LANCASTER UNIVERSITY
Engineering Department
Faculty of Applied Sciences

# TEST REPORT

## BM8080 Vented EN124 B125 Cover Test No.3
BIF - 11083

Date: 10/10/13

**Client: Structural Science Composites Ltd.**

## Cover

The cover supplied is a BM8080, 860mm x 860mm x 85mm overall composite cover. (Photo.1)
**Cover No.** – 11083

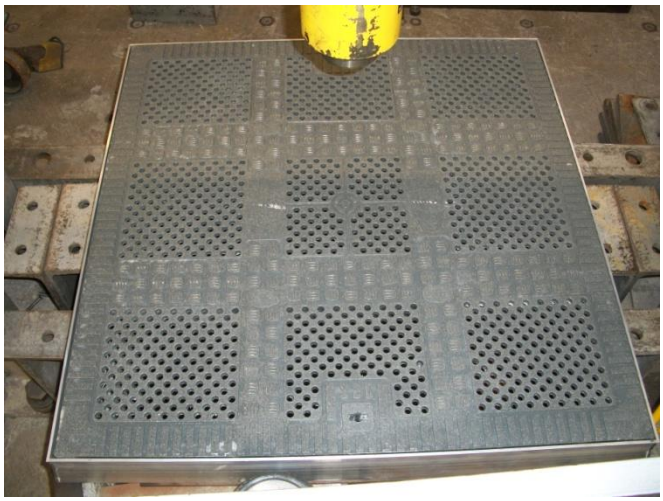

Photo.1

The frame supplied was of aluminium section welded in the four corners with an 8mm round bar tack welded on the underside in each corner. There was a clear opening of 800mm x 800mm (Photos.2 & 3)

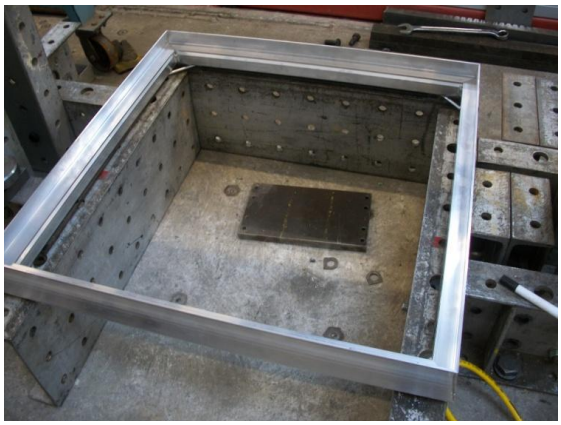

Photo.2

Photo.3

## Test Rig

The test rig consists of a ‘giant mecanno’ frame bolted to the floor and supporting the Enerpac 50 tonne hydraulic cylinder. The cover and frame sat on steel channels, with 50mm x 12mm steel plates and shims to support and level. (Photo. 4)

Photo.4

## Test

The test was carried out in accordance with BS EN 124, Class B125
The load was applied to the cover through a 250mm diameter by 45mm thick steel block with a 250mm diameter by 20mm rubber pad between the block and cover.

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 cover using a dial indicator.
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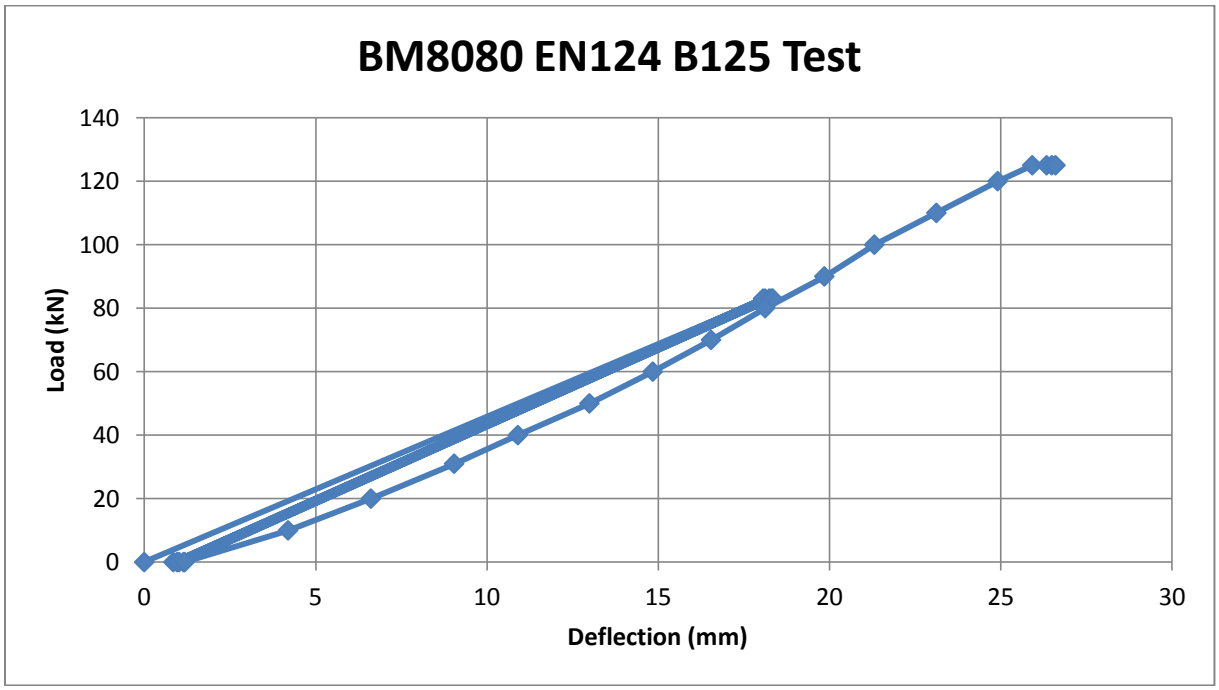
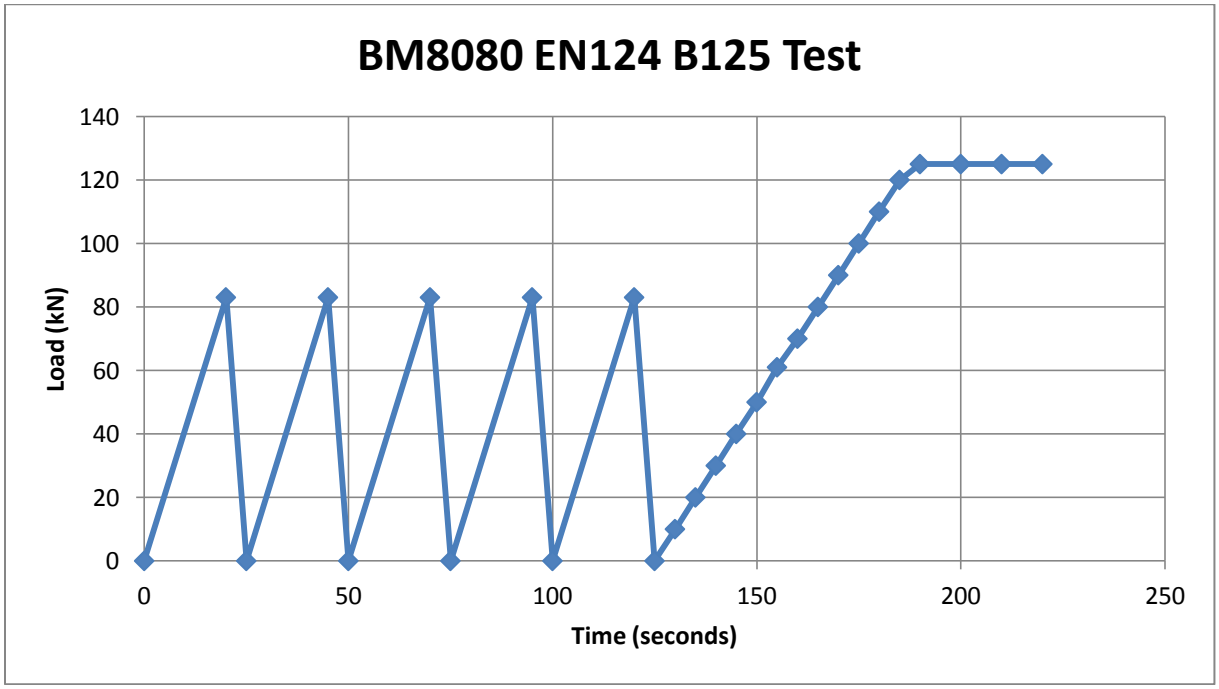
The cover was loaded to 2/3 of the test load and then released. This was repeated five times. It was then loaded to try and achieve the 125kN test load.

## Results

| LOAD (kN) | DEFLECTION (mm) | REMARKS |
|---|---|---|
| 0 | 0.00 | |
| 83 | 18.13 | Light cracking noises from about 30kN onwards for 1st cycle. |
| 0 | 0.85 | |
| 83 | 18.07 | |
| 0 | 0.96 | |
| 83 | 18.25 | |
| 0 | 1.02 | |
| 83 | 18.31 | |
| 0 | 1.15 | |
| 83 | 18.35 | |
| 0 | 1.18 | |
| 10 | 4.20 | |
| 20 | 6.62 | |
| 31 | 9.05 | |
| 40 | 10.91 | |
| 50 | 13.00 | |
| 60 | 14.85 | |
| 70 | 16.55 | |
| 80 | 18.13 | |
| 90 | 19.86 | |
| 100 | 21.32 | |
| 110 | 23.13 | |
| 120 | 14.92 | Slightly louder cracking noises |
| 125 | 25.93 | |
| 125 (10 seconds) | 26.35 | |
| 125 (20 seconds) | 26.50 | |
| 125 (30 seconds) | 26.61 | |
| 0 | 1.98 | |


BM8080 EN124 B125 Test
Load (kN)
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30
Deflection (mm)


BM8080 EN124 B125 Test
Load (kN)
140
120
100
80
60
40
20
0
0
50
100
150
200
250
Time (seconds)

**In accordance with EN124 Clause 8.3.1 the permanent set of the cover was 1.98mm which is within the permissible stated in Table 8 of the standard. (1/100 x 800 = 8.00mm).**

**The cover reached the test load of 125kN and held for the required 30 seconds so therefore passed the EN124 B125 load test.**

After the cover had been loaded to the test load of 125kN and held for 30 seconds it was unloaded to zero and a permanent set of 1.98mm measured.

After the cover had been unloaded it was inspected for damage and nothing visible was found.

The frame showed no signs of any damage.

M.A.Salisbury
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