

2" Versa-Dek® S Composite (2.0VWSC)

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)	φM _{n,p} (in-lb/ft)	φM _{n,n} (in-lb/ft)	φV _n (lb/ft)	φR _{we} (lb/ft)	φR _{bi} (lb/ft)
					single	multi							
22	30	2.19	40	0.643	0.413	0.413	0.287	0.264	10326	9510	4452	1008	1924
20	30	2.65	40	0.779	0.502	0.502	0.364	0.335	13115	12071	5380	1440	2741
18	30	3.50	40	1.028	0.662	0.662	0.491	0.457	17680	16436	7067	2414	4578
16	30	4.39	40	1.292	0.829	0.829	0.616	0.587	22164	21117	8842	3699	7001

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; φM_{n,p} and φM_{n,n} are design moment capacities of deck in positive and negative bending; φV_n is design shear strength of deck; φR_{we} and φR_{bi} are design web crippling strengths of deck for end and interior bearing.

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

STAGGERED ENDS

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					
							9	10	11	12	13	14	15	16	14	15	16	17	18	19	20	
4000 PSI Normal Weight Concrete (145 PCF)	4	22	7 - 3	7 - 11	8 - 2	2 - 7	297	228	164	115	81	56			93	77	63	52	43			
	44 PSF	20	8 - 5	8 - 11	9 - 3	3 - 1	345	252	178	126	90	63	42		93	76	63	52	42			
	1.11 cu.yd/(100sq.ft)	18	10 - 1	10 - 4	10 - 8	3 - 7	408	285	202	145	104	74	51		92	76	62	51	42			
	6x6 - W1.4 x W1.4	16	11 - 5	11 - 8	12 - 1	4 - 0	429	316	225	162	118	85	60	41	91	75	61	50	41			
	5	22	6 - 8	7 - 3	7 - 6	2 - 6	388	298	232	182	144	114	90	68	183	154	130	110	91	75	61	
	56 PSF	20	7 - 9	8 - 2	8 - 5	2 - 10	450	354	283	229	187	142	105	76	182	153	129	110	93	79	67	
	1.42 cu.yd/(100sq.ft)	18	9 - 3	9 - 6	9 - 10	3 - 3	500	458	377	294	218	163	121	90	182	153	129	109	92	78	66	
	6x6 - W1.4 x W1.4	16	10 - 6	10 - 9	11 - 1	3 - 8	500	500	440	325	243	183	137	103	181	152	128	108	92	78	66	
	5 1/4	22	6 - 7	7 - 1	7 - 4	2 - 5	411	315	245	193	152	121	95	75	206	170	141	116	96	79	65	
	59 PSF	20	7 - 7	8 - 0	8 - 3	2 - 9	477	375	299	242	198	163	125	93	209	176	150	127	108	93	79	
	1.5 cu.yd/(100sq.ft)	18	9 - 0	9 - 4	9 - 7	3 - 2	500	484	399	334	255	192	144	108	209	176	149	127	108	92	79	
	6x6 - W2.0 x W2.0	16	10 - 3	10 - 6	10 - 10	3 - 7	500	500	500	377	283	214	162	123	208	175	148	126	107	91	78	
	5 1/2	22	6 - 5	7 - 0	7 - 3	2 - 5	433	333	259	204	161	128	101	79	218	180	148	123	102	84	69	
	62 PSF	20	7 - 5	7 - 10	8 - 1	2 - 8	500	395	316	256	209	172	143	111	238	201	171	146	125	107	92	
	1.58 cu.yd/(100sq.ft)	18	8 - 10	9 - 1	9 - 5	3 - 2	500	500	421	352	295	223	169	128	237	201	170	145	124	107	91	
	6x6 - W2.0 x W2.0	16	10 - 1	10 - 4	10 - 8	3 - 7	500	500	500	434	327	249	190	145	237	200	170	145	124	106	91	
	6	22	6 - 3	6 - 9	6 - 11	2 - 4	479	368	286	225	178	141	112	88	241	199	164	136	113	93	76	
	68 PSF	20	7 - 2	7 - 7	7 - 10	2 - 7	500	437	349	283	231	191	158	131	290	245	208	177	151	129	111	
	1.73 cu.yd/(100sq.ft)	18	8 - 6	8 - 10	9 - 1	3 - 0	500	500	465	389	329	282	227	174	300	254	217	186	160	138	120	
	6x6 - W2.0 x W2.0	16	9 - 8	9 - 11	10 - 3	3 - 5	500	500	500	500	427	327	253	195	299	254	217	186	160	138	119	
	6 1/2	22	6 - 0	6 - 6	6 - 9	2 - 3	500	403	314	247	195	155	123	97	264	218	180	149	124	102	84	
	74 PSF	20	6 - 11	7 - 4	7 - 7	2 - 6	500	479	383	310	254	209	173	144	318	268	227	194	166	142	121	
	1.88 cu.yd/(100sq.ft)	18	8 - 3	8 - 6	8 - 10	2 - 11	500	500	500	426	361	309	266	229	370	315	269	232	201	174	152	
	4x4 - W1.4 x W1.4	16	9 - 5	9 - 7	9 - 11	3 - 4	500	500	500	500	476	415	326	255	369	314	269	231	200	174	151	
	6 3/4	22	5 - 11	6 - 5	6 - 7	2 - 2	500	420	327	258	204	162	128	101	276	227	188	156	129	107	88	
	77 PSF	20	6 - 10	7 - 2	7 - 5	2 - 6	500	499	399	324	265	218	181	150	332	280	237	202	173	148	127	
	1.96 cu.yd/(100sq.ft)	18	8 - 1	8 - 5	8 - 8	2 - 11	500	500	500	445	377	322	278	241	407	347	298	257	223	194	169	
	6x6 - W2.9 x W2.9	16	9 - 3	9 - 6	9 - 9	3 - 3	500	500	500	500	496	433	367	288	407	346	297	256	222	193	168	

Notes:

- Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
- 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.
- 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".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
- Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
- The continuous slab values are based on deck sheets staggered over the interior supports.

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

STAGGERED ENDS

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 Interior	LL=40 psf; SDL=20 psf End	LL=55 psf; SDL=10 psf Interior	LL=55 psf; SDL=10 psf End	LL=100 psf; SDL=15 psf Interior	LL=100 psf; SDL=15 psf End	Single	Double	Triple	Cantilever
22 GA Deck													
4	13 - 10	13 - 7	12 - 0	17 - 7	16 - 9	16 - 11	16 - 1	13 - 10	13 - 1	7 - 3	7 - 11	8 - 2	2 - 7
5	16 - 4	16 - 2	14 - 1	22 - 5	20 - 3	21 - 7	19 - 11	17 - 10	16 - 11	6 - 8	7 - 3	7 - 6	2 - 6
5 1/4	17 - 0	16 - 9	14 - 4	23 - 6	20 - 9	22 - 8	20 - 2	18 - 10	17 - 3	6 - 7	7 - 1	7 - 4	2 - 5
5 1/2	17 - 5	16 - 11	14 - 7	24 - 7	21 - 1	23 - 9	20 - 5	19 - 10	17 - 6	6 - 5	7 - 0	7 - 3	2 - 5
6	17 - 10	17 - 4	15 - 0	25 - 10	21 - 7	25 - 2	20 - 11	21 - 8	18 - 1	6 - 3	6 - 9	6 - 11	2 - 4
6 1/2	18 - 2	17 - 8	15 - 5	26 - 5	22 - 0	25 - 8	21 - 5	22 - 3	18 - 7	6 - 0	6 - 6	6 - 9	2 - 3
6 3/4	18 - 4	17 - 10	15 - 7	26 - 7	22 - 2	25 - 11	21 - 7	22 - 6	18 - 9	5 - 11	6 - 5	6 - 7	2 - 2
20 GA Deck													
4	14 - 1	13 - 11	12 - 3	17 - 7	16 - 8	16 - 11	16 - 0	13 - 9	13 - 1	8 - 5	8 - 11	9 - 3	3 - 1
5	16 - 8	16 - 6	14 - 8	22 - 4	20 - 8	21 - 6	20 - 4	17 - 10	16 - 11	7 - 9	8 - 2	8 - 5	2 - 10
5 1/4	17 - 4	17 - 1	15 - 3	23 - 6	21 - 5	22 - 8	21 - 1	18 - 10	17 - 10	7 - 7	8 - 0	8 - 3	2 - 9
5 1/2	17 - 11	17 - 8	15 - 10	24 - 7	22 - 2	23 - 9	21 - 10	19 - 9	18 - 9	7 - 5	7 - 10	8 - 1	2 - 8
6	19 - 2	18 - 11	16 - 11	26 - 9	23 - 8	25 - 10	23 - 4	21 - 8	20 - 0	7 - 2	7 - 7	7 - 10	2 - 7
6 1/2	20 - 3	20 - 1	17 - 5	28 - 10	24 - 11	27 - 11	24 - 2	23 - 6	20 - 7	6 - 11	7 - 4	7 - 7	2 - 6
6 3/4	20 - 10	20 - 7	17 - 8	29 - 10	25 - 2	28 - 11	24 - 5	24 - 5	20 - 10	6 - 10	7 - 2	7 - 5	2 - 6
18 GA Deck													
4	14 - 7	14 - 4	12 - 8	17 - 6	16 - 7	16 - 10	16 - 0	13 - 9	13 - 1	10 - 1	10 - 4	10 - 8	3 - 7
5	17 - 3	17 - 0	15 - 2	22 - 3	21 - 1	21 - 6	20 - 4	17 - 10	16 - 11	9 - 3	9 - 6	9 - 10	3 - 3
5 1/4	17 - 10	17 - 8	15 - 9	23 - 5	22 - 1	22 - 7	21 - 5	18 - 9	17 - 10	9 - 0	9 - 4	9 - 7	3 - 2
5 1/2	18 - 6	18 - 3	16 - 5	24 - 6	22 - 10	23 - 8	22 - 5	19 - 9	18 - 9	8 - 10	9 - 1	9 - 5	3 - 2
6	19 - 9	19 - 6	17 - 7	26 - 8	24 - 4	25 - 9	24 - 1	21 - 7	20 - 6	8 - 6	8 - 10	9 - 1	3 - 0
6 1/2	20 - 11	20 - 8	18 - 8	28 - 9	25 - 10	27 - 10	25 - 6	23 - 6	22 - 3	8 - 3	8 - 6	8 - 10	2 - 11
6 3/4	21 - 6	21 - 3	19 - 3	29 - 9	26 - 7	28 - 10	26 - 3	24 - 4	23 - 1	8 - 1	8 - 5	8 - 8	2 - 11
16 GA Deck													
4	15 - 0	14 - 9	13 - 1	17 - 5	16 - 7	16 - 9	15 - 11	13 - 9	13 - 0	11 - 5	11 - 8	12 - 1	4 - 0
5	17 - 8	17 - 6	15 - 7	22 - 2	21 - 1	21 - 5	20 - 4	17 - 9	16 - 10	10 - 6	10 - 9	11 - 1	3 - 8
5 1/4	18 - 4	18 - 1	16 - 3	23 - 4	22 - 1	22 - 6	21 - 4	18 - 9	17 - 9	10 - 3	10 - 6	10 - 10	3 - 7
5 1/2	19 - 0	18 - 9	16 - 10	24 - 5	23 - 2	23 - 7	22 - 5	19 - 8	18 - 8	10 - 1	10 - 4	10 - 8	3 - 7
6	20 - 3	20 - 0	18 - 0	26 - 7	25 - 0	25 - 8	24 - 5	21 - 7	20 - 6	9 - 8	9 - 11	10 - 3	3 - 5
6 1/2	21 - 5	21 - 2	19 - 2	28 - 8	26 - 6	27 - 9	26 - 2	23 - 5	22 - 3	9 - 5	9 - 7	9 - 11	3 - 4
6 3/4	22 - 1	21 - 10	19 - 9	29 - 8	27 - 3	28 - 9	26 - 11	24 - 4	23 - 1	9 - 3	9 - 6	9 - 9	3 - 3

Notes:

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	LL=20 psf	LL=100 psf	LL=100 psf	LL=20 psf; SDL=20 psf	LL=100 psf; SDL=20 psf	LL=100 psf; SDL=40 psf							
	SDL=20 psf	SDL=20 psf	SDL=40 psf	Interior	End	Interior	End	Interior	End	Single	Double	Triple	Cantilever
22 GA Deck													
4	14 - 10	11 - 11	11 - 5	20 - 0	18 - 4	13 - 7	12 - 11	13 - 0	12 - 4	7 - 3	7 - 11	8 - 2	2 - 7
5	17 - 5	14 - 0	13 - 5	25 - 1	21 - 6	17 - 8	16 - 9	16 - 10	16 - 0	6 - 8	7 - 3	7 - 6	2 - 6
5 1/4	18 - 0	14 - 3	13 - 8	26 - 3	22 - 3	18 - 7	17 - 1	17 - 10	16 - 5	6 - 7	7 - 1	7 - 4	2 - 5
5 1/2	18 - 8	14 - 5	13 - 11	27 - 5	23 - 0	19 - 7	17 - 4	18 - 9	16 - 8	6 - 5	7 - 0	7 - 3	2 - 5
6	19 - 4	14 - 11	14 - 4	28 - 1	23 - 5	21 - 5	17 - 11	20 - 6	17 - 3	6 - 3	6 - 9	6 - 11	2 - 4
6 1/2	19 - 7	15 - 3	14 - 9	28 - 7	23 - 10	22 - 1	18 - 5	21 - 3	17 - 9	6 - 0	6 - 6	6 - 9	2 - 3
6 3/4	19 - 9	15 - 6	14 - 11	28 - 9	24 - 0	22 - 4	18 - 7	21 - 7	18 - 0	5 - 11	6 - 5	6 - 7	2 - 2
20 GA Deck													
4	15 - 2	12 - 2	11 - 8	19 - 11	18 - 8	13 - 7	12 - 11	13 - 0	12 - 4	8 - 5	8 - 11	9 - 3	3 - 1
5	17 - 9	14 - 7	14 - 1	25 - 0	21 - 11	17 - 7	16 - 9	16 - 10	16 - 0	7 - 9	8 - 2	8 - 5	2 - 10
5 1/4	18 - 5	15 - 2	14 - 8	26 - 2	22 - 9	18 - 7	17 - 8	17 - 9	16 - 10	7 - 7	8 - 0	8 - 3	2 - 9
5 1/2	19 - 0	15 - 9	15 - 2	27 - 4	23 - 6	19 - 7	18 - 6	18 - 8	17 - 9	7 - 5	7 - 10	8 - 1	2 - 8
6	20 - 3	16 - 9	16 - 1	29 - 7	25 - 0	21 - 5	19 - 9	20 - 6	19 - 0	7 - 2	7 - 7	7 - 10	2 - 7
6 1/2	21 - 5	17 - 3	16 - 7	31 - 9	26 - 5	23 - 3	20 - 4	22 - 4	19 - 7	6 - 11	7 - 4	7 - 7	2 - 6
6 3/4	22 - 0	17 - 5	16 - 9	32 - 7	27 - 2	24 - 2	20 - 8	23 - 2	19 - 10	6 - 10	7 - 2	7 - 5	2 - 6
18 GA Deck													
4	15 - 7	12 - 7	12 - 1	19 - 10	18 - 10	13 - 7	12 - 11	12 - 11	12 - 3	10 - 1	10 - 4	10 - 8	3 - 7
5	18 - 4	15 - 0	14 - 6	24 - 11	22 - 8	17 - 7	16 - 8	16 - 10	15 - 11	9 - 3	9 - 6	9 - 10	3 - 3
5 1/4	19 - 0	15 - 8	15 - 1	26 - 1	23 - 5	18 - 7	17 - 7	17 - 9	16 - 10	9 - 0	9 - 4	9 - 7	3 - 2
5 1/2	19 - 7	16 - 3	15 - 8	27 - 3	24 - 3	19 - 6	18 - 6	18 - 8	17 - 9	8 - 10	9 - 1	9 - 5	3 - 2
6	20 - 10	17 - 5	16 - 10	29 - 6	25 - 9	21 - 5	20 - 3	20 - 6	19 - 5	8 - 6	8 - 10	9 - 1	3 - 0
6 1/2	22 - 0	18 - 6	17 - 11	31 - 8	27 - 3	23 - 2	22 - 0	22 - 3	21 - 1	8 - 3	8 - 6	8 - 10	2 - 11
6 3/4	22 - 7	19 - 1	18 - 6	32 - 8	27 - 11	24 - 1	22 - 10	23 - 2	21 - 11	8 - 1	8 - 5	8 - 8	2 - 11
16 GA Deck													
4	16 - 1	12 - 11	12 - 6	19 - 9	18 - 9	13 - 7	12 - 10	12 - 11	12 - 3	11 - 5	11 - 8	12 - 1	4 - 0
5	18 - 10	15 - 6	14 - 11	24 - 10	23 - 3	17 - 7	16 - 8	16 - 9	15 - 11	10 - 6	10 - 9	11 - 1	3 - 8
5 1/4	19 - 6	16 - 1	15 - 6	26 - 0	24 - 1	18 - 6	17 - 7	17 - 9	16 - 10	10 - 3	10 - 6	10 - 10	3 - 7
5 1/2	20 - 1	16 - 8	16 - 1	27 - 2	24 - 10	19 - 6	18 - 6	18 - 8	17 - 8	10 - 1	10 - 4	10 - 8	3 - 7
6	21 - 5	17 - 10	17 - 3	29 - 5	26 - 5	21 - 4	20 - 3	20 - 5	19 - 5	9 - 8	9 - 11	10 - 3	3 - 5
6 1/2	22 - 7	19 - 0	18 - 5	31 - 6	27 - 11	23 - 2	22 - 0	22 - 3	21 - 1	9 - 5	9 - 7	9 - 11	3 - 4
6 3/4	23 - 2	19 - 7	19 - 0	32 - 7	28 - 8	24 - 1	22 - 10	23 - 1	21 - 11	9 - 3	9 - 6	9 - 9	3 - 3

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2" Versa-Dek® S Composite (2.0VWSC)

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)	ϕM _{n,p} (in-lb/ft)	ϕM _{n,n} (in-lb/ft)	ϕV _n (lb/ft)	ϕR _{de} (lb/ft)	ϕR _{bi} (lb/ft)
					single	multi							
22	30	2.19	40	0.643	0.413	0.413	0.287	0.264	10326	9510	4452	1008	1924
20	30	2.65	40	0.779	0.502	0.502	0.364	0.335	13115	12071	5380	1440	2741
18	30	3.50	40	1.028	0.662	0.662	0.491	0.457	17680	16436	7067	2414	4578
16	30	4.39	40	1.292	0.829	0.829	0.616	0.587	22164	21117	8842	3699	7001

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; ϕM_{n,p} and ϕM_{n,n} are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{de} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

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

STAGGERED ENDS

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							
							9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
4000 PSI Lightweight Concrete (110 PCF)	4 33 PSF 1.11 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	22	8 - 0	8 - 8	9 - 0	2 - 9	259	179	126	89	62	43			101	84	64	47						
		20	9 - 3	9 - 9	10 - 1	3 - 4	282	196	138	98	70	49			100	84	71	53						
		18	11 - 2	11 - 4	11 - 9	3 - 11	319	223	158	114	82	58	40		100	83	70	59	47					
		16	12 - 2	12 - 9	13 - 2	4 - 5	355	248	177	128	93	67	47		99	83	69	58	49	41				
	4 1/2 38 PSF 1.27 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	22	7 - 8	8 - 4	8 - 7	2 - 8	351	256	182	131	95	68	48		143	121	96	74	56	41				
		20	8 - 11	9 - 4	9 - 8	3 - 3	396	278	199	144	105	76	54		143	121	102	82	63	47				
		18	10 - 8	10 - 10	11 - 3	3 - 9	447	315	226	165	121	89	64	46	142	120	102	87	74	57	43			
		16	11 - 10	12 - 3	12 - 8	4 - 3	495	349	252	185	136	101	74	54	142	119	101	86	73	63	50			
	5 42 PSF 1.42 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	22	7 - 4	8 - 0	8 - 3	2 - 7	398	308	242	184	135	99	72	52	193	164	137	107	83	64	49			
		20	8 - 6	9 - 0	9 - 4	3 - 1	460	364	274	201	148	110	81	59	193	163	140	118	92	72	55			
		18	10 - 3	10 - 6	10 - 10	3 - 7	500	428	310	228	170	127	95	70	192	163	139	119	103	85	66			
		16	11 - 6	11 - 10	12 - 2	4 - 1	500	474	344	255	190	143	108	80	191	162	138	118	102	88	76			
	5 1/2 47 PSF 1.58 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	22	7 - 1	7 - 9	8 - 0	2 - 7	444	344	270	215	172	138	103	76	229	191	160	134	113	92	72			
		20	8 - 3	8 - 8	9 - 0	3 - 0	500	407	327	267	201	151	114	85	249	212	182	157	129	102	80			
		18	9 - 10	10 - 1	10 - 5	3 - 6	500	500	411	305	229	173	132	100	249	212	181	156	135	118	95			
		16	11 - 3	11 - 5	11 - 9	3 - 11	500	500	455	339	256	194	149	113	248	211	181	156	135	117	102			
	6 51 PSF 1.73 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	22	6 - 10	7 - 6	7 - 9	2 - 6	491	380	299	238	190	154	124	100	253	211	177	148	125	105	88			
		20	7 - 11	8 - 5	8 - 8	2 - 11	500	449	362	295	244	201	153	117	303	257	220	189	163	138	111			
		18	9 - 6	9 - 9	10 - 1	3 - 4	500	500	478	396	300	229	176	135	312	267	229	199	173	151	129			
		16	10 - 10	11 - 0	11 - 5	3 - 10	500	500	500	438	333	255	197	153	312	266	229	198	172	150	131			
	6 1/4 54 PSF 1.81 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	22	6 - 9	7 - 4	7 - 7	2 - 6	500	398	313	249	200	161	130	105	265	221	185	156	131	110	93			
		20	7 - 10	8 - 3	8 - 6	2 - 10	500	471	379	309	255	213	175	135	317	269	230	198	171	148	128			
		18	9 - 4	9 - 7	9 - 11	3 - 4	500	500	500	421	339	260	201	155	347	297	255	221	193	169	148			
		16	10 - 8	10 - 10	11 - 3	3 - 9	500	500	500	494	376	290	225	175	346	296	255	221	192	168	147			
	6 1/2 56 PSF 1.88 cu.yd/(100sq.ft) 4x4 - W1.4 x W1.4	22	6 - 8	7 - 3	7 - 6	2 - 5	500	416	327	260	209	168	136	110	277	231	194	163	137	115	97			
		20	7 - 9	8 - 2	8 - 5	2 - 10	500	492	396	323	267	222	187	154	332	282	241	207	179	155	135			
		18	9 - 2	9 - 6	9 - 9	3 - 3	500	500	500	440	374	294	228	177	383	328	283	245	214	188	165			
		16	10 - 6	10 - 8	11 - 0	3 - 8	500	500	500	500	423	327	254	199	382	327	282	245	213	187	164			

Notes:

- Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
- 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.
- 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".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
- Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
- The continuous slab values are based on deck sheets staggered over the interior supports.

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

2" Versa-Dek® S Composite (2.0VWSC)

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)	φM _{n,p} (in-lb/ft)	φM _{n,n} (in-lb/ft)	φV _n (lb/ft)	φR _{be} (lb/ft)	φR _{bi} (lb/ft)
					single	multi							
22	30	2.19	40	0.643	0.413	0.413	0.287	0.264	10326	9510	4452	1008	1924
20	30	2.65	40	0.779	0.502	0.502	0.364	0.335	13115	12071	5380	1440	2741
18	30	3.50	40	1.028	0.662	0.662	0.491	0.457	17680	16436	7067	2414	4578
16	30	4.39	40	1.292	0.829	0.829	0.616	0.587	22164	21117	8842	3699	7001

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; φM_{n,p} and φM_{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

STAGGERED ENDS

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
22 GA Deck													
4	13 - 1	12 - 11	11 - 3	18 - 5	16 - 2	17 - 8	15 - 11	14 - 2	13 - 6	8 - 0	8 - 8	9 - 0	2 - 9
4 1/2	14 - 4	14 - 2	12 - 5	21 - 1	17 - 9	20 - 2	17 - 5	16 - 4	15 - 4	7 - 8	8 - 4	8 - 7	2 - 8
5	15 - 7	15 - 4	13 - 6	23 - 1	19 - 3	22 - 8	18 - 11	18 - 6	16 - 9	7 - 4	8 - 0	8 - 3	2 - 7
5 1/2	16 - 9	16 - 6	14 - 7	24 - 10	20 - 8	24 - 6	20 - 5	20 - 6	18 - 1	7 - 1	7 - 9	8 - 0	2 - 7
6	17 - 11	17 - 8	15 - 6	26 - 7	22 - 1	26 - 2	21 - 10	22 - 5	18 - 8	6 - 10	7 - 6	7 - 9	2 - 6
6 1/4	18 - 6	18 - 2	15 - 9	27 - 5	22 - 10	26 - 8	22 - 3	22 - 9	18 - 11	6 - 9	7 - 4	7 - 7	2 - 6
6 1/2	19 - 0	18 - 7	15 - 11	27 - 9	23 - 2	27 - 0	22 - 6	23 - 1	19 - 3	6 - 8	7 - 3	7 - 6	2 - 5
20 GA Deck													
4	13 - 5	13 - 2	11 - 6	18 - 5	16 - 7	17 - 7	16 - 4	14 - 2	13 - 5	9 - 3	9 - 9	10 - 1	3 - 4
4 1/2	14 - 8	14 - 6	12 - 8	21 - 0	18 - 2	20 - 2	17 - 10	16 - 4	15 - 6	8 - 11	9 - 4	9 - 8	3 - 3
5	15 - 11	15 - 8	13 - 10	23 - 7	19 - 8	22 - 8	19 - 5	18 - 5	17 - 1	8 - 6	9 - 0	9 - 4	3 - 1
5 1/2	17 - 2	16 - 11	15 - 0	25 - 5	21 - 2	25 - 0	20 - 10	20 - 6	18 - 6	8 - 3	8 - 8	9 - 0	3 - 0
6	18 - 4	18 - 1	16 - 1	27 - 2	22 - 7	26 - 9	22 - 4	22 - 6	19 - 10	7 - 11	8 - 5	8 - 8	2 - 11
6 1/4	18 - 10	18 - 7	16 - 7	28 - 0	23 - 4	27 - 7	23 - 0	23 - 6	20 - 6	7 - 10	8 - 3	8 - 6	2 - 10
6 1/2	19 - 5	19 - 2	17 - 1	28 - 10	24 - 0	28 - 5	23 - 8	24 - 6	21 - 2	7 - 9	8 - 2	8 - 5	2 - 10
18 GA Deck													
4	13 - 11	13 - 8	12 - 0	18 - 4	17 - 2	17 - 7	16 - 8	14 - 2	13 - 5	11 - 2	11 - 4	11 - 9	3 - 11
4 1/2	15 - 3	15 - 0	13 - 2	21 - 0	18 - 10	20 - 1	18 - 6	16 - 4	15 - 5	10 - 8	10 - 10	11 - 3	3 - 9
5	16 - 6	16 - 3	14 - 4	23 - 6	20 - 4	22 - 7	20 - 1	18 - 5	17 - 5	10 - 3	10 - 6	10 - 10	3 - 7
5 1/2	17 - 9	17 - 6	15 - 6	25 - 11	21 - 11	24 - 11	21 - 7	20 - 5	19 - 2	9 - 10	10 - 1	10 - 5	3 - 6
6	18 - 11	18 - 8	16 - 7	28 - 1	23 - 5	27 - 3	23 - 1	22 - 6	20 - 6	9 - 6	9 - 9	10 - 1	3 - 4
6 1/4	19 - 6	19 - 3	17 - 2	28 - 11	24 - 1	28 - 5	23 - 9	23 - 6	21 - 3	9 - 4	9 - 7	9 - 11	3 - 4
6 1/2	20 - 1	19 - 10	17 - 9	29 - 10	24 - 10	29 - 5	24 - 6	24 - 5	21 - 11	9 - 2	9 - 6	9 - 9	3 - 3
16 GA Deck													
4	14 - 4	14 - 1	12 - 4	18 - 3	17 - 4	17 - 6	16 - 7	14 - 1	13 - 5	12 - 2	12 - 9	13 - 2	4 - 5
4 1/2	15 - 8	15 - 5	13 - 7	20 - 11	19 - 4	20 - 0	19 - 0	16 - 3	15 - 5	11 - 10	12 - 3	12 - 8	4 - 3
5	17 - 0	16 - 8	14 - 9	23 - 5	21 - 0	22 - 6	20 - 8	18 - 4	17 - 5	11 - 6	11 - 10	12 - 2	4 - 1
5 1/2	18 - 3	18 - 0	15 - 11	25 - 10	22 - 6	24 - 10	22 - 2	20 - 5	19 - 4	11 - 3	11 - 5	11 - 9	3 - 11
6	19 - 6	19 - 2	17 - 1	28 - 2	24 - 1	27 - 2	23 - 9	22 - 5	21 - 2	10 - 10	11 - 0	11 - 5	3 - 10
6 1/4	20 - 1	19 - 10	17 - 8	29 - 4	24 - 10	28 - 3	24 - 6	23 - 5	21 - 10	10 - 8	10 - 10	11 - 3	3 - 9
6 1/2	20 - 8	20 - 5	18 - 3	30 - 6	25 - 6	29 - 5	25 - 2	24 - 5	22 - 6	10 - 6	10 - 8	11 - 0	3 - 8

Notes:

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 - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
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2" Versa-Dek® S Composite (2.0VWSC)

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)	φM _{n,p} (in-lb/ft)	φM _{n,n} (in-lb/ft)	φV _n (lb/ft)	φR _{be} (lb/ft)	φR _{bi} (lb/ft)
					single	multi							
22	30	2.19	40	0.643	0.413	0.413	0.287	0.264	10326	9510	4452	1008	1924
20	30	2.65	40	0.779	0.502	0.502	0.364	0.335	13115	12071	5380	1440	2741
18	30	3.50	40	1.028	0.662	0.662	0.491	0.457	17680	16436	7067	2414	4578
16	30	4.39	40	1.292	0.829	0.829	0.616	0.587	22164	21117	8842	3699	7001

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; φM_{n,p} and φM_{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

STAGGERED ENDS

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=20 psf SDL=20 psf	LL=100 psf SDL=20 psf	LL=100 psf SDL=40 psf	LL=20 psf; SDL=20 psf Interior	LL=20 psf; SDL=20 psf End	LL=100 psf; SDL=20 psf Interior	LL=100 psf; SDL=20 psf End	LL=100 psf; SDL=40 psf Interior	LL=100 psf; SDL=40 psf End	Single	Double	Triple	Cantilever
22 GA Deck													
4	14 - 2	11 - 2	10 - 8	21 - 0	17 - 6	14 - 0	13 - 3	13 - 4	12 - 8	8 - 0	8 - 8	9 - 0	2 - 9
4 1/2	15 - 6	12 - 3	11 - 10	22 - 11	19 - 1	16 - 2	15 - 2	15 - 4	14 - 7	7 - 8	8 - 4	8 - 7	2 - 8
5	16 - 9	13 - 5	12 - 11	24 - 10	20 - 8	18 - 3	16 - 7	17 - 4	15 - 11	7 - 4	8 - 0	8 - 3	2 - 7
5 1/2	17 - 11	14 - 6	13 - 11	26 - 7	22 - 2	20 - 3	17 - 11	19 - 4	17 - 2	7 - 1	7 - 9	8 - 0	2 - 7
6	19 - 1	15 - 4	14 - 9	28 - 4	23 - 7	22 - 2	18 - 6	21 - 3	17 - 9	6 - 10	7 - 6	7 - 9	2 - 6
6 1/4	19 - 8	15 - 7	15 - 0	29 - 2	24 - 4	22 - 6	18 - 9	21 - 8	18 - 0	6 - 9	7 - 4	7 - 7	2 - 6
6 1/2	20 - 3	15 - 10	15 - 3	30 - 0	25 - 0	22 - 10	19 - 0	22 - 0	18 - 4	6 - 8	7 - 3	7 - 6	2 - 5
20 GA Deck													
4	14 - 6	11 - 5	11 - 0	21 - 2	17 - 11	14 - 0	13 - 3	13 - 4	12 - 7	9 - 3	9 - 9	10 - 1	3 - 4
4 1/2	15 - 10	12 - 7	12 - 1	23 - 6	19 - 7	16 - 1	15 - 3	15 - 4	14 - 7	8 - 11	9 - 4	9 - 8	3 - 3
5	17 - 1	13 - 8	13 - 2	25 - 4	21 - 2	18 - 2	16 - 11	17 - 4	16 - 4	8 - 6	9 - 0	9 - 4	3 - 1
5 1/2	18 - 4	14 - 10	14 - 3	27 - 2	22 - 8	20 - 3	18 - 4	19 - 4	17 - 8	8 - 3	8 - 8	9 - 0	3 - 0
6	19 - 6	15 - 11	15 - 4	28 - 11	24 - 1	22 - 3	19 - 8	21 - 3	18 - 11	7 - 11	8 - 5	8 - 8	2 - 11
6 1/4	20 - 1	16 - 5	15 - 10	29 - 10	24 - 10	23 - 3	20 - 4	22 - 2	19 - 7	7 - 10	8 - 3	8 - 6	2 - 10
6 1/2	20 - 8	16 - 11	16 - 4	30 - 8	25 - 7	24 - 2	20 - 11	23 - 2	20 - 3	7 - 9	8 - 2	8 - 5	2 - 10
18 GA Deck													
4	15 - 0	11 - 10	11 - 4	21 - 1	18 - 7	13 - 11	13 - 3	13 - 3	12 - 7	11 - 2	11 - 4	11 - 9	3 - 11
4 1/2	16 - 4	13 - 0	12 - 6	23 - 11	20 - 3	16 - 1	15 - 3	15 - 4	14 - 6	10 - 8	10 - 10	11 - 3	3 - 9
5	17 - 8	14 - 2	13 - 8	26 - 3	21 - 10	18 - 2	17 - 3	17 - 4	16 - 5	10 - 3	10 - 6	10 - 10	3 - 7
5 1/2	18 - 11	15 - 4	14 - 9	28 - 1	23 - 5	20 - 2	18 - 11	19 - 3	18 - 3	9 - 10	10 - 1	10 - 5	3 - 6
6	20 - 2	16 - 5	15 - 10	29 - 11	24 - 11	22 - 2	20 - 4	21 - 2	19 - 7	9 - 6	9 - 9	10 - 1	3 - 4
6 1/4	20 - 9	17 - 0	16 - 5	30 - 10	25 - 8	23 - 2	21 - 0	22 - 2	20 - 3	9 - 4	9 - 7	9 - 11	3 - 4
6 1/2	21 - 4	17 - 7	16 - 11	31 - 8	26 - 5	24 - 2	21 - 8	23 - 1	20 - 11	9 - 2	9 - 6	9 - 9	3 - 3
16 GA Deck													
4	15 - 5	12 - 2	11 - 9	21 - 0	19 - 1	13 - 11	13 - 2	13 - 3	12 - 7	12 - 2	12 - 9	13 - 2	4 - 5
4 1/2	16 - 10	13 - 5	12 - 11	23 - 10	20 - 10	16 - 1	15 - 3	15 - 3	14 - 6	11 - 10	12 - 3	12 - 8	4 - 3
5	18 - 2	14 - 7	14 - 1	26 - 6	22 - 6	18 - 2	17 - 2	17 - 3	16 - 5	11 - 6	11 - 10	12 - 2	4 - 1
5 1/2	19 - 6	15 - 9	15 - 3	28 - 11	24 - 1	20 - 2	19 - 2	19 - 3	18 - 3	11 - 3	11 - 5	11 - 9	3 - 11
6	20 - 9	16 - 11	16 - 4	30 - 9	25 - 8	22 - 2	20 - 11	21 - 2	20 - 1	10 - 10	11 - 0	11 - 5	3 - 10
6 1/4	21 - 4	17 - 6	16 - 11	31 - 8	26 - 5	23 - 2	21 - 8	22 - 1	20 - 10	10 - 8	10 - 10	11 - 3	3 - 9
6 1/2	21 - 11	18 - 1	17 - 5	32 - 7	27 - 2	24 - 1	22 - 4	23 - 1	21 - 7	10 - 6	10 - 8	11 - 0	3 - 8

Notes:

- Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
- 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.
- 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".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
- The continuous slab values are based on deck sheets staggered over the interior supports.

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

2" Versa-Dek® LS Composite (2.0VWLSC)

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)	ϕM _{n,p} (in-lb/ft)	ϕM _{n,n} (in-lb/ft)	ϕV _n (lb/ft)	ϕR _{we} (lb/ft)	ϕR _{bi} (lb/ft)
					single	multi							
22	30	2.19	40	0.645	0.406	0.406	0.283	0.289	10200	10421	4452	1008	1924
20	30	2.66	40	0.781	0.493	0.493	0.360	0.354	12958	12749	5380	1440	2741
18	30	3.51	40	1.030	0.650	0.650	0.485	0.473	17467	17024	7067	2414	4578
16	30	4.41	40	1.295	0.814	0.814	0.608	0.598	21894	21539	8842	3699	7001

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; ϕM_{n,p} and ϕM_{n,n} are design moment capacities of deck in positive and negative bending; ϕV_n is design shear strength of deck; ϕR_{we} and ϕR_{bi} are design web crippling strengths of deck for end and interior bearing.

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

STAGGERED ENDS

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															
							9	10	11	12	13	14	15	16	17	18	19	20				
4000 PSI Normal Weight Concrete (145 PCF)	4	22	7 - 3	8 - 3	8 - 6	2 - 9	296	227	163	115	81	55			93	77	63	52	43			
	44 PSF	20	8 - 5	9 - 2	9 - 6	3 - 2	344	251	177	126	89	62	42		93	76	63	52	42			
	1.11 cu.yd/(100sq.ft)	18	10 - 0	10 - 6	10 - 11	3 - 8	406	283	201	144	103	73	51		92	76	62	51	42			
	6x6 - W1.4 x W1.4	16	11 - 4	11 - 9	12 - 2	4 - 1	429	314	224	161	117	84	59	40	91	75	61	50	41			
	5	22	6 - 7	7 - 7	7 - 9	2 - 7	387	297	231	182	144	114	90	68	183	154	130	109	90	74	61	
	56 PSF	20	7 - 8	8 - 5	8 - 8	2 - 11	449	353	282	228	187	142	105	76	182	153	129	110	93	79	67	
	1.42 cu.yd/(100sq.ft)	18	9 - 2	9 - 8	10 - 0	3 - 4	500	457	376	293	218	162	121	89	182	153	129	109	92	78	66	
	6x6 - W1.4 x W1.4	16	10 - 5	10 - 10	11 - 2	3 - 9	500	500	439	324	242	182	137	102	181	152	128	108	92	78	66	
	5 1/4	22	6 - 6	7 - 5	7 - 8	2 - 7	410	315	245	192	152	120	95	75	206	170	140	116	96	79	65	
	59 PSF	20	7 - 6	8 - 3	8 - 6	2 - 10	476	374	299	242	198	163	125	92	209	176	150	127	108	93	79	
	1.5 cu.yd/(100sq.ft)	18	9 - 0	9 - 6	9 - 9	3 - 3	500	483	398	333	254	191	144	108	209	176	149	127	108	92	79	
	6x6 - W2.0 x W2.0	16	10 - 2	10 - 7	11 - 0	3 - 8	500	500	500	376	282	213	162	122	208	175	148	126	107	91	78	
	5 1/2	22	6 - 5	7 - 4	7 - 6	2 - 6	433	332	259	203	161	127	101	79	218	179	148	123	101	84	68	
	62 PSF	20	7 - 5	8 - 1	8 - 4	2 - 9	500	395	316	255	209	172	142	110	238	201	171	146	125	107	92	
	1.58 cu.yd/(100sq.ft)	18	8 - 9	9 - 3	9 - 7	3 - 2	500	500	420	351	294	223	169	128	237	200	170	145	124	107	91	
	6x6 - W2.0 x W2.0	16	10 - 0	10 - 5	10 - 9	3 - 7	500	500	500	433	326	248	189	144	237	200	170	145	124	106	91	
	6	22	6 - 2	7 - 0	7 - 3	2 - 5	478	367	286	225	178	141	112	88	241	198	164	136	112	93	76	
	68 PSF	20	7 - 1	7 - 9	8 - 0	2 - 8	500	436	349	282	231	190	158	131	290	244	207	176	151	129	110	
	1.73 cu.yd/(100sq.ft)	18	8 - 6	9 - 0	9 - 3	3 - 1	500	500	465	389	329	281	226	174	300	254	217	186	160	138	120	
	6x6 - W2.0 x W2.0	16	9 - 8	10 - 0	10 - 5	3 - 6	500	500	500	500	426	327	252	195	299	254	217	186	160	138	119	
	6 1/2	22	6 - 0	6 - 10	7 - 0	2 - 4	500	402	313	246	195	155	123	96	264	217	180	149	123	102	84	
	74 PSF	20	6 - 11	7 - 6	7 - 9	2 - 7	500	478	382	310	253	209	173	144	318	268	227	193	165	141	121	
	1.88 cu.yd/(100sq.ft)	18	8 - 2	8 - 8	8 - 11	3 - 0	500	500	500	426	360	308	266	228	370	315	269	232	201	174	152	
	4x4 - W1.4 x W1.4	16	9 - 4	9 - 9	10 - 0	3 - 4	500	500	500	500	475	414	326	254	369	314	269	231	200	174	151	
	6 3/4	22	5 - 11	6 - 8	6 - 11	2 - 4	500	420	327	257	204	162	128	101	275	227	188	156	129	106	87	
	77 PSF	20	6 - 9	7 - 5	7 - 8	2 - 7	500	499	399	323	264	218	180	150	332	280	237	202	173	148	127	
	1.96 cu.yd/(100sq.ft)	18	8 - 1	8 - 6	8 - 10	2 - 11	500	500	500	444	376	322	277	241	407	347	298	257	223	194	169	
	6x6 - W2.9 x W2.9	16	9 - 2	9 - 7	9 - 11	3 - 3	500	500	500	500	496	432	367	288	407	346	297	256	222	193	168	

Notes:

- Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
- 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.
- 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".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
- Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
- The continuous slab values are based on deck sheets staggered over the interior supports.

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

2" Versa-Dek® LS Composite (2.0VWLSC)

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)	φM _{n,p} (in-lb/ft)	φM _{n,n} (in-lb/ft)	φV _n (lb/ft)	φR _{be} (lb/ft)	φR _{bi} (lb/ft)
					single	multi							
22	30	2.19	40	0.645	0.406	0.406	0.283	0.289	10200	10421	4452	1008	1924
20	30	2.66	40	0.781	0.493	0.493	0.360	0.354	12958	12749	5380	1440	2741
18	30	3.51	40	1.030	0.650	0.650	0.485	0.473	17467	17024	7067	2414	4578
16	30	4.41	40	1.295	0.814	0.814	0.608	0.598	21894	21539	8842	3699	7001

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; φM_{n,p} and φM_{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

STAGGERED ENDS

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
22 GA Deck													
4	13 - 10	13 - 7	12 - 0	17 - 7	16 - 9	16 - 11	16 - 1	13 - 10	13 - 1	7 - 3	8 - 3	8 - 6	2 - 9
5	16 - 4	16 - 2	14 - 1	22 - 5	20 - 2	21 - 7	19 - 10	17 - 10	16 - 11	6 - 7	7 - 7	7 - 9	2 - 7
5 1/4	17 - 0	16 - 9	14 - 4	23 - 6	20 - 9	22 - 8	20 - 2	18 - 10	17 - 3	6 - 6	7 - 5	7 - 8	2 - 7
5 1/2	17 - 5	16 - 11	14 - 7	24 - 7	21 - 1	23 - 9	20 - 5	19 - 10	17 - 6	6 - 5	7 - 4	7 - 6	2 - 6
6	17 - 10	17 - 4	15 - 0	25 - 10	21 - 6	25 - 2	20 - 11	21 - 8	18 - 1	6 - 2	7 - 0	7 - 3	2 - 5
6 1/2	18 - 2	17 - 8	15 - 5	26 - 4	22 - 0	25 - 8	21 - 5	22 - 3	18 - 6	6 - 0	6 - 10	7 - 0	2 - 4
6 3/4	18 - 4	17 - 10	15 - 7	26 - 7	22 - 2	25 - 11	21 - 7	22 - 6	18 - 9	5 - 11	6 - 8	6 - 11	2 - 4
20 GA Deck													
4	14 - 1	13 - 11	12 - 3	17 - 7	16 - 8	16 - 11	16 - 0	13 - 9	13 - 1	8 - 5	9 - 2	9 - 6	3 - 2
5	16 - 8	16 - 6	14 - 8	22 - 4	20 - 7	21 - 6	20 - 4	17 - 10	16 - 11	7 - 8	8 - 5	8 - 8	2 - 11
5 1/4	17 - 4	17 - 1	15 - 3	23 - 6	21 - 5	22 - 8	21 - 1	18 - 10	17 - 10	7 - 6	8 - 3	8 - 6	2 - 10
5 1/2	17 - 11	17 - 8	15 - 10	24 - 7	22 - 2	23 - 9	21 - 10	19 - 9	18 - 9	7 - 5	8 - 1	8 - 4	2 - 9
6	19 - 1	18 - 11	16 - 11	26 - 9	23 - 8	25 - 10	23 - 4	21 - 8	19 - 11	7 - 1	7 - 9	8 - 0	2 - 8
6 1/2	20 - 3	20 - 0	17 - 5	28 - 10	24 - 11	27 - 11	24 - 2	23 - 6	20 - 7	6 - 11	7 - 6	7 - 9	2 - 7
6 3/4	20 - 10	20 - 7	17 - 8	29 - 10	25 - 2	28 - 11	24 - 5	24 - 5	20 - 10	6 - 9	7 - 5	7 - 8	2 - 7
18 GA Deck													
4	14 - 7	14 - 4	12 - 8	17 - 6	16 - 7	16 - 10	16 - 0	13 - 9	13 - 1	10 - 0	10 - 6	10 - 11	3 - 8
5	17 - 3	17 - 0	15 - 2	22 - 3	21 - 1	21 - 6	20 - 4	17 - 10	16 - 11	9 - 2	9 - 8	10 - 0	3 - 4
5 1/4	17 - 10	17 - 7	15 - 9	23 - 5	22 - 1	22 - 7	21 - 5	18 - 9	17 - 10	9 - 0	9 - 6	9 - 9	3 - 3
5 1/2	18 - 6	18 - 3	16 - 4	24 - 6	22 - 10	23 - 8	22 - 5	19 - 9	18 - 9	8 - 9	9 - 3	9 - 7	3 - 2
6	19 - 8	19 - 6	17 - 6	26 - 8	24 - 4	25 - 9	24 - 1	21 - 7	20 - 6	8 - 6	9 - 0	9 - 3	3 - 1
6 1/2	20 - 11	20 - 8	18 - 8	28 - 9	25 - 10	27 - 10	25 - 6	23 - 6	22 - 3	8 - 2	8 - 8	8 - 11	3 - 0
6 3/4	21 - 6	21 - 3	19 - 3	29 - 9	26 - 6	28 - 10	26 - 3	24 - 4	23 - 1	8 - 1	8 - 6	8 - 10	2 - 11
16 GA Deck													
4	15 - 0	14 - 9	13 - 1	17 - 5	16 - 7	16 - 9	15 - 11	13 - 9	13 - 0	11 - 4	11 - 9	12 - 2	4 - 1
5	17 - 8	17 - 5	15 - 7	22 - 2	21 - 1	21 - 5	20 - 4	17 - 9	16 - 10	10 - 5	10 - 10	11 - 2	3 - 9
5 1/4	18 - 4	18 - 1	16 - 3	23 - 4	22 - 1	22 - 6	21 - 4	18 - 9	17 - 9	10 - 2	10 - 7	11 - 0	3 - 8
5 1/2	19 - 0	18 - 9	16 - 10	24 - 5	23 - 2	23 - 7	22 - 5	19 - 8	18 - 8	10 - 0	10 - 5	10 - 9	3 - 7
6	20 - 3	20 - 0	18 - 0	26 - 7	25 - 0	25 - 8	24 - 5	21 - 7	20 - 6	9 - 8	10 - 0	10 - 5	3 - 6
6 1/2	21 - 5	21 - 2	19 - 2	28 - 8	26 - 6	27 - 9	26 - 2	23 - 5	22 - 3	9 - 4	9 - 9	10 - 0	3 - 4
6 3/4	22 - 0	21 - 9	19 - 9	29 - 8	27 - 3	28 - 9	26 - 11	24 - 4	23 - 1	9 - 2	9 - 7	9 - 11	3 - 3

Notes:

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 - Deck deflection under deck and concrete weights is limited to the lesser of L/180 and 0.75".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
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					single	multi							
22	30	2.19	40	0.645	0.406	0.406	0.283	0.289	10200	10421	4452	1008	1924
20	30	2.66	40	0.781	0.493	0.493	0.360	0.354	12958	12749	5380	1440	2741
18	30	3.51	40	1.030	0.650	0.650	0.485	0.473	17467	17024	7067	2414	4578
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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; φM_{n,p} and φM_{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

STAGGERED ENDS

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=20 psf SDL=20 psf	LL=100 psf SDL=20 psf	LL=100 psf SDL=40 psf	LL=20 psf; SDL=20 psf Interior	LL=20 psf; SDL=20 psf End	LL=100 psf; SDL=20 psf Interior	LL=100 psf; SDL=20 psf End	LL=100 psf; SDL=40 psf Interior	LL=100 psf; SDL=40 psf End	Single	Double	Triple	Cantilever
22 GA Deck													
4	14 - 10	11 - 11	11 - 5	20 - 0	18 - 3	13 - 7	12 - 11	13 - 0	12 - 4	7 - 3	8 - 3	8 - 6	2 - 9
5	17 - 5	13 - 11	13 - 5	25 - 1	21 - 6	17 - 8	16 - 9	16 - 10	16 - 0	6 - 7	7 - 7	7 - 9	2 - 7
5 1/4	18 - 0	14 - 2	13 - 8	26 - 3	22 - 3	18 - 7	17 - 1	17 - 10	16 - 5	6 - 6	7 - 5	7 - 8	2 - 7
5 1/2	18 - 8	14 - 5	13 - 11	27 - 5	23 - 0	19 - 7	17 - 4	18 - 9	16 - 8	6 - 5	7 - 4	7 - 6	2 - 6
6	19 - 4	14 - 10	14 - 4	28 - 1	23 - 5	21 - 5	17 - 11	20 - 6	17 - 3	6 - 2	7 - 0	7 - 3	2 - 5
6 1/2	19 - 7	15 - 3	14 - 9	28 - 7	23 - 9	22 - 1	18 - 4	21 - 3	17 - 9	6 - 0	6 - 10	7 - 0	2 - 4
6 3/4	19 - 9	15 - 5	14 - 11	28 - 9	23 - 11	22 - 4	18 - 7	21 - 7	17 - 11	5 - 11	6 - 8	6 - 11	2 - 4
20 GA Deck													
4	15 - 1	12 - 2	11 - 8	19 - 11	18 - 8	13 - 7	12 - 11	13 - 0	12 - 4	8 - 5	9 - 2	9 - 6	3 - 2
5	17 - 9	14 - 7	14 - 1	25 - 0	21 - 11	17 - 7	16 - 9	16 - 10	16 - 0	7 - 8	8 - 5	8 - 8	2 - 11
5 1/4	18 - 5	15 - 2	14 - 7	26 - 2	22 - 9	18 - 7	17 - 8	17 - 9	16 - 10	7 - 6	8 - 3	8 - 6	2 - 10
5 1/2	19 - 0	15 - 9	15 - 2	27 - 4	23 - 6	19 - 7	18 - 6	18 - 8	17 - 9	7 - 5	8 - 1	8 - 4	2 - 9
6	20 - 3	16 - 8	16 - 0	29 - 7	25 - 0	21 - 5	19 - 9	20 - 6	18 - 11	7 - 1	7 - 9	8 - 0	2 - 8
6 1/2	21 - 5	17 - 2	16 - 6	31 - 8	26 - 5	23 - 3	20 - 4	22 - 4	19 - 7	6 - 11	7 - 6	7 - 9	2 - 7
6 3/4	21 - 11	17 - 5	16 - 9	32 - 7	27 - 2	24 - 2	20 - 8	23 - 2	19 - 10	6 - 9	7 - 5	7 - 8	2 - 7
18 GA Deck													
4	15 - 7	12 - 7	12 - 1	19 - 10	18 - 10	13 - 7	12 - 11	12 - 11	12 - 3	10 - 0	10 - 6	10 - 11	3 - 8
5	18 - 4	15 - 0	14 - 6	24 - 11	22 - 7	17 - 7	16 - 8	16 - 10	15 - 11	9 - 2	9 - 8	10 - 0	3 - 4
5 1/4	18 - 11	15 - 8	15 - 1	26 - 1	23 - 5	18 - 7	17 - 7	17 - 9	16 - 10	9 - 0	9 - 6	9 - 9	3 - 3
5 1/2	19 - 7	16 - 3	15 - 8	27 - 3	24 - 2	19 - 6	18 - 6	18 - 8	17 - 9	8 - 9	9 - 3	9 - 7	3 - 2
6	20 - 10	17 - 5	16 - 10	29 - 6	25 - 9	21 - 5	20 - 3	20 - 6	19 - 5	8 - 6	9 - 0	9 - 3	3 - 1
6 1/2	22 - 0	18 - 6	17 - 11	31 - 8	27 - 3	23 - 2	22 - 0	22 - 3	21 - 1	8 - 2	8 - 8	8 - 11	3 - 0
6 3/4	22 - 7	19 - 1	18 - 6	32 - 8	27 - 11	24 - 1	22 - 10	23 - 2	21 - 11	8 - 1	8 - 6	8 - 10	2 - 11
16 GA Deck													
4	16 - 0	12 - 11	12 - 5	19 - 9	18 - 9	13 - 7	12 - 10	12 - 11	12 - 3	11 - 4	11 - 9	12 - 2	4 - 1
5	18 - 10	15 - 5	14 - 11	24 - 10	23 - 3	17 - 7	16 - 8	16 - 9	15 - 11	10 - 5	10 - 10	11 - 2	3 - 9
5 1/4	19 - 5	16 - 1	15 - 6	26 - 0	24 - 0	18 - 6	17 - 7	17 - 9	16 - 10	10 - 2	10 - 7	11 - 0	3 - 8
5 1/2	20 - 1	16 - 8	16 - 1	27 - 2	24 - 10	19 - 6	18 - 6	18 - 8	17 - 8	10 - 0	10 - 5	10 - 9	3 - 7
6	21 - 4	17 - 10	17 - 3	29 - 5	26 - 5	21 - 4	20 - 3	20 - 5	19 - 5	9 - 8	10 - 0	10 - 5	3 - 6
6 1/2	22 - 7	19 - 0	18 - 5	31 - 6	27 - 11	23 - 2	22 - 0	22 - 3	21 - 1	9 - 4	9 - 9	10 - 0	3 - 4
6 3/4	23 - 2	19 - 7	19 - 0	32 - 7	28 - 8	24 - 1	22 - 10	23 - 1	21 - 11	9 - 2	9 - 7	9 - 11	3 - 3

Notes:

- Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
- 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.
- 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".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
- The continuous slab values are based on deck sheets staggered over the interior supports.

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2" Versa-Dek® LS Composite (2.0VWLSC)

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)	φM _{n,p} (in-lb/ft)	φM _{n,n} (in-lb/ft)	φV _n (lb/ft)	φR _{de} (lb/ft)	φR _{bi} (lb/ft)
					single	multi							
22	30	2.19	40	0.645	0.406	0.406	0.283	0.289	10200	10421	4452	1008	1924
20	30	2.66	40	0.781	0.493	0.493	0.360	0.354	12958	12749	5380	1440	2741
18	30	3.51	40	1.030	0.650	0.650	0.485	0.473	17467	17024	7067	2414	4578
16	30	4.41	40	1.295	0.814	0.814	0.608	0.598	21894	21539	8842	3699	7001

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; φM_{n,p} and φM_{n,n} are design moment capacities of deck in positive and negative bending; φV_n is design shear strength of deck; φR_{de} and φR_{bi} are design web crippling strengths of deck for end and interior bearing.

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

STAGGERED ENDS

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																	
4000 PSI Lightweight Concrete (110 PCF)	4 33 PSF 1.11 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	22	7 - 11	9 - 1	9 - 4	3 - 0	258	178	125	88	62	43			141	84	63	47						
		20	9 - 3	10 - 0	10 - 4	3 - 6	280	195	137	98	69	48			100	84	70	53						
		18	11 - 1	11 - 6	11 - 11	4 - 0	317	222	157	113	81	58			100	83	70	59	47					
		16	12 - 1	12 - 11	13 - 4	4 - 5	352	247	176	127	92	66	47		99	83	69	58	49	41				
	4 1/2 38 PSF 1.27 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	22	7 - 7	8 - 9	9 - 0	2 - 11	351	255	182	131	94	68	47		143	121	96	73	56	41				
		20	8 - 10	9 - 7	9 - 11	3 - 4	395	277	198	143	104	75	54		143	121	102	82	62	47				
		18	10 - 7	11 - 1	11 - 5	3 - 10	445	313	225	164	120	88	64	45	142	120	102	87	74	56	43			
		16	11 - 9	12 - 4	12 - 9	4 - 3	493	348	251	184	135	100	73	53	142	119	101	86	73	63	50			
	5 42 PSF 1.42 cu.yd/(100sq.ft) 6x6 - W1.4 x W1.4	22	7 - 4	8 - 5	8 - 7	2 - 10	397	307	241	183	135	99	72	52	193	164	137	107	83	64	48			
		20	8 - 6	9 - 3	9 - 7	3 - 2	460	363	273	200	148	109	81	58	193	163	140	118	92	72	55			
		18	10 - 2	10 - 8	11 - 0	3 - 8	500	427	309	228	169	126	94	70	192	163	139	119	103	84	66			
		16	11 - 5	11 - 11	12 - 4	4 - 1	500	472	343	253	189	142	107	80	191	162	138	118	102	88	76			
	5 1/2 47 PSF 1.58 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	22	7 - 0	8 - 1	8 - 4	2 - 9	444	343	270	214	172	137	103	76	229	190	159	134	113	92	72			
		20	8 - 2	8 - 11	9 - 3	3 - 1	500	406	327	267	201	151	113	85	249	212	182	157	128	102	80			
		18	9 - 9	10 - 3	10 - 7	3 - 6	500	500	410	304	229	173	131	99	249	212	181	156	135	118	94			
		16	11 - 2	11 - 6	11 - 11	4 - 0	500	500	454	338	255	194	148	113	248	211	181	156	135	117	102			
	6 51 PSF 1.73 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	22	6 - 10	7 - 10	8 - 0	2 - 8	490	379	298	237	190	153	124	100	253	211	176	148	125	105	88			
		20	7 - 11	8 - 8	8 - 11	3 - 0	500	449	361	295	243	200	153	116	302	257	219	189	163	138	111			
		18	9 - 5	9 - 11	10 - 3	3 - 5	500	500	477	395	299	228	175	135	312	267	229	199	173	151	128			
		16	10 - 9	11 - 2	11 - 6	3 - 10	500	500	500	437	332	255	197	152	312	266	229	198	172	150	131			
	6 1/4 54 PSF 1.81 cu.yd/(100sq.ft) 6x6 - W2.0 x W2.0	22	6 - 9	7 - 8	7 - 11	2 - 8	500	397	312	248	199	161	130	105	265	221	185	155	131	110	93			
		20	7 - 9	8 - 6	8 - 9	2 - 11	500	470	378	309	255	212	175	134	317	269	230	198	171	148	128			
		18	9 - 3	9 - 9	10 - 1	3 - 4	500	500	500	420	338	259	200	155	347	297	255	221	193	169	148			
		16	10 - 7	10 - 11	11 - 4	3 - 9	500	500	500	493	375	289	224	174	346	296	255	221	192	168	147			
	6 1/2 56 PSF 1.88 cu.yd/(100sq.ft) 4x4 - W1.4 x W1.4	22	6 - 7	7 - 7	7 - 9	2 - 7	500	415	327	260	208	168	136	110	277	231	193	162	137	115	97			
		20	7 - 8	8 - 4	8 - 8	2 - 11	500	491	395	323	267	222	186	154	331	281	240	207	179	155	135			
		18	9 - 2	9 - 8	9 - 11	3 - 4	500	500	500	439	374	293	227	177	383	328	283	245	214	188	165			
		16	10 - 5	10 - 9	11 - 2	3 - 9	500	500	500	500	422	326	254	198	382	327	282	245	213	187	164			

Notes:

- Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
- 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.
- 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".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022. The slab weight has been subtracted from the service loads listed above.
- Uniform superimposed service loads were determined by dividing the superimposed LRFD design loads controlled by strength by the load factor of 1.6.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
- The continuous slab values are based on deck sheets staggered over the interior supports.

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

2" Versa-Dek® LS Composite (2.0VWLSC)

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)	φM _{n,p} (in-lb/ft)	φM _{n,n} (in-lb/ft)	φV _n (lb/ft)	φR _{be} (lb/ft)	φR _{bi} (lb/ft)
					single	multi							
22	30	2.19	40	0.645	0.406	0.406	0.283	0.289	10200	10421	4452	1008	1924
20	30	2.66	40	0.781	0.493	0.493	0.360	0.354	12958	12749	5380	1440	2741
18	30	3.51	40	1.030	0.650	0.650	0.485	0.473	17467	17024	7067	2414	4578
16	30	4.41	40	1.295	0.814	0.814	0.608	0.598	21894	21539	8842	3699	7001

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; φM_{n,p} and φM_{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

STAGGERED ENDS

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 Interior	LL=40 psf; SDL=20 psf End	LL=55 psf; SDL=10 psf Interior	LL=55 psf; SDL=10 psf End	LL=100 psf; SDL=15 psf Interior	LL=100 psf; SDL=15 psf End	Single	Double	Triple	Cantilever
22 GA Deck													
4	13 - 1	12 - 10	11 - 3	18 - 5	16 - 2	17 - 8	15 - 11	14 - 2	13 - 6	7 - 11	9 - 1	9 - 4	3 - 0
4 1/2	14 - 4	14 - 1	12 - 5	21 - 1	17 - 9	20 - 2	17 - 5	16 - 4	15 - 4	7 - 7	8 - 9	9 - 0	2 - 11
5	15 - 7	15 - 4	13 - 6	23 - 1	19 - 3	22 - 8	18 - 11	18 - 6	16 - 8	7 - 4	8 - 5	8 - 7	2 - 10
5 1/2	16 - 9	16 - 6	14 - 7	24 - 10	20 - 8	24 - 6	20 - 5	20 - 6	18 - 1	7 - 0	8 - 1	8 - 4	2 - 9
6	17 - 11	17 - 8	15 - 6	26 - 6	22 - 1	26 - 2	21 - 10	22 - 5	18 - 8	6 - 10	7 - 10	8 - 0	2 - 8
6 1/4	18 - 5	18 - 2	15 - 9	27 - 4	22 - 10	26 - 8	22 - 2	22 - 9	18 - 11	6 - 9	7 - 8	7 - 11	2 - 8
6 1/2	19 - 0	18 - 6	15 - 11	27 - 9	23 - 2	26 - 11	22 - 5	23 - 1	19 - 2	6 - 7	7 - 7	7 - 9	2 - 7
20 GA Deck													
4	13 - 5	13 - 2	11 - 6	18 - 5	16 - 7	17 - 7	16 - 3	14 - 2	13 - 5	9 - 3	10 - 0	10 - 4	3 - 6
4 1/2	14 - 8	14 - 5	12 - 8	21 - 0	18 - 2	20 - 2	17 - 10	16 - 4	15 - 6	8 - 10	9 - 7	9 - 11	3 - 4
5	15 - 11	15 - 8	13 - 10	23 - 7	19 - 8	22 - 8	19 - 4	18 - 5	17 - 1	8 - 6	9 - 3	9 - 7	3 - 2
5 1/2	17 - 1	16 - 10	14 - 11	25 - 5	21 - 2	25 - 0	20 - 10	20 - 6	18 - 6	8 - 2	8 - 11	9 - 3	3 - 1
6	18 - 3	18 - 0	16 - 1	27 - 1	22 - 7	26 - 9	22 - 3	22 - 6	19 - 10	7 - 11	8 - 8	8 - 11	3 - 0
6 1/4	18 - 10	18 - 7	16 - 7	28 - 0	23 - 4	27 - 7	23 - 0	23 - 6	20 - 6	7 - 9	8 - 6	8 - 9	2 - 11
6 1/2	19 - 5	19 - 2	17 - 1	28 - 10	24 - 0	28 - 5	23 - 8	24 - 6	21 - 2	7 - 8	8 - 4	8 - 8	2 - 11
18 GA Deck													
4	13 - 11	13 - 8	11 - 11	18 - 4	17 - 2	17 - 7	16 - 8	14 - 2	13 - 5	11 - 1	11 - 6	11 - 11	4 - 0
4 1/2	15 - 2	14 - 11	13 - 2	21 - 0	18 - 9	20 - 1	18 - 6	16 - 4	15 - 5	10 - 7	11 - 1	11 - 5	3 - 10
5	16 - 6	16 - 3	14 - 4	23 - 6	20 - 4	22 - 7	20 - 0	18 - 5	17 - 5	10 - 2	10 - 8	11 - 0	3 - 8
5 1/2	17 - 9	17 - 5	15 - 6	25 - 11	21 - 11	24 - 11	21 - 7	20 - 5	19 - 1	9 - 9	10 - 3	10 - 7	3 - 6
6	18 - 11	18 - 8	16 - 7	28 - 1	23 - 4	27 - 3	23 - 0	22 - 6	20 - 6	9 - 5	9 - 11	10 - 3	3 - 5
6 1/4	19 - 6	19 - 3	17 - 2	28 - 11	24 - 1	28 - 5	23 - 9	23 - 6	21 - 2	9 - 3	9 - 9	10 - 1	3 - 4
6 1/2	20 - 1	19 - 10	17 - 8	29 - 9	24 - 10	29 - 4	24 - 6	24 - 5	21 - 10	9 - 2	9 - 8	9 - 11	3 - 4
16 GA Deck													
4	14 - 3	14 - 1	12 - 4	18 - 3	17 - 4	17 - 6	16 - 7	14 - 1	13 - 5	12 - 1	12 - 11	13 - 4	4 - 5
4 1/2	15 - 8	15 - 5	13 - 6	20 - 11	19 - 4	20 - 0	19 - 0	16 - 3	15 - 5	11 - 9	12 - 4	12 - 9	4 - 3
5	16 - 11	16 - 8	14 - 9	23 - 5	20 - 11	22 - 6	20 - 7	18 - 4	17 - 5	11 - 5	11 - 11	12 - 4	4 - 1
5 1/2	18 - 3	17 - 11	15 - 11	25 - 10	22 - 6	24 - 10	22 - 2	20 - 5	19 - 4	11 - 2	11 - 6	11 - 11	4 - 0
6	19 - 5	19 - 2	17 - 1	28 - 2	24 - 0	27 - 2	23 - 8	22 - 5	21 - 1	10 - 9	11 - 2	11 - 6	3 - 10
6 1/4	20 - 1	19 - 9	17 - 8	29 - 4	24 - 9	28 - 3	24 - 5	23 - 5	21 - 10	10 - 7	10 - 11	11 - 4	3 - 9
6 1/2	20 - 8	20 - 4	18 - 3	30 - 6	25 - 6	29 - 5	25 - 2	24 - 5	22 - 6	10 - 5	10 - 9	11 - 2	3 - 9

Notes:

- 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".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
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DECK PROPERTIES

LRFD

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					single	multi							
22	30	2.19	40	0.645	0.406	0.406	0.283	0.289	10200	10421	4452	1008	1924
20	30	2.66	40	0.781	0.493	0.493	0.360	0.354	12958	12749	5380	1440	2741
18	30	3.51	40	1.030	0.650	0.650	0.485	0.473	17467	17024	7067	2414	4578
16	30	4.41	40	1.295	0.814	0.814	0.608	0.598	21894	21539	8842	3699	7001

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; φM_{n,p} and φM_{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

STAGGERED ENDS

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=20 psf SDL=20 psf	LL=100 psf SDL=20 psf	LL=100 psf SDL=40 psf	LL=20 psf; SDL=20 psf Interior	LL=20 psf; SDL=20 psf End	LL=100 psf; SDL=20 psf Interior	LL=100 psf; SDL=20 psf End	LL=100 psf; SDL=40 psf Interior	LL=100 psf; SDL=40 psf End	Single	Double	Triple	Cantilever
22 GA Deck													
4	14 - 2	11 - 1	10 - 8	21 - 0	17 - 6	14 - 0	13 - 3	13 - 4	12 - 8	7 - 11	9 - 1	9 - 4	3 - 0
4 1/2	15 - 5	12 - 3	11 - 9	22 - 11	19 - 1	16 - 2	15 - 2	15 - 4	14 - 7	7 - 7	8 - 9	9 - 0	2 - 11
5	16 - 8	13 - 5	12 - 10	24 - 9	20 - 8	18 - 3	16 - 6	17 - 4	15 - 11	7 - 4	8 - 5	8 - 7	2 - 10
5 1/2	17 - 11	14 - 6	13 - 11	26 - 7	22 - 2	20 - 3	17 - 10	19 - 4	17 - 2	7 - 0	8 - 1	8 - 4	2 - 9
6	19 - 1	15 - 4	14 - 9	28 - 4	23 - 7	22 - 2	18 - 6	21 - 3	17 - 9	6 - 10	7 - 10	8 - 0	2 - 8
6 1/4	19 - 8	15 - 7	15 - 0	29 - 2	24 - 3	22 - 6	18 - 9	21 - 8	18 - 0	6 - 9	7 - 8	7 - 11	2 - 8
6 1/2	20 - 3	15 - 9	15 - 2	30 - 0	25 - 0	22 - 10	19 - 0	21 - 11	18 - 4	6 - 7	7 - 7	7 - 9	2 - 7
20 GA Deck													
4	14 - 6	11 - 5	10 - 11	21 - 2	17 - 11	14 - 0	13 - 3	13 - 4	12 - 7	9 - 3	10 - 0	10 - 4	3 - 6
4 1/2	15 - 10	12 - 7	12 - 1	23 - 5	19 - 6	16 - 1	15 - 3	15 - 4	14 - 7	8 - 10	9 - 7	9 - 11	3 - 4
5	17 - 1	13 - 8	13 - 2	25 - 4	21 - 1	18 - 2	16 - 11	17 - 4	16 - 3	8 - 6	9 - 3	9 - 7	3 - 2
5 1/2	18 - 4	14 - 10	14 - 3	27 - 2	22 - 8	20 - 3	18 - 3	19 - 4	17 - 7	8 - 2	8 - 11	9 - 3	3 - 1
6	19 - 6	15 - 11	15 - 4	28 - 11	24 - 1	22 - 3	19 - 8	21 - 3	18 - 11	7 - 11	8 - 8	8 - 11	3 - 0
6 1/4	20 - 1	16 - 5	15 - 10	29 - 9	24 - 10	23 - 3	20 - 4	22 - 2	19 - 7	7 - 9	8 - 6	8 - 9	2 - 11
6 1/2	20 - 8	16 - 11	16 - 4	30 - 8	25 - 6	24 - 2	20 - 11	23 - 2	20 - 3	7 - 8	8 - 4	8 - 8	2 - 11
18 GA Deck													
4	15 - 0	11 - 10	11 - 4	21 - 1	18 - 6	13 - 11	13 - 3	13 - 3	12 - 7	11 - 1	11 - 6	11 - 11	4 - 0
4 1/2	16 - 4	13 - 0	12 - 6	23 - 11	20 - 2	16 - 1	15 - 3	15 - 4	14 - 6	10 - 7	11 - 1	11 - 5	3 - 10
5	17 - 8	14 - 2	13 - 8	26 - 2	21 - 10	18 - 2	17 - 3	17 - 4	16 - 5	10 - 2	10 - 8	11 - 0	3 - 8
5 1/2	18 - 11	15 - 4	14 - 9	28 - 1	23 - 5	20 - 2	18 - 11	19 - 3	18 - 3	9 - 9	10 - 3	10 - 7	3 - 6
6	20 - 2	16 - 5	15 - 10	29 - 11	24 - 11	22 - 2	20 - 4	21 - 2	19 - 7	9 - 5	9 - 11	10 - 3	3 - 5
6 1/4	20 - 9	17 - 0	16 - 5	30 - 9	25 - 8	23 - 2	21 - 0	22 - 2	20 - 3	9 - 3	9 - 9	10 - 1	3 - 4
6 1/2	21 - 4	17 - 6	16 - 11	31 - 8	26 - 5	24 - 2	21 - 8	23 - 1	20 - 11	9 - 2	9 - 8	9 - 11	3 - 4
16 GA Deck													
4	15 - 5	12 - 2	11 - 8	21 - 0	19 - 1	13 - 11	13 - 2	13 - 3	12 - 7	12 - 1	12 - 11	13 - 4	4 - 5
4 1/2	16 - 10	13 - 5	12 - 11	23 - 10	20 - 9	16 - 1	15 - 3	15 - 3	14 - 6	11 - 9	12 - 4	12 - 9	4 - 3
5	18 - 2	14 - 7	14 - 1	26 - 6	22 - 5	18 - 1	17 - 2	17 - 3	16 - 5	11 - 5	11 - 11	12 - 4	4 - 1
5 1/2	19 - 6	15 - 9	15 - 2	28 - 10	24 - 1	20 - 2	19 - 2	19 - 3	18 - 3	11 - 2	11 - 6	11 - 11	4 - 0
6	20 - 9	16 - 11	16 - 4	30 - 9	25 - 7	22 - 2	20 - 11	21 - 2	20 - 1	10 - 9	11 - 2	11 - 6	3 - 10
6 1/4	21 - 4	17 - 6	16 - 11	31 - 8	26 - 4	23 - 2	21 - 7	22 - 1	20 - 10	10 - 7	10 - 11	11 - 4	3 - 9
6 1/2	21 - 11	18 - 1	17 - 5	32 - 6	27 - 1	24 - 1	22 - 4	23 - 1	21 - 6	10 - 5	10 - 9	11 - 2	3 - 9

Notes:

- Deck section properties are calculated in accordance with AISI S100-16 (2020) w/S2-20.
- 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.
- 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".
- 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.
- Composite slab service stage calculations are based on ANSI/SDI SD-2022.
- The service stage spans are based on the instantaneous deflection limits of L/360 and L/360 under live load and total load, respectively.
- Long-term deflection has not been taken into consideration.
- Temperature and shrinkage reinforcement in accordance with ANSI/SDI SD-2022 shall be provided in the slab.
- Negative moment (top) reinforcement is required over supports of continuous spans.
- Continuous spans should be approximately equal with the span length difference not exceeding 20%.
- The continuous slab values are based on deck sheets staggered over the interior supports.

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