



TEST REPORT

TRENWA LHF 26" - 60" Composite Trench Panel AASHTO M306-04 H20 Test

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Report by:

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Date test carried out:

15th 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 TRENWA LHF 26" - 60". (Photo.1)
Panel size - 60" x 26" x 4" (1523mm x 660mm x 102mm)



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 was supported on steel channels along the sides giving a span of 20 inches.

Test

The test was carried out in accordance with AASHTO M 306-04, Clauses 5.1 and 5.2.

The load was applied to the panel through a 9 in. x 9 in. (229mm X 229mm) by 0.75 in. thick steel plate with a 9 in. x 9 in. rubber pad between the plate and cover.

The load was measured using a 100 ton (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.

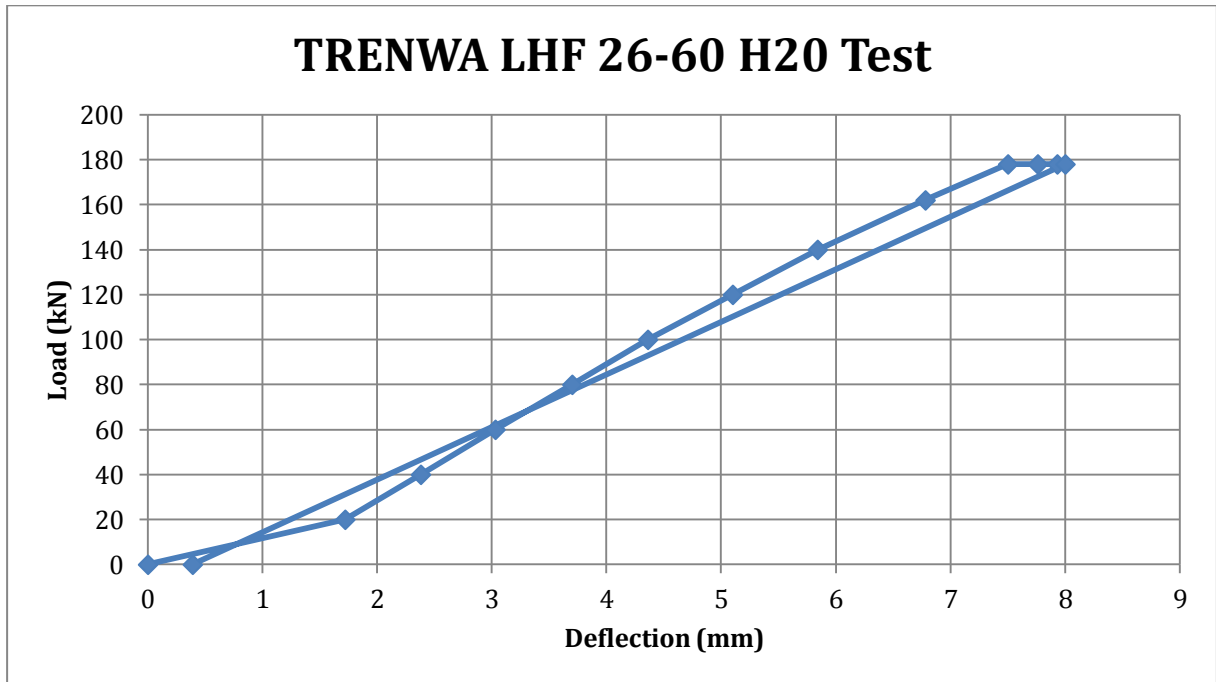
The panel was tested to H20

The H20 test consists of proof loading the cover to 40,000lb (178kN) and holding the load for 1 minute.

The load was then released, the permanent deformation measured and the cover inspected for any damage.

Results

LOAD		DEFLECTION		REMARKS
(kN)	(lbs)	(mm)	(in.)	
0	0	0.00	0.000	
21	4,720	1.72	0.068	
40	8,992	2.38	0.094	
60	13,488	3.03	0.119	
80	17,985	3.70	0.146	
100	22,481	4.36	0.172	
120	26,977	5.10	0.201	Odd light cracking noise from here on.
140	31,473	5.84	0.230	
162	36,419	6.78	0.267	
178	40,000	7.50	0.295	
178 (20 seconds)	40,000	7.76	0.305	
178 (40 seconds)	40,000	7.93	0.312	
178 (60 seconds)	40,000	8.00	0.315	PASS
0	0	0.39	0.015	
230	51,706	Dial gauge removed		Louder cracking
294	66,094	-		Ultimate failure



H20 Test

The panel held the proof test load of 40,000 lbs (178kN) for the required 1 minute and with no visible signs of any cracking.

In accordance with Clause 5.1 of the AASHTO M306-04 standard the permanent deformation was 0.015 in. (0.39mm) and is within the 1/8 in. (3.2mm) that is allowed.

The panel therefore passed the H20 test.

After the panel had passed the H20 test the dial gauge was removed from under the panel to avoid damage and the panel loaded until failure occurred at 294kN.

On inspection a large crack had appeared on the underside around the centre of the panel. (Photo.3)



Photo.3