

Diameter of bolt	d (mm)	20
Diameter of bolt hole	d ₀ (mm)	22
End distance	e ₁ (mm)	40
Edge distance	e ₂ (mm)	50
Spacing between centres of bolts in the direction of load transfer	p ₁ (mm)	60
Thickness of end plate	t _p (mm)	10
Horizontal distance of lever arm	B _L (mm)	490
Vertical distance of lever arm	D _L (mm)	51.7

Steel Grade		S275	S355
Dimension of Members		UB305x165x40	UC254x254x89
Depth of Section	D (mm)	303.4	260.3
Width of Section	B (mm)	165	256.3
Thickness of Web	t (mm)	6	10.3
Thickness of Flange	T (mm)	10.2	17.3
Root Radius	r (mm)	8.9	12.7
Depth between Fillets	d (mm)	265.2	200.3

Nominal Temperature

20°C

Time (minute)	Jack Displacement (mm)	Load Angle $\alpha(^{\circ})$	Beam Rotation ($^{\circ}$)	Column Rotation ($^{\circ}$)	Connection Rotation ($^{\circ}$)	Force Rotation ($^{\circ}$)	F3 from F1 (kN)	F3 from F2 (kN)	F3 from Reading (kN)	Tension (kN)	Shear (kN)	Moment (kN*m)
0												
1												
2												
3	0.011	33.66	0.000	0.000	0.000	8.659	-0.23	-5.98	-0.71	-0.589	-0.392	-228.6512
4	1.332	33.69	-0.003	-0.054	0.051	8.691	0.12	-6.90	-0.56	-0.470	-0.313	-182.623
5	2.881	33.95	0.079	-0.158	0.238	8.950	0.57	-5.12	-0.03	-0.021	-0.014	-8.304077
6	4.364	34.06	0.054	-0.104	0.158	9.056	1.02	-4.37	0.55	0.452	0.305	177.85241
7	5.844	34.11	0.000	-0.104	0.104	9.107	1.86	-2.25	1.26	1.039	0.704	409.75079
8	7.347	34.40	0.079	0.004	0.076	9.403	2.85	2.84	2.20	1.812	1.241	721.66766
9	8.654	34.56	0.025	-0.025	0.051	9.558	3.71	2.86	3.08	2.534	1.745	1014.2859
10	10.035	34.68	0.079	-0.104	0.184	9.677	4.85	7.56	4.33	3.559	2.462	1430.1263
11	11.734	34.92	0.054	-0.050	0.104	9.916	5.87	8.00	5.52	4.530	3.162	1834.8372
12	13.193	35.02	0.079	-0.131	0.210	10.025	7.10	9.14	6.72	5.503	3.857	2237.1807
13	14.756	35.19	0.213	-0.075	0.288	10.188	8.26	11.19	7.83	6.396	4.510	2614.4424
14	16.262	35.25	0.108	-0.050	0.158	10.253	9.36	12.11	8.59	7.015	4.958	2873.731
15	17.914	35.40	0.162	-0.104	0.266	10.399	9.89	13.68	9.27	7.559	5.372	3111.4729
16	19.142	35.56	0.213	-0.079	0.292	10.562	9.85	12.87	9.22	7.497	5.360	3102.8758
17	20.624	35.66	0.241	0.004	0.238	10.660	10.66	13.38	9.90	8.040	5.768	3338.1293
18	22.155	35.83	0.321	0.000	0.321	10.828	10.93	12.07	10.26	8.322	6.008	3474.8036
19	23.727	35.88	0.267	-0.104	0.371	10.883	11.45	14.48	10.61	8.593	6.216	3594.2291
20	25.298	36.17	0.375	0.029	0.346	11.169	11.55	14.67	11.03	8.906	6.511	3760.4955
21	26.908	36.22	0.479	-0.079	0.558	11.225	11.94	13.56	11.20	9.034	6.618	3821.7603
22	28.936	36.47	0.542	-0.043	0.585	11.465	12.25	14.27	11.51	9.257	6.842	3947.4778

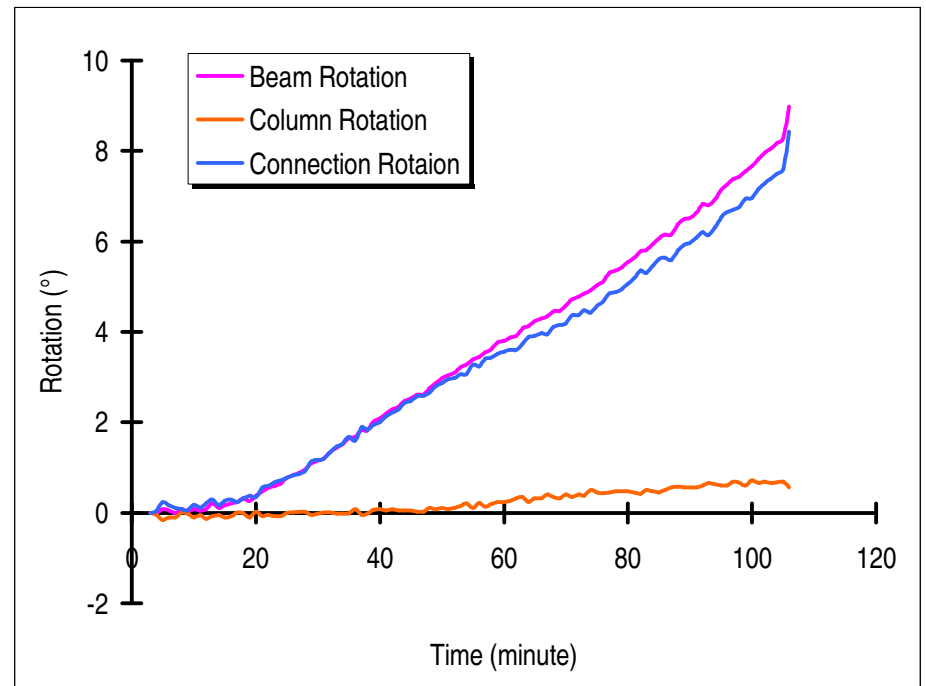
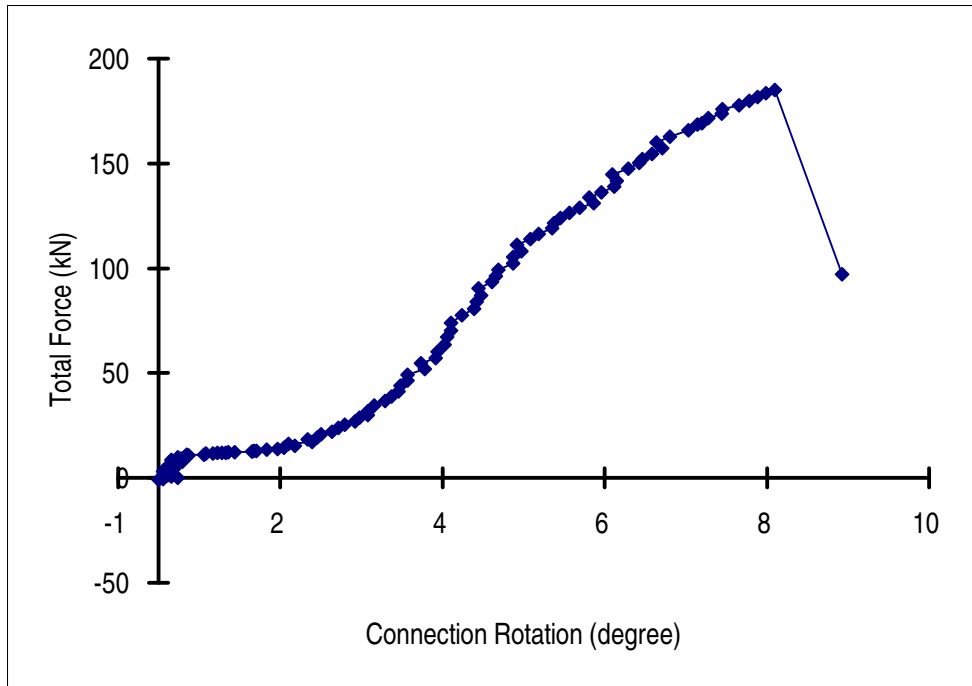
14 March 2007 Fin-plate Test Result

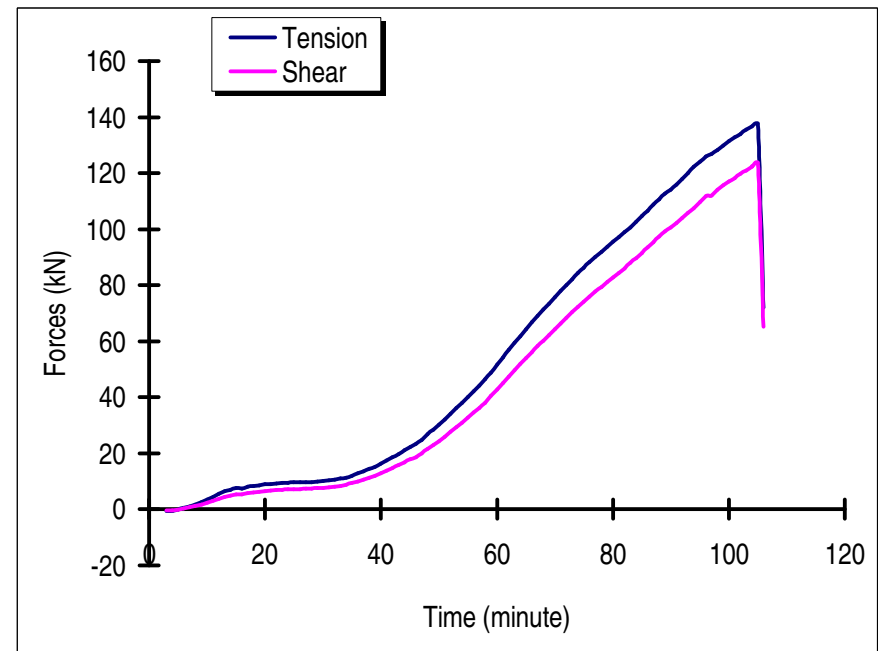
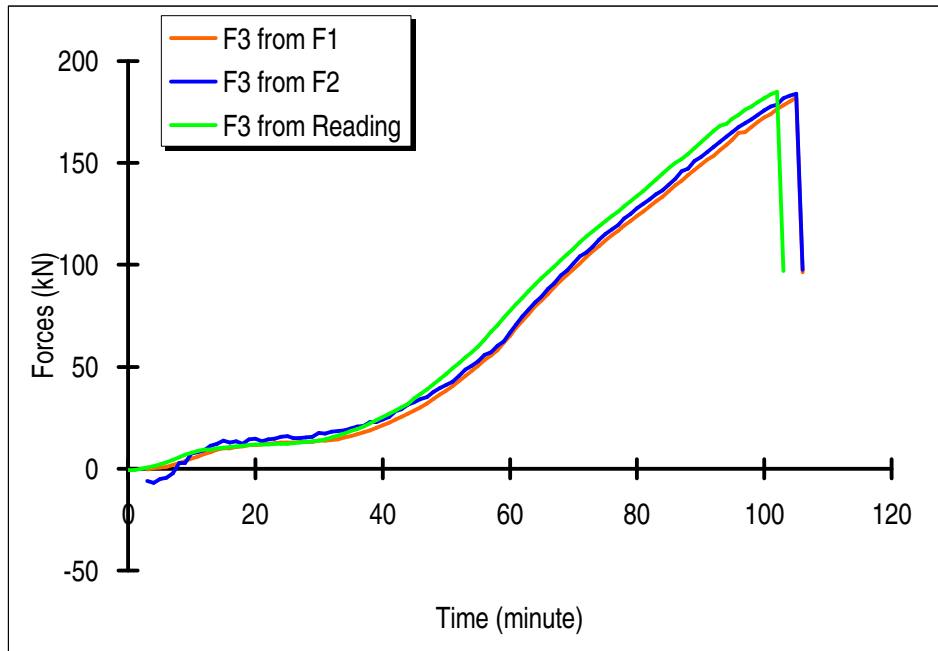
23	30.580	36.58	0.596	-0.072	0.668	11.579	12.42	14.61	11.77	9.449	7.012	4044.3399
24	32.328	36.71	0.641	-0.079	0.721	11.712	12.80	15.61	11.88	9.524	7.102	4094.1837
25	33.883	36.75	0.775	0.000	0.775	11.751	12.86	16.10	12.02	9.633	7.193	4146.3343
26	35.366	36.96	0.829	0.004	0.825	11.963	12.95	14.90	12.11	9.674	7.280	4193.3319
27	36.865	37.07	0.883	0.029	0.855	12.075	12.99	15.08	12.22	9.751	7.368	4241.936
28	38.364	37.00	0.962	0.029	0.934	12.004	12.98	15.27	12.28	9.805	7.390	4255.7416
29	40.047	37.26	1.096	-0.050	1.146	12.262	13.27	15.49	12.59	10.020	7.623	4386.1159
30	41.611	37.31	1.150	-0.021	1.172	12.308	13.60	17.39	12.73	10.127	7.717	4439.5876
31	43.166	37.46	1.205	0.004	1.201	12.458	13.87	17.14	12.98	10.307	7.897	4540.721
32	44.824	37.47	1.338	0.004	1.334	12.474	14.04	18.21	13.44	10.665	8.176	4700.9615
33	46.412	37.53	1.441	-0.025	1.466	12.529	14.47	18.58	13.84	10.972	8.428	4845.1392
34	48.048	37.83	1.520	-0.025	1.545	12.827	15.30	18.70	14.34	11.329	8.796	5051.6704
35	49.731	37.83	1.653	-0.025	1.678	12.827	15.89	19.72	15.25	12.046	9.353	5371.3498
36	51.302	37.90	1.684	0.083	1.601	12.895	16.78	20.71	16.21	12.793	9.957	5717.1601
37	52.857	38.02	1.840	-0.050	1.891	13.022	17.97	21.13	17.11	13.483	10.542	6050.3627
38	54.236	38.11	1.817	-0.021	1.838	13.108	18.92	22.87	18.36	14.447	11.332	6501.7338
39	55.839	38.11	2.013	0.062	1.951	13.108	20.01	22.73	19.41	15.269	11.976	6871.4461
40	57.362	38.27	2.091	0.087	2.004	13.265	21.21	23.98	20.68	16.233	12.804	7343.0251
41	58.837	38.35	2.193	0.058	2.135	13.349	22.57	25.34	22.17	17.387	13.756	7886.5561
42	60.385	38.44	2.294	0.083	2.212	13.436	24.20	28.08	23.72	18.581	14.747	8452.2625
43	61.996	38.45	2.349	0.058	2.291	13.446	25.51	29.13	25.36	19.859	15.766	9036.2779
44	63.574	38.60	2.474	0.050	2.424	13.597	27.06	31.28	27.07	21.158	16.888	9674.8021
45	65.106	38.71	2.529	0.050	2.478	13.705	28.59	32.74	28.62	22.336	17.898	10249.911
46	66.572	38.65	2.606	0.025	2.581	13.650	30.13	34.10	29.94	23.383	18.700	10710.828
47	68.080	38.72	2.606	0.025	2.581	13.716	31.86	35.24	31.80	24.809	19.887	11388.5
48	69.555	38.82	2.762	0.104	2.658	13.819	34.16	37.49	34.44	26.832	21.587	12358.278
49	71.102	38.96	2.872	0.079	2.793	13.965	36.32	39.65	36.65	28.498	23.048	13188.379
50	72.617	38.82	2.982	0.108	2.874	13.822	38.13	41.21	38.95	30.346	24.418	13978.689
51	74.084	38.97	3.037	0.079	2.958	13.966	40.49	42.78	41.36	32.155	26.007	14881.597
52	75.615	38.98	3.092	0.108	2.984	13.984	42.84	45.45	43.93	34.146	27.634	15811.872

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53	77.202	39.02	3.225	0.158	3.067	14.019	45.40	48.63	46.52	36.146	29.290	16757.241
54	78.493	39.18	3.280	0.212	3.068	14.177	47.93	50.47	49.14	38.097	31.045	17752.785
55	80.153	39.25	3.390	0.108	3.282	14.247	50.59	52.75	51.82	40.129	32.783	18742.717
56	81.676	39.33	3.446	0.216	3.230	14.333	53.21	55.81	54.58	42.213	34.592	19771.406
57	83.255	39.42	3.545	0.133	3.412	14.419	55.53	57.01	57.13	44.136	36.277	20729.603
58	84.811	39.39	3.623	0.187	3.436	14.392	58.18	60.34	60.07	46.426	38.124	21786.787
59	86.318	39.71	3.767	0.241	3.526	14.710	61.83	62.34	63.43	48.792	40.523	23135.092
60	87.753	39.60	3.801	0.241	3.559	14.600	65.33	66.77	67.08	51.686	42.758	24419.328
61	89.204	39.73	3.878	0.270	3.608	14.725	69.03	70.68	70.42	54.162	45.006	25693.667
62	90.639	39.75	3.921	0.320	3.601	14.747	72.43	74.82	73.98	56.882	47.303	27003.452
63	92.201	39.92	4.088	0.349	3.739	14.922	76.01	78.06	77.56	59.482	49.773	28398.652
64	93.660	40.01	4.131	0.241	3.890	15.008	79.60	81.71	80.75	61.851	51.914	29612.377
65	95.240	39.99	4.242	0.320	3.922	14.993	82.43	84.39	83.94	64.306	53.945	30772.249
66	96.603	40.01	4.298	0.320	3.978	15.006	85.68	88.13	87.17	66.769	56.038	31965.311
67	98.204	40.14	4.340	0.399	3.941	15.141	89.03	91.03	90.37	69.086	58.261	33219.811
68	99.672	40.21	4.451	0.345	4.107	15.211	92.17	94.80	93.38	71.312	60.286	34367.938
69	101.203	40.29	4.473	0.316	4.157	15.294	95.14	97.15	96.36	73.495	62.314	35515.281
70	102.678	40.31	4.584	0.399	4.185	15.312	97.88	100.63	99.27	75.699	64.225	36602.443
71	104.169	40.41	4.716	0.345	4.371	15.406	100.65	104.21	102.35	77.937	66.343	37799.325
72	105.748	40.54	4.772	0.399	4.373	15.544	103.84	106.09	105.23	79.964	68.401	38956.885
73	107.216	40.61	4.848	0.374	4.474	15.614	106.61	108.81	108.13	82.086	70.391	40081.893
74	108.827	40.58	4.925	0.507	4.417	15.583	109.31	112.33	111.12	84.389	72.286	41164.858
75	110.311	40.66	5.036	0.453	4.583	15.656	111.95	115.31	113.80	86.330	74.141	42211.942
76	112.001	40.74	5.113	0.428	4.684	15.737	114.65	117.39	116.37	88.174	75.940	43226.807
77	113.501	40.84	5.301	0.453	4.847	15.836	116.86	119.52	119.01	90.040	77.818	44283.296
78	115.111	40.82	5.356	0.478	4.879	15.824	119.26	122.68	121.57	91.997	79.477	45228.744
79	116.739	40.87	5.433	0.478	4.955	15.866	121.42	125.02	123.94	93.731	81.094	46143.921
80	118.286	40.89	5.544	0.478	5.067	15.886	123.88	127.77	126.34	95.513	82.694	47051.52
81	119.826	40.91	5.640	0.448	5.192	15.905	126.27	129.94	128.73	97.292	84.293	47958.773
82	121.356	40.96	5.789	0.424	5.365	15.955	128.57	132.31	131.09	99.005	85.928	48882.228

83	122.752	41.13	5.808	0.502	5.306	16.133	131.37	134.63	133.72	100.717	87.964	50015.569
84	124.226	41.11	5.940	0.478	5.462	16.115	133.54	136.50	136.35	102.722	89.657	50981.017
85	125.846	41.16	6.072	0.453	5.619	16.155	136.13	139.28	139.07	104.713	91.525	52037.411
86	126.993	41.24	6.147	0.502	5.645	16.240	138.93	142.10	141.77	106.606	93.459	53124.203
87	128.458	41.18	6.147	0.556	5.591	16.180	141.33	146.07	144.68	108.893	95.262	54158.213
88	129.846	41.37	6.372	0.581	5.791	16.369	143.98	147.38	147.50	110.697	97.487	55394.456
89	131.120	41.32	6.485	0.556	5.928	16.317	146.65	151.11	150.22	112.824	99.178	56363.263
90	132.461	41.41	6.523	0.556	5.966	16.406	148.99	152.80	151.97	113.987	100.513	57108.011
91	133.501	41.41	6.635	0.556	6.079	16.414	151.78	155.29	154.52	115.884	102.214	58073.376
92	134.623	41.37	6.823	0.611	6.213	16.369	153.67	157.94	157.28	118.032	103.947	59064.919
93	136.106	41.43	6.804	0.665	6.140	16.434	156.32	160.58	160.01	119.960	105.884	60155.048
94	137.693	41.34	6.936	0.635	6.301	16.337	158.97	162.98	162.86	122.280	107.566	61126.727
95	139.033	41.49	7.143	0.611	6.532	16.494	161.50	165.04	165.71	124.121	109.790	62364.011
96	140.755	41.62	7.256	0.611	6.645	16.618	164.81	167.50	168.43	125.914	111.861	63519.144
97	142.238	41.44	7.387	0.689	6.698	16.441	165.18	169.64	169.22	126.851	111.998	63626.884
98	143.809	41.62	7.443	0.665	6.779	16.624	167.70	171.29	171.69	128.343	114.044	64757.414
99	145.285	41.70	7.557	0.611	6.946	16.699	170.19	173.65	173.76	129.740	115.591	65622.819
100	146.696	41.66	7.670	0.719	6.951	16.658	172.29	175.94	176.00	131.492	116.984	66420.553
101	148.130	41.67	7.819	0.665	7.154	16.672	174.02	177.78	177.78	132.796	118.200	67108.453
102	149.782	41.82	7.968	0.689	7.279	16.815	176.43	178.78	179.77	133.986	119.860	68025.224
103	151.185	41.75	8.046	0.665	7.381	16.747	178.30	181.85	181.66	135.536	120.957	68660.268
104	152.779	41.83	8.169	0.680	7.489	16.829	180.08	183.13	183.54	136.764	122.407	69467.862
105	154.310	41.97	8.291	0.695	7.597	16.972	182.19	183.86	185.06	137.586	123.761	70209.723
106	156.851	42.18	8.986	0.556	8.430	17.176	96.49	97.67	97.12	71.973	65.206	36971.706





Photographs after Test

