TotalSolutions Group

Load Data

Revision 5.0

TOTAL FABRICATIONS

Slick

T2

OV TRUSS

MANUFACTURED IN THE UK

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1.1 The User shall read and fully understand all relevant Operating Manuals which are available from TSG before attempting set up a structure without a consultant from TSG being present.

1.2 If Users are unclear about any aspect of the operation, then they shall seek advice from TSG before proceeding.

1.3 **Important**: All loadings in the booklet are assumed to be from the bottom cords.

1.4 The payload of the truss has been calculated as a permanent action.

1.5 Should it be necessary to consider the payload as a variable action, the tabulated figures should be reduced to 90% of the given values.

Ladder Load Data

OV30 Ladder (300mm high x 48mm wide)

Span (metres)	3	6	9	12
UDL kg	2460	673	349	217
CPL kg	1230	336	174	108
TPL kg	922	252	131	82
QPL kg	615	168	87	54

OV40 Ladder (400mm high x 48mm wide)

Span (metres)	3	6	9	12
UDL kg	2093	894	496	306
CPL kg	1046	447	248	153
TPL kg	785	335	186	115
QPL kg	523	223	124	76

Triangular Load Data

Litebeam MKII (Apex Up) (253mm high x 285mm wide)

span (metres)

Triangle ▲	2	4	6	8	10	12
UDL kg	1521	750	488	354	271	212
DEFL mm	3	11	25	44	68	98
CPL kg	760	375	244	177	135	106
DEFL mm	2	9	20	35	55	79
TPL kg	570	281	183	133	101	80
DEFL mm	3	11	25	45	70	100
QPL kg	380	187	122	88	68	53
DEFL mm	3	10	23	41	65	93

Connection: Taper fitting. Fixings: TRP taper pin and R1 R Clip
For Litebeam MKI loading information refer to Total Solutions Group

XO Triangular (271mm high x 305mm wide)

span (metres)

Triangle ▲	3	4	5	6	7	8	9	10
UDL kg	1972	1474	1174	973	879	720	635	566
DEFL mm	10	18	28	41	56	73	93	115
CPL kg	986	737	587	487	414	360	317	283
DEFL mm	8	15	23	33	45	59	75	93
TPL kg	739	553	440	365	311	270	238	212
DEFL mm	10	19	29	42	57	75	95	117
QPL kg	493	368	293	243	207	180	159	141
DEFL mm	10	17	27	39	53	70	88	110

Connection: Taper fitting. Fixings: TFC taper pin and R1 R Clip

OV30 Triangular (300mm high x 270mm wide)

Span (metres)	3	6	9	12	15	Apex Up
UDL kg	2570	979	569	367	183	
CPL kg	1285	489	284	184	92	
TPL kg	964	367	213	138	69	
QPL kg	642	244	142	92	46	

Span (metres)	3	6	9	12	15	Apex Down
UDL kg	2570	979	403	367	245	
CPL kg	1285	489	202	184	122	
TPL kg	964	367	151	138	92	
QPL kg	642	244	100	92	61	

OV40 Triangular (400mm high x 353mm wide)

Span (metres)	3	6	9	12	15	18	Apex Up
UDL kg	3598	1370	789	538	367	117	
CPL kg	1799	685	394	269	183	59	
TPL kg	1349	514	296	202	138	44	
QPL kg	890	343	197	135	92	29	

Span (metres)	3	6	9	12	15	18	Apex Down
UDL kg	3598	1370	789	485	330	106	
CPL kg	1799	685	394	242	165	53	
TPL kg	1349	514	296	182	124	39	
QPL kg	890	343	197	121	83	26	

Triangular Medium Duty (458mm high x 521mm wide) span (metres)

Triangle ▲	3	4	6	8	10	12	14	15
UDL kg	2303	1772	1149	828	628	488	382	338
DEFL mm	2	4	9	16	25	37	51	58
CPL kg	1193	886	575	414	314	244	191	169
DEFL mm	2	3	7	13	21	31	43	50
TPL kg	895	665	431	311	235	183	143	127
DEFL mm	2	4	9	17	26	38	51	59
QPL kg	596	443	287	207	157	122	96	85
DEFL mm	2	4	9	15	24	35	49	56

Connection: Gusset Plate. Fixings: M16 x 45 HT Bolt, Nut & Washers

Folding Triangular (579mm high x 762mm wide when open) span (metres)

Triangle ▲	3	6	9	12	15	18	21	24
UDL kg	2911	2836	1843	1322	1014	793	626	494
DEFL mm	1	9	20	35	55	79	109	143
CPL kg	807	779	750	666	507	396	313	247
DEFL mm	0	4	13	29	45	67	93	124
TPL kg	404	389	375	361	346	297	235	185
DEFL mm	0	3	11	27	51	81	110	145
QPL kg	675	665	461	333	254	198	157	124
DEFL mm	1	8	19	33	52	76	105	138

Connection: Fork fitting. Fixings: TFT truss pin and R3 R Clip

Maxi Folding (617mm high x 617mm wide)

span (metres)

Triangle ▲	4.8	7.2	9.6	12	14.4	16.8
UDL kg	3378	3378	3367	2724	2217	1846
DEFL mm	3	12	29	46	66	90
CPL kg	1493	1290	1179	1048	953	859
DEFL mm	2	7	16	28	46	67
TPL kg	1413	1126	989	899	789	692
DEFL mm	4	11	23	41	64	92
QPL kg	942	751	659	599	526	461
DEFL mm	7	16	28	44	63	86

Connection: Fork fitting. Fixings: TP truss pin and R3 R Clip

T2 T450 Truss (576mm high x 451mm wide)

span (metres)

Triangle ▲	3	4	5	6	7	8	9	10	11	12
UDL kg	1214	1205	1196	1187	1178	1169	911	699	524	377
DEFL mm	1	2	3	5	8	12	15	19	22	26
CPL kg	343	334	325	316	307	299	290	281	262	188
DEFL mm	0	1	2	3	5	8	12	16	21	25
TPL kg	172	167	163	158	154	149	145	140	136	131
DEFL mm	0	1	2	3	5	8	11	15	20	26
QPL kg	114	111	108	105	102	100	97	94	91	88
DEFL mm	0	1	2	3	5	8	11	15	19	25

Connection: Fork fitting. Fixings: T2T truss pin and RT2 R Clip
These are allowable loads over and above the fall arrest load.

The T2 system and components thereof are covered by the following intellectual property rights:

Patent Application Nos. GB: 9930628.4, 0022152.3, 0022154.9; EP: 00128171.6; US: 09/746586

Design Registrations/Applications GB: 2095670, 2095671; International: DM/056289; US: 29/138239, 29/138337

Registered Trade Mark Applications: EP: 001841584; US: 78/051053

Super Beam Folding Truss (917mm high x 610mm wide) span (metres)

Triangle ▲	3	6	9	12	15	18	21	24	27	30	33	36
UDL kg	5775	5728	5681	5633	4822	3932	3283	2784	2385	2057	1780	1541
DEFL mm	1	5	17	40	66	93	123	156	191	226	260	292
CPL kg	5393	5346	4144	3067	2411	1966	1641	1392	1193	1029	890	771
DEFL mm	1	8	20	34	53	74	99	125	153	180	208	234
TPL kg	5613	5566	5519	4600	3616	2949	2462	2088	1789	1543	1335	1156
DEFL mm	1	7	22	44	68	95	126	160	195	231	266	298
QPL kg	5613	5566	5519	4600	3616	2949	2462	2088	1789	1543	1335	1156
DEFL mm	1	6	21	41	63	88	117	148	181	214	247	277

Connection: Fork fitting. Fixings: 5TTP truss pin and R4 R Clip

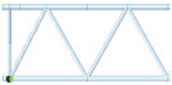


Figure 1: Orientation of the truss supported of bottom chords

Figure 2: Orientation of the truss supported of top chords

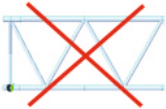


Figure 3: Not allowed orientation of the truss supported of bottom chords

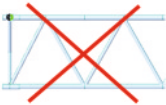
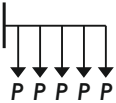


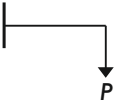
Figure 4: Not allowed orientation of the truss supported of top chords

Cantilever Span (metres)		3
UDL	kg	4220
DEFL	mm	6.3
EPL	kg	3390
DEFL	mm	11.3
CPL	kg	3470
DEFL	mm	4.9

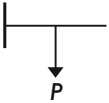
Uniform Load (UDL)



Point Load (Edge)



Point Load (Central)



Square Load Data

TOTAL FABRICATIONS

Slick

T2

OV TRUSS

Lite Box (285mm high x 285mm wide)

span (metres)

Square	2	4	6	8	10	12
UDL kg	1954	1747	1148	843	657	529
DEFL mm	3	13	29	51	79	114
CPL kg	1761	873	574	421	328	264
DEFL mm	3	10	23	41	64	92
TPL kg	977	655	430	316	246	198
DEFL mm	3	13	29	52	81	117
QPL kg	649	436	287	211	164	132
DEFL mm	3	12	27	48	75	109

Connection: Taper fitting. Fixings: TRP taper pin and R1 R Clip

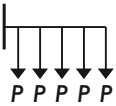
OV30 (300mm high x 300mm wide)

span (metres)

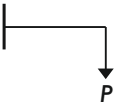
	3	6	9	12	15	18
UDL kg	1883	1592	1033	745	565	440
DEFL mm	5	33	71	122	181	243
CPL kg	1591	783	508	366	277	215
DEFL mm	7	26	56	96	142	190
TPL kg	1880	1194	775	559	424	330
DEFL mm	7	33	73	125	185	248
QPL kg	1809	1194	775	559	424	330
DEFL mm	6	31	68	116	172	231

Cantilever Span (metres)		3
UDL	kg	800
DEFL	mm	16.1
EPL	kg	400
DEFL	mm	21.4
CPL	kg	800
DEFL	mm	13.3

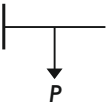
Uniform Load (UDL)



Point Load (Edge)



Point Load (Central)



XO Square (305mm high x 305mm wide)

span (metres)

Square	3	4	6	8	10	12	14	15
UDL kg	2324	2321	1748	1297	1024	839	704	650
DEFL mm	6	14	35	62	97	141	193	222
CPL kg	1765	1320	874	648	512	419	352	325
DEFL mm	7	12	28	50	79	115	158	182
TPL kg	1162	990	655	486	384	314	264	244
DEFL mm	8	16	36	63	99	144	197	226
QPL kg	775	660	437	324	256	210	176	162
DEFL mm	7	15	33	59	93	134	184	212

Connection: Taper fitting. Fixings: TFC taper pin and R1 R Clip

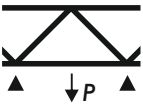
Light Duty (305mm high x 305mm wide)

span (metres)

Square		3	6	9	12	15
UDL	kg	1809	1248	1048	749	561
DEFL	mm	6	19	43	90	139
CPL	kg	894	593	524	374	281
DEFL	mm	5	16	39	72	116
TPL	kg	557	426	393	281	211
DEFL	mm	5	18	49	89	141
QPL	kg	437	302	262	187	140
DEFL	mm	5	18	46	84	133

Cantilever Span		3
UDL	kg	468
DEFL	mm	11
CPL	kg	281
DEFL	mm	16

Point Load Mid kN



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Connection: Gusset Plate. Fixings: M16 x 45 HT Bolt, Nut & Washers

GS Lite (305mm high x 305mm wide)

span (metres)

Square	2	4	6	8	10	12	14
UDL kg	1541	1524	1506	1457	1136	915	661
DEFL mm	3	13	29	51	80	115	140
CPL kg	1541	1509	992	729	568	457	376
DEFL mm	3	10	23	41	64	92	125
TPL kg	770	762	744	546	426	343	242
DEFL mm	3	13	29	52	82	118	140
QPL kg	511	502	494	364	283	229	176
DEFL mm	3	12	27	49	76	109	140

Connection: Fork fitting. Fixings: TP truss pin and R3 R Clip

Serious Light Duty (305mm high x 305mm wide)

Square ■	2	4	6	8	10	12	14	16
UDL kg	2978	2956	2397	1759	1367	1099	901	747
DEFL mm	1	9	24	41	63	87	113	140
CPL kg	2378	1825	1199	880	684	549	450	373
DEFL mm	1	9	19	33	50	70	91	112
TPL kg	2378	2356	1798	1319	1026	824	676	560
DEFL mm	1	9	24	42	64	89	116	143
QPL kg	2378	2356	1798	1319	1026	824	676	560
DEFL mm	1	9	23	39	59	83	107	133

Connection: Fork fitting. Fixings: TFT truss pin and R3 R Clip

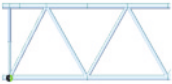


Figure 1: Orientation of the truss supported of bottom chords

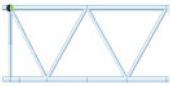


Figure 2: Orientation of the truss supported of top chords

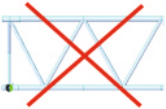


Figure 3: Not allowed orientation of the truss supported of bottom chords

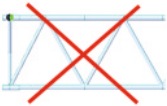
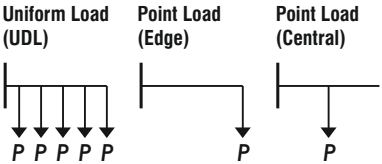


Figure 4: Not allowed orientation of the truss supported of top chords

Cantilever Span (metres)		2
UDL	kg	1900
DEFL	mm	7.6
EPL	kg	950
DEFL	mm	9.4
CPL	kg	1900
DEFL	mm	6.3



OV40 (400mm high x 400mm wide)

span (metres)		3.0	6.0	9.0	12.0	15.0	18.0
Uniformly distributed	kg	3852	2832	1508	1243	947	714
	kN	37.76	27.76	14.78	12.19	9.28	7.00
Central point load	kg	1926	1416	754	622	474	357
	kN	18.88	13.88	7.39	6.09	4.64	3.50
Quarter point loads at each point	kg	963	708	377	311	237	179
	kN	9.44	6.94	3.70	3.05	2.32	1.75
Third point loads at each point	kg	1445	1062	566	467	356	268
	kN	14.16	10.41	5.54	4.57	3.49	2.63

Mini Beam (347mm high x 255mm wide)

span (metres)

Rectangle	2	4	6	8	10	12	14	16	18
UDL kg	3388	3366	2994	2207	1727	1399	1158	973	823
DEFL mm	1	9	26	45	69	96	127	159	192
CPL kg	3388	2273	1497	1104	863	699	579	486	412
DEFL mm	2	9	21	36	55	77	101	127	154
TPL kg	3381	3360	2245	1655	1295	1049	869	730	618
DEFL mm	2	12	26	46	70	98	129	162	196
QPL kg	3381	3360	2245	1655	1295	1049	869	730	618
DEFL mm	2	11	24	43	65	91	120	151	182

Connection: Fork fitting. Fixings: TP truss pin and R3 R Clip

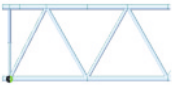


Figure 1: Orientation of the truss supported of bottom chords

Figure 2: Orientation of the truss supported of top chords

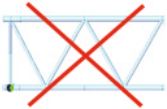
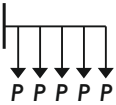


Figure 3: Not allowed orientation of the truss supported of bottom chords

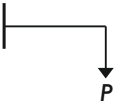
Figure 4: Not allowed orientation of the truss supported of top chords

Cantilever Span (metres)		3
UDL	kg	1170
DEFL	mm	11.5
EPL	kg	580
DEFL	mm	8.4
CPL	kg	1170
DEFL	mm	11.7

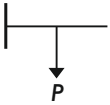
Uniform Load (UDL)



Point Load (Edge)



Point Load (Central)



GS Truss (347mm high x 347mm wide)

span (metres)

Rectangle	2	4	6	8	10	12	14	16	18
UDL kg	3388	3366	2994	2207	1727	1399	1158	973	823
DEFL mm	1	9	27	47	72	101	132	166	200
CPL kg	3388	2273	1497	1104	863	699	579	486	412
DEFL mm	2	10	22	38	58	81	106	133	160
TPL kg	3388	3366	2245	1655	1295	1049	869	730	618
DEFL mm	2	12	28	48	74	103	135	170	204
QPL kg	3388	3366	2245	1655	1295	1049	869	730	618
DEFL mm	2	11	26	45	68	96	126	158	190

Connection: Fork End. Fixings: TP or GP pins & R3 Clips

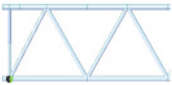


Figure 1: Orientation of the truss supported of bottom chords

Figure 2: Orientation of the truss supported of top chords

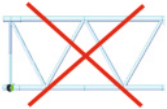
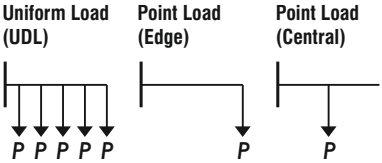


Figure 3: Not allowed orientation of the truss supported of bottom chords

Figure 4: Not allowed orientation of the truss supported of top chords

Cantilever Span (metres)		3
UDL	kg	1170
DEFL	mm	11.5
EPL	kg	580
DEFL	mm	8.4
CPL	kg	1170
DEFL	mm	11.7



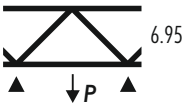
Medium Duty (521mm high x 521mm wide)

span (metres)

Square ■		3	6	9	12	15	18
UDL	kg	3743	2932	1872	1372	998	767
DEFL	mm	3	12	26	45	62	87
CPL	kg	2974	1580	936	686	499	384
DEFL	mm	4	11	20	36	55	79
TPL	kg	1497	1081	702	515	374	288
DEFL	mm	3	13	25	45	68	96
QPL	kg	1040	749	468	343	250	192
DEFL	mm	3	9	23	42	63	91

Cantilever Span		3
UDL	kg	1279
DEFL	mm	0.2
CPL	kg	665
DEFL	mm	10

Point Load Mid kN



Connection: Gusset Plate. Fixings: M16 x 45 HT Bolt, Nut & Washers

Nova Lite (500mm high x 500mm wide)

span (metres)

Square ■	6	8	10	12	14	16
UDL kg	3515	2601	2045	1668	1391	1181
DEFL mm	17	29	46	66	90	118
CPL kg	1757	1300	1022	834	696	590
DEFL mm	13	24	37	53	72	94
TPL kg	1318	975	767	625	522	443
DEFL mm	17	30	47	68	92	120
QPL kg	879	650	511	417	348	295
DEFL mm	16	28	44	63	85	112

Connection: Fork fitting. Fixings: TP truss pin and R3 R Clip

Serious Medium Duty (521mm high x 521mm wide)

span (metres)

Square ■	2	4	6	8	10	12	14	16	18	20	22	24
UDL kg	2649	2618	2587	2556	2360	1910	1579	1324	1118	947	802	676
DEFL mm	0.5	4	12	27	50	69	91	114	137	159	179	196
CPL kg	1989	1958	1927	1510	1180	955	790	662	559	474	401	338
DEFL mm	1	4	14	26	40	55	73	91	109	127	143	157
TPL kg	2409	2378	2347	2265	1770	1432	1185	993	839	711	602	507
DEFL mm	1	4	14	33	51	71	93	116	140	163	183	200
QPL kg	2409	2378	2347	2265	1770	1432	1185	993	839	711	602	507
DEFL mm	1	4	13	31	47	66	86	108	130	151	170	186

Connection: Fork fitting. Fixings: TFT truss pin and R3 R Clip

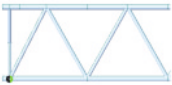


Figure 1: Orientation of the truss supported of bottom chords

Figure 2: Orientation of the truss supported of top chords

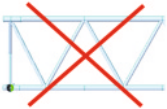
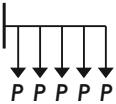


Figure 3: Not allowed orientation of the truss supported of bottom chords

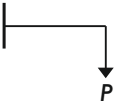
Figure 4: Not allowed orientation of the truss supported of top chords

Cantilever Span (metres)		2
UDL	kg	2420
DEFL	mm	3.6
EPL	kg	1210
DEFL	mm	4.4
CPL	kg	1900
DEFL	mm	2.9

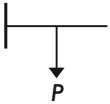
Uniform Load (UDL)



Point Load (Edge)



Point Load (Central)



Nova Beam (500mm high x 500mm wide)

span (metres)

Square	4	6	8	10	12	14	16
UDL kg	4844	4462	3294	2581	2096	1741	1467
DEFL mm	6	15	26	40	58	79	103
CPL kg	3384	2231	1647	1290	1048	870	733
DEFL mm	5	12	21	32	46	63	83
TPL kg	2422	1673	1235	968	789	653	550
DEFL mm	7	15	26	41	59	81	105
QPL kg	1605	1115	823	645	524	435	367
DEFL mm	6	14	24	38	55	75	98

Connection: Fork fitting. Fixings: TP or GP truss pin and R3 R Clip

Fold Flat (673mm high x 673mm wide when open)

span (metres)

Rectangle	3	6	9	12	15	18	21	24
UDL kg	4419	4367	3688	2676	2047	1610	1283	1025
DEFL mm	1	7	21	51	59	85	115	151
CPL kg	2183	2131	1844	1338	1023	805	642	513
DEFL mm	1	6	17	31	49	71	97	129
TPL kg	1092	1066	1040	1003	767	604	481	384
DEFL mm	1	5	17	39	60	87	117	153
QPL kg	728	710	693	669	512	402	321	256
DEFL mm	1	5	15	36	56	81	111	145

Connection: Fork fitting. Fixings: TFT truss pin and R3 R Clip

Maxi Beam (617mm high x 617mm wide)

span (metres)

Square	4	6	8	10	12	14	16
UDL kg	6947	5663	4205	3321	2724	2290	1958
DEFL mm	5	12	20	32	46	63	82
CPL kg	4277	2832	2103	1660	1362	1145	979
DEFL mm	4	9	16	26	37	50	65
TPL kg	3208	2124	1577	1245	1021	859	734
DEFL mm	5	12	21	33	47	64	84
QPL kg	2139	1416	1051	830	681	572	489
DEFL mm	5	11	19	30	44	59	78

Connection: Fork fitting. Fixings: TP truss pin and R3 R Clip

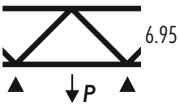
Heavy Duty (762mm high x 521mm wide)

span (metres)

Square		3	6	9	12	15	18	21	24
UDL	kg	4903	4242	2845	2071	1560	1235	961	774
DEFL	mm	3	9	18	30	46	66	87	116
CPL	kg	4513	2287	1422	1036	780	618	480	387
DEFL	mm	3	8	13	24	37	54	74	99
TPL	kg	2620	1560	1067	777	585	463	360	290
DEFL	mm	3	8	17	30	46	66	88	117
QPL	kg	1934	1102	711	518	390	309	240	193
DEFL	mm	3	9	15	28	43	62	84	111

Cantilever Span		3
UDL	kg	1840
DEFL	mm	0.1
CPL	kg	3088
DEFL	mm	7

Point Load Mid kN



Connection: Gusset Plate. Fixings: M16 x 45 HT Bolt, Nut & Washers

Serious Heavy Duty (762mm high x 521mm wide)

span (metres)

Square ■	3	6	9	12	15	18	21	24
UDL kg	2986	2934	2881	2829	2256	1784	1432	1156
DEFL mm	1	5	17	40	62	85	108	130
CPL kg	1996	1944	1891	1469	1128	892	716	578
DEFL mm	1	5	18	33	50	68	86	104
TPL kg	2376	2324	2271	2151	1692	1338	1074	867
DEFL mm	1	6	18	41	63	87	110	133
QPL kg	2376	2324	2271	2151	1692	1338	1074	867
DEFL mm	1	5	17	38	59	80	103	124

Connection: Fork fitting. Fixings: TFT truss pin and R3 R Clip

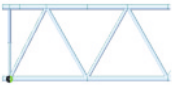


Figure 1: Orientation of the truss supported of bottom chords

Figure 2: Orientation of the truss supported of top chords

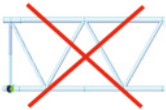


Figure 3: Not allowed orientation of the truss supported of bottom chords

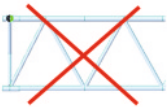
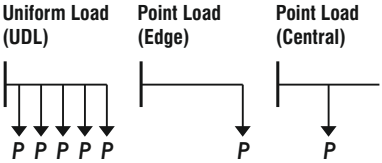


Figure 4: Not allowed orientation of the truss supported of top chords

Cantilever Span (metres)		3
UDL	kg	2910
DEFL	mm	6.5
EPL	kg	1450
DEFL	mm	7.9
CPL	kg	1950
DEFL	mm	3.8



Moving Light Truss - RUP Truss

Point Loads are assumed to be equally distributed across the given span

span (metres)	3	6	9	12	15
No. Load Points	4	8	12	16	20
Load per Point (kN)	4.7	1.8	0.8	0.4	0.3
Load per Point (kg)	479	183	81	40	30
Deflection (mm)	5	25	55	96	149

Connection: Fork End: TFT pins & R3 Clips

Moving Light Truss - LAD Truss

Figures Assuming Each truss loaded with 240kgs of moving lights

span (metres)	3	6	9	12
UDL kg	7251	3142	1558	604
CPL kg	3625	1571	779	302
TPL kg	2708	1157	552	183
QPL kg	1806	771	368	122

Figures without moving lights

span (metres)	3	6	9	12
UDL kg	7491	3622	2278	1564
CPL kg	3745	1811	1139	782
TPL kg	2798	1337	822	543
QPL kg	1866	891	548	362

Extra Heavy Duty (675mm high x 675mm wide)

span (metres)

Square	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
UDL kg	6015	5970	5924	5791	4551	3710	3096	2624	2247	1937	1674	1448	1250	1074	915	770
DEFL mm	1	4	13	31	48	67	89	113	138	163	187	210	231	248	259	265
CPL kg	3087	3042	2996	2895	2276	1855	1548	1312	1124	968	837	724	625	537	457	385
DEFL mm	0.5	3	11	25	38	54	71	90	110	130	150	168	185	198	208	212
TPL kg	4155	4110	4064	4019	3357	2782	2322	1968	1686	1453	1256	1086	938	805	686	578
DEFL mm	0.4	4	13	29	48	69	91	115	141	166	191	215	236	253	265	271
QPL kg	4155	4110	4064	4019	3357	2782	2322	1968	1686	1453	1256	1086	938	805	686	578
DEFL mm	0.3	3	12	27	45	64	85	107	131	155	178	200	219	235	246	252

Connection: Fork fitting. Fixings: TFT truss pin and R3 R Clip

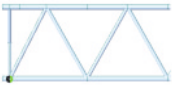


Figure 1: Orientation of the truss supported of bottom chords

Figure 2: Orientation of the truss supported of top chords

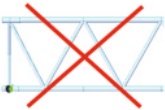


Figure 3: Not allowed orientation of the truss supported of bottom chords

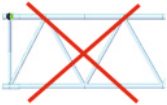
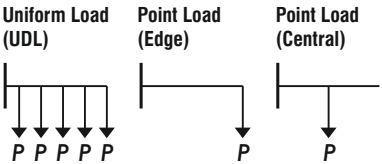


Figure 4: Not allowed orientation of the truss supported of top chords

Cantilever Span (metres)		3
UDL	kg	3330
DEFL	mm	6.3
EPL	kg	1660
DEFL	mm	7.7
CPL	kg	2830
DEFL	mm	5.1



Super Beam (917mm high x 610mm wide)

span (metres)

Rectangle	3	6	9	12	15	18	21	24	27	30	33	36
UDL kg	7525	7470	7414	7145	5617	4580	3823	3241	2777	2394	2071	1793
DEFL mm	1	5	16	37	57	80	106	134	163	193	222	250
CPL kg	6765	6710	4828	3573	2808	2290	1911	1621	1389	1197	1036	896
DEFL mm	1	7	17	30	45	64	85	107	131	155	178	200
TPL kg	6765	6710	6654	5359	4213	3435	2867	2431	2083	1796	1554	1345
DEFL mm	1	6	20	38	58	82	108	137	167	198	227	256
QPL kg	6765	6710	6654	5359	4213	3435	2867	2431	2083	1796	1554	1345
DEFL mm	1	5	18	35	54	76	101	127	155	184	211	238

Connection: Fork fitting. Fixings: 5TTP truss pin and R4 R Clip

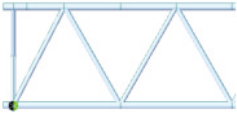


Figure 1: Orientation of the truss supported of bottom chords

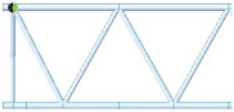
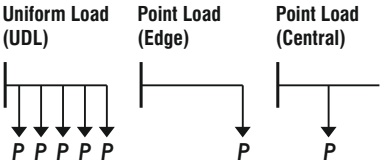


Figure 2: Orientation of the truss supported of top chords

Cantilever Span (metres)		3
UDL	kg	4220
DEFL	mm	6.3
EPL	kg	3390
DEFL	mm	11.3
CPL	kg	3470
DEFL	mm	4.9



Superbeam Catwalk

span (metres)	3	6	9	12
UDL kg	4482	3680	2877	768
DEFL mm	0	4	12	23
CPL kg	4482	3329	1500	384
DEFL mm	1	5	11	22
TPL kg	2241	1840	1125	288
DEFL mm	1	4	13	23

Loads assume a maximum of two people on the catwalk at any one time

All loads are given in Kilograms. Allowance has been made for self-weight of truss. Allowance has been made for frequent use factor of 83%. The payload of the truss has been calculated as a permanent action. Should it be necessary to consider the payload as a variable action, the tabulated figures should be reduced to 90% of the given values.

Super Mega Truss (1161mm high x 791mm)

span (metres)

Rectangle	6	10	14	18	22	26	28	30
UDL kg	6778	6670	6562	6454	6346	5928	5401	4936
DEFL mm	1	5	13	28	51	81	94	108
CPL kg	4666	4558	4450	4342	3621	2964	2700	2468
DEFL mm	1	5	14	30	47	67	78	90
TPL kg	2333	2279	2225	2171	2117	2063	2025	1851
DEFL mm	1	4	12	26	47	77	96	110
QPL kg	1555	1519	1483	1447	1411	1375	1350	1234
DEFL mm	1	4	11	24	44	72	90	103

Connection: Fork fitting

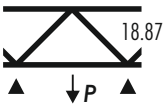
Mega Beam (1420mm high x 795mm wide)

Rect		4.8	9.6	14.4	19.2	24	28.8	33.6	38.4	43.2
UDL	kg	15571	13974	13176	12577	11978	11080	8874	7426	6109
DEFL	mm	4	7	17	32	57	88	114	147	182
CPL	kg	13309	12477	10398	8214	6862	5540	4437	3713	3054
DEFL	mm	4	8	23	36	74	106	142	187	221
TPL	kg	6758	6239	5823	4991	4492	4155	3328	2785	2291
DEFL	mm	4	9	20	46	81	133	175	229	270
QPL	kg	4679	4159	3951	3639	3223	2770	2218	1857	1527
DEFL	mm	3	9	20	46	82	124	164	215	254

Connection: Fork fitting. Fixings: METP truss pin and R5 R Clip

Cantilever Span (metres)		4.8
UDL	kg	8484
DEFL	mm	8
CPL	kg	6446
DEFL	mm	14

Point Load Mid kN



T2 R470 Truss (726mm high x 451mm wide)

span (metres)

Rect	4	6	8	10	12	14	16	18
UDL kg	2317	2291	2265	2238	1750	1303	961	689
DEFL mm	1	3	8	15	22	30	38	48
CPL kg	1236	1210	1183	1157	875	652	480	344
DEFL mm	1	3	7	13	19	26	35	44
TPL kg	618	605	592	579	565	489	360	258
DEFL mm	1	3	6	12	20	30	39	48
QPL kg	412	403	394	386	377	326	240	172
DEFL mm	1	2	6	11	19	29	37	47

Connection: Fork fitting. Fixings: T2T truss pin and RT2 R Clip
These are allowable loads over and above the fall arrest load.

T2 R450 Truss (576mm high x 451mm wide)

span (metres)

Rect	4	6	8	10	12	14	16	18
UDL kg	1447	1422	1397	1373	1097	745	475	260
DEFL mm	1	4	9	18	28	37	48	59
CPL kg	840	815	790	765	548	373	238	130
DEFL mm	1	4	9	17	25	34	45	57
TPL kg	420	408	395	383	370	279	178	98
DEFL mm	1	3	8	15	26	37	48	60
QPL kg	280	272	263	255	247	186	119	65
DEFL mm	1	3	8	15	25	36	47	59

Connection: Fork fitting. Fixings: T2T truss pin and RT R Clip
These are allowable loads over and above the fall arrest load.

Notes on Products & Load Tables

The User should refer to "Operating Manual for Modular Aluminium Truss and Tower Sections" and the "Operating Manual for Demountable Aluminium Roof Top Structures" where applicable.

The allowable loads are maximum static equivalent loads which can be safely applied to the truss. No allowance has been made for dynamic loads

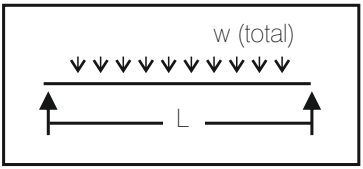
Glossary

Allowable Load	Maximum allowable static equivalent load imposed on truss/tower in addition to the self weight.
Deflection	The deviation from centre line due to imposed load.
Dynamic Loading	A structurally significant magnification of design load due to movement.
Span	The distance between the supports in a horizontal truss.
Static Load	A load which is not moving.
Variable Action	Action for which the variation in magnitude with time is neither negligible nor monotonic.
Permanent Action	Action that is likely to act throughout a given reference period and for which the variation in magnitude with time is negligible, or for which the variation is always in the same direction (monotonic) until the action attains a certain limit value.

Simply Supported Beams

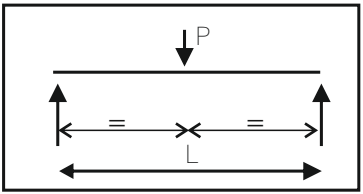
U.D.L.

Uniformily Distributed Load



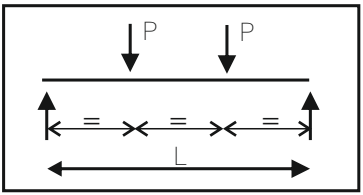
C.P.L

Centre Point Load



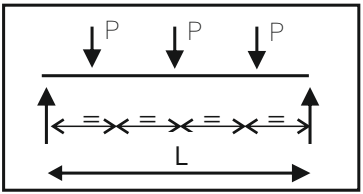
T.P.L.

Third Point Load



Q.P.L.

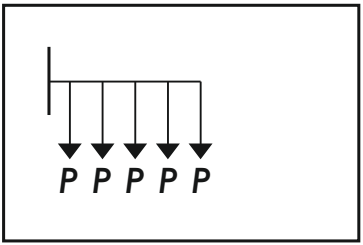
Quarter Point Load



Cantilever Beams

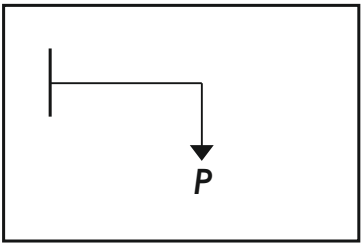
U.D.L. for cantilevers

Uniformily Distributed Load



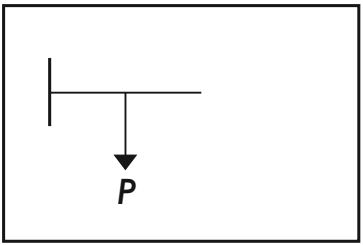
E.P.L. for cantilevers

Edge Point Load



C.P.L. for cantilevers

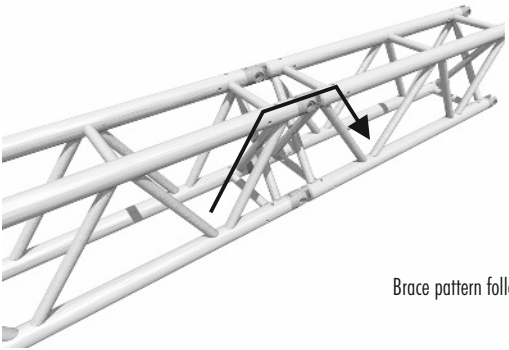
Central Point Load



Mis-noding

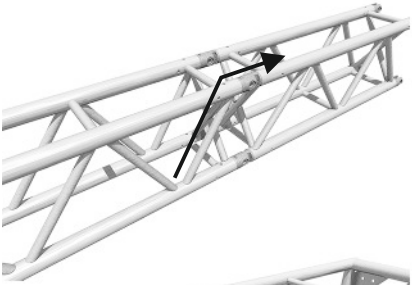
Mis-noding of truss can occur when two trusses are joined together and the continuous bracing pattern of the truss is interrupted so the proper transfer of loads through the truss can no longer occur. This can lead to severe structural consequences and possible collapse of the structure. It is important to note that depending on the truss type that truss may or may not be susceptible to a mis-noding problem during construction. Below are some basic points to look out for:

Please remember to consult the manufacturer if you are unsure at any point.

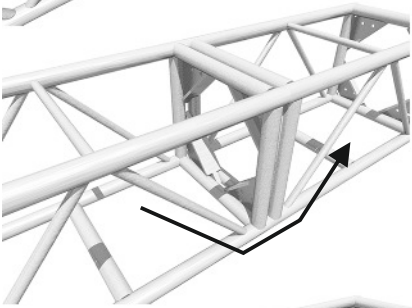


Brace pattern follows. Forces OK ✓

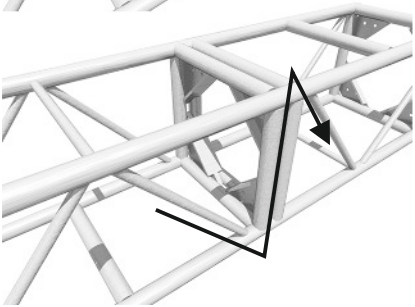
Mis-noding



Brace pattern is broken
Mis-noding has occured ✗



Brace pattern follows.
Forces OK ✓



Brace pattern does not follow
BUT vertical end members
allow forces to flow. ✓

Lifting & Slinging Trusses

The truss sections are generally lifted using electric chain hoists. The chain hoists shall be carefully controlled to ensure that load is not shed to / from the slower motors.

If the truss is supported by round slings these should be rigged so that the truss is not subjected to forces which would result in overstressing or damage. The forces are essentially compressive in nature and care must be taken to avoid slinging away from node points.

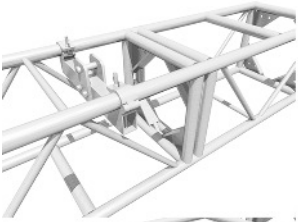
Establish the correct orientation for the truss. Make sure you know which is the top and bottom face and which are the sides.

Trusses should always be rigged and loaded so the two diagonally braced sides of the truss remain vertical.

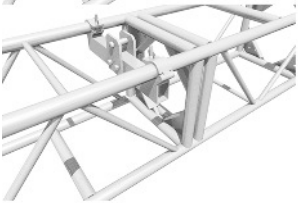
Lifting slings and pick up beam fixings should be positioned on the truss as close to node points as possible. If a lifting sling is positioned away from a node point, there is a risk of local bending in the truss chords. When using trusses as spreader beams over other trusses, care should be taken to ensure that the spreader beam node points correspond as closely as possible with the supporting trusses node points.

It is recommended that the User obtain advice from the manufacturer, a competent rigger or other person with experience in these matters.

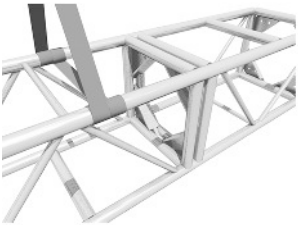
Lifting & Slinging Trusses



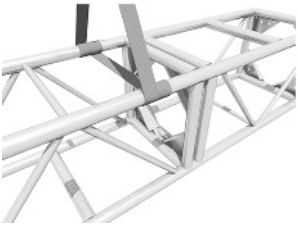
Truss pickup beam should be positioned as close to a node point as possible ✓



Truss pickup beam should not be positioned in the middle of unsupported main cords ✗



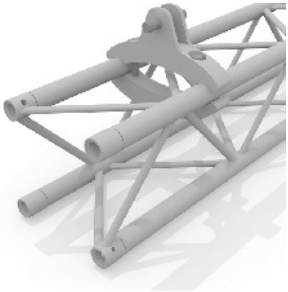
Slinging should be positioned as close to a node point as possible ✓



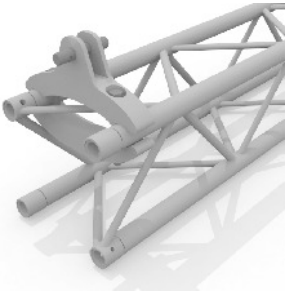
Slinging should not be positioned in the middle of unsupported main cords ✗

Lifting & Slinging Trusses

Litebeam, Litebox and OV Truss



Pickup or connection to the truss should be after the first node point at the open end ✓



Do not pick up from an OV truss at the very end an OV truss span due to the unsupported leg. ✗

Lifting & Slinging Trusses

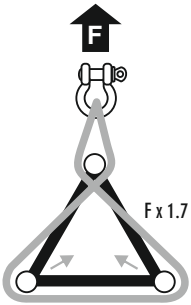
Ladder beam

Slinging a ladder-beam to lift it.

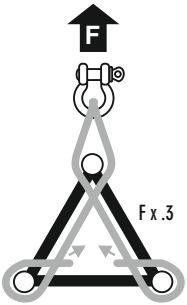
Slinging from a ladder-beam like this will keep the ladder vertical. In good condition, the welds are strong enough if you adhere to the relevant load tables.

Lifting & Slinging Trusses

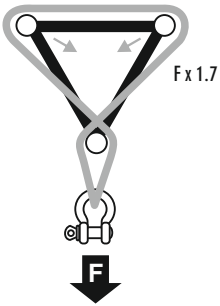
Triangular truss

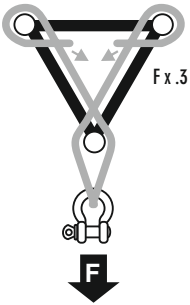


Slinging a triangular truss with one sling



Slinging a triangular truss with two slings

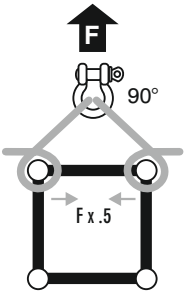




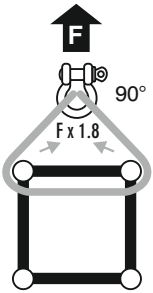
Check if your triangular truss is designed to be used apex up or down

Lifting & Slinging Trusses

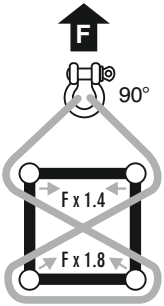
Forces typically applied by slings to a square truss.



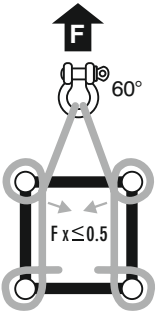
Two slings at an upper node



One sling fed under top chords



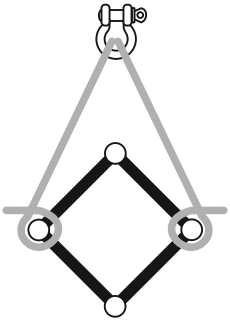
One sling in 'figure 8' pattern



Good practice using two slings

Obtain a 60° included angle at the shackle.
Wrap top chords at a node point
Choke bottom chords at a node point

Lifting & Slinging Trusses



✗ Do not rig square trusses like this

Inspection of Truss Quality and Safety

1.1 **Important:** These inspection criteria relate only to TSG manufactured trusses.

1.2 **Discard or Quarantine criteria; General**

1.2.1 Bent or deformed without load applied

1.2.2 Welds are incomplete or shows signs of cracking. Certain cracks are associated with the manufacturing process. If in doubt, consult TSG.

1.2.3 Wear on welds and welded areas.

1.2.4 Repairs made without written approval from TSG.

1.3 **Discard or Quarantine criteria; Main members**

1.3.1 Reduction of the total cross–sectional surface area by more than 15%; or any local area reduction transverse to the tube axis of more than 15%.

1.3.2 Localised bending of one or more of the main tubes viewed from the end of a section.

1.3.3 Damaged, partly missing or broken tubes.

1.3.4 Cracks or holes in the main tubes including drilled holes.

1.3.5 Holes from the manufacturing process should not be considered as damage

1.3.6 Lasting deformation through dents, lateral compression etc. that results in a change of diameter by more than 10%. e.g. Lite Beam tube dia. = 48mm; 44mm minimum and 52mm maximum.

1.4 **Discard or Quarantine criteria; Lattice members**

1.4.1 Reduction of the total cross-sectional surface area by more than 15% or any local area reduction transverse to the tube axis of more than 15%.

1.4.2 Localised bending of one or more of the lattice tubes.

1.4.3 Damaged, missing, or broken lattice tubes.

1.4.4 Cracks or holes in the lattice tubes.

1.4.5 Holes from the manufacturing process should not be considered as damage.

1.4.6 Lasting deformation through dents, lateral compression etc. that results in a change of diameter by more than 10%.

1.5 **Discard or Quarantine criteria; Connectors and connecting elements**

1.5.1 Deformation or elongation of connection holes (rivets, roll pins, in gusset plates) in the fittings or the main tubes by more than 10% e.g. Lite Beam 6.25mm + 0.63mm = 6.88mm max. Mini Beam, GS Truss, Maxi Beam, Folding Truss 10mm + 1mm = 11mm. Bending or deformation of any fitting part by more than 10 degrees from the axis of the main tubes.

1.5.2 Reduction of the cross-sectional area of the connector (male or female) surface by more than 10%.

1.5.3 Damaged connector or parts of the connector missing.

1.5.4 Damaged or missing roll pins or fixing rivets.

1.5.5 Fixing rivet should completely fill holes and have close contact with the riveted surfaces

1.5.6 Diameter reduction of connector elements (truss pins or fixing bolt) by more than 10%.

1.5.7 No damage to the threads on fixing bolts

1.5.8 Clear (galvanic) corrosion on rivets or roll pins in the connectors.

1.6 **Painting**

1.6.1 Inspecting painted modules is difficult because paint can obscure surface defects and cracked welds.

1.6.2 If a module is painted repeatedly defects may exist indefinitely.

1.6.3 Modules should always have previous layers of paint removed before any new painting occurs.

1.6.4 Modules should be re-inspected before new paint is applied.

1.6.5 Paint removal must not reduce the dimensions of any materials.

1.6.6 **Warning**: Chemical treatments damage aluminium. Do not use chemical baths for paint-stripping.

1.7 **Saline environment**

1.7.1 If trusses are subjected to a salty atmosphere, then they should be rinsed on a regular basis.

1.8 **Corrosion**

1.8.1 The contact surfaces of different metals should be checked for corrosion, for example the bolts and their bearing surfaces.

1.9 **Attention**

1.9.1 **Danger**: Neglecting any of the above factors may result in property damage, injury to people or death.

1.9.2 **Important**: Damaged modules should be clearly marked as such and shall not be used under any circumstance. Any repair must be undertaken by an authorized agent of TSG.

1.9.3 **Important**: If 3rd party inspections are checking welds then they should only inspect TSG products if they are fully conversant with the following:

- Execution class
- Consequence class
- Weld quality level

Notes

Notes

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