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TEST REPORT

FL96 Composite Cover and Frame
BS EN124 1994: D400 Test

Document reference number - FIB-FL96-29-04-16

Report by:

M.A.Salisbury
Senior Technician



Date test carried out:

29th April 2016

Customer name:

Fibrelite Composites Ltd.
Snaygill Industrial Estate,
Keighley Road,
Skipton,
North Yorkshire
BD23 2QR

Clarifying Statements:

1. The results reported have been performed in accordance with the test requirements agreed by the customer (Fibrelite Composites Ltd.) and laid down in the BS EN124 1994 standard.

2. This report does not include or imply any expert opinions as to the serviceability of the sample tested or their suitability for a specific purpose.

3. The submitter disclaims any liability of any kind for any damage whatsoever resulting from the use of either data in the files or the attached values of the test results reported.

4. The report may not be reproduced other than in full, except with the prior written consent of the Engineering Dept., Lancaster University.

5. All testing has been carried out in within the Engineering Department, Gillow Ave., Lancaster University, Bailrigg, Lancaster LA1 4YW.

6. This report applies only to those items and/or materials that have been tested and reported on herein. No inference shall be made to similar test items or materials/ samples.

Cover

The composite cover supplied is a rectangular FL96 complete with aluminium frame, with a clear opening of 900mm x 600mm. (Photo.1)
Cover No. - No number

A 100mm x 100mm steel box and 'I' section frame was placed around the aluminium frame to add support and as an added safety feature incase of failure. (Photo.2)



Photo. 1

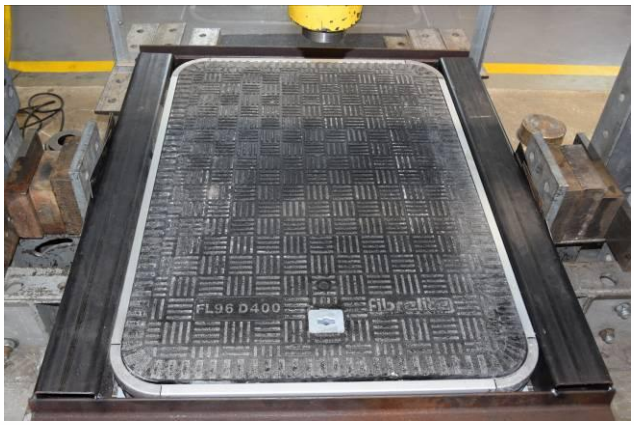


Photo.2

Test Rig

The test rig consists of a 'giant mecanno' frame bolted to the floor and supporting the Enerpac 50 ton hydraulic cylinder. (Photo 3)

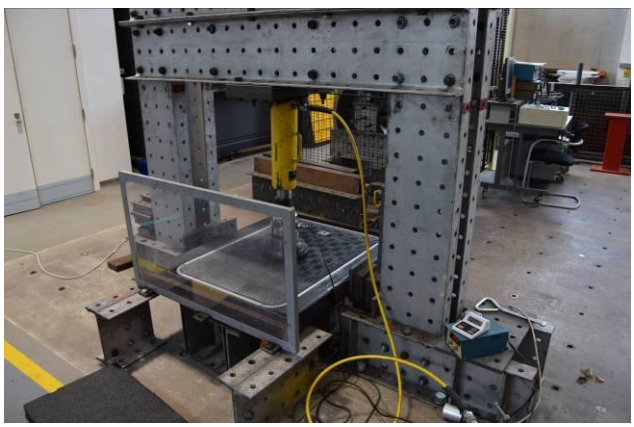


Photo. 3

Test

The test was carried out in accordance with BS EN 124 1994, Class D400.

The load was applied to the cover through a 250mm diameter by 45mm thick steel block with a 250mm diameter by 10mm rubber pad between the block and cover.

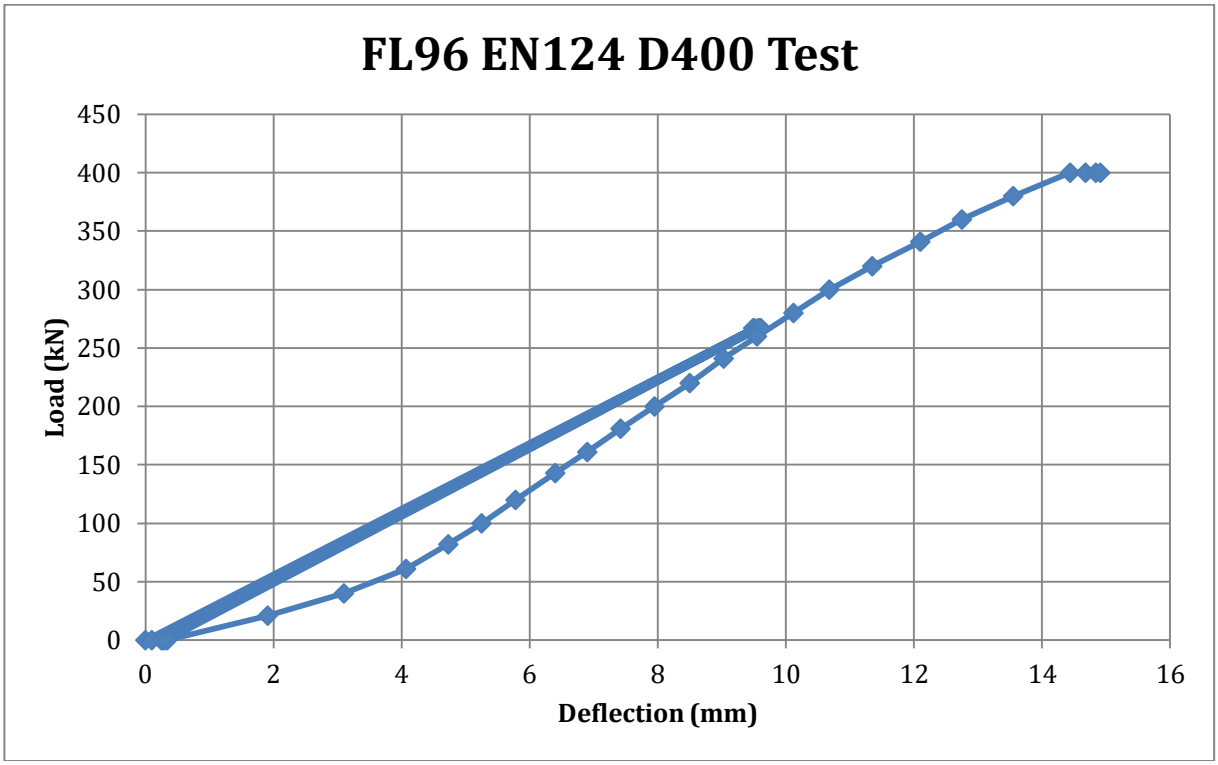
The load was measured using a 1000kN load cell (serial no. 3243N) and digital load indicator (serial no. D.I.B.1).

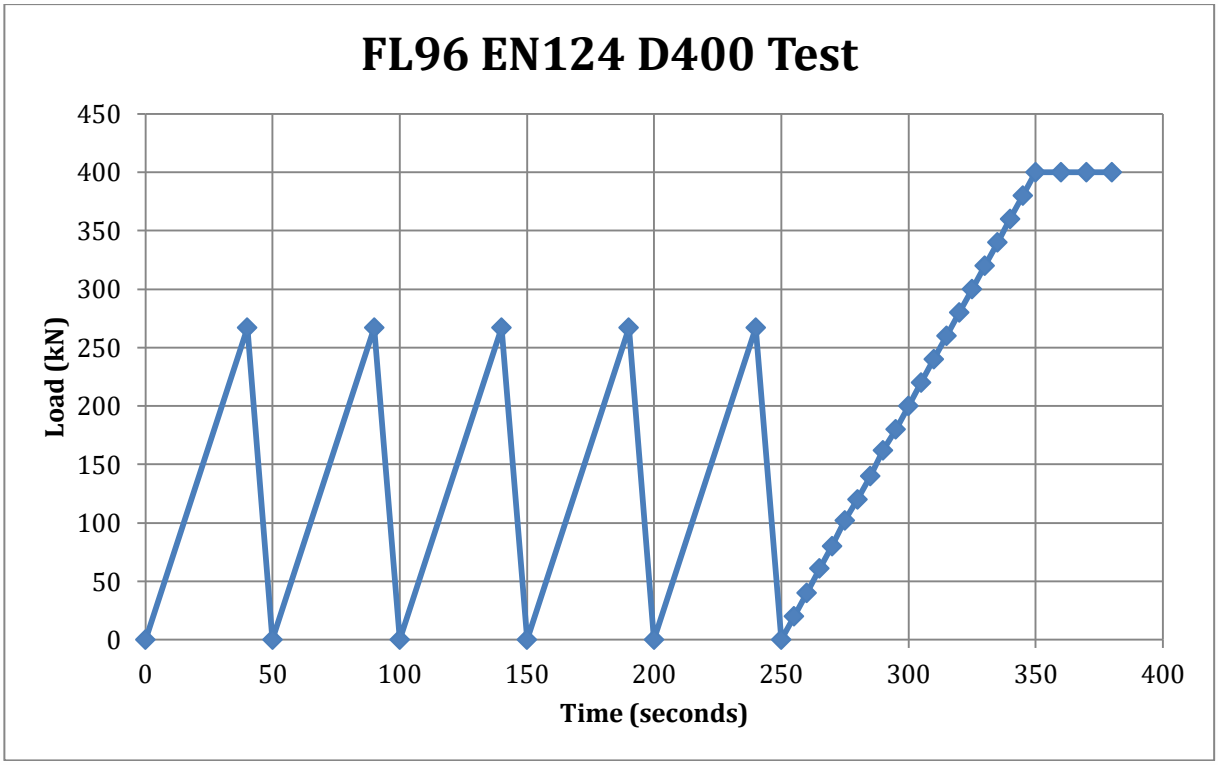
The deflection was measured at the centre on the underside of the cover using a dial indicator.

The cover was loaded to 2/3 of the test load and then released. This was repeated five times. It was then loaded to try and achieve the test load of 400kN.

Results

LOAD (kN)	DEFLECTION (mm)	REMARKS
0	0.00	
267	9.49	
0	0.10	
267	9.51	
0	0.28	
267	9.57	
0	0.30	
267	9.60	
0	0.25	
267	9.61	
0	0.34	
21	1.91	
40	3.10	
61	4.07	
82	4.73	
100	5.25	
120	5.78	
143	6.40	
161	6.90	
181	7.42	
200	7.95	
220	8.50	
241	9.03	
260	9.55	
280	10.12	
300	10.68	
320	11.35	
341	12.10	
360	12.75	
380	13.55	
400	14.44	
400 (10 seconds)	14.68	
400 (20 seconds)	14.84	
400 (30 seconds)	14.91	
0	1.90	**PASS**
475	Dial gauge removed.	Maximum load that could be applied. No signs of any failure.


FL96 EN124 D400 Test
Load (kN)
450
400
350
300
250
200
150
100
50
0
0
2
4
6
8
10
12
14
16
Deflection (mm)


FL96 EN124 D400 Test
Load (kN)
450
400
350
300
250
200
150
100
50
0
0
50
100
150
200
250
300
350
400
Time (seconds)

In accordance with EN124 Clause 8.3.1 the permanent set of the cover was 0.34mm which is within the permissible stated in Table 8 of the 1994 standard. (1/300 x 600 = 2.00mm).

The cover held the test load of 400kN for the required 30 seconds with no visible signs of cracking

The cover therefore passed the EN124 D400 test for both permanent set and load.

After the cover and frame had passed the EN124 D400 test the load was removed and a permanent set of 0.90mm recorded.

The cover was then loaded further up to 475kN which was the maximum load the test rig could produce.

No visible signs of any damage were found to either the cover or frame.