

Deformation of GFC 100 x 150mm Plastic Shims under a 20 Tonne Load

Testing & Report

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Scope

This report evaluates the deformation of seven different GFC plastic Panel Shim (SCP01, SCP02, SCP03, SCP05, SCP10, SCP15 & SCP20) thicknesses when a 20-tonne load (equivalent) is distributed evenly across the face of the shim.

Method

To enable a before and after comparison to be made a compressive load measured on a load cell and equivalent to 20 Tonnes was distributed over the whole shim was applied to a Ø63.6mm steel puck ($(A_p/A_s) \cdot 20000$) via a hydraulic press and held for two minutes.

Shim thickness was measured within the area that the steel puck had been placed and outside of this area to determine if there had been and deformation.

The shim was inspected for any signs of deformation while the load was applied such as shearing of the plastic around the edge of where the puck had been placed.

Summary

The testing showed that for the range of shims tests there was negligible deformation, cracks or splitting of the shim when at load equivalent to the shims rated capacity of 20 Tonnes was applied. Additionally, a load of twice the shims rated capacity (40 Tonnes) also showed negligible deformation, cracks or splitting of the shim.

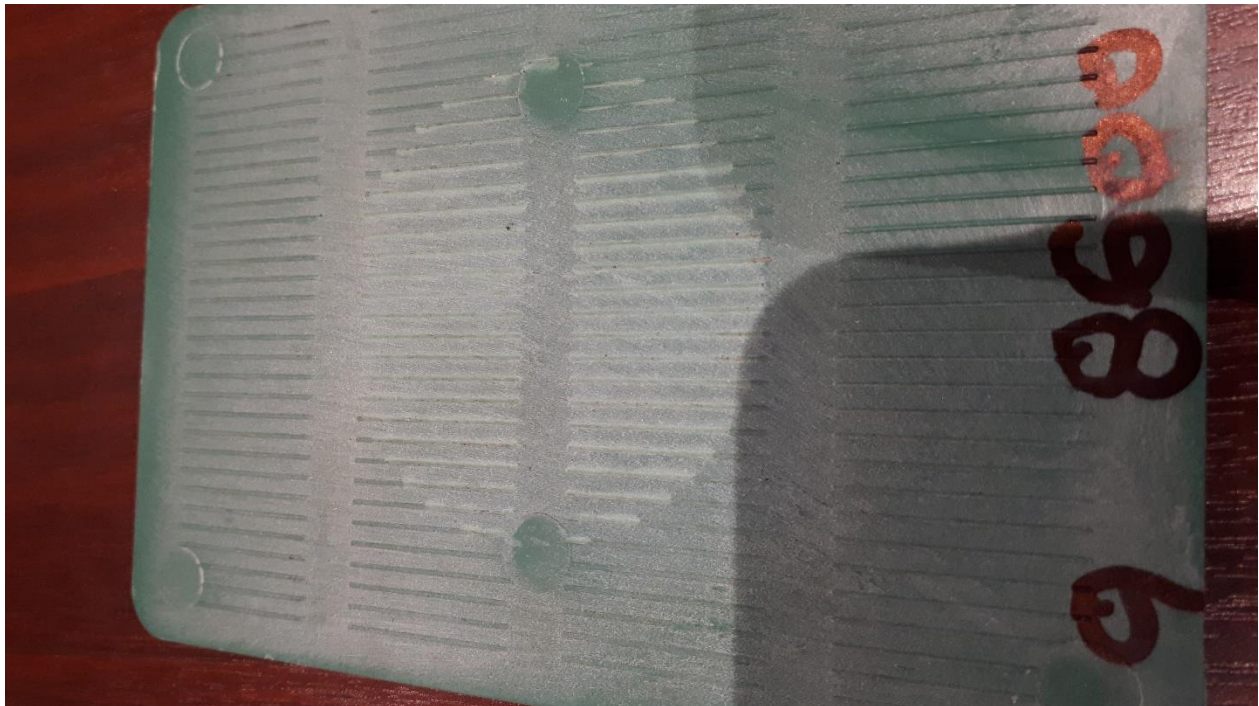
Picture 1: Test Set Up



Picture 2. Faint Outline of Puck Visible from 20 Tonne (Eq) Load



Picture 3. Faint Outline of Puck Visible from 40 Tonne (EQ) Load



Results

Test Number	Shim Size (mm)	Colour	Actual Load (kg)	Equivalent Load (Kg)	Thickness* Prior to Load (mm)	Thickness* After Load (mm)
2	100 x 150	Lt Brown	4270	20160	0.98	0.96
1	100 x 150	Blue	4270	20160	1.98	2.00
4	100 x 150	Green	4270	20160	2.88	2.84
3	100 x 150	Yellow	4370	20633	4.90	4.90
5	100 x 150	Black	4290	20255	10.00	9.98
6	100 x 150	Lt Green	4270	20160	14.96	15.00
14	100 x 150	White	4280	20208	20.20	20.00
12	100 x 150	Lt Brown	8610	40652	1.02	1.00
11	100 x 150	Blue	8580	40510	1.94	1.94
9	100 x 150	Green	8600	40604	3.00	3.00
10	100 x 150	Yellow	8580	40510	4.94	4.92
8	100 x 150	Black	8580	40510	9.92	9.90
7	100 x 150	Lt Green	8570	40463	14.82	14.82
13	100 x 150	White	8570	40463	20.50	20.46

*Measured with Verniers