Engineering | Lancaster University

TEST REPORT

STRUCTURAL SCIENCE COMPOSITES
CR106 COMPOSITE COVER AND FRAME
AASHTO H25 Load Test
(Cover Number-0199808)
(Frame Number-0197356)

Document reference number – SSC-CR106-AASHTOH25-0199808-22-04-26

Report by:

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Senior Technician

Date test carried out:

22nd April 2026

Customer name:

Structural Science Composites Ltd.
8 James Freel Court,
James Freel Close,
Barrow-in-Furness,
LA14 2NG

Clarifying Statements:

1. The results reported have been performed in accordance with the test requirements agreed by the customer (Structural Science 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 circular CR106. (Photo.1)

Photo. 1

Test Rig

The test rig consists of a 'giant mecanno' frame bolted to the floor and supporting the Enerpac 90 ton hydraulic cylinder. (Photo 2)

Photo. 2

The panel was seated on 65mm x 50mm rectangular steel bars round the span of the frame.

The load cell and test rig complies with EN ISO 7500-1:2004 minimum Class 3.

Test Rig ID: EG100TF
Load Cell ID:
Instron Calibration Certificate No. E288062725080001A
System Class: 1
Calibration Date: 27/06/25

Photograph 3 below shows the calibration certificate for the load cell and test rig.

Photo.3

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 geometric centre on the underside of the cover using a linear potentiometer.

The panel was tested to H25

The H25 test consists of proof loading the cover to 50,000lb (222kN) and holding the load for 1 minute.

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

Results

Permanent set test

Photo.4

Initial Reading	0.00mm	
Reading after 50,000lbf held for 1 min.	1.87mm	
Permanent Set	**1.87mm**	**0.073in.**

Permissible permanent set for an AASHTO H25 test is 2.54mm (0.1in.)

Therefore the panel PASSED the permanent set test.

Load Test

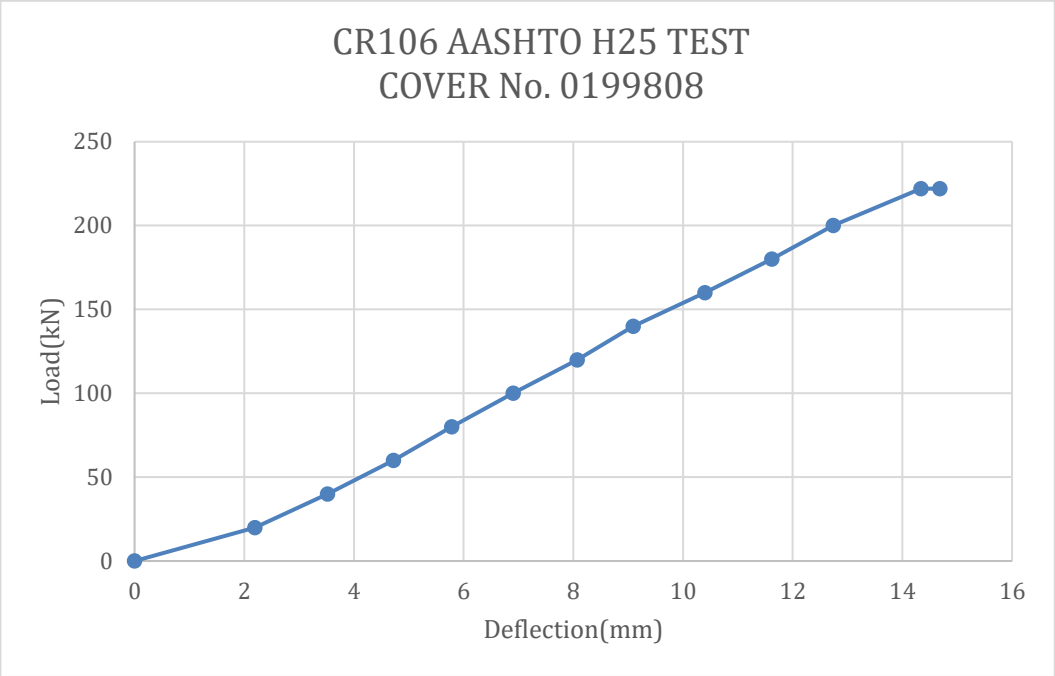
LOAD		DEFLECTION		Remarks
(kN)	(lbs)	(mm)	(in.)	
0	**0**	**0.00**	**0.00**	
20	4,496	3.21	0.126	
40	8,992	5.24	0.206	
60	13,448	7.49	0.294	
80	17,985	9.60	0.377	
100	22,481	11.43	0.450	
120	26,977	14.00	0.551	
140	31,473	16.03	0.629	
160	35,969	18.57	0.731	
180	40,000	21.00	0.826	
200	44,961	23.34	0.918	
222	50,000	26.55	1.045	
222 (60 SECS)	50,000	27.34	1.076	
0	0	1.87	0.051	

H25 Test

The panel held the proof test load of 50,000 lbs (222kN) 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 0.073 in. (1.87mm) and is within the 0.1in. (2.54mm) that is allowed.

The panel therefore passed the H25 test.


CR106 AASHTO H25 TEST
COVER No. 0199808
250
200
150
100
50
0
Load(kN)
0
2
4
6
8
10
12
14
16
Deflection(mm)