

SECTION PROPERTIES $f_y = 40 \text{ ksi}$

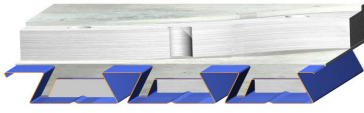
GAGE	I _p (in ⁴)	I _n (in ⁴)	S _p (in ³)	S _n (in ³)	Rbe			Rbi			V _a		
					(lb/ft)			(lb/ft)			(lb/ft)		
20	1.802	1.746	0.721	0.771	681			1437			3619		
18	2.489	2.375	1.042	1.118	1151			2390			6345		
16	3.190	2.375	1.414	1.448	1771			3638			8867		

45 PCF LIGHTWEIGHT INSULATING CONCRETE

h	5.5"			6.5"			7.5"			8.5"			9.5"			10.5"			
	GAGE	20	18	16	20	18	16	20	18	16	20	18	16	20	18	16	20	18	16
V _c	1.0	1.0	1.0	1.3	1.3	1.3	1.6	1.6	1.6	1.9	1.9	1.9	2.2	2.2	2.2	2.5	2.5	2.5	2.5
A _c	24.0	24.0	24.0	36.0	36.0	36.0	48.0	48.0	48.0	60.0	60.0	60.0	72.0	72.0	72.0	84.0	84.0	84.0	84.0
W _{cwet}	12.1	12.1	12.1	15.8	15.8	15.8	19.6	19.6	19.6	23.3	23.3	23.3	27.1	27.1	27.1	30.8	30.8	30.8	30.8
W _{cdry}	9.4	9.4	9.4	12.3	12.3	12.3	15.2	15.2	15.2	18.2	18.2	18.2	21.1	21.1	21.1	24.0	24.0	24.0	24.0

L	Load Comb.	SINGLE SPAN - MAXIMUM ALLOWABLE UNIFORM LIVE LOADS, (psf) - ASD																								
		7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"	15'-6"	16'-0"	16'-6"	17'-0"	17'-6"	18'-0"		
7'-0"	D+L (Strength)	182	315	447	179	312	444	176	309	441	173	306	438	170	303	435	167	300	432							
	D+L (Deflection)	348	476	609	345	473	606	342	470	603	339	467	600	336	464	597	333	461	594							
7'-6"	D+L (Strength)	169	283	387	166	280	384	163	277	381	160	274	379	157	271	376	154	268	373							
	D+L (Deflection)	280	384	492	277	381	489	274	379	486	271	376	483	269	373	481	266	370	478							
8'-0"	D+L (Strength)	158	247	339	155	244	336	152	241	333	149	238	330	146	235	327	143	232	324							
	D+L (Deflection)	229	314	403	226	311	400	223	308	397	220	306	394	217	303	391	214	300	388							
8'-6"	D+L (Strength)	147	217	298	144	214	295	141	211	292	138	208	289	135	205	287	132	202	284							
	D+L (Deflection)	188	260	333	186	257	331	183	254	328	180	251	325	177	248	322	174	245	319							
9'-0"	D+L (Strength)	130	192	264	127	189	261	124	186	259	121	183	256	118	180	253	115	178	250							
	D+L (Deflection)	157	217	279	154	214	276	151	211	273	148	208	270	145	205	267	142	202	264							
9'-6"	D+L (Strength)	115	171	236	112	168	233	109	165	230	106	162	227	103	159	224	100	156	221							
	D+L (Deflection)	131	182	235	128	179	232	126	176	229	123	173	226	120	170	223	117	168	220							
10'-0"	D+L (Strength)	103	153	211	100	150	208	97	147	205	94	144	203	91	141	200	88	138	197							
	D+L (Deflection)	111	154	199	108	151	196	105	148	193	102	145	190	99	143	187	96	140	184							
10'-6"	D+L (Strength)	92	137	190	89	135	187	86	132	184	83	129	182	80	126	179	77	123	176							
	D+L (Deflection)	94	131	170	91	128	167	88	125	164	85	123	161	82	120	158	79	117	155							
11'-0"	D+L (Strength)	83	124	172	80	121	169	77	118	166	74	115	163	71	112	160	68	109	157							
	D+L (Deflection)	80	112	146	77	109	143	74	107	140	71	104	137	68	101	134	66	98	131							
11'-6"	D+L (Strength)	74	112	156	72	109	153	69	106	150	66	104	147	63	101	144	60	98	142							
	D+L (Deflection)	69	97	126	66	94	123	63	91	120	60	88	117	57	85	114	54	82	111							
12'-0"	D+L (Strength)	67	102	142	64	99	139	62	96	136	59	93	133	56	90	130	53	87	128							
	D+L (Deflection)	59	83	109	56	80	106	53	78	103	50	75	100	47	72	97	44	69	94							
12'-6"	D+L (Strength)	61	93	130	58	90	127	55	87	124	52	84	121	49	81	118	47	78	115							
	D+L (Deflection)	51	72	95	48	69	92	45	66	89	42	63	86	39	61	83	36	58	80							
13'-0"	D+L (Strength)	56	85	119	53	82	116	50	79	113	47	76	110	44	73	107	41	70	104							
	D+L (Deflection)	44	63	82	41	60	80	38	57	77	35	54	74	32	51	71	29	48	68							
13'-6"	D+L (Strength)	51	78	109	48	75	106	45	72	103	42	69	100	39	66	98	36	63	95							
	D+L (Deflection)	37	54	72	35	52	69	32	49	66	29	46	63	26	43	60	23	40	57							
14'-0"	D+L (Strength)	46	71	100	43	68	98	40	65	95	37	63	92	34	60	89	32	57	86							
	D+L (Deflection)	32	47	63	29	44	60	26	42	57	24	39	54	21	36	51	18	33	48							
14'-6"	D+L (Strength)	42	66	93	39	63	90	36	60	87	33	57	84	30	54	81	27	51	78							
	D+L (Deflection)	28	41	55	25	38	52	22	35	49	19	33	46	16	30	44	13	27	41							
15'-0"	D+L (Strength)	39	60	86	36	57	83	33	54	80	30	52	77	27	49	74	24	46	71							
	D+L (Deflection)	24	36	48	21	33	46	18	30	43	15	27	40	12	24	37	9	21	34							
15'-6"	D+L (Strength)	35	56	79	32	53	76	29	50	73	26	47	70	23	44	68	20	41	65							
	D+L (Deflection)	19	30	41	16	27	38	13	24	35	10	21	32	7	18	29	4	15	26							
16'-0"	D+L (Strength)	32	51	73	29	48	71	26	46	68	23	43	65	20	41	62	17	38	59							
	D+L (Deflection)	16	25	34	13	22	31	10	19	28	7	16	25	4	13	22	1	10	19							
16'-6"	D+L (Strength)	28	47	68	25	45	65	22	43	62	19	41	59	16	39	56	13	36	53							
	D+L (Deflection)	20	28	38	17	25	35	14	23	33	11	20	30	8	17	27	5	14	24							
17'-0"	D+L (Strength)	24	44	63	21	41	60	18	39	57	15	37	55	12	35	53	10	33	51							
	D+L (Deflection)	16	23	33	13	21	31	10	18	28	7	15	25	4	12	22	1	10	19							
17'-6"	D+L (Strength)	20	39	59	17	36	56	14	34	54	11	32	52	9	30	50	7	29	49							
	D+L (Deflection)	13	19	29	10	16	26	7	13	23	4	11	21	2	9	19	0	7	17							
18'-0"	D+L (Strength)	18	35	55	15	33	53	12	31	51	9	29	49	6	27	47	4	26	46							
	D+L (Deflection)	11	16	26	8	13	23	5	10	20	3	8	18	1	6	16	0	5	15							

GAGE	MAXIMUM UNSHORED CONSTRUCTION CLEAR SPANS																	
	20	18	16	20	18	16	20	18	16	20	18	16	20	18	16	20	18	16
	1 Span	16'-8"	19'-9"	20'-7"	15'-7"	18'-7"	19'-8"	14'-8"	17'-7"									



SECTION PROPERTIES $f_y = 40 \text{ ksi}$

GAGE	I _p (in ⁴)	I _n (in ⁴)	S _p (in ³)	S _n (in ³)	Rbe			Rbi			V _a		
					(lb/ft)			(lb/ft)			(lb/ft)		
20	1.802	1.746	0.721	0.771	681			1437			3619		
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45 PCF LIGHTWEIGHT INSULATING CONCRETE

h	11.5"			12.5"			13.5"			14.5"			15.5"			16.5"			
	GAGE	20	18	16	20	18	16	20	18	16	20	18	16	20	18	16	20	18	16
V _c	2.8	2.8	2.8	3.2	3.2	3.2	3.5	3.5	3.5	3.8	3.8	3.8	4.1	4.1	4.1	4.4	4.4	4.4	4.4
Ac	96.0	96.0	96.0	108.0	108.0	108.0	120.0	120.0	120.0	132.0	132.0	132.0	144.0	144.0	144.0	156.0	156.0	156.0	156.0
W _{c,wet}	34.6	34.6	34.6	38.3	38.3	38.3	42.1	42.1	42.1	45.8	45.8	45.8	49.6	49.6	49.6	53.3	53.3	53.3	53.3
W _{c,dry}	26.9	26.9	26.9	29.8	29.8	29.8	32.7	32.7	32.7	35.7	35.7	35.7	38.6	38.6	38.6	41.5	41.5	41.5	41.5

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		5'-0"			5'-6"			6'-0"			6'-6"			7'-0"			7'-6"			8'-0"			8'-6"			9'-0"			9'-6"			10'-0"			10'-6"			11'-0"			11'-6"			12'-0"			12'-6"			13'-0"			13'-6"			14'-0"			14'-6"			15'-0"			15'-6"			16'-0"																																																																																																																																																																																																																																																																																																																																																																																																							
5'-0"	D+L (Strength)	242	429	676	239	426	673	236	423	670	234	420	667	231	417	664	228	414	662	5'-6"	D+L (Strength)	218	387	612	215	384	609	212	381	606	209	378	603	206	376	600	203	373	597	6'-0"	D+L (Strength)	197	352	558	194	349	555	191	346	552	188	344	549	185	341	546	182	338	543	6'-6"	D+L (Strength)	179	323	503	177	320	500	174	317	497	171	314	494	168	311	491	165	308	488	7'-0"	D+L (Strength)	164	298	429	162	295	426	159	292	423	156	289	421	153	286	418	150	283	415	7'-6"	D+L (Strength)	151	265	370	149	262	367	146	259	364	143	256	361	140	254	358	137	251	355	8'-0"	D+L (Strength)	140	229	321	137	226	318	134	223	315	131	221	312	128	218	309	126	215	306	8'-6"	D+L (Strength)	129	200	281	126	197	278	124	194	275	121	191	272	118	188	269	115	185	266	9'-0"	D+L (Strength)	112	175	247	109	172	244	106	169	241	103	166	238	100	163	235	98	160	232	9'-6"	D+L (Strength)	98	154	218	95	151	215	92	148	212	89	145	209	86	142	207	83	139	204	10'-0"	D+L (Strength)	85	135	194	82	133	191	79	130	188	76	127	185	73	124	182	71	121	179	10'-6"	D+L (Strength)	74	120	173	71	117	170	69	114	167	66	111	164	63	108	161	60	105	158	11'-0"	D+L (Strength)	65	107	155	62	104	152	59	101	149	56	98	146	53	95	143	51	92	140	11'-6"	D+L (Strength)	57	95	139	54	92	136	51	89	133	48	86	130	45	83	127	42	80	124	12'-0"	D+L (Strength)	50	85	125	47	82	122	44	79	119	41	76	116	38	73	113	35	70	110	12'-6"	D+L (Strength)	44	75	112	41	73	109	38	70	107	35	67	104	32	64	101	29	61	98	13'-0"	D+L (Strength)	38	67	101	35	64	99	32	62	96	29	59	93	26	56	90	23	53	87	13'-6"	D+L (Strength)	33	60	92	30	57	89	27	54	86	24	51	83	21	48	80	18	45	84	14'-0"	D+L (Strength)	29	54	83	27	51	80	24	48	77	21	45	74	18	42	71	15	39	68	14'-6"	D+L (Strength)		48	75		45	72		42	69		39	66		36	63		33	61	15'-0"	D+L (Strength)		43	68		40	65		37	62		34	59		31	56		28	54	15'-6"	D+L (Strength)		38	61		35	58		32	55		29	52		26	49		23	46	16'-0"	D+L (Strength)		33	55		30	52		27	49		24	46		21	43		18	40

GAGE	MAXIMUM UNSHORED CONSTRUCTION CLEAR SPANS																	
	20	18	16	20	18	16	20	18	16	20	18	16	20	18	16	20	18	16
1 Span	11'-11"	14'-9"	16'-9"	11'-6"	14'-2"	16'-5"	11'-1"	13'-7"	16'-1"	10'-8"	13'-2"	15'-9"	10'-4"	12'-9"	15'-6"	10'-1"	12'-4"	15'-3"
Cantilever	5'-10"	7'-6"	8'-1"	5'-8"	7'-3"	7'-10"	5'-6"	7'-1"	7'-8"	5'-5"	6'-10"	7'-5"	5'-3"	6'-8"	7'-3"	5'-2"	6'-6"	7'-1"

5'-0"	D+L (Strength)	242
	D+L (Deflection)	958

← Maximum allowable live load (psf) based on strength
 ← Maximum allowable live load (psf) based on deflection
 The deflection limit (service phase) is the smaller of L/240 or 0.75"

- I_p** Moment of inertia of deck for positive bending
- I_n** Moment of inertia of deck for negative bending
- S_p** Section modulus of deck for positive bending
- S_n** Section modulus of deck for negative bending
- L** Span length; clear distance of deck between supports
- h** Total height of concrete slab (bottom of deck to top of slab)

- W_c** Dry weight of concrete (neglecting deflection) (psf)
- Ac** Gross area of concrete (in²)
- V_c** Volume of concrete (cu.yd per 100 sq.ft of deck)
- f_y** 40 ksi (for determining maximum loads)
- R_{be}** Allowable web crippling for exterior reaction with 2" bearing
- R_{bi}** Allowable web crippling for interior reaction with 4" bearing

The section property table is based on 2001 AISI's Cold-Formed Steel Design Manual, 2004 Supplement.
 The live loads and unshored clear spans are based on SDI's Insulating Concrete Metal Deck Design Handbook
 The deflection limit for the maximum unshored construction spans is the smaller of L/180 or 0.75".
 Deck length over 45' -0" require inquiry and special accommodations. Please contact the Metal-Dek Group[®] for further information.