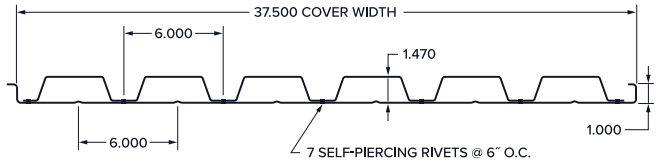
1.5" Composite Floor Deck Cellular (1.5CFDC)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	37.5	3.41
20/18	0.0358/0.0474		3.91
18/20	0.0474/0.0358		4.01
18/18	0.0474/0.0474		4.51



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	1.002	0.387	0.387	0.371	0.323	0.284	0.383	6793	9178	2156	917	1621
20/18	40	1.149	0.421	0.421	0.404	0.392	0.291	0.409	6976	9803	2156	917	1621
18/20	40	1.178	0.497	0.497	0.490	0.393	0.419	0.451	10032	10813	2841	1531	2746
18/18	40	1.325	0.544	0.544	0.536	0.467	0.430	0.524	10290	12559	2841	1531	2746

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
3 1/2	20/20	23	7 - 2	8 - 3	8 - 7	2 - 10	0.211
	20/18		7 - 2	8 - 3	8 - 7	2 - 10	
	18/20		11 - 1	9 - 6	9 - 10	3 - 8	
	18/18		11 - 2	9 - 8	9 - 10	3 - 8	
4	20/20	28	6 - 10	8 - 1	8 - 2	2 - 8	0.252
	20/18		6 - 10	8 - 1	8 - 2	2 - 8	
	18/20		10 - 3	9 - 6	9 - 10	3 - 5	
	18/18		10 - 7	9 - 6	9 - 10	3 - 6	
4 1/2	20/20	32	6 - 7	7 - 9	7 - 10	2 - 7	0.294
	20/18		6 - 7	7 - 9	7 - 10	2 - 7	
	18/20		9 - 0	9 - 3	9 - 6	3 - 2	
	18/18		9 - 10	9 - 3	9 - 6	3 - 3	
5	20/20	37	6 - 4	7 - 5	7 - 6	2 - 6	0.336
	20/18		6 - 4	7 - 5	7 - 6	2 - 6	
	18/20		8 - 0	8 - 11	9 - 2	3 - 0	
	18/18		8 - 9	8 - 11	9 - 2	3 - 0	
5 1/2	20/20	42	6 - 1	7 - 2	7 - 3	2 - 5	0.377
	20/18		6 - 1	7 - 2	7 - 3	2 - 5	
	18/20		7 - 5	8 - 7	8 - 9	2 - 11	
	18/18		7 - 10	8 - 7	8 - 9	2 - 11	
6	20/20	46	5 - 11	6 - 11	7 - 0	2 - 4	0.419
	20/18		5 - 11	6 - 11	7 - 0	2 - 4	
	18/20		7 - 2	8 - 3	8 - 6	2 - 10	
	18/18		7 - 2	8 - 3	8 - 6	2 - 10	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 1 1/2" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 3" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight Concrete (yc = 110 pcf, f'c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	10 - 0	11 - 0		
3 1/2	20/20	193	160	134	114	97	83	71	52	39	6x6 - W1.4xW1.4	0.028
	20/18	192	160	134	113	96	82	70	52	38		
	18/20	181	150	126	106	90	77	65	48	35		
	18/18	180	150	125	106	89	76	65	47	34		
4	20/20	247	206	173	147	125	107	92	69	51	6x6 - W1.4xW1.4	0.028
	20/18	246	205	172	146	125	107	92	68	51		
	18/20	233	194	163	138	117	100	86	64	47		
	18/18	233	193	162	137	117	100	85	63	47		
4 1/2	20/20	304	254	214	182	155	133	115	86	65	6x6 - W1.4xW1.4	0.028
	20/18	303	253	213	181	155	133	115	86	65		
	18/20	288	240	202	172	146	126	108	81	60		
	18/18	288	240	202	171	146	125	108	80	60		
5	20/20	363	304	256	218	187	161	139	105	80	6x6 - W2.0xW2.0	0.040
	20/18	363	303	256	217	186	160	139	104	79		
	18/20	346	289	244	207	177	152	131	99	74		
	18/18	346	289	243	206	176	152	131	98	74		
5 1/2	20/20	424	355	300	255	219	189	164	124	95	6x6 - W2.0xW2.0	0.040
	20/18	424	354	299	255	219	188	163	123	94		
	18/20	406	339	286	243	208	179	155	117	89		
	18/18	406	339	286	243	208	179	155	117	88		
6	20/20	487	407	344	294	252	218	189	143	110	4x4 - W1.4xW1.4	0.042
	20/18	486	407	344	293	252	217	188	143	109		
	18/20	467	391	330	281	241	208	180	136	104		
	18/18	467	390	329	280	240	207	179	136	103		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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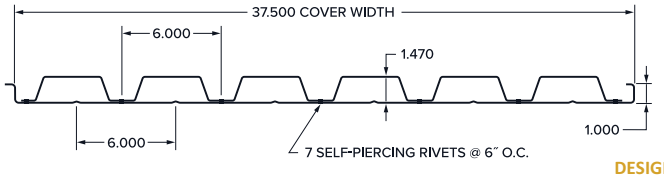
1.5" Composite Floor Deck Cellular (1.5CFDC)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	37.5	5.04
16/18	0.0598/0.0474		5.15
16/16	0.0598/0.0598		5.68



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.482	0.586	0.586	0.577	0.550	0.439	0.547	10522	13104	2841	1531	2746
16/18	40	1.513	0.658	0.658	0.657	0.544	0.592	0.643	14189	15398	3566	2338	4234
16/16	40	1.670	0.711	0.711	0.710	0.636	0.606	0.671	14504	16060	3566	2338	4234

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
3 1/2	18/16	23	11 - 3	10 - 4	10 - 6	3 - 9	0.211
	16/18		12 - 3	12 - 10	13 - 0	4 - 4	
	16/16		12 - 5	13 - 7	13 - 9	4 - 7	
4	18/16	28	10 - 8	10 - 1	10 - 6	3 - 6	0.252
	16/18		11 - 10	12 - 10	13 - 0	4 - 4	
	16/16		12 - 0	13 - 7	13 - 9	4 - 7	
4 1/2	18/16	32	10 - 3	9 - 3	10 - 0	3 - 5	0.294
	16/18		11 - 5	12 - 4	12 - 6	4 - 2	
	16/16		11 - 7	13 - 0	13 - 2	4 - 4	
5	18/16	37	9 - 10	8 - 11	9 - 3	3 - 3	0.336
	16/18		11 - 1	11 - 2	11 - 7	3 - 10	
	16/16		11 - 3	12 - 1	12 - 2	4 - 0	
5 1/2	18/16	42	8 - 10	8 - 7	8 - 9	2 - 11	0.377
	16/18		10 - 8	10 - 1	10 - 9	3 - 7	
	16/16		10 - 11	10 - 11	11 - 4	3 - 9	
6	18/16	46	8 - 1	8 - 3	8 - 6	2 - 10	0.419
	16/18		10 - 4	9 - 3	10 - 1	3 - 5	
	16/16		10 - 7	9 - 11	10 - 8	3 - 6	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 1 1/2" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 3" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight (γ_c = 110 pcf, f'_c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	10 - 0	11 - 0		
3 1/2	18/16	180	149	125	105	89	75	64	47	34	6x6 - W1.4xW1.4	0.028
	16/18	170	141	117	99	83	71	60	43	31		
	16/16	170	140	117	98	83	70	59	43	30		
4	18/16	232	193	162	137	116	99	85	63	46	6x6 - W1.4xW1.4	0.028
	16/18	220	183	153	129	110	93	80	58	42		
	16/16	220	182	153	129	109	93	79	58	42		
4 1/2	18/16	287	239	201	171	145	124	107	80	59	6x6 - W1.4xW1.4	0.028
	16/18	274	228	191	162	138	118	101	75	55		
	16/16	274	227	191	161	137	117	100	74	55		
5	18/16	345	288	243	206	176	151	130	97	73	6x6 - W2.0xW2.0	0.040
	16/18	331	275	232	196	168	144	124	92	69		
	16/16	330	275	231	196	167	143	123	92	68		
5 1/2	18/16	405	338	285	242	207	178	154	116	88	6x6 - W2.0xW2.0	0.040
	16/18	389	324	273	232	198	170	147	110	83		
	16/16	388	324	273	232	198	170	146	110	82		
6	18/16	466	389	329	280	240	207	179	135	103	4x4 - W1.4xW1.4	0.042
	16/18	449	375	316	269	230	198	171	129	97		
	16/16	448	374	315	268	229	197	170	128	97		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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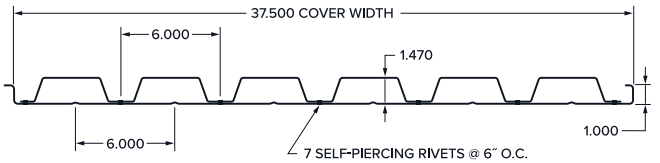
1.5" Composite Floor Deck Cellular (1.5CFDC)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0474	37.5	3.41
20/18	0.0358/0.0474		3.91
18/20	0.0474/0.0358		4.01
18/18	0.0474/0.0474		4.51



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REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	1.002	0.387	0.387	0.371	0.323	0.284	0.383	6793	9178	2156	917	1621
20/18	40	1.149	0.421	0.421	0.404	0.392	0.291	0.409	6976	9803	2156	917	1621
18/20	40	1.178	0.497	0.497	0.490	0.393	0.419	0.451	10032	10813	2841	1531	2746
18/18	40	1.325	0.544	0.544	0.536	0.467	0.430	0.524	10290	12559	2841	1531	2746

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
3 1/2	20/20	31	6 - 8	7 - 10	7 - 11	2 - 7	0.211
	20/18		6 - 8	7 - 10	7 - 11	2 - 7	
	18/20		9 - 5	9 - 5	9 - 8	3 - 2	
	18/18		10 - 4	9 - 5	9 - 9	3 - 5	
4	20/20	37	6 - 4	7 - 5	7 - 6	2 - 6	0.252
	20/18		6 - 4	7 - 5	7 - 6	2 - 6	
	18/20		8 - 0	8 - 11	9 - 2	3 - 0	
	18/18		8 - 10	8 - 11	9 - 2	3 - 0	
4 1/2	20/20	43	6 - 1	7 - 1	7 - 2	2 - 4	0.294
	20/18		6 - 1	7 - 1	7 - 2	2 - 4	
	18/20		7 - 4	8 - 6	8 - 9	2 - 11	
	18/18		7 - 8	8 - 6	8 - 9	2 - 11	
5	20/20	49	5 - 10	6 - 10	6 - 11	2 - 3	0.336
	20/18		5 - 10	6 - 10	6 - 11	2 - 3	
	18/20		7 - 1	8 - 2	8 - 4	2 - 9	
	18/18		7 - 1	8 - 2	8 - 4	2 - 9	
5 1/2	20/20	55	5 - 7	6 - 6	6 - 7	2 - 2	0.377
	20/18		5 - 7	6 - 6	6 - 7	2 - 2	
	18/20		6 - 9	7 - 10	8 - 0	2 - 8	
	18/18		6 - 9	7 - 10	8 - 0	2 - 8	
6	20/20	61	5 - 5	6 - 4	6 - 5	2 - 1	0.419
	20/18		5 - 5	6 - 4	6 - 5	2 - 1	
	18/20		6 - 6	7 - 6	7 - 8	2 - 6	
	18/18		6 - 6	7 - 6	7 - 8	2 - 6	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 1 1/2" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 3" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Normal-Weight Concrete (y_c = 145 pcf, f'_c = 3000 psi, n = 9)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	10 - 0	11 - 0		
3 1/2	20/20	199	164	137	115	97	82	69	50	35	6x6 - W1.4xW1.4	0.028
	20/18	198	164	137	114	96	82	69	49	35		
	18/20	188	155	129	108	91	76	64	46	32		
	18/18	188	155	129	107	90	76	64	45	31		
4	20/20	253	210	176	148	125	106	90	66	47	6x6 - W1.4xW1.4	0.028
	20/18	253	210	175	147	125	106	90	65	47		
	18/20	241	199	166	140	118	100	85	61	43		
	18/18	241	199	166	139	117	99	84	60	43		
4 1/2	20/20	311	258	216	182	155	132	113	82	60	6x6 - W1.4xW1.4	0.028
	20/18	310	258	216	182	154	131	112	82	60		
	18/20	297	246	206	173	147	125	106	77	56		
	18/18	297	246	205	173	146	124	106	77	55		
5	20/20	370	308	258	218	186	158	136	100	74	6x6 - W2.0xW2.0	0.040
	20/18	370	307	258	218	185	158	135	100	73		
	18/20	355	295	247	208	177	151	129	94	69		
	18/18	355	294	247	208	176	150	128	94	68		
5 1/2	20/20	431	359	302	255	217	186	159	118	88	6x6 - W2.0xW2.0	0.040
	20/18	431	358	301	255	217	185	159	118	87		
	18/20	415	345	289	245	208	177	152	112	82		
	18/18	415	345	289	244	207	177	151	111	82		
6	20/20	493	411	346	293	249	214	184	137	102	4x4 - W1.4xW1.4	0.042
	20/18	493	410	345	292	249	213	183	136	101		
	18/20	476	396	333	281	239	205	176	130	96		
	18/18	476	396	332	281	239	204	175	129	96		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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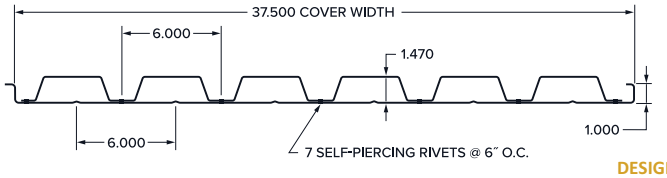
1.5" Composite Floor Deck Cellular (1.5CFDC)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	37.5	5.04
16/18	0.0598/0.0474		5.15
16/16	0.0598/0.0598		5.68



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ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.482	0.586	0.586	0.577	0.550	0.439	0.547	10522	13104	2841	1531	2746
16/18	40	1.513	0.658	0.658	0.657	0.544	0.592	0.643	14189	15398	3566	2338	4234
16/16	40	1.670	0.711	0.711	0.710	0.636	0.606	0.671	14504	16060	3566	2338	4234

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
3 1/2	18/16	31	10 - 5	9 - 5	10 - 4	3 - 5	0.211
	16/18		11 - 7	12 - 9	12 - 11	4 - 3	
	16/16		11 - 9	13 - 5	13 - 7	4 - 6	
4	18/16	37	9 - 10	8 - 11	9 - 4	3 - 3	0.252
	16/18		11 - 1	11 - 3	11 - 8	3 - 10	
	16/16		11 - 4	12 - 1	12 - 3	4 - 1	
4 1/2	18/16	43	8 - 8	8 - 6	8 - 9	2 - 11	0.294
	16/18		10 - 7	9 - 10	10 - 7	3 - 6	
	16/16		10 - 10	10 - 8	11 - 2	3 - 8	
5	18/16	49	7 - 8	8 - 2	8 - 4	2 - 9	0.336
	16/18		10 - 2	9 - 1	9 - 9	3 - 4	
	16/16		10 - 5	9 - 6	10 - 3	3 - 5	
5 1/2	18/16	55	6 - 11	7 - 10	8 - 0	2 - 8	0.377
	16/18		9 - 10	8 - 9	9 - 0	3 - 3	
	16/16		10 - 1	8 - 9	9 - 6	3 - 4	
6	18/16	61	6 - 6	7 - 6	7 - 8	2 - 6	0.419
	16/18		8 - 11	8 - 5	8 - 8	2 - 11	
	16/16		9 - 8	8 - 5	8 - 10	3 - 2	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 1 1/2" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 3" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Normal-Weight (yc = 145 pcf, f'c = 3000 psi, n = 9)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	10 - 0	11 - 0		
3 1/2	18/16	187	154	128	107	90	75	63	45	31	6x6 - W1.4xW1.4	0.028
	16/18	178	146	121	101	84	71	59	41	28		
	16/16	177	146	121	100	84	70	59	41	27		
4	18/16	240	198	165	139	117	99	84	60	42	6x6 - W1.4xW1.4	0.028
	16/18	229	189	157	132	111	93	79	56	39		
	16/16	229	189	157	131	110	93	78	55	38		
4 1/2	18/16	296	245	205	172	146	124	105	76	55	6x6 - W1.4xW1.4	0.028
	16/18	284	235	196	165	139	118	100	72	51		
	16/16	283	234	195	164	138	117	99	71	50		
5	18/16	354	294	246	207	176	150	128	93	68	6x6 - W2.0xW2.0	0.040
	16/18	341	283	236	199	168	143	122	88	64		
	16/16	340	282	236	198	168	142	121	88	63		
5 1/2	18/16	414	344	288	243	207	176	151	111	81	6x6 - W2.0xW2.0	0.040
	16/18	400	332	278	234	199	169	144	106	77		
	16/16	399	331	277	234	198	169	144	105	76		
6	18/16	475	395	332	280	238	204	175	129	95	4x4 - W1.4xW1.4	0.042
	16/18	459	382	320	270	230	196	168	123	90		
	16/16	459	381	320	270	229	195	167	123	90		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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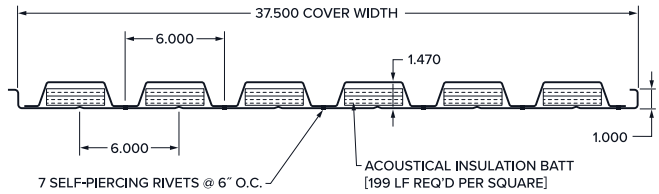
1.5" Composite Floor Deck Cellular Acoustical (1.5CFDCA)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	37.5	3.28
20/18	0.0358/0.0474		3.74
18/20	0.0474/0.0358		3.88
18/18	0.0474/0.0474		4.34



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	0.919	0.364	0.364	0.350	0.323	0.280	0.383	6698	9178	2156	917	1621
20/18	40	1.039	0.397	0.397	0.381	0.378	0.287	0.409	6884	9787	2156	917	1621
18/20	40	1.095	0.466	0.466	0.460	0.393	0.413	0.451	9881	10813	2841	1531	2746
18/18	40	1.215	0.510	0.510	0.503	0.455	0.423	0.524	10142	12554	2841	1531	2746

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in) Single	Double	Triple	Cantilever	Concrete Volume (ft^3/ft^2)
3 1/2	20/20	23	7 - 2	8 - 3	8 - 7	2 - 10	0.211
	20/18		7 - 3	8 - 3	8 - 7	2 - 10	
	18/20		11 - 0	10 - 0	10 - 1	3 - 8	
	18/18		11 - 1	10 - 4	10 - 5	3 - 8	
4	20/20	28	6 - 10	8 - 1	8 - 2	2 - 8	0.252
	20/18		6 - 10	8 - 1	8 - 2	2 - 8	
	18/20		10 - 5	9 - 6	10 - 1	3 - 5	
	18/18		10 - 6	10 - 0	10 - 5	3 - 6	
4 1/2	20/20	32	6 - 7	7 - 9	7 - 10	2 - 7	0.294
	20/18		6 - 7	7 - 9	7 - 10	2 - 7	
	18/20		9 - 11	9 - 3	9 - 8	3 - 3	
	18/18		10 - 1	9 - 3	10 - 0	3 - 4	
5	20/20	37	6 - 4	7 - 5	7 - 6	2 - 6	0.336
	20/18		6 - 4	7 - 5	7 - 6	2 - 6	
	18/20		9 - 2	8 - 11	9 - 2	3 - 0	
	18/18		9 - 8	8 - 11	9 - 3	3 - 2	
5 1/2	20/20	42	6 - 1	7 - 2	7 - 3	2 - 5	0.377
	20/18		6 - 1	7 - 2	7 - 3	2 - 5	
	18/20		8 - 3	8 - 7	8 - 9	2 - 11	
	18/18		8 - 9	8 - 7	8 - 9	2 - 11	
6	20/20	46	5 - 11	6 - 11	7 - 0	2 - 4	0.419
	20/18		5 - 11	6 - 11	7 - 0	2 - 4	
	18/20		7 - 6	8 - 3	8 - 6	2 - 10	
	18/18		8 - 0	8 - 3	8 - 6	2 - 10	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 1 1/2" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 3" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight Concrete (yc = 110 pcf, f'c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in) 6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	10 - 0	11 - 0	Recommended Welded Wire Fabric	Wire Area (in^2/ft)
3 1/2	20/20	193	160	135	114	97	83	71	52	39	6x6 - W1.4xW1.4	0.028
	20/18	192	160	134	113	96	82	71	52	38		
	18/20	181	150	126	106	90	77	65	48	35		
	18/18	181	150	125	106	90	76	65	47	34		
4	20/20	247	206	173	147	125	107	92	69	52	6x6 - W1.4xW1.4	0.028
	20/18	246	205	173	146	125	107	92	69	51		
	18/20	233	194	163	138	117	100	86	64	47		
	18/18	233	194	162	137	117	100	86	63	47		
4 1/2	20/20	304	254	214	182	155	134	115	87	65	6x6 - W1.4xW1.4	0.028
	20/18	303	253	213	181	155	133	115	86	65		
	18/20	289	241	202	172	147	126	108	81	60		
	18/18	288	240	202	171	146	125	108	80	60		
5	20/20	363	304	256	218	187	161	139	105	80	6x6 - W2.0xW2.0	0.040
	20/18	363	303	256	218	186	160	139	105	79		
	18/20	347	289	244	207	177	152	131	99	74		
	18/18	346	289	243	207	177	152	131	98	74		
5 1/2	20/20	424	355	300	255	219	189	164	124	95	6x6 - W2.0xW2.0	0.040
	20/18	424	355	299	255	219	189	163	124	94		
	18/20	406	339	286	244	209	180	155	117	89		
	18/18	406	339	286	243	208	179	155	117	89		
6	20/20	487	407	344	294	252	218	189	144	110	4x4 - W1.4xW1.4	0.042
	20/18	486	407	344	293	252	217	188	143	110		
	18/20	467	391	330	281	241	208	180	136	104		
	18/18	467	390	329	281	240	207	179	136	103		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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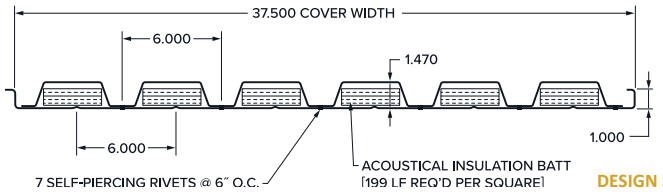
1.5" Composite Floor Deck Cellular Acoustical (1.5CFDCA)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	37.5	4.83
16/18	0.0598/0.0474		4.97
16/16	0.0598/0.0598		5.46



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REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.343	0.551	0.551	0.543	0.521	0.433	0.543	10377	13002	2841	1531	2746
16/18	40	1.403	0.616	0.616	0.616	0.533	0.583	0.643	13969	15398	3566	2338	4234
16/16	40	1.531	0.666	0.666	0.665	0.606	0.596	0.666	14287	15959	3566	2338	4234

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
3 1/2	18/16	23	11 - 2	10 - 11	11 - 0	3 - 8	0.211
	16/18		12 - 1	13 - 7	14 - 0	4 - 8	
	16/16		12 - 3	13 - 10	14 - 4	4 - 9	
4	18/16	28	10 - 8	10 - 11	11 - 0	3 - 8	0.252
	16/18		11 - 7	13 - 7	13 - 8	4 - 6	
	16/16		11 - 10	13 - 10	13 - 10	4 - 7	
4 1/2	18/16	32	10 - 2	9 - 8	10 - 7	3 - 6	0.294
	16/18		11 - 3	13 - 3	13 - 2	4 - 5	
	16/16		11 - 5	13 - 6	13 - 5	4 - 6	
5	18/16	37	9 - 9	8 - 11	9 - 10	3 - 3	0.336
	16/18		10 - 10	12 - 3	12 - 5	4 - 1	
	16/16		11 - 1	12 - 10	13 - 0	4 - 4	
5 1/2	18/16	42	9 - 4	8 - 7	9 - 1	3 - 1	0.377
	16/18		10 - 6	11 - 2	11 - 7	3 - 10	
	16/16		10 - 8	11 - 11	12 - 1	4 - 0	
6	18/16	46	8 - 10	8 - 3	8 - 6	2 - 11	0.419
	16/18		10 - 2	10 - 2	10 - 10	3 - 7	
	16/16		10 - 4	10 - 10	11 - 4	3 - 9	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 1 1/2" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 3" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight (y_c = 110 pcf, f'_c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	10 - 0	11 - 0		
3 1/2	18/16	180	149	125	105	89	76	65	47	34	6x6 - W1.4xW1.4	0.028
	16/18	170	141	118	99	83	71	60	43	31		
	16/16	170	140	117	98	83	70	60	43	30		
4	18/16	232	193	162	137	116	99	85	63	46	6x6 - W1.4xW1.4	0.028
	16/18	220	183	153	129	110	93	80	58	43		
	16/16	220	182	153	129	109	93	79	58	42		
4 1/2	18/16	288	240	201	171	146	125	107	80	59	6x6 - W1.4xW1.4	0.028
	16/18	274	228	192	162	138	118	101	75	55		
	16/16	274	228	191	162	137	117	101	74	55		
5	18/16	346	288	243	206	176	151	130	98	73	6x6 - W2.0xW2.0	0.040
	16/18	331	276	232	197	168	144	124	92	69		
	16/16	330	275	231	196	167	143	123	92	68		
5 1/2	18/16	405	338	285	243	208	179	154	116	88	6x6 - W2.0xW2.0	0.040
	16/18	389	325	274	232	199	171	147	110	83		
	16/16	389	324	273	232	198	170	147	110	83		
6	18/16	466	390	329	280	240	207	179	135	103	4x4 - W1.4xW1.4	0.042
	16/18	449	375	316	269	230	198	171	129	98		
	16/16	448	374	316	268	230	198	171	128	97		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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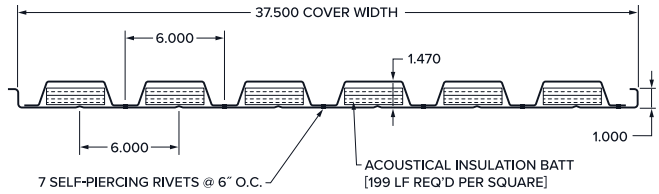
1.5" Composite Floor Deck Cellular Acoustical (1.5CFDCA)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	37.5	3.28
20/18	0.0358/0.0474		3.74
18/20	0.0474/0.0358		3.88
18/18	0.0474/0.0474		4.34



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REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	0.919	0.364	0.364	0.350	0.323	0.280	0.383	6698	9178	2156	917	1621
20/18	40	1.039	0.397	0.397	0.381	0.378	0.287	0.409	6884	9787	2156	917	1621
18/20	40	1.095	0.466	0.466	0.460	0.393	0.413	0.451	9881	10813	2841	1531	2746
18/18	40	1.215	0.510	0.510	0.503	0.455	0.423	0.524	10142	12554	2841	1531	2746

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
3 1/2	20/20	31	6 - 8	7 - 10	7 - 11	2 - 7	0.211
	20/18		6 - 8	7 - 10	7 - 11	2 - 7	
	18/20		10 - 1	9 - 5	10 - 0	3 - 4	
	18/18		10 - 3	9 - 5	10 - 4	3 - 5	
4	20/20	37	6 - 4	7 - 5	7 - 6	2 - 6	0.252
	20/18		6 - 4	7 - 5	7 - 6	2 - 6	
	18/20		9 - 3	8 - 11	9 - 2	3 - 1	
	18/18		9 - 8	8 - 11	9 - 4	3 - 2	
4 1/2	20/20	43	6 - 1	7 - 1	7 - 2	2 - 4	0.294
	20/18		6 - 1	7 - 1	7 - 2	2 - 4	
	18/20		8 - 0	8 - 6	8 - 9	2 - 11	
	18/18		8 - 7	8 - 6	8 - 9	2 - 11	
5	20/20	49	5 - 10	6 - 10	6 - 11	2 - 3	0.336
	20/18		5 - 10	6 - 10	6 - 11	2 - 3	
	18/20		7 - 1	8 - 2	8 - 4	2 - 9	
	18/18		7 - 7	8 - 2	8 - 4	2 - 9	
5 1/2	20/20	55	5 - 7	6 - 6	6 - 7	2 - 2	0.377
	20/18		5 - 7	6 - 6	6 - 7	2 - 2	
	18/20		6 - 9	7 - 10	8 - 0	2 - 8	
	18/18		6 - 10	7 - 10	8 - 0	2 - 8	
6	20/20	61	5 - 5	6 - 4	6 - 5	2 - 1	0.419
	20/18		5 - 5	6 - 4	6 - 5	2 - 1	
	18/20		6 - 6	7 - 6	7 - 8	2 - 6	
	18/18		6 - 6	7 - 6	7 - 8	2 - 6	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 1 1/2" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 3" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	10 - 0	11 - 0		
3 1/2	20/20	199	164	137	115	97	82	70	50	35	6x6 - W1.4xW1.4	0.028
	20/18	198	164	137	115	97	82	69	49	35		
	18/20	188	155	129	108	91	77	65	46	32		
	18/18	188	155	129	108	90	76	64	45	31		
4	20/20	254	210	176	148	125	106	91	66	47	6x6 - W1.4xW1.4	0.028
	20/18	253	210	175	147	125	106	90	65	47		
	18/20	241	200	167	140	118	100	85	61	43		
	18/18	241	199	166	139	118	99	84	60	43		
4 1/2	20/20	311	258	216	183	155	132	113	83	60	6x6 - W1.4xW1.4	0.028
	20/18	311	258	216	182	154	132	112	82	60		
	18/20	297	246	206	174	147	125	106	77	56		
	18/18	297	246	206	173	146	124	106	77	55		
5	20/20	371	308	258	218	186	159	136	100	74	6x6 - W2.0xW2.0	0.040
	20/18	370	308	258	218	185	158	135	100	73		
	18/20	355	295	247	209	177	151	129	94	69		
	18/18	355	295	247	208	177	150	128	94	68		
5 1/2	20/20	432	359	302	255	217	186	160	118	88	6x6 - W2.0xW2.0	0.040
	20/18	431	359	301	255	217	185	159	118	87		
	18/20	415	345	290	245	208	178	152	112	82		
	18/18	415	345	289	244	207	177	152	112	82		
6	20/20	494	411	346	293	250	214	184	137	102	4x4 - W1.4xW1.4	0.042
	20/18	493	411	345	292	249	213	183	136	101		
	18/20	476	396	333	281	240	205	176	130	96		
	18/18	476	396	332	281	239	204	175	130	96		

Normal-Weight Concrete (y_c = 145 pcf, f'_c = 3000 psi, n = 9)

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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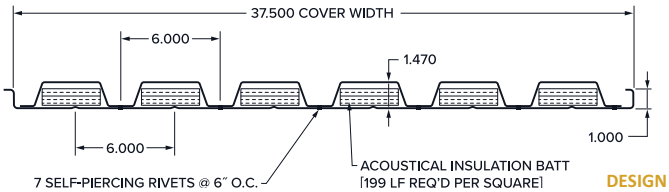
1.5" Composite Floor Deck Cellular Acoustical (1.5CFDCA)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	37.5	4.83
16/18	0.0598/0.0474		4.97
16/16	0.0598/0.0598		5.46



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.343	0.551	0.551	0.543	0.521	0.433	0.543	10377	13002	2841	1531	2746
16/18	40	1.403	0.616	0.616	0.616	0.533	0.583	0.643	13969	15398	3566	2338	4234
16/16	40	1.531	0.666	0.666	0.665	0.606	0.596	0.666	14287	15959	3566	2338	4234

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
3 1/2	18/16	31	10 - 4	10 - 2	10 - 11	3 - 7	0.211
	16/18		11 - 5	13 - 7	13 - 4	4 - 6	
	16/16		11 - 7	13 - 9	13 - 7	4 - 7	
4	18/16	37	9 - 9	8 - 11	9 - 10	3 - 3	0.252
	16/18		10 - 10	12 - 4	12 - 6	4 - 2	
	16/16		11 - 1	12 - 11	13 - 1	4 - 4	
4 1/2	18/16	43	9 - 3	8 - 6	9 - 0	3 - 1	0.294
	16/18		10 - 5	10 - 11	11 - 5	3 - 9	
	16/16		10 - 7	11 - 8	11 - 11	3 - 11	
5	18/16	49	8 - 4	8 - 2	8 - 4	2 - 9	0.336
	16/18		10 - 0	9 - 8	10 - 5	3 - 5	
	16/16		10 - 2	10 - 4	10 - 11	3 - 7	
5 1/2	18/16	55	7 - 6	7 - 10	8 - 0	2 - 8	0.377
	16/18		9 - 7	8 - 9	9 - 8	3 - 2	
	16/16		9 - 10	9 - 4	10 - 1	3 - 4	
6	18/16	61	6 - 10	7 - 6	7 - 8	2 - 6	0.419
	16/18		9 - 4	8 - 5	9 - 0	3 - 1	
	16/16		9 - 6	8 - 5	9 - 5	3 - 2	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 1 1/2" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 3" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Normal-Weight (γc = 145 pcf, f'c = 3000 psi, n = 9)	Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
			6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	10 - 0	11 - 0		
	3 1/2	18/16	187	154	128	107	90	76	64	45	31	6x6 - W1.4xW1.4	0.028
		16/18	178	146	121	101	85	71	59	41	28		
		16/16	178	146	121	101	84	70	59	41	28		
	4	18/16	240	199	166	139	117	99	84	60	42	6x6 - W1.4xW1.4	0.028
		16/18	230	189	158	132	111	94	79	56	39		
		16/16	229	189	157	131	110	93	78	56	39		
	4 1/2	18/16	296	245	205	173	146	124	105	76	55	6x6 - W1.4xW1.4	0.028
		16/18	284	235	196	165	139	118	100	72	51		
		16/16	284	235	196	164	139	117	99	71	51		
	5	18/16	355	294	246	208	176	150	128	93	68	6x6 - W2.0xW2.0	0.040
		16/18	341	283	236	199	168	143	122	88	64		
		16/16	341	282	236	199	168	143	121	88	63		
	5 1/2	18/16	414	344	289	244	207	177	151	111	81	6x6 - W2.0xW2.0	0.040
		16/18	400	332	278	234	199	169	145	106	77		
		16/16	399	331	277	234	198	169	144	105	77		
	6	18/16	475	395	332	281	239	204	175	129	95	4x4 - W1.4xW1.4	0.042
		16/18	460	382	320	270	230	196	168	123	91		
		16/16	459	381	320	270	229	196	167	123	90		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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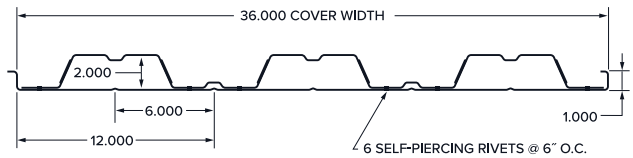
2" Composite Floor Deck Cellular (2.0CFDC)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	36	3.34
20/18	0.0358/0.0474		3.85
18/20	0.0474/0.0358		3.92
18/18	0.0474/0.0474		4.42



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	0.983	0.648	0.648	0.646	0.520	0.379	0.405	9081	9707	1733	467	893
20/18	40	1.130	0.692	0.692	0.691	0.606	0.386	0.428	9253	10259	1733	467	893
18/20	40	1.152	0.808	0.808	0.807	0.636	0.556	0.527	13314	12626	2389	780	1493
18/18	40	1.300	0.866	0.866	0.865	0.744	0.566	0.553	13562	13253	2389	780	1493

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
4	20/20	28	9 - 4	10 - 0	10 - 4	3 - 5	0.250
	20/18		9 - 4	10 - 0	10 - 4	3 - 5	
	18/20		12 - 7	12 - 2	12 - 7	4 - 2	
	18/18		12 - 9	12 - 4	12 - 7	4 - 3	
4 1/2	20/20	32	8 - 10	9 - 10	10 - 2	3 - 4	0.292
	20/18		8 - 10	9 - 10	10 - 2	3 - 4	
	18/20		12 - 0	11 - 11	12 - 4	4 - 1	
	18/18		12 - 1	11 - 11	12 - 4	4 - 1	
5	20/20	37	8 - 6	9 - 5	9 - 9	3 - 3	0.333
	20/18		8 - 6	9 - 5	9 - 9	3 - 3	
	18/20		11 - 6	11 - 5	11 - 10	3 - 11	
	18/18		11 - 7	11 - 5	11 - 10	3 - 11	
5 1/2	20/20	41	8 - 2	9 - 1	9 - 5	3 - 1	0.375
	20/18		8 - 2	9 - 1	9 - 5	3 - 1	
	18/20		11 - 1	11 - 0	11 - 5	3 - 9	
	18/18		11 - 1	11 - 0	11 - 5	3 - 9	
6	20/20	46	7 - 11	8 - 9	9 - 1	3 - 0	0.417
	20/18		7 - 11	8 - 9	9 - 1	3 - 0	
	18/20		10 - 3	10 - 7	11 - 0	3 - 8	
	18/18		10 - 9	10 - 7	11 - 0	3 - 8	
6 1/2	20/20	50	7 - 7	8 - 5	8 - 9	2 - 11	0.458
	20/18		7 - 7	8 - 5	8 - 9	2 - 11	
	18/20		9 - 6	10 - 3	10 - 8	3 - 6	
	18/18		9 - 10	10 - 3	10 - 8	3 - 6	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2" for end bearing and 4" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 4" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight Concrete (yc = 110 pcf, f'c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		7 - 0	7 - 6	8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0		
4	20/20	200	171	146	109	83	63	48	36	27	6x6 - W1.4xW1.4	0.028
	20/18	200	170	146	109	82	62	47	36	26		
	18/20	263	225	194	147	113	88	69	54	42		
	18/18	263	225	194	146	113	87	68	54	42		
4 1/2	20/20	244	208	179	134	102	78	60	46	34	6x6 - W1.4xW1.4	0.028
	20/18	244	208	178	133	101	77	59	45	34		
	18/20	321	275	237	180	139	108	85	67	53		
	18/18	320	274	237	179	138	108	85	67	53		
5	20/20	290	248	213	160	122	94	72	56	43	6x6 - W1.4xW1.4	0.028
	20/18	290	247	212	159	121	93	72	55	42		
	18/20	382	327	283	215	166	130	103	82	65		
	18/18	381	327	282	214	166	130	103	81	64		
5 1/2	20/20	338	289	248	187	143	110	86	66	51	6x6 - W2.0xW2.0	0.040
	20/18	338	288	248	186	142	110	85	66	51		
	18/20	445	382	330	251	195	153	122	97	77		
	18/18	445	381	330	251	195	153	121	96	77		
6	20/20	388	331	285	215	165	128	99	77	60	6x6 - W2.0xW2.0	0.040
	20/18	387	331	285	214	164	127	99	77	59		
	18/20	511	438	379	289	225	177	141	113	90		
	18/18	510	438	379	289	224	177	140	112	90		
6 1/2	20/20	438	375	323	244	187	145	114	89	69	4x4 - W1.4xW1.4	0.042
	20/18	437	374	322	243	187	145	113	88	69		
	18/20	578	496	430	328	255	202	161	129	104		
	18/18	577	496	429	327	255	201	160	128	103		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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2" Composite Floor Deck Cellular (2.0CFDC)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	36	4.96
16/18	0.0598/0.0474		5.04
16/16	0.0598/0.0598		5.57

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REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.457	0.917	0.917	0.916	0.829	0.575	0.572	13784	13691	2389	780	1493
16/18	40	1.481	1.038	1.038	1.037	0.887	0.722	0.683	17290	16349	3003	1191	2281
16/16	40	1.638	1.101	1.101	1.099	0.986	0.734	0.706	17579	16910	3003	1191	2281

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
4	18/16	28	12 - 9	12 - 9	13 - 1	4 - 4	0.250
	16/18		13 - 3	14 - 0	14 - 6	4 - 10	
	16/16		13 - 5	14 - 2	14 - 8	4 - 10	
4 1/2	18/16	32	12 - 2	12 - 5	12 - 7	4 - 2	0.292
	16/18		12 - 10	13 - 9	14 - 3	4 - 9	
	16/16		13 - 0	13 - 11	14 - 5	4 - 9	
5	18/16	37	11 - 8	11 - 5	11 - 10	3 - 11	0.333
	16/18		12 - 6	13 - 2	13 - 8	4 - 6	
	16/16		12 - 7	13 - 4	13 - 10	4 - 7	
5 1/2	18/16	41	11 - 2	11 - 0	11 - 5	3 - 9	0.375
	16/18		12 - 2	12 - 9	13 - 2	4 - 4	
	16/16		12 - 3	12 - 11	13 - 4	4 - 5	
6	18/16	46	10 - 9	10 - 7	11 - 0	3 - 8	0.417
	16/18		11 - 10	12 - 4	12 - 9	4 - 3	
	16/16		12 - 0	12 - 6	12 - 11	4 - 3	
6 1/2	18/16	50	10 - 5	10 - 3	10 - 8	3 - 6	0.458
	16/18		11 - 7	11 - 11	12 - 3	4 - 1	
	16/16		11 - 9	12 - 1	12 - 6	4 - 2	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2" for end bearing and 4" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 4" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight (yc = 110 pcf, f'c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		7 - 0	7 - 6	8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0		
4	18/16	262	224	193	146	112	87	68	53	41	6x6 - W1.4xW1.4	0.028
	16/18	326	280	242	185	143	113	90	72	57		
	16/16	326	280	242	184	143	112	89	71	57		
4 1/2	18/16	320	274	236	179	138	107	84	66	52	6x6 - W1.4xW1.4	0.028
	16/18	398	342	296	226	176	139	111	89	72		
	16/16	397	341	295	225	175	138	110	88	71		
5	18/16	381	326	282	214	165	129	102	81	64	6x6 - W1.4xW1.4	0.028
	16/18	474	407	353	270	211	167	134	108	87		
	16/16	473	407	352	270	210	167	133	107	87		
5 1/2	18/16	444	381	329	250	194	152	121	96	76	6x6 - W2.0xW2.0	0.040
	16/18	553	476	413	317	248	197	158	128	104		
	16/16	553	476	412	316	247	196	157	127	103		
6	18/16	510	437	378	288	224	176	140	112	89	6x6 - W2.0xW2.0	0.040
	16/18	636	547	475	365	286	227	183	148	121		
	16/16	635	547	474	364	285	227	182	148	120		
6 1/2	18/16	577	495	428	327	254	201	160	128	103	4x4 - W1.4xW1.4	0.042
	16/18	720	620	538	414	325	259	208	169	138		
	16/16	720	620	538	413	324	258	208	169	138		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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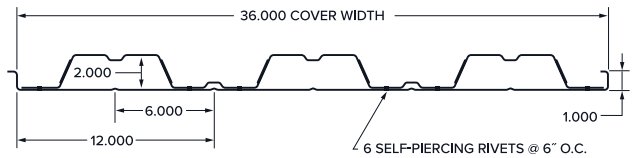
2" Composite Floor Deck Cellular (2.0CFDC)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	36	3.34
20/18	0.0358/0.0474		3.85
18/20	0.0474/0.0358		3.92
18/18	0.0474/0.0474		4.42



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	0.983	0.648	0.648	0.646	0.520	0.379	0.405	9081	9707	1733	467	893
20/18	40	1.130	0.692	0.692	0.691	0.606	0.386	0.428	9253	10259	1733	467	893
18/20	40	1.152	0.808	0.808	0.807	0.636	0.556	0.527	13314	12626	2389	780	1493
18/18	40	1.300	0.866	0.866	0.865	0.744	0.566	0.553	13562	13253	2389	780	1493

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
4	20/20	36	8 - 6	9 - 6	9 - 10	3 - 3	0.250
	20/18		8 - 6	9 - 6	9 - 10	3 - 3	
	18/20		11 - 7	11 - 6	11 - 10	3 - 11	
	18/18		11 - 8	11 - 6	11 - 10	3 - 11	
4 1/2	20/20	42	8 - 1	9 - 0	9 - 4	3 - 1	0.292
	20/18		8 - 1	9 - 0	9 - 4	3 - 1	
	18/20		10 - 11	10 - 11	11 - 3	3 - 9	
	18/18		11 - 0	10 - 11	11 - 3	3 - 9	
5	20/20	48	7 - 9	8 - 7	8 - 11	2 - 11	0.333
	20/18		7 - 9	8 - 7	8 - 11	2 - 11	
	18/20		9 - 9	10 - 5	10 - 9	3 - 7	
	18/18		10 - 3	10 - 5	10 - 9	3 - 7	
5 1/2	20/20	54	7 - 5	8 - 3	8 - 6	2 - 10	0.375
	20/18		7 - 5	8 - 3	8 - 6	2 - 10	
	18/20		9 - 3	10 - 0	10 - 4	3 - 5	
	18/18		9 - 3	10 - 0	10 - 4	3 - 5	
6	20/20	60	7 - 2	7 - 11	8 - 2	2 - 8	0.417
	20/18		7 - 2	7 - 11	8 - 2	2 - 8	
	18/20		9 - 0	9 - 7	9 - 11	3 - 3	
	18/18		9 - 0	9 - 7	9 - 11	3 - 3	
6 1/2	20/20	66	6 - 11	7 - 8	7 - 11	2 - 7	0.458
	20/18		6 - 11	7 - 8	7 - 11	2 - 7	
	18/20		8 - 8	9 - 3	9 - 7	3 - 2	
	18/18		8 - 8	9 - 3	9 - 7	3 - 2	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2'' for end bearing and 4'' for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 4'' minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		7 - 0	7 - 6	8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0		
4	20/20	203	172	146	107	79	59	43	31	21	6x6 - W1.4xW1.4	0.028
	20/18	203	171	146	107	79	58	43	30	21		
	18/20	271	231	198	148	112	86	66	50	38		
	18/18	270	230	197	147	112	85	65	50	37		
4 1/2	20/20	247	209	178	131	98	73	54	39	28	6x6 - W1.4xW1.4	0.028
	20/18	247	209	178	131	97	72	53	39	27		
	18/20	329	281	241	181	138	106	82	63	48		
	18/18	329	280	241	180	137	105	81	62	47		
5	20/20	293	249	212	157	117	88	66	48	35	6x6 - W1.4xW1.4	0.028
	20/18	293	248	212	156	117	87	65	48	34		
	18/20	391	334	287	216	165	127	99	76	59		
	18/18	390	333	287	215	164	127	98	76	58		
5 1/2	20/20	341	290	248	183	138	104	78	58	42	6x6 - W2.0xW2.0	0.040
	20/18	340	289	247	183	137	103	77	57	41		
	18/20	455	389	335	252	193	150	116	91	70		
	18/18	455	388	334	252	193	149	116	90	70		
6	20/20	390	332	284	211	159	120	91	68	50	6x6 - W2.0xW2.0	0.040
	20/18	389	331	283	210	158	119	90	67	49		
	18/20	521	445	384	290	222	173	135	105	82		
	18/18	520	445	383	289	222	172	134	105	81		
6 1/2	20/20	440	374	321	239	180	137	104	78	58	4x4 - W1.4xW1.4	0.042
	20/18	439	374	320	238	179	136	103	78	57		
	18/20	588	503	434	328	252	196	154	121	94		
	18/18	588	503	433	327	252	196	153	120	94		

Normal-Weight Concrete (yc = 145 pcf, f'c = 3000 psi, n = 9)

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1'' under service level superimposed loading.

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2" Composite Floor Deck Cellular (2.0CFDC)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	36	4.96
16/18	0.0598/0.0474		5.04
16/16	0.0598/0.0598		5.57

ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.457	0.917	0.917	0.916	0.829	0.575	0.572	13784	13691	2389	780	1493
16/18	40	1.481	1.038	1.038	1.037	0.887	0.722	0.683	17290	16349	3003	1191	2281
16/16	40	1.638	1.101	1.101	1.099	0.986	0.734	0.706	17579	16910	3003	1191	2281

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
4	18/16	36	11 - 8	11 - 6	11 - 10	3 - 11	0.250
	16/18		12 - 6	13 - 3	13 - 9	4 - 7	
	16/16		12 - 8	13 - 5	13 - 11	4 - 7	
4 1/2	18/16	42	11 - 1	10 - 11	11 - 3	3 - 9	0.292
	16/18		12 - 1	12 - 8	13 - 1	4 - 4	
	16/16		12 - 3	12 - 10	13 - 3	4 - 5	
5	18/16	48	10 - 7	10 - 5	10 - 9	3 - 7	0.333
	16/18		11 - 9	12 - 1	12 - 6	4 - 2	
	16/16		11 - 10	12 - 3	12 - 8	4 - 2	
5 1/2	18/16	54	9 - 11	10 - 0	10 - 4	3 - 5	0.375
	16/18		11 - 5	11 - 5	11 - 9	3 - 11	
	16/16		11 - 7	11 - 9	12 - 1	4 - 0	
6	18/16	60	9 - 0	9 - 7	9 - 11	3 - 3	0.417
	16/18		11 - 1	10 - 11	11 - 4	3 - 9	
	16/16		11 - 2	10 - 11	11 - 4	3 - 9	
6 1/2	18/16	66	8 - 8	9 - 3	9 - 7	3 - 2	0.458
	16/18		10 - 9	10 - 7	10 - 11	3 - 7	
	16/16		10 - 10	10 - 7	10 - 11	3 - 7	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2" for end bearing and 4" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 4" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Normal-Weight (yc = 145 pcf, f'c = 3000 psi, n = 9)	Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
			7 - 0	7 - 6	8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0		
	4	18/16	270	230	197	147	111	85	65	49	37	6x6 - W1.4xW1.4	0.028
		16/18	339	290	250	189	145	113	88	69	54		
		16/16	339	290	250	188	145	112	88	69	53		
	4 1/2	18/16	328	280	240	180	137	105	81	62	47	6x6 - W1.4xW1.4	0.028
		16/18	413	354	305	231	178	139	109	86	68		
		16/16	412	353	304	231	178	139	109	86	67		
	5	18/16	390	333	286	215	164	126	98	75	58	6x6 - W1.4xW1.4	0.028
		16/18	491	421	363	276	213	167	132	104	83		
		16/16	490	420	363	275	213	166	131	104	82		
	5 1/2	18/16	454	388	334	251	192	149	115	89	69	6x6 - W2.0xW2.0	0.040
		16/18	572	490	424	322	250	196	155	124	98		
		16/16	571	490	423	322	249	196	155	123	98		
	6	18/16	520	444	383	289	221	172	134	104	81	6x6 - W2.0xW2.0	0.040
		16/18	655	562	486	370	288	226	180	143	115		
		16/16	654	562	486	370	287	226	179	143	114		
	6 1/2	18/16	587	502	433	327	251	195	153	119	93	4x4 - W1.4xW1.4	0.042
		16/18	740	635	550	419	326	257	205	164	131		
		16/16	740	635	549	419	326	257	204	163	131		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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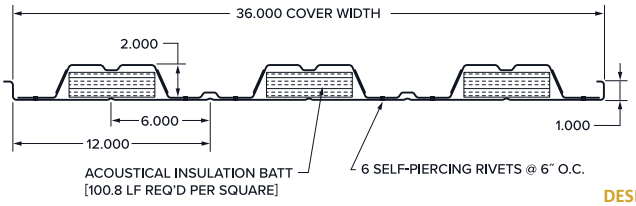
2" Composite Floor Deck Cellular Acoustical (2.0CFDCA)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	36	3.22
20/18	0.0358/0.0474		3.68
18/20	0.0474/0.0358		3.80
18/18	0.0474/0.0474		4.26



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in²/ft)	I_D 1 Span (in⁴/ft)	I_D 2+ Span (in⁴/ft)	I_p (in⁴/ft)	I_n (in⁴/ft)	S_p (in³/ft)	S_n (in³/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	0.903	0.618	0.618	0.617	0.500	0.375	0.402	8985	9620	1733	467	893
20/18	40	1.024	0.662	0.662	0.661	0.574	0.382	0.424	9158	10145	1733	467	893
18/20	40	1.072	0.772	0.772	0.771	0.619	0.550	0.524	13166	12552	2389	780	1493
18/18	40	1.194	0.826	0.826	0.825	0.708	0.560	0.548	13412	13129	2389	780	1493

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft³/ft²)
			Single	Double	Triple	Cantilever	
4	20/20	28	9 - 8	10 - 0	10 - 4	3 - 5	0.250
	20/18		9 - 11	10 - 0	10 - 4	3 - 5	
	18/20		12 - 5	12 - 5	12 - 10	4 - 3	
	18/18		12 - 7	12 - 7	13 - 0	4 - 4	
4 1/2	20/20	32	8 - 10	9 - 10	10 - 2	3 - 4	0.292
	20/18		9 - 0	9 - 10	10 - 2	3 - 4	
	18/20		12 - 0	12 - 2	12 - 7	4 - 2	
	18/18		12 - 1	12 - 4	12 - 10	4 - 3	
5	20/20	37	8 - 6	9 - 5	9 - 9	3 - 3	0.333
	20/18		8 - 6	9 - 5	9 - 9	3 - 3	
	18/20		11 - 5	11 - 6	11 - 10	3 - 11	
	18/18		11 - 6	11 - 8	11 - 11	3 - 11	
5 1/2	20/20	41	8 - 2	9 - 1	9 - 5	3 - 1	0.375
	20/18		8 - 2	9 - 1	9 - 5	3 - 1	
	18/20		11 - 0	11 - 0	11 - 5	3 - 9	
	18/18		11 - 1	11 - 0	11 - 5	3 - 9	
6	20/20	46	7 - 11	8 - 9	9 - 1	3 - 0	0.417
	20/18		7 - 11	8 - 9	9 - 1	3 - 0	
	18/20		10 - 7	10 - 7	11 - 0	3 - 8	
	18/18		10 - 8	10 - 7	11 - 0	3 - 8	
6 1/2	20/20	50	7 - 7	8 - 5	8 - 9	2 - 11	0.458
	20/18		7 - 7	8 - 5	8 - 9	2 - 11	
	18/20		10 - 3	10 - 3	10 - 8	3 - 6	
	18/18		10 - 4	10 - 3	10 - 8	3 - 6	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2" for end bearing and 4" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 4" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight Concrete (γc = 110 pcf, f'c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in²/ft)
		7 - 0	7 - 6	8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0		
4	20/20	201	171	146	109	83	63	48	36	27	6x6 - W1.4xW1.4	0.028
	20/18	200	170	146	109	82	63	48	36	27		
	18/20	263	225	194	147	113	88	69	54	42		
	18/18	263	225	194	147	113	88	69	54	42		
4 1/2	20/20	244	208	179	134	102	78	60	46	35	6x6 - W1.4xW1.4	0.028
	20/18	244	208	178	133	101	77	59	45	34		
	18/20	321	275	237	180	139	109	85	68	53		
	18/18	320	274	237	179	138	108	85	67	53		
5	20/20	290	248	213	160	122	94	72	56	43	6x6 - W1.4xW1.4	0.028
	20/18	290	247	212	159	121	93	72	55	42		
	18/20	382	327	283	215	166	130	103	82	65		
	18/18	381	327	282	214	166	130	103	81	65		
5 1/2	20/20	338	289	249	187	143	111	86	67	51	6x6 - W2.0xW2.0	0.040
	20/18	338	288	248	187	143	110	85	66	51		
	18/20	445	382	330	252	195	153	122	97	78		
	18/18	445	382	330	251	195	153	121	97	77		
6	20/20	388	331	285	215	165	128	100	78	60	6x6 - W2.0xW2.0	0.040
	20/18	387	331	285	215	164	127	99	77	60		
	18/20	511	438	379	289	225	177	141	113	90		
	18/18	510	438	379	289	224	177	141	112	90		
6 1/2	20/20	438	375	323	244	187	145	114	89	69	4x4 - W1.4xW1.4	0.042
	20/18	438	374	322	243	187	145	113	88	69		
	18/20	578	496	430	328	255	202	161	129	104		
	18/18	577	496	429	328	255	201	160	129	103		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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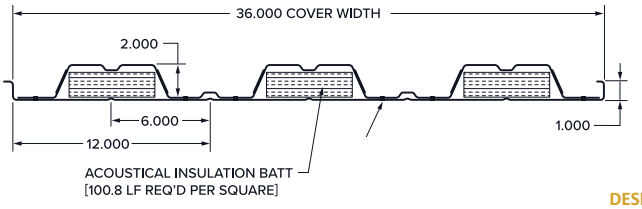
2" Composite Floor Deck Cellular Acoustical (2.0CFDCA)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	36	4.75
16/18	0.0598/0.0474		4.87
16/16	0.0598/0.0598		5.37



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.324	0.875	0.875	0.874	0.780	0.569	0.564	13635	13501	2389	780	1493
16/18	40	1.375	0.990	0.990	0.989	0.850	0.713	0.676	17087	16195	3003	1191	2281
16/16	40	1.505	1.050	1.050	1.048	0.931	0.725	0.697	17374	16691	3003	1191	2281

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
4	18/16	28	12 - 9	12 - 9	13 - 2	4 - 4	0.250
	16/18		13 - 2	14 - 0	14 - 5	4 - 9	
	16/16		13 - 3	14 - 1	14 - 7	4 - 10	
4 1/2	18/16	32	12 - 1	12 - 6	12 - 11	4 - 3	0.292
	16/18		12 - 8	13 - 8	14 - 2	4 - 8	
	16/16		12 - 10	13 - 10	14 - 4	4 - 9	
5	18/16	37	11 - 7	12 - 0	12 - 5	4 - 1	0.333
	16/18		12 - 4	13 - 2	13 - 8	4 - 6	
	16/16		12 - 6	13 - 4	13 - 9	4 - 7	
5 1/2	18/16	41	11 - 2	11 - 2	11 - 7	3 - 10	0.375
	16/18		12 - 0	12 - 8	13 - 2	4 - 4	
	16/16		12 - 2	12 - 10	13 - 3	4 - 5	
6	18/16	46	10 - 9	10 - 7	11 - 0	3 - 8	0.417
	16/18		11 - 9	12 - 3	12 - 8	4 - 2	
	16/16		11 - 10	12 - 5	12 - 10	4 - 3	
6 1/2	18/16	50	10 - 4	10 - 3	10 - 8	3 - 6	0.458
	16/18		11 - 6	11 - 10	12 - 3	4 - 1	
	16/16		11 - 7	12 - 0	12 - 5	4 - 1	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2" for end bearing and 4" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 4" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight (γ_c = 110 pcf, f'_c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		7 - 0	7 - 6	8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0		
4	18/16	262	225	193	146	112	87	68	53	41	6x6 - W1.4xW1.4	0.028
	16/18	327	280	243	185	144	113	90	72	57		
	16/16	326	280	242	184	143	113	89	71	57		
4 1/2	18/16	320	274	236	179	138	108	85	67	52	6x6 - W1.4xW1.4	0.028
	16/18	398	342	296	226	176	139	111	89	72		
	16/16	397	341	296	226	176	139	111	89	71		
5	18/16	381	326	282	214	165	130	102	81	64	6x6 - W1.4xW1.4	0.028
	16/18	474	408	353	270	211	167	134	108	87		
	16/16	474	407	353	270	211	167	133	107	87		
5 1/2	18/16	444	381	329	251	194	153	121	96	77	6x6 - W2.0xW2.0	0.040
	16/18	554	476	413	317	248	197	158	128	104		
	16/16	553	476	413	316	247	196	157	127	103		
6	18/16	510	438	378	288	224	176	140	112	90	6x6 - W2.0xW2.0	0.040
	16/18	636	547	475	365	286	227	183	148	121		
	16/16	635	547	475	364	285	227	182	148	120		
6 1/2	18/16	577	495	429	327	255	201	160	128	103	4x4 - W1.4xW1.4	0.042
	16/18	720	620	539	414	325	259	209	170	139		
	16/16	720	620	538	413	324	258	208	169	138		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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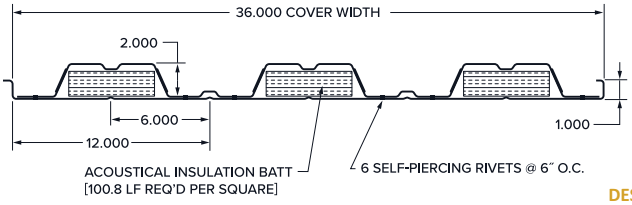
2" Composite Floor Deck Cellular Acoustical (2.0CFDCA)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	36	3.22
20/18	0.0358/0.0474		3.68
18/20	0.0474/0.0358		3.80
18/18	0.0474/0.0474		4.26



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	0.903	0.618	0.618	0.617	0.500	0.375	0.402	8985	9620	1733	467	893
20/18	40	1.024	0.662	0.662	0.661	0.574	0.382	0.424	9158	10145	1733	467	893
18/20	40	1.072	0.772	0.772	0.771	0.619	0.550	0.524	13166	12552	2389	780	1493
18/18	40	1.194	0.826	0.826	0.825	0.708	0.560	0.548	13412	13129	2389	780	1493

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in) Single	Double	Triple	Cantilever	Concrete Volume (ft^3/ft^2)
4	20/20	36	8 - 6	9 - 6	9 - 10	3 - 3	0.250
	20/18		8 - 6	9 - 6	9 - 10	3 - 3	
	18/20		11 - 6	11 - 7	11 - 10	3 - 11	
	18/18		11 - 7	11 - 10	12 - 0	4 - 0	
4 1/2	20/20	42	8 - 1	9 - 0	9 - 4	3 - 1	0.292
	20/18		8 - 1	9 - 0	9 - 4	3 - 1	
	18/20		10 - 11	10 - 11	11 - 3	3 - 9	
	18/18		11 - 0	10 - 11	11 - 3	3 - 9	
5	20/20	48	7 - 9	8 - 7	8 - 11	2 - 11	0.333
	20/18		7 - 9	8 - 7	8 - 11	2 - 11	
	18/20		10 - 4	10 - 5	10 - 9	3 - 7	
	18/18		10 - 5	10 - 5	10 - 9	3 - 7	
5 1/2	20/20	54	7 - 5	8 - 3	8 - 6	2 - 10	0.375
	20/18		7 - 5	8 - 3	8 - 6	2 - 10	
	18/20		9 - 11	10 - 0	10 - 4	3 - 5	
	18/18		10 - 0	10 - 0	10 - 4	3 - 5	
6	20/20	60	7 - 2	7 - 11	8 - 2	2 - 8	0.417
	20/18		7 - 2	7 - 11	8 - 2	2 - 8	
	18/20		9 - 0	9 - 7	9 - 11	3 - 3	
	18/18		9 - 3	9 - 7	9 - 11	3 - 3	
6 1/2	20/20	66	6 - 11	7 - 8	7 - 11	2 - 7	0.458
	20/18		6 - 11	7 - 8	7 - 11	2 - 7	
	18/20		8 - 8	9 - 3	9 - 7	3 - 2	
	18/18		8 - 8	9 - 3	9 - 7	3 - 2	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2" for end bearing and 4" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 4" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Normal-Weight Concrete (γ_c = 145 pcf, f'_c = 3000 psi, n = 9)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in) 7 - 0	7 - 6	8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	Recommended Welded Wire Fabric	Wire Area (in^2/ft)
4	20/20	203	172	146	107	79	59	43	31	21	6x6 - W1.4xW1.4	0.028
	20/18	203	172	146	107	79	58	43	30	21		
	18/20	271	231	198	148	112	86	66	50	38		
	18/18	271	230	198	148	112	85	65	50	37		
4 1/2	20/20	247	209	179	132	98	73	54	39	28	6x6 - W1.4xW1.4	0.028
	20/18	247	209	178	131	97	73	54	39	27		
	18/20	329	281	241	181	138	106	82	63	48		
	18/18	329	281	241	181	137	106	81	62	47		
5	20/20	293	249	212	157	117	88	66	48	35	6x6 - W1.4xW1.4	0.028
	20/18	293	248	212	157	117	88	65	48	34		
	18/20	391	334	287	216	165	127	99	76	59		
	18/18	391	334	287	216	165	127	98	76	58		
5 1/2	20/20	341	290	248	184	138	104	78	58	42	6x6 - W2.0xW2.0	0.040
	20/18	341	289	247	183	137	103	78	58	42		
	18/20	455	389	335	252	193	150	116	91	70		
	18/18	455	389	334	252	193	149	116	90	70		
6	20/20	390	332	284	211	159	120	91	68	50	6x6 - W2.0xW2.0	0.040
	20/18	390	331	283	210	158	120	90	67	49		
	18/20	521	446	384	290	223	173	135	105	82		
	18/18	520	445	383	289	222	172	134	105	82		
6 1/2	20/20	440	374	321	239	180	137	104	78	58	4x4 - W1.4xW1.4	0.042
	20/18	440	374	320	238	180	136	103	78	57		
	18/20	588	503	434	328	252	196	154	121	94		
	18/18	588	503	433	328	252	196	153	120	94		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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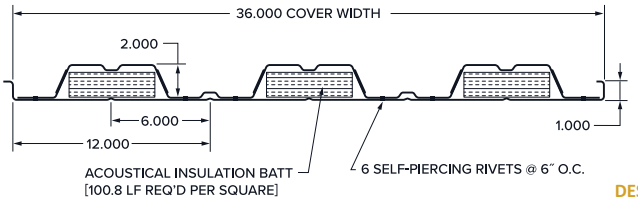
2" Composite Floor Deck Cellular Acoustical (2.0CFDCA)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	36	4.75
16/18	0.0598/0.0474		4.87
16/16	0.0598/0.0598		5.37



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REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.324	0.875	0.875	0.874	0.780	0.569	0.564	13635	13501	2389	780	1493
16/18	40	1.375	0.990	0.990	0.989	0.850	0.713	0.676	17087	16195	3003	1191	2281
16/16	40	1.505	1.050	1.050	1.048	0.931	0.725	0.697	17374	16691	3003	1191	2281

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
4	18/16	36	11 - 8	12 - 1	12 - 6	4 - 2	0.250
	16/18		12 - 4	13 - 2	13 - 8	4 - 6	
	16/16		12 - 6	13 - 4	13 - 10	4 - 7	
4 1/2	18/16	42	11 - 0	10 - 11	11 - 5	3 - 9	0.292
	16/18		11 - 11	12 - 7	13 - 0	4 - 4	
	16/16		12 - 1	12 - 9	13 - 2	4 - 4	
5	18/16	48	10 - 6	10 - 5	10 - 9	3 - 7	0.333
	16/18		11 - 7	12 - 0	12 - 6	4 - 2	
	16/16		11 - 9	12 - 2	12 - 7	4 - 2	
5 1/2	18/16	54	10 - 1	10 - 0	10 - 4	3 - 5	0.375
	16/18		11 - 3	11 - 7	12 - 0	4 - 0	
	16/16		11 - 5	11 - 9	12 - 1	4 - 0	
6	18/16	60	9 - 8	9 - 7	9 - 11	3 - 3	0.417
	16/18		10 - 11	11 - 2	11 - 6	3 - 10	
	16/16		11 - 2	11 - 3	11 - 8	3 - 10	
6 1/2	18/16	66	9 - 0	9 - 3	9 - 7	3 - 2	0.458
	16/18		10 - 8	10 - 7	10 - 11	3 - 7	
	16/16		10 - 9	10 - 11	11 - 3	3 - 9	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2" for end bearing and 4" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 4" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		7 - 0	7 - 6	8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0		
4	18/16	270	230	197	147	111	85	65	49	37	6x6 - W1.4xW1.4	0.028
	16/18	340	290	250	189	145	113	88	69	54		
	16/16	339	290	250	189	145	113	88	69	54		
4 1/2	18/16	328	280	240	180	137	105	81	62	47	6x6 - W1.4xW1.4	0.028
	16/18	413	354	305	231	178	139	109	86	68		
	16/16	413	353	305	231	178	139	109	86	67		
5	18/16	390	333	286	215	164	126	98	75	58	6x6 - W1.4xW1.4	0.028
	16/18	491	421	363	276	213	167	132	105	83		
	16/16	490	420	363	275	213	167	131	104	82		
5 1/2	18/16	454	388	334	251	192	149	116	90	69	6x6 - W2.0xW2.0	0.040
	16/18	572	490	424	322	250	196	155	124	99		
	16/16	571	490	423	322	249	196	155	123	98		
6	18/16	520	445	383	289	222	172	134	104	81	6x6 - W2.0xW2.0	0.040
	16/18	655	562	486	370	288	226	180	144	115		
	16/16	655	562	486	370	287	226	179	143	114		
6 1/2	18/16	587	502	433	327	251	195	153	120	93	4x4 - W1.4xW1.4	0.042
	16/18	740	636	550	420	326	257	205	164	132		
	16/16	740	635	550	419	326	257	204	163	131		

Normal-Weight (yc = 145 pcf, f'c = 3000 psi, n = 9)

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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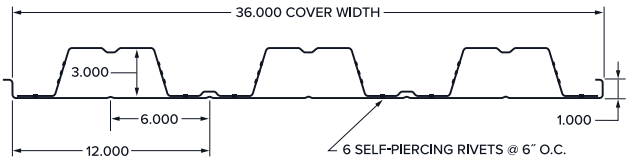
3" Composite Floor Deck Cellular (3.0CFDC)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	36	3.54
20/18	0.0358/0.0474		4.04
18/20	0.0474/0.0358		4.18
18/18	0.0474/0.0474		4.68



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	1.041	1.531	1.531	1.530	1.223	0.603	0.646	14444	15478	2031	500	996
20/18	40	1.188	1.634	1.634	1.633	1.425	0.606	0.686	14514	16437	2031	500	996
18/20	40	1.229	1.908	1.908	1.907	1.485	0.895	0.843	21447	20194	3334	839	1663
18/18	40	1.377	2.038	2.038	2.038	1.751	0.910	0.888	21808	21263	3334	839	1663

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
5	20/20	32	12 - 9	12 - 9	13 - 2	4 - 4	0.292
	20/18		12 - 8	12 - 9	13 - 2	4 - 4	
	18/20		15 - 0	15 - 5	15 - 11	5 - 3	
	18/18		15 - 3	15 - 9	16 - 3	5 - 5	
5 1/2	20/20	37	12 - 2	12 - 2	12 - 7	4 - 2	0.333
	20/18		12 - 1	12 - 2	12 - 7	4 - 2	
	18/20		14 - 7	14 - 9	15 - 4	5 - 1	
	18/18		14 - 10	15 - 1	15 - 8	5 - 2	
6	20/20	41	11 - 8	11 - 9	12 - 1	4 - 0	0.375
	20/18		11 - 8	11 - 9	12 - 1	4 - 0	
	18/20		14 - 3	14 - 3	14 - 9	4 - 11	
	18/18		14 - 5	14 - 7	15 - 1	5 - 0	
6 1/2	20/20	46	10 - 10	11 - 4	11 - 8	3 - 10	0.417
	20/18		11 - 2	11 - 4	11 - 8	3 - 10	
	18/20		13 - 10	13 - 9	14 - 2	4 - 8	
	18/18		14 - 1	14 - 1	14 - 6	4 - 10	
7	20/20	50	10 - 4	10 - 11	11 - 4	3 - 9	0.458
	20/18		10 - 7	10 - 11	11 - 4	3 - 9	
	18/20		13 - 7	13 - 2	13 - 8	4 - 6	
	18/18		13 - 8	13 - 5	13 - 8	4 - 6	
7 1/2	20/20	55	10 - 0	10 - 4	10 - 11	3 - 7	0.500
	20/18		10 - 0	10 - 4	10 - 11	3 - 7	
	18/20		13 - 2	12 - 10	13 - 3	4 - 5	
	18/18		13 - 3	12 - 10	13 - 3	4 - 5	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2 1/2" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 5" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight Concrete (yc = 110 pcf, f'c = 3000 psi, n = 14)	Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
			8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	15 - 0	16 - 0		
	5	20/20	256	195	151	119	94	75	60	47	37	6x6 - W1.4xW1.4	0.028
		20/18	256	195	151	118	94	74	59	47	37		
		18/20	337	259	203	161	130	105	86	70	57		
		18/18	337	258	202	161	129	105	85	69	57		
	5 1/2	20/20	300	229	178	140	111	89	71	57	45	6x6 - W1.4xW1.4	0.028
		20/18	300	228	177	139	111	88	71	56	44		
		18/20	394	303	238	189	153	124	101	83	68		
		18/18	394	303	237	189	152	123	101	82	67		
	6	20/20	347	265	206	163	130	104	83	67	53	6x6 - W1.4xW1.4	0.028
		20/18	347	265	206	162	129	103	83	66	53		
		18/20	456	351	276	220	177	144	118	97	80		
		18/18	456	350	275	219	177	144	118	97	79		
	6 1/2	20/20	397	303	236	187	149	120	96	78	62	6x6 - W2.0xW2.0	0.040
		20/18	396	303	236	186	148	119	96	77	62		
		18/20	521	401	315	252	204	166	136	112	93		
		18/18	520	401	315	251	203	166	136	112	92		
	7	20/20	448	343	267	211	169	136	110	89	71	6x6 - W2.0xW2.0	0.040
		20/18	447	342	267	211	169	136	109	88	71		
		18/20	589	454	357	286	231	189	155	128	106		
		18/18	588	453	357	285	231	188	155	128	106		
	7 1/2	20/20	500	383	299	237	190	153	124	100	81	4x4 - W1.4xW1.4	0.042
		20/18	500	383	299	237	189	153	123	100	81		
		18/20	658	508	400	320	260	213	175	145	120		
		18/18	658	507	399	320	259	212	175	144	120		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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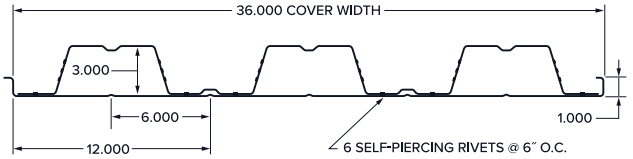
3" Composite Floor Deck Cellular (3.0CFDC)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	36	5.22
16/18	0.0598/0.0474		5.37
16/16	0.0598/0.0598		5.90



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.534	2.154	2.154	2.153	1.943	0.923	0.917	22118	21957	3334	839	1663
16/18	40	1.578	2.443	2.443	2.442	2.091	1.163	1.098	27863	26288	4624	1285	2536
16/16	40	1.735	2.584	2.584	2.583	2.310	1.181	1.135	28276	27174	4624	1285	2536

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
5	18/16	32	15 - 5	15 - 11	16 - 5	5 - 5	0.292
	16/18		15 - 10	17 - 5	18 - 0	6 - 0	
	16/16		16 - 0	17 - 8	18 - 3	6 - 1	
5 1/2	18/16	37	14 - 11	15 - 3	15 - 10	5 - 3	0.333
	16/18		15 - 5	16 - 9	17 - 4	5 - 9	
	16/16		15 - 7	16 - 11	17 - 7	5 - 10	
6	18/16	41	14 - 7	14 - 9	15 - 3	5 - 1	0.375
	16/18		15 - 0	16 - 2	16 - 9	5 - 7	
	16/16		15 - 2	16 - 4	16 - 11	5 - 7	
6 1/2	18/16	46	14 - 3	14 - 3	14 - 9	4 - 11	0.417
	16/18		14 - 8	15 - 8	16 - 2	5 - 4	
	16/16		14 - 10	15 - 10	16 - 5	5 - 5	
7	18/16	50	13 - 9	13 - 9	14 - 2	4 - 8	0.458
	16/18		14 - 4	15 - 2	15 - 8	5 - 2	
	16/16		14 - 6	15 - 4	15 - 10	5 - 3	
7 1/2	18/16	55	13 - 4	13 - 3	13 - 5	4 - 5	0.500
	16/18		14 - 1	14 - 8	15 - 2	5 - 0	
	16/16		14 - 3	14 - 11	15 - 5	5 - 1	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2 1/2" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 5" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight (γ_c = 110 pcf, f'_c = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	15 - 0	16 - 0		
5	18/16	336	258	202	160	129	104	85	69	56	6x6 - W1.4xW1.4	0.028
	16/18	389	300	236	188	152	124	102	84	69		
	16/16	389	299	235	188	152	124	101	83	69		
5 1/2	18/16	393	302	237	188	152	123	100	82	67	6x6 - W1.4xW1.4	0.028
	16/18	455	351	276	221	179	146	120	99	82		
	16/16	455	350	276	220	178	146	120	99	82		
6	18/16	455	350	274	219	176	143	117	96	79	6x6 - W1.4xW1.4	0.028
	16/18	527	406	320	257	208	170	141	116	97		
	16/16	526	406	320	256	208	170	140	116	96		
6 1/2	18/16	520	400	314	251	203	165	135	111	92	6x6 - W2.0xW2.0	0.040
	16/18	602	465	367	294	239	196	162	135	112		
	16/16	601	464	366	294	239	196	162	134	112		
7	18/16	588	453	356	285	230	188	154	127	105	6x6 - W2.0xW2.0	0.040
	16/18	681	526	416	334	272	223	185	154	128		
	16/16	680	526	415	333	271	223	184	153	128		
7 1/2	18/16	657	507	399	319	259	211	174	144	119	4x4 - W1.4xW1.4	0.042
	16/18	762	589	466	375	305	251	208	174	145		
	16/16	761	589	465	374	305	251	208	173	145		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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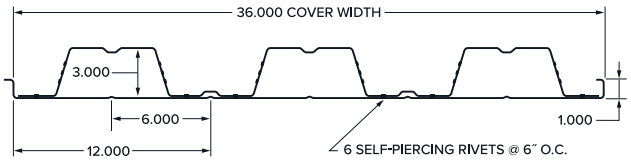
3" Composite Floor Deck Cellular (3.0CFDC)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	36	3.54
20/18	0.0358/0.0474		4.04
18/20	0.0474/0.0358		4.18
18/18	0.0474/0.0474		4.68



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REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	1.041	1.531	1.531	1.530	1.223	0.603	0.646	14444	15478	2031	500	996
20/18	40	1.188	1.634	1.634	1.633	1.425	0.606	0.686	14514	16437	2031	500	996
18/20	40	1.229	1.908	1.908	1.907	1.485	0.895	0.843	21447	20194	3334	839	1663
18/18	40	1.377	2.038	2.038	2.038	1.751	0.910	0.888	21808	21263	3334	839	1663

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
5	20/20	42	11 - 7	11 - 8	12 - 0	4 - 0	0.292
	20/18		11 - 6	11 - 8	12 - 0	4 - 0	
	18/20		14 - 2	14 - 2	14 - 7	4 - 10	
	18/18		14 - 4	14 - 5	14 - 11	4 - 11	
5 1/2	20/20	48	10 - 6	11 - 1	11 - 6	3 - 10	0.333
	20/18		11 - 0	11 - 1	11 - 6	3 - 10	
	18/20		13 - 8	13 - 6	13 - 10	4 - 7	
	18/18		13 - 11	13 - 9	14 - 0	4 - 8	
6	20/20	54	10 - 1	10 - 5	11 - 0	3 - 8	0.375
	20/18		10 - 1	10 - 5	11 - 0	3 - 8	
	18/20		13 - 3	12 - 10	13 - 4	4 - 5	
	18/18		13 - 4	12 - 10	13 - 4	4 - 5	
6 1/2	20/20	60	9 - 8	9 - 7	10 - 7	3 - 6	0.417
	20/18		9 - 8	9 - 7	10 - 7	3 - 6	
	18/20		12 - 8	12 - 5	12 - 10	4 - 3	
	18/18		12 - 9	12 - 5	12 - 10	4 - 3	
7	20/20	66	9 - 3	8 - 11	10 - 2	3 - 4	0.458
	20/18		9 - 3	8 - 11	10 - 2	3 - 4	
	18/20		12 - 3	11 - 11	12 - 4	4 - 1	
	18/18		12 - 4	11 - 11	12 - 4	4 - 1	
7 1/2	20/20	73	9 - 0	8 - 5	9 - 6	3 - 2	0.500
	20/18		9 - 0	8 - 5	9 - 6	3 - 2	
	18/20		11 - 10	11 - 7	11 - 11	3 - 11	
	18/18		11 - 11	11 - 7	11 - 11	3 - 11	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2 1/2" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 5" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Normal-Weight Concrete (yc = 145 pcf, f'c = 3000 psi, n = 9)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	15 - 0	16 - 0		
5	20/20	260	196	150	116	90	70	54	41	31	6x6 - W1.4xW1.4	0.028
	20/18	259	195	149	115	89	69	53	41	30		
	18/20	346	263	205	161	128	102	82	65	52		
	18/18	345	263	204	160	127	102	81	65	51		
5 1/2	20/20	304	229	176	136	106	83	64	49	37	6x6 - W1.4xW1.4	0.028
	20/18	304	229	176	136	106	82	64	49	37		
	18/20	405	309	240	189	151	121	97	78	62		
	18/18	404	308	240	189	150	120	96	77	61		
6	20/20	352	266	204	159	124	97	76	59	44	6x6 - W1.4xW1.4	0.028
	20/18	351	265	204	158	124	97	75	58	44		
	18/20	468	357	278	220	175	141	113	91	73		
	18/18	467	357	278	219	175	140	113	91	73		
6 1/2	20/20	401	303	234	182	143	112	88	68	52	6x6 - W2.0xW2.0	0.040
	20/18	401	303	233	182	142	112	87	68	52		
	18/20	534	408	318	252	201	162	131	106	85		
	18/18	533	408	318	251	201	162	130	105	85		
7	20/20	452	343	264	206	162	128	101	79	61	6x6 - W2.0xW2.0	0.040
	20/18	452	342	264	206	162	127	100	78	60		
	18/20	602	461	360	285	228	184	149	121	98		
	18/18	602	460	359	285	228	184	149	120	97		
7 1/2	20/20	505	383	296	231	182	144	114	89	69	4x4 - W1.4xW1.4	0.042
	20/18	504	382	295	231	182	143	113	89	69		
	18/20	672	515	403	320	256	207	168	136	111		
	18/18	672	515	402	319	256	207	167	136	110		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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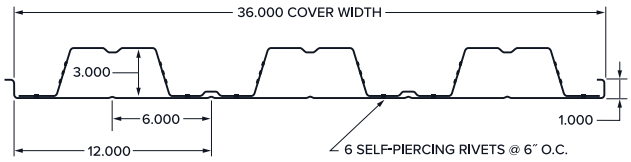
3" Composite Floor Deck Cellular (3.0CFDC)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	36	5.22
16/18	0.0598/0.0474		5.37
16/16	0.0598/0.0598		5.90



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ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.534	2.154	2.154	2.153	1.943	0.923	0.917	22118	21957	3334	839	1663
16/18	40	1.578	2.443	2.443	2.442	2.091	1.163	1.098	27863	26288	4624	1285	2536
16/16	40	1.735	2.584	2.584	2.583	2.310	1.181	1.135	28276	27174	4624	1285	2536

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in) Single	Double	Triple	Cantilever	Concrete Volume (ft^3/ft^2)
5	18/16	42	14 - 6	14 - 7	15 - 2	5 - 0	0.292
	16/18		14 - 11	16 - 0	16 - 7	5 - 6	
	16/16		15 - 1	16 - 3	16 - 10	5 - 7	
5 1/2	18/16	48	14 - 0	14 - 0	14 - 6	4 - 10	0.333
	16/18		14 - 6	15 - 4	15 - 11	5 - 3	
	16/16		14 - 8	15 - 7	16 - 1	5 - 4	
6	18/16	54	13 - 4	13 - 4	13 - 6	4 - 6	0.375
	16/18		14 - 1	14 - 9	15 - 3	5 - 1	
	16/16		14 - 3	14 - 11	15 - 6	5 - 2	
6 1/2	18/16	60	12 - 10	12 - 5	12 - 10	4 - 3	0.417
	16/18		13 - 9	14 - 3	14 - 9	4 - 11	
	16/16		13 - 11	14 - 5	14 - 11	4 - 11	
7	18/16	66	12 - 4	11 - 11	12 - 4	4 - 1	0.458
	16/18		13 - 6	13 - 9	14 - 3	4 - 9	
	16/16		13 - 8	13 - 11	14 - 5	4 - 9	
7 1/2	18/16	73	11 - 11	11 - 7	11 - 11	3 - 11	0.500
	16/18		13 - 3	13 - 4	13 - 9	4 - 7	
	16/16		13 - 5	13 - 6	13 - 11	4 - 7	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2 1/2" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 5" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in) 8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	15 - 0	16 - 0	Recommended Welded Wire Fabric	Wire Area (in^2/ft)
5	18/16	345	262	204	160	127	101	81	64	51	6x6 - W1.4xW1.4	0.028
	16/18	402	308	240	190	152	123	99	80	65		
	16/16	402	307	240	190	152	122	99	80	64		
5 1/2	18/16	404	308	239	188	150	120	96	77	61	6x6 - W1.4xW1.4	0.028
	16/18	471	361	282	224	180	145	118	96	77		
	16/16	471	360	282	223	179	145	117	95	77		
6	18/16	467	356	277	219	174	140	112	90	72	6x6 - W1.4xW1.4	0.028
	16/18	545	418	327	260	209	169	138	112	91		
	16/16	544	417	327	259	208	169	137	112	91		
6 1/2	18/16	533	407	317	251	200	161	130	105	84	6x6 - W2.0xW2.0	0.040
	16/18	622	478	374	298	240	195	159	130	106		
	16/16	621	477	374	297	239	194	158	129	106		
7	18/16	601	460	359	284	227	183	148	120	97	6x6 - W2.0xW2.0	0.040
	16/18	702	540	424	338	272	221	181	148	122		
	16/16	702	539	423	337	272	221	180	148	121		
7 1/2	18/16	671	514	402	319	255	206	167	135	110	4x4 - W1.4xW1.4	0.042
	16/18	785	604	474	378	306	249	204	167	138		
	16/16	784	603	474	378	305	248	203	167	137		

Normal-Weight (yc = 145 pcf, f'c = 3000 psi, n = 9)

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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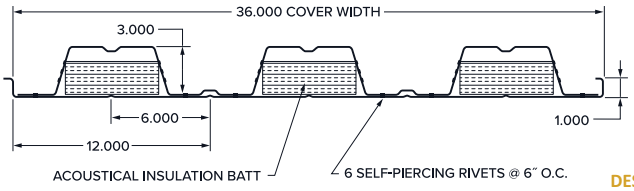
3" Composite Floor Deck Cellular Acoustical (3.0CFDCA)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	36	3.42
20/18	0.0358/0.0474		3.88
18/20	0.0474/0.0358		4.06
18/18	0.0474/0.0474		4.52



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in²/ft)	I_D 1 Span (in⁴/ft)	I_D 2+ Span (in⁴/ft)	I_p (in⁴/ft)	I_n (in⁴/ft)	S_p (in³/ft)	S_n (in³/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	0.961	1.463	1.463	1.462	1.167	0.604	0.640	14477	15337	2031	500	996
20/18	40	1.082	1.562	1.562	1.561	1.352	0.603	0.679	14453	16262	2031	500	996
18/20	40	1.149	1.823	1.823	1.822	1.451	0.885	0.838	21205	20079	3334	839	1663
18/18	40	1.271	1.946	1.946	1.946	1.673	0.900	0.879	21565	21065	3334	839	1663

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft³/ft²)
			Single	Double	Triple	Cantilever	
5	20/20	32	12 - 9	12 - 11	13 - 2	4 - 4	0.292
	20/18		12 - 8	13 - 3	13 - 5	4 - 5	
	18/20		14 - 11	15 - 4	15 - 11	5 - 3	
	18/18		15 - 1	15 - 8	16 - 3	5 - 5	
5 1/2	20/20	37	12 - 2	12 - 2	12 - 7	4 - 2	0.333
	20/18		12 - 1	12 - 3	12 - 7	4 - 2	
	18/20		14 - 5	14 - 9	15 - 3	5 - 1	
	18/18		14 - 8	15 - 1	15 - 7	5 - 2	
6	20/20	41	11 - 8	11 - 9	12 - 1	4 - 0	0.375
	20/18		11 - 7	11 - 9	12 - 1	4 - 0	
	18/20		14 - 1	14 - 3	14 - 9	4 - 11	
	18/18		14 - 3	14 - 6	15 - 0	5 - 0	
6 1/2	20/20	46	11 - 3	11 - 4	11 - 8	3 - 10	0.417
	20/18		11 - 2	11 - 4	11 - 8	3 - 10	
	18/20		13 - 9	13 - 9	14 - 3	4 - 9	
	18/18		13 - 11	14 - 0	14 - 6	4 - 10	
7	20/20	50	10 - 10	10 - 11	11 - 4	3 - 9	0.458
	20/18		10 - 10	10 - 11	11 - 4	3 - 9	
	18/20		13 - 5	13 - 4	13 - 9	4 - 7	
	18/18		13 - 7	13 - 7	14 - 1	4 - 8	
7 1/2	20/20	55	10 - 3	10 - 4	10 - 11	3 - 7	0.500
	20/18		10 - 5	10 - 4	10 - 11	3 - 7	
	18/20		13 - 1	12 - 11	13 - 4	4 - 5	
	18/18		13 - 2	13 - 2	13 - 8	4 - 6	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2 1/2" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 5" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight Concrete (γc = 110 pcf, f'c = 3000 psi, n = 14)	Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in²/ft)
			8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	15 - 0	16 - 0		
	5	20/20	257	195	151	119	94	75	60	48	38	6x6 - W1.4xW1.4	0.028
		20/18	256	195	151	119	94	75	59	47	37		
		18/20	337	259	203	161	130	105	86	70	57		
		18/18	337	258	202	161	129	105	85	70	57		
	5 1/2	20/20	301	229	178	140	111	89	71	57	45	6x6 - W1.4xW1.4	0.028
		20/18	300	229	177	140	111	88	71	56	45		
		18/20	395	303	238	190	153	124	101	83	68		
		18/18	394	303	237	189	152	124	101	83	68		
	6	20/20	348	265	206	163	130	104	83	67	53	6x6 - W1.4xW1.4	0.028
		20/18	347	265	206	162	129	103	83	66	53		
		18/20	456	351	276	220	178	145	118	97	80		
		18/18	456	350	275	219	177	144	118	97	80		
	6 1/2	20/20	397	303	236	187	149	120	96	78	62	6x6 - W2.0xW2.0	0.040
		20/18	396	303	236	186	149	119	96	77	62		
		18/20	521	401	316	252	204	166	137	113	93		
		18/18	521	401	315	252	203	166	136	112	92		
	7	20/20	448	343	267	212	169	136	110	89	72	6x6 - W2.0xW2.0	0.040
		20/18	447	342	267	211	169	136	110	88	71		
		18/20	589	454	357	286	231	189	156	128	106		
		18/18	588	453	357	285	231	189	155	128	106		
	7 1/2	20/20	501	383	299	237	190	153	124	101	81	4x4 - W1.4xW1.4	0.042
		20/18	500	383	299	237	190	153	124	100	81		
		18/20	658	508	400	320	260	213	175	145	120		
		18/18	658	507	400	320	259	212	175	145	120		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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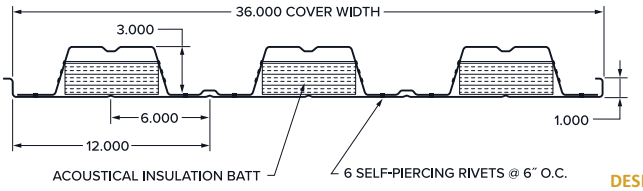
3" Composite Floor Deck Cellular Acoustical (3.0CFDCA)

LIGHTWEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	36	5.01
16/18	0.0598/0.0474		5.20
16/16	0.0598/0.0598		5.69



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.400	2.058	2.058	2.057	1.833	0.913	0.905	21878	21669	3334	839	1663
16/18	40	1.472	2.333	2.333	2.332	2.004	1.150	1.084	27537	25972	4624	1285	2536
16/16	40	1.601	2.466	2.466	2.465	2.189	1.167	1.121	27948	26843	4624	1285	2536

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
5	18/16	32	15 - 3	15 - 10	16 - 5	5 - 5	0.292
	16/18		15 - 8	17 - 4	17 - 11	5 - 11	
	16/16		15 - 11	17 - 7	18 - 2	6 - 0	
5 1/2	18/16	37	14 - 10	15 - 2	15 - 9	5 - 3	0.333
	16/18		15 - 3	16 - 8	17 - 3	5 - 9	
	16/16		15 - 5	16 - 11	17 - 6	5 - 10	
6	18/16	41	14 - 5	14 - 8	15 - 2	5 - 0	0.375
	16/18		14 - 10	16 - 1	16 - 8	5 - 6	
	16/16		15 - 0	16 - 3	16 - 10	5 - 7	
6 1/2	18/16	46	14 - 1	14 - 2	14 - 8	4 - 10	0.417
	16/18		14 - 6	15 - 7	16 - 1	5 - 4	
	16/16		14 - 8	15 - 9	16 - 4	5 - 5	
7	18/16	50	13 - 8	13 - 9	14 - 2	4 - 8	0.458
	16/18		14 - 3	15 - 1	15 - 7	5 - 2	
	16/16		14 - 5	15 - 3	15 - 9	5 - 3	
7 1/2	18/16	55	13 - 3	13 - 4	13 - 9	4 - 7	0.500
	16/18		13 - 11	14 - 8	15 - 1	5 - 0	
	16/16		14 - 1	14 - 10	15 - 4	5 - 1	

Lightweight Concrete (110 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2 1/2" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 5" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Lightweight (γc = 110 pcf, $f'c$ = 3000 psi, n = 14)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	15 - 0	16 - 0		
5	18/16	336	258	202	160	129	104	85	69	56	6x6 - W1.4xW1.4	0.028
	16/18	389	300	236	188	152	124	102	84	69		
	16/16	389	299	235	188	152	124	102	84	69		
5 1/2	18/16	394	302	237	189	152	123	100	82	67	6x6 - W1.4xW1.4	0.028
	16/18	455	351	276	221	179	146	121	100	82		
	16/16	455	351	276	221	179	146	120	99	82		
6	18/16	455	350	275	219	177	144	117	96	79	6x6 - W1.4xW1.4	0.028
	16/18	527	406	320	257	208	171	141	117	97		
	16/16	526	406	320	256	208	170	140	116	96		
6 1/2	18/16	520	400	315	251	203	165	136	112	92	6x6 - W2.0xW2.0	0.040
	16/18	602	465	367	294	239	196	162	135	112		
	16/16	602	465	366	294	239	196	162	134	112		
7	18/16	588	453	356	285	230	188	155	128	105	6x6 - W2.0xW2.0	0.040
	16/18	681	526	416	334	272	223	185	154	128		
	16/16	680	526	415	333	271	223	184	153	128		
7 1/2	18/16	657	507	399	319	259	212	174	144	119	4x4 - W1.4xW1.4	0.042
	16/18	762	590	466	375	305	251	208	174	145		
	16/16	762	589	466	374	305	251	208	173	145		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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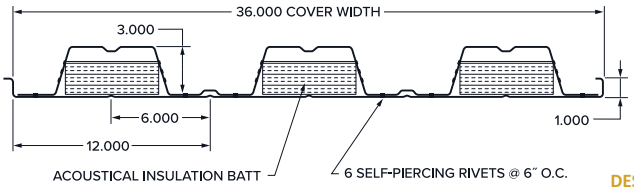
3" Composite Floor Deck Cellular Acoustical (3.0CFDCA)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
20/20	0.0358/0.0358	36	3.42
20/18	0.0358/0.0474		3.88
18/20	0.0474/0.0358		4.06
18/18	0.0474/0.0474		4.52



ICC-ES APPROVED
REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in^2/ft)	I_D 1 Span (in^4/ft)	I_D 2+ Span (in^4/ft)	I_p (in^4/ft)	I_n (in^4/ft)	S_p (in^3/ft)	S_n (in^3/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
20/20	40	0.961	1.463	1.463	1.462	1.167	0.604	0.640	14477	15337	2031	500	996
20/18	40	1.082	1.562	1.562	1.561	1.352	0.603	0.679	14453	16262	2031	500	996
18/20	40	1.149	1.823	1.823	1.822	1.451	0.885	0.838	21205	20079	3334	839	1663
18/18	40	1.271	1.946	1.946	1.946	1.673	0.900	0.879	21565	21065	3334	839	1663

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in)				Concrete Volume (ft^3/ft^2)
			Single	Double	Triple	Cantilever	
5	20/20	42	11 - 7	11 - 8	12 - 0	4 - 0	0.292
	20/18		11 - 6	11 - 8	12 - 0	4 - 0	
	18/20		14 - 0	14 - 1	14 - 7	4 - 10	
	18/18		14 - 2	14 - 5	14 - 11	4 - 11	
5 1/2	20/20	48	11 - 0	11 - 1	11 - 6	3 - 10	0.333
	20/18		11 - 0	11 - 1	11 - 6	3 - 10	
	18/20		13 - 7	13 - 6	14 - 0	4 - 8	
	18/18		13 - 9	13 - 9	14 - 3	4 - 9	
6	20/20	54	10 - 4	10 - 5	11 - 0	3 - 8	0.375
	20/18		10 - 6	10 - 5	11 - 0	3 - 8	
	18/20		13 - 2	13 - 0	13 - 5	4 - 5	
	18/18		13 - 3	13 - 3	13 - 8	4 - 6	
6 1/2	20/20	60	9 - 8	9 - 7	10 - 7	3 - 6	0.417
	20/18		9 - 9	9 - 7	10 - 7	3 - 6	
	18/20		12 - 7	12 - 6	12 - 10	4 - 3	
	18/18		12 - 8	12 - 9	12 - 11	4 - 3	
7	20/20	66	9 - 3	8 - 11	10 - 2	3 - 4	0.458
	20/18		9 - 3	8 - 11	10 - 2	3 - 4	
	18/20		12 - 2	11 - 11	12 - 4	4 - 1	
	18/18		12 - 3	11 - 11	12 - 4	4 - 1	
7 1/2	20/20	73	9 - 0	8 - 5	9 - 6	3 - 2	0.500
	20/18		9 - 0	8 - 5	9 - 6	3 - 2	
	18/20		11 - 9	11 - 7	11 - 11	3 - 11	
	18/18		11 - 10	11 - 7	11 - 11	3 - 11	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2 1/2" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 5" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Normal-Weight Concrete (yc = 145 pcf, f'c = 3000 psi, n = 9)

Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in)									Recommended Welded Wire Fabric	Wire Area (in^2/ft)
		8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	15 - 0	16 - 0		
5	20/20	260	196	150	116	90	70	54	41	31	6x6 - W1.4xW1.4	0.028
	20/18	259	195	149	115	90	70	54	41	30		
	18/20	346	264	205	161	128	102	82	65	52		
	18/18	345	263	204	161	128	102	81	65	51		
5 1/2	20/20	304	230	176	137	107	83	65	50	37	6x6 - W1.4xW1.4	0.028
	20/18	304	229	176	136	106	83	64	49	37		
	18/20	405	309	240	190	151	121	97	78	62		
	18/18	405	309	240	189	150	120	96	77	61		
6	20/20	352	266	204	159	124	97	76	59	45	6x6 - W1.4xW1.4	0.028
	20/18	351	265	204	158	124	97	75	58	44		
	18/20	468	357	278	220	176	141	113	91	73		
	18/18	467	357	278	220	175	140	113	91	73		
6 1/2	20/20	401	304	234	182	143	112	88	68	52	6x6 - W2.0xW2.0	0.040
	20/18	401	303	233	182	142	112	88	68	52		
	18/20	534	408	319	252	201	162	131	106	85		
	18/18	533	408	318	252	201	162	130	105	85		
7	20/20	452	343	264	206	162	128	101	79	61	6x6 - W2.0xW2.0	0.040
	20/18	452	342	264	206	162	127	100	78	60		
	18/20	602	461	360	285	229	184	149	121	98		
	18/18	602	461	360	285	228	184	149	120	97		
7 1/2	20/20	505	383	296	231	182	144	114	89	69	4x4 - W1.4xW1.4	0.042
	20/18	504	383	295	231	182	144	113	89	69		
	18/20	673	515	403	320	256	207	168	137	111		
	18/18	672	515	402	319	256	207	168	136	110		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
   - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
   - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

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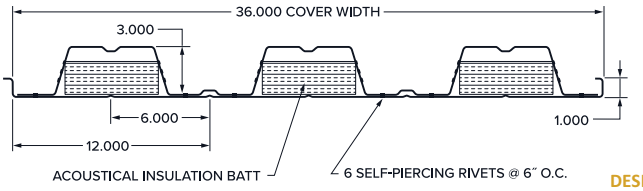
3" Composite Floor Deck Cellular Acoustical (3.0CFDCA)

NORMAL-WEIGHT CONCRETE

PROPERTIES

Gage (Hat/Pan)	Thickness (in)	Cover (in)	Weight (psf)
18/16	0.0474/0.0598	36	5.01
16/18	0.0598/0.0474		5.20
16/16	0.0598/0.0598		5.69



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REFER TO ESR-1169

ASD SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F_y (ksi)	A_s (in²/ft)	I_D 1 Span (in⁴/ft)	I_D 2+ Span (in⁴/ft)	I_p (in⁴/ft)	I_n (in⁴/ft)	S_p (in³/ft)	S_n (in³/ft)	Mn,p/Ω (in-lb/ft)	Mn,n/Ω (in-lb/ft)	Vn/Ω (lb/ft)	*Rbe/Ω (lb/ft)	*Rbi/Ω (lb/ft)
18/16	40	1.400	2.058	2.058	2.057	1.833	0.913	0.905	21878	21669	3334	839	1663
16/18	40	1.472	2.333	2.333	2.332	2.004	1.150	1.084	27537	25972	4624	1285	2536
16/16	40	1.601	2.466	2.466	2.465	2.189	1.167	1.121	27948	26843	4624	1285	2536

CONSTRUCTION CLEAR SPANS

Total Slab Depth (in)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft - in) Single	Double	Triple	Cantilever	Concrete Volume (ft³/ft²)
5	18/16	42	14 - 4	14 - 7	15 - 1	5 - 0	0.292
	16/18		14 - 9	15 - 11	16 - 6	5 - 6	
	16/16		14 - 11	16 - 2	16 - 9	5 - 7	
5 1/2	18/16	48	13 - 11	13 - 11	14 - 5	4 - 9	0.333
	16/18		14 - 4	15 - 3	15 - 10	5 - 3	
	16/16		14 - 6	15 - 6	16 - 0	5 - 4	
6	18/16	54	13 - 4	13 - 4	13 - 10	4 - 7	0.375
	16/18		14 - 0	14 - 8	15 - 2	5 - 0	
	16/16		14 - 2	14 - 10	15 - 5	5 - 1	
6 1/2	18/16	60	12 - 9	12 - 11	13 - 4	4 - 5	0.417
	16/18		13 - 8	14 - 2	14 - 8	4 - 10	
	16/16		13 - 10	14 - 4	14 - 10	4 - 11	
7	18/16	66	12 - 4	12 - 4	12 - 6	4 - 2	0.458
	16/18		13 - 4	13 - 8	14 - 2	4 - 8	
	16/16		13 - 6	13 - 10	14 - 4	4 - 9	
7 1/2	18/16	73	11 - 11	11 - 7	11 - 11	3 - 11	0.500
	16/18		13 - 1	13 - 3	13 - 8	4 - 6	
	16/16		13 - 3	13 - 5	13 - 10	4 - 7	

Normal-Weight Concrete (145 pcf)

Notes:

1. Section properties and resistance spot weld strength are calculated in accordance with the AISI S100-16 w/ S3.
2. Web crippling design strengths* and maximum construction spans are based on 2 1/2" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
3. Maximum construction spans are based on ANSI/SDI SD-2022 Standard for Steel Deck and the following construction loading:
   - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
   - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
4. Concrete weights do not include weight of deck.
5. Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
6. Cantilever clear spans assume adjacent clear span is at least 3 times longer than the cantilever clear span and no greater than spans published above. Bearing width at perimeter support assumed to be 5" minimum. Contact New Millennium otherwise.

SLAB DESIGN - ALLOWABLE SUPERIMPOSED UNIFORM LOADS AND MINIMUM SDI SLAB REINFORCEMENT

Normal-Weight (γc = 145 pcf, f'c = 3000 psi, n = 9) Total Slab Depth (in)	Gage	Allowable Superimposed Uniform Load (psf) Clear Span (ft - in) 8 - 0	9 - 0	10 - 0	11 - 0	12 - 0	13 - 0	14 - 0	15 - 0	16 - 0	Recommended Welded Wire Fabric	Wire Area (in²/ft)
5	18/16	345	263	204	160	127	101	81	64	51	6x6 - W1.4xW1.4	0.028
	16/18	402	308	240	191	152	123	99	81	65		
	16/16	402	308	240	190	152	122	99	80	65		
5 1/2	18/16	404	308	239	189	150	120	96	77	61	6x6 - W1.4xW1.4	0.028
	16/18	471	361	282	224	180	145	118	96	78		
	16/16	471	361	282	224	179	145	117	95	77		
6	18/16	467	357	278	219	175	140	112	90	72	6x6 - W1.4xW1.4	0.028
	16/18	545	418	327	260	209	169	138	112	92		
	16/16	544	417	327	260	209	169	137	112	91		
6 1/2	18/16	533	407	318	251	201	161	130	105	84	6x6 - W2.0xW2.0	0.040
	16/18	622	478	374	298	240	195	159	130	106		
	16/16	622	477	374	298	240	194	158	129	106		
7	18/16	601	460	359	284	228	183	148	120	97	6x6 - W2.0xW2.0	0.040
	16/18	702	540	424	338	272	221	181	148	122		
	16/16	702	539	423	337	272	221	181	148	121		
7 1/2	18/16	672	514	402	319	255	206	167	136	110	4x4 - W1.4xW1.4	0.042
	16/18	785	604	474	379	306	249	204	168	138		
	16/16	784	603	474	378	305	248	203	167	137		

Notes:

7. Welded wire fabric shown in the table above is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
8. Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
   - Unfactored service level loads, determined using SDI design method per ANSI/SDI SD-2022 Standard for Steel Deck.
   - Single span conditions without negative bending reinforcing over supports.
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