



TEST REPORT

FM45-130-117-HD Composite Trench Panel BS EN124 D400 Test

Document reference number - FIB-FM45-130-13-05-15

Report by:

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Date test carried out:

13th May 2015

Customer name:

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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 ASSHTO 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.

Panel

The composite trench panel supplied is a rectangular FM45-130-117-HD. (Photo.1)



Photo. 1

Test Rig

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



Photo. 2

Test

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

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

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

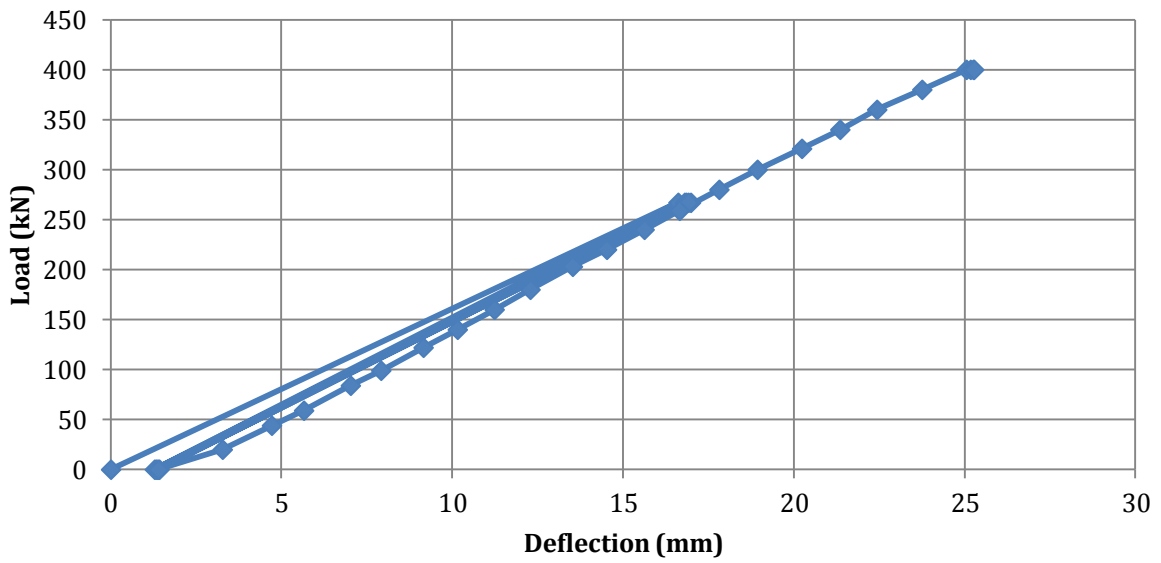
The deflection was measured at the centre on the underside of the panel using a dial indicator.

The panel 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.

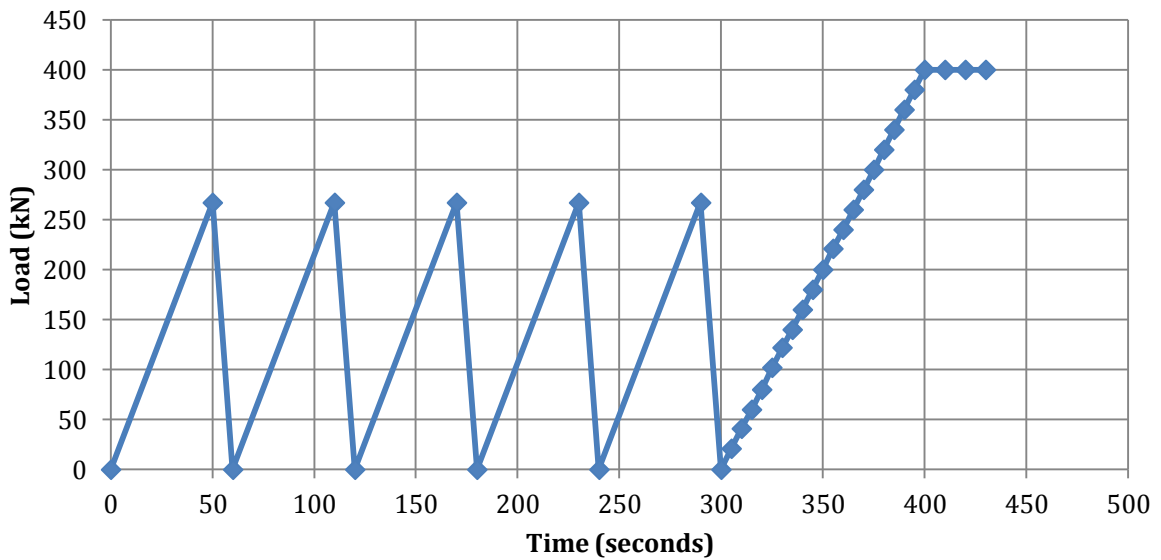
Results

LOAD (kN)	DEFLECTION (mm)	REMARKS
0	0.00	
267	16.61	
0	1.28	
267	16.80	
0	1.32	
267	16.85	
0	1.35	
267	16.98	
0	1.42	
267	16.91	
0	1.39	
20	3.27	
44	4.71	
59	5.65	
84	7.02	
99	7.91	
122	9.15	
140	10.15	
160	11.23	
180	12.28	
203	13.52	
220	14.52	
240	15.62	
259	16.65	
280	17.81	
300	18.93	
321	20.23	
340	21.35	
360	22.43	
380	23.75	
400	25.05	
400 (10 seconds)	25.17	
400 (20 seconds)	25.25	
400 (30 seconds)	25.27	PASS
0	1.72	
400	Dial gauge removed	
480	-	Maximum load that could be applied by test rig. No signs of any damage.
	-	

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In accordance with EN124 Clause 8.3.1 the permanent set of the panel was 1.39mm which is within the permissible stated in Table 8 of the standard. ($1/300 \times 450 = 1.50\text{mm}$).

The panel held the test load of 400kN for the required 30 seconds.

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

After the panel had been loaded to the test load of 400kN and held for the required 30 seconds the load was released and a permanent set of 1.72mm recorded.

The dial gauge was then removed from under the panel to avoid damage.

The panel was then loaded further, up to the maximum capacity of the hydraulic cylinder which was 480kN.

At this point the test had to be stopped with no visible evidence of failure to the panel.

Photograph 3 below shows the panel still under load at 480kN.



Photo.3