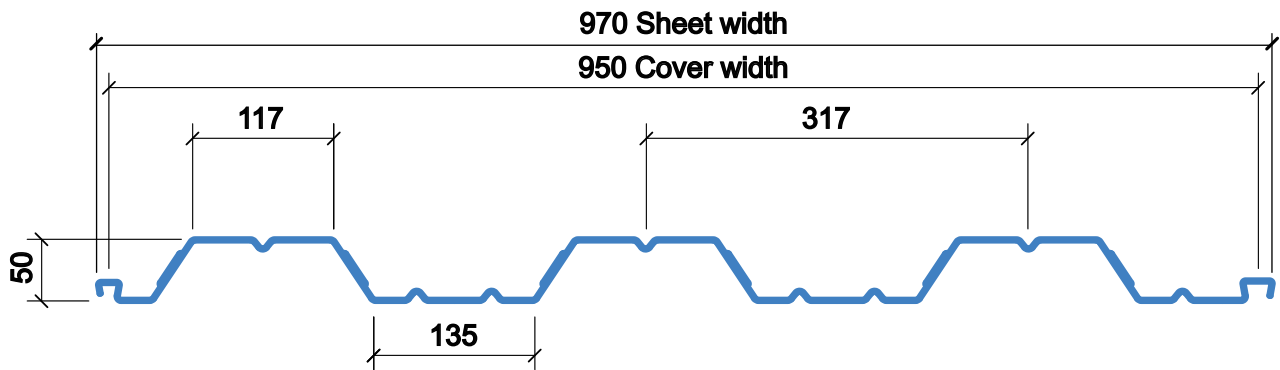


Product Data Sheet Floor Deck, Details and Sectional Properties

TR50™ Permanent Shutter



The TR50 profile was introduced in 2018 as a non-composite permanent shuttering deck profile as a low cost solution for a quality product. This profile should only be used as formwork, where the reinforcement within the slab has been designed by the structural engineer, taking no account of the metal decking.

Benefits

- Un-propped spans up to 3.0m
- Formwork for non-composite RCC floor and roof slabs
- Flexible side-lap detail for control of cover width
- Trough stiffener location designed to optimise stud position and avoid additional on-site checks
- Optimised cover width for speed of installation
- 120g/m² galvanised finish as standard, 275g/m², 550g/m² galvanised finish and colour coat finish also available

Gauges

- 0.7mm
- 0.8mm
- 0.9mm
- 1.0mm
- 1.2mm

Steel Grade

- S250
- S350
- S550

Profile Properties

Nominal Thickness mm	Design Thickness (bare steel) mm	Weight of Profile kg/m ²	Weight of Profile kN/m ²	Area of Steel mm ² /m	Moment of Inertia cm ⁴ /m
0.7	0.66	6.82	0.070	848	26.20
0.8	0.76	7.85	0.080	976	31.10
0.9	0.86	8.88	0.090	1104	36.90
1.0	0.96	9.92	0.100	1233	42.30
1.2	1.16	11.98	0.120	1490	55.40

Concrete Volume and Weight

Concrete Volume and Weight

	Overall Slab Depth (mm)											
Concrete	100	110	120	130	140	150	175	200	225	250	275	300
Volume (m³/m²)	0.076	0.086	0.096	0.106	0.116	0.126	0.151	0.176	0.201	0.226	0.251	0.276
Weight (kN/m²)	1.98	2.24	2.50	2.76	3.02	3.28	3.93	4.58	5.23	5.88	6.53	7.18

Span Load Tables Steel Grade S250

Span (m) Results are Maximum Load (kg/m²)

Span	Gauge (mm)	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
 Single	0.7	741	674	617	570	529	494	463	436	394	-	-	-	-	-	-	-	-	-	-	-	-
	0.8	954	868	795	734	682	636	597	548	489	439	396	-	-	-	-	-	-	-	-	-	-
	0.9	1192	1084	994	917	852	795	745	662	590	530	478	434	395	-	-	-	-	-	-	-	-
	1.0	1453	1321	1211	1118	1038	969	882	782	697	626	565	512	467	427	392	-	-	-	-	-	-
	1.2	2039	1854	1700	1569	1457	1330	1169	1036	924	829	748	679	618	566	520	479	443	403	-	-	-
 Double	0.7	715	635	569	513	466	425	391	360	-	-	-	-	-	-	-	-	-	-	-	-	-
	0.8	910	807	722	651	591	540	495	456	422	392	365	-	-	-	-	-	-	-	-	-	-
	0.9	1113	987	882	795	721	657	602	554	512	475	442	413	386	362	-	-	-	-	-	-	-
	1.0	1323	1171	1045	941	852	776	710	653	603	559	519	484	453	424	398	375	-	-	-	-	-
	1.2	1774	1566	1394	1252	1131	1028	939	862	794	734	681	634	592	554	520	489	460	434	411	389	369
 Multiple	0.7	831	739	663	599	545	498	458	423	392	364	-	-	-	-	-	-	-	-	-	-	-
	0.8	1057	940	843	761	692	632	581	536	496	461	430	402	377	-	-	-	-	-	-	-	-
	0.9	1296	1150	1030	930	844	771	708	652	604	560	522	488	457	429	404	381	-	-	-	-	-
	1.0	1542	1367	1223	1102	999	912	836	769	711	660	614	573	536	503	473	446	421	-	-	-	-
	1.2	2073	1833	1635	1470	1331	1211	1108	1018	940	870	808	753	704	660	619	583	549	519	491	465	438

Span Load Tables Steel Grade S350

Span (m) Results are Maximum Load (kg/m²)

Span		Gauge (mm)	Span (m) Results at Maximum Load (kg/m ²)																				
			1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
 Single	0.7	876	796	730	674	625	584	547	515	486	452	408	370	-	-	-	-	-	-	-	-	-	-
	0.8	1130	1027	942	869	807	753	706	665	628	588	528	456	397	-	-	-	-	-	-	-	-	-
	0.9	1411	1283	1176	1086	1008	941	882	830	784	708	621	537	467	409	-	-	-	-	-	-	-	-
	1.0	1719	1562	1432	1322	1228	1146	1074	1011	923	829	718	620	539	472	415	368	-	-	-	-	-	-
	1.2	2412	2193	2010	1855	1723	1608	1507	1374	1225	1081	927	800	696	609	536	474	422	377	-	-	-	-
 Double	0.7	824	729	651	586	530	483	442	407	375	-	-	-	-	-	-	-	-	-	-	-	-	-
	0.8	1052	930	830	747	676	616	563	518	478	443	412	384	-	-	-	-	-	-	-	-	-	-
	0.9	1304	1153	1029	925	838	763	698	641	592	548	509	475	444	416	390	367	-	-	-	-	-	-
	1.0	1573	1390	1240	1115	1009	918	840	772	712	659	612	571	533	499	469	441	416	393	372	-	-	-
	1.2	2147	1895	1688	1516	1370	1245	1138	1045	963	891	827	770	718	672	631	593	559	527	499	472	448	-
 Multiple	0.7	960	851	761	686	622	568	520	479	443	411	382	-	-	-	-	-	-	-	-	-	-	-
	0.8	1226	1087	971	875	794	724	663	611	564	523	487	454	425	399	375	-	-	-	-	-	-	-
	0.9	1520	1347	1204	1085	983	897	822	756	699	648	603	563	526	494	464	437	413	390	369	-	-	-
	1.0	1835	1625	1452	1307	1185	1080	989	910	841	780	725	676	633	593	558	525	495	468	436	392	-	-
	1.2	2508	2218	1979	1780	1611	1467	1343	1234	1139	1055	980	914	854	800	751	707	667	628	563	507	458	-

Span Load Tables Steel Grade S550

Span (m) Results are Maximum Load (kg/m²)

Span	Gauge (mm)	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
 Single	0.7	1099	999	915	845	785	732	687	646	603	513	440	380	330	289	254	225	200	179	160	144	130
	0.8	1417	1288	1181	1090	1012	944	885	833	725	616	528	456	397	347	306	270	240	215	192	173	156
	0.9	1769	1608	1474	1361	1263	1179	1106	1012	852	725	621	537	467	409	360	318	283	253	226	204	184
	1.0	2155	1959	1796	1658	1539	1437	1347	1169	985	837	718	620	539	472	415	368	327	292	262	235	213
	1.2	3024	2749	2520	2326	2160	2016	1810	1509	1271	1081	927	800	696	609	536	474	422	377	338	304	275
 Double	0.7	1032	913	815	733	664	605	553	509	470	435	405	377	353	331	310	292	276	260	247	234	217
	0.8	1328	1175	1050	944	855	779	713	656	606	561	522	487	455	426	401	377	356	336	318	289	261
	0.9	1655	1465	1308	1177	1067	972	890	818	756	700	651	607	568	532	500	471	444	420	377	340	307
	1.0	1999	1769	1579	1421	1287	1172	1073	987	911	844	785	731	684	641	602	567	534	486	436	392	355
	1.2	2743	2425	2163	1944	1759	1600	1464	1345	1241	1149	1067	994	929	870	817	768	703	628	563	507	458
 Multiple	0.7	1202	1065	953	859	779	710	651	600	554	514	479	447	418	392	369	347	328	298	267	240	217
	0.8	1547	1372	1227	1106	1003	915	839	773	715	663	617	576	539	506	476	448	401	358	321	289	261
	0.9	1928	1710	1530	1379	1251	1141	1047	964	891	827	770	719	673	631	594	530	471	421	377	340	307
	1.0	2330	2065	1847	1664	1510	1377	1263	1162	1075	997	928	866	810	760	692	613	545	486	436	392	355
	1.2	3200	2834	2532	2280	2066	1883	1725	1587	1466	1359	1264	1179	1102	1015	894	791	703	628	563	507	458

Span Load Tables Criteria

- Deflection limit = span/130
- Based upon un-propped construction
- Spans are centre to centre of 100mm supports
- 1.5 load factor included assuming all loading is imposed in accordance with Eurocodes

Slab Depth Tables Steel Grade S250

		Span (m) Results are Maximum Overall Slab Depth (mm)																						
Span	Gauge (mm)	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00		
 Single	0.7	243	218	197	179	163	150	138	128	112	-	-	-	-	-	-	-	-	-	-	-	-		
	0.8	323	291	263	240	220	203	188	170	148	129	113	-	-	-	-	-	-	-	-	-	-		
	0.9	413	372	338	309	284	263	244	213	186	163	143	127	112	-	-	-	-	-	-	-	-		
	1.0	511	461	419	384	354	328	295	257	225	199	176	156	139	124	110	-	-	-	-	-	-		
	1.2	731	661	603	554	511	464	403	352	310	275	244	218	195	175	158	142	129	114	-	-	-		
 Double	0.7	233	203	178	157	139	124	111	100	-	-	-	-	-	-	-	-	-	-	-	-	-		
	0.8	306	268	236	209	186	167	150	135	123	111	101	-	-	-	-	-	-	-	-	-	-		
	0.9	383	335	296	263	235	211	190	172	156	142	130	119	109	100	-	-	-	-	-	-	-		
	1.0	462	404	357	317	284	255	230	209	190	173	158	145	133	123	113	104	-	-	-	-	-		
	1.2	631	552	488	434	388	349	316	287	261	239	219	201	185	171	158	146	135	126	117	108	101		
 Multiple	0.7	277	242	214	190	169	152	136	123	111	101	-	-	-	-	-	-	-	-	-	-	-		
	0.8	362	318	281	250	224	202	182	165	151	137	126	115	105	-	-	-	-	-	-	-	-		
	0.9	452	397	352	314	281	254	230	209	191	174	160	147	135	125	115	107	-	-	-	-	-		
	1.0	544	478	424	378	340	306	278	253	231	211	194	179	165	152	141	131	121	113	105	-	-		
	1.2	744	653	579	516	464	419	380	346	316	290	267	246	227	211	195	182	169	158	147	137	127		

Slab Depth Tables Steel Grade S350

		Span (m) Results are Maximum Overall Slab Depth (mm)																						
Span	Gauge (mm)	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00		
 Single	0.7	294	264	239	218	200	184	170	158	147	134	118	103	-	-	-	-	-	-	-	-	-		
	0.8	389	351	318	291	268	247	230	214	200	185	163	135	113	-	-	-	-	-	-	-	-		
	0.9	495	447	407	372	343	318	296	276	259	230	197	165	139	117	-	-	-	-	-	-	-		
	1.0	611	552	503	461	426	395	368	344	311	275	233	196	166	141	119	101	-	-	-	-	-		
	1.2	872	789	720	662	612	568	530	480	424	369	311	264	224	192	164	141	121	104	-	-	-		
 Double	0.7	274	239	209	185	164	146	131	117	105	-	-	-	-	-	-	-	-	-	-	-	-		
	0.8	360	314	277	245	218	196	176	159	144	130	119	108	-	-	-	-	-	-	-	-	-		
	0.9	455	398	351	312	279	251	226	205	186	170	155	142	130	120	110	102	-	-	-	-	-		
	1.0	556	487	430	383	343	309	279	254	231	211	194	178	164	151	139	129	119	111	103	-	-		
	1.2	772	677	599	533	478	432	391	356	325	298	274	252	233	215	200	185	173	161	150	140	131		
 Multiple	0.7	326	285	251	222	198	178	160	144	131	119	108	-	-	-	-	-	-	-	-	-	-		
	0.8	426	373	330	293	263	236	214	194	176	161	147	135	124	114	105	-	-	-	-	-	-		
	0.9	536	471	417	372	334	301	273	248	227	207	190	175	161	149	138	128	119	110	102	-	-		
	1.0	655	575	510	456	409	370	336	306	280	257	236	218	201	186	173	161	149	139	127	111	-		
	1.2	908	798	708	633	570	515	468	427	391	360	332	306	284	264	245	228	213	199	174	153	134		

Slab Depth Tables Steel Grade S550

		Span (m) Results are Maximum Overall Slab Depth (mm)																					
Span	Gauge (mm)	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	
 Single	0.7	378	340	309	282	260	240	223	207	191	157	130	107	-	-	-	-	-	-	-	-	-	
	0.8	498	449	409	374	345	320	297	278	237	196	163	135	113	-	-	-	-	-	-	-	-	
	0.9	630	569	519	476	440	408	380	345	284	236	197	165	139	117	-	-	-	-	-	-	-	
	1.0	775	701	640	588	543	504	471	403	334	278	233	196	166	141	119	101	-	-	-	-	-	
	1.2	1102	999	912	839	776	722	644	531	441	369	311	264	224	192	164	141	121	104	-	-	-	
 Double	0.7	353	308	271	240	214	192	172	156	141	128	116	106	-	-	-	-	-	-	-	-	-	
	0.8	464	407	359	320	286	257	232	211	192	175	160	147	135	124	114	106	-	-	-	-	-	
	0.9	587	515	456	407	365	329	299	272	248	227	209	192	177	164	152	140	130	121	105	-	-	
	1.0	717	630	558	499	448	405	367	335	306	281	258	238	220	204	190	176	164	146	127	111	-	
	1.2	996	876	777	695	625	565	514	469	430	395	364	337	312	290	270	252	227	199	174	153	134	
 Multiple	0.7	417	366	323	288	258	232	209	190	173	158	144	132	121	112	103	-	-	-	-	-	-	
	0.8	547	481	426	381	342	309	280	255	233	213	196	181	167	154	143	132	114	-	-	-	-	
	0.9	690	608	540	483	435	393	358	326	299	275	253	234	217	201	187	163	141	122	105	-	-	
	1.0	841	742	659	590	532	482	439	401	368	339	313	289	268	249	224	194	168	146	127	111	-	
	1.2	1169	1031	917	822	741	672	612	560	515	474	438	406	378	345	299	260	227	199	174	153	134	

Span Depth Table Criteria

- This table is based upon concrete poured to a constant thickness and does not take account of deflection of the decking or supporting beams – as a guide, to account for the deflection of the decking, a volume of span/250 should be added to the figures indicate in the Concrete Volume and Weight table
- Concrete weight indicated does not include the weight of the deck profile
- Concrete weight is based upon concrete density of 26kN/m³
- Overall slab depth includes deck profile
- Deflection limit = span/130
- Based upon un-propped construction
- Construction imposed load is taken as 1.5kN/m²
- Spans are centre to centre of 100mm supports