

**ALLOWABLE DIAPHRAGM SHEARS FOR  
DEEP DEK 6.0 CELLULAR ACOUSTICAL**



a unit of **CSI**™

SUPPORT CONNECTION: 5/8" Puddle Welds  
 SUPPORT PATTERN : 24/4  
 SIDELAP CONNECTION : # 10 Screws (Type 2)

Qd = Allowable Design Shear (lbs/foot)  
 G' = Diaphragm Shear Stiffness (kips/in)

GAGE THICKNESS	SIDE LAP SPACING	SHEAR STIFFNESS	DECK SPAN - C TO C SUPPORT							
			14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"
20/20 .0358"/.0358"	12"	Qd	439	425	414	405	398	392	387	383
		G'	44.1	45.5	46.7	47.6	48.4	49.1	49.7	50.2
	24"	Qd	275	261	250	242	235	229	224	219
		G'	31.5	31.6	31.7	31.7	31.7	31.6	31.6	31.5
	36"	Qd	221	207	196	187	180	174	169	165
		G'	26.0	25.7	25.3	25.0	24.8	24.5	24.3	24.1
20/18 .0358"/.0474"	12"	Qd	451	435	423	414	406	399	394	389
		G'	56.1	56.5	56.8	57.1	57.2	57.4	57.5	57.6
	24"	Qd	287	272	260	250	242	236	230	225
		G'	37.1	36.5	36.0	35.6	35.2	34.9	34.6	34.3
	36"	Qd	233	217	205	196	188	181	176	171
		G'	29.7	28.8	28.1	27.4	26.9	26.4	26.0	25.7
18/20 .0474"/.0358"	12"	Qd	565	548	535	525	517	510	504	499
		G'	45.5	47.4	49.0	50.3	51.4	52.4	53.3	54.0
	24"	Qd	348	332	319	309	300	293	287	282
		G'	33.4	33.9	34.2	34.4	34.6	34.7	34.7	34.8
	36"	Qd	276	259	247	236	228	221	215	210
		G'	28.0	27.9	27.7	27.5	27.3	27.2	27.0	26.8
18/18 .0474"/.0474"	12"	Qd	576	558	544	533	524	516	510	505
		G'	60.5	61.4	62.1	62.6	63.0	63.4	63.7	63.9
	24"	Qd	360	342	328	317	308	300	294	288
		G'	40.9	40.5	40.1	39.7	39.4	39.1	38.9	38.6
	36"	Qd	287	270	256	244	235	228	221	216
		G'	33.0	32.2	31.5	30.8	30.3	29.8	29.4	29.0
18/16 .0474"/.0598"	12"	Qd	588	568	553	541	532	523	516	510
		G'	69.7	69.6	69.5	69.4	69.4	69.3	69.2	69.1
	24"	Qd	371	352	337	325	315	307	300	294
		G'	44.9	43.9	43.1	42.4	41.8	41.3	40.9	40.5
	36"	Qd	299	280	265	253	243	235	228	222
		G'	35.6	34.3	33.3	32.4	31.7	31.1	30.5	30.1
16/18 .0598"/.0474"	12"	Qd	709	689	673	660	650	641	634	628
		G'	63.8	65.2	66.2	67.1	67.8	68.4	68.9	69.3
	24"	Qd	436	416	400	387	377	368	361	355
		G'	44.0	43.8	43.6	43.3	43.1	42.9	42.7	42.5
	36"	Qd	345	325	309	296	286	277	270	264
		G'	35.8	35.1	34.4	33.8	33.3	32.9	32.5	32.1
16/16 .0598"/.0598"	12"	Qd	720	698	682	668	657	648	640	633
		G'	75.3	75.6	75.7	75.9	75.9	76.0	76.0	76.0
	24"	Qd	447	425	408	395	384	375	367	360
		G'	49.2	48.3	47.5	46.8	46.2	45.7	45.3	44.9
	36"	Qd	356	334	317	304	293	284	276	269
		G'	39.2	37.9	36.8	35.9	35.2	34.5	34.0	33.5
14/16 .0747"/.0598"	12"	Qd	878	854	835	820	807	797	788	780
		G'	80.6	81.3	81.8	82.2	82.5	82.7	82.9	83.0
	24"	Qd	537	513	494	478	466	456	447	439
		G'	53.5	52.6	51.9	51.3	50.8	50.3	49.9	49.5
	36"	Qd	423	399	380	365	352	342	333	325
		G'	42.8	41.5	40.6	39.6	38.8	38.1	37.5	37.0
14/14 .0747"/.0747"	12"	Qd	890	864	844	828	814	803	794	786
		G'	90.3	89.9	89.4	89.2	89.0	88.7	88.5	88.3
	24"	Qd	548	523	502	486	473	462	453	445
		G'	57.5	56.1	54.9	54.0	53.2	52.5	51.9	51.4
	36"	Qd	435	409	389	373	359	348	339	331
		G'	45.4	43.7	42.3	41.1	40.2	39.3	38.7	38.0

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, 3rd Edition  
 Qd Values have been divided by SF of 2.35 to obtain (ASD) Diaphragm Shear values for wind loading.  
 Calculations are based on a "Single Span Condition". For "Multiple Spans", contact the Metal Dek Group for additional information.

**ALLOWABLE DIAPHRAGM SHEARS FOR  
DEEP DEK 6.0 CELLULAR ACOUSTICAL**



SUPPORT CONNECTION: 5/8" Diameter Puddle Welds  
 SUPPORT PATTERN : 24.5/4  
 SIDELAP CONNECTION : 1-1/2" Seam Welds

Qd = Allowable Design Shear (lbs/foot)  
 G' = Diaphragm Shear Stiffness (kips/in)

GAGE THICKNESS	SIDE LAP SPACING	SHEAR STIFFNESS	DECK SPAN - C TO C SUPPORT							
			14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"
20/20 .0358"/.0358"	12"	Qd	1659	1631	1610	1593	1578	1566	1566	1548
		G'	44.1	45.5	46.7	47.6	48.4	49.1	49.7	50.2
	24"	Qd	963	938	919	903	891	880	872	864
		G'	31.5	31.6	31.7	31.7	31.7	31.6	31.6	31.5
	36"	Qd	708	683	664	648	636	625	616	609
		G'	26.0	25.7	25.3	25.0	24.8	24.5	24.3	24.1
20/18 .0358"/.0474"	12"	Qd	1887	1856	1831	1812	1796	1782	1771	1761
		G'	56.1	56.5	56.8	57.1	57.2	57.4	57.5	57.6
	24"	Qd	1095	1067	1045	1028	1013	1002	991	983
		G'	37.1	36.5	36.0	35.6	35.2	34.9	34.6	34.3
	36"	Qd	805	777	755	738	723	711	701	693
		G'	29.7	28.8	28.1	27.4	26.9	26.4	26.0	25.7
18/20 .0474"/.0358"	12"	Qd	1887	1856	1831	1812	1796	1782	1771	1761
		G'	45.5	47.4	49.0	50.3	51.4	52.4	53.3	54.0
	24"	Qd	1095	1067	1045	1028	1013	1002	991	983
		G'	33.4	33.9	34.2	34.4	34.6	34.7	34.7	34.8
	36"	Qd	805	777	755	738	723	711	701	693
		G'	28.0	27.9	27.7	27.5	27.2	27.2	27.0	26.8
18/18 .0474"/.0474"	12"	Qd	2104	2069	2042	2020	2002	1987	1974	1963
		G'	60.5	61.4	62.1	62.6	63.0	63.4	63.7	63.9
	24"	Qd	1221	1190	1166	1146	1130	1117	1106	1096
		G'	40.9	40.5	40.1	39.7	39.4	39.1	38.9	38.6
	36"	Qd	898	866	842	823	807	793	782	772
		G'	33.0	32.2	31.5	30.8	30.3	29.8	29.4	29.0
18/16 .0474"/.0598"	12"	Qd	2323	2285	2255	2231	2211	2194	2180	2168
		G'	69.7	69.6	69.5	69.4	69.4	69.3	69.2	69.1
	24"	Qd	1349	1314	1287	1266	1248	1233	1221	1210
		G'	44.9	43.9	43.1	42.4	41.8	41.3	40.9	40.5
	36"	Qd	991	957	930	908	891	876	864	853
		G'	35.6	34.3	33.3	32.4	31.7	31.1	30.5	30.1
16/18 .0598"/.0474"	12"	Qd	cssteel	2285	2255	2231	2211	2194	2180	2168
		G'	63.8	65.2	66.2	67.1	67.8	68.4	68.9	69.3
	24"	Qd	1349	1314	1287	1266	1248	1233	1221	1210
		G'	44.0	43.8	43.6	43.3	43.1	42.9	42.7	42.5
	36"	Qd	991	957	930	908	891	876	864	853
		G'	35.8	35.1	34.4	33.8	33.3	32.9	32.5	32.1
16/16 .0598"/.0598"	12"	Qd	2530	2488	2456	2429	2408	2390	2374	2361
		G'	75.3	75.6	75.7	75.9	75.9	76.0	76.0	76.0
	24"	Qd	1469	1431	1402	1378	1359	1343	1329	1318
		G'	49.2	48.3	47.5	46.8	46.2	45.7	45.3	44.9
	36"	Qd	1080	1042	1013	989	970	954	940	929
		G'	39.2	37.9	36.8	35.9	35.2	34.5	34.0	33.5
14/16 .0747"/.0598"	12"	Qd	2761	2716	2680	2652	2628	2608	2591	2577
		G'	80.6	81.3	81.8	82.2	82.5	82.7	82.9	83.0
	24"	Qd	1603	1562	1530	1504	1483	1466	1451	1438
		G'	53.5	52.6	51.9	51.3	50.8	50.3	49.9	49.5
	36"	Qd	1178	1137	1105	1080	1059	1041	1026	1014
		G'	42.8	41.5	40.5	39.6	38.8	38.1	37.5	37.0
14/14 .0747"/.0747"	12"	Qd	2974	2925	2887	2856	2830	2809	2791	2775
		G'	90.3	89.9	89.5	89.2	89.0	88.7	88.5	88.3
	24"	Qd	1726	1682	1648	1620	1598	1579	1563	1549
		G'	57.5	56.1	54.9	54.0	53.2	52.5	51.9	51.4
	36"	Qd	1269	1225	1190	1163	1140	1121	1106	1092
		G'	45.5	43.7	42.3	41.1	40.2	39.3	38.7	38.0

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, 3rd Edition  
 Qd Values have been divided by SF of 2.35 to obtain (ASD) Diaphragm Shear values for wind loading.  
 Calculations are based on a "Single Span Condition". For "Multiple Spans", contact the Metal Dek Group for additional information.

**ALLOWABLE DIAPHRAGM SHEARS FOR  
DEEP DEK 6.0 CELLULAR ACOUSTICAL**



a unit of **CSI™**

SUPPORT CONNECTION: #12 Support Screws (Type 5)  
 SUPPORT PATTERN : 24/4  
 SIDELAP CONNECTION : # 10 Screws (Type 2)

Qd = Allowable Design Shear (lbs/foot)  
 G' = Diaphragm Shear Stiffness (kips/in)

GAGE THICKNESS	SIDE LAP SPACING	SHEAR STIFFNESS	DECK SPAN - C TO C SUPPORT							
			14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"
20/20 .0358"/.0358"	12"	Qd	443	435	430	425	422	417	414	411
		G'	43.8	45.2	46.4	47.3	48.1	48.8	49.4	49.9
	24"	Qd	251	243	238	233	229	226	224	221
		G'	31.0	31.1	31.2	31.2	31.2	31.2	31.2	31.2
	36"	Qd	187	179	174	169	165	162	160	157
		G'	25.4	25.1	24.8	24.5	24.3	24.1	23.9	23.7
20/18 .0358"/.0474"	12"	Qd	443	435	430	425	422	417	414	411
		G'	55.5	56.0	56.3	56.6	56.8	57.0	57.1	57.2
	24"	Qd	251	243	238	233	229	226	224	221
		G'	36.4	35.9	35.4	35	34.7	34.4	34.1	33.9
	36"	Qd	187	179	174	169	165	162	160	157
		G'	28.9	28.1	27.4	26.8	26.3	25.9	25.5	25.2
18/20 .0474"/.0358"	12"	Qd	586	577	569	563	558	553	548	544
		G'	45.1	47.1	48.7	50	51.1	52.1	53	53.8
	24"	Qd	332	322	315	309	304	300	296	293
		G'	32.9	33.4	33.7	34	34.1	34.3	34.4	34.4
	36"	Qd	247	237	230	224	219	215	211	208
		G'	27.4	27.3	27.1	27	26.8	26.7	26.5	26.4
18/18 .0474"/.0474"	12"	Qd	586	577	569	563	558	553	548	544
		G'	59.9	60.9	61.6	62.1	62.6	62.9	63.3	63.5
	24"	Qd	332	322	315	309	304	300	296	293
		G'	40.2	39.8	39.5	39.1	38.9	38.6	38.4	38.2
	36"	Qd	247	237	230	224	219	215	211	208
		G'	32.2	31.4	30.7	30.2	29.7	29.3	28.9	28.5
18/16 .0474"/.0598"	12"	Qd	586	577	569	563	558	553	548	544
		G'	68.9	68.9	68.9	68.9	68.8	68.8	68.7	68.7
	24"	Qd	332	322	315	309	304	300	296	293
		G'	44.0	43.1	42.3	41.7	41.2	40.7	40.3	40.0
	36"	Qd	247	237	230	224	219	215	211	208
		G'	34.6	33.4	32.5	31.7	31.0	30.4	30	29.5
16/18 .0598"/.0474"	12"	Qd	740	727	718	710	704	697	691	686
		G'	63.2	64.6	65.7	66.6	67.3	67.9	68.5	68.9
	24"	Qd	419	406	397	389	383	378	374	370
		G'	43.2	43.1	42.9	42.7	42.5	42.3	42.1	42.0
	36"	Qd	312	299	290	282	276	271	267	263
		G'	35.0	34.3	33.7	33.1	32.7	32.2	31.9	31.6
16/16 .0598"/.0598"	12"	Qd	740	727	718	710	704	697	691	686
		G'	74.5	74.8	75.1	75.2	75.3	75.4	75.5	75.5
	24"	Qd	419	406	397	389	383	378	374	370
		G'	48.2	47.4	46.7	46.1	45.5	45.1	44.7	44.4
	36"	Qd	312	299	290	282	276	271	267	263
		G'	38.1	36.9	36.0	35.1	34.4	33.8	33.3	32.9
14/16 .0747"/.0598"	12"	Qd	924	909	897	887	880	871	864	857
		G'	79.8	80.6	81.1	81.5	81.8	82.1	82.3	82.5
	24"	Qd	523	508	496	486	479	472	467	462
		G'	52.4	51.7	51.1	50.5	50	49.6	49.2	48.9
	36"	Qd	389	374	362	353	345	338	333	328
		G'	41.7	40.5	39.5	38.7	38.0	37.4	36.8	36.4
14/14 .0747"/.0747"	12"	Qd	924	909	897	887	880	871	864	857
		G'	89.3	89.0	88.7	88.5	88.3	88.1	87.9	87.7
	24"	Qd	523	508	496	486	479	472	467	462
		G'	56.4	55.0	54.0	53.1	52.4	51.7	51.2	50.7
	36"	Qd	389	374	362	353	345	338	333	328
		G'	44.1	42.5	41.3	40.2	39.3	38.6	37.9	37.4

**NOTES:** Data is prepared in accordance with SDI's DIAPHRAGM DESIGN MANUAL, 3rd Edition  
 Qd Values have been divided by SF of 2.00 to obtain (ASD) Diaphragm Shear values for wind loading.  
 Calculations are based on a "Single Span Condition". For "Multiple Spans", contact the Metal Dek Group for additional information.