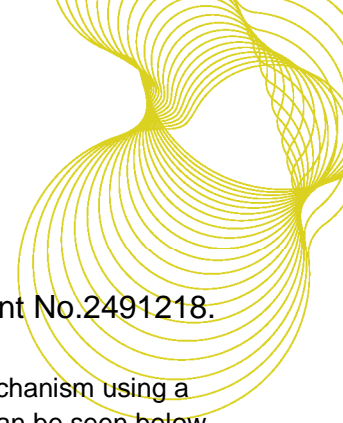


Certificate of Test



Customer: Vistamic Limited
Product: Vistamic Integrated Spindle/Cam Mechanism Patent No.2491218.

Tests: A life cycle test was carried out on a Vistamic Integrated Spindle/Cam mechanism using a pneumatic controller with a counter to operate the system. The test set up can be seen below in the photograph.

Background: The sprindle is axially and radially encapsulated within the cam which itself is encapsulated between the two panes of toughened glass. .



The operating force of the handle was measured at regular intervals of testing. The pneumatic controller was set up to open and close the panel by pushing and pulling the handle continuously and the number of cycles recorded. The mechanism was inspected at regular intervals to check for signs of wear and tear and also the functionality of the system.

Results: **Operating force:** The average operating force measured on the handle was 9.3 Newton.

Life cycle test: Three hundred thousand cycles (300,000) were carried out on the system. There was no visible damaged observed in the mechanism and normal functionality was still maintained at the end of the test.

Date of test: 30th January to 25th February 2013

Certificate No: 285-486

Signed: 

Date: 28th February 2013

Dr Paul Blackmore, Associate Director, Building Technology Group

For and on behalf of Building Research Establishment Ltd, Garston, Watford, WD25 9XX

BRE does not endorse this product nor warrant its performance in use and accepts no liability for any loss or damage arising from its use



BRE Construction Division's Quality Management System is approved to BS EN ISO9001:2008, certificate number LRQ 4001063