



TEST REPORT

FL45 COVER TEST

Date : 03/02/06

Client : Fibrelite Composites Ltd.

Cover

The cover is an FL45, supplied by Fibrelite and manufactured in 1992 and has been in service ever since. It has slight wear on corners and edges but is in very good condition. It has no markings or serial number apart from the Fibrelite name on the top face. (Photo. 1)

The cover was also supplied with a new aluminium frame for it to sit in.



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)

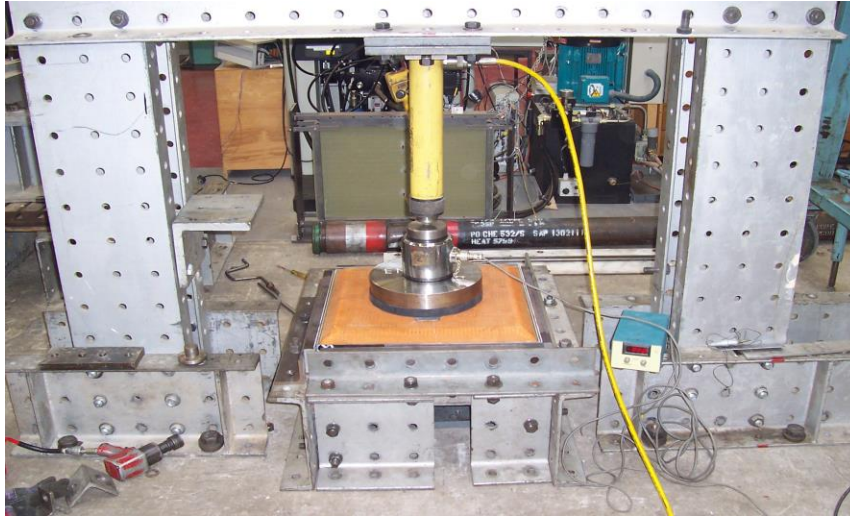


Photo. 2

The cover and frame were sat on steel channels with steel angle to support the sides of the frame to stop any distortion. Steel and aluminium shims were used to pack and level up. (Photo. 3)



Photo.3

Test

The load was applied to the cover through a 303mm diameter by 45mm thick steel block with a 303mm diameter by 25mm rubber pad between the block and cover.

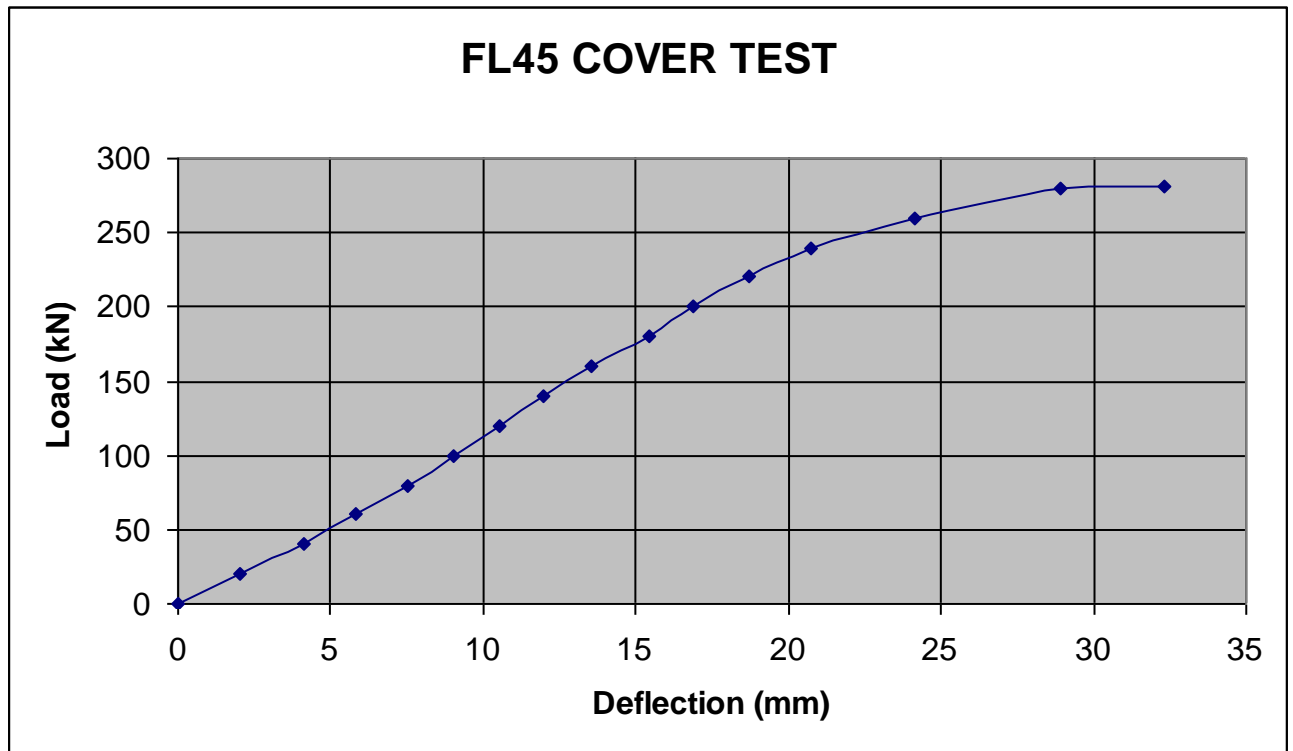
The load was measured using a 1000kN load cell (serial no. 3243N) and digital load indicator (serial no. D.I.B.1).

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

Results

LOAD (kN)	DEFLECTION (mm)	REMARKS
0	0	
20	2.00	
40	4.14	
60	5.85	
80	7.53	
100	9.00	Light cracking noises
120	10.51	
140	11.96	
160	13.55	
180	15.42	
200	16.86	
220	18.73	
240	20.72	Louder cracking
260	24.12	
280	28.90	
281	32.30	Loud bang (failure)

The cover failed at 281kN. A loud bang was heard and the load could not be maintained.



On inspection of the cover a large depression had formed and a crack from one corner towards the centre. (Photo. 4)

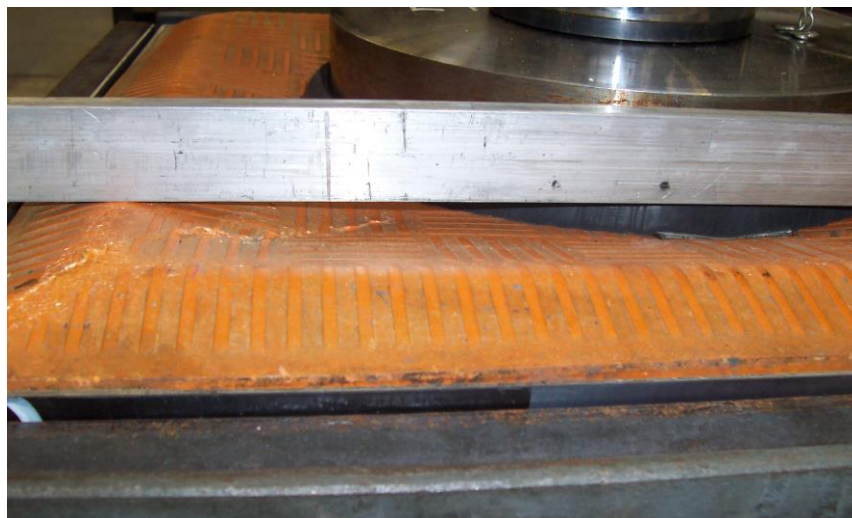


Photo. 4

When the cover was removed the frame showed no signs of damage or distortion.

When inspected on the underside, the cover showed cracking along two edges. (Photo. 5)



Photo. 6

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