

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

Steel Grade		S275	S355
Dimension of Members		UB305x165 x40	UC254x254 x89
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 $\alpha$ (°)	Beam Rotation (°)	Column Rotation (°)	Connection Rotation (°)	Force Rotation (°)	F3 from F1 (kN)	F3 from F2 (kN)	F3 from Reading (kN)	Tension (kN)	Shear (kN)	Moment (kN*m)
0	-0.009											
1	-0.009											
2	0.000											
3	-0.002	37.30	0.000	0.000	0.000	11.703	-0.04	-1.23	-0.70	-0.56	-0.42	-243.48
4	1.512	36.99	0.130	0.057	0.073	11.388	-0.11	-0.87	-0.76	-0.60	-0.45	-261.78
5	3.144	37.43	0.089	0.057	0.033	11.834	0.06	-0.38	-0.55	-0.44	-0.34	-192.94
6	4.726	37.86	0.109	0.095	0.013	12.262	0.19	-0.44	-0.47	-0.37	-0.29	-165.62
7	6.583	38.15	0.118	0.057	0.061	12.550	1.40	0.53	0.75	0.59	0.47	267.21
8	7.732	38.16	0.098	0.095	0.003	12.565	4.19	3.68	3.15	2.47	1.94	1115.37
9	9.265	38.33	0.080	0.116	-0.036	12.731	8.88	8.87	7.58	5.94	4.70	2693.78
10	10.824	38.54	0.198	0.095	0.103	12.940	11.92	12.06	10.41	8.14	6.49	3717.01
11	12.591	38.60	0.357	0.113	0.243	13.005	12.45	13.29	10.89	8.51	6.80	3894.22
12	14.225	38.71	0.465	0.018	0.446	13.115	12.35	12.64	10.70	8.35	6.69	3830.96
13	15.648	38.76	0.396	-0.039	0.434	13.164	12.65	13.08	11.09	8.65	6.94	3975.87
14	17.494	38.89	0.622	0.075	0.547	13.294	13.29	14.02	11.61	9.03	7.29	4170.49
15	18.981	38.92	0.743	0.113	0.630	13.325	13.91	15.06	12.40	9.64	7.79	4457.51
16	20.548	39.18	0.819	0.095	0.724	13.584	14.68	15.58	13.11	10.16	8.28	4735.25
17	22.063	39.18	0.900	0.018	0.881	13.584	15.56	16.09	13.90	10.77	8.78	5021.09
18	23.795	39.33	1.008	0.075	0.933	13.729	16.39	16.78	14.81	11.45	9.38	5363.37
19	25.238	39.30	1.116	0.075	1.041	13.698	17.17	18.03	15.71	12.16	9.95	5687.53
20	26.966	39.46	1.225	0.113	1.112	13.859	18.09	18.59	16.65	12.85	10.58	6043.95
21	28.509	39.62	1.277	0.039	1.238	14.020	18.97	19.85	17.66	13.60	11.26	6431.90
22	30.159	39.57	1.464	0.095	1.368	13.972	20.30	21.32	19.13	14.75	12.19	6960.83

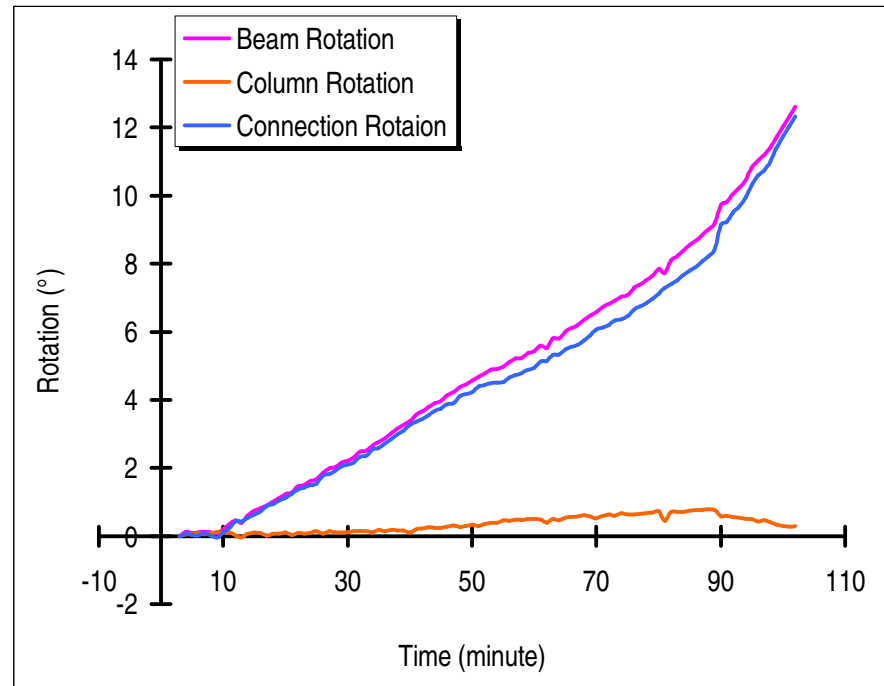
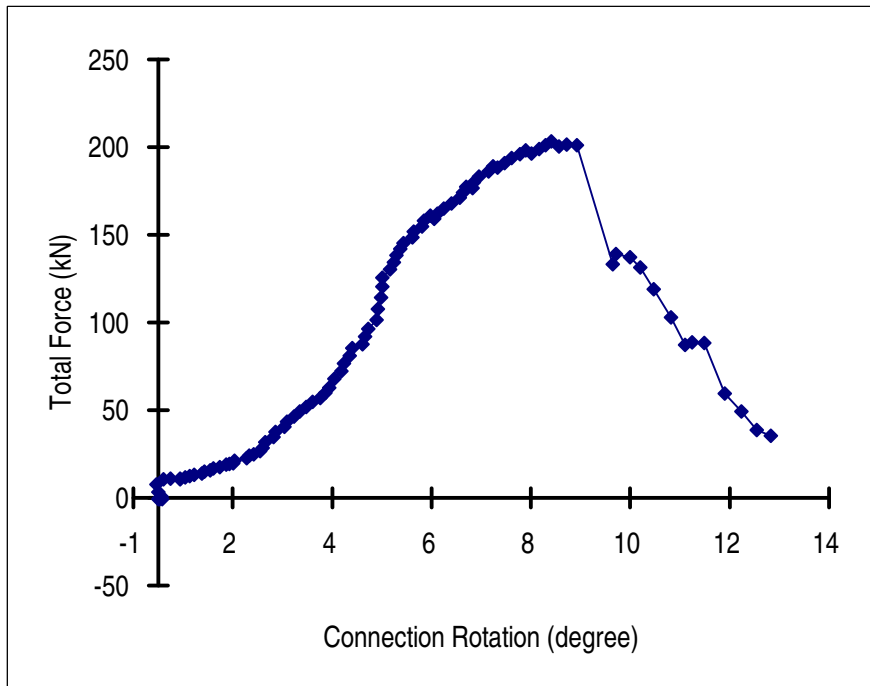
## 23 April 2007 Fin-plate Test Result

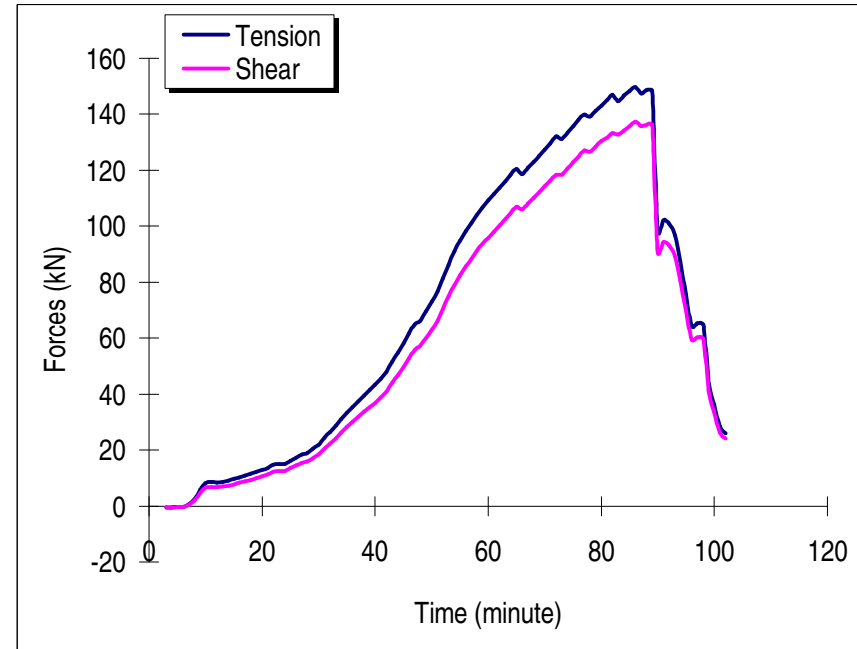
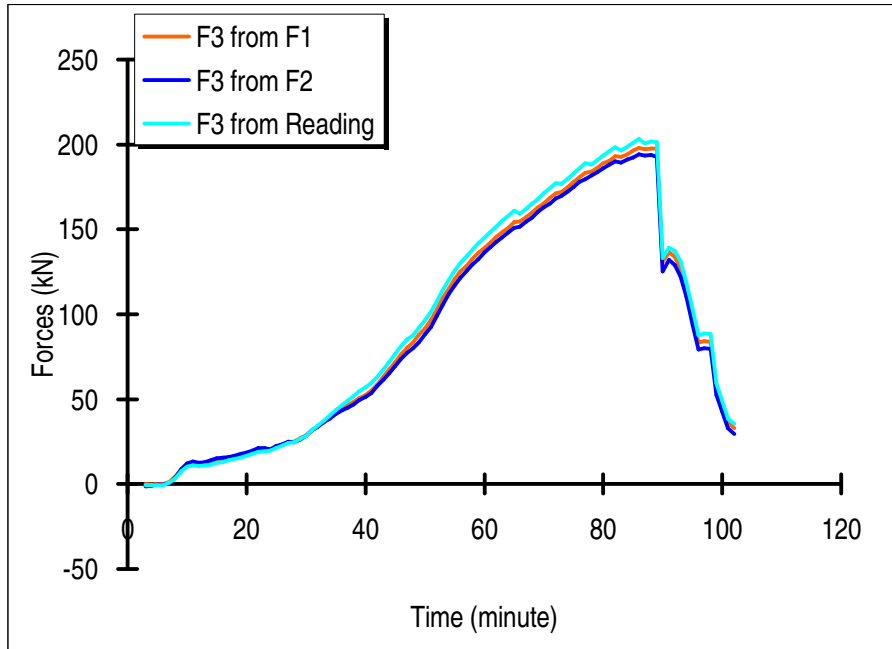
23	31.745	39.67	1.503	0.077	1.426	14.069	20.60	21.27	19.44	14.97	12.41	7086.58
24	33.254	39.81	1.602	0.095	1.506	14.214	20.60	20.63	19.58	15.04	12.54	7156.87
25	34.924	39.90	1.674	0.134	1.540	14.295	22.08	22.34	21.17	16.24	13.57	7745.96
26	36.477	39.93	1.859	0.077	1.781	14.325	23.13	23.34	22.60	17.33	14.50	8275.68
27	38.047	39.96	1.977	0.152	1.825	14.358	24.59	24.82	24.15	18.51	15.51	8848.78
28	39.497	39.99	2.033	0.113	1.919	14.391	25.12	24.70	24.69	18.91	15.87	9050.74
29	41.061	40.09	2.164	0.113	2.050	14.487	27.03	26.23	26.63	20.38	17.15	9780.29
30	42.376	40.01	2.212	0.113	2.099	14.406	28.71	28.22	28.58	21.89	18.37	10478.67
31	43.887	40.04	2.311	0.152	2.159	14.439	31.54	31.74	31.92	24.44	20.53	11711.21
32	45.545	40.20	2.470	0.152	2.318	14.601	34.05	33.65	34.56	26.40	22.31	12717.05
33	46.917	40.17	2.510	0.152	2.358	14.568	36.43	36.67	37.53	28.68	24.21	13801.22
34	48.492	40.25	2.659	0.113	2.546	14.649	38.96	38.65	40.52	30.93	26.18	14924.52
35	50.072	40.27	2.761	0.173	2.588	14.666	41.53	41.29	43.60	33.27	28.18	16062.26
36	51.563	40.26	2.879	0.152	2.727	14.663	44.04	43.34	46.45	35.44	30.02	17110.66
37	53.232	40.39	3.020	0.173	2.847	14.794	46.34	44.89	49.21	37.47	31.89	18168.66
38	54.767	40.39	3.146	0.170	2.976	14.794	48.55	47.03	51.91	39.53	33.64	19166.16
39	56.322	40.35	3.270	0.170	3.100	14.747	50.48	49.60	54.61	41.62	35.35	20146.94
40	57.946	40.28	3.372	0.113	3.259	14.679	52.66	51.41	56.97	43.46	36.83	20991.62
41	59.646	40.46	3.556	0.191	3.365	14.859	55.30	53.65	59.74	45.46	38.77	22084.16
42	61.203	40.42	3.651	0.211	3.440	14.825	58.72	57.66	62.88	47.87	40.78	23231.03
43	62.821	40.49	3.791	0.247	3.543	14.893	63.46	61.48	67.75	51.52	43.99	25059.54
44	64.270	40.54	3.910	0.229	3.681	14.940	67.64	65.35	72.13	54.82	46.89	26703.21
45	65.796	40.51	3.963	0.229	3.734	14.910	71.86	69.46	76.66	58.28	49.80	28364.08
46	67.276	40.57	4.127	0.268	3.859	14.974	76.21	73.51	81.16	61.65	52.79	30064.45
47	68.801	40.60	4.217	0.307	3.911	15.004	80.43	77.29	85.48	64.90	55.63	31679.69
48	70.229	40.81	4.366	0.250	4.116	15.214	83.55	80.11	87.59	66.29	57.25	32580.34
49	71.776	40.78	4.454	0.286	4.168	15.179	87.81	83.60	92.10	69.74	60.16	34239.16
50	73.486	40.78	4.553	0.328	4.226	15.179	91.78	88.17	96.49	73.07	63.03	35871.04
51	75.121	40.81	4.678	0.289	4.389	15.214	96.45	92.29	101.35	76.70	66.24	37697.44
52	76.602	40.85	4.768	0.346	4.423	15.249	102.68	98.90	107.60	81.39	70.38	40048.68

## 23 April 2007 Fin-plate Test Result

53	78.264	41.01	4.875	0.384	4.491	15.407	109.40	105.15	114.13	86.12	74.88	42593.39
54	79.721	40.93	4.895	0.384	4.511	15.325	115.21	112.06	120.43	90.99	78.89	44880.80
55	81.302	41.04	4.978	0.462	4.516	15.442	120.74	117.14	125.59	94.72	82.46	46900.43
56	82.953	41.09	5.105	0.441	4.664	15.489	125.08	121.59	130.26	98.18	85.61	48684.99
57	84.491	41.17	5.220	0.480	4.740	15.570	128.79	125.67	134.32	101.11	88.42	50271.78
58	86.126	41.23	5.246	0.459	4.787	15.635	132.93	129.44	138.25	103.97	91.13	51800.11
59	87.569	41.30	5.374	0.498	4.876	15.699	136.20	132.33	141.91	106.62	93.66	53229.56
60	89.148	41.23	5.435	0.498	4.937	15.635	139.13	136.42	145.27	109.25	95.76	54430.88
61	90.664	41.32	5.600	0.480	5.121	15.717	142.13	139.53	148.54	111.56	98.07	55733.25
62	92.251	41.42	5.522	0.384	5.138	15.818	145.47	142.40	151.74	113.79	100.38	57032.16
63	93.870	41.44	5.807	0.498	5.309	15.836	148.17	145.15	154.90	116.12	102.51	58236.48
64	95.346	41.49	5.803	0.462	5.341	15.891	151.06	148.22	158.07	118.40	104.72	59484.14
65	96.843	41.58	6.014	0.536	5.477	15.982	154.10	150.72	161.02	120.45	106.87	60689.97
66	98.382	41.79	6.112	0.554	5.558	16.191	154.65	151.61	159.17	118.67	106.07	60204.34
67	99.938	41.78	6.196	0.575	5.621	16.183	157.32	154.79	162.12	120.89	108.02	61312.78
68	101.469	41.89	6.357	0.614	5.743	16.292	160.08	156.96	165.06	122.87	110.22	62540.11
69	102.936	41.86	6.476	0.575	5.901	16.258	162.87	160.13	168.00	125.13	112.10	63615.05
70	104.539	41.88	6.580	0.515	6.064	16.284	165.36	162.77	171.12	127.40	114.24	64824.97
71	106.038	41.90	6.722	0.593	6.129	16.303	168.58	165.23	174.21	129.66	116.35	66016.30
72	107.529	41.89	6.826	0.632	6.194	16.292	171.41	168.14	177.32	131.99	118.40	67182.00
73	108.980	42.08	6.916	0.593	6.323	16.483	171.98	169.89	176.79	131.21	118.49	67198.75
74	110.455	42.10	7.029	0.671	6.358	16.502	175.04	172.51	179.91	133.49	120.62	68406.36
75	111.978	42.17	7.083	0.632	6.451	16.566	178.04	174.98	183.05	135.68	122.88	69672.58
76	113.500	42.09	7.281	0.632	6.649	16.495	180.81	177.86	186.04	138.05	124.72	70728.34
77	115.032	42.25	7.386	0.649	6.736	16.648	183.40	179.64	188.95	139.87	127.04	72017.21
78	116.604	42.25	7.505	0.671	6.834	16.655	183.95	181.67	188.14	139.26	126.51	71717.27
79	118.134	42.27	7.652	0.688	6.964	16.674	186.17	183.71	190.96	141.30	128.45	72813.15
80	119.698	42.34	7.847	0.731	7.116	16.737	188.81	185.96	193.63	143.13	130.41	73908.58
81	121.282	42.21	7.721	0.442	7.280	16.610	190.61	188.32	195.98	145.16	131.67	74650.68
82	122.927	42.17	8.101	0.709	7.392	16.566	192.92	190.20	198.34	147.01	133.14	75492.62

83	124.474	42.54	8.223	0.713	7.510	16.941	192.53	189.29	196.44	144.74	132.82	75237.09
84	126.182	42.45	8.376	0.709	7.667	16.853	194.40	191.31	198.76	146.65	134.16	76012.99
85	127.599	42.44	8.546	0.752	7.794	16.839	196.50	192.41	201.01	148.35	135.64	76856.97
86	129.059	42.52	8.678	0.770	7.908	16.922	198.02	194.41	203.13	149.71	137.29	77774.60
87	130.638	42.64	8.841	0.770	8.071	17.044	197.08	193.52	200.52	147.50	135.84	76926.89
88	132.386	42.54	9.003	0.788	8.215	16.941	197.72	193.74	201.61	148.54	136.31	77214.01
89	133.981	42.56	9.193	0.770	8.423	16.961	197.48	192.56	201.27	148.25	136.13	77110.53
90	136.242	42.83	9.728	0.577	9.150	17.235	130.86	125.41	133.22	97.69	90.57	51267.25
91	137.725	42.74	9.811	0.595	9.216	17.137	136.46	131.92	139.11	102.17	94.40	53448.39
92	139.280	42.71	10.055	0.556	9.499	17.112	134.00	129.01	137.15	100.78	93.03	52676.85
93	141.075	42.61	10.240	0.538	9.701	17.010	126.95	122.11	131.45	96.74	88.99	50401.51
94	142.798	42.63	10.465	0.499	9.966	17.030	114.99	110.41	118.99	87.55	80.59	45638.72
95	144.561	42.74	10.816	0.499	10.317	17.137	98.19	93.61	102.82	75.52	69.77	39504.47
96	146.430	42.79	11.020	0.424	10.597	17.191	83.60	79.32	87.39	64.13	59.37	33608.72
97	148.016	42.67	11.203	0.463	10.740	17.069	84.35	80.07	88.84	65.33	60.22	34098.56
98	149.419	42.63	11.397	0.402	10.995	17.030	83.86	79.48	88.19	64.89	59.73	33825.53
99	151.519	42.74	11.732	0.327	11.405	17.137	56.59	52.66	59.41	43.64	40.32	22827.61
100	153.347	42.71	12.028	0.288	11.740	17.112	46.44	42.81	49.29	36.22	33.44	18932.13
101	155.151	42.69	12.320	0.270	12.050	17.093	36.14	32.79	38.70	28.45	26.24	14860.21
102	156.947	42.75	12.617	0.288	12.329	17.152	32.99	29.71	35.48	26.06	24.09	13636.98







Photographs after Test

