

56399/M/Rev1

**LABORATORY TESTING OF BUTTON FIX
SYSTEM**

BOARDS DIRECT

**Sandberg LLP
40 Grosvenor Gardens
London SW1W 0EB**

**Tel: 020 7565 7000
Fax: 020 7565 7100
email: ho@sandberg.co.uk
web: www.sandberg.co.uk**

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CONSULTING ENGINEERS

INVESTIGATION INSPECTION
MATERIALS TESTING

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BOARDS DIRECT

Boards Direct
Unit 4
Poplars Court
Lenton Lane
Nottingham
NG7 2RR

This report comprises:
Test Certificate
Appendix

For the attention of: Mr David Shaw

8 March 2016

Partners: N C D Sandberg S M Pringle S C Clarke D J Ellis P Tate A A Willmott R A Rogerson
M A Eden J D French C Morgan G S Mayers G C S Moor Dr R M Harris J Fagan R H Gostomski
Senior Associates: R D Easthope I M Hudson J H Dell S R P Morris M I Ingle M Faliva
Associates: D Hunt R A Lucas A L Pitman D A Kinnersley M C Gould A Kitson J Carmichael Y N P Guellil

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Instruction: Email of instruction received from David Shaw, Managing Partner of Boards Direct, on 22 February 2016.

Further instruction on 7 March 2016 that the contents of this report may also be shared with Buttonfix Limited, Registered office address: 2 Coates Crescent, Coates Crescent, Edinburgh, EH3 7AL; Company number SC334746.

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Certificate - Bond Strength Testing of Button Fix System	1
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Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report. Your attention is drawn to the enclosed sample retention form and we would be grateful if you could complete the form and return it within one month from the date of the report.

Tests reported on sheets not bearing the UKAS mark in this report/certificate are not included in the UKAS accreditation schedule for this laboratory.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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TEST CERTIFICATE

Certificate:	56399/M/1/Rev1	Order Ref:	Email of Instruction 22/02/16
Samples Received:	25 February 2016	Tested By:	NAF
Test Date:	2 March 2016	Test Procedure:	In House
Client Details:	Boards Direct, Unit 4, Poplars Court, Lenton Lane, Nottingham, NG7 2RR		

BOND STRENGTH TESTING OF BUTTON-FIX SYSTEM

Test Details	:	Type 1 bonded plate and orange button
Adhesive	:	Permabond. Acrylic. TA426
Galvanised sheet steel	:	0.92 mm thick
Test equipment	:	Hounsfield tensometer ref.: C/002

TEST RESULTS

Sample Reference	Load Direction	Maximum Failure Load (kN)	Comments
MW 084-1	Vertical Load (Shear)	3.19 (325 kg)	Bond failed between bonded plate and steel sheet
MW 084-2	85 degrees to vertical	1.11 (113 kg)	Bond failed between bonded plate and steel sheet

For Sandberg LLP

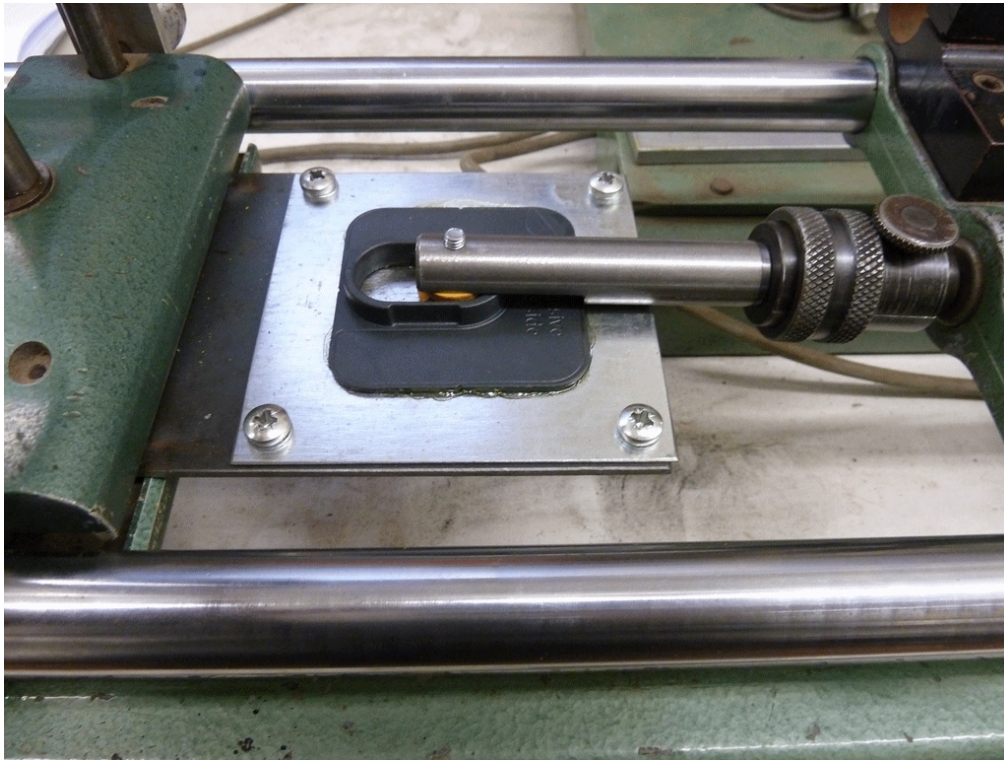


Date: 8 March 2016

Neale Fetter - Assistant Manager Metallurgy Department

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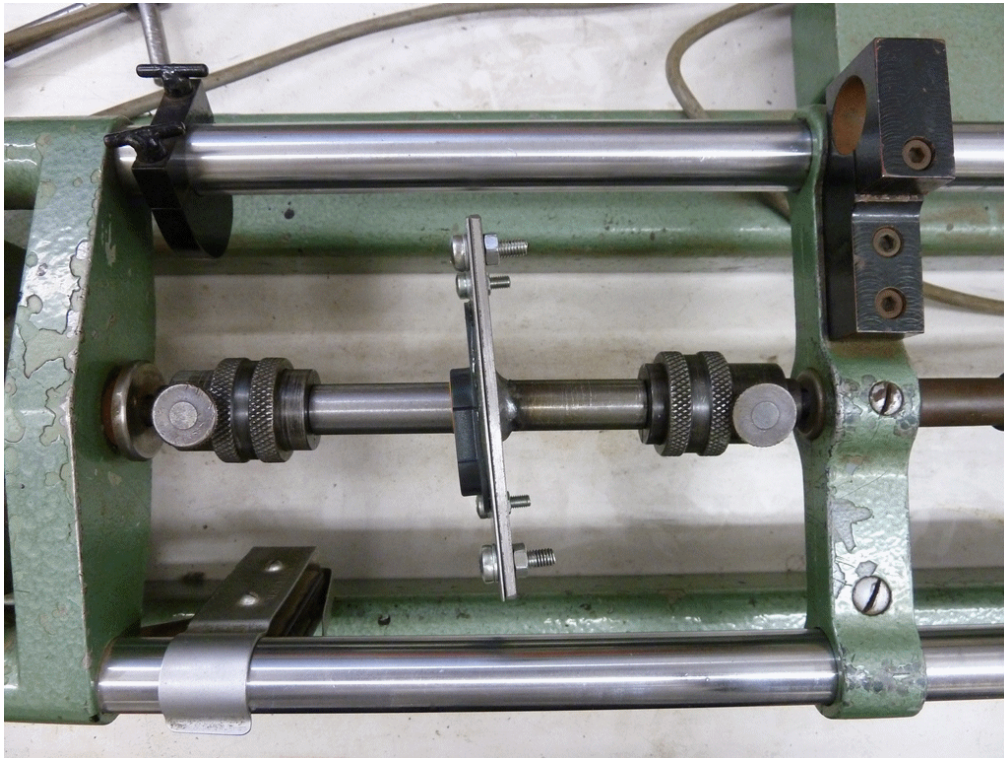
APPENDIX A



Photograph 1 A view showing the test set-up for the vertical (shear) test.



Photograph 2 A view showing the vertical (shear) failure mode. The bond between the plate and sheet steel failed.



Photograph 3 A view showing the test set up for the 85 degrees from vertical test.



Photograph 4 A view showing the 85 degrees from vertical test failure mode. The bond between the plate and sheet steel failed.

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Where our involvement consists exclusively of testing samples, the results and our conclusions relate only to the samples tested.