



TEST REPORT

**STRUCTURAL SCIENCE COMPOSITES
DR90 COMPOSITE COVER AND FRAME
AASHTO H25 Load Test
(Cover Number-0200584)
(Frame Number-0193509)**

Document reference number – SSC-DR90-AASHTOH25-0200584-22-04-26

Report by:

D.W. Gardner
Senior Technician

A rectangular box containing a handwritten signature in black ink, which appears to be 'D. Gardner'.

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 DR90. (Photo.1)

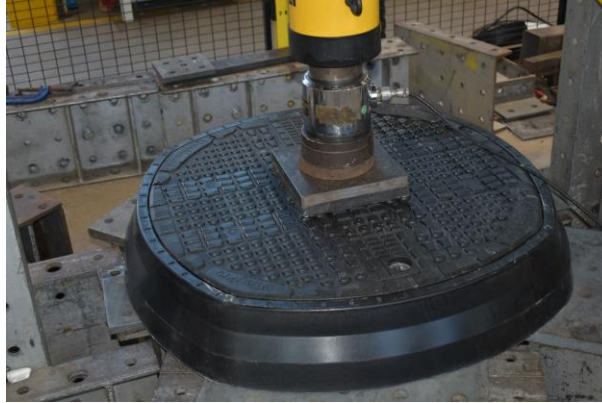


Photo. 1

Test Rig

The test rig consists of a 'giant mecano' 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.

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. | 1.31mm | |
| Permanent Set | 1.31mm | 0.051in. |

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 | 2.19 | 0.086 | |
| 40 | 8,992 | 3.52 | 0.138 | |
| 60 | 13,448 | 4.72 | 0.185 | |
| 80 | 17,985 | 5.78 | 0.227 | |
| 100 | 22,481 | 6.90 | 0.271 | |
| 120 | 26,977 | 8.07 | 0.317 | |
| 140 | 31,473 | 9.09 | 0.357 | |
| 160 | 35,969 | 10.40 | 0.409 | |
| 180 | 40,000 | 11.62 | 0.457 | |
| 200 | 44,961 | 12.74 | 0.501 | |
| 222 | 50,000 | 14.34 | 0.564 | |
| 222 (60 SECS) | 50,000 | 14.68 | 0.577 | |
| 0 | 0 | 1.31 | 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 0.051 in. (1.31mm) and is within the 0.1in. (2.54mm) that is allowed.

The panel therefore passed the H25 test.

DR90 AASHTO H25 TEST
COVER No. 0200584

