

COMPFIRE

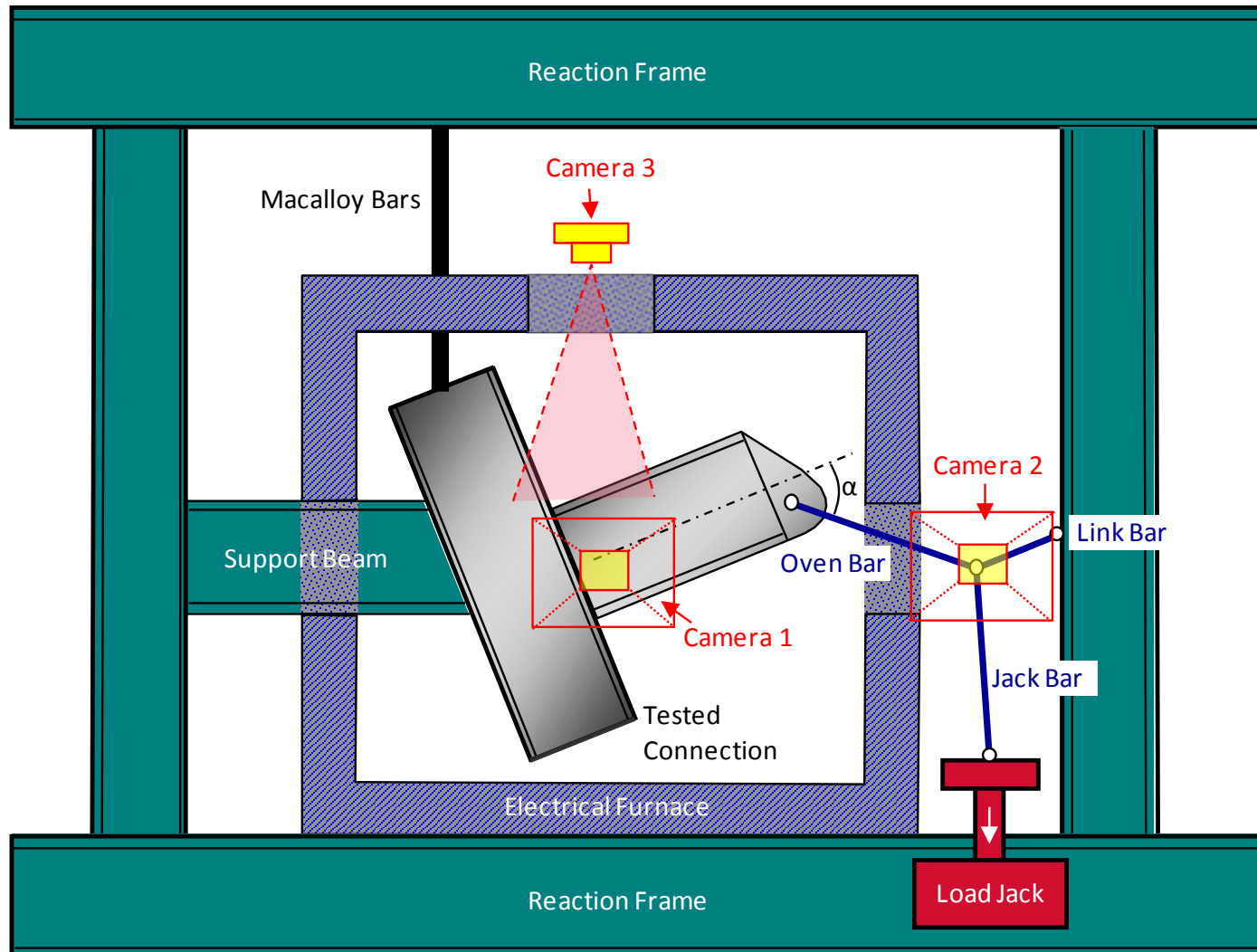
SCFT-UKPFC230_20_55_24-01-2011

24 January 2011 Reverse Channel Connection (UKPFC 230x90x32) to Square Concrete-Filled Tube Test Result

RFSR-CT-2009-0021

Design of joints to composite columns for improved fire robustness

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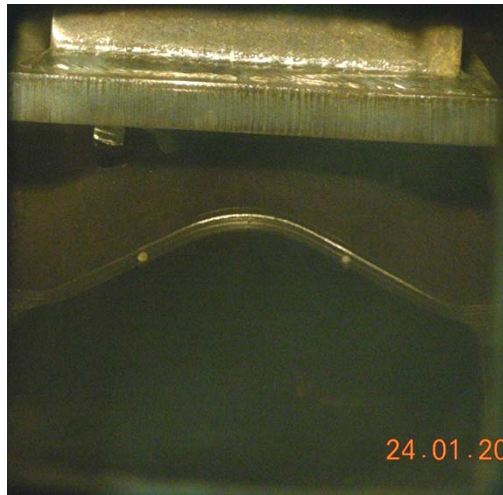
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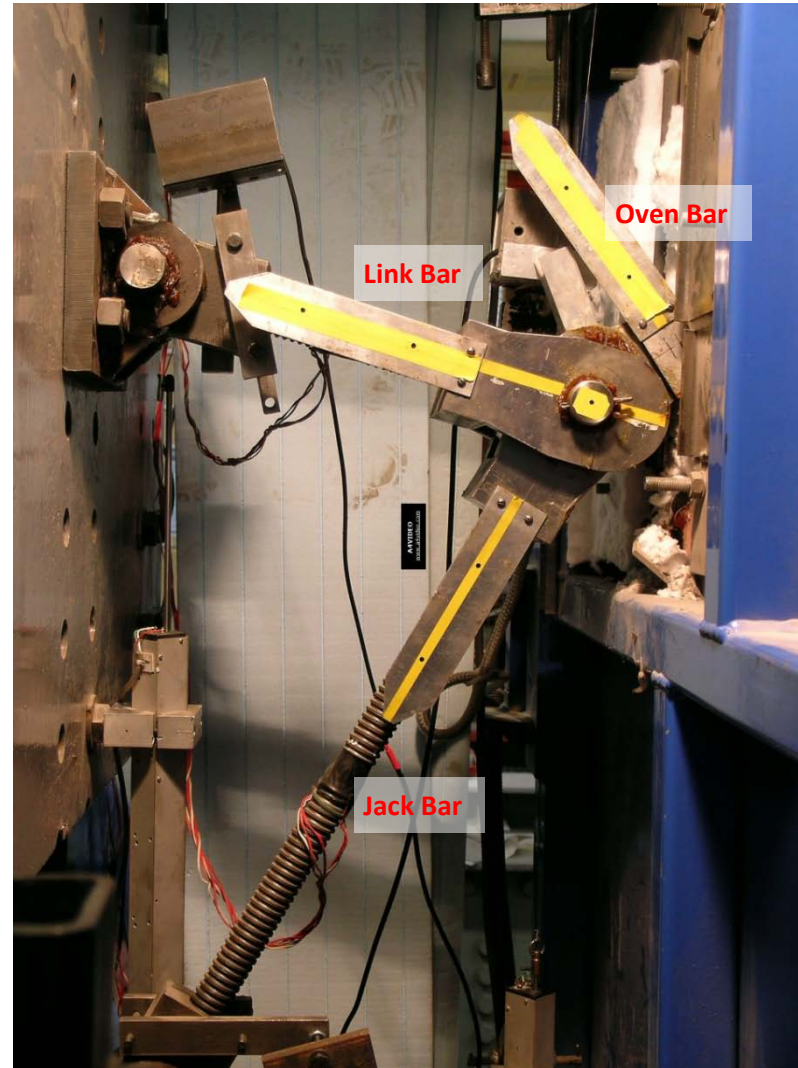
<ftp://openspace.dec.uc.pt/>



View of Camera 1



View of Camera 3

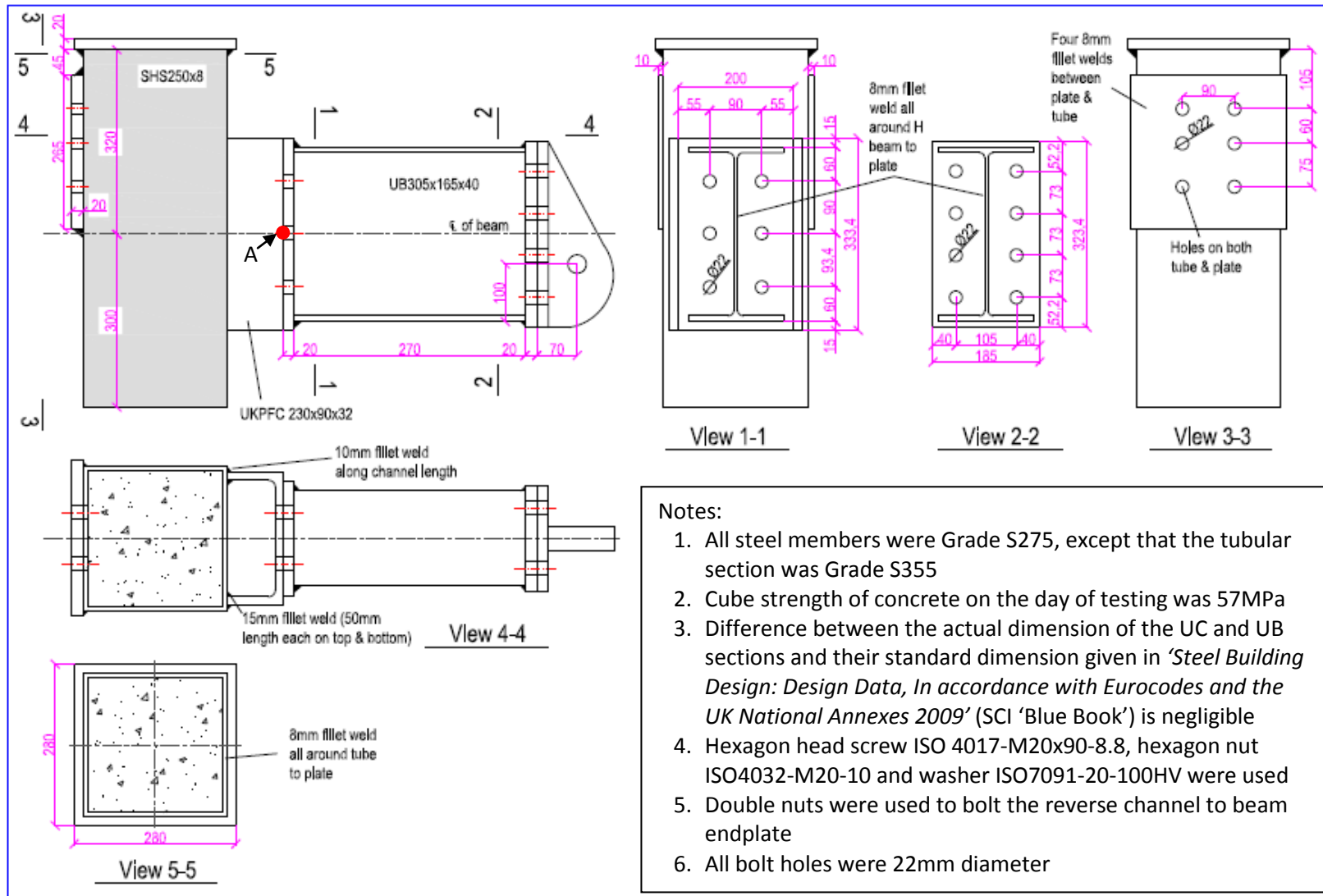


View of Camera 2

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Nominal Temperature: 20°C

Time	Jack Displacement	Load Angle	Beam Rotation	Column Rotation	Connection Rotation	Oven Bar Force	Tension	Shear	Moment**
(minute)	(mm)	α (°)	(°)	(°)	(°)	(kN)	(kN)	(kN)	(kNm)
0	-0.01	52.78	0.00	0.00	0.00	0.87	0.53	0.70	0.24
1	0.82	52.71	0.07	0.07	0.00	2.64	1.60	2.10	0.72
2	2.15	52.68	0.09	0.08	0.01	5.63	3.42	4.48	1.53
3	3.57	52.62	0.14	0.10	0.03	9.72	5.90	7.72	2.63
4	4.94	52.58	0.17	0.12	0.05	13.30	8.08	10.56	3.60
5	6.21	52.54	0.20	0.15	0.06	16.56	10.07	13.14	4.47
6	7.42	52.50	0.24	0.16	0.07	19.30	11.75	15.31	5.21
7	8.78	52.44	0.30	0.19	0.10	23.13	14.10	18.34	6.24
8	10.24	52.35	0.38	0.23	0.15	27.18	16.60	21.52	7.32
9	11.58	52.29	0.44	0.26	0.17	31.25	19.11	24.72	8.40
10	13.08	52.22	0.51	0.30	0.21	35.63	21.83	28.16	9.57
11	14.62	52.15	0.58	0.33	0.25	40.20	24.67	31.74	10.79
12	16.18	52.07	0.66	0.37	0.29	45.02	27.68	35.51	12.06
13	17.65	51.98	0.74	0.40	0.34	49.88	30.72	39.30	13.34
14	19.17	51.89	0.83	0.44	0.39	54.49	33.63	42.87	14.55
15	20.70	51.80	0.92	0.47	0.45	59.30	36.67	46.60	15.81
16	22.11	51.70	1.02	0.51	0.51	64.01	39.67	50.24	17.04
17	23.60	51.60	1.12	0.53	0.59	68.52	42.56	53.70	18.20
18	25.20	51.50	1.22	0.56	0.66	72.57	45.18	56.79	19.25
19	26.78	51.37	1.34	0.58	0.75	76.49	47.75	59.76	20.24
20	28.36	51.26	1.45	0.60	0.84	80.28	50.23	62.62	21.20
21	29.90	51.15	1.56	0.63	0.93	83.88	52.62	65.32	22.10



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22	31.41	51.02	1.68	0.65	1.04	86.92	54.68	67.57	22.85
23	32.95	50.90	1.80	0.67	1.13	90.04	56.79	69.87	23.62
24	34.57	50.76	1.94	0.69	1.25	93.05	58.87	72.07	24.34
25	36.11	50.63	2.06	0.71	1.35	96.24	61.05	74.40	25.12
26	37.62	50.50	2.19	0.72	1.47	99.29	63.16	76.61	25.85
27	39.24	50.36	2.32	0.74	1.58	102.32	65.27	78.80	26.57
28	40.77	50.23	2.46	0.76	1.70	105.43	67.45	81.03	27.30
29	42.40	50.09	2.59	0.78	1.81	107.97	69.27	82.82	27.89
30	43.75	49.95	2.73	0.80	1.93	111.49	71.74	85.34	28.72
31	45.40	49.82	2.86	0.81	2.05	114.20	73.68	87.25	29.34
32	46.80	49.67	3.00	0.83	2.18	117.30	75.91	89.42	30.06
33	48.33	49.54	3.14	0.85	2.29	120.03	77.89	91.33	30.68
34	49.69	49.40	3.27	0.87	2.41	122.95	80.02	93.35	31.34
35	51.14	49.26	3.41	0.88	2.53	125.87	82.16	95.37	31.99
36	52.63	49.11	3.56	0.90	2.66	128.70	84.25	97.28	32.61
37	54.04	48.97	3.69	0.91	2.78	131.83	86.55	99.45	33.32
38	55.56	48.83	3.83	0.93	2.91	134.69	88.67	101.39	33.94
39	57.09	48.68	3.98	0.95	3.03	137.22	90.61	103.05	34.47
40	58.59	48.54	4.12	0.96	3.15	140.26	92.87	105.11	35.14
41	60.03	48.39	4.26	0.98	3.28	142.70	94.76	106.69	35.64
42	61.85	48.24	4.41	1.00	3.41	146.03	97.26	108.92	36.36
43	63.28	48.10	4.55	1.02	3.53	149.09	99.57	110.97	37.02
44	64.87	47.95	4.70	1.04	3.66	152.16	101.92	112.98	37.66
45	66.31	47.80	4.85	1.05	3.79	155.44	104.42	115.14	38.35
46	67.71	47.65	4.99	1.08	3.92	158.45	106.74	117.09	38.98
47	69.23	47.49	5.14	1.10	4.05	161.83	109.34	119.30	39.68
48	70.70	47.35	5.29	1.12	4.17	164.76	111.64	121.18	40.28

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49	72.18	47.20	5.44	1.14	4.30	168.25	114.32	123.45	41.00
50	73.58	47.05	5.59	1.16	4.43	171.59	116.92	125.58	41.68
51	75.01	46.90	5.74	1.19	4.55	174.96	119.55	127.74	42.36
52	76.56	46.75	5.88	1.21	4.68	178.28	122.15	129.85	43.03
53	77.84	46.59	6.04	1.24	4.80	181.65	124.83	131.96	43.69
54	79.36	46.45	6.19	1.26	4.93	184.91	127.41	134.01	44.34
55	80.75	46.29	6.34	1.28	5.06	188.19	130.05	136.03	44.97
56	82.21	46.15	6.48	1.31	5.17	191.67	132.79	138.22	45.66
57	83.75	45.99	6.64	1.33	5.31	195.05	135.51	140.29	46.31
58	85.07	45.84	6.79	1.36	5.43	198.40	138.22	142.33	46.94
59	86.59	45.69	6.94	1.38	5.56	201.80	140.97	144.40	47.58
60	88.11	45.53	7.10	1.42	5.68	204.60	143.32	146.01	48.07
61	89.71	45.38	7.25	1.45	5.80	207.80	145.96	147.91	48.66
62	91.13	45.23	7.40	1.48	5.92	211.01	148.60	149.80	49.24
63	92.53	45.07	7.55	1.51	6.05	213.95	151.10	151.48	49.75
64	94.10	44.92	7.71	1.54	6.17	217.10	153.74	153.29	50.30
65	95.36	44.77	7.86	1.57	6.29	220.37	156.46	155.19	50.88
66	96.72	44.62	8.01	1.61	6.40	223.50	159.09	156.98	51.43
67	97.91	44.47	8.16	1.63	6.53	227.56	162.40	159.41	52.18
68	99.25	44.31	8.32	1.66	6.66	230.39	164.87	160.92	52.63
69	100.64	44.14	8.49	1.69	6.80	232.62	166.94	161.99	52.92
70	102.11	43.94	8.69	1.70	6.99	232.43	167.35	161.29	52.64
71	103.35	43.72	8.90	1.70	7.21	230.57	166.63	159.37	51.95
72	104.80	43.53	9.10	1.70	7.40	231.15	167.59	159.19	51.83
73	106.05	43.34	9.28	1.70	7.58	232.68	169.22	159.70	51.94
74	107.50	43.15	9.48	1.71	7.78	233.80	170.57	159.89	51.94
75	108.95	42.96	9.67	1.71	7.96	235.56	172.39	160.53	52.09

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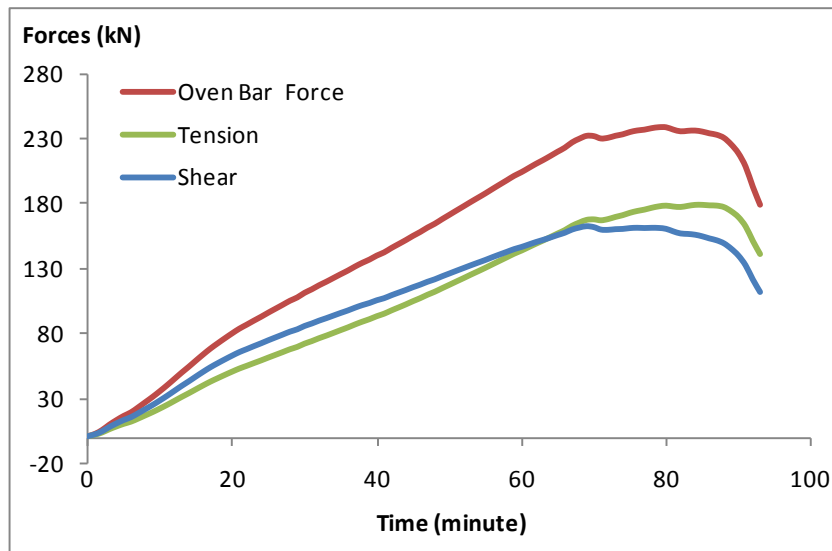
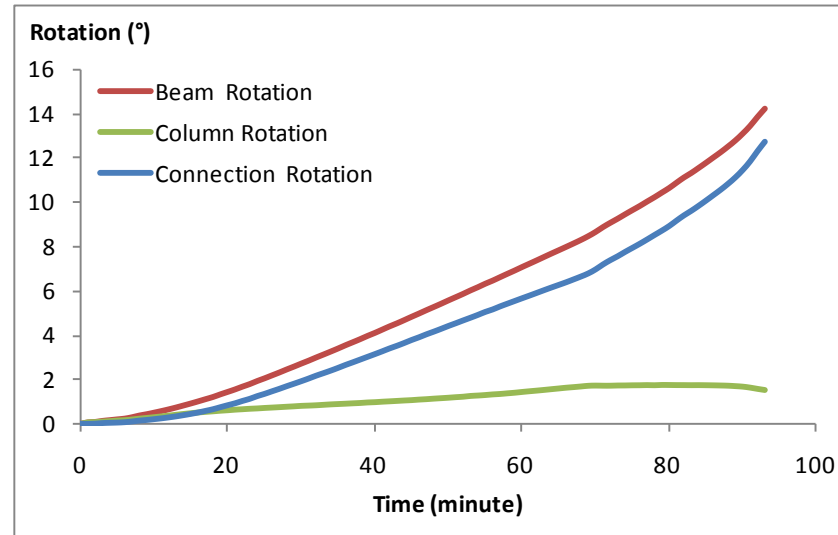
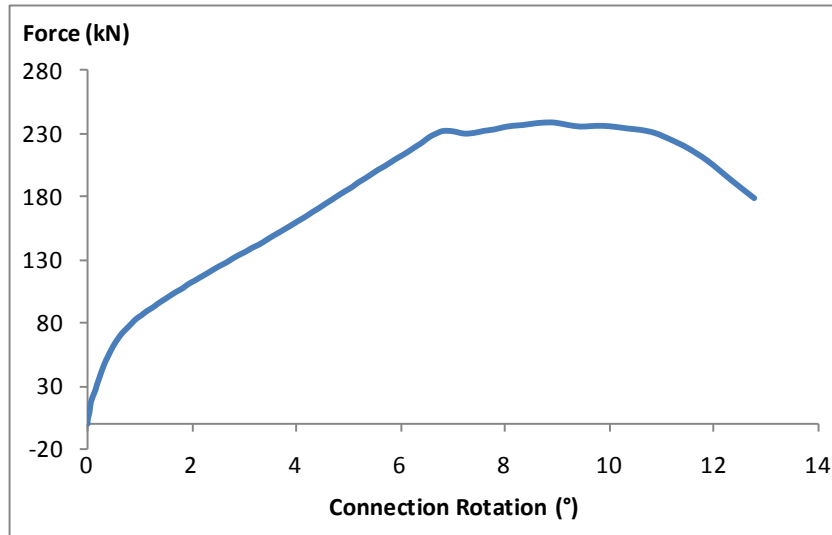
76	110.27	42.77	9.86	1.72	8.14	236.74	173.78	160.77	52.11
77	111.60	42.57	10.06	1.72	8.34	237.40	174.84	160.59	51.99
78	112.97	42.37	10.26	1.72	8.54	238.54	176.24	160.74	51.97
79	114.43	42.17	10.47	1.73	8.74	239.28	177.36	160.63	51.87
80	115.86	41.96	10.67	1.73	8.95	239.23	177.90	159.95	51.58
81	117.41	41.72	10.91	1.72	9.19	237.44	177.23	158.01	50.88
82	118.92	41.49	11.15	1.72	9.43	236.12	176.88	156.42	50.29
83	120.35	41.28	11.35	1.72	9.64	236.51	177.73	156.05	50.11
84	121.84	41.05	11.58	1.72	9.86	236.70	178.49	155.46	49.85
85	123.36	40.83	11.81	1.72	10.10	235.91	178.52	154.23	49.38
86	124.90	40.59	12.05	1.71	10.34	234.55	178.12	152.59	48.78
87	126.46	40.35	12.29	1.70	10.59	233.47	177.93	151.15	48.24
88	127.94	40.09	12.55	1.70	10.86	231.08	176.78	148.81	47.41
89	129.76	39.82	12.83	1.68	11.15	226.03	173.61	144.74	46.03
90	131.47	39.51	13.14	1.65	11.48	219.23	169.14	139.47	44.25
91	133.11	39.16	13.48	1.61	11.87	208.88	161.96	131.92	41.76
92	134.88	38.76	13.89	1.55	12.33	193.34	150.76	121.05	38.20
93	136.57	38.39	14.27	1.50	12.76	179.46	140.66	111.45	35.08

** Moment about Point A on the specimen drawing

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Photographs after Test



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