



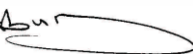
TEST REPORT

FM45-140-117-HD Composite Trench Panel
BS EN124 D400 Test
Span - 1300mm

Document reference number - FIB-FM45-140-117-HD-17-05-16

Report by:

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Date test carried out:

17th May 2016

Customer name:

Fibrelite Composites Ltd.
Snaygill Industrial Estate,
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Skipton,
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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.

Panel

The composite trench panel supplied is a rectangular FM45-140-117-HD. (1400mm x 450mm x 117mm)

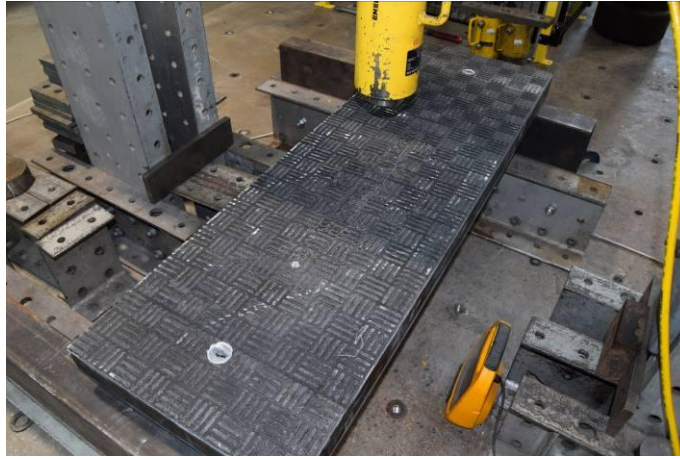


Photo. 1

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)

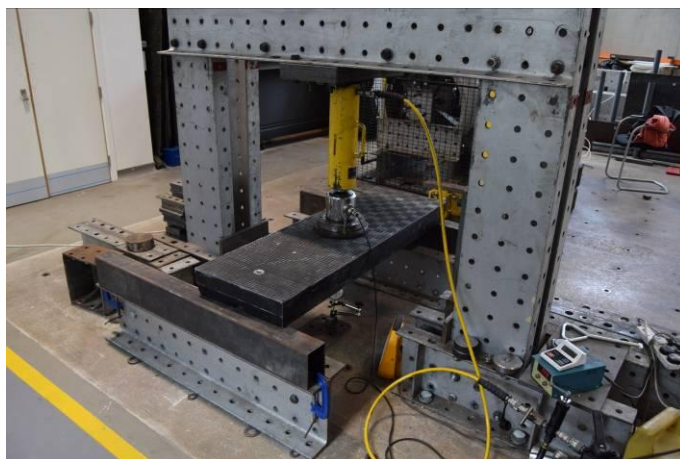


Photo. 2

The panel sat on two 100mm wide x 150mm deep steel rectangular box sections on top of steel channels giving a clear span of 1300mm.

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.

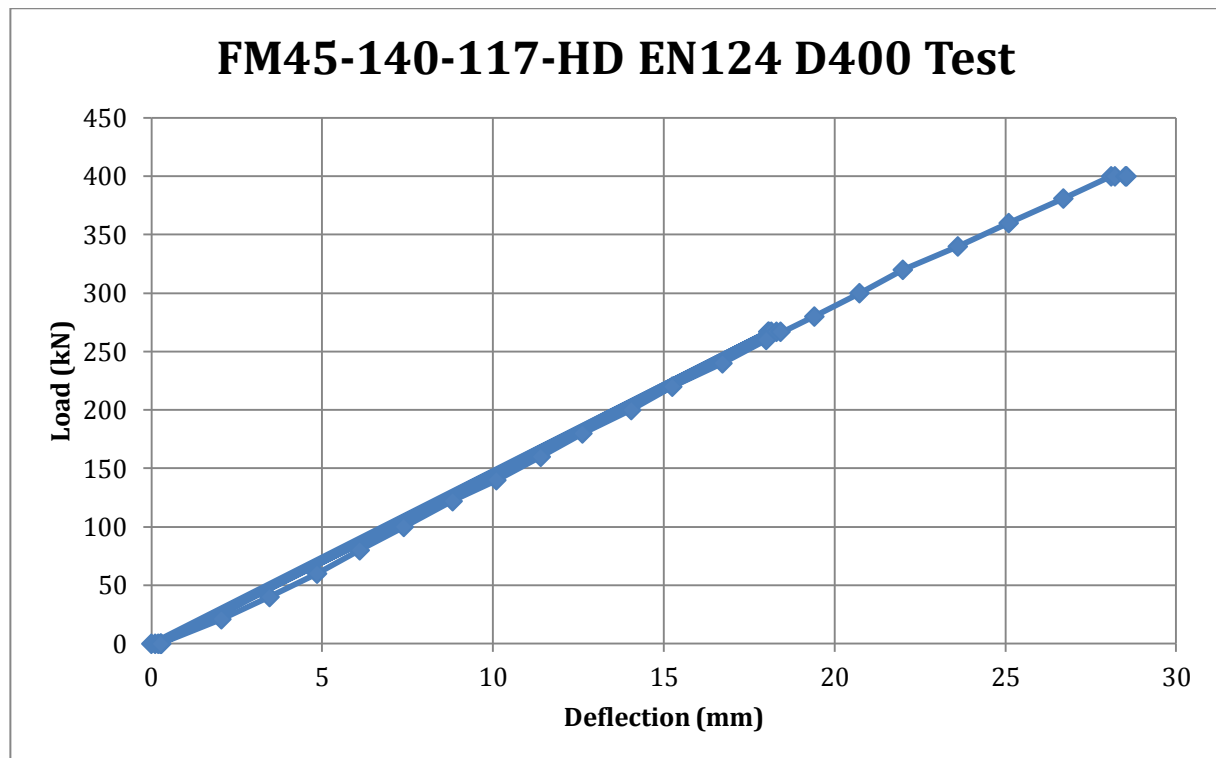
The load was measured using a 1000kN load cell (serial no. 3243N) and digital load indicator (serial no. D.I.B.1).

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

The panel was loaded to $\frac{2}{3}$ 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	18.06	
0	0.11	
267	18.08	
0	0.20	
267	18.15	
0	0.27	
267	18.30	
0	0.29	
267	18.42	
0	0.27	
21	2.05	
40	3.46	
60	4.85	
80	6.10	
100	7.39	
122	8.82	
140	10.10	
160	11.40	
180	12.62	
200	14.05	
220	15.25	
240	16.72	
260	18.00	
280	19.41	
300	20.73	
320	22.00	
340	23.61	
360	25.10	
381	26.70	
400	28.10	
400 (10 seconds)	28.21	
400 (20 seconds)	28.52	
400 (30 seconds)	28.55	PASS
0	0.83	
475	Dial gauge removed.	Max. load test rig capable of applying.



In accordance with EN124 Clause 8.3.1 the permanent set of the panel was 0.27mm which is within the permissible stated in Table 8 of the standard. ($1/300 \times 450 = 1.50\text{mm}$).

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

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

After the panel had completed the EN124 test the dial gauge was removed to avoid damage and the panel loaded again to try and achieve failure.

The test was stopped at 475kN as this was the maximum load the test rig could produce.

The panel showed no visible signs of damage.