

DEEP-DEK® 4.5 ACOUSTICAL
ALLOWABLE DIAPHRAGM SHEAR VALUES



5/8" DIAMETER PUDDLE WELDS AT SUPPORTS
WELDED SIDELAPS

		20 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	1405	1396	1389	1383	1377	1373	1368	1365	1361	1358	1356	1353	1351	1349	1347
8"	1197	1186	1176	1168	1161	1155	1149	1145	1140	1137	1133	1130	1127	1124	1122
10"	1044	1031	1019	1010	1002	995	989	983	978	974	970	966	963	960	957
12"	928	914	902	892	883	875	868	862	857	852	848	844	840	837	834
15"	799	786	774	763	754	745	738	731	725	720	716	711	707	704	701
18"	690	677	665	656	648	641	635	630	625	621	617	613	610	607	604
20"	636	623	612	602	594	587	581	575	571	566	562	559	556	553	550
24"	555	541	530	521	513	505	499	494	489	485	481	477	474	471	469
30"	473	460	449	439	431	424	418	412	408	403	399	396	393	390	387
32"	453	439	428	419	411	404	398	392	387	383	379	376	372	370	367
36"	419	405	394	385	377	370	364	358	353	349	345	342	338	336	333

		18 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	1823	1812	1803	1795	1788	1781	1776	1771	1767	1763	1760	1757	1754	1751	1749
8"	1554	1539	1527	1516	1507	1499	1492	1486	1480	1475	1471	1467	1463	1459	1456
10"	1355	1338	1323	1311	1300	1291	1283	1276	1270	1264	1259	1254	1250	1246	1242
12"	1205	1187	1171	1157	1146	1136	1127	1119	1112	1106	1100	1095	1091	1086	1082
15"	1037	1020	1005	991	978	967	958	949	942	935	929	923	918	914	909
18"	896	879	864	852	841	832	824	817	811	805	800	796	792	488	785
20"	826	808	794	781	771	762	754	747	741	735	730	725	721	717	714
24"	720	702	688	676	665	656	648	641	635	629	624	620	616	612	608
30"	614	597	582	570	559	550	542	535	529	524	919	514	510	506	503
32"	588	570	556	544	533	524	516	509	503	497	492	488	483	480	476
36"	544	526	512	499	489	480	472	465	459	453	448	443	439	436	432

		16 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	2251	2237	2225	2215	2207	2199	2193	2187	2181	2177	2172	2169	2165	2162	2159
8"	1918	1900	1885	1872	1860	1850	1842	1834	1827	1821	1816	1811	1806	1802	1798
10"	1672	1651	1634	1618	1605	1594	1584	1575	1567	1560	1554	1548	1543	1538	1533
12"	1488	1465	1445	1429	1415	1402	1391	1382	1373	1365	1358	1352	1346	1341	1336
15"	1280	1259	1241	1223	1207	1194	1182	1172	1162	1154	1147	1140	1134	1128	1123
18"	1106	1085	1067	1052	1039	1028	1018	1009	1001	994	988	983	977	973	968
20"	1019	998	980	965	952	940	931	922	914	907	901	896	890	886	881
24"	889	867	849	834	821	810	800	791	784	777	771	765	760	755	751
30"	758	737	719	704	691	679	670	661	653	646	640	634	629	625	620
32"	726	704	686	671	658	647	637	628	621	614	607	602	597	592	588
36"	671	650	632	617	604	592	583	574	566	559	553	547	542	538	533

		14 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	2738	2721	2707	2694	2684	2675	2667	2660	2653	2647	2642	2638	2633	2629	2626
8"	2333	2311	2292	2276	2263	2251	2240	2231	2222	2215	2208	2202	2196	2191	2187
10"	2034	2008	1987	1968	1953	1939	1927	1916	1906	1899	1890	1883	1876	1870	1865
12"	1809	1782	1758	1738	1721	1706	1692	1681	1670	1661	1652	1644	1637	1631	1625
15"	1557	1531	1509	1487	1469	1452	1438	1425	1414	1404	1395	1386	1379	1372	1365
18"	1345	1319	1298	1279	1263	1250	1238	1227	1218	1209	1202	1195	1189	1183	1178
20"	1240	1213	1192	1173	1158	1144	1132	1121	1112	1104	1096	1089	1083	1077	1072
24"	1081	1055	1033	1015	999	985	973	963	953	945	937	930	924	919	913
30"	922	896	874	856	840	826	814	804	794	786	779	772	765	760	755
32"	882	856	835	816	800	787	775	764	755	746	739	732	726	720	715
36"	816	790	768	750	734	721	709	698	689	680	673	665	660	654	649



Diaphragm design based on "Steel Deck Institute Diaphragm Design Manual, Third Edition". For diaphragm values of other roof deck assemblies, consult the SDI Diaphragm Design Manual or contact the Metal Dek Group™.
All calculations are based on a "Single Span Condition". For "Multiple Spans", please contact the Metal Dek Group for additional information. Rev: 04/08/05

DEEP-DEK® 4.5 ACOUSTICAL ALLOWABLE DIAPHRAGM SHEAR VALUES



5/8" DIAMETER PUDDLE WELDS AT SUPPORTS
#10x3/4" SIDELAP SCREWS AT SIDELAPS

		20 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	753	744	736	730	725	720	714	709	705	701	697	694	691	688	685
8"	589	580	573	566	561	556	552	549	545	543	540	538	535	533	532
10"	491	482	475	468	463	458	454	450	447	444	442	439	437	435	434
12"	426	417	409	403	397	393	389	385	382	379	376	374	372	370	368
15"	360	351	344	337	332	327	323	320	316	314	311	309	306	305	303
18"	317	308	300	294	288	284	280	276	273	270	267	265	263	261	259
20"	295	286	278	272	267	262	258	254	251	248	246	243	241	239	237
24"	262	253	246	239	234	229	225	222	218	215	213	210	208	206	205
30"	229	220	213	207	201	197	192	189	186	183	180	178	176	174	172
32"	221	212	205	198	193	188	184	181	177	175	172	170	167	166	164
36"	208	199	191	185	179	175	171	167	164	161	158	156	154	152	150

		18 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	995	983	973	965	958	949	942	935	930	924	920	915	911	908	905
8"	778	767	757	749	742	735	730	725	721	717	714	711	708	706	703
10"	648	637	627	619	612	606	600	595	591	587	584	581	578	576	573
12"	562	550	540	532	525	519	514	509	505	501	497	494	492	489	487
15"	475	464	454	446	438	432	427	422	418	414	411	408	405	402	400
18"	418	406	396	388	381	375	369	364	360	356	353	350	347	345	342
20"	389	377	367	359	352	346	340	336	331	328	324	321	318	316	314
24"	345	334	324	316	309	302	297	292	288	284	281	278	275	273	270
30"	302	290	281	272	265	259	254	249	245	241	238	235	232	229	227
32"	291	279	270	261	254	248	243	238	234	230	227	224	221	218	216
36"	273	261	252	243	236	230	225	220	216	212	209	206	203	200	198

		16 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	1253	1238	1226	1215	1203	1192	1183	1175	1168	1161	1156	1150	1145	1141	1137
8"	980	965	953	943	934	926	920	914	909	904	900	896	892	889	886
10"	816	801	789	779	770	762	756	750	745	740	736	732	728	725	722
12"	707	692	680	670	661	653	646	641	635	631	626	623	619	616	613
15"	597	583	571	560	551	544	537	531	526	521	517	513	510	507	504
18"	524	510	498	487	479	471	464	458	453	449	444	441	437	434	431
20"	488	473	461	451	442	435	428	422	417	412	408	404	401	397	395
24"	433	419	407	396	388	380	373	367	362	357	353	349	346	343	340
30"	379	364	352	342	333	325	319	313	308	303	299	295	291	288	285
32"	365	350	338	328	319	312	305	299	294	289	285	281	278	275	272
36"	342	328	316	305	297	289	282	276	271	266	262	258	255	252	249

		14 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	1562	1544	1525	1508	1493	1481	1470	1460	1451	1443	1436	1430	1424	1419	1414
8"	1220	1202	1188	1175	1164	1155	1147	1139	1133	1127	1122	1117	1113	1109	1106
10"	1016	998	983	970	959	950	942	935	928	922	917	913	908	904	901
12"	879	861	846	834	823	814	805	798	792	786	781	776	772	768	764
15"	743	725	710	697	686	677	669	662	655	649	644	640	635	631	628
18"	652	634	619	606	595	586	578	571	564	558	553	549	544	540	537
20"	606	588	573	561	550	541	532	525	519	513	508	503	499	495	491
24"	538	520	505	492	482	472	464	457	450	445	440	435	431	427	423
30"	470	452	437	424	413	404	396	389	382	376	371	367	362	358	355
32"	453	435	420	407	396	387	379	372	365	359	354	350	345	341	338
36"	424	406	391	379	368	359	350	343	337	331	326	321	317	313	309



Diaphragm design based on "Steel Deck Institute Diaphragm Design Manual, Third Edition". For diaphragm values of other roof deck assemblies, consult the SDI Diaphragm Design Manual or contact the Metal Dek Group™.
All calculations are based on a "Single Span Condition". For "Multiple Spans", please contact the Metal Dek Group for additional information.

DEEP-DEK® 4.5 ACOUSTICAL ALLOWABLE DIAPHRAGM SHEAR VALUES



#12x1-1/4" SUPPORT SCREWS AT SUPPORTS
#10x3/4" SIDELAP SCREWS AT SIDELAPS

		20 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	758	751	745	740	736	732	729	726	723	721	719	717	715	713	712
8"	630	622	615	609	604	599	595	592	589	586	583	581	579	577	575
10"	542	533	526	519	514	509	505	501	497	494	492	489	487	485	483
12"	466	459	453	447	443	439	435	432	430	427	425	423	422	419	417
15"	389	382	376	370	366	362	359	356	353	351	348	346	345	343	342
18"	338	331	324	319	315	311	307	304	302	299	287	295	293	292	290
20"	312	305	299	294	289	285	282	279	276	274	272	270	268	266	265
24"	274	267	260	255	251	247	243	240	238	235	233	231	229	228	226
30"	236	228	222	217	212	208	205	202	199	197	195	193	191	189	188
32"	226	219	212	207	203	199	195	192	190	187	185	183	181	180	178
36"	210	203	196	191	187	183	179	176	174	171	169	167	165	164	162

		18 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	1004	994	987	980	974	969	965	961	958	954	952	949	947	945	943
8"	834	823	814	806	799	793	788	784	779	776	773	770	767	764	762
10"	718	706	696	688	680	674	668	663	659	655	651	648	645	642	640
12"	617	607	599	592	586	581	577	573	569	566	563	560	558	555	553
15"	515	506	497	490	484	479	475	471	467	464	461	459	456	454	452
18"	448	438	430	423	417	411	407	403	399	396	393	391	388	386	384
20"	414	404	396	389	383	378	373	369	366	362	359	357	355	352	350
24"	363	353	345	338	332	327	322	318	315	311	309	306	304	302	300
30"	312	302	294	287	281	276	271	267	264	261	258	255	253	251	249
32"	299	289	281	274	268	263	259	255	251	248	245	242	240	238	236
36"	278	268	260	253	247	242	237	233	230	227	224	221	219	217	215

		16 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	1266	1255	1245	1236	1229	1223	1217	1212	1208	1204	1201	1197	1194	1192	1189
8"	1052	1038	1027	1017	1008	1001	994	989	983	979	975	971	967	964	961
10"	906	891	878	867	858	850	843	837	831	826	821	817	814	810	807
12"	779	766	756	747	740	733	727	722	718	714	710	707	704	700	697
15"	650	638	628	619	611	605	599	594	590	586	582	579	576	573	571
18"	565	552	542	533	526	519	513	508	504	500	496	493	490	487	485
20"	522	509	499	490	483	476	471	466	461	457	454	450	447	445	442
24"	458	445	435	426	419	412	406	401	397	393	389	386	383	380	378
30"	394	381	371	362	354	348	342	337	333	329	325	322	319	316	314
32"	377	365	355	346	338	332	326	321	317	313	309	306	303	300	298
36"	351	338	328	319	312	305	299	294	290	286	282	279	276	273	271

		14 Gauge Deep-Dek® 4.5 Acoustical													
Sidelap Spacing		Span (ft), 12/2 Attachment Pattern													
o/c	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"
6"	1582	1567	1555	1544	1535	1528	1521	1515	1509	1504	1500	1496	1492	1489	1486
8"	1314	1297	1282	1270	1259	1250	1242	1235	1228	1223	1217	1213	1208	1204	1201
10"	1132	1113	1097	1084	1072	1062	1053	1045	1038	1032	1026	1021	1016	1012	1008
12"	973	957	944	933	924	916	909	902	897	892	887	883	880	875	871
15"	812	797	784	773	764	755	748	742	736	731	727	723	719	716	713
18"	705	690	677	665	657	648	641	635	629	625	620	616	612	609	606
20"	652	636	623	613	603	595	588	582	576	571	567	562	559	555	552
24"	572	556	543	532	523	515	508	501	496	491	486	482	479	475	472
30"	492	476	463	452	443	435	428	421	416	411	406	402	398	395	392
32"	472	456	443	432	423	415	407	401	396	391	386	382	378	375	372
36"	438	423	410	399	389	381	374	368	362	357	353	349	345	342	338



Diaphragm design based on "Steel Deck Institute Diaphragm Design Manual, Third Edition". For diaphragm values of other roof deck assemblies, consult the SDI Diaphragm Design Manual or contact the Metal Dek Group™.
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