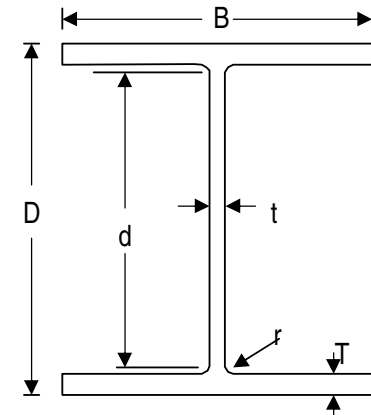
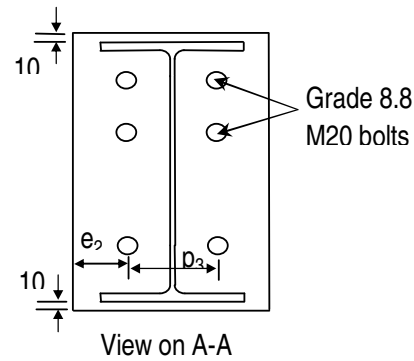


The specimen details



Diameter of bolt	d (mm)	20
Diameter of bolt hole	d ₀ (mm)	22
End distance	e ₁ (mm)	60
Edge distance	e ₂ (mm)	55
Spacing between centres of bolts in the direction of load transfer	p ₁ (mm)	70
	p ₂ (mm)	133.4
Spacing between rows of bolts	p ₃ (mm)	90
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		UB305x16 5x40	UC254x25 4x89
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)	Thermocouple Average(°C)	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	23.966	0.004											
1	23.990	0.017											
2	23.967	0.005											
3	24.007	0.028	37.28	0.000	0.000	0.000	75.018	-0.22	-0.77	-0.92	-0.73	-0.56	-320.50
4	24.024	1.412	37.33	0.000	0.031	-0.031	74.941	0.02	-0.28	-0.63	-0.50	-0.38	-221.16
5	24.003	2.914	37.32	0.039	0.066	-0.027	74.911	0.74	0.83	-0.04	-0.03	-0.02	-13.27
6	23.772	4.135	37.38	0.092	0.094	-0.002	74.824	1.67	1.60	0.88	0.70	0.53	305.68
7	23.637	5.668	37.48	0.121	0.131	-0.010	74.690	3.02	2.26	1.87	1.48	1.14	654.32
8	23.588	7.179	37.42	0.165	0.180	-0.015	74.698	5.29	5.72	4.03	3.20	2.45	1408.36
9	23.475	8.640	37.49	0.209	0.226	-0.017	74.581	7.89	8.30	6.39	5.07	3.89	2236.35
10	23.330	10.185	37.52	0.268	0.263	0.005	74.521	11.01	11.64	9.06	7.18	5.52	3171.25
11	23.299	11.762	37.59	0.304	0.301	0.003	74.412	14.63	15.22	12.46	9.88	7.60	4369.77
12	23.371	13.153	37.65	0.368	0.339	0.029	74.312	18.32	18.44	16.23	12.85	9.91	5695.75
13	23.266	14.539	37.73	0.422	0.367	0.055	74.199	22.34	23.05	20.21	15.98	12.37	7105.44
14	23.228	15.873	37.74	0.456	0.407	0.049	74.155	26.68	27.96	24.21	19.15	14.82	8513.94
15	23.203	17.107	37.75	0.498	0.425	0.073	74.127	30.57	31.65	28.07	22.20	17.18	9871.80
16	23.155	18.412	37.81	0.541	0.439	0.102	74.054	35.03	37.05	32.09	25.36	19.67	11299.12
17	23.150	19.717	37.92	0.559	0.472	0.087	73.904	39.68	41.12	36.58	28.85	22.48	12907.35
18	23.087	21.062	38.00	0.593	0.495	0.098	73.803	44.64	46.04	41.54	32.73	25.57	14678.41
19	23.084	22.505	38.12	0.638	0.525	0.113	73.651	49.95	51.40	46.54	36.61	28.73	16483.16
20	23.056	23.979	38.21	0.686	0.539	0.147	73.551	55.13	56.90	51.58	40.53	31.91	18300.65
21	22.998	25.533	38.25	0.739	0.577	0.162	73.472	61.31	63.32	57.53	45.18	35.62	20426.60
22	22.981	27.070	38.30	0.797	0.583	0.214	73.420	67.86	70.20	63.88	50.13	39.59	22701.49

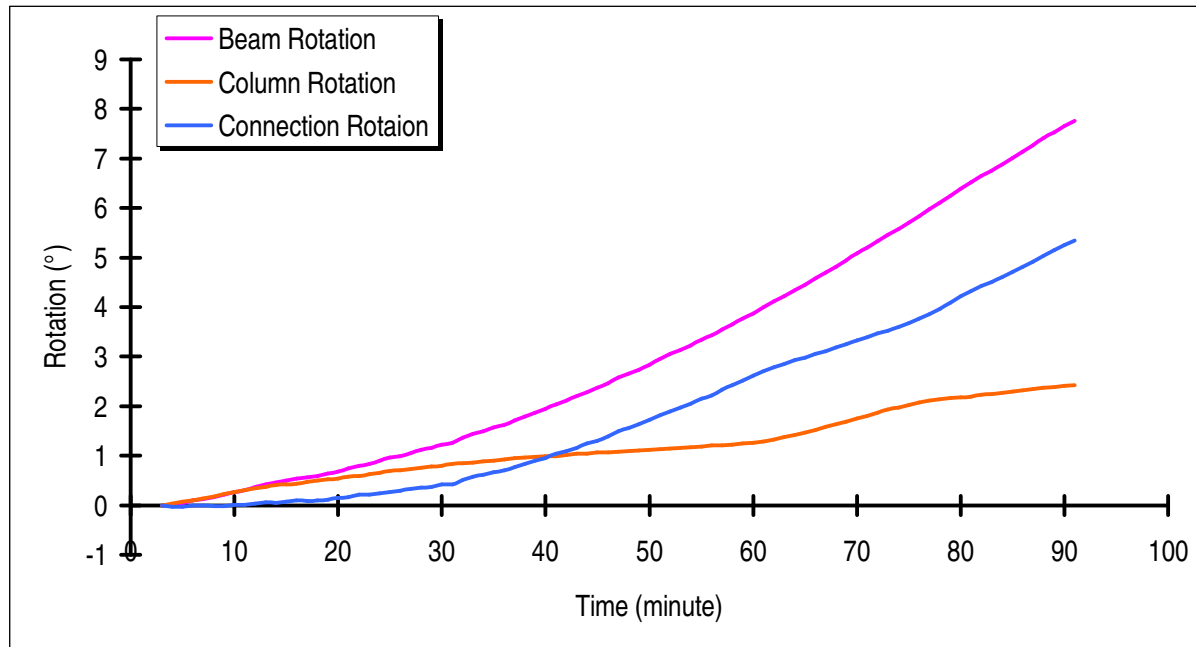
05 February 2008 End-plate Test Result

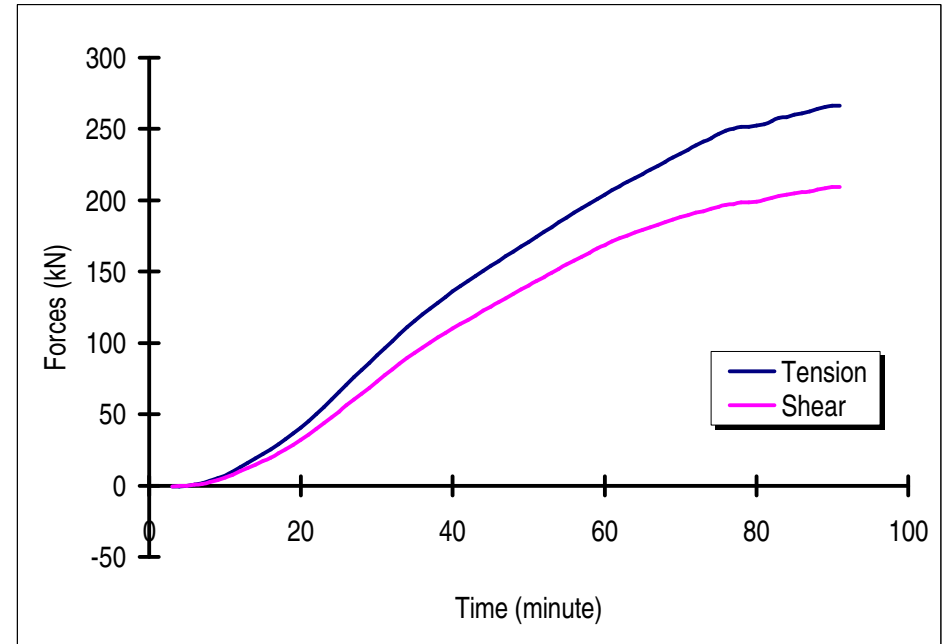
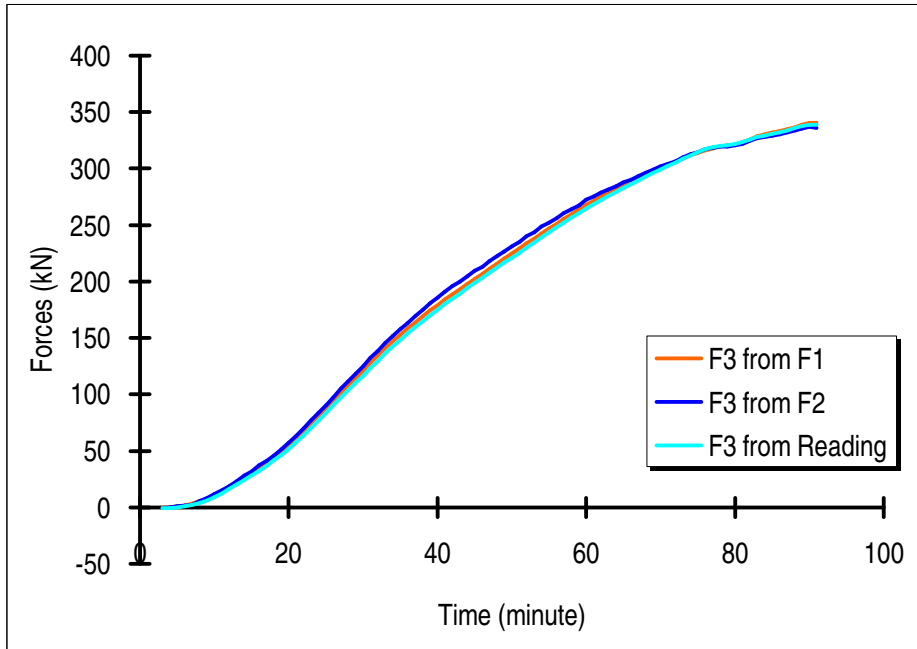
23	22.990	28.552	38.39	0.841	0.624	0.217	73.284	74.67	77.09	70.43	55.20	43.74	25074.44
24	22.991	30.026	38.42	0.894	0.651	0.243	73.232	81.22	83.72	76.96	60.30	47.82	27412.67
25	22.974	31.514	38.41	0.958	0.690	0.268	73.205	87.88	90.72	83.64	65.55	51.96	29784.23
26	23.033	33.020	38.41	0.993	0.703	0.290	73.190	94.60	97.41	90.42	70.85	56.17	32197.42
27	22.964	34.614	38.49	1.059	0.730	0.329	73.081	101.56	105.26	97.13	76.03	60.45	34641.89
28	22.983	36.135	38.49	1.116	0.760	0.356	73.053	107.86	111.30	103.53	81.04	64.43	36923.31
29	22.985	37.648	38.52	1.157	0.789	0.368	72.989	114.49	118.22	110.16	86.18	68.61	39312.24
30	22.808	39.227	38.64	1.224	0.798	0.426	72.862	121.42	125.38	116.87	91.28	72.98	41799.25
31	22.646	40.797	38.67	1.264	0.837	0.427	72.795	128.01	132.43	123.58	96.49	77.22	44224.37
32	22.678	42.343	38.78	1.361	0.844	0.517	72.680	134.55	138.60	129.90	101.27	81.35	46577.64
33	22.680	43.856	38.82	1.439	0.864	0.575	72.619	140.88	145.47	136.31	106.20	85.44	48913.09
34	22.695	45.402	38.89	1.496	0.885	0.611	72.521	147.11	151.66	142.48	110.89	89.46	51201.00
35	22.694	46.851	38.93	1.571	0.899	0.672	72.472	152.95	157.82	148.37	115.42	93.23	53352.28
36	22.837	48.381	38.91	1.629	0.925	0.704	72.466	158.43	163.35	154.11	119.92	96.79	55395.92
37	22.720	49.894	38.88	1.716	0.945	0.771	72.471	163.65	169.11	159.65	124.27	100.22	57360.17
38	22.805	51.352	38.96	1.791	0.960	0.831	72.379	169.26	174.80	165.06	128.35	103.79	59390.01
39	22.855	52.978	38.98	1.873	0.972	0.901	72.346	174.40	180.55	170.10	132.23	107.01	61226.01
40	22.891	54.563	38.95	1.947	0.990	0.957	72.357	179.06	185.92	175.02	136.10	110.03	62961.59
41	22.883	56.085	39.01	2.034	0.987	1.047	72.301	183.82	190.79	179.92	139.80	113.26	64796.22
42	22.846	57.654	39.00	2.108	1.014	1.094	72.287	188.43	195.85	184.71	143.55	116.24	66504.05
43	22.850	59.168	39.05	2.200	1.036	1.164	72.217	193.23	199.83	189.38	147.08	119.30	68247.22
44	22.737	60.674	39.17	2.286	1.043	1.243	72.088	197.82	204.22	194.04	150.44	122.56	70083.43
45	22.806	62.156	39.12	2.374	1.069	1.305	72.109	202.30	209.51	198.61	154.08	125.32	71672.12
46	22.885	63.517	39.21	2.460	1.072	1.388	72.015	206.76	213.03	203.25	157.48	128.50	73469.44
47	22.959	65.032	39.26	2.576	1.080	1.496	71.963	211.45	217.99	207.78	160.88	131.48	75165.99
48	22.927	66.664	39.30	2.660	1.098	1.562	71.900	215.88	222.48	212.26	164.25	134.45	76852.16
49	23.061	68.202	39.41	2.738	1.101	1.637	71.793	220.45	226.43	216.67	167.41	137.54	78594.84
50	23.167	69.747	39.40	2.843	1.117	1.726	71.786	224.75	230.86	221.15	170.90	140.36	80209.64
51	23.319	71.277	39.44	2.948	1.134	1.814	71.725	229.20	234.82	225.69	174.29	143.37	81918.87
52	23.285	72.838	39.45	3.051	1.151	1.900	71.701	233.71	239.90	230.16	177.73	146.24	83553.08

05 February 2008 End-plate Test Result

53	23.376	74.328	39.44	3.133	1.162	1.971	71.694	237.92	243.81	234.67	181.22	149.09	85184.21
54	23.365	75.994	39.45	3.227	1.172	2.055	71.678	242.46	248.77	239.07	184.60	151.91	86791.13
55	23.328	77.556	39.50	3.342	1.188	2.154	71.608	246.78	252.33	243.51	187.89	154.90	88489.09
56	23.415	79.014	39.50	3.429	1.211	2.218	71.590	251.06	255.87	247.94	191.32	157.70	90090.87
57	23.359	80.599	39.52	3.542	1.213	2.329	71.565	255.23	260.68	252.18	194.53	160.48	91669.72
58	23.467	82.088	39.57	3.657	1.227	2.430	71.508	259.41	264.12	256.39	197.65	163.31	93272.03
59	23.459	83.570	39.62	3.762	1.245	2.517	71.433	263.97	267.45	260.66	200.78	166.23	94924.66
60	23.407	85.188	39.59	3.875	1.259	2.616	71.450	267.71	272.27	264.54	203.86	168.59	96283.90
61	23.483	86.596	39.59	4.002	1.291	2.711	71.421	271.62	275.29	268.47	206.90	171.09	97708.44
62	23.413	88.191	39.60	4.112	1.323	2.789	71.382	275.46	278.86	272.14	209.71	173.45	99057.78
63	23.471	89.657	39.44	4.219	1.371	2.848	71.491	278.42	281.70	275.73	212.95	175.16	100077.91
64	23.436	91.210	39.48	4.334	1.412	2.922	71.413	282.35	284.15	279.27	215.57	177.54	101428.62
65	23.437	92.747	39.40	4.450	1.466	2.984	71.438	285.59	287.52	282.69	218.45	179.41	102523.46
66	23.477	94.206	39.30	4.581	1.523	3.058	71.476	288.59	290.12	286.11	221.40	181.22	103582.97
67	23.459	95.838	39.22	4.700	1.590	3.110	71.491	291.83	293.36	289.29	224.13	182.92	104579.80
68	23.419	97.383	39.16	4.816	1.634	3.182	71.508	294.90	296.17	292.70	226.96	184.83	105693.26
69	23.477	98.858	39.03	4.947	1.692	3.255	71.583	297.51	299.06	296.03	229.97	186.40	106631.96
70	23.429	100.490	38.93	5.081	1.750	3.331	71.622	300.49	301.98	299.27	232.81	188.05	107607.20
71	23.483	102.012	38.85	5.198	1.809	3.389	71.638	303.35	304.04	302.51	235.58	189.77	108621.19
72	23.490	103.598	38.74	5.331	1.867	3.464	71.689	306.02	306.54	305.55	238.31	191.23	109488.83
73	23.430	105.161	38.60	5.455	1.929	3.526	71.770	308.61	309.94	308.58	241.16	192.52	110280.74
74	23.451	106.714	38.54	5.580	1.977	3.603	71.780	311.39	312.45	311.46	243.61	194.07	111188.29
75	23.492	108.154	38.40	5.702	2.029	3.673	71.868	313.75	314.37	314.43	246.41	195.32	111953.87
76	23.479	109.709	38.31	5.841	2.072	3.769	71.921	316.10	317.42	317.14	248.86	196.59	112712.16
77	23.460	111.344	38.23	5.978	2.117	3.861	71.954	317.57	318.63	318.72	250.37	197.22	113106.44
78	23.489	112.800	38.30	6.106	2.142	3.964	71.860	319.79	319.76	320.32	251.38	198.52	113822.49
79	23.493	114.289	38.34	6.253	2.168	4.085	71.794	320.43	319.50	320.44	251.34	198.77	113951.43
80	23.493	115.778	38.30	6.395	2.181	4.214	71.821	321.43	320.49	321.51	252.32	199.25	114244.40
81	23.537	117.236	38.35	6.522	2.195	4.327	71.753	323.73	321.72	323.27	253.52	200.59	114989.50
82	23.505	118.742	38.28	6.653	2.231	4.422	71.788	325.85	324.61	325.48	255.50	201.64	115618.49

83	23.520	120.141	38.25	6.753	2.246	4.507	71.800	328.38	327.15	328.11	257.66	203.15	116493.90
84	23.573	121.664	38.27	6.884	2.275	4.609	71.758	330.07	328.17	329.13	258.41	203.84	116883.31
85	23.538	123.225	38.25	7.010	2.300	4.710	71.755	331.77	329.31	331.03	259.98	204.92	117509.45
86	23.553	124.667	38.24	7.135	2.326	4.809	71.736	332.95	330.18	332.16	260.90	205.59	117895.60
87	23.566	126.125	38.17	7.267	2.346	4.921	71.784	334.57	332.16	333.83	262.45	206.30	118333.05
88	23.564	127.607	38.16	7.413	2.374	5.039	71.764	336.54	333.81	335.85	264.06	207.51	119030.60
89	23.596	129.001	38.17	7.532	2.384	5.148	71.750	338.61	335.62	337.48	265.34	208.54	119619.13
90	23.634	130.449	38.16	7.659	2.407	5.252	71.731	340.54	337.00	339.02	266.56	209.48	120154.64
91	23.571	131.690	38.18	7.766	2.424	5.342	71.700	340.52	335.80	338.71	266.26	209.35	120075.45





Photographs after Test

