



## **TEST REPORT**

### **FL180 B125 Cover Test**

Date: 11/04/11

**Client: Fibrelite Composites Ltd.**

#### **Cover**

The cover supplied is a round FL180 and of composite construction. (See photo. 1)  
No. on cover – 2988 180

The cover was tested in a composite frame with a cover opening of 457mm.

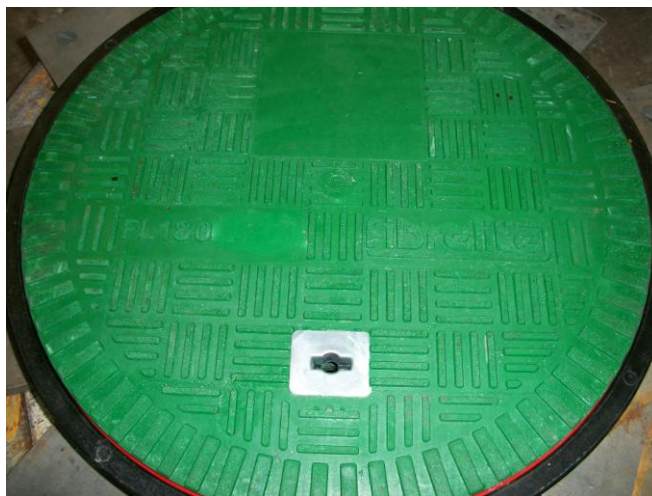


Photo. 1

## **Test Rig**

The test rig consists of a 'giant mecano' frame bolted to the floor and supporting the Enerpac 50 tonne hydraulic cylinder. (Photo 2)

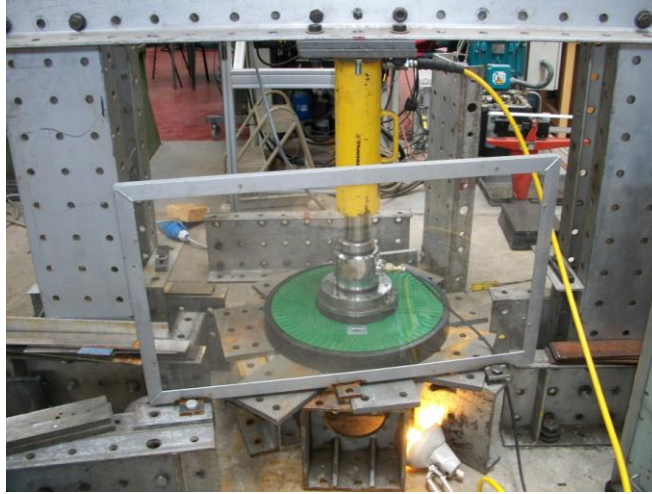


Photo. 2

The cover and frame were sat on steel channels and plates with steel shims to pack and level.

## **Test**

The load was applied to the cover through a 250mm diameter by 45mm thick steel block with a 250mm diameter by 25mm rubber pad between the block and cover.

The load was measured using a 1000kN load cell (serial no. 3243N) and digital load indicator (serial no. D.I.B.1).

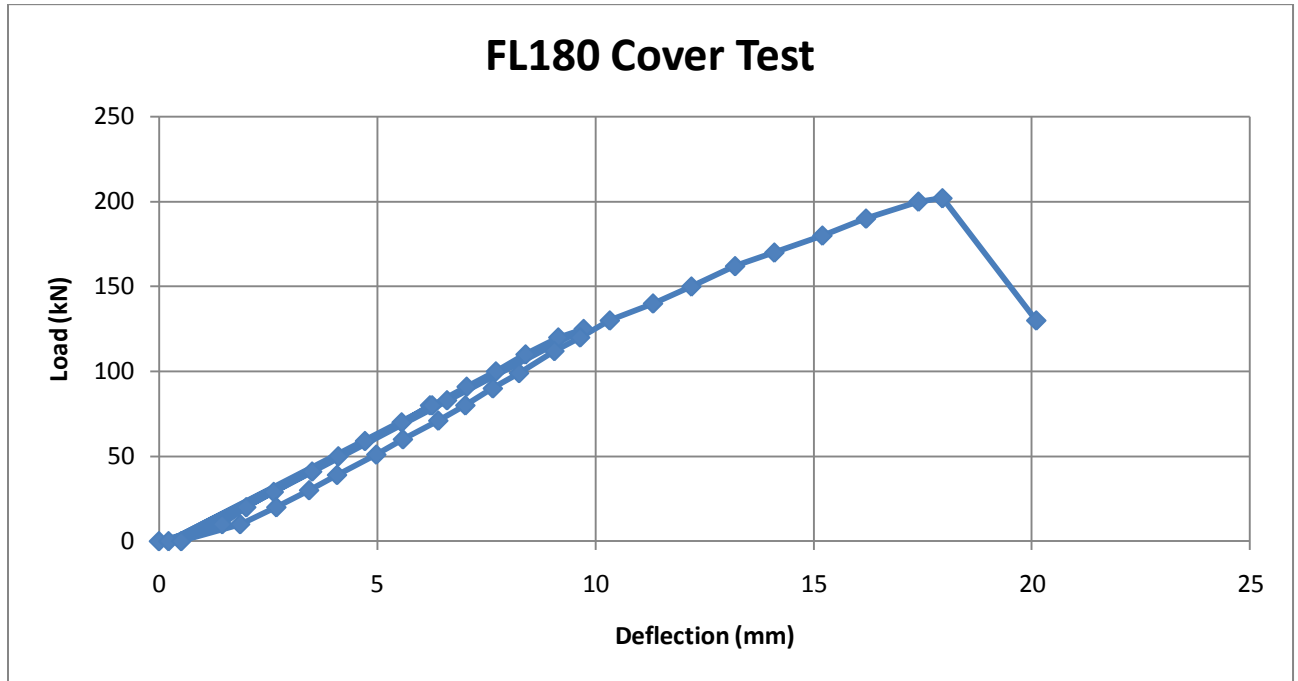
The deflection was measured at the centre on the underside of the cover using a dial indicator.

The cover was loaded to 2/3 of the test load and then released and the permanent set noted. It was then loaded to the test load of 125kN, the load released and the permanent set noted again. Finally the cover was then loaded to failure.

## **Results**

<b>Load (kN)</b>	<b>Deflection (mm)</b>	<b>Remarks</b>
0	0	
10	1.45	
20	2.00	
29	2.63	
41	3.51	
50	4.11	
59	4.72	
70	5.56	
80	6.21	
83	6.60	
0	0.22	
80	6.26	
91	7.05	
100	7.72	
110	8.40	
120	9.15	
125	9.73	
0	0.51	
10	1.86	
20	2.69	
30	3.44	
39	4.08	
51	4.98	
60	5.59	
71	6.40	
80	7.02	
90	7.65	
99	8.25	
112	9.06	
120	9.65	
130	10.33	
140	11.32	
150	12.20	
162	13.20	
170	14.10	Louder cracking/creaking

180	15.20	
190	16.20	
200	17.40	
202	17.95	Loud bang – large crack on top surface.
130	20.10	



**The permanent set at 83kN (2/3 test load) was 0.22mm.**

**The permanent set at 125kN (test load) was 0.51mm.**

**The cover failed at 202kN.**

Photograph 3 shows the cover still in the test rig under load at failure and a large crack running halfway across the cover from the edge to near the centre.



Photo.3

Photograph 4 shows the crack running through the depth of the cover.

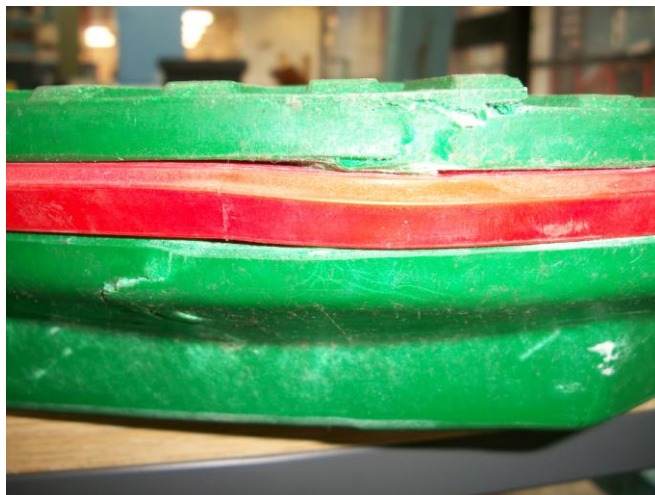


Photo.4

The bottom surface of the cover showed some permanent deformation and some light cracking to the resin. (Photo.5)



Photo.5

There were no signs of any damage to the frame.

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