



CEL CORE[®] DIAPHRAGM DESIGN

The principal function of a steel panel roof system is to enclose and protect the area covered where the panels are designed to span across supporting structural members. The panel shape and thickness are controlled by the loads acting against the roof. The roof system includes weather resistant membranes and may include insulation layers between the steel deck and the membrane. These interconnected roof elements form large flat areas, resistant to changes in shape, which can act as bracing diaphragms to building side walls.

Shear diaphragms are essentially flat assemblies of structural elements, such as those in roofs or floors, which are able to resist shear forces developed in their own plane. Shear forces may arise from **wind** or **seismic** activity and the diaphragm assemblies then must serve as bracing to maintain the shape of the areas they cover. The diaphragm design depends on two major properties, *strength* and *stiffness*. These are used to determine what portion of the acting forces can be transferred off the system to other parts of the structure.

A diaphragm is defined in terms of its field and frame members at its perimeter. The field behavior depends on panel geometry and spans, the connection systems used between individual panels, and the insulating system above the steel panels. Perimeter behavior is dependent on the types of connections used along the four edges of any one zone. The proper design approach is to size the roof panels, fasteners, and joists for loads normal to the roof surface such as snow loads or wind uplift. With that design set for a minimum number of specific fasteners, a field shear strength can be determined. The shear strength with a minimum fastener pattern may be above that required for lateral loads or additional fasteners can be installed to meet the diaphragm field requirements. It is possible to meet the design requirements with heavier panels having fewer fasteners or lighter panels with more fasteners. The final design must consider the economics of either approach. Finally, the diaphragm perimeter connections are installed as required to remove design shears from the roof diaphragm.

CEL CORE, Inc., has developed a roof system that uses a light weight insulating concrete placed over typical corrugated and galvanized steel deck. As the concrete cures, it develops strength and adheres to the steel deck creating the additional shear paths. The **CEL CORE** system has been load tested in the Major Units Laboratory at West Virginia University using full scale roof assemblies. Test results are given in the West Virginia University Report, "Diaphragm Tests - The Celcore Roofing System," July 30, 1988, by L. D. Luttrell. This report and resulting load tables may be obtained by contacting a Celcore approved applicator or calling **Celcore at (704) 669-4875**.



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF, CF) 26 with cellular concrete fill (Type II)

Safety Factor: 3.25

Support Fastening: 3/8" Puddle Welds Thru Weld Washers/Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/4	0	577	544	517	495	477	462	449	438	428	419	411
	1	606	570	541	517	497	480	466	453	442	433	424
	2	636	596	564	538	517	498	483	469	457	447	437
	3	666	623	588	560	537	517	500	485	472	461	451
	4	695	649	612	582	556	535	517	501	487	475	464
	5	725	675	636	603	576	553	534	517	502	489	477
	6	754	702	659	625	596	571	550	532	516	502	490
	7	784	728	683	646	616	590	567	548	531	516	503
	8	814	754	707	668	635	608	584	564	546	530	516
	9	843	780	730	689	655	626	601	580	561	544	529
	10	873	807	754	711	675	644	618	595	576	558	543
	11	902	833	778	732	694	662	635	611	590	572	556
	12	932	859	801	754	714	681	652	627	605	586	569
13	962	886	825	775	734	699	669	643	620	600	582	
30/3	0	502	477	457	441	428	416	406	398	390	384	378
	1	532	504	481	463	447	434	423	414	405	398	391
	2	561	530	505	484	467	453	440	429	420	412	404
	3	591	556	529	506	487	471	457	445	435	426	417
	4	621	583	552	527	507	489	474	461	450	439	431
	5	650	609	576	549	526	507	491	477	464	453	444
	6	680	635	600	570	546	525	508	493	479	467	457
	7	709	662	623	592	566	544	525	508	494	481	470
	8	739	688	647	613	586	562	542	524	509	495	483
	9	769	714	671	635	605	580	559	540	524	509	496
	10	798	741	694	657	625	598	575	556	538	523	509
	11	828	767	718	678	645	617	592	571	553	537	523
	12	857	793	742	700	664	635	609	587	568	551	536
13	887	819	765	721	684	653	626	603	583	565	549	

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF, CF) 26 with cellular concrete fill (Type II)

Safety Factor: 3.25

Support Fastening: 3/8" Puddle Welds Thru Weld Washers/Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/8	0	805	746	700	661	629	602	579	559	542	526	512
	1	835	773	723	683	649	621	596	575	557	540	526
	2	864	799	747	704	669	639	613	591	571	554	539
	3	894	825	771	726	689	657	630	607	586	568	552
	4	923	852	794	747	708	675	647	622	601	582	565
	5	953	878	818	769	728	694	664	638	616	596	578
	6	983	904	842	791	748	712	681	654	631	610	591
	7	1012	931	865	812	768	730	698	670	645	624	605
	8	1042	957	889	834	787	748	715	686	660	638	618
	9	1071	983	913	855	807	766	732	701	675	652	631
	10	1101	1010	936	877	827	785	748	717	690	666	644
	11	1131	1036	960	898	847	803	765	733	705	679	657
	12	1160	1062	984	920	866	821	782	749	719	693	670
13	1190	1089	1008	941	886	839	799	764	734	707	683	
30/6	0	586	551	524	502	483	467	454	442	432	423	415
	1	615	578	548	523	503	486	471	458	447	437	428
	2	645	604	572	545	523	504	488	474	462	451	441
	3	674	630	595	566	542	522	505	490	476	465	454
	4	704	657	619	588	562	540	522	505	491	479	468
	5	734	683	643	609	582	559	539	521	506	493	481
	6	763	709	666	631	602	577	555	537	521	507	494
	7	793	736	690	653	621	595	572	553	536	521	507
	8	822	762	714	674	641	613	589	569	550	534	520
	9	852	788	737	696	661	631	606	584	565	548	547
	10	882	815	761	717	681	650	623	600	580	562	547
	11	911	841	785	739	700	668	640	616	595	576	560
	12	941	867	808	760	720	686	657	632	610	590	573
13	970	894	832	782	740	704	674	648	624	604	586	

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF, CF) 24 with cellular concrete fill (Type II)

Safety Factor: 3.25

Support Fastening: 3/8" Puddle Welds Thru Weld Washers/Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/4	0	734	683	643	610	582	559	539	521	506	493	481
	1	774	719	675	639	609	583	561	543	526	511	499
	2	813	754	706	667	635	608	584	564	546	530	516
	3	853	789	738	696	661	632	607	585	566	549	534
	4	892	824	769	725	688	656	629	606	585	567	551
	5	932	859	801	754	714	680	652	627	605	586	569
	6	971	894	833	782	740	705	674	648	625	604	586
	7	1011	929	864	811	767	729	697	669	645	623	604
	8	1050	965	896	840	793	753	720	690	664	642	622
	9	1090	1000	928	869	819	778	742	711	684	660	639
	10	1129	1035	959	897	846	802	765	732	704	679	657
	11	1169	1070	991	926	872	826	787	753	724	697	674
	12	1208	1105	1022	955	898	851	810	774	743	716	692
13	1248	1140	1054	984	925	875	832	796	763	735	709	
30/3	0	620	582	552	527	506	489	474	461	449	439	430
	1	660	617	583	556	533	516	496	482	469	450	448
	2	699	652	615	584	559	537	519	503	489	476	465
	3	739	688	647	613	585	562	542	524	509	495	483
	4	770	723	678	642	612	586	564	545	528	514	501
	5	818	758	710	671	638	610	587	566	548	532	518
	6	857	793	742	699	664	635	609	587	560	551	536
	7	897	828	773	728	691	659	632	608	588	569	553
	8	936	863	805	757	717	683	654	629	607	588	571
	9	976	898	836	786	743	708	677	650	627	607	588
	10	1015	934	868	814	770	732	700	672	647	625	606
	11	1055	969	900	843	796	756	722	693	667	644	624
	12	1095	1004	931	872	823	781	745	714	606	662	641
13	1134	1039	963	901	849	805	767	735	706	601	659	

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF, CF) 24 with cellular concrete fill (Type II)

Safety Factor: 3.25

Support Fastening: 3/8" Puddle Welds Thru Weld Washers/Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/8	0	1082	993	922	863	814	773	738	707	680	657	636
	1	1122	1028	953	892	841	798	760	728	700	675	653
	2	1162	1063	985	921	867	822	783	749	720	694	671
	3	1201	1099	1017	949	894	846	806	771	740	713	689
	4	1241	1134	1048	978	920	871	828	792	760	731	706
	5	1280	1169	1080	1007	946	895	851	813	779	750	724
	6	1320	1204	1111	1036	973	919	873	834	799	768	741
	7	1359	1239	1143	1064	999	944	896	855	819	787	759
	8	1399	1274	1175	1093	1025	968	919	876	839	806	776
	9	1438	1309	1203	1122	1052	992	941	897	858	824	794
	10	1478	1344	1238	1151	1078	1016	964	918	878	843	811
	11	1517	1380	1270	1179	1104	1041	986	939	898	861	829
	12	1557	1415	1301	1208	1131	1065	1009	960	918	880	847
13	1596	1450	1333	1237	1157	1089	1032	981	937	899	864	
30/6	0	747	695	654	620	591	567	546	529	513	499	487
	1	787	731	685	648	618	591	569	550	533	518	504
	2	827	766	717	677	644	616	592	571	553	536	522
	3	866	801	749	706	670	640	614	592	572	555	540
	4	906	836	780	735	697	664	637	613	592	574	557
	5	945	871	812	763	723	689	659	634	612	592	575
	6	985	906	843	792	749	713	682	655	632	611	592
	7	1024	941	875	821	776	737	705	676	651	629	601
	8	1064	976	907	850	802	762	727	697	671	648	627
	9	1103	1012	938	878	828	786	750	718	691	667	645
	10	1143	1047	970	907	855	810	772	739	711	685	663
	11	1182	1082	1002	936	881	835	795	761	730	704	680
	12	1222	1117	1033	965	907	859	818	782	750	722	698
13	1261	1152	1065	993	934	883	840	803	770	741	715	

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF, CF) 22 with cellular concrete fill (Type II)
 Support Fastening: 5/8" Puddle Welds

Safety Factor: 3.25
 Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/4	0	521	494	473	455	440	428	417	408	400	393	386
	1	590	537	512	490	473	458	445	434	424	416	408
	2	619	581	551	526	505	488	473	460	449	439	430
	3	667	624	590	561	538	518	501	486	473	462	451
	4	716	668	629	597	570	458	529	512	497	484	473
	5	765	711	668	632	603	578	557	538	522	507	495
	6	814	754	707	668	635	608	584	564	546	530	516
	7	863	798	746	703	668	638	612	590	571	553	538
	8	911	841	785	739	700	668	640	616	595	576	560
	9	960	884	924	774	733	698	668	642	619	599	581
	10	1009	928	963	810	765	728	696	668	644	622	603
	11	1058	971	902	845	798	758	724	694	668/	645	625
	12	1107	1015	941	881	831	788	752	720	693	668	647
13	1155	1058	980	916	863	818	790	746	717	691	668	
30/3	0	460	440	424	411	400	390	382	376	369	364	359
	1	509	484	463	446	432	420	410	402	394	387	381
	2	558	527	502	482	465	451	438	428	418	410	403
	3	607	580	541	517	497	481	466	454	443	433	424
	4	656	614	580	553	530	511	494	480	467	456	446
	5	704	657	619	588	562	541	522	506	49	479	468
	6	753	700	358	624	595	571	550	532	516	502	489
	7	802	744	697	659	627	601	578	558	540	525	511
	8	851	787	736	695	660	631	605	584	565	548	533
	9	900	831	775	730	693	661	633	610	589	571	555
	10	948	874	814	766	725	691	661	636	613	594	576
	11	997	917	853	801	758	721	689	662	638	617	598
	12	1046	967	892	837	790	751	717	688	662	640	620
13	1095	1004	931	872	823	781	745	714	687	663	641	

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF, CF) 22 with cellular concrete fill (Type II)
 Support Fastening: 5/8" Puddle Welds

Safety Factor: 3.25
 Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/8	0	707	659	621	590	564	542	523	507	493	480	469
	1	755	702	660	625	596	572	551	533	517	503	490
	2	804	746	699	661	629	602	579	559	541	526	512
	3	853	789	738	699	661	632	607	585	566	549	534
	4	902	832	777	732	694	662	635	611	590	572	555
	5	951	876	816	767	727	692	663	637	615	595	577
	6	999	919	855	803	759	722	690	663	639	618	599
	7	1048	963	894	838	792	752	718	689	663	641	621
	8	1097	1006	933	874	824	782	746	715	688	664	642
	9	1146	1049	972	909	857	812	774	741	712	687	664
	10	1194	1093	1011	945	889	842	802	767	736	710	686
	11	1243	1136	1050	980	922	872	830	793	761	733	707
	12	1292	1179	1089	1016	954	902	858	819	785	755	729
13	1341	1223	1128	1051	987	932	886	845	810	778	751	
30/6	0	528	500	478	460	445	432	421	412	403	396	389
	1	577	544	517	496	478	462	449	438	428	419	411
	2	626	587	556	531	510	492	477	464	452	442	433
	3	675	631	595	567	543	522	505	490	477	465	455
	4	723	674	634	602	575	552	533	516	501	488	476
	5	772	717	673	638	608	582	561	542	525	511	498
	6	821	761	712	673	640	612	588	568	550	534	520
	7	870	804	751	708	673	642	616	594	574	557	541
	8	919	847	791	744	705	672	644	620	599	580	563
	9	967	891	830	779	738	702	672	646	623	603	585
	10	1016	934	869	815	770	732	700	672	647	626	606
	11	1065	978	908	850	803	762	728	698	672	649	628
	12	1114	1021	947	886	835	792	756	724	696	672	650
13	1162	1064	986	921	868	822	784	750	720	694	671	

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

15/16" x 3-3/4"(HF) 26 with Cellular Concrete Fill (Type II)
 Support Fastening: 3/8" Puddle Welds Thru Washers

Safety Factor 3.25
 Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/9	0	577	544	517	496	477	462	449	438	428	419	411
	1	607	570	541	517	497	480	466	453	443	433	424
	2	636	596	565	539	517	499	483	469	457	447	437
	3	666	623	588	560	537	517	500	485	472	461	451
	4	695	649	612	582	556	535	517	501	487	475	464
30/5	0	477	455	438	423	411	401	392	385	378	372	367
	1	507	482	461	445	431	419	409	400	393	386	380
	2	537	508	485	466	451	437	426	416	408	400	393
	3	566	534	509	488	470	456	443	432	422	414	406
	4	596	561	532	509	490	474	460	448	437	428	420
30/4	0	448	429	414	402	391	383	375	369	363	358	354
	1	477	455	437	423	411	401	392	384	378	372	367
	2	507	481	461	445	431	419	409	400	393	386	380
	3	536	508	485	466	450	437	426	416	407	400	393
	4	566	534	509	488	470	455	443	432	422	414	406

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

15/16" x 3-3/4"(HF) 24 with Cellular Concrete Fill (Type II)
 Support Fastening: 3/8" Puddle Welds Thru Washers

Safety Factor 3.25
 Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/9	0	734	684	643	610	582	559	539	522	506	493	481
	1	774	719	675	639	609	583	562	543	526	512	499
	2	813	754	706	668	635	608	584	564	546	530	516
	3	853	789	738	696	661	632	607	585	586	549	534
	4	892	824	770	725	688	656	629	606	585	567	551
30/5	0	582	549	522	500	481	466	452	441	430	422	414
	1	622	584	553	528	507	490	475	462	450	440	431
	2	661	619	585	557	534	514	497	483	470	459	449
	3	701	654	616	586	560	538	520	504	490	477	466
	4	741	689	648	615	587	563	543	525	510	496	464
30/4	0	537	508	485	466	451	437	426	416	408	400	393
	1	576	543	517	495	477	462	449	437	427	419	411
	2	616	578	548	524	503	486	471	458	447	437	428
	3	665	614	580	553	494	530	510	480	467	456	446
	4	695	649	612	581	556	535	516	501	487	474	464

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

15/16" x 3-3/4"(HF) 22 with Cellular Concrete Fill (Type II)
 Support Fastening: 3/8" Puddle Welds Thru Washers

Safety Factor 3.25
 Stitch Fastening: #10 TEK Screws

Fastener Layout	Side Fastening Per span	Lap Span (ft.-in.)										
		4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
30/9	0	724	661	613	576	546	522	501	404	470	457	446
	1	789	716	662	619	585	557	534	514	497	483	470
	2	855	772	711	663	624	593	567	544	525	509	495
	3	920	828	759	706	663	628	599	574	553	535	519
	4	905	a84	808	749	702	664	632	604	581	561	543
30/5	0	576	533	501	477	457	441	427	416	406	397	390
	1	641	589	550	520	496	476	460	446	434	423	414
	2	706	645	599	563	535	512	492	476	462	449	439
	3	771	701	648	607	574	547	525	506	490	475	463
	4	836	756	697	650	613	583	557	536	517	501	488
30/4	0	531	495	460	447	430	416	405	395	387	380	373
	1	596	551	517	490	469	452	437	425	415	406	398
	2	661	607	566	534	508	487	470	455	443	432	422
	3	726	662	614	577	547	523	502	485	470	458	446
	4	791	718	663	620	586	558	535	515	498	484	471

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF) 22 with cellular concrete fill (Type II)

Safety Factor: 2.75

Support Fastening: 5/8” Puddle Welds /Stitch Fastening: #10 TEK Screws

Fastener Layout	Side lap Fastening Per span	Lap Span (ft.-in.)												
		3-0	3-6	4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
36/9	0	886	799	734	684	643	610	582	559	539	522	506	493	481
	1	951	855	783	721	682	645	615	589	567	548	531	516	503
	2	1016	911	832	770	721	681	647	619	595	514	555	539	514
	3	1081	967	881	814	760	716	680	649	623	600	580	562	546
	4	1146	1022	929	857	799	752	712	679	650	626	604	585	369
	5	1212	1078	978	901	838	787	745	709	678	612	628	608	590
	6	1277	1134	1027	944	877	823	778	739	706	678	653	631	611
	7	1342	1190	1076	987	916	858	810	769	734	704	677	654	633
	8	1407	1246	1125	1031	955	894	843	799	762	730	702	677	655
	9	1472	1301	1173	1074	994	929	875	829	790	756	726	700	676
	10	1537	1357	1222	1117	1033	965	908	859	818	782	750	723	698
	11	1602	1413	1271	1161	1073	1000	940	889	846	808	775	746	720
	12	1667	1469	1320	1204	1112	1036	973	919	874	834	799	769	741
	13	1732	1524	1369	1247	1151	1071	1005	949	901	860	824	791	763
36/7	0	648	596	556	525	500	480	463	449	437	426	417	409	402
	1	714	651	605	569	540	516	496	479	465	432	442	432	423
	2	779	707	654	612	579	551	529	509	493	479	466	455	445
	3	844	763	702	655	618	587	561	539	521	505	490	478	467
	4	909	819	751	699	657	622	594	569	549	531	515	501	489
	5	974	874	800	742	696	658	626	599	576	557	539	524	510
	6	1039	930	849	785	735	693	659	629	604	583	564	547	532
	7	1104	986	897	829	774	729	691	659	632	609	588	570	554
	8	1169	1042	946	872	813	764	724	689	660	635	612	593	575
	9	1234	1097	995	915	852	800	756	719	688	661	637	616	597
	10	1299	1153	1044	959	891	835	789	749	716	687	661	639	619
	11	1364	1209	1093	1002	930	871	821	780	744	713	686	662	640
	12	1429	1265	1141	1046	969	906	854	810	772	739	710	685	662
	13	1494	1320	1190	1089	1008	942	886	840	799	765	734	708	684

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2” and polystyrene thickness up to 4”



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF) 22 with cellular concrete fill (Type II)

Safety Factor: 2.75

Support Fastening: 5/8" Puddle Welds /Stitch Fastening: #10 TEK Screws

Fastener Layout	Side lap Fastening Per span	Lap Span (ft.-in.)												
		3-0	3-6	4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
36/5	0	622	573	336	508	485	466	450	437	426	416	407	400	393
	1	687	629	585	551	524	501	483	467	454	442	432	423	415
	2	752	684	634	594	563	531	515	497	481	468	456	446	436
	3	817	740	683	638	602	572	548	527	509	494	481	469	458
	4	882	796	731	681	641	608	580	557	537	520	505	492	480
	5	947	852	780	724	680	643	613	587	563	546	529	515	501
	6	1012	908	829	768	719	679	645	617	593	572	554	531	523
	7	1077	963	878	811	758	714	678	647	621	598	578	560	545
	8	1142	1019	926	854	797	750	710	677	649	624	602	583	566
	9	1207	1075	975	898	836	785	743	707	677	650	627	606	588
	10	1273	1131	1024	941	875	821	716	737	705	676	651	629	610
	11	1330	1186	1073	985	914	856	808	767	732	702	676	652	632
	12	1403	1242	1122	1028	953	892	841	797	760	728	700	675	653
	13	1468	1298	1170	1071	992	927	873	827	788	754	724	698	675
36/4	0	543	505	477	455	437	423	411	400	392	384	378	372	367
	1	608	561	525	498	476	458	443	430	420	410	402	395	388
	2	673	617	574	541	515	494	476	461	448	436	426	418	410
	3	738	672	623	585	554	529	508	491	475	462	451	441	432
	4	803	728	672	628	593	565	541	521	503	488	475	464	453
	5	868	784	721	672	632	600	573	551	531	514	500	487	475
	6	933	840	769	715	671	636	606	581	559	540	524	510	497
	7	998	895	818	758	710	671	638	611	587	566	548	532	518
	8	1063	951	867	802	748	706	671	641	615	592	573	555	540
	9	1128	1007	916	845	788	742	703	671	643	618	597	578	562
	10	1193	1063	965	888	827	777	736	701	671	644	622	601	583
	11	1258	1118	1013	932	866	813	768	731	698	670	646	624	605
	12	1323	1174	1062	975	905	848	801	761	726	696	670	647	621
	13	1388	1230	1111	1018	944	884	833	791	754	722	695	670	648

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"



Diaphragm Shear Strength (PLF)

1.50 (B, F, EF) 22 with cellular concrete fill (Type II)

Safety Factor: 2.75

Support Fastening: 5/8" Puddle Welds /Stitch Fastening: #10 TEK Screws

Fastener Layout	Side lap Fastening Per span	Lap Span (ft.-in.)												
		3-0	3-6	4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6	8-0	8-6	9-0
36/3	0	516	482	457	437	421	408	397	388	380	374	368	362	358
	1	581	538	506	480	460	444	430	418	408	400	392	385	379
	2	646	594	554	524	499	479	462	448	436	426	416	408	401
	3	711	650	603	567	538	515	495	478	464	452	441	431	423
	4	777	708	652	611	577	550	528	508	492	478	463	454	445
	5	842	761	701	654	616	586	560	538	520	504	490	477	466
	6	907	817	750	697	655	621	593	568	548	530	514	500	488
	7	972	873	798	741	694	657	625	598	576	556	538	523	510
	8	1037	928	847	784	733	692	658	628	603	582	563	546	531
	9	1102	984	896	827	772	728	690	658	631	608	587	569	553
	10	1167	1040	945	871	811	763	723	688	659	634	612	592	575
	11	1232	1036	994	914	851	799	755	719	687	660	636	615	596
	12	1297	1151	1042	951	890	824	788	749	715	686	660	638	618
	13	1362	1207	1091	1001	929	869	820	779	743	712	685	661	640

Note: Cellular Concrete Fill 200 psi minimum compressive strength, minimum topping of 2" and polystyrene thickness up to 4"