



## **TEST REPORT**

### **FL100 EN124 D400 Cover Test**

Date: 12/09/12

**Client: Fibrelite Composites Ltd.**

#### **Cover**

The cover supplied is a round FL100 and of composite construction. (See photo. 1)  
No. on cover –

The cover was tested in a composite frame.  
Frame No.



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

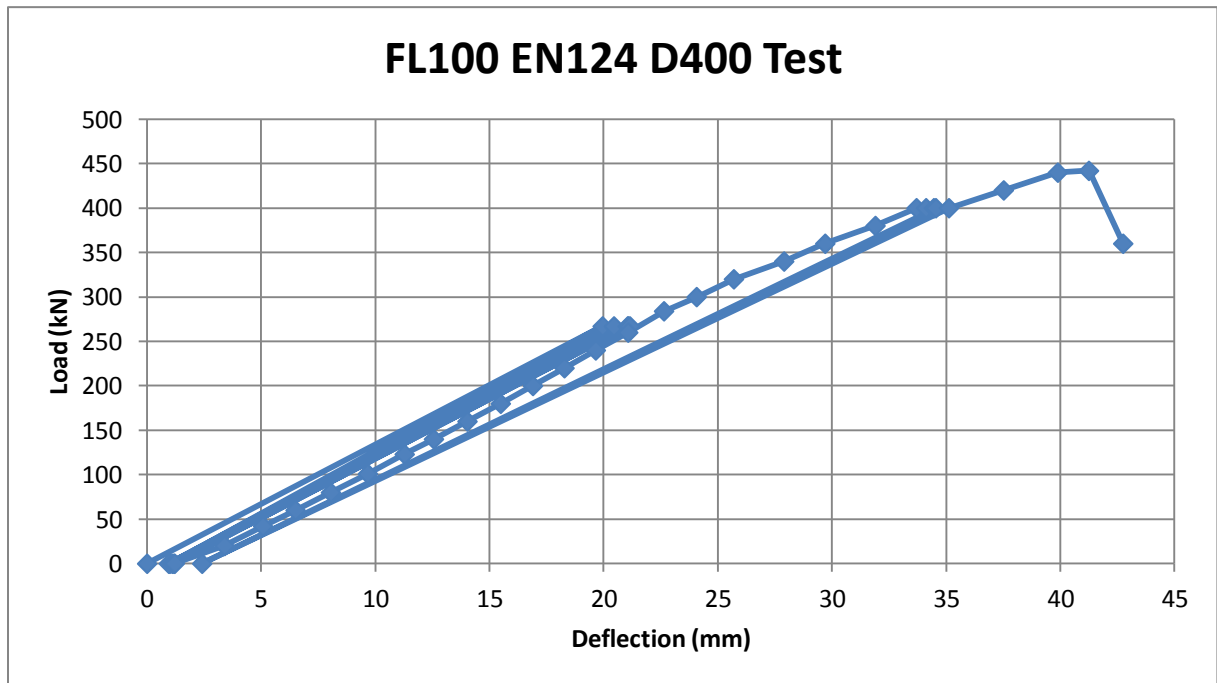
The deflection was measured at the centre on the underside of the cover using a dial indicator.

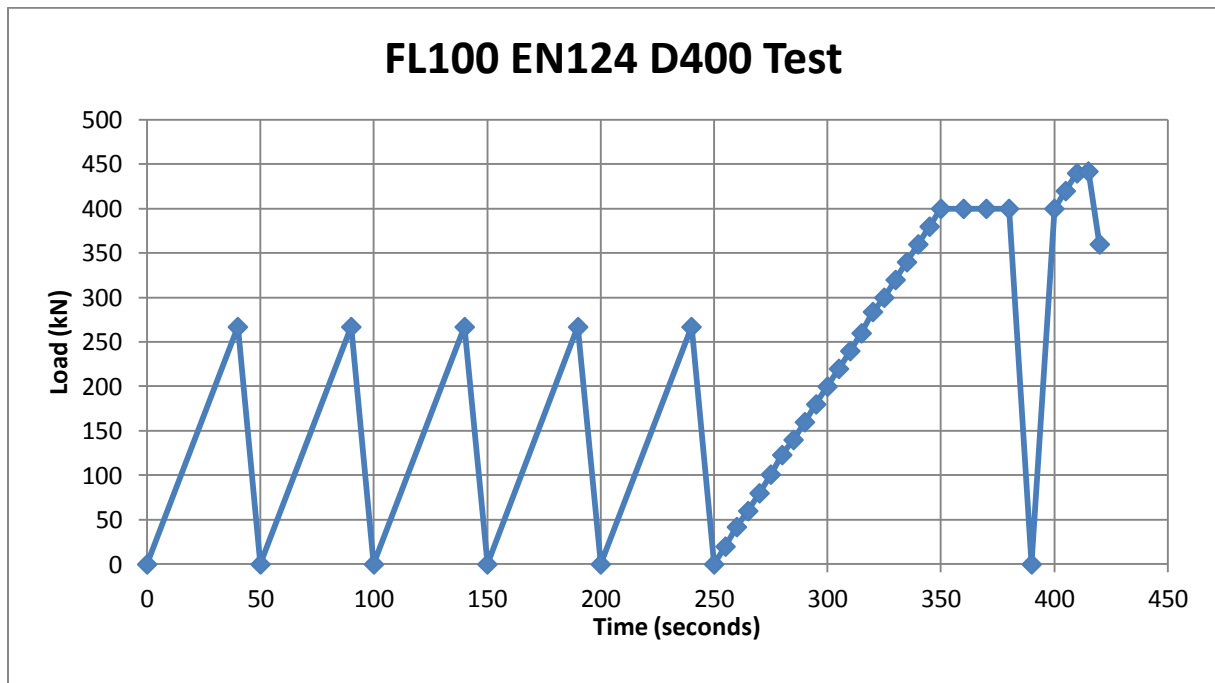
The cover was loaded to 2/3 of the test load and then released. This was repeated five times. It was then loaded to try and achieve the test load.

## Results

Load (kN)	Deflection (mm)	Remarks
0	0.00	
267	19.95	Light cracking noises from 30kN onwards for the 1 <sup>st</sup> cycle.
0	1.00	
267	20.45	
0	0.95	
267	21.05	
0	1.10	
267	21.08	
0	1.17	
267	21.15	
0	1.21	
20	3.40	
42	5.08	
60	6.50	
80	8.05	
101	9.67	
123	11.28	
140	12.56	
160	14.03	
180	15.49	
200	16.90	
220	18.28	
240	19.65	
260	21.07	
284	22.64	
300	24.07	
320	25.70	
340	27.90	
360	29.70	
380	31.90	
400	33.70	
400 (10 seconds)	34.12	

400 (20 seconds)	34.46	
400 (30 seconds)	34.55	
0	2.41	
400	35.12	
420	37.52	Louder cracking.
440	39.89	Loud cracking/tearing noises.
442	41.25	Lou bang! – failure.
360	42.75	





**The cover held the test load of 400kN for the required 30 seconds so therefore passed the EN124 D400 test.**

**In accordance with EN124 Clause 8.3.1 the permanent set of the cover was 1.21mm which is within the permissible stated in Table 8 of the standard. ( $1/300 \times 1000 = 3.33\text{mm}$ ).**

**The cover therefore passed the permanent set test also.**

**After the cover had passed the EN124 D400 test, the load was released from the 400kN and after waiting two minutes for the cover to settle, the permanent set was recorded at 2.41mm**

**The cover was then loaded again until failure at 442kN**

The cover was then removed from the test rig and inspected for damage.

On the top surface there was a large crack running from the outside edge of the cover towards the centre. (Photo.3)



Photo.3

There were no signs of any cracking to the bottom surface of the cover or any damage to the frame.

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