - 2	383	357	333	296	240	195	158	127	179	157	138	121	107	94	82
	1.79 cu.yd/(100sq.ft)	16/16	17 - 7	21 - 11	20 - 7	7 - 4	383	356	333	295	240	194	157	127	178	156	137	121	106	93	82
	6x6 - W2.0 x W2.0	14/16	18 - 4	22 - 10	21 - 5	7 - 7	500	482	407	330	269	220	179	146	178	156	137	120	105	93	81
	9 5/8	18/16	16 - 3	14 - 4	14 - 11	5 - 5	307	281	258	238	220	204	185	150	216	193	170	150	133	117	104
	79 PSF	16/18	16 - 10	21 - 0	19 - 9	7 - 0	428	398	372	349	315	257	211	172	219	193	170	150	133	117	103
	2.02 cu.yd/(100sq.ft)	16/16	17 - 1	21 - 3	20 - 0	7 - 1	427	398	372	348	314	257	210	172	219	192	170	150	132	117	103
	6x6 - W2.9 x W2.9	14/16	17 - 10	22 - 2	20 - 10	7 - 5	500	500	500	429	351	289	238	195	218	192	169	149	131	116	102

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular Acoustical (4.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.22	50	1.240	3.927	3.995	0.964	1.488	43367	66965	2843	2384	1729
20/18	24	4.68	50	1.374	4.195	4.467	0.969	1.550	43616	69761	2843	2384	1729
18/20	24	5.13	50	1.506	5.225	5.225	1.584	1.937	71302	87147	6616	4077	2891
18/18	24	5.58	50	1.641	5.632	5.632	1.589	2.008	71493	90351	6616	4077	2891

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
6 5/8	19 - 4	19 - 0	15 - 3	24 - 4	23 - 1	23 - 5	22 - 2	19 - 1	17 - 0	16 - 11	13 - 8	14 - 3	5 - 8
7 1/8	20 - 4	20 - 1	16 - 1	25 - 11	24 - 6	24 - 11	23 - 3	20 - 6	17 - 11	16 - 2	12 - 5	13 - 0	5 - 5
7 5/8	21 - 4	21 - 0	16 - 11	27 - 4	25 - 6	26 - 5	24 - 3	21 - 10	18 - 10	15 - 6	11 - 6	11 - 11	5 - 2
8 1/8	22 - 3	22 - 0	17 - 8	28 - 9	26 - 4	27 - 9	25 - 1	23 - 2	19 - 7	14 - 11	10 - 7	11 - 1	5 - 0
8 5/8	23 - 3	22 - 11	18 - 5	30 - 2	27 - 1	29 - 2	25 - 10	24 - 5	20 - 4	14 - 4	9 - 10	10 - 3	4 - 6
8 7/8	23 - 8	23 - 5	18 - 9	30 - 10	27 - 6	29 - 10	26 - 3	24 - 10	20 - 9	14 - 0	9 - 7	9 - 11	4 - 3
9 5/8	25 - 1	24 - 10	19 - 8	32 - 9	28 - 6	31 - 9	27 - 3	26 - 1	21 - 9	13 - 4	8 - 8	9 - 0	3 - 8
20/18 GA Deck													
6 5/8	19 - 4	19 - 0	15 - 3	24 - 4	23 - 1	23 - 4	22 - 2	19 - 1	16 - 11	16 - 11	13 - 7	14 - 2	5 - 8
7 1/8	20 - 4	20 - 0	16 - 1	25 - 10	24 - 5	24 - 11	23 - 2	20 - 6	17 - 11	16 - 2	12 - 5	12 - 11	5 - 5
7 5/8	21 - 3	21 - 0	16 - 11	27 - 4	25 - 5	26 - 4	24 - 2	21 - 10	18 - 9	15 - 6	11 - 5	11 - 11	5 - 2
8 1/8	22 - 3	22 - 0	17 - 8	28 - 9	26 - 3	27 - 9	25 - 0	23 - 2	19 - 7	14 - 11	10 - 7	11 - 0	4 - 11
8 5/8	23 - 2	22 - 11	18 - 4	30 - 1	27 - 1	29 - 1	25 - 10	24 - 5	20 - 4	14 - 4	9 - 10	10 - 3	4 - 5
8 7/8	23 - 8	23 - 5	18 - 8	30 - 9	27 - 5	29 - 9	26 - 2	24 - 10	20 - 8	14 - 1	9 - 6	9 - 11	4 - 3
9 5/8	25 - 1	24 - 9	19 - 8	32 - 8	28 - 5	31 - 8	27 - 3	26 - 0	21 - 8	13 - 4	8 - 8	9 - 0	3 - 8
18/20 GA Deck													
6 5/8	20 - 0	19 - 8	17 - 5	24 - 3	23 - 0	23 - 4	22 - 2	19 - 1	18 - 1	18 - 1	22 - 7	21 - 3	7 - 6
7 1/8	21 - 0	20 - 9	18 - 5	25 - 10	24 - 6	24 - 10	23 - 7	20 - 6	19 - 5	17 - 7	20 - 7	20 - 7	6 - 10
7 5/8	22 - 0	21 - 9	19 - 5	27 - 3	25 - 10	26 - 4	24 - 11	21 - 10	20 - 8	17 - 1	19 - 0	19 - 9	6 - 7
8 1/8	23 - 0	22 - 9	20 - 5	28 - 8	27 - 2	27 - 8	26 - 3	23 - 1	21 - 11	16 - 9	17 - 7	18 - 4	6 - 1
8 5/8	24 - 0	23 - 8	21 - 4	30 - 1	28 - 6	29 - 1	27 - 7	24 - 5	23 - 2	16 - 4	16 - 5	17 - 1	5 - 8
8 7/8	24 - 6	24 - 2	21 - 10	30 - 9	29 - 2	29 - 9	28 - 2	25 - 0	23 - 9	16 - 2	15 - 10	16 - 6	5 - 6
9 5/8	25 - 11	25 - 7	23 - 3	32 - 8	31 - 0	31 - 8	30 - 0	26 - 10	25 - 6	15 - 9	14 - 5	15 - 0	5 - 3
18/18 GA Deck													
6 5/8	20 - 0	19 - 8	17 - 5	24 - 3	23 - 0	23 - 3	22 - 1	19 - 1	18 - 1	18 - 5	22 - 5	21 - 7	7 - 6
7 1/8	21 - 0	20 - 8	18 - 5	25 - 9	24 - 5	24 - 10	23 - 6	20 - 5	19 - 5	17 - 10	20 - 6	20 - 11	7 - 0
7 5/8	22 - 0	21 - 8	19 - 5	27 - 3	25 - 10	26 - 3	24 - 11	21 - 9	20 - 8	17 - 5	18 - 11	19 - 8	6 - 7
8 1/8	23 - 0	22 - 8	20 - 5	28 - 8	27 - 2	27 - 8	26 - 3	23 - 1	21 - 11	17 - 0	17 - 6	18 - 3	6 - 1
8 5/8	24 - 0	23 - 8	21 - 4	30 - 0	28 - 5	29 - 0	27 - 6	24 - 4	23 - 1	16 - 8	16 - 4	17 - 0	5 - 8
8 7/8	24 - 5	24 - 2	21 - 10	30 - 8	29 - 1	29 - 8	28 - 2	25 - 0	23 - 9	16 - 6	15 - 9	16 - 5	5 - 6
9 5/8	25 - 11	25 - 7	23 - 3	32 - 7	30 - 11	31 - 7	30 - 0	26 - 10	25 - 6	16 - 0	14 - 4	15 - 0	5 - 4

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular Acoustical (4.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.07	50	1.784	6.012	6.012	1.591	2.076	71600	93409	6616	4077	2891
16/18	24	6.55	50	1.925	6.991	6.991	2.272	2.492	102241	112162	11426	6334	4423
16/16	24	7.04	50	2.069	7.458	7.458	2.317	2.570	104287	115632	11426	6334	4423
14/16	24	8.20	50	2.410	8.917	8.917	3.133	3.157	140970	142075	17829	9635	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
6 5/8	19 - 11	19 - 8	17 - 5	24 - 2	22 - 11	23 - 3	22 - 1	19 - 0	18 - 1	18 - 8	22 - 4	21 - 10	7 - 5
7 1/8	21 - 0	20 - 8	18 - 5	25 - 8	24 - 5	24 - 9	23 - 6	20 - 5	19 - 4	18 - 2	20 - 5	21 - 3	7 - 1
7 5/8	22 - 0	21 - 8	19 - 5	27 - 2	25 - 9	26 - 2	24 - 10	21 - 9	20 - 8	17 - 8	18 - 10	19 - 7	6 - 6
8 1/8	23 - 0	22 - 8	20 - 4	28 - 7	27 - 1	27 - 7	26 - 2	23 - 1	21 - 11	17 - 3	17 - 5	18 - 2	6 - 1
8 5/8	23 - 11	23 - 8	21 - 4	29 - 11	28 - 5	29 - 0	27 - 6	24 - 4	23 - 1	16 - 11	16 - 3	16 - 11	5 - 8
8 7/8	24 - 5	24 - 2	21 - 10	30 - 7	29 - 1	29 - 8	28 - 1	25 - 0	23 - 8	16 - 9	15 - 9	16 - 4	5 - 7
9 5/8	25 - 10	25 - 7	23 - 3	32 - 7	30 - 11	31 - 7	29 - 11	26 - 10	25 - 5	16 - 3	14 - 4	14 - 11	5 - 5
16/18 GA Deck													
6 5/8	20 - 7	20 - 3	18 - 0	24 - 2	22 - 11	23 - 2	22 - 0	19 - 0	18 - 0	19 - 4	24 - 1	22 - 8	8 - 0
7 1/8	21 - 7	21 - 4	19 - 0	25 - 8	24 - 4	24 - 9	23 - 5	20 - 5	19 - 4	18 - 9	23 - 5	22 - 0	7 - 10
7 5/8	22 - 8	22 - 4	20 - 0	27 - 1	25 - 9	26 - 2	24 - 10	21 - 9	20 - 7	18 - 4	22 - 10	21 - 5	7 - 7
8 1/8	23 - 8	23 - 4	21 - 0	28 - 6	27 - 1	27 - 7	26 - 2	23 - 1	21 - 10	17 - 11	22 - 3	20 - 11	7 - 5
8 5/8	24 - 8	24 - 4	22 - 0	29 - 11	28 - 4	28 - 11	27 - 5	24 - 4	23 - 1	17 - 6	21 - 10	20 - 6	7 - 3
8 7/8	25 - 2	24 - 10	22 - 6	30 - 7	29 - 0	29 - 7	28 - 1	24 - 11	23 - 8	17 - 4	21 - 7	20 - 3	7 - 2
9 5/8	26 - 7	26 - 4	23 - 11	32 - 6	30 - 10	31 - 6	29 - 11	26 - 9	25 - 5	16 - 10	21 - 0	19 - 9	7 - 0
16/16 GA Deck													
6 5/8	20 - 7	20 - 3	17 - 11	24 - 1	22 - 10	23 - 2	22 - 0	19 - 0	18 - 0	19 - 7	24 - 5	23 - 0	8 - 2
7 1/8	21 - 7	21 - 3	19 - 0	25 - 7	24 - 3	24 - 8	23 - 5	20 - 4	19 - 4	19 - 1	23 - 9	22 - 4	7 - 11
7 5/8	22 - 7	22 - 4	20 - 0	27 - 1	25 - 8	26 - 1	24 - 9	21 - 8	20 - 7	18 - 7	23 - 1	21 - 9	7 - 9
8 1/8	23 - 8	23 - 4	21 - 0	28 - 6	27 - 0	27 - 6	26 - 1	23 - 0	21 - 10	18 - 2	22 - 7	21 - 3	7 - 6
8 5/8	24 - 8	24 - 4	21 - 11	29 - 10	28 - 4	28 - 11	27 - 5	24 - 4	23 - 1	17 - 9	22 - 1	20 - 10	7 - 4
8 7/8	25 - 1	24 - 10	22 - 5	30 - 6	28 - 11	29 - 7	28 - 0	24 - 11	23 - 8	17 - 7	21 - 11	20 - 7	7 - 4
9 5/8	26 - 7	26 - 3	23 - 11	32 - 5	30 - 9	31 - 6	29 - 10	26 - 9	25 - 5	17 - 1	21 - 3	20 - 0	7 - 1
14/16 GA Deck													
6 5/8	21 - 2	20 - 11	18 - 6	24 - 0	22 - 9	23 - 1	21 - 11	18 - 11	17 - 11	20 - 5	25 - 5	23 - 11	8 - 6
7 1/8	22 - 3	21 - 11	19 - 7	25 - 6	24 - 2	24 - 7	23 - 4	20 - 4	19 - 3	19 - 10	24 - 8	23 - 3	8 - 3
7 5/8	23 - 3	23 - 0	20 - 7	26 - 11	25 - 7	26 - 0	24 - 8	21 - 8	20 - 6	19 - 4	24 - 1	22 - 8	8 - 0
8 1/8	24 - 4	24 - 0	21 - 7	28 - 4	26 - 11	27 - 5	26 - 0	22 - 11	21 - 9	18 - 11	23 - 6	22 - 2	7 - 10
8 5/8	25 - 4	25 - 0	22 - 7	29 - 9	28 - 2	28 - 9	27 - 4	24 - 3	23 - 0	18 - 6	23 - 0	21 - 8	7 - 8
8 7/8	25 - 10	25 - 6	23 - 1	30 - 5	28 - 10	29 - 5	27 - 11	24 - 10	23 - 7	18 - 4	22 - 10	21 - 5	7 - 7
9 5/8	27 - 4	27 - 0	24 - 7	32 - 4	30 - 8	31 - 5	29 - 9	26 - 8	25 - 4	17 - 10	22 - 2	20 - 10	7 - 5

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular Acoustical (4.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.22	50	1.240	3.927	3.995	0.964	1.488	43367	66965	2843	2384	1729
20/18	24	4.68	50	1.374	4.195	4.467	0.969	1.550	43616	69761	2843	2384	1729
18/20	24	5.13	50	1.506	5.225	5.225	1.584	1.937	71302	87147	6616	4077	2891
18/18	24	5.58	50	1.641	5.632	5.632	1.589	2.008	71493	90351	6616	4077	2891

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	15	16	17	18	19	20	21	22	20	21	22	23	24	25	26
4000 PSI Lightweight Concrete (110 PCF)	6 5/8	20/20	18 - 0	16 - 3	17 - 0	6 - 0	122	109	86	67	51				87	79	70	57	46		
	32 PSF	20/18	18 - 3	16 - 2	16 - 10	6 - 1	122	108	86	66	51				86	78	70	56	45		
	1.09 cu.yd/(100sq.ft)	18/20	19 - 3	24 - 0	22 - 6	8 - 0	166	130	102	80	62	48			92	81	71	63	56	45	
	6x6 - W1.4 x W1.4	18/18	19 - 7	24 - 4	22 - 11	8 - 1	165	129	102	80	62	48			92	81	71	63	55	45	
	7 1/8	20/20	17 - 6	15 - 0	15 - 7	5 - 10	137	122	109	85	67	51			97	88	80	73	60	48	
	37 PSF	20/18	17 - 8	14 - 11	15 - 6	5 - 11	137	121	108	85	66	51			97	88	80	73	59	48	
	1.25 cu.yd/(100sq.ft)	18/20	18 - 8	23 - 3	21 - 11	7 - 9	205	162	128	101	80	62	48		111	98	86	76	68	59	47
	6x6 - W1.4 x W1.4	18/18	19 - 0	23 - 8	22 - 3	7 - 11	205	161	127	100	79	62	48		111	98	86	76	67	58	47
	7 5/8	20/20	17 - 0	13 - 11	14 - 6	5 - 8	152	135	120	108	85	66	51		107	97	89	81	74	62	50
	42 PSF	20/18	17 - 0	13 - 10	14 - 5	5 - 8	151	134	120	107	84	66	50		107	97	88	80	73	62	50
	1.4 cu.yd/(100sq.ft)	18/20	18 - 3	22 - 8	21 - 4	7 - 7	232	199	158	126	100	79	62	48	132	117	103	91	81	72	61
	6x6 - W1.4 x W1.4	18/18	18 - 6	22 - 10	21 - 8	7 - 7	232	199	158	126	100	79	62	47	132	116	103	91	81	72	61
	8 1/8	20/20	16 - 5	12 - 11	13 - 6	5 - 6	166	148	132	118	106	84	65	50	118	107	97	88	81	74	65
	46 PSF	20/18	16 - 5	12 - 10	13 - 5	5 - 6	166	147	131	118	105	83	65	50	117	106	97	88	80	74	64
	1.55 cu.yd/(100sq.ft)	18/20	17 - 10	21 - 5	20 - 10	7 - 2	255	234	194	155	124	99	79	62	155	137	121	108	96	85	76
	6x6 - W2.0 x W2.0	18/18	18 - 1	21 - 4	21 - 2	7 - 1	255	234	194	155	124	99	78	61	154	137	121	107	95	85	76
	8 5/8	20/20	15 - 11	12 - 1	12 - 7	5 - 4	181	160	143	129	116	104	82	64	128	116	105	96	88	80	74
	51 PSF	20/18	15 - 11	12 - 1	12 - 7	5 - 4	180	160	143	128	115	103	82	64	127	116	105	96	88	80	73
	1.71 cu.yd/(100sq.ft)	18/20	17 - 5	20 - 1	20 - 5	6 - 10	277	255	235	189	152	123	98	78	179	159	141	125	112	100	89
	6x6 - W2.0 x W2.0	18/18	17 - 9	20 - 0	20 - 9	6 - 11	277	254	234	188	152	122	98	78	179	159	141	125	111	99	89
	8 7/8	20/20	15 - 8	11 - 9	12 - 3	5 - 3	188	167	149	134	120	109	92	72	133	121	110	100	91	84	77
	53 PSF	20/18	15 - 8	11 - 8	12 - 2	5 - 3	188	167	149	133	120	109	91	72	133	120	109	100	91	83	76
	1.79 cu.yd/(100sq.ft)	18/20	17 - 3	19 - 5	20 - 3	6 - 9	289	265	244	207	168	136	109	87	193	171	152	135	120	108	96
	6x6 - W2.0 x W2.0	18/18	17 - 6	19 - 4	20 - 2	6 - 9	288	265	244	207	167	135	109	87	192	170	151	135	120	107	96
	9 5/8	20/20	15 - 0	10 - 9	11 - 2	5 - 0	210	186	166	149	134	122	110	100	148	135	122	112	102	93	86
	60 PSF	20/18	15 - 0	10 - 8	11 - 2	5 - 0	210	186	166	149	134	121	110	99	148	134	122	111	102	93	85
	2.02 cu.yd/(100sq.ft)	18/20	16 - 9	17 - 9	18 - 6	6 - 2	322	296	273	253	220	179	146	119	231	208	185	165	148	133	119
	6x6 - W2.9 x W2.9	18/18	17 - 1	17 - 9	18 - 5	6 - 2	322	295	272	252	220	179	146	118	231	208	185	165	148	132	118

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular Acoustical (4.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.07	50	1.784	6.012	6.012	1.591	2.076	71600	93409	6616	4077	2891
16/18	24	6.55	50	1.925	6.991	6.991	2.272	2.492	102241	112162	11426	6334	4423
16/16	24	7.04	50	2.069	7.458	7.458	2.317	2.570	104287	115632	11426	6334	4423
14/16	24	8.20	50	2.410	8.917	8.917	3.133	3.157	140970	142075	17829	9635	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
							15	16	17	18	19	20	21	22	20	21	22	23	24	25	26
4000 PSI Lightweight Concrete (110 PCF)	6 5/8	18/16	19 - 10	24 - 8	23 - 2	8 - 3	165	129	101	79	62	47			92	80	71	62	55	44	
	32 PSF	16/18	20 - 6	25 - 6	24 - 0	8 - 6	190	150	118	94	74	58	45		91	80	70	62	54	48	42
	1.09 cu.yd/(100sq.ft)	16/16	20 - 9	25 - 11	24 - 4	8 - 8	190	149	118	93	73	57	44		91	80	70	62	54	48	42
	6x6 - W1.4 x W1.4	14/16	21 - 7	26 - 10	25 - 3	8 - 11	219	173	138	109	87	69	54	42	90	79	69	61	53	47	41
	7 1/8	18/16	19 - 3	24 - 0	22 - 7	8 - 0	204	161	127	100	79	61	47		111	97	86	76	67	58	47
	37 PSF	16/18	19 - 11	24 - 10	23 - 4	8 - 3	231	183	145	116	92	72	57	44	110	97	85	75	67	59	52
	1.25 cu.yd/(100sq.ft)	16/16	20 - 3	25 - 2	23 - 8	8 - 5	231	183	145	115	91	72	56	43	110	97	85	75	66	58	51
	6x6 - W1.4 x W1.4	14/16	21 - 0	26 - 2	24 - 7	8 - 9	262	208	166	133	106	84	67	52	109	96	84	74	65	58	51
	7 5/8	18/16	18 - 9	22 - 9	22 - 0	7 - 7	232	198	157	125	99	78	61	47	131	116	102	91	80	71	61
	42 PSF	16/18	19 - 5	24 - 3	22 - 9	8 - 1	283	225	179	144	115	92	73	57	131	115	102	90	80	71	63
	1.4 cu.yd/(100sq.ft)	16/16	19 - 9	24 - 7	23 - 1	8 - 2	283	224	179	143	114	91	72	56	131	115	102	90	80	70	62
	6x6 - W1.4 x W1.4	14/16	20 - 6	25 - 6	24 - 0	8 - 6	318	253	203	163	131	105	84	67	130	114	101	89	79	70	62
	8 1/8	18/16	18 - 4	21 - 2	21 - 6	7 - 2	254	233	193	154	123	98	78	61	154	136	121	107	95	85	75
	46 PSF	16/18	19 - 0	23 - 8	22 - 3	7 - 11	343	273	219	176	142	114	91	73	154	136	120	107	95	84	75
	1.55 cu.yd/(100sq.ft)	16/16	19 - 3	24 - 0	22 - 7	8 - 0	342	273	219	176	141	114	91	72	153	135	120	106	94	84	74
	6x6 - W2.0 x W2.0	14/16	20 - 1	25 - 0	23 - 6	8 - 4	358	306	246	199	161	130	105	84	153	135	119	105	93	83	74
	8 5/8	18/16	18 - 0	19 - 10	20 - 8	6 - 11	277	254	234	188	151	122	97	77	179	158	140	125	111	99	88
	51 PSF	16/18	18 - 7	23 - 2	21 - 10	7 - 9	380	329	264	214	173	140	113	91	178	158	140	124	111	99	88
	1.71 cu.yd/(100sq.ft)	16/16	18 - 11	23 - 6	22 - 1	7 - 10	380	328	264	213	173	140	113	91	178	157	140	124	110	98	88
	6x6 - W2.0 x W2.0	14/16	19 - 8	24 - 6	23 - 0	8 - 2	381	355	297	241	196	159	130	105	177	157	139	123	110	97	87
	8 7/8	18/16	17 - 9	19 - 3	20 - 1	6 - 8	288	264	244	207	167	135	108	86	192	170	151	134	120	107	95
	53 PSF	16/18	18 - 5	23 - 0	21 - 7	7 - 8	395	359	289	234	190	155	125	101	191	169	150	134	119	106	95
	1.79 cu.yd/(100sq.ft)	16/16	18 - 8	23 - 3	21 - 11	7 - 9	395	358	289	234	190	154	125	101	191	169	150	133	119	106	95
	6x6 - W2.0 x W2.0	14/16	19 - 6	24 - 3	22 - 10	8 - 1	393	366	324	263	215	175	143	117	190	168	149	133	118	105	94
	9 5/8	18/16	17 - 4	17 - 8	18 - 4	6 - 1	322	295	272	252	219	179	145	118	230	207	185	165	147	132	118
	60 PSF	16/18	17 - 11	22 - 4	21 - 0	7 - 5	431	401	374	304	249	204	167	137	233	207	184	164	147	131	118
	2.02 cu.yd/(100sq.ft)	16/16	18 - 2	22 - 8	21 - 4	7 - 7	431	401	373	304	248	203	166	136	233	207	184	164	146	131	117
	6x6 - W2.9 x W2.9	14/16	18 - 11	23 - 7	22 - 2	7 - 10	429	399	373	341	280	230	190	156	232	206	183	163	146	130	117

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular Acoustical (4.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.22	50	1.240	3.927	3.995	0.964	1.488	43367	66965	2843	2384	1729
20/18	24	4.68	50	1.374	4.195	4.467	0.969	1.550	43616	69761	2843	2384	1729
18/20	24	5.13	50	1.506	5.225	5.225	1.584	1.937	71302	87147	6616	4077	2891
18/18	24	5.58	50	1.641	5.632	5.632	1.589	2.008	71493	90351	6616	4077	2891

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
6 5/8	18 - 5	18 - 1	15 - 10	25 - 6	22 - 9	24 - 5	22 - 4	19 - 8	17 - 7	18 - 0	16 - 3	17 - 0	6 - 0
7 1/8	19 - 5	19 - 1	16 - 9	27 - 2	24 - 0	26 - 1	23 - 7	21 - 2	18 - 8	17 - 6	15 - 0	15 - 7	5 - 10
7 5/8	20 - 4	20 - 1	17 - 9	28 - 10	25 - 2	27 - 8	24 - 9	22 - 7	19 - 8	17 - 0	13 - 11	14 - 6	5 - 8
8 1/8	21 - 4	21 - 0	18 - 7	30 - 5	26 - 4	29 - 3	26 - 0	24 - 0	20 - 7	16 - 5	12 - 11	13 - 6	5 - 6
8 5/8	22 - 3	22 - 0	19 - 5	32 - 0	27 - 6	30 - 10	27 - 2	25 - 5	21 - 5	15 - 11	12 - 1	12 - 7	5 - 4
8 7/8	22 - 9	22 - 5	19 - 9	32 - 9	28 - 1	31 - 7	27 - 9	26 - 1	21 - 10	15 - 8	11 - 9	12 - 3	5 - 3
9 5/8	24 - 2	23 - 10	20 - 11	34 - 11	29 - 10	33 - 9	29 - 5	27 - 8	23 - 0	15 - 0	10 - 9	11 - 2	5 - 0
20/18 GA Deck													
6 5/8	18 - 5	18 - 1	15 - 9	25 - 5	22 - 9	24 - 4	22 - 4	19 - 7	17 - 7	18 - 3	16 - 2	16 - 10	6 - 1
7 1/8	19 - 4	19 - 1	16 - 9	27 - 2	23 - 11	26 - 0	23 - 7	21 - 1	18 - 7	17 - 8	14 - 11	15 - 6	5 - 11
7 5/8	20 - 4	20 - 0	17 - 8	28 - 9	25 - 2	27 - 8	24 - 9	22 - 7	19 - 7	17 - 0	13 - 10	14 - 5	5 - 8
8 1/8	21 - 4	21 - 0	18 - 7	30 - 4	26 - 4	29 - 3	25 - 11	24 - 0	20 - 6	16 - 5	12 - 10	13 - 5	5 - 6
8 5/8	22 - 3	21 - 11	19 - 4	31 - 11	27 - 6	30 - 9	27 - 1	25 - 4	21 - 5	15 - 11	12 - 1	12 - 7	5 - 4
8 7/8	22 - 9	22 - 5	19 - 9	32 - 8	28 - 1	31 - 6	27 - 8	26 - 1	21 - 10	15 - 8	11 - 8	12 - 2	5 - 3
9 5/8	24 - 1	23 - 9	20 - 10	34 - 11	29 - 9	33 - 8	29 - 5	27 - 7	23 - 0	15 - 0	10 - 8	11 - 2	5 - 0
18/20 GA Deck													
6 5/8	19 - 2	18 - 10	16 - 6	25 - 5	23 - 8	24 - 4	23 - 1	19 - 7	18 - 7	19 - 3	24 - 0	22 - 6	8 - 0
7 1/8	20 - 2	19 - 10	17 - 5	27 - 1	24 - 11	26 - 0	24 - 6	21 - 1	20 - 0	18 - 8	23 - 3	21 - 11	7 - 9
7 5/8	21 - 2	20 - 10	18 - 5	28 - 9	26 - 1	27 - 7	25 - 9	22 - 6	21 - 5	18 - 3	22 - 8	21 - 4	7 - 7
8 1/8	22 - 1	21 - 10	19 - 4	30 - 4	27 - 4	29 - 2	26 - 11	23 - 11	22 - 9	17 - 10	21 - 5	20 - 10	7 - 2
8 5/8	23 - 1	22 - 9	20 - 4	31 - 10	28 - 7	30 - 8	28 - 2	25 - 4	24 - 1	17 - 5	20 - 1	20 - 5	6 - 10
8 7/8	23 - 7	23 - 3	20 - 9	32 - 7	29 - 2	31 - 5	28 - 9	26 - 0	24 - 8	17 - 3	19 - 5	20 - 3	6 - 9
9 5/8	25 - 0	24 - 8	22 - 2	34 - 10	30 - 11	33 - 8	30 - 6	28 - 1	26 - 7	16 - 9	17 - 9	18 - 6	6 - 2
18/18 GA Deck													
6 5/8	19 - 2	18 - 10	16 - 6	25 - 4	23 - 8	24 - 3	23 - 0	19 - 7	18 - 7	19 - 7	24 - 4	22 - 11	8 - 1
7 1/8	20 - 1	19 - 10	17 - 5	27 - 0	24 - 10	25 - 11	24 - 6	21 - 1	20 - 0	19 - 0	23 - 8	22 - 3	7 - 11
7 5/8	21 - 1	20 - 9	18 - 5	28 - 8	26 - 1	27 - 7	25 - 8	22 - 6	21 - 4	18 - 6	22 - 10	21 - 8	7 - 7
8 1/8	22 - 1	21 - 9	19 - 4	30 - 3	27 - 4	29 - 1	26 - 11	23 - 11	22 - 8	18 - 1	21 - 4	21 - 2	7 - 1
8 5/8	23 - 1	22 - 9	20 - 3	31 - 10	28 - 6	30 - 8	28 - 1	25 - 4	24 - 0	17 - 9	20 - 0	20 - 9	6 - 11
8 7/8	23 - 7	23 - 3	20 - 9	32 - 7	29 - 1	31 - 5	28 - 8	26 - 0	24 - 8	17 - 6	19 - 4	20 - 2	6 - 9
9 5/8	25 - 0	24 - 8	22 - 2	34 - 9	30 - 10	33 - 7	30 - 6	28 - 0	26 - 7	17 - 1	17 - 9	18 - 5	6 - 2

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

4.5" Composite Deep-Dek® Cellular Acoustical (4.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.07	50	1.784	6.012	6.012	1.591	2.076	71600	93409	6616	4077	2891
16/18	24	6.55	50	1.925	6.991	6.991	2.272	2.492	102241	112162	11426	6334	4423
16/16	24	7.04	50	2.069	7.458	7.458	2.317	2.570	104287	115632	11426	6334	4423
14/16	24	8.20	50	2.410	8.917	8.917	3.133	3.157	140970	142075	17829	9635	6645

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
6 5/8	19 - 1	18 - 9	16 - 6	25 - 3	23 - 7	24 - 3	23 - 0	19 - 7	18 - 7	19 - 10	24 - 8	23 - 2	8 - 3
7 1/8	20 - 1	19 - 9	17 - 5	27 - 0	24 - 10	25 - 11	24 - 5	21 - 0	19 - 11	19 - 3	24 - 0	22 - 7	8 - 0
7 5/8	21 - 1	20 - 9	18 - 4	28 - 7	26 - 1	27 - 6	25 - 8	22 - 6	21 - 4	18 - 9	22 - 9	22 - 0	7 - 7
8 1/8	22 - 1	21 - 9	19 - 4	30 - 2	27 - 3	29 - 1	26 - 10	23 - 11	22 - 8	18 - 4	21 - 2	21 - 6	7 - 2
8 5/8	23 - 0	22 - 9	20 - 3	31 - 9	28 - 6	30 - 7	28 - 1	25 - 3	24 - 0	18 - 0	19 - 10	20 - 8	6 - 11
8 7/8	23 - 6	23 - 2	20 - 9	32 - 6	29 - 1	31 - 4	28 - 8	26 - 0	24 - 8	17 - 9	19 - 3	20 - 1	6 - 8
9 5/8	24 - 11	24 - 8	22 - 1	34 - 9	30 - 10	33 - 6	30 - 5	28 - 0	26 - 7	17 - 4	17 - 8	18 - 4	6 - 1
16/18 GA Deck													
6 5/8	19 - 10	19 - 6	17 - 1	25 - 3	23 - 11	24 - 2	22 - 11	19 - 6	18 - 6	20 - 6	25 - 6	24 - 0	8 - 6
7 1/8	20 - 9	20 - 5	18 - 0	26 - 11	25 - 6	25 - 10	24 - 6	21 - 0	19 - 11	19 - 11	24 - 10	23 - 4	8 - 3
7 5/8	21 - 9	21 - 6	19 - 0	28 - 7	26 - 11	27 - 5	26 - 0	22 - 5	21 - 4	19 - 5	24 - 3	22 - 9	8 - 1
8 1/8	22 - 10	22 - 6	20 - 0	30 - 2	28 - 2	29 - 0	27 - 6	23 - 10	22 - 8	19 - 0	23 - 8	22 - 3	7 - 11
8 5/8	23 - 10	23 - 6	20 - 11	31 - 8	29 - 5	30 - 7	29 - 0	25 - 3	24 - 0	18 - 7	23 - 2	21 - 10	7 - 9
8 7/8	24 - 3	24 - 0	21 - 5	32 - 5	30 - 0	31 - 3	29 - 7	25 - 11	24 - 7	18 - 5	23 - 0	21 - 7	7 - 8
9 5/8	25 - 9	25 - 5	22 - 10	34 - 8	31 - 10	33 - 6	31 - 5	27 - 11	26 - 6	17 - 11	22 - 4	21 - 0	7 - 5
16/16 GA Deck													
6 5/8	19 - 10	19 - 6	17 - 1	25 - 2	23 - 10	24 - 1	22 - 11	19 - 6	18 - 6	20 - 9	25 - 11	24 - 4	8 - 8
7 1/8	20 - 9	20 - 5	18 - 0	26 - 10	25 - 6	25 - 9	24 - 5	21 - 0	19 - 11	20 - 3	25 - 2	23 - 8	8 - 5
7 5/8	21 - 9	21 - 5	19 - 0	28 - 6	26 - 11	27 - 5	26 - 0	22 - 5	21 - 3	19 - 9	24 - 7	23 - 1	8 - 2
8 1/8	22 - 9	22 - 5	19 - 11	30 - 1	28 - 2	29 - 0	27 - 6	23 - 10	22 - 7	19 - 3	24 - 0	22 - 7	8 - 0
8 5/8	23 - 9	23 - 5	20 - 11	31 - 8	29 - 4	30 - 6	28 - 11	25 - 3	23 - 11	18 - 11	23 - 6	22 - 1	7 - 10
8 7/8	24 - 3	23 - 11	21 - 5	32 - 5	30 - 0	31 - 3	29 - 7	25 - 11	24 - 7	18 - 8	23 - 3	21 - 11	7 - 9
9 5/8	25 - 9	25 - 5	22 - 10	34 - 7	31 - 10	33 - 5	31 - 5	27 - 11	26 - 6	18 - 2	22 - 8	21 - 4	7 - 7
14/16 GA Deck													
6 5/8	20 - 7	20 - 3	17 - 9	25 - 0	23 - 9	24 - 0	22 - 9	19 - 5	18 - 5	21 - 7	26 - 10	25 - 3	8 - 11
7 1/8	21 - 5	21 - 1	18 - 8	26 - 9	25 - 4	25 - 8	24 - 4	20 - 11	19 - 10	21 - 0	26 - 2	24 - 7	8 - 9
7 5/8	22 - 5	22 - 1	19 - 7	28 - 4	26 - 11	27 - 3	25 - 11	22 - 4	21 - 3	20 - 6	25 - 6	24 - 0	8 - 6
8 1/8	23 - 6	23 - 2	20 - 7	29 - 11	28 - 5	28 - 10	27 - 4	23 - 9	22 - 7	20 - 1	25 - 0	23 - 6	8 - 4
8 5/8	24 - 6	24 - 2	21 - 7	31 - 6	29 - 11	30 - 4	28 - 10	25 - 2	23 - 10	19 - 8	24 - 6	23 - 0	8 - 2
8 7/8	25 - 0	24 - 8	22 - 1	32 - 3	30 - 7	31 - 1	29 - 6	25 - 10	24 - 6	19 - 6	24 - 3	22 - 10	8 - 1
9 5/8	26 - 6	26 - 2	23 - 6	34 - 5	32 - 8	33 - 4	31 - 7	27 - 10	26 - 5	18 - 11	23 - 7	22 - 2	7 - 10

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

6" Composite Deep-Dek® Cellular (6.0CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.92	50	1.447	7.585	7.999	1.296	2.166	58308	97478	2115	2239	1716
20/18	24	5.50	50	1.616	8.082	8.920	1.301	2.256	58532	101520	2115	2239	1716
18/20	24	5.95	50	1.747	10.361	10.361	2.140	2.811	96285	126502	4918	3872	2873
18/18	24	6.52	50	1.916	11.051	11.051	2.139	2.918	96245	131300	4918	3872	2873

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
							17	18	19	20	21	22	23	24	22	23	24	25	26	27	28
4000 PSI Normal Weight Concrete (145 PCF)	8 1/8	20/20	18 - 8	12 - 4	12 - 10	5 - 4	162	140	122	106	92	73	58	44	117	104	92	82	72	64	57
	48 PSF	20/18	18 - 8	12 - 3	12 - 9	5 - 3	162	140	121	106	92	73	57	44	117	103	92	81	72	64	57
	1.23 cu.yd/(100sq.ft)	18/20	20 - 10	20 - 5	21 - 3	7 - 1	211	184	161	134	108	87	70	55	116	103	91	81	72	64	56
	6x6 - W1.4 x W1.4	18/18	21 - 1	20 - 4	21 - 2	7 - 1	211	183	160	134	108	87	69	54	116	102	91	80	71	63	56
	8 5/8	20/20	17 - 11	11 - 4	11 - 10	4 - 8	223	207	174	141	114	91	72	57	135	120	107	95	84	75	67
	54 PSF	20/18	17 - 11	11 - 4	11 - 9	4 - 7	223	206	174	140	113	91	72	56	135	120	106	94	84	74	66
	1.39 cu.yd/(100sq.ft)	18/20	20 - 3	18 - 10	19 - 7	6 - 9	239	208	182	160	132	107	86	68	135	119	106	94	83	74	66
	6x6 - W1.4 x W1.4	18/18	20 - 7	18 - 9	19 - 6	6 - 10	238	208	182	159	131	106	85	68	134	119	105	94	83	74	65
	9 1/8	20/20	17 - 3	10 - 6	11 - 0	4 - 0	243	225	209	170	138	111	89	71	155	138	123	109	97	87	77
	60 PSF	20/18	17 - 3	10 - 6	10 - 11	4 - 0	243	225	209	169	137	111	89	70	155	137	122	109	97	86	77
	1.54 cu.yd/(100sq.ft)	18/20	19 - 10	17 - 5	18 - 2	6 - 7	312	290	238	195	159	130	105	85	154	137	122	108	96	86	76
	6x6 - W1.4 x W1.4	18/18	20 - 1	17 - 4	18 - 1	6 - 8	311	290	237	194	159	129	105	84	154	137	121	108	96	85	76
	9 5/8	20/20	16 - 8	9 - 9	10 - 2	3 - 6	264	244	227	203	165	135	109	87	176	157	140	125	111	99	88
	66 PSF	20/18	16 - 8	9 - 9	10 - 2	3 - 6	263	244	227	202	165	134	108	87	176	156	139	124	111	99	88
	1.7 cu.yd/(100sq.ft)	18/20	19 - 5	16 - 3	16 - 11	6 - 6	338	314	282	231	190	156	127	103	176	156	139	124	110	98	88
	6x6 - W2.0 x W2.0	18/18	19 - 8	16 - 2	16 - 10	6 - 7	337	314	281	231	189	155	127	103	175	156	139	123	110	98	87
	10 1/8	20/20	16 - 1	9 - 2	9 - 6	3 - 1	284	263	244	224	196	161	131	106	199	177	158	141	126	113	101
	72 PSF	20/18	16 - 1	9 - 1	9 - 6	3 - 1	283	262	244	223	196	160	130	105	199	177	158	141	126	112	100
	1.85 cu.yd/(100sq.ft)	18/20	19 - 0	15 - 3	15 - 10	6 - 4	364	339	316	272	224	185	152	124	199	177	157	141	125	112	100
	6x6 - W2.0 x W2.0	18/18	19 - 3	15 - 2	15 - 9	6 - 5	364	338	316	272	224	184	152	124	198	176	157	140	125	112	100
	10 3/8	20/20	15 - 10	8 - 11	9 - 3	2 - 11	294	272	253	232	205	175	143	116	211	188	168	150	134	120	107
	76 PSF	20/18	15 - 10	8 - 10	9 - 2	2 - 10	294	272	253	232	205	174	142	116	211	188	168	150	134	120	107
	1.93 cu.yd/(100sq.ft)	18/20	18 - 10	14 - 9	15 - 4	6 - 3	377	351	328	294	243	201	166	136	211	188	167	149	133	119	107
	6x6 - W2.0 x W2.0	18/18	19 - 1	14 - 8	15 - 3	6 - 4	377	350	327	294	243	200	165	136	210	187	167	149	133	119	106
	11 1/8	20/20	15 - 2	8 - 1	8 - 5	2 - 5	324	300	279	259	229	202	179	151	237	223	199	178	160	143	129
	85 PSF	20/18	15 - 2	8 - 1	8 - 5	2 - 4	324	300	279	258	228	202	179	151	237	222	199	178	159	143	128
	2.16 cu.yd/(100sq.ft)	18/20	18 - 4	13 - 6	14 - 1	6 - 1	416	387	361	339	306	254	211	175	249	222	198	178	159	143	128
	6x6 - W2.9 x W2.9	18/18	18 - 7	13 - 5	14 - 0	6 - 2	416	387	361	338	306	254	211	175	249	222	198	177	159	142	127

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

6" Composite Deep-Dek® Cellular (6.0CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	7.13	50	2.096	11.676	11.941	2.141	3.015	96360	135665	4918	3872	2873
16/18	24	7.61	50	2.236	13.951	13.951	3.227	3.616	145205	162734	9895	6059	4398
16/16	24	8.22	50	2.416	14.892	14.892	3.217	3.728	144774	167778	9895	6059	4398
14/16	24	9.53	50	2.800	17.762	17.762	4.569	4.574	205600	205835	17829	9272	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
							17	18	19	20	21	22	23	24	22	23	24	25	26	27	28
4000 PSI Normal Weight Concrete (145 PCF)	8 1/8	18/16	21 - 4	20 - 2	21 - 0	7 - 1	210	183	160	133	107	86	68	54	115	102	90	80	71	63	55
	48 PSF	16/18	22 - 3	27 - 9	26 - 1	9 - 3	261	228	188	153	125	101	82	65	115	102	90	80	70	62	55
	1.23 cu.yd/(100sq.ft)	16/16	22 - 7	28 - 1	26 - 5	9 - 4	260	227	188	153	124	101	81	65	115	101	89	79	70	62	54
	6x6 - W1.4 x W1.4	14/16	23 - 5	29 - 3	27 - 6	9 - 9	318	263	215	176	144	118	96	78	114	100	88	78	69	61	54
	8 5/8	18/16	20 - 10	18 - 7	19 - 5	6 - 11	238	207	181	159	131	106	85	67	134	118	105	93	83	73	65
	54 PSF	16/18	21 - 8	27 - 0	25 - 5	9 - 0	291	255	224	183	149	122	99	80	133	118	105	93	82	73	64
	1.39 cu.yd/(100sq.ft)	16/16	22 - 0	27 - 5	25 - 9	9 - 2	291	254	223	182	149	121	98	79	133	118	104	92	82	72	64
	6x6 - W1.4 x W1.4	14/16	22 - 11	28 - 6	26 - 10	9 - 6	351	307	252	207	170	140	114	93	132	117	103	91	81	71	63
	9 1/8	18/16	20 - 4	17 - 3	18 - 0	6 - 9	311	289	237	193	158	129	104	83	153	136	121	107	95	85	75
	60 PSF	16/18	21 - 2	26 - 4	24 - 10	8 - 9	326	286	251	219	179	147	120	98	153	136	120	107	95	84	75
	1.54 cu.yd/(100sq.ft)	16/16	21 - 6	26 - 2	25 - 2	8 - 9	326	285	251	218	179	147	120	97	153	135	120	107	95	84	75
	6x6 - W1.4 x W1.4	14/16	22 - 4	27 - 10	26 - 2	9 - 3	389	342	298	245	202	167	137	112	152	134	119	106	94	83	74
	9 5/8	18/16	19 - 11	16 - 1	16 - 9	6 - 8	337	314	281	230	189	155	126	102	175	155	138	123	109	98	87
	66 PSF	16/18	20 - 9	24 - 6	24 - 4	8 - 2	366	321	282	249	213	176	145	119	174	155	138	123	109	97	86
	1.7 cu.yd/(100sq.ft)	16/16	21 - 1	24 - 5	24 - 8	8 - 3	366	320	282	249	213	175	144	118	174	154	137	122	109	97	86
	6x6 - W2.0 x W2.0	14/16	21 - 11	27 - 3	25 - 8	9 - 1	433	380	335	290	240	199	164	136	173	153	136	121	108	96	85
	10 1/8	18/16	19 - 6	15 - 1	15 - 8	6 - 6	363	338	315	271	223	184	151	123	198	176	157	140	125	111	99
	72 PSF	16/18	20 - 4	23 - 0	23 - 10	7 - 11	449	419	368	304	252	208	172	142	197	175	156	139	124	111	99
	1.85 cu.yd/(100sq.ft)	16/16	20 - 8	22 - 10	23 - 10	7 - 11	449	419	367	303	251	208	172	142	197	175	156	139	124	110	98
	6x6 - W2.0 x W2.0	14/16	21 - 6	26 - 9	25 - 2	8 - 11	481	423	373	331	282	235	195	162	196	174	155	138	123	109	97
	10 3/8	18/16	19 - 4	14 - 7	15 - 3	6 - 5	376	350	327	293	242	200	165	135	210	187	166	148	133	118	106
	76 PSF	16/18	20 - 2	22 - 3	23 - 2	7 - 9	465	434	397	328	272	226	188	155	209	186	166	148	132	118	105
	1.93 cu.yd/(100sq.ft)	16/16	20 - 6	22 - 2	23 - 1	7 - 8	465	434	396	328	272	226	187	154	209	186	166	148	132	118	105
	6x6 - W2.0 x W2.0	14/16	21 - 4	26 - 6	24 - 11	8 - 10	500	446	393	349	305	254	212	176	208	185	165	147	131	117	104
	11 1/8	18/16	18 - 10	13 - 4	13 - 11	6 - 3	415	386	361	338	305	253	210	174	248	221	198	177	158	142	127
	85 PSF	16/18	19 - 8	20 - 5	21 - 3	7 - 1	500	480	449	410	342	285	238	198	248	221	197	176	158	141	127
	2.16 cu.yd/(100sq.ft)	16/16	19 - 11	20 - 4	21 - 2	7 - 1	500	479	449	409	341	285	237	198	247	220	197	176	157	141	126
	6x6 - W2.9 x W2.9	14/16	20 - 9	25 - 10	24 - 4	8 - 7	500	500	500	456	381	319	268	224	246	219	196	175	156	140	125

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

6" Composite Deep-Dek® Cellular (6.0CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.92	50	1.447	7.585	7.999	1.296	2.166	58308	97478	2115	2239	1716
20/18	24	5.50	50	1.616	8.082	8.920	1.301	2.256	58532	101520	2115	2239	1716
18/20	24	5.95	50	1.747	10.361	10.361	2.140	2.811	96285	126502	4918	3872	2873
18/18	24	6.52	50	1.916	11.051	11.051	2.139	2.918	96245	131300	4918	3872	2873

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
8 1/8	22 - 10	22 - 6	19 - 8	29 - 10	28 - 3	28 - 8	27 - 3	23 - 8	22 - 5	18 - 8	12 - 4	12 - 10	5 - 4
8 5/8	23 - 9	23 - 5	20 - 11	31 - 2	29 - 4	30 - 1	28 - 6	24 - 11	23 - 8	17 - 11	11 - 4	11 - 10	4 - 8
9 1/8	24 - 8	24 - 4	21 - 10	32 - 6	30 - 6	31 - 5	29 - 9	26 - 2	24 - 10	17 - 3	10 - 6	11 - 0	4 - 0
9 5/8	25 - 7	25 - 3	22 - 9	33 - 9	31 - 7	32 - 8	31 - 0	27 - 5	26 - 0	16 - 8	9 - 9	10 - 2	3 - 6
10 1/8	26 - 5	26 - 1	23 - 7	35 - 0	32 - 8	33 - 11	32 - 2	28 - 7	27 - 2	16 - 1	9 - 2	9 - 6	3 - 1
10 3/8	26 - 10	26 - 6	24 - 1	35 - 7	33 - 2	34 - 6	32 - 9	29 - 2	27 - 8	15 - 10	8 - 11	9 - 3	2 - 11
11 1/8	28 - 1	27 - 10	25 - 4	37 - 4	34 - 9	36 - 3	34 - 5	30 - 11	29 - 4	15 - 2	8 - 1	8 - 5	2 - 5
20/18 GA Deck													
8 1/8	22 - 10	22 - 6	19 - 8	29 - 9	28 - 2	28 - 8	27 - 2	23 - 7	22 - 5	18 - 8	12 - 3	12 - 9	5 - 3
8 5/8	23 - 9	23 - 5	20 - 11	31 - 1	29 - 4	30 - 0	28 - 6	24 - 11	23 - 7	17 - 11	11 - 4	11 - 9	4 - 7
9 1/8	24 - 8	24 - 4	21 - 10	32 - 5	30 - 5	31 - 4	29 - 9	26 - 2	24 - 10	17 - 3	10 - 6	10 - 11	4 - 0
9 5/8	25 - 6	25 - 2	22 - 9	33 - 8	31 - 6	32 - 7	30 - 11	27 - 4	25 - 11	16 - 8	9 - 9	10 - 2	3 - 6
10 1/8	26 - 5	26 - 1	23 - 7	34 - 11	32 - 7	33 - 10	32 - 1	28 - 7	27 - 1	16 - 1	9 - 1	9 - 6	3 - 1
10 3/8	26 - 10	26 - 6	24 - 0	35 - 6	33 - 2	34 - 5	32 - 8	29 - 2	27 - 8	15 - 10	8 - 10	9 - 2	2 - 10
11 1/8	28 - 1	27 - 9	25 - 4	37 - 4	34 - 9	36 - 2	34 - 4	30 - 10	29 - 3	15 - 2	8 - 1	8 - 5	2 - 4
18/20 GA Deck													
8 1/8	23 - 8	23 - 3	20 - 9	29 - 8	28 - 2	28 - 7	27 - 2	23 - 7	22 - 4	20 - 10	20 - 5	21 - 3	7 - 1
8 5/8	24 - 7	24 - 3	21 - 8	31 - 1	29 - 6	29 - 11	28 - 5	24 - 10	23 - 7	20 - 3	18 - 10	19 - 7	6 - 9
9 1/8	25 - 6	25 - 2	22 - 7	32 - 4	30 - 8	31 - 3	29 - 8	26 - 1	24 - 9	19 - 10	17 - 5	18 - 2	6 - 7
9 5/8	26 - 4	26 - 1	23 - 6	33 - 8	31 - 11	32 - 7	30 - 10	27 - 4	25 - 11	19 - 5	16 - 3	16 - 11	6 - 6
10 1/8	27 - 3	26 - 11	24 - 5	34 - 11	33 - 1	33 - 9	32 - 1	28 - 6	27 - 1	19 - 0	15 - 3	15 - 10	6 - 4
10 3/8	27 - 8	27 - 5	24 - 10	35 - 6	33 - 8	34 - 5	32 - 7	29 - 1	27 - 7	18 - 10	14 - 9	15 - 4	6 - 3
11 1/8	29 - 0	28 - 8	26 - 2	37 - 3	35 - 4	36 - 2	34 - 4	30 - 10	29 - 3	18 - 4	13 - 6	14 - 1	6 - 1
18/18 GA Deck													
8 1/8	23 - 7	23 - 3	20 - 8	29 - 8	28 - 1	28 - 6	27 - 1	23 - 6	22 - 4	21 - 1	20 - 4	21 - 2	7 - 1
8 5/8	24 - 6	24 - 2	21 - 8	31 - 0	29 - 5	29 - 11	28 - 4	24 - 10	23 - 7	20 - 7	18 - 9	19 - 6	6 - 10
9 1/8	25 - 5	25 - 1	22 - 7	32 - 4	30 - 8	31 - 3	29 - 7	26 - 1	24 - 9	20 - 1	17 - 4	18 - 1	6 - 8
9 5/8	26 - 4	26 - 0	23 - 6	33 - 7	31 - 10	32 - 6	30 - 10	27 - 4	25 - 11	19 - 8	16 - 2	16 - 10	6 - 7
10 1/8	27 - 3	26 - 11	24 - 4	34 - 10	33 - 0	33 - 9	32 - 0	28 - 6	27 - 0	19 - 3	15 - 2	15 - 9	6 - 5
10 3/8	27 - 8	27 - 4	24 - 10	35 - 5	33 - 7	34 - 4	32 - 7	29 - 1	27 - 7	19 - 1	14 - 8	15 - 3	6 - 4
11 1/8	29 - 0	28 - 8	26 - 1	37 - 2	35 - 3	36 - 1	34 - 3	30 - 10	29 - 3	18 - 7	13 - 5	14 - 0	6 - 2

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

6" Composite Deep-Dek® Cellular (6.0CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	7.13	50	2.096	11.676	11.941	2.141	3.015	96360	135665	4918	3872	2873
16/18	24	7.61	50	2.236	13.951	13.951	3.227	3.616	145205	162734	9895	6059	4398
16/16	24	8.22	50	2.416	14.892	14.892	3.217	3.728	144774	167778	9895	6059	4398
14/16	24	9.53	50	2.800	17.762	17.762	4.569	4.574	205600	205835	17829	9272	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf SDL=20	LL=55 psf SDL=10	LL=100 psf SDL=15	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15					
				Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
8 1/8	23 - 7	23 - 3	20 - 8	29 - 7	28 - 1	28 - 6	27 - 0	23 - 6	22 - 4	21 - 4	20 - 2	21 - 0	7 - 1
8 5/8	24 - 6	24 - 2	21 - 7	30 - 11	29 - 4	29 - 10	28 - 4	24 - 9	23 - 6	20 - 10	18 - 7	19 - 5	6 - 11
9 1/8	25 - 5	25 - 1	22 - 6	32 - 3	30 - 7	31 - 2	29 - 7	26 - 0	24 - 8	20 - 4	17 - 3	18 - 0	6 - 9
9 5/8	26 - 4	26 - 0	23 - 5	33 - 6	31 - 9	32 - 5	30 - 9	27 - 3	25 - 10	19 - 11	16 - 1	16 - 9	6 - 8
10 1/8	27 - 2	26 - 10	24 - 4	34 - 9	32 - 11	33 - 8	31 - 11	28 - 5	27 - 0	19 - 6	15 - 1	15 - 8	6 - 6
10 3/8	27 - 8	27 - 4	24 - 9	35 - 4	33 - 6	34 - 3	32 - 6	29 - 1	27 - 7	19 - 4	14 - 7	15 - 3	6 - 5
11 1/8	28 - 11	28 - 7	26 - 1	37 - 1	35 - 2	36 - 0	34 - 2	30 - 9	29 - 2	18 - 10	13 - 4	13 - 11	6 - 3
16/18 GA Deck													
8 1/8	24 - 4	24 - 0	21 - 5	29 - 6	28 - 0	28 - 5	27 - 0	23 - 6	22 - 3	22 - 3	27 - 9	26 - 1	9 - 3
8 5/8	25 - 3	24 - 11	22 - 3	30 - 10	29 - 3	29 - 9	28 - 3	24 - 9	23 - 6	21 - 8	27 - 0	25 - 5	9 - 0
9 1/8	26 - 2	25 - 10	23 - 3	32 - 2	30 - 6	31 - 1	29 - 6	26 - 0	24 - 8	21 - 2	26 - 4	24 - 10	8 - 9
9 5/8	27 - 1	26 - 9	24 - 2	33 - 5	31 - 9	32 - 4	30 - 9	27 - 3	25 - 10	20 - 9	24 - 6	24 - 4	8 - 2
10 1/8	28 - 0	27 - 8	25 - 1	34 - 8	32 - 11	33 - 7	31 - 11	28 - 5	27 - 0	20 - 4	23 - 0	23 - 10	7 - 11
10 3/8	28 - 5	28 - 1	25 - 6	35 - 3	33 - 6	34 - 3	32 - 5	29 - 0	27 - 6	20 - 2	22 - 3	23 - 2	7 - 9
11 1/8	29 - 9	29 - 6	26 - 10	37 - 1	35 - 2	36 - 0	34 - 2	30 - 9	29 - 2	19 - 8	20 - 5	21 - 3	7 - 1
16/16 GA Deck													
8 1/8	24 - 4	24 - 0	21 - 4	29 - 5	27 - 11	28 - 4	26 - 11	23 - 5	22 - 3	22 - 7	28 - 1	26 - 5	9 - 4
8 5/8	25 - 2	24 - 10	22 - 3	30 - 10	29 - 3	29 - 9	28 - 2	24 - 9	23 - 5	22 - 0	27 - 5	25 - 9	9 - 2
9 1/8	26 - 1	25 - 9	23 - 2	32 - 1	30 - 6	31 - 0	29 - 5	26 - 0	24 - 8	21 - 6	26 - 2	25 - 2	8 - 9
9 5/8	27 - 1	26 - 9	24 - 1	33 - 5	31 - 8	32 - 4	30 - 8	27 - 2	25 - 10	21 - 1	24 - 5	24 - 8	8 - 3
10 1/8	27 - 11	27 - 8	25 - 0	34 - 7	32 - 10	33 - 7	31 - 10	28 - 5	26 - 11	20 - 8	22 - 10	23 - 10	7 - 11
10 3/8	28 - 5	28 - 1	25 - 6	35 - 3	33 - 5	34 - 2	32 - 5	29 - 0	27 - 6	20 - 6	22 - 2	23 - 1	7 - 8
11 1/8	29 - 9	29 - 5	26 - 10	37 - 0	35 - 1	35 - 11	34 - 1	30 - 8	29 - 1	19 - 11	20 - 4	21 - 2	7 - 1
14/16 GA Deck													
8 1/8	25 - 2	24 - 10	22 - 2	29 - 3	27 - 9	28 - 3	26 - 9	23 - 4	22 - 2	23 - 5	29 - 3	27 - 6	9 - 9
8 5/8	25 - 11	25 - 7	23 - 0	30 - 8	29 - 1	29 - 7	28 - 1	24 - 8	23 - 5	22 - 11	28 - 6	26 - 10	9 - 6
9 1/8	26 - 10	26 - 6	23 - 11	32 - 0	30 - 4	30 - 11	29 - 4	25 - 11	24 - 7	22 - 4	27 - 10	26 - 2	9 - 3
9 5/8	27 - 10	27 - 6	24 - 10	33 - 3	31 - 6	32 - 2	30 - 6	27 - 1	25 - 9	21 - 11	27 - 3	25 - 8	9 - 1
10 1/8	28 - 9	28 - 5	25 - 9	34 - 6	32 - 8	33 - 5	31 - 8	28 - 4	26 - 10	21 - 6	26 - 9	25 - 2	8 - 11
10 3/8	29 - 2	28 - 10	26 - 3	35 - 1	33 - 3	34 - 0	32 - 3	28 - 11	27 - 5	21 - 4	26 - 6	24 - 11	8 - 10
11 1/8	30 - 7	30 - 3	27 - 7	36 - 10	34 - 11	35 - 9	33 - 11	30 - 7	29 - 1	20 - 9	25 - 10	24 - 4	8 - 7

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

6" Composite Deep-Dek® Cellular (6.0CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.92	50	1.447	7.585	7.999	1.296	2.166	58308	97478	2115	2239	1716
20/18	24	5.50	50	1.616	8.082	8.920	1.301	2.256	58532	101520	2115	2239	1716
18/20	24	5.95	50	1.747	10.361	10.361	2.140	2.811	96285	126502	4918	3872	2873
18/18	24	6.52	50	1.916	11.051	11.051	2.139	2.918	96245	131300	4918	3872	2873

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	17	18	19	20	21	22	23	24	22	23	24	25	26	27	28
4000 PSI Lightweight Concrete (110 PCF)	8 1/8	20/20	20 - 6	14 - 10	15 - 5	6 - 10	171	140	113	91	73	58	45		126	112	101	86	72	60	49
	37 PSF	20/18	20 - 6	14 - 9	15 - 4	6 - 10	170	139	112	90	72	57	45		125	112	100	86	71	59	49
	1.23 cu.yd/(100sq.ft)	18/20	22 - 1	24 - 6	25 - 6	8 - 6	204	165	134	109	88	71	57	45	125	112	100	90	80	72	62
	6x6 - W1.4 x W1.4	18/18	22 - 5	24 - 4	25 - 4	8 - 5	204	165	134	108	88	71	57	45	125	111	99	89	80	72	61
	8 5/8	20/20	19 - 9	13 - 9	14 - 4	6 - 4	207	167	135	109	88	71	56	44	145	130	116	104	87	73	61
	41 PSF	20/18	19 - 8	13 - 8	14 - 3	6 - 3	206	166	134	109	87	70	55	43	145	129	116	103	87	72	60
	1.39 cu.yd/(100sq.ft)	18/20	21 - 7	22 - 9	23 - 8	7 - 11	239	194	158	129	105	85	68	55	144	129	116	104	93	84	74
	6x6 - W1.4 x W1.4	18/18	21 - 10	22 - 7	23 - 6	7 - 10	238	193	157	128	104	84	68	54	144	129	115	103	93	84	73
	9 1/8	20/20	19 - 0	12 - 10	13 - 4	5 - 8	246	199	161	131	106	86	69	55	166	149	133	120	106	89	74
	46 PSF	20/18	19 - 0	12 - 9	13 - 3	5 - 7	245	198	161	131	106	85	68	54	166	148	133	120	105	88	74
	1.54 cu.yd/(100sq.ft)	18/20	21 - 1	21 - 2	22 - 1	7 - 4	282	229	187	153	125	102	83	67	165	148	133	119	107	97	87
	6x6 - W1.4 x W1.4	18/18	21 - 4	21 - 1	21 - 11	7 - 4	281	229	187	152	125	102	82	66	165	147	132	119	107	96	87
	9 5/8	20/20	18 - 5	12 - 0	12 - 6	5 - 1	276	235	191	156	127	104	84	67	188	169	152	137	123	107	90
	50 PSF	20/18	18 - 5	11 - 11	12 - 5	5 - 0	275	234	191	156	127	103	83	66	188	168	151	136	123	106	90
	1.7 cu.yd/(100sq.ft)	18/20	20 - 8	19 - 10	20 - 8	6 - 11	331	270	221	181	149	122	100	81	188	168	151	136	122	110	100
	6x6 - W2.0 x W2.0	18/18	20 - 11	19 - 9	20 - 7	7 - 0	330	269	220	181	148	122	99	81	187	168	151	135	122	110	99
	10 1/8	20/20	17 - 10	11 - 3	11 - 9	4 - 7	297	275	225	184	151	124	101	81	195	185	171	154	139	126	108
	55 PSF	20/18	17 - 10	11 - 2	11 - 8	4 - 6	297	274	224	184	150	123	100	81	195	184	171	154	139	126	107
	1.85 cu.yd/(100sq.ft)	18/20	20 - 3	18 - 8	19 - 5	6 - 9	377	315	259	213	176	145	119	98	212	190	171	154	139	125	113
	6x6 - W2.0 x W2.0	18/18	20 - 6	18 - 7	19 - 4	6 - 10	377	314	258	212	175	144	119	97	211	189	170	153	138	125	113
	10 3/8	20/20	17 - 7	10 - 11	11 - 5	4 - 4	308	286	243	199	164	134	110	89	198	187	177	164	148	134	118
	57 PSF	20/18	17 - 7	10 - 11	11 - 4	4 - 3	307	286	242	199	163	134	109	89	197	187	177	163	147	133	117
	1.93 cu.yd/(100sq.ft)	18/20	20 - 0	18 - 2	18 - 11	6 - 8	391	339	279	230	190	157	130	107	224	201	181	163	147	133	120
	6x6 - W2.0 x W2.0	18/18	20 - 4	18 - 0	18 - 9	6 - 9	390	339	279	230	190	157	129	106	224	201	180	163	147	133	120
	11 1/8	20/20	16 - 10	10 - 1	10 - 6	3 - 9	330	309	290	250	207	171	141	116	205	193	183	174	165	157	144
	64 PSF	20/18	16 - 10	10 - 0	10 - 5	3 - 8	329	308	289	250	206	170	140	115	204	193	183	173	165	157	143
	2.16 cu.yd/(100sq.ft)	18/20	19 - 6	16 - 8	17 - 5	6 - 6	431	402	347	288	239	199	165	137	264	237	214	193	174	158	143
	6x6 - W2.9 x W2.9	18/18	19 - 10	16 - 7	17 - 3	6 - 7	431	402	347	287	238	198	165	136	264	237	213	192	174	157	143

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

6" Composite Deep-Dek® Cellular (6.0CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	7.13	50	2.096	11.676	11.941	2.141	3.015	96360	135665	4918	3872	2873
16/18	24	7.61	50	2.236	13.951	13.951	3.227	3.616	145205	162734	9895	6059	4398
16/16	24	8.22	50	2.416	14.892	14.892	3.217	3.728	144774	167778	9895	6059	4398
14/16	24	9.53	50	2.800	17.762	17.762	4.569	4.574	205600	205835	17829	9272	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
			Single	Double	Triple	Canti-lever	17	18	19	20	21	22	23	24	22	23	24	25	26	27	28
4000 PSI Lightweight Concrete (110 PCF)	8 1/8	18/16	22 - 8	24 - 2	25 - 2	8 - 5	203	164	133	108	87	70	56	44	124	111	99	89	80	71	60
	37 PSF	16/18	23 - 7	29 - 5	27 - 8	9 - 10	236	192	157	128	104	85	69	55	124	110	99	88	79	71	64
	1.23 cu.yd/(100sq.ft)	16/16	23 - 11	29 - 9	28 - 0	9 - 11	235	191	156	127	104	84	68	55	123	110	98	88	79	71	63
	6x6 - W1.4 x W1.4	14/16	24 - 10	30 - 11	29 - 1	10 - 4	274	223	183	150	124	101	83	68	122	109	97	87	78	70	62
	8 5/8	18/16	22 - 1	22 - 5	23 - 4	7 - 9	238	193	157	127	103	84	67	53	143	128	115	103	92	83	72
	41 PSF	16/18	23 - 0	28 - 8	27 - 0	9 - 7	272	222	181	148	121	99	81	65	143	128	114	103	92	83	74
	1.39 cu.yd/(100sq.ft)	16/16	23 - 4	29 - 1	27 - 4	9 - 8	272	221	180	148	121	99	80	65	143	127	114	102	92	82	74
	6x6 - W1.4 x W1.4	14/16	24 - 3	30 - 2	28 - 5	10 - 1	311	254	209	172	141	116	95	78	142	126	113	101	91	81	73
	9 1/8	18/16	21 - 7	20 - 11	21 - 9	7 - 3	281	228	186	152	124	101	82	66	164	147	132	118	106	96	86
	46 PSF	16/18	22 - 6	28 - 1	26 - 5	9 - 4	317	259	212	174	143	117	96	78	164	147	131	118	106	95	86
	1.54 cu.yd/(100sq.ft)	16/16	22 - 10	28 - 5	26 - 9	9 - 6	316	258	211	173	142	117	96	78	164	146	131	118	106	95	85
	6x6 - W1.4 x W1.4	14/16	23 - 9	29 - 6	27 - 9	9 - 10	346	293	241	199	164	135	112	92	163	145	130	117	105	94	84
	9 5/8	18/16	21 - 2	19 - 7	20 - 5	7 - 1	329	268	220	180	148	121	99	80	187	167	150	135	122	110	99
	50 PSF	16/18	22 - 1	27 - 6	25 - 10	9 - 2	368	303	249	205	169	140	115	94	186	167	150	135	121	109	98
	1.7 cu.yd/(100sq.ft)	16/16	22 - 4	27 - 10	26 - 2	9 - 3	367	303	248	205	169	139	115	94	186	166	149	134	121	109	98
	6x6 - W2.0 x W2.0	14/16	23 - 3	28 - 11	27 - 3	9 - 8	366	340	280	232	192	159	132	109	185	165	148	133	120	108	97
	10 1/8	18/16	20 - 9	18 - 5	19 - 3	6 - 11	376	314	257	212	175	144	118	96	211	189	170	153	138	124	112
	55 PSF	16/18	21 - 8	27 - 0	25 - 4	9 - 0	388	353	291	241	199	165	137	113	210	189	169	152	137	124	112
	1.85 cu.yd/(100sq.ft)	16/16	21 - 11	27 - 4	25 - 9	9 - 1	388	353	290	240	199	165	136	112	210	188	169	152	137	124	112
	6x6 - W2.0 x W2.0	14/16	22 - 10	28 - 5	26 - 9	9 - 6	386	362	327	271	225	187	156	130	209	187	168	151	136	123	111
	10 3/8	18/16	20 - 7	17 - 11	18 - 8	6 - 10	390	338	278	229	189	156	129	105	223	200	180	162	146	132	119
	57 PSF	16/18	21 - 5	26 - 9	25 - 2	8 - 11	399	374	314	260	216	179	149	123	223	200	180	162	146	132	119
	1.93 cu.yd/(100sq.ft)	16/16	21 - 9	27 - 1	25 - 6	9 - 0	398	373	313	259	215	178	148	122	223	199	179	161	145	131	119
	6x6 - W2.0 x W2.0	14/16	22 - 7	28 - 2	26 - 6	9 - 5	396	371	349	292	243	203	169	141	222	199	178	160	144	130	118
	11 1/8	18/16	20 - 0	16 - 6	17 - 2	6 - 8	431	402	346	287	238	198	164	136	263	237	213	192	173	157	142
	64 PSF	16/18	20 - 11	25 - 2	24 - 6	8 - 5	430	403	379	323	270	225	188	157	263	236	212	192	173	157	142
	2.16 cu.yd/(100sq.ft)	16/16	21 - 3	25 - 0	24 - 10	8 - 4	429	402	378	323	269	225	188	156	263	236	212	191	173	156	141
	6x6 - W2.9 x W2.9	14/16	22 - 1	27 - 6	25 - 10	9 - 2	427	401	377	355	303	254	213	179	262	235	211	190	172	155	140

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
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   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
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6" Composite Deep-Dek® Cellular (6.0CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.92	50	1.447	7.585	7.999	1.296	2.166	58308	97478	2115	2239	1716
20/18	24	5.50	50	1.616	8.082	8.920	1.301	2.256	58532	101520	2115	2239	1716
18/20	24	5.95	50	1.747	10.361	10.361	2.140	2.811	96285	126502	4918	3872	2873
18/18	24	6.52	50	1.916	11.051	11.051	2.139	2.918	96245	131300	4918	3872	2873

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
8 1/8	21 - 10	21 - 6	18 - 11	31 - 4	27 - 0	30 - 0	26 - 7	24 - 4	23 - 1	20 - 6	14 - 10	15 - 5	6 - 10
8 5/8	22 - 8	22 - 4	19 - 9	32 - 10	28 - 1	31 - 7	27 - 8	25 - 9	24 - 5	19 - 9	13 - 9	14 - 4	6 - 4
9 1/8	23 - 7	23 - 3	20 - 8	34 - 4	29 - 2	33 - 0	28 - 9	27 - 1	25 - 6	19 - 0	12 - 10	13 - 4	5 - 8
9 5/8	24 - 6	24 - 2	21 - 6	35 - 10	30 - 3	34 - 6	29 - 10	28 - 5	26 - 7	18 - 5	12 - 0	12 - 6	5 - 1
10 1/8	25 - 4	25 - 0	22 - 4	37 - 3	31 - 4	35 - 11	30 - 11	29 - 9	27 - 7	17 - 10	11 - 3	11 - 9	4 - 7
10 3/8	25 - 9	25 - 5	22 - 9	37 - 11	31 - 10	36 - 7	31 - 5	30 - 5	28 - 2	17 - 7	10 - 11	11 - 5	4 - 4
11 1/8	27 - 1	26 - 9	24 - 0	39 - 11	33 - 5	38 - 7	33 - 0	32 - 4	29 - 8	16 - 10	10 - 1	10 - 6	3 - 9
20/18 GA Deck													
8 1/8	21 - 10	21 - 5	18 - 11	31 - 3	26 - 11	29 - 11	26 - 6	24 - 4	23 - 1	20 - 6	14 - 9	15 - 4	6 - 10
8 5/8	22 - 8	22 - 4	19 - 9	32 - 9	28 - 0	31 - 6	27 - 7	25 - 8	24 - 5	19 - 8	13 - 8	14 - 3	6 - 3
9 1/8	23 - 7	23 - 3	20 - 7	34 - 3	29 - 1	33 - 0	28 - 8	27 - 1	25 - 6	19 - 0	12 - 9	13 - 3	5 - 7
9 5/8	24 - 5	24 - 1	21 - 6	35 - 9	30 - 2	34 - 5	29 - 9	28 - 5	26 - 6	18 - 5	11 - 11	12 - 5	5 - 0
10 1/8	25 - 4	25 - 0	22 - 4	37 - 2	31 - 3	35 - 10	30 - 10	29 - 9	27 - 7	17 - 10	11 - 2	11 - 8	4 - 6
10 3/8	25 - 9	25 - 5	22 - 9	37 - 10	31 - 10	36 - 6	31 - 5	30 - 5	28 - 1	17 - 7	10 - 11	11 - 4	4 - 3
11 1/8	27 - 0	26 - 8	24 - 0	39 - 10	33 - 5	38 - 7	33 - 0	32 - 3	29 - 8	16 - 10	10 - 0	10 - 5	3 - 8
18/20 GA Deck													
8 1/8	22 - 9	22 - 5	19 - 9	31 - 2	28 - 2	29 - 11	27 - 8	24 - 3	23 - 0	22 - 1	24 - 6	25 - 6	8 - 6
8 5/8	23 - 7	23 - 3	20 - 6	32 - 8	29 - 2	31 - 5	28 - 8	25 - 8	24 - 4	21 - 7	22 - 9	23 - 8	7 - 11
9 1/8	24 - 6	24 - 1	21 - 5	34 - 2	30 - 3	32 - 11	29 - 10	27 - 1	25 - 8	21 - 1	21 - 2	22 - 1	7 - 4
9 5/8	25 - 5	25 - 0	22 - 4	35 - 8	31 - 4	34 - 4	30 - 11	28 - 5	26 - 11	20 - 8	19 - 10	20 - 8	6 - 11
10 1/8	26 - 3	25 - 11	23 - 2	37 - 1	32 - 6	35 - 9	32 - 0	29 - 8	28 - 2	20 - 3	18 - 8	19 - 5	6 - 9
10 3/8	26 - 9	26 - 4	23 - 7	37 - 9	33 - 0	36 - 6	32 - 7	30 - 4	28 - 9	20 - 0	18 - 2	18 - 11	6 - 8
11 1/8	28 - 0	27 - 8	24 - 11	39 - 10	34 - 8	38 - 6	34 - 2	32 - 3	30 - 7	19 - 6	16 - 8	17 - 5	6 - 6
18/18 GA Deck													
8 1/8	22 - 9	22 - 5	19 - 9	31 - 1	28 - 1	29 - 10	27 - 8	24 - 3	23 - 0	22 - 5	24 - 4	25 - 4	8 - 5
8 5/8	23 - 6	23 - 2	20 - 6	32 - 8	29 - 1	31 - 4	28 - 8	25 - 8	24 - 4	21 - 10	22 - 7	23 - 6	7 - 10
9 1/8	24 - 5	24 - 1	21 - 5	34 - 1	30 - 2	32 - 10	29 - 9	27 - 0	25 - 7	21 - 4	21 - 1	21 - 11	7 - 4
9 5/8	25 - 4	25 - 0	22 - 3	35 - 7	31 - 4	34 - 3	30 - 10	28 - 4	26 - 11	20 - 11	19 - 9	20 - 7	7 - 0
10 1/8	26 - 3	25 - 11	23 - 2	37 - 0	32 - 5	35 - 8	32 - 0	29 - 8	28 - 2	20 - 6	18 - 7	19 - 4	6 - 10
10 3/8	26 - 8	26 - 4	23 - 7	37 - 8	32 - 11	36 - 5	32 - 6	30 - 4	28 - 9	20 - 4	18 - 0	18 - 9	6 - 9
11 1/8	28 - 0	27 - 8	24 - 11	39 - 9	34 - 7	38 - 5	34 - 2	32 - 3	30 - 7	19 - 10	16 - 7	17 - 3	6 - 7

Notes:

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   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
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DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	7.13	50	2.096	11.676	11.941	2.141	3.015	96360	135665	4918	3872	2873
16/18	24	7.61	50	2.236	13.951	13.951	3.227	3.616	145205	162734	9895	6059	4398
16/16	24	8.22	50	2.416	14.892	14.892	3.217	3.728	144774	167778	9895	6059	4398
14/16	24	9.53	50	2.800	17.762	17.762	4.569	4.574	205600	205835	17829	9272	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
8 1/8	22 - 8	22 - 4	19 - 8	31 - 0	28 - 1	29 - 9	27 - 7	24 - 2	23 - 0	22 - 8	24 - 2	25 - 2	8 - 5
8 5/8	23 - 6	23 - 2	20 - 6	32 - 7	29 - 0	31 - 3	28 - 7	25 - 7	24 - 3	22 - 1	22 - 5	23 - 4	7 - 9
9 1/8	24 - 5	24 - 0	21 - 4	34 - 0	30 - 2	32 - 9	29 - 8	27 - 0	25 - 7	21 - 7	20 - 11	21 - 9	7 - 3
9 5/8	25 - 3	24 - 11	22 - 3	35 - 6	31 - 3	34 - 3	30 - 10	28 - 4	26 - 10	21 - 2	19 - 7	20 - 5	7 - 1
10 1/8	26 - 2	25 - 10	23 - 2	36 - 11	32 - 4	35 - 7	31 - 11	29 - 7	28 - 1	20 - 9	18 - 5	19 - 3	6 - 11
10 3/8	26 - 7	26 - 3	23 - 7	37 - 7	32 - 11	36 - 4	32 - 6	30 - 3	28 - 9	20 - 7	17 - 11	18 - 8	6 - 10
11 1/8	27 - 11	27 - 7	24 - 10	39 - 8	34 - 6	38 - 4	34 - 1	32 - 2	30 - 6	20 - 0	16 - 6	17 - 2	6 - 8
16/18 GA Deck													
8 1/8	23 - 8	23 - 3	20 - 6	30 - 11	29 - 3	29 - 8	28 - 2	24 - 2	22 - 11	23 - 7	29 - 5	27 - 8	9 - 10
8 5/8	24 - 5	24 - 0	21 - 3	32 - 6	30 - 2	31 - 3	29 - 7	25 - 7	24 - 3	23 - 0	28 - 8	27 - 0	9 - 7
9 1/8	25 - 3	24 - 10	22 - 1	34 - 0	31 - 2	32 - 9	30 - 9	26 - 11	25 - 7	22 - 6	28 - 1	26 - 5	9 - 4
9 5/8	26 - 2	25 - 9	23 - 0	35 - 5	32 - 4	34 - 2	31 - 10	28 - 3	26 - 10	22 - 1	27 - 6	25 - 10	9 - 2
10 1/8	27 - 1	26 - 8	23 - 11	36 - 10	33 - 5	35 - 7	33 - 0	29 - 7	28 - 1	21 - 8	27 - 0	25 - 4	9 - 0
10 3/8	27 - 6	27 - 2	24 - 4	37 - 7	34 - 0	36 - 3	33 - 6	30 - 3	28 - 8	21 - 5	26 - 9	25 - 2	8 - 11
11 1/8	28 - 10	28 - 6	25 - 8	39 - 7	35 - 8	38 - 3	35 - 2	32 - 2	30 - 6	20 - 11	25 - 2	24 - 6	8 - 5
16/16 GA Deck													
8 1/8	23 - 7	23 - 3	20 - 6	30 - 10	29 - 2	29 - 8	28 - 1	24 - 2	22 - 11	23 - 11	29 - 9	28 - 0	9 - 11
8 5/8	24 - 4	24 - 0	21 - 3	32 - 5	30 - 1	31 - 2	29 - 7	25 - 6	24 - 3	23 - 4	29 - 1	27 - 4	9 - 8
9 1/8	25 - 2	24 - 10	22 - 1	33 - 11	31 - 1	32 - 8	30 - 8	26 - 11	25 - 6	22 - 10	28 - 5	26 - 9	9 - 6
9 5/8	26 - 1	25 - 9	23 - 0	35 - 4	32 - 3	34 - 1	31 - 10	28 - 3	26 - 9	22 - 4	27 - 10	26 - 2	9 - 3
10 1/8	27 - 0	26 - 8	23 - 11	36 - 9	33 - 4	35 - 6	32 - 11	29 - 6	28 - 0	21 - 11	27 - 4	25 - 9	9 - 1
10 3/8	27 - 5	27 - 1	24 - 4	37 - 6	33 - 11	36 - 2	33 - 6	30 - 2	28 - 8	21 - 9	27 - 1	25 - 6	9 - 0
11 1/8	28 - 10	28 - 5	25 - 8	39 - 6	35 - 7	38 - 2	35 - 2	32 - 1	30 - 5	21 - 3	25 - 0	24 - 10	8 - 4
14/16 GA Deck													
8 1/8	24 - 7	24 - 2	21 - 4	30 - 8	29 - 1	29 - 6	28 - 0	24 - 1	22 - 10	24 - 10	30 - 11	29 - 1	10 - 4
8 5/8	25 - 3	24 - 10	22 - 1	32 - 3	30 - 7	31 - 0	29 - 5	25 - 5	24 - 2	24 - 3	30 - 2	28 - 5	10 - 1
9 1/8	26 - 0	25 - 8	22 - 10	33 - 9	32 - 0	32 - 6	30 - 10	26 - 10	25 - 5	23 - 9	29 - 6	27 - 9	9 - 10
9 5/8	26 - 11	26 - 6	23 - 9	35 - 2	33 - 3	33 - 11	32 - 2	28 - 2	26 - 8	23 - 3	28 - 11	27 - 3	9 - 8
10 1/8	27 - 10	27 - 6	24 - 8	36 - 7	34 - 5	35 - 4	33 - 6	29 - 5	27 - 11	22 - 10	28 - 5	26 - 9	9 - 6
10 3/8	28 - 3	27 - 11	25 - 1	37 - 3	35 - 0	36 - 0	34 - 2	30 - 1	28 - 7	22 - 7	28 - 2	26 - 6	9 - 5
11 1/8	29 - 8	29 - 4	26 - 5	39 - 4	36 - 8	38 - 1	36 - 1	32 - 0	30 - 4	22 - 1	27 - 6	25 - 10	9 - 2

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

6" Composite Deep-Dek® Cellular Acoustical (6.0CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.57	50	1.343	7.183	7.581	1.292	2.134	58147	96016	2115	2239	1716
20/18	24	5.03	50	1.477	7.649	8.392	1.296	2.216	58329	99739	2115	2239	1716
18/20	24	5.59	50	1.643	9.812	9.812	2.141	2.775	96329	124868	4918	3872	2873
18/18	24	6.05	50	1.777	10.450	10.450	2.137	2.871	96183	129214	4918	3872	2873

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
							17	18	19	20	21	22	23	24	22	23	24	25	26	27	28
4000 PSI Normal Weight Concrete (145 PCF)	8 1/8	20/20	18 - 9	12 - 5	12 - 11	5 - 4	162	141	122	106	93	74	58	45	117	104	92	82	73	65	57
	48 PSF	20/18	18 - 8	12 - 4	12 - 10	5 - 4	162	140	122	106	92	73	57	44	117	104	92	82	72	64	57
	1.23 cu.yd/(100sq.ft)	18/20	20 - 7	20 - 6	21 - 4	7 - 1	211	184	161	134	109	88	70	55	117	103	91	81	72	64	56
	6x6 - W1.4 x W1.4	18/18	20 - 10	20 - 5	21 - 3	7 - 1	211	184	161	134	108	87	69	55	116	103	91	81	72	63	56
	8 5/8	20/20	17 - 11	11 - 5	11 - 11	4 - 8	223	207	175	141	114	92	73	57	136	120	107	95	85	75	67
	54 PSF	20/18	17 - 11	11 - 4	11 - 10	4 - 7	223	207	174	141	114	91	72	56	135	120	106	95	84	75	66
	1.39 cu.yd/(100sq.ft)	18/20	20 - 0	18 - 11	19 - 8	6 - 8	239	208	182	160	132	107	86	69	135	119	106	94	84	74	66
	6x6 - W1.4 x W1.4	18/18	20 - 4	18 - 10	19 - 7	6 - 9	239	208	182	160	132	107	86	68	134	119	106	94	83	74	66
	9 1/8	20/20	17 - 3	10 - 7	11 - 0	4 - 1	244	226	209	170	138	112	90	71	155	138	123	109	97	87	77
	60 PSF	20/18	17 - 3	10 - 6	10 - 11	4 - 0	243	225	209	170	138	111	89	71	155	138	122	109	97	86	77
	1.54 cu.yd/(100sq.ft)	18/20	19 - 7	17 - 6	18 - 3	6 - 6	312	290	238	195	159	130	106	85	155	137	122	109	97	86	77
	6x6 - W1.4 x W1.4	18/18	19 - 10	17 - 5	18 - 2	6 - 7	312	290	238	195	159	130	105	85	154	137	122	108	96	86	76
	9 5/8	20/20	16 - 8	9 - 10	10 - 3	3 - 7	264	244	227	203	166	135	109	88	177	157	140	125	111	99	89
	66 PSF	20/18	16 - 8	9 - 9	10 - 2	3 - 6	264	244	227	203	165	134	109	87	176	157	140	124	111	99	88
	1.7 cu.yd/(100sq.ft)	18/20	19 - 2	16 - 4	17 - 0	6 - 5	338	315	282	232	190	156	128	104	176	156	139	124	111	99	88
	6x6 - W2.0 x W2.0	18/18	19 - 5	16 - 3	16 - 11	6 - 6	338	314	282	231	190	156	127	103	176	156	139	124	110	98	88
	10 1/8	20/20	16 - 1	9 - 2	9 - 7	3 - 2	284	263	245	224	197	161	131	106	200	178	159	142	127	113	101
	72 PSF	20/18	16 - 1	9 - 2	9 - 6	3 - 1	284	263	244	224	196	161	131	106	199	177	158	141	126	113	101
	1.85 cu.yd/(100sq.ft)	18/20	18 - 9	15 - 3	15 - 11	6 - 3	364	339	316	273	225	185	152	125	199	177	158	141	126	112	100
	6x6 - W2.0 x W2.0	18/18	19 - 0	15 - 2	15 - 10	6 - 4	364	339	316	272	224	185	152	124	199	177	157	140	125	112	100
	10 3/8	20/20	15 - 10	8 - 11	9 - 3	2 - 11	294	273	253	233	206	175	143	117	212	189	168	150	134	120	108
	76 PSF	20/18	15 - 10	8 - 10	9 - 3	2 - 11	294	272	253	232	205	175	143	116	211	188	168	150	134	120	107
	1.93 cu.yd/(100sq.ft)	18/20	18 - 7	14 - 9	15 - 5	6 - 2	377	351	328	295	244	201	166	136	211	188	168	150	134	120	107
	6x6 - W2.0 x W2.0	18/18	18 - 10	14 - 9	15 - 4	6 - 3	377	351	327	294	243	201	166	136	211	187	167	149	133	119	107
	11 1/8	20/20	15 - 2	8 - 2	8 - 6	2 - 5	325	301	279	259	229	203	180	151	238	223	199	179	160	144	129
	85 PSF	20/18	15 - 2	8 - 1	8 - 5	2 - 5	324	300	279	259	229	202	179	151	237	223	199	178	160	143	128
	2.16 cu.yd/(100sq.ft)	18/20	18 - 1	13 - 6	14 - 1	6 - 0	416	387	362	339	307	255	212	176	249	222	199	178	159	143	128
	6x6 - W2.9 x W2.9	18/18	18 - 4	13 - 6	14 - 0	6 - 1	416	387	361	338	306	254	211	175	249	222	198	177	159	142	128

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
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6" Composite Deep-Dek® Cellular Acoustical (6.0CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.54	50	1.921	11.030	11.212	2.138	2.959	96210	133156	4918	3872	2873
16/18	24	7.14	50	2.097	13.080	13.080	3.232	3.565	145437	160421	9895	6059	4398
16/16	24	7.63	50	2.241	13.925	13.925	3.224	3.664	145093	164900	9895	6059	4398
14/16	24	8.93	50	2.625	16.641	16.641	4.476	4.503	201405	202641	17829	9272	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	17	18	19	20	21	22	23	24	22	23	24	25	26	27	28
4000 PSI Normal Weight Concrete (145 PCF)	8 1/8	18/16	21 - 1	20 - 4	21 - 2	7 - 1	211	183	160	133	108	87	69	54	116	102	91	80	71	63	56
	48 PSF	16/18	21 - 11	27 - 4	25 - 9	9 - 1	261	228	189	154	125	102	82	66	115	102	90	80	71	63	55
	1.23 cu.yd/(100sq.ft)	16/16	22 - 3	27 - 9	26 - 1	9 - 3	261	228	188	153	125	101	82	65	115	102	90	80	70	62	55
	6x6 - W1.4 x W1.4	14/16	23 - 2	28 - 10	27 - 1	9 - 7	318	264	216	177	145	119	97	78	114	101	89	79	69	61	54
	8 5/8	18/16	20 - 7	18 - 9	19 - 6	6 - 10	238	208	182	159	131	106	85	68	134	119	105	94	83	74	65
	54 PSF	16/18	21 - 5	26 - 8	25 - 1	8 - 11	291	255	224	183	150	122	99	80	134	118	105	93	83	73	65
	1.39 cu.yd/(100sq.ft)	16/16	21 - 8	27 - 0	25 - 5	9 - 0	291	255	223	183	149	122	99	80	133	118	105	93	82	73	64
	6x6 - W1.4 x W1.4	14/16	22 - 7	28 - 1	26 - 5	9 - 4	351	308	252	207	171	140	115	93	132	117	104	92	81	72	64
	9 1/8	18/16	20 - 1	17 - 4	18 - 1	6 - 8	311	290	237	194	159	129	105	84	154	137	121	108	96	85	76
	60 PSF	16/18	20 - 11	26 - 0	24 - 6	8 - 8	327	286	251	219	180	148	121	98	153	136	121	107	95	85	75
	1.54 cu.yd/(100sq.ft)	16/16	21 - 2	26 - 4	24 - 10	8 - 9	326	286	251	218	179	147	120	98	153	136	120	107	95	84	75
	6x6 - W1.4 x W1.4	14/16	22 - 1	27 - 6	25 - 10	9 - 2	390	342	298	246	203	167	138	113	152	135	119	106	94	84	74
	9 5/8	18/16	19 - 8	16 - 2	16 - 10	6 - 7	337	314	281	231	189	155	127	103	175	156	139	123	110	98	87
	66 PSF	16/18	20 - 6	24 - 8	24 - 0	8 - 3	367	321	283	250	214	177	145	119	175	155	138	123	109	98	87
	1.7 cu.yd/(100sq.ft)	16/16	20 - 9	24 - 6	24 - 4	8 - 2	366	321	282	249	213	176	145	119	174	155	138	123	109	97	86
	6x6 - W2.0 x W2.0	14/16	21 - 7	26 - 11	25 - 4	9 - 0	433	380	336	290	240	199	165	136	173	154	137	122	108	96	85
	10 1/8	18/16	19 - 3	15 - 2	15 - 9	6 - 5	364	338	316	272	224	184	152	124	198	176	157	140	125	112	100
	72 PSF	16/18	20 - 1	23 - 1	23 - 6	7 - 10	449	420	368	304	252	209	173	143	198	176	157	140	125	111	99
	1.85 cu.yd/(100sq.ft)	16/16	20 - 4	23 - 0	23 - 10	7 - 11	449	419	368	304	252	208	172	142	197	175	156	139	124	111	99
	6x6 - W2.0 x W2.0	14/16	21 - 2	26 - 5	24 - 10	8 - 10	482	423	374	331	283	235	196	162	196	174	155	138	123	110	98
	10 3/8	18/16	19 - 1	14 - 8	15 - 3	6 - 4	377	350	327	294	243	200	165	135	210	187	167	149	133	119	106
	76 PSF	16/18	19 - 10	22 - 4	23 - 3	7 - 9	466	435	397	329	273	227	188	156	210	187	166	148	133	118	106
	1.93 cu.yd/(100sq.ft)	16/16	20 - 2	22 - 3	23 - 2	7 - 9	465	434	397	328	272	226	187	155	209	186	166	148	132	118	105
	6x6 - W2.0 x W2.0	14/16	21 - 0	26 - 2	24 - 7	8 - 9	500	446	394	349	305	255	212	177	208	185	165	147	131	117	104
	11 1/8	18/16	18 - 7	13 - 5	14 - 0	6 - 2	416	387	361	338	306	254	211	175	249	222	198	177	159	142	127
	85 PSF	16/18	19 - 4	20 - 6	21 - 4	7 - 1	500	480	449	411	342	286	239	199	248	221	198	177	158	142	127
	2.16 cu.yd/(100sq.ft)	16/16	19 - 8	20 - 5	21 - 3	7 - 1	500	480	449	410	342	285	238	198	248	221	197	176	158	141	127
	6x6 - W2.9 x W2.9	14/16	20 - 6	25 - 6	24 - 0	8 - 6	500	500	500	457	382	320	268	225	247	220	196	175	157	140	126

Notes:

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3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
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DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.57	50	1.343	7.183	7.581	1.292	2.134	58147	96016	2115	2239	1716
20/18	24	5.03	50	1.477	7.649	8.392	1.296	2.216	58329	99739	2115	2239	1716
18/20	24	5.59	50	1.643	9.812	9.812	2.141	2.775	96329	124868	4918	3872	2873
18/18	24	6.05	50	1.777	10.450	10.450	2.137	2.871	96183	129214	4918	3872	2873

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
8 1/8	22 - 10	22 - 6	19 - 8	29 - 10	28 - 3	28 - 9	27 - 3	23 - 8	22 - 5	18 - 9	12 - 5	12 - 11	5 - 4
8 5/8	23 - 10	23 - 6	21 - 0	31 - 3	29 - 5	30 - 1	28 - 7	24 - 11	23 - 8	17 - 11	11 - 5	11 - 11	4 - 8
9 1/8	24 - 8	24 - 5	21 - 10	32 - 6	30 - 6	31 - 5	29 - 10	26 - 2	24 - 10	17 - 3	10 - 7	11 - 0	4 - 1
9 5/8	25 - 7	25 - 3	22 - 9	33 - 10	31 - 7	32 - 8	31 - 0	27 - 5	26 - 0	16 - 8	9 - 10	10 - 3	3 - 7
10 1/8	26 - 5	26 - 2	23 - 8	35 - 0	32 - 8	33 - 11	32 - 2	28 - 7	27 - 2	16 - 1	9 - 2	9 - 7	3 - 2
10 3/8	26 - 10	26 - 7	24 - 1	35 - 8	33 - 3	34 - 6	32 - 9	29 - 2	27 - 8	15 - 10	8 - 11	9 - 3	2 - 11
11 1/8	28 - 2	27 - 10	25 - 4	37 - 5	34 - 9	36 - 4	34 - 5	30 - 11	29 - 4	15 - 2	8 - 2	8 - 6	2 - 5
20/18 GA Deck													
8 1/8	22 - 10	22 - 6	19 - 8	29 - 10	28 - 3	28 - 8	27 - 3	23 - 7	22 - 5	18 - 8	12 - 4	12 - 10	5 - 4
8 5/8	23 - 9	23 - 5	20 - 11	31 - 2	29 - 4	30 - 1	28 - 6	24 - 11	23 - 8	17 - 11	11 - 4	11 - 10	4 - 7
9 1/8	24 - 8	24 - 4	21 - 10	32 - 6	30 - 6	31 - 4	29 - 9	26 - 2	24 - 10	17 - 3	10 - 6	10 - 11	4 - 0
9 5/8	25 - 7	25 - 3	22 - 9	33 - 9	31 - 7	32 - 8	31 - 0	27 - 5	26 - 0	16 - 8	9 - 9	10 - 2	3 - 6
10 1/8	26 - 5	26 - 1	23 - 7	35 - 0	32 - 8	33 - 11	32 - 2	28 - 7	27 - 1	16 - 1	9 - 2	9 - 6	3 - 1
10 3/8	26 - 10	26 - 6	24 - 1	35 - 7	33 - 2	34 - 6	32 - 9	29 - 2	27 - 8	15 - 10	8 - 10	9 - 3	2 - 11
11 1/8	28 - 1	27 - 10	25 - 4	37 - 4	34 - 9	36 - 3	34 - 4	30 - 11	29 - 4	15 - 2	8 - 1	8 - 5	2 - 5
18/20 GA Deck													
8 1/8	23 - 8	23 - 4	20 - 9	29 - 9	28 - 3	28 - 8	27 - 2	23 - 7	22 - 5	20 - 7	20 - 6	21 - 4	7 - 1
8 5/8	24 - 7	24 - 3	21 - 8	31 - 1	29 - 6	30 - 0	28 - 5	24 - 11	23 - 7	20 - 0	18 - 11	19 - 8	6 - 8
9 1/8	25 - 6	25 - 2	22 - 7	32 - 5	30 - 9	31 - 4	29 - 8	26 - 2	24 - 9	19 - 7	17 - 6	18 - 3	6 - 6
9 5/8	26 - 5	26 - 1	23 - 6	33 - 8	31 - 11	32 - 7	30 - 11	27 - 4	25 - 11	19 - 2	16 - 4	17 - 0	6 - 5
10 1/8	27 - 3	27 - 0	24 - 5	34 - 11	33 - 1	33 - 10	32 - 1	28 - 7	27 - 1	18 - 9	15 - 3	15 - 11	6 - 3
10 3/8	27 - 9	27 - 5	24 - 10	35 - 6	33 - 8	34 - 5	32 - 8	29 - 2	27 - 8	18 - 7	14 - 9	15 - 5	6 - 2
11 1/8	29 - 0	28 - 9	26 - 2	37 - 3	35 - 4	36 - 2	34 - 4	30 - 10	29 - 3	18 - 1	13 - 6	14 - 1	6 - 0
18/18 GA Deck													
8 1/8	23 - 7	23 - 3	20 - 9	29 - 8	28 - 2	28 - 7	27 - 1	23 - 7	22 - 4	20 - 10	20 - 5	21 - 3	7 - 1
8 5/8	24 - 7	24 - 3	21 - 8	31 - 1	29 - 5	29 - 11	28 - 5	24 - 10	23 - 7	20 - 4	18 - 10	19 - 7	6 - 9
9 1/8	25 - 6	25 - 2	22 - 7	32 - 4	30 - 8	31 - 3	29 - 8	26 - 1	24 - 9	19 - 10	17 - 5	18 - 2	6 - 7
9 5/8	26 - 4	26 - 1	23 - 6	33 - 8	31 - 11	32 - 6	30 - 10	27 - 4	25 - 11	19 - 5	16 - 3	16 - 11	6 - 6
10 1/8	27 - 3	26 - 11	24 - 5	34 - 10	33 - 1	33 - 9	32 - 0	28 - 6	27 - 1	19 - 0	15 - 2	15 - 10	6 - 4
10 3/8	27 - 8	27 - 5	24 - 10	35 - 6	33 - 8	34 - 5	32 - 7	29 - 1	27 - 7	18 - 10	14 - 9	15 - 4	6 - 3
11 1/8	29 - 0	28 - 8	26 - 2	37 - 3	35 - 4	36 - 2	34 - 3	30 - 10	29 - 3	18 - 4	13 - 6	14 - 0	6 - 1

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

6" Composite Deep-Dek® Cellular Acoustical (6.0CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	6.54	50	1.921	11.030	11.212	2.138	2.959	96210	133156	4918	3872	2873
16/18	24	7.14	50	2.097	13.080	13.080	3.232	3.565	145437	160421	9895	6059	4398
16/16	24	7.63	50	2.241	13.925	13.925	3.224	3.664	145093	164900	9895	6059	4398
14/16	24	8.93	50	2.625	16.641	16.641	4.476	4.503	201405	202641	17829	9272	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
8 1/8	23 - 7	23 - 3	20 - 8	29 - 8	28 - 1	28 - 6	27 - 1	23 - 6	22 - 4	21 - 1	20 - 4	21 - 2	7 - 1
8 5/8	24 - 6	24 - 2	21 - 8	31 - 0	29 - 5	29 - 11	28 - 4	24 - 10	23 - 7	20 - 7	18 - 9	19 - 6	6 - 10
9 1/8	25 - 5	25 - 1	22 - 7	32 - 4	30 - 8	31 - 2	29 - 7	26 - 1	24 - 9	20 - 1	17 - 4	18 - 1	6 - 8
9 5/8	26 - 4	26 - 0	23 - 6	33 - 7	31 - 10	32 - 6	30 - 10	27 - 4	25 - 11	19 - 8	16 - 2	16 - 10	6 - 7
10 1/8	27 - 3	26 - 11	24 - 4	34 - 10	33 - 0	33 - 9	32 - 0	28 - 6	27 - 0	19 - 3	15 - 2	15 - 9	6 - 5
10 3/8	27 - 8	27 - 4	24 - 10	35 - 5	33 - 7	34 - 4	32 - 7	29 - 1	27 - 7	19 - 1	14 - 8	15 - 3	6 - 4
11 1/8	29 - 0	28 - 8	26 - 1	37 - 2	35 - 3	36 - 1	34 - 3	30 - 10	29 - 3	18 - 7	13 - 5	14 - 0	6 - 2
16/18 GA Deck													
8 1/8	24 - 5	24 - 1	21 - 5	29 - 7	28 - 1	28 - 6	27 - 0	23 - 6	22 - 4	21 - 11	27 - 4	25 - 9	9 - 1
8 5/8	25 - 3	24 - 11	22 - 4	30 - 11	29 - 4	29 - 10	28 - 4	24 - 9	23 - 6	21 - 5	26 - 8	25 - 1	8 - 11
9 1/8	26 - 2	25 - 10	23 - 3	32 - 3	30 - 7	31 - 2	29 - 7	26 - 0	24 - 8	20 - 11	26 - 0	24 - 6	8 - 8
9 5/8	27 - 1	26 - 9	24 - 2	33 - 6	31 - 9	32 - 5	30 - 9	27 - 3	25 - 10	20 - 6	24 - 8	24 - 0	8 - 3
10 1/8	28 - 0	27 - 8	25 - 1	34 - 9	32 - 11	33 - 8	31 - 11	28 - 5	27 - 0	20 - 1	23 - 1	23 - 6	7 - 10
10 3/8	28 - 6	28 - 2	25 - 6	35 - 4	33 - 6	34 - 3	32 - 6	29 - 1	27 - 7	19 - 10	22 - 4	23 - 3	7 - 9
11 1/8	29 - 10	29 - 6	26 - 11	37 - 1	35 - 2	36 - 0	34 - 2	30 - 9	29 - 2	19 - 4	20 - 6	21 - 4	7 - 1
16/16 GA Deck													
8 1/8	24 - 4	24 - 0	21 - 5	29 - 6	28 - 0	28 - 5	27 - 0	23 - 6	22 - 3	22 - 3	27 - 9	26 - 1	9 - 3
8 5/8	25 - 3	24 - 11	22 - 3	30 - 10	29 - 3	29 - 9	28 - 3	24 - 9	23 - 6	21 - 8	27 - 0	25 - 5	9 - 0
9 1/8	26 - 2	25 - 10	23 - 3	32 - 2	30 - 6	31 - 1	29 - 6	26 - 0	24 - 8	21 - 2	26 - 4	24 - 10	8 - 9
9 5/8	27 - 1	26 - 9	24 - 2	33 - 5	31 - 9	32 - 4	30 - 8	27 - 3	25 - 10	20 - 9	24 - 6	24 - 4	8 - 2
10 1/8	28 - 0	27 - 8	25 - 1	34 - 8	32 - 11	33 - 7	31 - 11	28 - 5	27 - 0	20 - 4	23 - 0	23 - 10	7 - 11
10 3/8	28 - 5	28 - 1	25 - 6	35 - 3	33 - 6	34 - 3	32 - 5	29 - 0	27 - 6	20 - 2	22 - 3	23 - 2	7 - 9
11 1/8	29 - 9	29 - 5	26 - 10	37 - 1	35 - 2	36 - 0	34 - 2	30 - 9	29 - 2	19 - 8	20 - 5	21 - 3	7 - 1
14/16 GA Deck													
8 1/8	25 - 2	24 - 10	22 - 2	29 - 4	27 - 10	28 - 4	26 - 10	23 - 5	22 - 2	23 - 2	28 - 10	27 - 1	9 - 7
8 5/8	26 - 0	25 - 8	23 - 0	30 - 9	29 - 2	29 - 8	28 - 2	24 - 8	23 - 5	22 - 7	28 - 1	26 - 5	9 - 4
9 1/8	26 - 11	26 - 7	23 - 11	32 - 0	30 - 5	31 - 0	29 - 4	25 - 11	24 - 7	22 - 1	27 - 6	25 - 10	9 - 2
9 5/8	27 - 10	27 - 6	24 - 10	33 - 4	31 - 7	32 - 3	30 - 7	27 - 2	25 - 9	21 - 7	26 - 11	25 - 4	9 - 0
10 1/8	28 - 9	28 - 5	25 - 10	34 - 6	32 - 9	33 - 6	31 - 9	28 - 4	26 - 11	21 - 2	26 - 5	24 - 10	8 - 10
10 3/8	29 - 3	28 - 11	26 - 3	35 - 2	33 - 4	34 - 1	32 - 4	28 - 11	27 - 5	21 - 0	26 - 2	24 - 7	8 - 9
11 1/8	30 - 7	30 - 3	27 - 8	36 - 11	35 - 0	35 - 10	34 - 0	30 - 8	29 - 1	20 - 6	25 - 6	24 - 0	8 - 6

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

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6" Composite Deep-Dek® Cellular Acoustical (6.0CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.57	50	1.343	7.183	7.581	1.292	2.134	58147	96016	2115	2239	1716
20/18	24	5.03	50	1.477	7.649	8.392	1.296	2.216	58329	99739	2115	2239	1716
18/20	24	5.59	50	1.643	9.812	9.812	2.141	2.775	96329	124868	4918	3872	2873
18/18	24	6.05	50	1.777	10.450	10.450	2.137	2.871	96183	129214	4918	3872	2873

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	17	18	19	20	21	22	23	24	22	23	24	25	26	27	28
4000 PSI Lightweight Concrete (110 PCF)	8 1/8	20/20	20 - 4	14 - 11	15 - 6	6 - 9	171	140	113	91	73	58	46		126	113	101	86	72	60	50
	37 PSF	20/18	20 - 6	14 - 10	15 - 5	6 - 10	171	140	112	90	72	58	45		126	112	101	86	72	60	49
	1.23 cu.yd/(100sq.ft)	18/20	21 - 10	24 - 7	25 - 7	8 - 6	205	166	135	109	89	72	57	45	125	112	100	90	81	73	62
	6x6 - W1.4 x W1.4	18/18	22 - 2	24 - 6	25 - 6	8 - 6	204	165	134	109	88	71	57	45	125	112	100	90	80	72	62
	8 5/8	20/20	19 - 9	13 - 10	14 - 5	6 - 4	207	167	135	109	88	71	56	44	145	130	117	104	88	73	61
	41 PSF	20/18	19 - 9	13 - 9	14 - 4	6 - 4	207	167	135	109	88	70	56	44	145	130	116	104	87	73	61
	1.39 cu.yd/(100sq.ft)	18/20	21 - 4	22 - 10	23 - 9	7 - 11	239	194	158	129	105	85	69	55	145	129	116	104	94	84	74
	6x6 - W1.4 x W1.4	18/18	21 - 7	22 - 8	23 - 8	7 - 11	239	194	158	128	105	85	68	54	144	129	116	104	93	84	74
	9 1/8	20/20	19 - 1	12 - 10	13 - 5	5 - 8	246	199	162	132	107	86	69	55	166	149	134	120	106	89	75
	46 PSF	20/18	19 - 0	12 - 9	13 - 4	5 - 8	245	199	161	131	106	86	69	54	166	149	133	120	105	89	74
	1.54 cu.yd/(100sq.ft)	18/20	20 - 10	21 - 3	22 - 2	7 - 5	282	230	187	153	126	102	83	67	166	148	133	119	108	97	87
	6x6 - W1.4 x W1.4	18/18	21 - 1	21 - 2	22 - 1	7 - 4	282	229	187	153	125	102	83	67	165	148	133	119	107	97	87
	9 5/8	20/20	18 - 5	12 - 0	12 - 6	5 - 1	276	235	192	157	128	104	84	67	189	169	152	137	123	107	90
	50 PSF	20/18	18 - 5	12 - 0	12 - 6	5 - 1	276	235	191	156	127	103	84	67	188	169	152	137	123	107	90
	1.7 cu.yd/(100sq.ft)	18/20	20 - 5	19 - 11	20 - 9	6 - 11	331	270	221	182	149	123	100	82	188	168	151	136	123	111	100
	6x6 - W2.0 x W2.0	18/18	20 - 8	19 - 10	20 - 8	6 - 11	331	270	221	181	149	122	100	81	188	168	151	136	122	110	100
	10 1/8	20/20	17 - 10	11 - 4	11 - 9	4 - 7	297	275	225	185	151	124	101	82	196	185	172	155	140	126	108
	55 PSF	20/18	17 - 10	11 - 3	11 - 9	4 - 7	297	275	225	184	151	123	101	81	195	185	171	154	139	126	108
	1.85 cu.yd/(100sq.ft)	18/20	20 - 0	18 - 9	19 - 6	6 - 8	377	315	259	213	176	145	120	98	212	190	171	154	139	125	113
	6x6 - W2.0 x W2.0	18/18	20 - 3	18 - 8	19 - 5	6 - 9	377	315	259	213	176	145	119	98	212	190	171	154	139	125	113
	10 3/8	20/20	17 - 7	11 - 0	11 - 5	4 - 4	308	286	243	200	164	135	110	90	198	187	177	164	148	134	118
	57 PSF	20/18	17 - 7	10 - 11	11 - 5	4 - 4	308	286	243	199	164	134	110	89	198	187	177	164	148	134	118
	1.93 cu.yd/(100sq.ft)	18/20	19 - 10	18 - 2	18 - 11	6 - 7	391	340	279	231	191	158	130	107	225	201	181	163	147	133	121
	6x6 - W2.0 x W2.0	18/18	20 - 1	18 - 1	18 - 10	6 - 8	391	339	279	230	190	157	130	107	224	201	181	163	147	133	120
	11 1/8	20/20	16 - 11	10 - 1	10 - 6	3 - 9	330	309	290	251	207	171	141	116	205	194	184	174	165	157	144
	64 PSF	20/18	16 - 10	10 - 1	10 - 6	3 - 9	330	309	290	250	207	171	141	116	205	193	183	174	165	157	144
	2.16 cu.yd/(100sq.ft)	18/20	19 - 3	16 - 9	17 - 5	6 - 5	432	403	348	288	239	199	166	137	265	238	214	193	175	158	143
	6x6 - W2.9 x W2.9	18/18	19 - 7	16 - 8	17 - 4	6 - 6	431	402	347	288	239	199	165	137	264	237	214	193	174	158	143

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

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6" Composite Deep-Dek® Cellular Acoustical (6.0CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft) single	I_D (in^4/ft) multi	S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
18/16	24	6.54	50	1.921	11.030	11.212	2.138	2.959	96210	133156	4918	3872	2873
16/18	24	7.14	50	2.097	13.080	13.080	3.232	3.565	145437	160421	9895	6059	4398
16/16	24	7.63	50	2.241	13.925	13.925	3.224	3.664	145093	164900	9895	6059	4398
14/16	24	8.93	50	2.625	16.641	16.641	4.476	4.503	201405	202641	17829	9272	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
			Single	Double	Triple	Canti-lever	17	18	19	20	21	22	23	24	22	23	24	25	26	27	28
4000 PSI Lightweight Concrete (110 PCF)	8 1/8	18/16	22 - 5	24 - 4	25 - 4	8 - 5	204	165	134	108	88	71	56	45	125	111	99	89	80	72	61
	37 PSF	16/18	23 - 3	29 - 0	27 - 3	9 - 8	237	192	157	128	105	86	69	56	124	111	99	89	80	71	64
	1.23 cu.yd/(100sq.ft)	16/16	23 - 7	29 - 5	27 - 8	9 - 10	236	192	156	128	104	85	69	55	124	110	99	88	79	71	64
	6x6 - W1.4 x W1.4	14/16	24 - 6	30 - 6	28 - 8	10 - 2	274	224	184	151	124	102	84	68	123	109	98	87	78	70	63
	8 5/8	18/16	21 - 10	22 - 7	23 - 6	7 - 10	238	193	157	128	104	84	68	54	144	129	115	103	93	84	73
	41 PSF	16/18	22 - 9	28 - 4	26 - 7	9 - 5	273	222	182	149	122	100	81	66	143	128	115	103	92	83	75
	1.39 cu.yd/(100sq.ft)	16/16	23 - 0	28 - 8	27 - 0	9 - 7	272	222	181	148	121	99	81	65	143	128	114	103	92	83	74
	6x6 - W1.4 x W1.4	14/16	23 - 11	29 - 9	28 - 0	9 - 11	312	255	209	172	142	117	96	79	142	127	113	102	91	82	73
	9 1/8	18/16	21 - 4	21 - 1	21 - 11	7 - 4	281	229	187	152	125	102	82	66	165	147	132	119	107	96	87
	46 PSF	16/18	22 - 3	27 - 8	26 - 0	9 - 3	317	259	212	175	144	118	97	79	164	147	132	118	106	96	86
	1.54 cu.yd/(100sq.ft)	16/16	22 - 6	28 - 0	26 - 4	9 - 4	317	259	212	174	143	117	96	78	164	147	131	118	106	95	86
	6x6 - W1.4 x W1.4	14/16	23 - 5	29 - 2	27 - 5	9 - 9	346	294	241	199	165	136	112	92	163	146	130	117	105	94	85
	9 5/8	18/16	20 - 11	19 - 9	20 - 7	7 - 0	330	269	220	181	148	122	99	81	187	168	151	135	122	110	99
	50 PSF	16/18	21 - 9	27 - 1	25 - 6	9 - 0	368	304	250	206	170	140	116	95	187	167	150	135	122	110	99
	1.7 cu.yd/(100sq.ft)	16/16	22 - 1	27 - 6	25 - 10	9 - 2	368	303	249	205	169	140	115	94	186	167	150	135	121	109	98
	6x6 - W2.0 x W2.0	14/16	22 - 11	28 - 7	26 - 10	9 - 6	366	341	281	232	193	160	132	109	185	166	149	134	120	108	97
	10 1/8	18/16	20 - 6	18 - 7	19 - 4	6 - 10	377	314	258	212	175	144	119	97	211	189	170	153	138	125	113
	55 PSF	16/18	21 - 4	26 - 7	25 - 0	8 - 10	389	354	291	241	200	166	137	113	211	189	170	153	138	124	112
	1.85 cu.yd/(100sq.ft)	16/16	21 - 8	26 - 11	25 - 4	9 - 0	388	353	291	241	199	165	137	113	210	189	169	152	137	124	112
	6x6 - W2.0 x W2.0	14/16	22 - 6	28 - 0	26 - 4	9 - 4	386	362	327	271	226	188	157	130	209	188	168	151	136	123	111
	10 3/8	18/16	20 - 4	18 - 0	18 - 9	6 - 9	390	339	278	230	190	157	129	106	224	201	180	163	147	133	120
	57 PSF	16/18	21 - 2	26 - 4	24 - 9	8 - 9	399	374	314	260	216	179	149	123	223	200	180	162	146	132	119
	1.93 cu.yd/(100sq.ft)	16/16	21 - 5	26 - 9	25 - 1	8 - 11	399	374	314	260	215	179	149	123	223	200	180	162	146	132	119
	6x6 - W2.0 x W2.0	14/16	22 - 4	27 - 9	26 - 2	9 - 3	397	372	350	293	244	203	170	141	222	199	179	161	145	131	118
	11 1/8	18/16	19 - 10	16 - 7	17 - 3	6 - 7	431	402	347	287	238	198	165	136	264	237	213	192	174	157	143
	64 PSF	16/18	20 - 7	25 - 3	24 - 2	8 - 5	430	403	379	324	270	226	189	157	263	237	213	192	173	157	142
	2.16 cu.yd/(100sq.ft)	16/16	20 - 11	25 - 2	24 - 6	8 - 5	430	403	379	323	270	225	188	157	263	236	212	192	173	157	142
	6x6 - W2.9 x W2.9	14/16	21 - 9	27 - 1	25 - 6	9 - 0	428	401	377	355	304	255	214	179	262	235	211	191	172	156	141

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
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10. Negative moment (top) reinforcement is required over supports of continuous spans.
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6" Composite Deep-Dek® Cellular Acoustical (6.0CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.57	50	1.343	7.183	7.581	1.292	2.134	58147	96016	2115	2239	1716
20/18	24	5.03	50	1.477	7.649	8.392	1.296	2.216	58329	99739	2115	2239	1716
18/20	24	5.59	50	1.643	9.812	9.812	2.141	2.775	96329	124868	4918	3872	2873
18/18	24	6.05	50	1.777	10.450	10.450	2.137	2.871	96183	129214	4918	3872	2873

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
8 1/8	21 - 10	21 - 6	18 - 11	31 - 4	27 - 0	30 - 1	26 - 7	24 - 4	23 - 1	20 - 4	14 - 11	15 - 6	6 - 9
8 5/8	22 - 9	22 - 5	19 - 9	32 - 11	28 - 1	31 - 7	27 - 8	25 - 9	24 - 5	19 - 9	13 - 10	14 - 5	6 - 4
9 1/8	23 - 8	23 - 3	20 - 8	34 - 5	29 - 2	33 - 1	28 - 9	27 - 2	25 - 6	19 - 1	12 - 10	13 - 5	5 - 8
9 5/8	24 - 6	24 - 2	21 - 6	35 - 10	30 - 3	34 - 6	29 - 10	28 - 6	26 - 7	18 - 5	12 - 0	12 - 6	5 - 1
10 1/8	25 - 4	25 - 0	22 - 4	37 - 3	31 - 4	35 - 11	30 - 11	29 - 10	27 - 8	17 - 10	11 - 4	11 - 9	4 - 7
10 3/8	25 - 10	25 - 6	22 - 9	38 - 0	31 - 11	36 - 8	31 - 6	30 - 5	28 - 2	17 - 7	11 - 0	11 - 5	4 - 4
11 1/8	27 - 1	26 - 9	24 - 1	40 - 0	33 - 6	38 - 8	33 - 0	32 - 4	29 - 9	16 - 11	10 - 1	10 - 6	3 - 9
20/18 GA Deck													
8 1/8	21 - 10	21 - 6	18 - 11	31 - 3	27 - 0	30 - 0	26 - 7	24 - 4	23 - 1	20 - 6	14 - 10	15 - 5	6 - 10
8 5/8	22 - 8	22 - 4	19 - 9	32 - 10	28 - 1	31 - 6	27 - 7	25 - 9	24 - 5	19 - 9	13 - 9	14 - 4	6 - 4
9 1/8	23 - 7	23 - 3	20 - 8	34 - 4	29 - 2	33 - 0	28 - 9	27 - 1	25 - 6	19 - 0	12 - 9	13 - 4	5 - 8
9 5/8	24 - 6	24 - 2	21 - 6	35 - 9	30 - 3	34 - 6	29 - 10	28 - 5	26 - 7	18 - 5	12 - 0	12 - 6	5 - 1
10 1/8	25 - 4	25 - 0	22 - 4	37 - 2	31 - 4	35 - 11	30 - 11	29 - 9	27 - 7	17 - 10	11 - 3	11 - 9	4 - 7
10 3/8	25 - 9	25 - 5	22 - 9	37 - 11	31 - 10	36 - 7	31 - 5	30 - 5	28 - 2	17 - 7	10 - 11	11 - 5	4 - 4
11 1/8	27 - 1	26 - 8	24 - 0	39 - 11	33 - 5	38 - 7	33 - 0	32 - 4	29 - 8	16 - 10	10 - 1	10 - 6	3 - 9
18/20 GA Deck													
8 1/8	22 - 10	22 - 5	19 - 9	31 - 2	28 - 2	29 - 11	27 - 9	24 - 4	23 - 1	21 - 10	24 - 7	25 - 7	8 - 6
8 5/8	23 - 7	23 - 3	20 - 7	32 - 9	29 - 2	31 - 6	28 - 9	25 - 8	24 - 5	21 - 4	22 - 10	23 - 9	7 - 11
9 1/8	24 - 6	24 - 2	21 - 5	34 - 3	30 - 3	32 - 11	29 - 10	27 - 1	25 - 8	20 - 10	21 - 3	22 - 2	7 - 5
9 5/8	25 - 5	25 - 1	22 - 4	35 - 9	31 - 5	34 - 5	30 - 11	28 - 5	26 - 11	20 - 5	19 - 11	20 - 9	6 - 11
10 1/8	26 - 4	25 - 11	23 - 2	37 - 2	32 - 6	35 - 10	32 - 1	29 - 9	28 - 2	20 - 0	18 - 9	19 - 6	6 - 8
10 3/8	26 - 9	26 - 5	23 - 8	37 - 10	33 - 0	36 - 6	32 - 7	30 - 4	28 - 10	19 - 10	18 - 2	18 - 11	6 - 7
11 1/8	28 - 1	27 - 8	24 - 11	39 - 10	34 - 8	38 - 6	34 - 3	32 - 3	30 - 7	19 - 3	16 - 9	17 - 5	6 - 5
18/18 GA Deck													
8 1/8	22 - 9	22 - 5	19 - 9	31 - 2	28 - 2	29 - 11	27 - 8	24 - 3	23 - 0	22 - 2	24 - 6	25 - 6	8 - 6
8 5/8	23 - 7	23 - 3	20 - 6	32 - 8	29 - 2	31 - 5	28 - 8	25 - 8	24 - 4	21 - 7	22 - 8	23 - 8	7 - 11
9 1/8	24 - 6	24 - 1	21 - 5	34 - 2	30 - 3	32 - 11	29 - 10	27 - 0	25 - 8	21 - 1	21 - 2	22 - 1	7 - 4
9 5/8	25 - 4	25 - 0	22 - 4	35 - 8	31 - 4	34 - 4	30 - 11	28 - 5	26 - 11	20 - 8	19 - 10	20 - 8	6 - 11
10 1/8	26 - 3	25 - 11	23 - 2	37 - 1	32 - 5	35 - 9	32 - 0	29 - 8	28 - 2	20 - 3	18 - 8	19 - 5	6 - 9
10 3/8	26 - 8	26 - 4	23 - 7	37 - 9	33 - 0	36 - 5	32 - 7	30 - 4	28 - 9	20 - 1	18 - 1	18 - 10	6 - 8
11 1/8	28 - 0	27 - 8	24 - 11	39 - 9	34 - 7	38 - 6	34 - 2	32 - 3	30 - 7	19 - 7	16 - 8	17 - 4	6 - 6

Notes:

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6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
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9. Negative moment (top) reinforcement is required over supports of continuous spans.
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6" Composite Deep-Dek® Cellular Acoustical (6.0CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
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16/18	24	7.14	50	2.097	13.080	13.080	3.232	3.565	145437	160421	9895	6059	4398
16/16	24	7.63	50	2.241	13.925	13.925	3.224	3.664	145093	164900	9895	6059	4398
14/16	24	8.93	50	2.625	16.641	16.641	4.476	4.503	201405	202641	17829	9272	6611

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
8 1/8	22 - 9	22 - 5	19 - 9	31 - 1	28 - 1	29 - 10	27 - 8	24 - 3	23 - 0	22 - 5	24 - 4	25 - 4	8 - 5
8 5/8	23 - 6	23 - 2	20 - 6	32 - 7	29 - 1	31 - 4	28 - 8	25 - 8	24 - 4	21 - 10	22 - 7	23 - 6	7 - 10
9 1/8	24 - 5	24 - 1	21 - 5	34 - 1	30 - 2	32 - 10	29 - 9	27 - 0	25 - 7	21 - 4	21 - 1	21 - 11	7 - 4
9 5/8	25 - 4	25 - 0	22 - 3	35 - 7	31 - 4	34 - 3	30 - 10	28 - 4	26 - 11	20 - 11	19 - 9	20 - 7	7 - 0
10 1/8	26 - 3	25 - 10	23 - 2	37 - 0	32 - 5	35 - 8	32 - 0	29 - 8	28 - 2	20 - 6	18 - 7	19 - 4	6 - 10
10 3/8	26 - 8	26 - 4	23 - 7	37 - 8	32 - 11	36 - 5	32 - 6	30 - 4	28 - 9	20 - 4	18 - 0	18 - 9	6 - 9
11 1/8	28 - 0	27 - 8	24 - 11	39 - 9	34 - 7	38 - 5	34 - 2	32 - 3	30 - 7	19 - 10	16 - 7	17 - 3	6 - 7
16/18 GA Deck													
8 1/8	23 - 8	23 - 4	20 - 7	31 - 0	29 - 3	29 - 9	28 - 3	24 - 2	23 - 0	23 - 3	29 - 0	27 - 3	9 - 8
8 5/8	24 - 5	24 - 1	21 - 4	32 - 7	30 - 2	31 - 3	29 - 8	25 - 7	24 - 3	22 - 9	28 - 4	26 - 7	9 - 5
9 1/8	25 - 3	24 - 11	22 - 2	34 - 0	31 - 3	32 - 9	30 - 9	27 - 0	25 - 7	22 - 3	27 - 8	26 - 0	9 - 3
9 5/8	26 - 2	25 - 10	23 - 0	35 - 6	32 - 4	34 - 3	31 - 11	28 - 4	26 - 10	21 - 9	27 - 1	25 - 6	9 - 0
10 1/8	27 - 1	26 - 9	23 - 11	36 - 11	33 - 6	35 - 7	33 - 0	29 - 7	28 - 1	21 - 4	26 - 7	25 - 0	8 - 10
10 3/8	27 - 6	27 - 2	24 - 4	37 - 7	34 - 0	36 - 4	33 - 7	30 - 3	28 - 9	21 - 2	26 - 4	24 - 9	8 - 9
11 1/8	28 - 11	28 - 6	25 - 8	39 - 8	35 - 8	38 - 4	35 - 3	32 - 2	30 - 6	20 - 7	25 - 3	24 - 2	8 - 5
16/16 GA Deck													
8 1/8	23 - 8	23 - 3	20 - 6	30 - 11	29 - 3	29 - 8	28 - 2	24 - 2	22 - 11	23 - 7	29 - 5	27 - 8	9 - 10
8 5/8	24 - 5	24 - 0	21 - 3	32 - 6	30 - 1	31 - 3	29 - 7	25 - 7	24 - 3	23 - 0	28 - 8	27 - 0	9 - 7
9 1/8	25 - 3	24 - 10	22 - 1	34 - 0	31 - 2	32 - 9	30 - 9	26 - 11	25 - 7	22 - 6	28 - 0	26 - 4	9 - 4
9 5/8	26 - 2	25 - 9	23 - 0	35 - 5	32 - 4	34 - 2	31 - 10	28 - 3	26 - 10	22 - 1	27 - 6	25 - 10	9 - 2
10 1/8	27 - 1	26 - 8	23 - 11	36 - 10	33 - 5	35 - 7	33 - 0	29 - 7	28 - 1	21 - 8	26 - 11	25 - 4	9 - 0
10 3/8	27 - 6	27 - 2	24 - 4	37 - 7	34 - 0	36 - 3	33 - 6	30 - 3	28 - 8	21 - 5	26 - 9	25 - 1	8 - 11
11 1/8	28 - 10	28 - 6	25 - 8	39 - 7	35 - 8	38 - 3	35 - 2	32 - 2	30 - 6	20 - 11	25 - 2	24 - 6	8 - 5
14/16 GA Deck													
8 1/8	24 - 7	24 - 3	21 - 5	30 - 9	29 - 2	29 - 7	28 - 0	24 - 1	22 - 10	24 - 6	30 - 6	28 - 8	10 - 2
8 5/8	25 - 3	24 - 11	22 - 1	32 - 4	30 - 8	31 - 1	29 - 6	25 - 6	24 - 2	23 - 11	29 - 9	28 - 0	9 - 11
9 1/8	26 - 1	25 - 8	22 - 10	33 - 10	32 - 1	32 - 7	30 - 11	26 - 10	25 - 6	23 - 5	29 - 2	27 - 5	9 - 9
9 5/8	26 - 11	26 - 7	23 - 9	35 - 3	33 - 4	34 - 0	32 - 3	28 - 2	26 - 9	22 - 11	28 - 7	26 - 10	9 - 6
10 1/8	27 - 10	27 - 6	24 - 8	36 - 8	34 - 5	35 - 5	33 - 7	29 - 6	28 - 0	22 - 6	28 - 0	26 - 4	9 - 4
10 3/8	28 - 4	28 - 0	25 - 1	37 - 4	35 - 0	36 - 1	34 - 3	30 - 2	28 - 7	22 - 4	27 - 9	26 - 2	9 - 3
11 1/8	29 - 9	29 - 4	26 - 6	39 - 5	36 - 9	38 - 1	36 - 2	32 - 0	30 - 5	21 - 9	27 - 1	25 - 6	9 - 0

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 1.5" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

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7.5" Composite Deep-Dek® Cellular (7.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft) single	I_D (in^4/ft) multi	S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
20/20	24	5.27	50	1.549	12.141	13.101	1.630	2.876	73361	129400	1683	784	1245
20/18	24	5.84	50	1.717	12.921	14.554	1.634	2.994	73542	134743	1683	784	1245
18/20	24	6.40	50	1.882	16.595	16.595	2.696	3.730	121338	167871	3913	1554	2857
18/18	24	6.98	50	2.050	17.678	17.816	2.696	3.870	121305	174133	3913	1554	2857

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
			Single	Double	Triple	Canti-lever	19	20	21	22	23	24	25	26	24	25	26	27	28	29	30
4000 PSI Normal Weight Concrete (145 PCF)	9 5/8	20/20	12 - 6	8 - 3	8 - 8	3 - 7	160	140	123	108	95	84	74	63	131	118	106	95	85	76	69
	54 PSF	20/18	12 - 4	8 - 3	8 - 7	3 - 7	160	140	123	108	95	83	73	62	130	118	105	95	85	76	68
	1.37 cu.yd/(100sq.ft)	18/20	22 - 10	18 - 10	19 - 7	7 - 7	212	187	166	147	131	114	94	77	144	129	116	105	94	85	76
	6x6 - W1.4 x W1.4	18/18	23 - 2	18 - 9	19 - 6	7 - 9	212	187	165	146	130	113	93	76	144	129	116	104	94	84	76
	10 1/8	20/20	11 - 3	7 - 8	8 - 0	3 - 5	183	167	153	140	129	114	94	76	142	131	121	112	104	96	87
	60 PSF	20/18	11 - 2	7 - 8	7 - 11	3 - 5	183	167	152	140	129	114	93	75	141	131	121	112	104	96	86
	1.52 cu.yd/(100sq.ft)	18/20	22 - 4	17 - 5	18 - 2	7 - 5	234	207	183	162	144	128	110	90	162	146	131	118	106	96	86
	6x6 - W1.4 x W1.4	18/18	22 - 7	17 - 4	18 - 1	7 - 6	234	206	182	162	144	128	109	90	162	145	131	117	106	95	86
	10 5/8	20/20	10 - 4	7 - 2	7 - 5	3 - 3	198	180	165	151	139	128	112	91	153	141	130	121	112	104	97
	66 PSF	20/18	10 - 3	7 - 1	7 - 5	3 - 3	197	180	164	151	138	128	111	91	152	141	130	120	112	104	97
	1.68 cu.yd/(100sq.ft)	18/20	21 - 10	16 - 3	16 - 11	7 - 3	253	229	203	180	160	143	127	108	182	163	147	132	119	107	97
	6x6 - W1.4 x W1.4	18/18	22 - 0	16 - 2	16 - 10	7 - 4	253	229	203	180	160	142	127	107	181	163	146	132	119	107	96
	11 1/8	20/20	9 - 6	6 - 8	7 - 0	3 - 1	212	193	177	162	149	137	127	108	164	151	140	129	120	112	104
	72 PSF	20/18	9 - 5	6 - 8	6 - 11	3 - 1	212	193	176	161	148	137	126	108	163	151	139	129	120	111	103
	1.83 cu.yd/(100sq.ft)	18/20	20 - 8	15 - 2	15 - 10	6 - 11	272	251	233	216	202	182	152	127	202	182	164	148	133	120	108
	6x6 - W2.0 x W2.0	18/18	20 - 7	15 - 1	15 - 9	6 - 10	271	251	232	216	201	182	152	126	202	181	163	147	133	120	108
	11 5/8	20/20	8 - 9	6 - 3	6 - 6	2 - 11	226	206	188	173	159	146	135	125	175	161	149	138	128	119	111
	78 PSF	20/18	8 - 9	6 - 3	6 - 6	2 - 11	226	206	188	172	158	146	135	124	174	161	149	138	128	119	110
	1.99 cu.yd/(100sq.ft)	18/20	19 - 5	14 - 3	14 - 10	6 - 6	290	268	249	231	215	201	177	148	223	202	182	164	148	134	121
	6x6 - W2.0 x W2.0	18/18	19 - 4	14 - 3	14 - 10	6 - 5	290	268	248	231	215	201	176	147	223	201	181	163	147	133	120
	11 7/8	20/20	8 - 6	6 - 1	6 - 4	2 - 10	234	213	194	178	164	151	139	129	180	166	154	142	132	123	114
	81 PSF	20/18	8 - 5	6 - 1	6 - 4	2 - 10	233	212	194	178	163	150	139	128	180	166	153	142	132	122	114
	2.06 cu.yd/(100sq.ft)	18/20	18 - 10	13 - 10	14 - 5	6 - 3	300	277	256	238	222	208	190	159	230	212	191	172	156	141	127
	6x6 - W2.0 x W2.0	18/18	18 - 9	13 - 10	14 - 4	6 - 3	299	276	256	238	222	207	190	159	230	212	191	172	155	140	127
	12 5/8	20/20	7 - 8	5 - 6	5 - 9	2 - 7	255	232	212	194	179	164	152	140	197	181	168	155	144	134	124
	90 PSF	20/18	7 - 7	5 - 6	5 - 9	2 - 6	255	232	212	194	178	164	151	140	196	181	167	155	143	133	124
	2.3 cu.yd/(100sq.ft)	18/20	17 - 4	12 - 9	13 - 3	5 - 9	327	302	280	260	243	227	212	198	252	235	220	200	180	163	148
	6x6 - W2.9 x W2.9	18/18	17 - 3	12 - 8	13 - 3	5 - 9	327	302	280	260	242	226	212	197	251	235	220	199	180	163	147

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

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7.5" Composite Deep-Dek® Cellular (7.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft) single	I_D (in^4/ft) multi	S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
18/16	24	7.59	50	2.231	18.659	19.449	2.697	4.000	121386	179987	3913	1554	2857
16/18	24	8.19	50	2.406	22.745	22.745	4.069	4.793	183094	215704	7871	2426	4376
16/16	24	8.80	50	2.586	24.004	24.004	4.059	4.943	182662	222435	7871	2426	4376
14/16	24	10.25	50	3.012	28.960	28.960	5.980	6.058	269082	272625	15371	3699	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
			Single	Double	Triple	Canti-lever	19	20	21	22	23	24	25	26	24	25	26	27	28	29	30
4000 PSI Normal Weight Concrete (145 PCF)	9 5/8	18/16	23 - 5	18 - 7	19 - 4	7 - 10	211	186	165	146	130	112	92	75	143	129	115	104	93	84	75
	54 PSF	16/18	24 - 6	28 - 4	28 - 9	9 - 7	265	235	209	186	158	132	109	90	143	128	115	103	93	83	75
	1.37 cu.yd/(100sq.ft)	16/16	24 - 10	28 - 2	29 - 1	9 - 8	265	234	208	186	158	131	109	90	142	128	114	103	92	83	74
	6x6 - W1.4 x W1.4	14/16	25 - 10	32 - 2	30 - 3	10 - 9	312	276	246	218	183	153	128	107	141	127	113	102	91	82	73
	10 1/8	18/16	22 - 10	17 - 3	18 - 0	7 - 7	233	206	182	161	143	128	109	89	161	145	130	117	105	95	85
	60 PSF	16/18	24 - 0	26 - 3	27 - 4	9 - 1	289	257	228	203	182	152	127	105	161	144	130	117	105	94	85
	1.52 cu.yd/(100sq.ft)	16/16	24 - 3	26 - 1	27 - 3	9 - 1	288	256	228	203	181	151	126	104	161	144	129	116	104	94	84
	6x6 - W1.4 x W1.4	14/16	25 - 3	31 - 6	29 - 7	10 - 6	354	314	280	247	208	174	146	122	159	143	128	115	103	93	83
	10 5/8	18/16	21 - 10	16 - 1	16 - 9	7 - 3	252	229	202	179	159	142	126	106	181	162	146	131	118	106	96
	66 PSF	16/18	23 - 6	24 - 6	25 - 6	8 - 6	312	282	251	223	200	177	148	123	180	162	145	131	118	106	95
	1.68 cu.yd/(100sq.ft)	16/16	23 - 9	24 - 4	25 - 5	8 - 6	311	281	250	223	199	176	147	122	180	161	145	130	117	106	95
	6x6 - W1.4 x W1.4	14/16	24 - 9	30 - 10	29 - 0	10 - 3	383	342	305	273	238	200	168	141	179	160	144	129	116	104	94
	11 1/8	18/16	20 - 6	15 - 1	15 - 8	6 - 10	271	250	232	215	201	181	151	125	201	181	163	147	132	119	107
	72 PSF	16/18	23 - 0	22 - 11	23 - 11	8 - 0	335	311	276	246	220	197	172	144	201	180	162	146	132	119	107
	1.83 cu.yd/(100sq.ft)	16/16	23 - 3	22 - 10	23 - 9	7 - 11	335	310	276	246	220	197	172	144	200	180	162	146	131	118	107
	6x6 - W2.0 x W2.0	14/16	24 - 3	30 - 3	28 - 5	10 - 1	411	373	333	298	267	231	195	164	199	179	161	145	130	117	105
	11 5/8	18/16	19 - 3	14 - 2	14 - 9	6 - 5	289	267	248	230	214	200	176	147	222	201	181	163	147	133	120
	78 PSF	16/18	22 - 7	21 - 7	22 - 6	7 - 6	358	334	305	272	243	218	196	168	223	200	180	163	147	132	119
	1.99 cu.yd/(100sq.ft)	16/16	22 - 10	21 - 6	22 - 4	7 - 7	358	334	304	271	243	218	195	167	222	200	180	162	146	132	119
	6x6 - W2.0 x W2.0	14/16	23 - 10	29 - 9	27 - 11	9 - 11	440	408	364	326	293	263	225	190	221	199	179	161	145	131	118
	11 7/8	18/16	18 - 8	13 - 9	14 - 4	6 - 3	299	276	256	238	221	207	189	158	229	211	190	171	155	140	126
	81 PSF	16/18	22 - 5	20 - 11	21 - 10	7 - 6	370	345	322	302	284	254	214	181	234	211	190	171	154	139	126
	2.06 cu.yd/(100sq.ft)	16/16	22 - 8	20 - 10	21 - 9	7 - 7	369	344	322	302	284	253	214	180	234	210	189	171	154	139	125
	6x6 - W2.0 x W2.0	14/16	23 - 8	29 - 6	27 - 9	9 - 10	454	426	381	341	306	276	241	204	233	209	188	169	153	138	124
	12 5/8	18/16	17 - 2	12 - 8	13 - 2	5 - 9	327	302	279	260	242	226	211	196	251	234	219	199	180	162	147
	90 PSF	16/18	21 - 10	19 - 3	20 - 1	7 - 3	404	377	353	331	311	293	263	223	270	243	219	198	179	162	147
	2.3 cu.yd/(100sq.ft)	16/16	22 - 2	19 - 2	20 - 0	7 - 5	404	377	352	330	310	292	262	222	270	243	219	198	179	162	146
	6x6 - W2.9 x W2.9	14/16	23 - 1	28 - 7	27 - 1	9 - 6	497	467	436	391	351	316	285	251	269	242	218	197	178	160	145

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
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DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	5.27	50	1.549	12.141	13.101	1.630	2.876	73361	129400	1683	784	1245
20/18	24	5.84	50	1.717	12.921	14.554	1.634	2.994	73542	134743	1683	784	1245
18/20	24	6.40	50	1.882	16.595	16.595	2.696	3.730	121338	167871	3913	1554	2857
18/18	24	6.98	50	2.050	17.678	17.816	2.696	3.870	121305	174133	3913	1554	2857

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
9 5/8	26 - 2	25 - 10	21 - 9	34 - 11	32 - 0	33 - 8	30 - 10	27 - 11	25 - 7	12 - 6	8 - 3	8 - 8	3 - 7
10 1/8	27 - 1	26 - 9	24 - 0	36 - 2	33 - 5	34 - 11	33 - 0	29 - 1	27 - 2	11 - 3	7 - 8	8 - 0	3 - 5
10 5/8	27 - 11	27 - 7	24 - 10	37 - 4	34 - 6	36 - 1	34 - 1	30 - 3	28 - 1	10 - 4	7 - 2	7 - 5	3 - 3
11 1/8	28 - 9	28 - 5	25 - 8	38 - 6	35 - 6	37 - 3	35 - 1	31 - 5	29 - 1	9 - 6	6 - 8	7 - 0	3 - 1
11 5/8	29 - 7	29 - 3	26 - 6	39 - 7	36 - 6	38 - 5	36 - 1	32 - 7	29 - 11	8 - 9	6 - 3	6 - 6	2 - 11
11 7/8	30 - 0	29 - 7	26 - 11	40 - 2	37 - 0	38 - 11	36 - 7	33 - 1	30 - 4	8 - 6	6 - 1	6 - 4	2 - 10
12 5/8	31 - 2	30 - 10	28 - 2	41 - 9	38 - 6	40 - 7	38 - 1	34 - 9	31 - 6	7 - 8	5 - 6	5 - 9	2 - 7
20/18 GA Deck													
9 5/8	26 - 2	25 - 10	21 - 9	34 - 11	31 - 11	33 - 8	30 - 9	27 - 11	25 - 6	12 - 4	8 - 3	8 - 7	3 - 7
10 1/8	27 - 0	26 - 8	23 - 11	36 - 1	33 - 5	34 - 10	33 - 0	29 - 1	27 - 1	11 - 2	7 - 8	7 - 11	3 - 5
10 5/8	27 - 11	27 - 6	24 - 10	37 - 3	34 - 5	36 - 0	34 - 0	30 - 3	28 - 1	10 - 3	7 - 1	7 - 5	3 - 3
11 1/8	28 - 9	28 - 4	25 - 8	38 - 5	35 - 6	37 - 2	35 - 1	31 - 5	29 - 0	9 - 5	6 - 8	6 - 11	3 - 1
11 5/8	29 - 6	29 - 2	26 - 6	39 - 6	36 - 6	38 - 4	36 - 1	32 - 6	29 - 10	8 - 9	6 - 3	6 - 6	2 - 11
11 7/8	29 - 11	29 - 7	26 - 11	40 - 1	37 - 0	38 - 10	36 - 7	33 - 1	30 - 3	8 - 5	6 - 1	6 - 4	2 - 10
12 5/8	31 - 1	30 - 9	28 - 1	41 - 8	38 - 5	40 - 6	38 - 0	34 - 8	31 - 6	7 - 7	5 - 6	5 - 9	2 - 6
18/20 GA Deck													
9 5/8	27 - 2	26 - 9	23 - 11	34 - 10	33 - 0	33 - 7	31 - 10	27 - 10	26 - 5	22 - 10	18 - 10	19 - 7	7 - 7
10 1/8	27 - 11	27 - 7	24 - 9	36 - 0	34 - 2	34 - 9	33 - 0	29 - 0	27 - 7	22 - 4	17 - 5	18 - 2	7 - 5
10 5/8	28 - 10	28 - 5	25 - 8	37 - 2	35 - 3	36 - 0	34 - 2	30 - 3	28 - 8	21 - 10	16 - 3	16 - 11	7 - 3
11 1/8	29 - 8	29 - 4	26 - 6	38 - 4	36 - 4	37 - 2	35 - 3	31 - 4	29 - 9	20 - 8	15 - 2	15 - 10	6 - 11
11 5/8	30 - 6	30 - 2	27 - 4	39 - 5	37 - 5	38 - 3	36 - 3	32 - 6	30 - 10	19 - 5	14 - 3	14 - 10	6 - 6
11 7/8	30 - 11	30 - 6	27 - 9	40 - 0	37 - 11	38 - 10	36 - 10	33 - 0	31 - 4	18 - 10	13 - 10	14 - 5	6 - 3
12 5/8	32 - 1	31 - 9	29 - 0	41 - 7	39 - 6	40 - 5	38 - 4	34 - 8	32 - 10	17 - 4	12 - 9	13 - 3	5 - 9
18/18 GA Deck													
9 5/8	27 - 1	26 - 9	23 - 11	34 - 9	32 - 11	33 - 6	31 - 9	27 - 10	26 - 5	23 - 2	18 - 9	19 - 6	7 - 9
10 1/8	27 - 11	27 - 7	24 - 9	35 - 11	34 - 1	34 - 9	32 - 11	29 - 0	27 - 6	22 - 7	17 - 4	18 - 1	7 - 6
10 5/8	28 - 9	28 - 5	25 - 7	37 - 1	35 - 3	35 - 11	34 - 1	30 - 2	28 - 7	22 - 0	16 - 2	16 - 10	7 - 4
11 1/8	29 - 7	29 - 3	26 - 6	38 - 3	36 - 4	37 - 1	35 - 2	31 - 4	29 - 8	20 - 7	15 - 1	15 - 9	6 - 10
11 5/8	30 - 5	30 - 1	27 - 4	39 - 5	37 - 4	38 - 2	36 - 3	32 - 5	30 - 9	19 - 4	14 - 3	14 - 10	6 - 5
11 7/8	30 - 10	30 - 6	27 - 9	39 - 11	37 - 11	38 - 9	36 - 9	33 - 0	31 - 3	18 - 9	13 - 10	14 - 4	6 - 3
12 5/8	32 - 1	31 - 9	29 - 0	41 - 6	39 - 5	40 - 4	38 - 3	34 - 7	32 - 10	17 - 3	12 - 8	13 - 3	5 - 9

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

7.5" Composite Deep-Dek® Cellular (7.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	7.59	50	2.231	18.659	19.449	2.697	4.000	121386	179987	3913	1554	2857
16/18	24	8.19	50	2.406	22.745	22.745	4.069	4.793	183094	215704	7871	2426	4376
16/16	24	8.80	50	2.586	24.004	24.004	4.059	4.943	182662	222435	7871	2426	4376
14/16	24	10.25	50	3.012	28.960	28.960	5.980	6.058	269082	272625	15371	3699	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
9 5/8	27 - 1	26 - 8	23 - 11	34 - 8	32 - 10	33 - 5	31 - 9	27 - 9	26 - 4	23 - 5	18 - 7	19 - 4	7 - 10
10 1/8	27 - 10	27 - 6	24 - 9	35 - 10	34 - 0	34 - 8	32 - 10	29 - 0	27 - 6	22 - 10	17 - 3	18 - 0	7 - 7
10 5/8	28 - 9	28 - 4	25 - 7	37 - 0	35 - 2	35 - 10	34 - 0	30 - 2	28 - 7	21 - 10	16 - 1	16 - 9	7 - 3
11 1/8	29 - 7	29 - 3	26 - 6	38 - 2	36 - 3	37 - 0	35 - 1	31 - 3	29 - 8	20 - 6	15 - 1	15 - 8	6 - 10
11 5/8	30 - 5	30 - 1	27 - 4	39 - 4	37 - 3	38 - 1	36 - 2	32 - 5	30 - 9	19 - 3	14 - 2	14 - 9	6 - 5
11 7/8	30 - 10	30 - 6	27 - 9	39 - 10	37 - 10	38 - 8	36 - 8	32 - 11	31 - 3	18 - 8	13 - 9	14 - 4	6 - 3
12 5/8	32 - 0	31 - 8	29 - 0	41 - 5	39 - 4	40 - 3	38 - 3	34 - 7	32 - 9	17 - 2	12 - 8	13 - 2	5 - 9
16/18 GA Deck													
9 5/8	28 - 0	27 - 8	24 - 9	34 - 7	32 - 10	33 - 4	31 - 8	27 - 9	26 - 4	24 - 6	28 - 4	28 - 9	9 - 7
10 1/8	28 - 9	28 - 5	25 - 6	35 - 9	33 - 11	34 - 7	32 - 10	28 - 11	27 - 5	24 - 0	26 - 3	27 - 4	9 - 1
10 5/8	29 - 7	29 - 3	26 - 4	37 - 0	35 - 1	35 - 9	33 - 11	30 - 1	28 - 7	23 - 6	24 - 6	25 - 6	8 - 6
11 1/8	30 - 5	30 - 1	27 - 3	38 - 1	36 - 2	36 - 11	35 - 0	31 - 3	29 - 8	23 - 0	22 - 11	23 - 11	8 - 0
11 5/8	31 - 3	30 - 11	28 - 1	39 - 3	37 - 3	38 - 1	36 - 1	32 - 4	30 - 8	22 - 7	21 - 7	22 - 6	7 - 6
11 7/8	31 - 8	31 - 4	28 - 6	39 - 9	37 - 9	38 - 7	36 - 7	32 - 11	31 - 2	22 - 5	20 - 11	21 - 10	7 - 6
12 5/8	32 - 11	32 - 7	29 - 10	41 - 5	39 - 3	40 - 3	38 - 2	34 - 6	32 - 9	21 - 10	19 - 3	20 - 1	7 - 3
16/16 GA Deck													
9 5/8	28 - 0	27 - 7	24 - 8	34 - 6	32 - 9	33 - 4	31 - 7	27 - 8	26 - 3	24 - 10	28 - 2	29 - 1	9 - 8
10 1/8	28 - 8	28 - 4	25 - 6	35 - 9	33 - 11	34 - 6	32 - 9	28 - 11	27 - 5	24 - 3	26 - 1	27 - 3	9 - 1
10 5/8	29 - 6	29 - 2	26 - 4	36 - 11	35 - 0	35 - 8	33 - 10	30 - 1	28 - 6	23 - 9	24 - 4	25 - 5	8 - 6
11 1/8	30 - 5	30 - 0	27 - 3	38 - 0	36 - 1	36 - 10	35 - 0	31 - 2	29 - 7	23 - 3	22 - 10	23 - 9	7 - 11
11 5/8	31 - 3	30 - 11	28 - 1	39 - 2	37 - 2	38 - 0	36 - 0	32 - 4	30 - 8	22 - 10	21 - 6	22 - 4	7 - 7
11 7/8	31 - 8	31 - 4	28 - 6	39 - 8	37 - 8	38 - 6	36 - 7	32 - 10	31 - 2	22 - 8	20 - 10	21 - 9	7 - 7
12 5/8	32 - 11	32 - 7	29 - 9	41 - 4	39 - 2	40 - 2	38 - 1	34 - 6	32 - 8	22 - 2	19 - 2	20 - 0	7 - 5
14/16 GA Deck													
9 5/8	28 - 11	28 - 7	25 - 7	34 - 4	32 - 7	33 - 2	31 - 5	27 - 7	26 - 2	25 - 10	32 - 2	30 - 3	10 - 9
10 1/8	29 - 8	29 - 3	26 - 4	35 - 6	33 - 8	34 - 4	32 - 7	28 - 9	27 - 4	25 - 3	31 - 6	29 - 7	10 - 6
10 5/8	30 - 5	30 - 0	27 - 2	36 - 9	34 - 10	35 - 6	33 - 9	29 - 11	28 - 5	24 - 9	30 - 10	29 - 0	10 - 3
11 1/8	31 - 3	30 - 11	28 - 0	37 - 10	35 - 11	36 - 8	34 - 10	31 - 1	29 - 6	24 - 3	30 - 3	28 - 5	10 - 1
11 5/8	32 - 1	31 - 9	28 - 11	39 - 0	37 - 0	37 - 10	35 - 11	32 - 2	30 - 7	23 - 10	29 - 9	27 - 11	9 - 11
11 7/8	32 - 6	32 - 2	29 - 4	39 - 6	37 - 6	38 - 5	36 - 5	32 - 9	31 - 1	23 - 8	29 - 6	27 - 9	9 - 10
12 5/8	33 - 9	33 - 5	30 - 7	41 - 2	39 - 0	40 - 0	37 - 11	34 - 4	32 - 7	23 - 1	28 - 7	27 - 1	9 - 6

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

7.5" Composite Deep-Dek® Cellular (7.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	5.27	50	1.549	12.141	13.101	1.630	2.876	73361	129400	1683	784	1245
20/18	24	5.84	50	1.717	12.921	14.554	1.634	2.994	73542	134743	1683	784	1245
18/20	24	6.40	50	1.882	16.595	16.595	2.696	3.730	121338	167871	3913	1554	2857
18/18	24	6.98	50	2.050	17.678	17.816	2.696	3.870	121305	174133	3913	1554	2857

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
			Single	Double	Triple	Canti-lever	Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
							19	20	21	22	23	24	25	26	24	25	26	27	28	29	30
4000 PSI Lightweight Concrete (110 PCF)	9 5/8	20/20	15 - 9	10 - 0	10 - 5	4 - 1	170	150	133	112	93	76	62	50	140	128	116	105	95	85	72
	41 PSF	20/18	15 - 8	9 - 11	10 - 4	4 - 1	169	150	132	112	92	76	61	49	140	127	115	104	94	84	71
	1.37 cu.yd/(100sq.ft)	18/20	24 - 3	22 - 8	23 - 8	8 - 1	222	196	163	136	113	94	77	64	154	139	126	114	104	94	86
	6x6 - W1.4 x W1.4	18/18	24 - 7	22 - 6	23 - 6	8 - 2	222	195	162	135	112	93	77	63	154	139	126	114	103	94	85
	10 1/8	20/20	14 - 7	9 - 4	9 - 9	3 - 10	194	178	157	130	108	89	73	59	153	142	132	123	115	98	84
	45 PSF	20/18	14 - 5	9 - 3	9 - 8	3 - 10	194	177	157	130	107	88	72	58	152	141	132	123	114	98	83
	1.52 cu.yd/(100sq.ft)	18/20	23 - 9	21 - 2	22 - 0	7 - 11	245	217	185	154	128	107	89	73	173	157	142	129	117	106	97
	6x6 - W1.4 x W1.4	18/18	24 - 0	21 - 0	21 - 11	8 - 0	245	217	184	153	128	106	88	72	173	156	141	128	116	106	96
	10 5/8	20/20	13 - 4	8 - 9	9 - 1	3 - 9	210	192	177	151	126	104	86	70	164	153	142	133	124	115	99
	50 PSF	20/18	13 - 3	8 - 8	9 - 0	3 - 9	209	192	176	151	125	103	85	69	164	152	142	132	124	114	98
	1.68 cu.yd/(100sq.ft)	18/20	23 - 3	19 - 10	20 - 7	7 - 9	265	241	211	176	147	123	102	85	194	175	159	144	131	119	109
	6x6 - W1.4 x W1.4	18/18	23 - 6	19 - 8	20 - 6	7 - 10	265	241	211	176	147	122	102	84	193	175	158	144	131	119	108
	11 1/8	20/20	12 - 3	8 - 2	8 - 6	3 - 7	225	206	190	175	146	122	101	83	168	159	151	142	133	125	115
	54 PSF	20/18	12 - 2	8 - 2	8 - 6	3 - 7	225	206	189	174	146	121	100	82	167	159	151	142	133	124	115
	1.83 cu.yd/(100sq.ft)	18/20	22 - 9	18 - 7	19 - 5	7 - 7	285	264	243	203	170	143	119	99	215	195	177	161	146	133	121
	6x6 - W2.0 x W2.0	18/18	23 - 1	18 - 6	19 - 3	7 - 8	284	264	242	203	170	142	119	99	215	194	176	160	146	133	121
	11 5/8	20/20	11 - 5	7 - 9	8 - 1	3 - 5	240	220	203	187	169	141	117	97	172	163	155	147	140	133	125
	59 PSF	20/18	11 - 4	7 - 8	8 - 0	3 - 5	240	220	202	186	168	140	117	97	171	162	154	147	140	133	124
	1.99 cu.yd/(100sq.ft)	18/20	22 - 4	17 - 7	18 - 4	7 - 5	304	282	263	233	196	165	138	116	237	216	196	178	162	148	135
	6x6 - W2.0 x W2.0	18/18	22 - 8	17 - 6	18 - 2	7 - 7	304	282	262	233	196	164	138	115	237	215	195	177	162	147	134
	11 7/8	20/20	11 - 0	7 - 6	7 - 10	3 - 5	248	227	209	193	178	152	126	105	174	165	156	149	142	135	129
	61 PSF	20/18	10 - 11	7 - 6	7 - 9	3 - 4	248	227	209	192	178	151	126	104	173	164	156	148	141	135	128
	2.06 cu.yd/(100sq.ft)	18/20	22 - 2	17 - 1	17 - 10	7 - 5	314	291	271	250	210	177	148	124	245	227	206	187	170	155	142
	6x6 - W2.0 x W2.0	18/18	22 - 6	17 - 0	17 - 9	7 - 6	314	291	271	249	209	176	148	124	245	226	205	187	170	155	141
	12 5/8	20/20	9 - 11	6 - 11	7 - 3	3 - 2	271	249	228	211	195	181	156	131	180	170	162	154	146	139	133
	68 PSF	20/18	9 - 11	6 - 11	7 - 2	3 - 2	271	248	228	210	194	180	156	130	179	170	161	153	146	139	132
	2.3 cu.yd/(100sq.ft)	18/20	21 - 6	15 - 9	16 - 5	7 - 2	344	319	297	277	255	216	182	154	268	251	237	216	197	180	164
	6x6 - W2.9 x W2.9	18/18	21 - 5	15 - 9	16 - 4	7 - 2	343	318	296	276	255	215	182	153	268	251	236	215	196	179	164

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

7.5" Composite Deep-Dek® Cellular (7.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft) single	I_D (in^4/ft) multi	S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
18/16	24	7.59	50	2.231	18.659	19.449	2.697	4.000	121386	179987	3913	1554	2857
16/18	24	8.19	50	2.406	22.745	22.745	4.069	4.793	183094	215704	7871	2426	4376
16/16	24	8.80	50	2.586	24.004	24.004	4.059	4.943	182662	222435	7871	2426	4376
14/16	24	10.25	50	3.012	28.960	28.960	5.980	6.058	269082	272625	15371	3699	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	19	20	21	22	23	24	25	26	24	25	26	27	28	29	30
4000 PSI Lightweight Concrete (110 PCF)	9 5/8	18/16	24 - 10	22 - 4	23 - 4	8 - 3	221	195	162	134	112	92	76	62	153	138	125	113	103	93	85
	41 PSF	16/18	26 - 0	32 - 5	30 - 6	10 - 10	274	228	191	159	133	112	93	77	153	138	125	113	102	93	85
	1.37 cu.yd/(100sq.ft)	16/16	26 - 3	32 - 9	30 - 10	10 - 11	274	228	190	159	133	111	92	77	152	137	124	112	102	93	84
	6x6 - W1.4 x W1.4	14/16	27 - 4	34 - 1	32 - 1	11 - 4	316	267	223	188	158	133	112	94	151	136	123	111	101	91	83
	10 1/8	18/16	24 - 3	20 - 10	21 - 9	8 - 1	244	217	184	153	127	106	87	72	172	156	141	128	116	105	96
	45 PSF	16/18	25 - 5	31 - 8	29 - 10	10 - 7	300	256	213	179	150	125	105	87	172	155	140	127	116	105	96
	1.52 cu.yd/(100sq.ft)	16/16	25 - 9	31 - 7	30 - 2	10 - 6	299	255	213	178	149	125	104	87	171	155	140	127	115	105	95
	6x6 - W1.4 x W1.4	14/16	26 - 9	33 - 4	31 - 4	11 - 1	333	295	247	208	175	147	124	104	170	154	139	126	114	103	94
	10 5/8	18/16	23 - 9	19 - 7	20 - 4	7 - 11	264	240	210	175	146	122	101	84	193	174	158	143	130	118	108
	50 PSF	16/18	24 - 11	29 - 9	29 - 2	9 - 11	324	288	241	202	170	142	119	100	192	174	157	143	130	118	107
	1.68 cu.yd/(100sq.ft)	16/16	25 - 2	29 - 7	29 - 6	9 - 10	323	288	240	201	169	142	119	99	192	173	157	142	129	117	107
	6x6 - W1.4 x W1.4	14/16	26 - 3	32 - 8	30 - 9	10 - 11	351	329	276	232	196	165	139	117	191	172	156	141	128	116	106
	11 1/8	18/16	23 - 4	18 - 5	19 - 2	7 - 9	284	263	242	202	169	141	118	98	214	194	176	160	145	132	120
	54 PSF	16/18	24 - 6	28 - 0	28 - 8	9 - 7	348	324	274	230	194	163	137	115	214	193	175	159	145	132	120
	1.83 cu.yd/(100sq.ft)	16/16	24 - 9	27 - 10	29 - 0	9 - 8	348	323	273	230	193	162	136	114	213	193	175	159	144	131	120
	6x6 - W2.0 x W2.0	14/16	25 - 9	32 - 1	30 - 2	10 - 8	368	347	311	262	221	187	158	133	212	192	174	158	143	130	118
	11 5/8	18/16	22 - 11	17 - 5	18 - 1	7 - 8	303	281	262	232	195	164	137	114	236	215	195	177	161	147	134
	59 PSF	16/18	24 - 0	26 - 6	27 - 7	9 - 2	372	348	313	263	222	187	158	133	237	214	194	177	161	146	133
	1.99 cu.yd/(100sq.ft)	16/16	24 - 4	26 - 4	27 - 5	9 - 2	372	348	312	263	221	187	157	132	236	214	194	176	160	146	133
	6x6 - W2.0 x W2.0	14/16	25 - 4	31 - 7	29 - 8	10 - 6	386	364	344	297	251	213	180	152	235	213	193	175	159	145	132
	11 7/8	18/16	22 - 9	16 - 11	17 - 7	7 - 7	313	290	270	248	209	175	147	123	244	226	205	186	169	154	141
	61 PSF	16/18	23 - 10	25 - 9	26 - 10	8 - 11	384	359	334	281	237	201	170	143	249	225	204	186	169	154	140
	2.06 cu.yd/(100sq.ft)	16/16	24 - 1	25 - 7	26 - 8	8 - 11	384	359	333	281	237	200	169	142	248	225	204	185	169	154	140
	6x6 - W2.0 x W2.0	14/16	25 - 2	31 - 4	29 - 5	10 - 5	395	373	352	316	268	227	193	163	247	224	203	184	167	152	139
	12 5/8	18/16	21 - 3	15 - 8	16 - 3	7 - 1	343	318	296	276	254	215	181	153	267	251	236	215	196	179	163
	68 PSF	16/18	23 - 3	23 - 10	24 - 10	8 - 3	421	393	369	340	288	244	207	176	275	260	236	214	195	178	163
	2.3 cu.yd/(100sq.ft)	16/16	23 - 6	23 - 9	24 - 8	8 - 3	420	393	368	339	287	244	207	175	274	259	235	214	195	178	162
	6x6 - W2.9 x W2.9	14/16	24 - 7	30 - 7	28 - 9	10 - 2	422	398	377	357	324	276	235	200	272	258	234	213	194	177	161

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

7.5" Composite Deep-Dek® Cellular (7.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	5.27	50	1.549	12.141	13.101	1.630	2.876	73361	129400	1683	784	1245
20/18	24	5.84	50	1.717	12.921	14.554	1.634	2.994	73542	134743	1683	784	1245
18/20	24	6.40	50	1.882	16.595	16.595	2.696	3.730	121338	167871	3913	1554	2857
18/18	24	6.98	50	2.050	17.678	17.816	2.696	3.870	121305	174133	3913	1554	2857

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
9 5/8	25 - 2	24 - 9	21 - 11	36 - 10	31 - 1	35 - 4	30 - 7	28 - 10	26 - 5	15 - 9	10 - 0	10 - 5	4 - 1
10 1/8	25 - 11	25 - 6	22 - 8	38 - 2	32 - 0	36 - 9	31 - 7	30 - 2	28 - 0	14 - 7	9 - 4	9 - 9	3 - 10
10 5/8	26 - 9	26 - 4	23 - 6	39 - 7	33 - 0	38 - 1	32 - 7	31 - 5	29 - 0	13 - 4	8 - 9	9 - 1	3 - 9
11 1/8	27 - 7	27 - 2	24 - 4	40 - 10	34 - 1	39 - 5	33 - 7	32 - 9	30 - 0	12 - 3	8 - 2	8 - 6	3 - 7
11 5/8	28 - 4	28 - 0	25 - 1	42 - 1	35 - 1	40 - 9	34 - 7	33 - 11	31 - 0	11 - 5	7 - 9	8 - 1	3 - 5
11 7/8	28 - 9	28 - 5	25 - 6	42 - 8	35 - 7	41 - 5	35 - 1	34 - 7	31 - 6	11 - 0	7 - 6	7 - 10	3 - 5
12 5/8	30 - 0	29 - 7	26 - 8	44 - 5	37 - 0	43 - 3	36 - 7	36 - 5	33 - 0	9 - 11	6 - 11	7 - 3	3 - 2
20/18 GA Deck													
9 5/8	25 - 1	24 - 9	21 - 10	36 - 9	31 - 0	35 - 3	30 - 7	28 - 10	26 - 4	15 - 8	9 - 11	10 - 4	4 - 1
10 1/8	25 - 10	25 - 6	22 - 7	38 - 1	32 - 0	36 - 8	31 - 6	30 - 1	27 - 11	14 - 5	9 - 3	9 - 8	3 - 10
10 5/8	26 - 8	26 - 4	23 - 5	39 - 6	33 - 0	38 - 0	32 - 6	31 - 5	29 - 0	13 - 3	8 - 8	9 - 0	3 - 9
11 1/8	27 - 6	27 - 2	24 - 3	40 - 10	34 - 0	39 - 4	33 - 7	32 - 8	30 - 0	12 - 2	8 - 2	8 - 6	3 - 7
11 5/8	28 - 4	28 - 0	25 - 1	42 - 0	35 - 0	40 - 8	34 - 7	33 - 11	31 - 0	11 - 4	7 - 8	8 - 0	3 - 5
11 7/8	28 - 9	28 - 4	25 - 6	42 - 7	35 - 6	41 - 4	35 - 1	34 - 6	31 - 6	10 - 11	7 - 6	7 - 9	3 - 4
12 5/8	29 - 11	29 - 7	26 - 8	44 - 4	37 - 0	43 - 2	36 - 6	36 - 4	33 - 0	9 - 11	6 - 11	7 - 2	3 - 2
18/20 GA Deck													
9 5/8	26 - 3	25 - 11	22 - 11	36 - 8	32 - 6	35 - 2	32 - 0	28 - 9	27 - 3	24 - 3	22 - 8	23 - 8	8 - 1
10 1/8	27 - 0	26 - 7	23 - 7	38 - 0	33 - 4	36 - 7	32 - 10	30 - 1	28 - 6	23 - 9	21 - 2	22 - 0	7 - 11
10 5/8	27 - 9	27 - 4	24 - 4	39 - 5	34 - 3	38 - 0	33 - 9	31 - 4	29 - 9	23 - 3	19 - 10	20 - 7	7 - 9
11 1/8	28 - 7	28 - 2	25 - 2	40 - 9	35 - 3	39 - 4	34 - 10	32 - 7	30 - 11	22 - 9	18 - 7	19 - 5	7 - 7
11 5/8	29 - 5	29 - 0	26 - 0	42 - 0	36 - 4	40 - 7	35 - 10	33 - 10	32 - 2	22 - 4	17 - 7	18 - 4	7 - 5
11 7/8	29 - 10	29 - 5	26 - 5	42 - 8	36 - 10	41 - 3	36 - 4	34 - 6	32 - 8	22 - 2	17 - 1	17 - 10	7 - 5
12 5/8	31 - 0	30 - 8	27 - 8	44 - 7	38 - 4	43 - 1	37 - 10	36 - 3	34 - 2	21 - 6	15 - 9	16 - 5	7 - 2
18/18 GA Deck													
9 5/8	26 - 3	25 - 10	22 - 10	36 - 6	32 - 5	35 - 1	31 - 11	28 - 9	27 - 3	24 - 7	22 - 6	23 - 6	8 - 2
10 1/8	26 - 11	26 - 6	23 - 7	37 - 11	33 - 3	36 - 6	32 - 9	30 - 0	28 - 6	24 - 0	21 - 0	21 - 11	8 - 0
10 5/8	27 - 8	27 - 4	24 - 4	39 - 4	34 - 2	37 - 11	33 - 9	31 - 4	29 - 8	23 - 6	19 - 8	20 - 6	7 - 10
11 1/8	28 - 6	28 - 2	25 - 2	40 - 8	35 - 3	39 - 3	34 - 9	32 - 7	30 - 11	23 - 1	18 - 6	19 - 3	7 - 8
11 5/8	29 - 4	29 - 0	26 - 0	41 - 11	36 - 3	40 - 6	35 - 9	33 - 10	32 - 1	22 - 8	17 - 6	18 - 2	7 - 7
11 7/8	29 - 9	29 - 4	26 - 5	42 - 7	36 - 9	41 - 2	36 - 4	34 - 5	32 - 8	22 - 6	17 - 0	17 - 9	7 - 6
12 5/8	31 - 0	30 - 7	27 - 8	44 - 5	38 - 3	43 - 0	37 - 10	36 - 3	34 - 2	21 - 5	15 - 9	16 - 4	7 - 2

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

7.5" Composite Deep-Dek® Cellular (7.5CDC)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	7.59	50	2.231	18.659	19.449	2.697	4.000	121386	179987	3913	1554	2857
16/18	24	8.19	50	2.406	22.745	22.745	4.069	4.793	183094	215704	7871	2426	4376
16/16	24	8.80	50	2.586	24.004	24.004	4.059	4.943	182662	222435	7871	2426	4376
14/16	24	10.25	50	3.012	28.960	28.960	5.980	6.058	269082	272625	15371	3699	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
9 5/8	26 - 2	25 - 10	22 - 10	36 - 5	32 - 4	35 - 0	31 - 11	28 - 8	27 - 2	24 - 10	22 - 4	23 - 4	8 - 3
10 1/8	26 - 10	26 - 6	23 - 7	37 - 10	33 - 3	36 - 5	32 - 9	30 - 0	28 - 5	24 - 3	20 - 10	21 - 9	8 - 1
10 5/8	27 - 8	27 - 3	24 - 4	39 - 3	34 - 2	37 - 10	33 - 8	31 - 3	29 - 8	23 - 9	19 - 7	20 - 4	7 - 11
11 1/8	28 - 6	28 - 1	25 - 2	40 - 7	35 - 2	39 - 2	34 - 8	32 - 6	30 - 10	23 - 4	18 - 5	19 - 2	7 - 9
11 5/8	29 - 3	28 - 11	26 - 0	41 - 10	36 - 2	40 - 5	35 - 9	33 - 9	32 - 0	22 - 11	17 - 5	18 - 1	7 - 8
11 7/8	29 - 8	29 - 4	26 - 5	42 - 6	36 - 8	41 - 1	36 - 3	34 - 5	32 - 7	22 - 9	16 - 11	17 - 7	7 - 7
12 5/8	30 - 11	30 - 7	27 - 7	44 - 4	38 - 3	42 - 11	37 - 9	36 - 2	34 - 1	21 - 3	15 - 8	16 - 3	7 - 1
16/18 GA Deck													
9 5/8	27 - 4	26 - 11	23 - 10	36 - 4	33 - 9	34 - 11	33 - 2	28 - 7	27 - 2	26 - 0	32 - 5	30 - 6	10 - 10
10 1/8	27 - 11	27 - 6	24 - 6	37 - 9	34 - 6	36 - 4	34 - 0	29 - 11	28 - 5	25 - 5	31 - 8	29 - 10	10 - 7
10 5/8	28 - 8	28 - 3	25 - 2	39 - 2	35 - 5	37 - 9	34 - 11	31 - 3	29 - 7	24 - 11	29 - 9	29 - 2	9 - 11
11 1/8	29 - 5	29 - 0	26 - 0	40 - 6	36 - 4	39 - 1	35 - 10	32 - 6	30 - 10	24 - 6	28 - 0	28 - 8	9 - 7
11 5/8	30 - 3	29 - 10	26 - 10	41 - 9	37 - 5	40 - 4	36 - 11	33 - 9	32 - 0	24 - 0	26 - 6	27 - 7	9 - 2
11 7/8	30 - 8	30 - 3	27 - 3	42 - 5	37 - 11	41 - 0	37 - 5	34 - 4	32 - 7	23 - 10	25 - 9	26 - 10	8 - 11
12 5/8	31 - 11	31 - 6	28 - 6	44 - 3	39 - 5	42 - 10	39 - 0	36 - 2	34 - 3	23 - 3	23 - 10	24 - 10	8 - 3
16/16 GA Deck													
9 5/8	27 - 3	26 - 10	23 - 10	36 - 3	33 - 8	34 - 11	33 - 1	28 - 7	27 - 1	26 - 3	32 - 9	30 - 10	10 - 11
10 1/8	27 - 11	27 - 6	24 - 5	37 - 8	34 - 5	36 - 3	34 - 0	29 - 11	28 - 4	25 - 9	31 - 7	30 - 2	10 - 6
10 5/8	28 - 7	28 - 2	25 - 2	39 - 1	35 - 4	37 - 8	34 - 10	31 - 2	29 - 7	25 - 2	29 - 7	29 - 6	9 - 10
11 1/8	29 - 4	29 - 0	26 - 0	40 - 5	36 - 3	39 - 0	35 - 10	32 - 5	30 - 9	24 - 9	27 - 10	29 - 0	9 - 8
11 5/8	30 - 2	29 - 10	26 - 10	41 - 8	37 - 4	40 - 3	36 - 10	33 - 8	31 - 11	24 - 4	26 - 4	27 - 5	9 - 2
11 7/8	30 - 7	30 - 3	27 - 3	42 - 4	37 - 10	40 - 11	37 - 4	34 - 3	32 - 6	24 - 1	25 - 7	26 - 8	8 - 11
12 5/8	31 - 10	31 - 6	28 - 6	44 - 2	39 - 5	42 - 9	38 - 11	36 - 1	34 - 3	23 - 6	23 - 9	24 - 8	8 - 3
14/16 GA Deck													
9 5/8	28 - 5	28 - 0	24 - 10	36 - 1	34 - 2	34 - 8	32 - 11	28 - 6	27 - 0	27 - 4	34 - 1	32 - 1	11 - 4
10 1/8	29 - 0	28 - 7	25 - 5	37 - 6	35 - 6	36 - 1	34 - 3	29 - 9	28 - 3	26 - 9	33 - 4	31 - 4	11 - 1
10 5/8	29 - 7	29 - 2	26 - 1	38 - 10	36 - 7	37 - 5	35 - 6	31 - 1	29 - 6	26 - 3	32 - 8	30 - 9	10 - 11
11 1/8	30 - 4	29 - 11	26 - 10	40 - 2	37 - 6	38 - 9	36 - 10	32 - 4	30 - 8	25 - 9	32 - 1	30 - 2	10 - 8
11 5/8	31 - 1	30 - 9	27 - 8	41 - 6	38 - 6	40 - 1	38 - 0	33 - 7	31 - 10	25 - 4	31 - 7	29 - 8	10 - 6
11 7/8	31 - 7	31 - 2	28 - 1	42 - 1	39 - 0	40 - 9	38 - 6	34 - 2	32 - 5	25 - 2	31 - 4	29 - 5	10 - 5
12 5/8	32 - 10	32 - 5	29 - 4	44 - 0	40 - 7	42 - 7	40 - 1	36 - 0	34 - 2	24 - 7	30 - 7	28 - 9	10 - 2

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

7.5" Composite Deep-Dek® Cellular Acoustical (7.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.91	50	1.444	11.516	12.447	1.626	2.835	73183	127565	1683	784	1245
20/18	24	5.37	50	1.579	12.246	13.719	1.630	2.943	73337	132416	1683	784	1245
18/20	24	6.05	50	1.777	15.765	15.765	2.695	3.684	121297	165777	3913	1554	2857
18/18	24	6.51	50	1.912	16.742	16.876	2.693	3.809	121195	171426	3913	1554	2857

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	19	20	21	22	23	24	25	26	24	25	26	27	28	29	30
4000 PSI Normal Weight Concrete (145 PCF)	9 5/8	20/20	12 - 6	8 - 4	8 - 8	3 - 7	160	141	123	109	96	84	74	63	131	118	106	95	85	77	69
	54 PSF	20/18	12 - 5	8 - 3	8 - 8	3 - 7	160	140	123	108	95	84	74	63	131	118	106	95	85	76	68
	1.37 cu.yd/(100sq.ft)	18/20	22 - 7	18 - 11	19 - 8	7 - 6	213	187	166	147	131	114	94	77	145	130	117	105	94	85	76
	6x6 - W1.4 x W1.4	18/18	22 - 11	18 - 10	19 - 7	7 - 8	212	187	166	147	130	113	93	76	144	129	116	104	94	85	76
	10 1/8	20/20	11 - 4	7 - 8	8 - 0	3 - 5	184	167	153	140	129	115	94	76	142	131	121	113	105	97	87
	60 PSF	20/18	11 - 3	7 - 8	8 - 0	3 - 5	183	167	153	140	129	114	94	76	142	131	121	112	104	96	87
	1.52 cu.yd/(100sq.ft)	18/20	22 - 1	17 - 6	18 - 3	7 - 4	235	207	183	162	144	129	110	91	163	146	131	118	106	96	86
	6x6 - W1.4 x W1.4	18/18	22 - 4	17 - 5	18 - 2	7 - 5	234	207	183	162	144	128	110	90	162	146	131	118	106	96	86
	10 5/8	20/20	10 - 4	7 - 2	7 - 6	3 - 3	198	180	165	151	139	128	112	92	153	141	131	121	112	105	97
	66 PSF	20/18	10 - 3	7 - 2	7 - 5	3 - 3	198	180	165	151	139	128	111	91	153	141	130	121	112	104	97
	1.68 cu.yd/(100sq.ft)	18/20	21 - 7	16 - 3	17 - 0	7 - 2	253	230	203	180	161	143	128	108	182	163	147	132	119	108	97
	6x6 - W1.4 x W1.4	18/18	21 - 10	16 - 3	16 - 11	7 - 3	253	229	203	180	160	143	127	107	182	163	147	132	119	107	97
	11 1/8	20/20	9 - 6	6 - 8	7 - 0	3 - 1	212	193	177	162	149	137	127	109	164	151	140	130	120	112	104
	72 PSF	20/18	9 - 6	6 - 8	6 - 11	3 - 1	212	193	176	162	149	137	127	108	164	151	140	129	120	112	104
	1.83 cu.yd/(100sq.ft)	18/20	20 - 9	15 - 3	15 - 10	6 - 11	272	251	233	217	202	183	153	127	203	182	164	148	133	120	109
	6x6 - W2.0 x W2.0	18/18	20 - 8	15 - 2	15 - 10	6 - 11	272	251	233	216	202	182	152	127	202	182	164	147	133	120	108
	11 5/8	20/20	8 - 10	6 - 3	6 - 7	2 - 11	227	206	189	173	159	146	135	125	175	161	149	138	128	119	111
	78 PSF	20/18	8 - 9	6 - 3	6 - 6	2 - 11	226	206	188	173	159	146	135	125	175	161	149	138	128	119	111
	1.99 cu.yd/(100sq.ft)	18/20	19 - 6	14 - 4	14 - 11	6 - 6	291	268	249	231	216	201	177	148	224	202	182	164	148	134	121
	6x6 - W2.0 x W2.0	18/18	19 - 5	14 - 3	14 - 10	6 - 6	290	268	248	231	215	201	177	148	223	202	182	164	148	134	121
	11 7/8	20/20	8 - 6	6 - 1	6 - 4	2 - 10	234	213	195	178	164	151	139	129	180	167	154	143	132	123	114
	81 PSF	20/18	8 - 6	6 - 1	6 - 4	2 - 10	233	213	194	178	164	151	139	129	180	166	154	142	132	123	114
	2.06 cu.yd/(100sq.ft)	18/20	18 - 11	13 - 11	14 - 6	6 - 4	300	277	257	239	222	208	191	160	231	212	191	173	156	141	127
	6x6 - W2.0 x W2.0	18/18	18 - 10	13 - 10	14 - 5	6 - 3	300	277	256	238	222	207	190	159	230	212	191	172	156	141	127
	12 5/8	20/20	7 - 8	5 - 6	5 - 9	2 - 7	255	233	212	195	179	165	152	140	197	182	168	156	144	134	124
	90 PSF	20/18	7 - 8	5 - 6	5 - 9	2 - 7	255	232	212	194	179	164	152	140	197	181	168	155	144	134	124
	2.3 cu.yd/(100sq.ft)	18/20	17 - 4	12 - 9	13 - 4	5 - 9	328	303	281	261	243	227	212	198	252	235	221	200	181	164	148
	6x6 - W2.9 x W2.9	18/18	17 - 4	12 - 9	13 - 3	5 - 9	327	302	280	260	243	227	212	197	252	235	220	199	180	163	148

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

7.5" Composite Deep-Dek® Cellular Acoustical (7.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft) single	I_D (in^4/ft) multi	S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
18/16	24	7.00	50	2.056	17.652	18.294	2.694	3.926	121215	176689	3913	1554	2857
16/18	24	7.71	50	2.267	21.399	21.399	4.078	4.727	183504	212719	7871	2426	4376
16/16	24	8.20	50	2.411	22.715	22.715	4.065	4.859	182916	218676	7871	2426	4376
14/16	24	9.65	50	2.837	27.176	27.176	5.956	5.968	268009	268579	15371	3699	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)													
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required					
			Single	Double	Triple	Canti-lever	19	20	21	22	23	24	25	26	24	25	26	27	28	29	30
4000 PSI Normal Weight Concrete (145 PCF)	9 5/8	18/16	23 - 2	18 - 8	19 - 6	7 - 9	212	187	165	146	130	113	93	76	144	129	116	104	94	84	76
	54 PSF	16/18	24 - 3	28 - 5	28 - 4	9 - 6	266	235	209	186	159	132	110	91	143	128	115	104	93	84	75
	1.37 cu.yd/(100sq.ft)	16/16	24 - 6	28 - 4	28 - 9	9 - 7	265	235	209	186	158	132	109	90	143	128	115	103	93	83	75
	6x6 - W1.4 x W1.4	14/16	25 - 6	31 - 9	29 - 11	10 - 7	312	277	247	219	184	154	129	108	142	127	114	102	92	82	74
	10 1/8	18/16	22 - 7	17 - 4	18 - 1	7 - 6	234	206	182	162	144	128	109	90	162	145	131	117	106	95	86
	60 PSF	16/18	23 - 8	26 - 5	27 - 6	9 - 2	289	257	228	204	182	152	127	105	161	145	130	117	105	95	85
	1.52 cu.yd/(100sq.ft)	16/16	24 - 0	26 - 3	27 - 4	9 - 1	289	257	228	203	182	152	127	105	161	144	130	117	105	94	85
	6x6 - W1.4 x W1.4	14/16	24 - 11	31 - 1	29 - 3	10 - 4	354	314	280	248	208	175	147	123	160	143	129	115	104	93	84
	10 5/8	18/16	22 - 0	16 - 2	16 - 10	7 - 4	253	229	203	180	160	142	127	107	181	163	146	132	119	107	96
	66 PSF	16/18	23 - 2	24 - 7	25 - 7	8 - 6	312	282	251	224	200	177	148	124	181	162	146	131	118	106	96
	1.68 cu.yd/(100sq.ft)	16/16	23 - 6	24 - 6	25 - 6	8 - 6	312	282	251	223	200	177	148	123	180	162	145	131	118	106	95
	6x6 - W1.4 x W1.4	14/16	24 - 5	30 - 5	28 - 7	10 - 2	383	342	305	273	238	201	169	142	179	161	144	130	117	105	94
	11 1/8	18/16	20 - 7	15 - 1	15 - 9	6 - 10	271	251	232	216	201	182	152	126	202	181	163	147	133	120	108
	72 PSF	16/18	22 - 8	23 - 0	24 - 0	8 - 0	335	311	276	247	221	198	173	145	201	181	163	147	132	119	107
	1.83 cu.yd/(100sq.ft)	16/16	23 - 0	22 - 11	23 - 11	8 - 0	335	311	276	246	220	197	172	144	201	180	162	146	132	119	107
	6x6 - W2.0 x W2.0	14/16	23 - 11	29 - 10	28 - 1	9 - 11	412	374	333	298	268	232	196	165	200	179	161	145	131	118	106
	11 5/8	18/16	19 - 4	14 - 3	14 - 10	6 - 5	290	268	248	231	215	201	176	147	223	201	181	163	147	133	120
	78 PSF	16/18	22 - 3	21 - 8	22 - 7	7 - 6	359	334	305	272	244	218	196	168	223	201	181	163	147	133	120
	1.99 cu.yd/(100sq.ft)	16/16	22 - 7	21 - 7	22 - 6	7 - 6	358	334	305	272	243	218	196	168	223	200	180	162	147	132	119
	6x6 - W2.0 x W2.0	14/16	23 - 6	29 - 4	27 - 7	9 - 9	440	409	365	326	293	264	226	191	222	199	179	161	145	131	118
	11 7/8	18/16	18 - 9	13 - 9	14 - 4	6 - 3	299	276	256	238	222	207	190	159	230	212	191	172	155	140	127
	81 PSF	16/18	22 - 1	21 - 0	21 - 11	7 - 4	370	345	323	303	285	254	215	181	235	211	190	171	155	140	126
	2.06 cu.yd/(100sq.ft)	16/16	22 - 5	20 - 11	21 - 10	7 - 6	370	345	322	302	284	254	214	181	234	211	190	171	154	139	126
	6x6 - W2.0 x W2.0	14/16	23 - 4	29 - 1	27 - 4	9 - 8	455	427	381	341	307	276	242	205	233	210	189	170	153	138	125
	12 5/8	18/16	17 - 3	12 - 8	13 - 3	5 - 9	327	302	280	260	242	226	212	197	251	235	220	199	180	163	147
	90 PSF	16/18	21 - 7	19 - 4	20 - 2	7 - 2	405	377	353	331	311	293	263	223	271	244	220	199	179	162	147
	2.3 cu.yd/(100sq.ft)	16/16	21 - 10	19 - 3	20 - 1	7 - 3	404	377	353	331	311	293	263	223	270	243	219	198	179	162	147
	6x6 - W2.9 x W2.9	14/16	22 - 9	28 - 4	26 - 8	9 - 6	497	467	436	391	351	317	286	252	269	242	218	197	178	161	145

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
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7.5" Composite Deep-Dek® Cellular Acoustical (7.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.91	50	1.444	11.516	12.447	1.626	2.835	73183	127565	1683	784	1245
20/18	24	5.37	50	1.579	12.246	13.719	1.630	2.943	73337	132416	1683	784	1245
18/20	24	6.05	50	1.777	15.765	15.765	2.695	3.684	121297	165777	3913	1554	2857
18/18	24	6.51	50	1.912	16.742	16.876	2.693	3.809	121195	171426	3913	1554	2857

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf SDL=20 psf	LL=55 psf SDL=10 psf	LL=100 psf SDL=15 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
				Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
9 5/8	26 - 3	25 - 10	21 - 10	35 - 0	32 - 0	33 - 9	30 - 11	27 - 11	25 - 7	12 - 6	8 - 4	8 - 8	3 - 7
10 1/8	27 - 1	26 - 9	24 - 0	36 - 3	33 - 6	35 - 0	33 - 1	29 - 2	27 - 2	11 - 4	7 - 8	8 - 0	3 - 5
10 5/8	27 - 11	27 - 7	24 - 10	37 - 5	34 - 6	36 - 2	34 - 1	30 - 4	28 - 2	10 - 4	7 - 2	7 - 6	3 - 3
11 1/8	28 - 9	28 - 5	25 - 9	38 - 6	35 - 7	37 - 4	35 - 2	31 - 5	29 - 1	9 - 6	6 - 8	7 - 0	3 - 1
11 5/8	29 - 7	29 - 3	26 - 6	39 - 8	36 - 7	38 - 5	36 - 2	32 - 7	29 - 11	8 - 10	6 - 3	6 - 7	2 - 11
11 7/8	30 - 0	29 - 8	26 - 11	40 - 2	37 - 1	39 - 0	36 - 8	33 - 1	30 - 4	8 - 6	6 - 1	6 - 4	2 - 10
12 5/8	31 - 2	30 - 10	28 - 2	41 - 9	38 - 6	40 - 7	38 - 1	34 - 9	31 - 7	7 - 8	5 - 6	5 - 9	2 - 7
20/18 GA Deck													
9 5/8	26 - 2	25 - 10	21 - 9	34 - 11	32 - 0	33 - 8	30 - 10	27 - 11	25 - 6	12 - 5	8 - 3	8 - 8	3 - 7
10 1/8	27 - 1	26 - 9	24 - 0	36 - 2	33 - 5	34 - 11	33 - 0	29 - 1	27 - 1	11 - 3	7 - 8	8 - 0	3 - 5
10 5/8	27 - 11	27 - 7	24 - 10	37 - 4	34 - 6	36 - 1	34 - 1	30 - 3	28 - 1	10 - 3	7 - 2	7 - 5	3 - 3
11 1/8	28 - 9	28 - 5	25 - 8	38 - 6	35 - 6	37 - 3	35 - 1	31 - 5	29 - 0	9 - 6	6 - 8	6 - 11	3 - 1
11 5/8	29 - 7	29 - 3	26 - 6	39 - 7	36 - 6	38 - 4	36 - 1	32 - 7	29 - 11	8 - 9	6 - 3	6 - 6	2 - 11
11 7/8	29 - 11	29 - 7	26 - 11	40 - 2	37 - 0	38 - 11	36 - 7	33 - 1	30 - 4	8 - 6	6 - 1	6 - 4	2 - 10
12 5/8	31 - 2	30 - 10	28 - 2	41 - 9	38 - 6	40 - 6	38 - 1	34 - 9	31 - 6	7 - 8	5 - 6	5 - 9	2 - 7
18/20 GA Deck													
9 5/8	27 - 2	26 - 10	23 - 11	34 - 10	33 - 1	33 - 7	31 - 11	27 - 10	26 - 5	22 - 7	18 - 11	19 - 8	7 - 6
10 1/8	28 - 0	27 - 7	24 - 9	36 - 1	34 - 3	34 - 10	33 - 1	29 - 1	27 - 7	22 - 1	17 - 6	18 - 3	7 - 4
10 5/8	28 - 10	28 - 6	25 - 8	37 - 3	35 - 4	36 - 0	34 - 2	30 - 3	28 - 8	21 - 7	16 - 3	17 - 0	7 - 2
11 1/8	29 - 8	29 - 4	26 - 6	38 - 5	36 - 5	37 - 2	35 - 3	31 - 5	29 - 9	20 - 9	15 - 3	15 - 10	6 - 11
11 5/8	30 - 6	30 - 2	27 - 5	39 - 6	37 - 6	38 - 4	36 - 4	32 - 6	30 - 10	19 - 6	14 - 4	14 - 11	6 - 6
11 7/8	30 - 11	30 - 7	27 - 10	40 - 0	38 - 0	38 - 10	36 - 10	33 - 1	31 - 4	18 - 11	13 - 11	14 - 6	6 - 4
12 5/8	32 - 1	31 - 9	29 - 0	41 - 8	39 - 6	40 - 6	38 - 5	34 - 8	32 - 11	17 - 4	12 - 9	13 - 4	5 - 9
18/18 GA Deck													
9 5/8	27 - 2	26 - 9	23 - 11	34 - 9	33 - 0	33 - 7	31 - 10	27 - 10	26 - 5	22 - 11	18 - 10	19 - 7	7 - 8
10 1/8	27 - 11	27 - 7	24 - 9	36 - 0	34 - 2	34 - 9	33 - 0	29 - 0	27 - 7	22 - 4	17 - 5	18 - 2	7 - 5
10 5/8	28 - 10	28 - 5	25 - 8	37 - 2	35 - 3	36 - 0	34 - 1	30 - 2	28 - 8	21 - 10	16 - 3	16 - 11	7 - 3
11 1/8	29 - 8	29 - 3	26 - 6	38 - 4	36 - 4	37 - 1	35 - 3	31 - 4	29 - 9	20 - 8	15 - 2	15 - 10	6 - 11
11 5/8	30 - 6	30 - 1	27 - 4	39 - 5	37 - 5	38 - 3	36 - 3	32 - 6	30 - 10	19 - 5	14 - 3	14 - 10	6 - 6
11 7/8	30 - 10	30 - 6	27 - 9	40 - 0	37 - 11	38 - 10	36 - 10	33 - 0	31 - 4	18 - 10	13 - 10	14 - 5	6 - 3
12 5/8	32 - 1	31 - 9	29 - 0	41 - 7	39 - 5	40 - 5	38 - 4	34 - 8	32 - 10	17 - 4	12 - 9	13 - 3	5 - 9

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
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   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
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7.5" Composite Deep-Dek® Cellular Acoustical (7.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	7.00	50	2.056	17.652	18.294	2.694	3.926	121215	176689	3913	1554	2857
16/18	24	7.71	50	2.267	21.399	21.399	4.078	4.727	183504	212719	7871	2426	4376
16/16	24	8.20	50	2.411	22.715	22.715	4.065	4.859	182916	218676	7871	2426	4376
14/16	24	9.65	50	2.837	27.176	27.176	5.956	5.968	268009	268579	15371	3699	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

NORMAL WEIGHT CONCRETE (145 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
9 5/8	27 - 1	26 - 9	23 - 11	34 - 9	32 - 11	33 - 6	31 - 9	27 - 10	26 - 5	23 - 2	18 - 8	19 - 6	7 - 9
10 1/8	27 - 11	27 - 7	24 - 9	35 - 11	34 - 1	34 - 9	32 - 11	29 - 0	27 - 6	22 - 7	17 - 4	18 - 1	7 - 6
10 5/8	28 - 9	28 - 5	25 - 7	37 - 1	35 - 3	35 - 11	34 - 1	30 - 2	28 - 7	22 - 0	16 - 2	16 - 10	7 - 4
11 1/8	29 - 7	29 - 3	26 - 6	38 - 3	36 - 4	37 - 1	35 - 2	31 - 4	29 - 8	20 - 7	15 - 1	15 - 9	6 - 10
11 5/8	30 - 5	30 - 1	27 - 4	39 - 5	37 - 4	38 - 2	36 - 3	32 - 5	30 - 9	19 - 4	14 - 3	14 - 10	6 - 5
11 7/8	30 - 10	30 - 6	27 - 9	39 - 11	37 - 10	38 - 9	36 - 9	33 - 0	31 - 3	18 - 9	13 - 9	14 - 4	6 - 3
12 5/8	32 - 1	31 - 9	29 - 0	41 - 6	39 - 5	40 - 4	38 - 3	34 - 7	32 - 10	17 - 3	12 - 8	13 - 3	5 - 9
16/18 GA Deck													
9 5/8	28 - 1	27 - 8	24 - 9	34 - 8	32 - 10	33 - 5	31 - 8	27 - 9	26 - 4	24 - 3	28 - 5	28 - 4	9 - 6
10 1/8	28 - 9	28 - 5	25 - 6	35 - 10	34 - 0	34 - 8	32 - 10	28 - 11	27 - 6	23 - 8	26 - 5	27 - 6	9 - 2
10 5/8	29 - 7	29 - 3	26 - 5	37 - 0	35 - 2	35 - 10	34 - 0	30 - 1	28 - 7	23 - 2	24 - 7	25 - 7	8 - 6
11 1/8	30 - 6	30 - 1	27 - 3	38 - 2	36 - 3	37 - 0	35 - 1	31 - 3	29 - 8	22 - 8	23 - 0	24 - 0	8 - 0
11 5/8	31 - 4	30 - 11	28 - 2	39 - 3	37 - 3	38 - 1	36 - 2	32 - 5	30 - 9	22 - 3	21 - 8	22 - 7	7 - 6
11 7/8	31 - 9	31 - 4	28 - 7	39 - 10	37 - 9	38 - 8	36 - 8	32 - 11	31 - 3	22 - 1	21 - 0	21 - 11	7 - 4
12 5/8	32 - 11	32 - 7	29 - 10	41 - 5	39 - 4	40 - 3	38 - 3	34 - 7	32 - 9	21 - 7	19 - 4	20 - 2	7 - 2
16/16 GA Deck													
9 5/8	28 - 0	27 - 8	24 - 9	34 - 7	32 - 10	33 - 4	31 - 8	27 - 9	26 - 4	24 - 6	28 - 4	28 - 9	9 - 7
10 1/8	28 - 9	28 - 5	25 - 6	35 - 9	33 - 11	34 - 7	32 - 10	28 - 11	27 - 5	24 - 0	26 - 3	27 - 4	9 - 1
10 5/8	29 - 7	29 - 3	26 - 4	37 - 0	35 - 1	35 - 9	33 - 11	30 - 1	28 - 7	23 - 6	24 - 6	25 - 6	8 - 6
11 1/8	30 - 5	30 - 1	27 - 3	38 - 1	36 - 2	36 - 11	35 - 0	31 - 3	29 - 8	23 - 0	22 - 11	23 - 11	8 - 0
11 5/8	31 - 3	30 - 11	28 - 1	39 - 3	37 - 3	38 - 1	36 - 1	32 - 4	30 - 8	22 - 7	21 - 7	22 - 6	7 - 6
11 7/8	31 - 8	31 - 4	28 - 6	39 - 9	37 - 9	38 - 7	36 - 7	32 - 11	31 - 2	22 - 5	20 - 11	21 - 10	7 - 6
12 5/8	32 - 11	32 - 7	29 - 10	41 - 5	39 - 3	40 - 3	38 - 2	34 - 6	32 - 9	21 - 10	19 - 3	20 - 1	7 - 3
14/16 GA Deck													
9 5/8	29 - 0	28 - 7	25 - 8	34 - 5	32 - 7	33 - 2	31 - 6	27 - 8	26 - 3	25 - 6	31 - 9	29 - 11	10 - 7
10 1/8	29 - 8	29 - 4	26 - 4	35 - 7	33 - 9	34 - 5	32 - 8	28 - 10	27 - 4	24 - 11	31 - 1	29 - 3	10 - 4
10 5/8	30 - 5	30 - 1	27 - 2	36 - 9	34 - 11	35 - 7	33 - 9	30 - 0	28 - 5	24 - 5	30 - 5	28 - 7	10 - 2
11 1/8	31 - 3	30 - 11	28 - 0	37 - 11	36 - 0	36 - 9	34 - 10	31 - 2	29 - 6	23 - 11	29 - 10	28 - 1	9 - 11
11 5/8	32 - 2	31 - 9	28 - 11	39 - 1	37 - 1	37 - 11	35 - 11	32 - 3	30 - 7	23 - 6	29 - 4	27 - 7	9 - 9
11 7/8	32 - 7	32 - 3	29 - 4	39 - 7	37 - 7	38 - 5	36 - 6	32 - 10	31 - 1	23 - 4	29 - 1	27 - 4	9 - 8
12 5/8	33 - 10	33 - 6	30 - 8	41 - 2	39 - 1	40 - 1	38 - 0	34 - 5	32 - 8	22 - 9	28 - 4	26 - 8	9 - 6

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

For construction or service stage designs utilizing different criteria, go to: **tools.newmill.com/deck-tools/**

7.5" Composite Deep-Dek® Cellular Acoustical (7.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft)		S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.91	50	1.444	11.516	12.447	1.626	2.835	73183	127565	1683	784	1245
20/18	24	5.37	50	1.579	12.246	13.719	1.630	2.943	73337	132416	1683	784	1245
18/20	24	6.05	50	1.777	15.765	15.765	2.695	3.684	121297	165777	3913	1554	2857
18/18	24	6.51	50	1.912	16.742	16.876	2.693	3.809	121195	171426	3913	1554	2857

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	19	20	21	22	23	24	25	26	24	25	26	27	28	29	30
4000 PSI Lightweight Concrete (110 PCF)	9 5/8	20/20	15 - 10	10 - 1	10 - 6	4 - 1	170	150	133	113	93	76	62	50	141	128	116	105	95	85	72
	41 PSF	20/18	15 - 9	10 - 0	10 - 5	4 - 1	170	150	133	112	93	76	62	50	140	128	116	105	95	84	72
	1.37 cu.yd/(100sq.ft)	18/20	24 - 0	22 - 9	23 - 9	8 - 0	222	196	163	136	113	94	78	64	154	139	126	115	104	95	86
	6x6 - W1.4 x W1.4	18/18	24 - 4	22 - 8	23 - 7	8 - 1	222	196	163	135	113	93	77	63	154	139	126	114	104	94	86
	10 1/8	20/20	14 - 8	9 - 4	9 - 9	3 - 10	194	178	157	130	108	89	73	59	153	142	132	123	115	99	84
	45 PSF	20/18	14 - 7	9 - 4	9 - 9	3 - 10	194	178	157	130	107	88	72	59	152	142	132	123	115	98	84
	1.52 cu.yd/(100sq.ft)	18/20	23 - 6	21 - 3	22 - 1	7 - 10	245	218	185	154	129	107	89	73	173	157	142	129	117	107	97
	6x6 - W1.4 x W1.4	18/18	23 - 9	21 - 1	22 - 0	7 - 11	245	217	185	154	128	107	88	73	173	156	142	129	117	106	97
	10 5/8	20/20	13 - 5	8 - 9	9 - 2	3 - 9	210	192	177	152	126	104	86	70	164	153	143	133	124	115	99
	50 PSF	20/18	13 - 4	8 - 9	9 - 1	3 - 9	209	192	176	151	126	104	86	70	164	153	142	133	124	115	99
	1.68 cu.yd/(100sq.ft)	18/20	23 - 0	19 - 10	20 - 8	7 - 8	265	242	212	177	148	123	103	85	194	175	159	144	131	120	109
	6x6 - W1.4 x W1.4	18/18	23 - 3	19 - 9	20 - 7	7 - 9	265	241	211	176	147	123	102	85	193	175	159	144	131	119	109
	11 1/8	20/20	12 - 4	8 - 3	8 - 7	3 - 7	225	206	190	175	147	122	101	83	168	160	152	143	133	125	116
	54 PSF	20/18	12 - 3	8 - 2	8 - 6	3 - 7	225	206	189	175	146	121	101	83	168	159	151	142	133	125	115
	1.83 cu.yd/(100sq.ft)	18/20	22 - 6	18 - 8	19 - 6	7 - 6	285	264	243	204	171	143	120	100	216	195	177	161	146	133	122
	6x6 - W2.0 x W2.0	18/18	22 - 10	18 - 7	19 - 4	7 - 7	285	264	243	203	170	143	119	99	215	195	177	160	146	133	121
	11 5/8	20/20	11 - 5	7 - 9	8 - 1	3 - 6	241	221	203	187	169	141	118	98	172	163	155	148	141	133	125
	59 PSF	20/18	11 - 5	7 - 9	8 - 1	3 - 5	240	220	202	187	169	141	117	97	172	163	155	147	140	133	125
	1.99 cu.yd/(100sq.ft)	18/20	22 - 1	17 - 7	18 - 4	7 - 4	305	282	263	234	196	165	139	116	238	216	196	178	162	148	135
	6x6 - W2.0 x W2.0	18/18	22 - 5	17 - 7	18 - 3	7 - 6	304	282	263	233	196	165	138	116	237	216	196	178	162	148	135
	11 7/8	20/20	11 - 0	7 - 7	7 - 10	3 - 5	248	228	209	193	179	152	127	105	174	165	157	149	142	135	129
	61 PSF	20/18	11 - 0	7 - 6	7 - 10	3 - 5	248	227	209	193	178	151	126	105	174	165	156	149	142	135	129
	2.06 cu.yd/(100sq.ft)	18/20	21 - 11	17 - 2	17 - 10	7 - 4	314	292	271	250	210	177	149	125	245	227	206	187	171	156	142
	6x6 - W2.0 x W2.0	18/18	22 - 3	17 - 1	17 - 9	7 - 5	314	291	271	249	210	177	148	124	245	227	206	187	170	155	142
	12 5/8	20/20	10 - 0	7 - 0	7 - 3	3 - 2	272	249	229	211	195	181	157	131	180	171	162	154	146	139	133
	68 PSF	20/18	9 - 11	6 - 11	7 - 3	3 - 2	271	248	228	211	195	181	156	131	180	170	162	154	146	139	133
	2.3 cu.yd/(100sq.ft)	18/20	21 - 5	15 - 10	16 - 6	7 - 2	344	319	297	277	256	216	183	154	268	252	237	216	197	180	164
	6x6 - W2.9 x W2.9	18/18	21 - 6	15 - 9	16 - 5	7 - 2	344	319	296	277	255	216	182	154	268	251	236	216	197	180	164

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
10. Negative moment (top) reinforcement is required over supports of continuous spans.
11. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

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7.5" Composite Deep-Dek® Cellular Acoustical (7.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in.^{2}/ft)	I_D (in^4/ft) single	I_D (in^4/ft) multi	S_p (in.^{3}/ft)	S_n (in.^{3}/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
18/16	24	7.00	50	2.056	17.652	18.294	2.694	3.926	121215	176689	3913	1554	2857
16/18	24	7.71	50	2.267	21.399	21.399	4.078	4.727	183504	212719	7871	2426	4376
16/16	24	8.20	50	2.411	22.715	22.715	4.065	4.859	182916	218676	7871	2426	4376
14/16	24	9.65	50	2.837	27.176	27.176	5.956	5.968	268009	268579	15371	3699	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

CONSTRUCTION CLEAR SPANS AND UNIFORM SUPERIMPOSED SERVICE LOAD CAPACITY

LRFD

Concrete	Slab Depth (in), Concrete Weight, Concrete Volume, WWF	Deck Gage	Maximum Unshored Clear Spans (ft-in)				Uniform Service Load Capacity, PSF / Spans (ft)														
							Simple Span Conditions								Continuous Span Condition Negative Moment Reinforcement Required						
			Single	Double	Triple	Canti-lever	19	20	21	22	23	24	25	26	24	25	26	27	28	29	30
4000 PSI Lightweight Concrete (110 PCF)	9 5/8	18/16	24 - 7	22 - 6	23 - 6	8 - 2	222	195	162	135	112	93	77	63	154	139	126	114	103	94	85
	41 PSF	16/18	25 - 8	32 - 0	30 - 1	10 - 8	275	229	191	160	134	112	94	78	153	138	125	113	103	93	85
	1.37 cu.yd/(100sq.ft)	16/16	26 - 0	32 - 5	30 - 6	10 - 10	274	228	191	159	133	111	93	77	153	138	125	113	102	93	84
	6x6 - W1.4 x W1.4	14/16	27 - 0	33 - 8	31 - 8	11 - 3	317	267	224	188	158	133	112	94	152	137	124	112	101	92	83
	10 1/8	18/16	24 - 0	21 - 0	21 - 11	8 - 0	245	217	184	153	128	106	88	72	173	156	141	128	116	106	96
	45 PSF	16/18	25 - 1	31 - 3	29 - 5	10 - 5	300	256	214	179	150	126	105	88	172	156	141	128	116	105	96
	1.52 cu.yd/(100sq.ft)	16/16	25 - 5	31 - 8	29 - 10	10 - 7	300	255	213	179	150	125	105	87	172	155	140	127	116	105	96
	6x6 - W1.4 x W1.4	14/16	26 - 5	32 - 11	31 - 0	11 - 0	334	296	248	209	176	148	125	105	171	154	139	126	114	104	94
	10 5/8	18/16	23 - 6	19 - 8	20 - 6	7 - 10	265	241	211	176	147	122	102	84	193	175	158	144	131	119	108
	50 PSF	16/18	24 - 7	29 - 11	28 - 10	10 - 0	324	289	242	203	170	143	120	100	193	174	158	143	130	118	108
	1.68 cu.yd/(100sq.ft)	16/16	24 - 11	29 - 9	29 - 2	9 - 11	324	288	241	202	170	142	119	100	192	174	157	143	130	118	107
	6x6 - W1.4 x W1.4	14/16	25 - 11	32 - 3	30 - 4	10 - 9	351	330	277	233	196	166	140	118	191	173	156	142	129	117	106
	11 1/8	18/16	23 - 1	18 - 6	19 - 3	7 - 8	284	264	242	203	170	142	119	99	215	194	176	160	146	133	121
	54 PSF	16/18	24 - 2	28 - 2	28 - 3	9 - 5	348	324	275	231	194	163	137	115	214	194	176	160	145	132	120
	1.83 cu.yd/(100sq.ft)	16/16	24 - 5	28 - 0	28 - 8	9 - 7	348	323	274	230	194	163	137	115	214	193	175	159	145	132	120
	6x6 - W2.0 x W2.0	14/16	25 - 5	31 - 8	29 - 9	10 - 7	369	348	311	262	222	187	158	134	213	192	174	158	144	131	119
	11 5/8	18/16	22 - 8	17 - 6	18 - 2	7 - 7	304	282	262	233	195	164	138	115	237	215	195	177	162	147	134
	59 PSF	16/18	23 - 9	26 - 7	27 - 8	9 - 3	373	348	313	264	223	188	159	134	237	215	195	177	161	147	134
	1.99 cu.yd/(100sq.ft)	16/16	24 - 0	26 - 6	27 - 7	9 - 2	372	348	313	263	222	187	158	133	237	214	194	177	161	146	133
	6x6 - W2.0 x W2.0	14/16	25 - 0	31 - 2	29 - 3	10 - 5	386	365	345	297	252	213	181	153	236	213	193	175	160	145	132
	11 7/8	18/16	22 - 6	17 - 0	17 - 8	7 - 6	314	291	271	249	209	176	148	124	245	226	205	187	170	155	141
	61 PSF	16/18	23 - 6	25 - 10	26 - 11	9 - 0	385	360	334	282	238	201	170	143	249	226	205	186	169	154	141
	2.06 cu.yd/(100sq.ft)	16/16	23 - 10	25 - 9	26 - 10	8 - 11	384	359	334	281	237	201	169	143	249	225	204	186	169	154	140
	6x6 - W2.0 x W2.0	14/16	24 - 9	30 - 10	29 - 0	10 - 3	395	373	353	317	269	228	193	164	248	224	203	185	168	153	139
	12 5/8	18/16	21 - 4	15 - 9	16 - 4	7 - 1	343	318	296	276	255	215	182	153	267	251	236	215	196	179	164
	68 PSF	16/18	23 - 0	23 - 11	24 - 11	8 - 4	421	394	369	340	289	245	208	176	275	260	236	215	196	179	163
	2.3 cu.yd/(100sq.ft)	16/16	23 - 3	23 - 10	24 - 10	8 - 3	421	393	369	340	288	244	207	176	275	260	236	214	195	178	163
	6x6 - W2.9 x W2.9	14/16	24 - 3	30 - 2	28 - 4	10 - 1	423	399	377	357	325	276	236	201	273	259	235	213	194	177	162

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
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5. Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
6. Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
7. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
8. Long-term deflection has not been taken into consideration.
9. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
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7.5" Composite Deep-Dek® Cellular Acoustical (7.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
20/20	24	4.91	50	1.444	11.516	12.447	1.626	2.835	73183	127565	1683	784	1245
20/18	24	5.37	50	1.579	12.246	13.719	1.630	2.943	73337	132416	1683	784	1245
18/20	24	6.05	50	1.777	15.765	15.765	2.695	3.684	121297	165777	3913	1554	2857
18/18	24	6.51	50	1.912	16.742	16.876	2.693	3.809	121195	171426	3913	1554	2857

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
20/20 GA Deck													
9 5/8	25 - 2	24 - 10	21 - 11	36 - 10	31 - 1	35 - 5	30 - 8	28 - 10	26 - 5	15 - 10	10 - 1	10 - 6	4 - 1
10 1/8	25 - 11	25 - 7	22 - 8	38 - 3	32 - 1	36 - 10	31 - 7	30 - 2	28 - 0	14 - 8	9 - 4	9 - 9	3 - 10
10 5/8	26 - 9	26 - 5	23 - 6	39 - 8	33 - 1	38 - 2	32 - 7	31 - 6	29 - 0	13 - 5	8 - 9	9 - 2	3 - 9
11 1/8	27 - 7	27 - 3	24 - 4	40 - 11	34 - 1	39 - 6	33 - 8	32 - 9	30 - 1	12 - 4	8 - 3	8 - 7	3 - 7
11 5/8	28 - 5	28 - 0	25 - 2	42 - 1	35 - 1	40 - 10	34 - 8	34 - 0	31 - 1	11 - 5	7 - 9	8 - 1	3 - 6
11 7/8	28 - 10	28 - 5	25 - 6	42 - 9	35 - 7	41 - 5	35 - 2	34 - 7	31 - 7	11 - 0	7 - 7	7 - 10	3 - 5
12 5/8	30 - 0	29 - 7	26 - 9	44 - 6	37 - 1	43 - 4	36 - 7	36 - 5	33 - 0	10 - 0	7 - 0	7 - 3	3 - 2
20/18 GA Deck													
9 5/8	25 - 2	24 - 9	21 - 11	36 - 9	31 - 1	35 - 4	30 - 7	28 - 10	26 - 5	15 - 9	10 - 0	10 - 5	4 - 1
10 1/8	25 - 11	25 - 6	22 - 8	38 - 2	32 - 0	36 - 9	31 - 7	30 - 2	28 - 0	14 - 7	9 - 4	9 - 9	3 - 10
10 5/8	26 - 9	26 - 4	23 - 6	39 - 7	33 - 0	38 - 1	32 - 7	31 - 5	29 - 0	13 - 4	8 - 9	9 - 1	3 - 9
11 1/8	27 - 7	27 - 2	24 - 4	40 - 10	34 - 1	39 - 5	33 - 7	32 - 8	30 - 0	12 - 3	8 - 2	8 - 6	3 - 7
11 5/8	28 - 4	28 - 0	25 - 1	42 - 1	35 - 1	40 - 9	34 - 7	33 - 11	31 - 0	11 - 5	7 - 9	8 - 1	3 - 5
11 7/8	28 - 9	28 - 5	25 - 6	42 - 8	35 - 7	41 - 5	35 - 1	34 - 7	31 - 6	11 - 0	7 - 6	7 - 10	3 - 5
12 5/8	29 - 11	29 - 7	26 - 8	44 - 5	37 - 0	43 - 3	36 - 7	36 - 4	33 - 0	9 - 11	6 - 11	7 - 3	3 - 2
18/20 GA Deck													
9 5/8	26 - 4	25 - 11	22 - 11	36 - 8	32 - 6	35 - 3	32 - 0	28 - 9	27 - 4	24 - 0	22 - 9	23 - 9	8 - 0
10 1/8	27 - 0	26 - 7	23 - 7	38 - 1	33 - 4	36 - 8	32 - 11	30 - 1	28 - 7	23 - 6	21 - 3	22 - 1	7 - 10
10 5/8	27 - 9	27 - 4	24 - 5	39 - 5	34 - 4	38 - 0	33 - 10	31 - 5	29 - 9	23 - 0	19 - 10	20 - 8	7 - 8
11 1/8	28 - 7	28 - 2	25 - 3	40 - 9	35 - 4	39 - 4	34 - 10	32 - 8	31 - 0	22 - 6	18 - 8	19 - 6	7 - 6
11 5/8	29 - 5	29 - 0	26 - 1	42 - 1	36 - 4	40 - 8	35 - 10	33 - 11	32 - 2	22 - 1	17 - 7	18 - 4	7 - 4
11 7/8	29 - 10	29 - 5	26 - 6	42 - 9	36 - 10	41 - 3	36 - 5	34 - 6	32 - 8	21 - 11	17 - 2	17 - 10	7 - 4
12 5/8	31 - 1	30 - 8	27 - 8	44 - 7	38 - 4	43 - 2	37 - 11	36 - 4	34 - 3	21 - 5	15 - 10	16 - 6	7 - 2
18/18 GA Deck													
9 5/8	26 - 3	25 - 11	22 - 11	36 - 7	32 - 6	35 - 2	32 - 0	28 - 9	27 - 3	24 - 4	22 - 8	23 - 7	8 - 1
10 1/8	27 - 0	26 - 7	23 - 7	38 - 0	33 - 4	36 - 7	32 - 10	30 - 1	28 - 6	23 - 9	21 - 1	22 - 0	7 - 11
10 5/8	27 - 9	27 - 4	24 - 4	39 - 5	34 - 3	37 - 11	33 - 9	31 - 4	29 - 9	23 - 3	19 - 9	20 - 7	7 - 9
11 1/8	28 - 7	28 - 2	25 - 2	40 - 9	35 - 3	39 - 3	34 - 10	32 - 7	30 - 11	22 - 10	18 - 7	19 - 4	7 - 7
11 5/8	29 - 5	29 - 0	26 - 0	42 - 0	36 - 4	40 - 7	35 - 10	33 - 10	32 - 1	22 - 5	17 - 7	18 - 3	7 - 6
11 7/8	29 - 9	29 - 5	26 - 5	42 - 8	36 - 10	41 - 3	36 - 4	34 - 6	32 - 8	22 - 3	17 - 1	17 - 9	7 - 5
12 5/8	31 - 0	30 - 8	27 - 8	44 - 6	38 - 4	43 - 1	37 - 10	36 - 3	34 - 2	21 - 6	15 - 9	16 - 5	7 - 2

Notes:

1. Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
2. Maximum clear spans without shoring and design web crippling strengths are based on deck bearing of 3" at end supports and 3" at interior supports.
3. Maximum construction clear spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading and deflection limits:
   - Deck and concrete weights plus worst-case influence of either a 150 lb/ft concentrated live load or a 20 psf uniform live load; or deck weight plus a 50 psf uniform live load, whichever controls.
   - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
4. Maximum cantilever clear spans assume that the adjacent span is at least 3 times longer than the cantilever and no greater than the maximum construction span for single, double, and triple spans. Deck bearing at the perimeter support is assumed to be equal to the deck bearing at interior supports shown above.
5. Composite slab service stage calculations are based on ANSI/SDI SD-2022.
6. The service stage spans are based on the instanteneous deflection limits of L/360 and L/360 under live load and total load, respectively.
7. Long-term deflection has not been taken into consideration.
8. Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
9. Negative moment (top) reinforcement is required over supports of continuous spans.
10. Continuous spans should be approximately equal with the span length difference not exceeding 20%.

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7.5" Composite Deep-Dek® Cellular Acoustical (7.5CDCA)

DECK PROPERTIES

LRFD

Gage	Cover (in)	Weight (psf)	F_y (ksi)	A_s (in^2/ft)	I_D (in^4/ft)		S_p ($in.^3$/ft)	S_n ($in.^3$/ft)	$\phi M_{n,p}$ (in-lb/ft)	$\phi M_{n,n}$ (in-lb/ft)	ϕV_n (lb/ft)	ϕR_{be} (lb/ft)	ϕR_{bi} (lb/ft)
					single	multi							
18/16	24	7.00	50	2.056	17.652	18.294	2.694	3.926	121215	176689	3913	1554	2857
16/18	24	7.71	50	2.267	21.399	21.399	4.078	4.727	183504	212719	7871	2426	4376
16/16	24	8.20	50	2.411	22.715	22.715	4.065	4.859	182916	218676	7871	2426	4376
14/16	24	9.65	50	2.837	27.176	27.176	5.956	5.968	268009	268579	15371	3699	6582

F_y is steel yield stress; A_s is area of deck; I_D is deck moment of inertia for deflection calculations; S_p and S_n are deck section moduli in positive and negative bending; $\phi M_{n,p}$ and $\phi M_{n,n}$ are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{be} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

LIGHTWEIGHT CONCRETE (110 PCF), f'c=4000 PSI

MAXIMUM ALLOWABLE SPANS

LRFD

Total Slab Depth (in)	Service Stage									Construction Stage			
	Simple Spans (ft-in)			Continuous Spans (ft-in)						Maximum Unshored Clear Spans (ft-in)			
	LL=40 psf	LL=55 psf	LL=100 psf	LL=40 psf; SDL=20 psf		LL=55 psf; SDL=10 psf		LL=100 psf; SDL=15 psf					
	SDL=20 psf	SDL=10 psf	SDL=15 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
18/16 GA Deck													
9 5/8	26 - 3	25 - 10	22 - 10	36 - 6	32 - 5	35 - 1	31 - 11	28 - 8	27 - 3	24 - 7	22 - 6	23 - 6	8 - 2
10 1/8	26 - 11	26 - 6	23 - 7	37 - 11	33 - 3	36 - 6	32 - 9	30 - 0	28 - 6	24 - 0	21 - 0	21 - 11	8 - 0
10 5/8	27 - 8	27 - 4	24 - 4	39 - 4	34 - 2	37 - 11	33 - 9	31 - 4	29 - 8	23 - 6	19 - 8	20 - 6	7 - 10
11 1/8	28 - 6	28 - 2	25 - 2	40 - 8	35 - 3	39 - 3	34 - 9	32 - 7	30 - 11	23 - 1	18 - 6	19 - 3	7 - 8
11 5/8	29 - 4	29 - 0	26 - 0	41 - 11	36 - 3	40 - 6	35 - 9	33 - 10	32 - 1	22 - 8	17 - 6	18 - 2	7 - 7
11 7/8	29 - 9	29 - 4	26 - 5	42 - 7	36 - 9	41 - 2	36 - 4	34 - 5	32 - 8	22 - 6	17 - 0	17 - 8	7 - 6
12 5/8	31 - 0	30 - 7	27 - 8	44 - 5	38 - 3	43 - 0	37 - 10	36 - 3	34 - 2	21 - 4	15 - 9	16 - 4	7 - 1
16/18 GA Deck													
9 5/8	27 - 4	26 - 11	23 - 10	36 - 5	33 - 10	35 - 0	33 - 3	28 - 8	27 - 2	25 - 8	32 - 0	30 - 1	10 - 8
10 1/8	28 - 0	27 - 7	24 - 6	37 - 10	34 - 7	36 - 5	34 - 1	30 - 0	28 - 5	25 - 1	31 - 3	29 - 5	10 - 5
10 5/8	28 - 8	28 - 3	25 - 3	39 - 2	35 - 5	37 - 9	34 - 11	31 - 3	29 - 8	24 - 7	29 - 11	28 - 10	10 - 0
11 1/8	29 - 5	29 - 1	26 - 0	40 - 6	36 - 5	39 - 1	35 - 11	32 - 6	30 - 10	24 - 2	28 - 2	28 - 3	9 - 5
11 5/8	30 - 3	29 - 11	26 - 10	41 - 10	37 - 5	40 - 5	36 - 11	33 - 9	32 - 0	23 - 9	26 - 7	27 - 8	9 - 3
11 7/8	30 - 8	30 - 4	27 - 3	42 - 6	37 - 11	41 - 1	37 - 6	34 - 4	32 - 7	23 - 6	25 - 10	26 - 11	9 - 0
12 5/8	31 - 11	31 - 7	28 - 6	44 - 4	39 - 6	42 - 11	39 - 0	36 - 2	34 - 4	23 - 0	23 - 11	24 - 11	8 - 4
16/16 GA Deck													
9 5/8	27 - 4	26 - 11	23 - 10	36 - 4	33 - 9	34 - 11	33 - 2	28 - 7	27 - 2	26 - 0	32 - 5	30 - 6	10 - 10
10 1/8	27 - 11	27 - 6	24 - 6	37 - 9	34 - 6	36 - 4	34 - 0	29 - 11	28 - 5	25 - 5	31 - 8	29 - 10	10 - 7
10 5/8	28 - 8	28 - 3	25 - 2	39 - 2	35 - 5	37 - 9	34 - 11	31 - 3	29 - 7	24 - 11	29 - 9	29 - 2	9 - 11
11 1/8	29 - 5	29 - 0	26 - 0	40 - 6	36 - 4	39 - 1	35 - 10	32 - 6	30 - 10	24 - 5	28 - 0	28 - 8	9 - 7
11 5/8	30 - 3	29 - 10	26 - 10	41 - 9	37 - 5	40 - 4	36 - 11	33 - 9	32 - 0	24 - 0	26 - 6	27 - 7	9 - 2
11 7/8	30 - 8	30 - 3	27 - 3	42 - 5	37 - 11	41 - 0	37 - 5	34 - 4	32 - 7	23 - 10	25 - 9	26 - 10	8 - 11
12 5/8	31 - 11	31 - 6	28 - 6	44 - 3	39 - 5	42 - 10	39 - 0	36 - 2	34 - 3	23 - 3	23 - 10	24 - 10	8 - 3
14/16 GA Deck													
9 5/8	28 - 5	28 - 0	24 - 10	36 - 2	34 - 3	34 - 9	33 - 0	28 - 6	27 - 1	27 - 0	33 - 8	31 - 8	11 - 3
10 1/8	29 - 0	28 - 7	25 - 6	37 - 7	35 - 7	36 - 2	34 - 4	29 - 10	28 - 4	26 - 5	32 - 11	31 - 0	11 - 0
10 5/8	29 - 8	29 - 3	26 - 2	38 - 11	36 - 8	37 - 6	35 - 7	31 - 1	29 - 6	25 - 11	32 - 3	30 - 4	10 - 9
11 1/8	30 - 4	30 - 0	26 - 10	40 - 3	37 - 6	38 - 10	36 - 10	32 - 4	30 - 9	25 - 5	31 - 8	29 - 9	10 - 7
11 5/8	31 - 2	30 - 9	27 - 8	41 - 7	38 - 6	40 - 2	38 - 0	33 - 7	31 - 11	25 - 0	31 - 2	29 - 3	10 - 5
11 7/8	31 - 7	31 - 2	28 - 1	42 - 2	39 - 1	40 - 10	38 - 7	34 - 3	32 - 6	24 - 9	30 - 10	29 - 0	10 - 3
12 5/8	32 - 10	32 - 6	29 - 5	44 - 1	40 - 7	42 - 8	40 - 2	36 - 0	34 - 2	24 - 3	30 - 2	28 - 4	10 - 1

Notes:

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