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65275/M-A

LABORATORY TESTING OF BUTTON- FIX
SYSTEM - TYPE 1 FLUSH - NYLON

BUTTONFIX LIMITED

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CONSULTING ENGINEERS

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BUTTON-FIX LIMITED

Buttonfix Limited
Unit A, 1 Britton Street
London
EC1M 5NW

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For the attention of: Mr Tony Wills

16 July 2019

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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.

Summary of Test Results:

Type 1 Flush - Nylon

Test	Vertical Shear (kg) MZ 567	Horizontal Shear (kg) MZ 568	Pull Apart (kg) MZ 569
A	304.9	252.9	93.81
B	281.9	270.7	81.47
C	306.4	258.0	87.39
Average	298	261	88
Standard Deviation	11	7	5

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TEST CERTIFICATE

Certificate:	65275/M - A/1	Order Ref:	PO - 19/190
Samples Received:	03 June 2019	Tested By:	NAF/AT
Test Date:	07 June 2019	Test Procedure:	In House
Client Details:	Buttonfix Limited, Unit A, 1 Britton Street, London, EC1M 5NW		

STRENGTH TESTING OF BUTTON-FIX SYSTEM

Test Details:	Type 1 Flush - Nylon
Button-Fix Type:	Glass Filled Nylon
Fixing Screw Details:	Spax 4.5 x 25mm countersunk for the fixes and 5 x 20mm countersunk for the buttons
Substrate Material:	18 mm Birch Faced Plywood
Test equipment:	Hounsfield Tensometer ref.: C/002

TEST RESULTS

Sample Reference	Load Direction	Maximum Failure Load (kN)	Comments
MZ 567-A	X - Vertical Shear Rebated	2.990 (304.9 kg)	Pulled out screw
MZ 567-B	X - Vertical Shear Rebated	2.765 (281.9 kg)	Pulled out screw
MZ 567-C	X - Vertical Shear Rebated	3.005 (306.4 kg)	Pulled out screw
MZ 568-A	Y - Horizontal Side Shear Rebated	2.480 (252.9 kg)	Pulled out screw
MZ 568-B	Y - Horizontal Side Shear Rebated	2.655 (270.7 kg)	Pulled out screw
MZ 568-C	Y - Horizontal Side Shear Rebated	2.530 (258.0 kg)	Pulled out screw
MZ 569-A	Z - Pull Out from Panel Surface Mounted	0.920 (93.81 kg)	Distortion of screw
MZ 569-B	Z - Pull Out from Panel Surface Mounted	0.799 (81.47 kg)	Distortion of screw
MZ 569-C	Z - Pull Out from Panel Surface Mounted	0.857 (87.39 kg)	Distortion of screw

For Sandberg LLP



Date: 16 July 2019

Neale Fetter - Assistant Manager Metallurgy Department

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APPENDIX A

Photographs 1 to 6



Photograph 1 A view showing the general condition of the fixing after a vertical shear test on a type 1 - nylon fixing.



Photograph 2 A view showing the general condition of the button after a vertical shear test on a type 1 - nylon fixing.



Photograph 3 A view showing the general condition of the fixing after a horizontal shear test on a type 1 - nylon fixing.



Photograph 4 A view showing the general condition of the button fixing location after a horizontal shear test on a type 1 - nylon fixing.



Photograph 5 A view showing the general condition of the fixing after a pull apart test on a type 1 - nylon fixing.



Photograph 6 A view showing the general condition of the button after a pull apart test on a type 1 - nylon fixing.

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

