Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

BS 6375-2&3:2009

Test of: Flamebreak 430 – Single Door – Door Type 2

Performance of windows & doors - Part 2: Operation & strength & Part 3: Additional performance characteristics

A Report To:
Pacific Rim Wood Ltd
Ground Floor Suite, Block B, Old Kelways, Somerton Road, Langport, Somerset, TA10 9SJ

Document Reference:
WIL 501511-1

Date: 13/12/2021

Copy: 1

Issue No.: 1

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

TEST CONCLUSIONS

Samples of:

Manufacturer	Pacific Rim Wood Ltd
Product	Flamebreak
Model	Flamebreak 430 – Single Door – Door Type 2

have been tested in accordance with: BS6375-2:2009 & BS6375-3:2009 Annex A&C.
By Element Materials Technology, a UKAS accredited Testing Laboratory (No. 0621)

At Unit 3 Wednesbury One, Black Country New Road, Wednesbury, WS10 7NZ.
Results and comments as detailed below:

BS6375-2 Clause	Description	Compliance
6.1	**UK Category of Duty - Medium**	**YES**
6.2	Operating forces – Class 1	YES
6.3	Mechanical strength – Class 2	YES
6.3.1	Vertical load – Class 2	YES
6.3.2	Static torsion – Class 2	YES
6.3.3	Soft and heavy body impact – Class 2	YES
6.3.4	Hard body impact – Class 2	YES
6.4	Load bearing capacity of safety devices – 350N	N/A
6.5	Resistance to repeated opening and closing – Class 4	YES

BS6375-3 Clause	Description	Compliance
Annex A	**Basic security**	**YES**
Annex C	**Closure against obstruction**	**YES**

No inferences can be made regarding performance against other requirements of this standard

Tests marked " N/A" are not applicable to the sample under test.
Tests marked "N/T" were not applied to the sample under test

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

AUTHORISATION

Tests performed by: Chris Bryan, Senior Test Engineer Josh Ratcliffe, Test Engineer
Report issued by: Chris Bryan, Senior Test Engineer Signed    Date 10/12/2021 For and on behalf of Element Materials Technology
Report authorised by: Mark Garfield, Door & Window Laboratory Manager Signed    Date 10/12/2021 For and on behalf of Element Materials Technology
Report issued: 13 December 2021

UKAS TESTING
0621

NOTE.
Tests marked “Not UKAS Accredited” are not covered by the Laboratory UKAS accreditation schedule.

Tests marked NT were not tested
Tests marked NA are not applicable to the product on test.

The laboratory has tested the product supplied by the client as sampled in accordance with their own requirements

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

CONTENTS **PAGE NO.**

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

TEST DETAILS

CLIENT DETAILS

Company name	Pacific Rim Wood Ltd
Address	Ground Floor Suite, Block B, Old Kelways, Somerton Road, Langport, Somerset, TA10 9SJ
Contact	Shaun Hannan

ORDER DETAILS

Order number	PRW/PAS24/GPM
Dated	26/01/2021

SAMPLE DETAILS

Outer frame	955 x 2211 x 110mm
Opening leaves	861 x 2116 x 44mm
Configuration	Inward-opening single timber doorset
Material	Timber
Details of Hardware	
Hinges	4No. NICO Manufacturing LTD NICO security hinge. Ref: 53150R10SEC
Lock	Winkhaus GmbH & Co Multipoint lock. Ref: Winkhaus AV2 F2070
Cylinder	ERA 35/35 key/thumbturn. Ref: BS-L-T3535-51
Handles	Winkhaus GmbH & Co Lever handles with face plates. Ref: Winkhaus Melbourne 1672/2390N – ZA/3816N

TEST DETAILS

Test specification	BS 6375-2:2009 & BS 6375-3 :2009
Full test	Yes
Test to clauses	All
Test methods	BS EN 12046-2:2000 operating forces BS EN 947:1999 vertical load BS EN 948:1999 static torsion BS EN 949:1999 soft body impact BS EN 950:1999 hard body impact BS EN 948:1999 strength of safety devices BS EN 1191:2012 Annex H repeated opening & closing BS 6375-3:2009 Annex A basic security BS 6375-3:2009 Annex C closure against obstruction
Sample received	09/03/2021
Test started	10/03/2021
Test completed	29/03/2021
Special Test requirements	
Other reports to be used in conjunction with this report	

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

TEST PROCEDURE

Introduction

This test report should be read in conjunction with the Standard BS 6375-2:2009 Performance of windows and doors – Part 2: Classification for operation and strength characteristics and guidance on selection & specification and Part 3: Classification for additional performance characteristics and guidance on seletion and specification.

The specimens were judged on their ability to comply with the performance criteria as required in BS 6375-2:2009 and BS6375-3:2009, with test methods BS EN 12046-2:2000, BS EN 947:1999, BS EN 948:1999, BS EN 949:1999, BS EN 950:1999, BS EN 1191:2012 Annex H and BS6375-3:2009 Annex A&C. classified in accordance with BS 6375-2:2009, BS EN 12217:2015, BS EN 1192:2000 & BS EN 12400:2002.

Instruction To Test

Initial requirement was for a UK category of use of medium duty as defined in BS6375-2, requiring a performance of Class 2 for operating forces, Class 2 for mechanical strength, a threshold value of 350N for load-bearing capacity of safety devices, and Class 4 for repeated opening and closing.

Test Specimen Construction

A description of the test construction is given in the Schedule of Components. The description is based on a detailed survey of the specimens and information supplied by the sponsor of the test.

Installation

The doorset was supplied mounted within a timber sub-frame of nominal section 75 x 100mm fitted flush with the exterior face, in accordance with the clients fitting instructions.

Sampling

The samples were not independently witnessed or selected and were provided direct from the test sponsor.

Test Climate

The sample was conditioned in the laboratory in the range 15-30 °C and 25-75% humidity.

The temperature and humidity in the lab was maintained in the range 18.3-21.7°C and 34-50.1% humidity for the duration of the test.

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

INITIAL OBSERVATIONS

The internal face of the sample

The external face of the sample

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

Sample hinge

Sample top lock

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

Sample handle

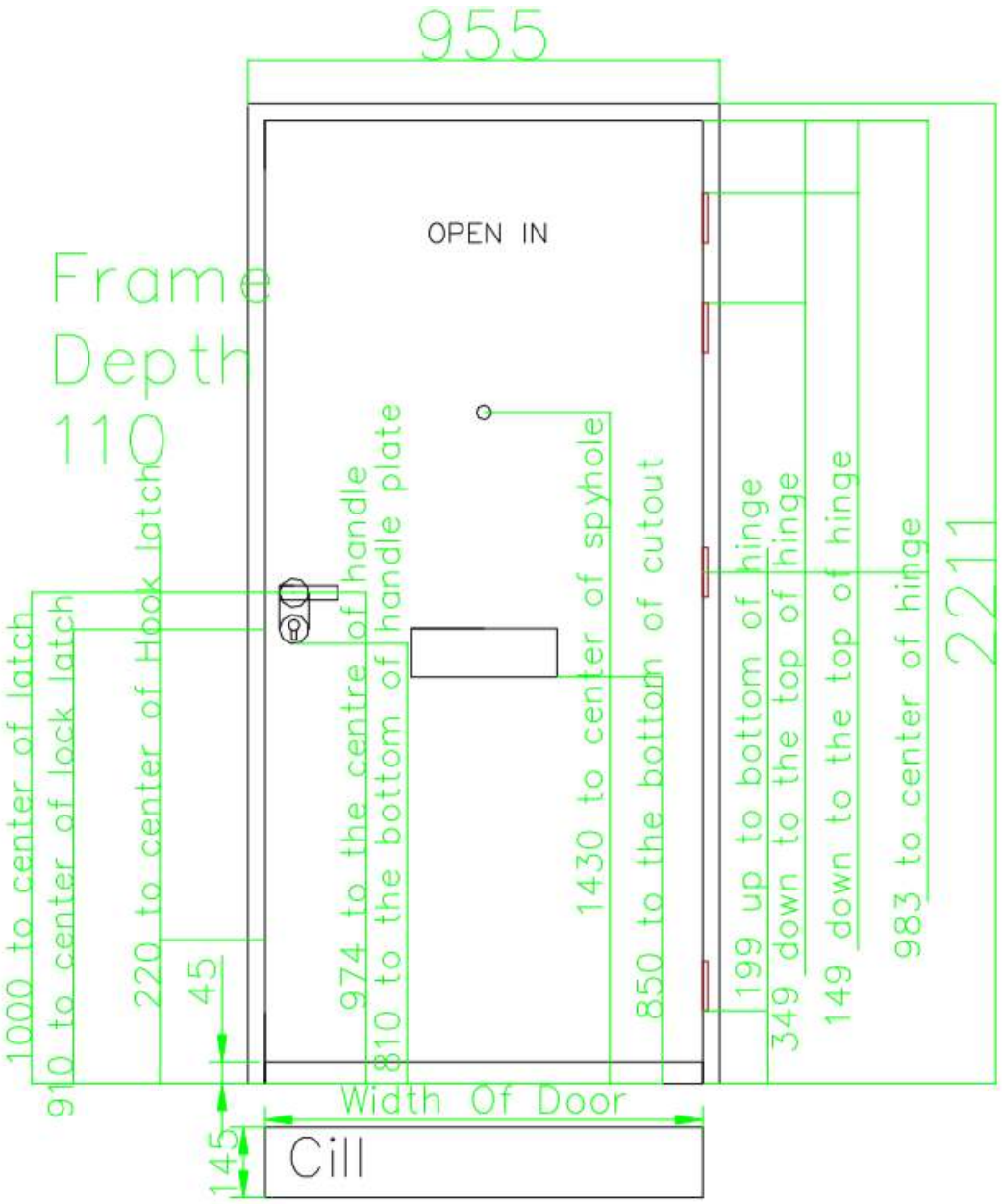
Sample centre dead bolt

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

TEST SPECIMEN

Figure 1- General Elevation of Test Specimen (External Face)

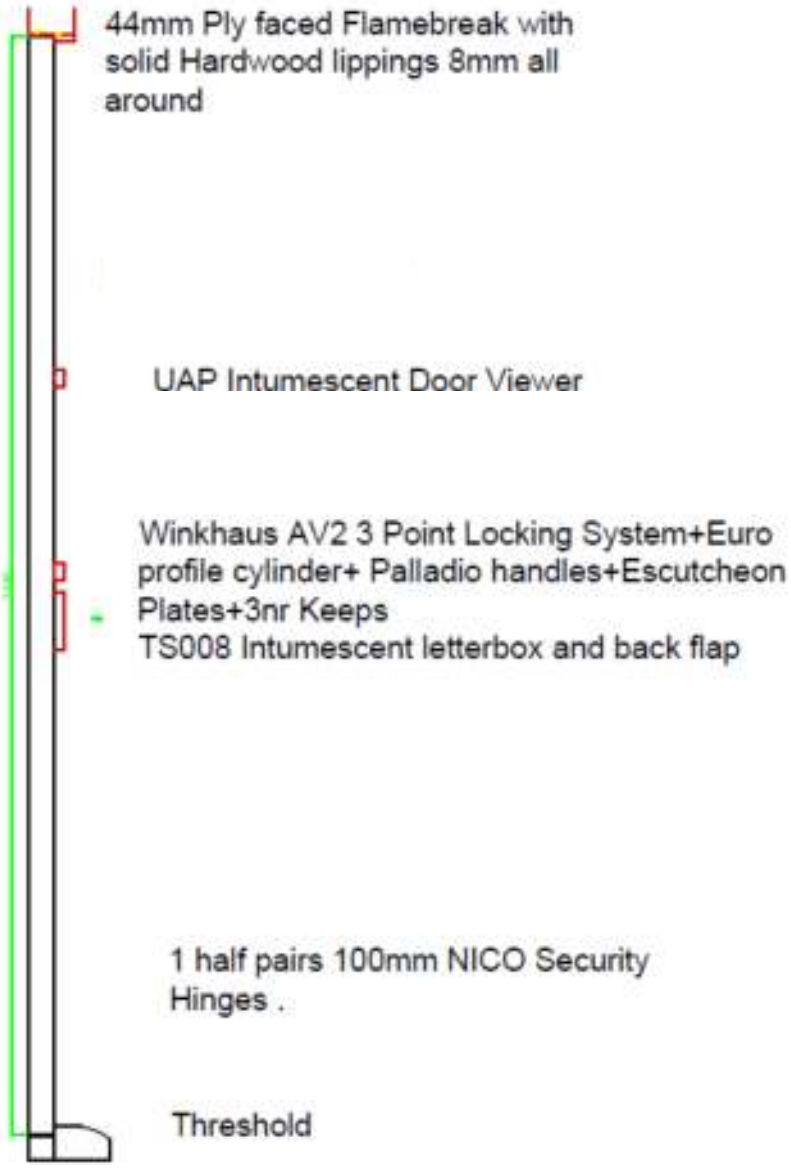


Do not scale. All dimensions are in mm

Figure 2 – Horizontal section

Do not scale. All dimensions are in mm

Figure 3 – Vertical section



Do not scale. All dimensions are in mm

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

SCHEDULE OF COMPONENTS

(Refer to Figures 1 to 3)
(All values are nominal unless stated otherwise)
(All other details are as stated by the sponsor)

Variants

None

Item		**Description**
1. Door frame head		
Reference	:	Custom
Material	:	Sapele
Density	:	661.52 kg/m^3 (stated)
Section size	:	110mm wide x 59mm thick
Rebate	:	50mm wide x 15mm deep integral with frame
Fixing jamb to head joints	:	Rebated butt joint
i. type	:	Wood screws
ii. size	:	5.0mm diameter x 100mm long
iii. quantity	:	6No. / frame (3No. for each joint)
Details of adhesive		
i. supplier	:	Timbond Professional
ii. reference	:	PVA wood adhesive D3 water resistant
2. Door frame jamb		
Reference	:	Custom
Material	:	Sapele
Density	:	661.52 kg/m^3 (stated)
Section size	:	110mm wide x 59mm thick
Rebate	:	50mm wide x 15mm deep integral with frame
3. Door frame sill		
Reference	:	Custom
Material	:	Sapele
Density	:	661.52 kg/m^3 (stated)
Section size	:	145mm wide x 60mm high
Rebate	:	50mm wide x 15mm deep integral with frame
Fixing jamb to sill joints	:	Butt joint
i. type	:	Wood screws
ii. size	:	5.0mm diameter x 100mm long
iii. quantity	:	6No. / frame (3No. for each joint)
Details of adhesive		
i. supplier	:	Timbond Professional
ii. reference	:	PVA wood adhesive D3 water resistant

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

Item		Description
4. Door frame weather seals		
Description	:	Aquamac 21 draught strip seal
Manufacturer	:	Schlegel
Reference	:	
Fixing method	:	Slot into a pre-cut groove in the rebate
Position	:	All four rebated edges
Continuity	:	Uninterrupted by hardware
5. Door frame intumescent/smoke seals		
Description	:	15mm wide x 4mm thick intumescent brush strip
Manufacturer	:	Pyroplex
Reference	:	
Fixing method	:	Self adhesive
Position	:	In both jambs and head of frame; present in the bottom of the leaf as well
Continuity	:	Interrupted by hardware. All hardware items have intumescent pads behind them
6. Door leaf		
Supplier/manufacturer	:	Flamebreak 430 – Pacific Rim Wood Ltd
Overall leaf size		
i. active leaf	:	861mm wide x 2116mm high x 44mm thick
7. Door leaf internal framing		
Material	:	Mixed Tropical hardwood
Density	:	Approx. 480 kg/m^3 (stated)
Core section size	:	3 layer Falcatta core – each layer = 12.3mm thickness with lamels of width :- 36mm/40mm/42mm/45mm/47mm/54mm/56mm dependent on raw material availability.
Doorleaf framing section sizes		
i. top rail	:	36mm thick x 35mm deep – incorporating a 9mm x 9mm tongue
Details of adhesive		
i. supplier	:	Pamolite Adhesive Industries
ii. reference	:	Type 1 Melamine glue
8. Door leaf core		
Supplier/manufacturer	:	Flamebreak 430
Material	:	Albisia Falcatta – Trilaminate core
Density	:	140 – 360 kg/m3 (stated)
Thickness	:	35mm
Fixing into rebate	:	N/A

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

Item		Description
9. Door leaf facings		
Material	:	Nominal 4mm Ply Faced both sides
Density	:	Average 575 kg/m^3 (stated)
Thickness	:	Nominal 4mm
Details of adhesive		
i. supplier	:	Pamolite Adhesive Industries
ii. reference	:	Type 1 Melamine glue
10. Door leaf lippings		
Position	:	Fitted to two long edges, top and bottom
Material	:	Sapele
Density	:	Min 640 kg/m3 (Stated)
Section size	:	44mm wide x 8mm thick
Details of adhesive		
i. supplier	:	Adkwick
ii. reference	:	Kleibert 707.6
11. Hinges		
Supplier/manufacturer	:	NICO Manufacturing LTD
Description	:	NICO security hinge
Reference	:	53150R10SEC
Primary material	:	Steel
Size of knuckle	:	14mm diameter x 107mm high
Size of blades	:	102mm high x 31mm wide x 3mm thick
Quantity	:	4No. hinges / leaf
Intumescent protection (if applicable)	:	2No. 1mm thick x 100mm long x 30mm wide radius NOR910 Norsound intumescent pad. One applied between the hinge blade and frame and the other one between the other hinge blade and the leaf
Position of hinges		
i. top hinge	:	149mm from top of door to top of hinge
ii. middle hinge	:	932mm from top of door to top of hinge
iii. bottom hinge	:	1850mm from top of door to top of hinge
iv second hinge from the top	:	349mm from top of door to top of hinge
Fixing hinge to doorleaf		
i. type	:	Wood screw
ii. size	:	4.5mm diameter x 30mm long
iii. quantity	:	4No.
Fixing hinge to frame		
i. type	:	Wood screw
ii. size	:	4.5mm diameter x 30mm long
iii. quantity	:	4No.

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

Item		Description
12. **Lock**		
Supplier/manufacturer	:	Winkhaus GmbH & Co
Description	:	Multipoint lock
Reference	:	Winkhaus AV2 F2070
Face plate size	:	1770mm high x 20mm wide x 3mm thick
Intumescent protection (if applicable)	:	Interdens 1mm OFFICIAL Winkhaus AV2 kit lock protection
Position	:	974mm from bottom of door to centre of spindle
Fixings		
type	:	Wood screw
size	:	3.5mm diameter x 50mm long
quantity	:	12no
13. Lock Keeps		
Supplier/manufacturer	:	Winkhaus GmbH & Co
Reference		
i. top & bottom keeps	:	STVSBAV2
ii. centre keep	:	STVSBFR24
Material	:	Stainless steel
Intumescent protection (if applicable)	:	Interdens 1mm OFFICIAL Winkhaus AV2 kit keep protection
Overall size		
i. top & bottom keeps	:	175mm high x 24 mm wide x 2 mm thick
ii. centre keep	:	234mm high x 24 mm wide x 2 mm thick
Fixing keeps to frame		
i. type	:	Wood screw
ii. size	:	3.5mm diameter x 35mm long
iii. quantity	:	4No. 3.5mm thread diameter x 35mm long for top/bottom keep
	:	3No. 3.5mm thread diameter x 35mm long for centre keep
14. Cylinder		
Supplier/manufacturer	:	ERA
Description	:	35/35 key/thumbturn
TS007 (if applicable)	:	Yes
Reference	:	BS-L-T3535-51
Overall size	:	34mm high x 17mm wide x 70mm long euro profile
Fixings		
i. type	:	M5 Machine Screw
ii. quantity	:	1 No.

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

Item		Description
15. Lever handles		
Supplier/manufacturer	:	Winkhaus GmbH & Co
Description	:	Lever handles with face plates
Reference	:	Winkhaus Melbourne 1672/2390N – ZA/3816N
TS007 certification ref (if applicable)	:	
Material	:	Aluminium
Overall size	:	External face plate: 258mm high x 34mm wide x 15mm thick x 4mm cylinder incorporated escutcheon projection
	:	Internal face plate: 258mm high x 34mm wide x 10mm thick
Lever length	:	Handles: 30mm high x 135mm wide x 65mm projection
Fixings		
i. type	:	Steel bolts
ii. size	:	5.0mm diameter x 60mm long
iii. quantity	:	3No.
16. Door viewer		
Supplier/manufacturer	:	UAP Limited
Description	:	14mm Wide angle door viewer
Reference	:	
Overall size	:	14mm Ø with 22 mm Ø to unexposed face, 26 mm Ø to exposed face
Door hole size	:	16.4mm
Intumescent protection (if applicable)	:	45mm long x 40mm wide x 1mm thick reinforced bespoke intumescent jacket rolled and inserted in the aperture prior to the door viewer being installed
Fixing height (centre of viewer)	:	1430mm from bottom of door
17. Letter Plate		
Supplier/manufacturer	:	UAP Limited
Description	:	Soterian TS008 letterplate
TS008 (if applicable)	:	Yes
Reference	:	
Aperture size	:	External size 40 mm high x 259.5 mm wide Internal size 55 mm high x 259.5 mm wide
Door slot size	:	
Fixing height	:	850mm up to bottom of aperture
Cowl	:	115mm high x 305mm wide x 6mm thick x 35 mm projection
Intumescent protection (if applicable)	:	Bespoke intumescent protection pre-fitted on internal framing and external face plate
Fixings		
i. type	:	Various screws and bolts provided in the letter plate kit

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

PERFORMANCE CRITERIA & TEST RESULTS

Clause	Result	Pass/Fail
BS6375-2 6.2 Operating forces	The average force required to enable the sample to latch must not exceed those defined in table 1 of BS EN 12217, Class 1 (75N) for external doorsets & class 2 (50N) for internal doorsets. The average force or torque required to operate the hardware must not exceed those defined for the relevant class in table 1 on BS EN 12217, Class 1 (100N or 10Nm) for external doorsets & class 2 (50N or 5Nm) for internal doorsets). The average force required to commence and maintain motion must not exceed those defined for the relevant class in table 1 on BS EN 12217, Class 1 (75N) for external doorsets & Class 2 (50N) for internal doorsets The sample met the requirements of Class 2. An average force of 9.37N was required to latch the sample. An average force of 35.47N was required to disengage and 0N was required to engage the hardware. An average torque of 0.12Nm was required to lock and 0.09Nm was required to unlock the doorset. An average force of 10.5N was required to commence and maintain motion.	**PASS CLASS 2**
BS6375-2 6.3.1 Vertical load	The doorset was tested in accordance with EN 947, a load of 600N was applied as required for Class 2 (medium duty). To achieve the requirements of the class the resultant residual deformation should not exceed 1mm, and the specimen should continue to operate normally. The doorset was tested in accordance with EN 947, under a load of 600N as required by Class 2 of EN 1192, with a preload of 200N. To achieve the requirements of the class the resultant residual deformation should not exceed 1mm, and the specimen should continue to operate normally. A load of 600N was applied, no damage was observed, and the doorset continued to operate normally. The sample met the requirements of Class 2. The deflection under full load was 4.33mm, and the residual deflection was 0.65mm.	**PASS CLASS 2**
BS6375-2 6.3.2 Static torsion	The doorset was tested in accordance with EN 948, a load of 250N was applied as required for Class 2 (medium duty). To achieve the requirements of the class the resultant residual deformation should not exceed 2mm, and the specimen shall continue to operate normally. The doorset was tested in accordance with EN 948, under a load of 250N as required by Class 2 of EN 1192, with a preload of 200N. To achieve the requirements of the class the resultant residual deformation	**PASS CLASS 2**

Clause	Result	Pass/Fail
	should not exceed 2mm, and the specimen should continue to operate normally. A load of 250N was applied, no damage was observed ,and the doorset continued to operate normally. The sample met the requirements of Class 2. The deflection under full load was 27.44mm, and the residual deflection was 0.74mm.	
BS6375-2 6.3.3 Soft & heavy body impact	The doorset was tested in accordance with EN 949, a soft & heavy body impact of 60J was applied as required for Class 2. To achieve the requirements of the class the resultant residual deformation in flatness should not exceed 2mm, and the specimen shall continue to operate normally. The doorset was tested in accordance with EN 949, a soft & heavy body impact of 60J was applied as required for class 2. To achieve the requirements of the class the resultant residual deformation in flatness should not exceed 2mm, and the specimen shall continue to operate normally.. The sample met the requirements of class 2, with a residual deformation of 0mm on the internal face, and a residual deformation of 0mm on the external face. No damage was observed during the test	**PASS CLASS 2**
BS6375-2 6.3.4 Hard body impact	The doorleaf was tested in accordance with EN 950, hard body impacts of 3J were applied as required for Class 2. To achieve the requirements of the class the mean value of the diameters of indentation should not exceed 20mm, and the mean values of the depths of indentation should not exceed 1.0mm, with the maximum depth not exceeding 1.5mm. The doorleaf was tested in accordance with EN 950, hard body impacts of 3J were applied as required for class 2. To achieve the requirements of the class the mean value of the diameters of indentation should not exceed 20mm, and the mean values of the depths of indentation should not exceed 1.0mm, with the maximum depth not exceeding 1.5mm. The sample met the requirements of class 2. The mean value of the depth of indentation was 0.1mm. The maximum value of the depth of indentation was 0.15mm. The mean value of the diameter of indentation was 7.93mm. No damage was observed during the test.	**PASS CLASS 2**

Clause	Result	Pass/Fail
BS6375-2 6.4 Load-bearing capacity of safety devices	This test was not carried out as no such device was fitted to the doorset.	N/A
BS6375-2 6.5 Resistance to repeated opening and closing	Prior to the cyclic operation test, when tested in accordance with EN 12046-2, the sample met the requirements for Class 2. The sample met the requirements of Class 2. An average force of 13.1N was required to latch the sample. An average force of 38.93N was required to disengage and N was required to engage the hardware. An average torque of 0.12Nm was required to lock and 0.1Nm was required to unlock the doorset. An average force of 13.9N was required to commence and maintain motion.	**PASS**
	The number of cycles completed by the doorset was 50,000, as required by Class 4 of the standard, for medium duty. The stroke of the doorleaf was 90 degrees. Observations and measurement were carried out at intervals of 25% of the total cycles. No lubrication or adjustment was specified by the client. The weight of the tested doorleaf was approximately 30 to 31kg, and the dead load applied on the leaf by the operating equipment was 0.65 kg. The sample met the requirements of Class 2. An average force of 13.1N was required to latch the sample. An average force of 38.93N was required to disengage and N was required to engage the hardware. An average torque of 0.12Nm was required to lock and 0.1Nm was required to unlock the doorset. An average force of 13.9N was required to commence and maintain motion.	**PASS CLASS 4**
	Following the cyclic operation test, when tested in accordance with EN 12046-2, the sample continued to meet the requirements for Class 2. The sample met the requirements of Class 2. An average force of 13.27N (V=1%) was required to latch the sample.	**PASS**

Clause	Result	Pass/Fail
	An average torque of 0.11Nm (V=-6)% was required to lock and 0.11Nm (V=10%) was required to unlock the doorset. An average force of 13.7N (V=-1%) was required to commence and maintain motion.	
BS6375-3 Annex A Basic security	Attacks were made with the craft knife to try and remove the material from around the hinge and try to gain access to the hinge fixings. Some of the material was removed, but no further damage was made. Total attack time was 3 minutes. Entry not achieved.	**PASS**
BS6375-3 Annex C Closure against obstruction	Damage was observed timber around hinge has split under the application of a 200N load with the bottom hinge corner obstructed from closing. The doorset continued to latch and the operating forces met the requirements of Class 1. An average force of 66.77N was required to latch the sample. An average force of 31.97N was required to disengage and 0N was required to engage the hardware. An average torque of 0.09Nm was required to lock and 0.11Nm was required to unlock the doorset. An average force of 28.67N was required to commence and maintain motion.	**PASS**

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

CONCLUSIONS

Evaluation against objective	The sample as provided by the client was subjected to operational & strength testing in accordance with BS 6375-2:2009 and achieved the requirements for a UK category of use of medium duty. The sample was also subjected to closure against obstruction testing in accordance with BS 6375-3:2009 Annex A & Annex C and achieved the requirements
Observations & comments	

LIMITATIONS

Limitations	The results relate only to the behaviour of the specimens of the element of construction under the particular conditions of test. They are not intended to be the sole criteria for assessing the potential performance of the element in use, nor do they reflect the actual behaviour in use.
Range of door assemblies covered by this report	It is our opinion that the range of door assemblies covered by this report are limited to the following ▪ Assemblies with identical hardware fitted no further apart than in the tested assembly ▪ Assemblies of the same or smaller overall dimensions to the tested assembly
Uncertainty of Measurement	The uncertainties of measurements calculated for a confidence level of 95% throughout these tests are within the limits of these tolerances. The standard specifies the following tolerances ▪ Forces: ±2% ▪ Distances: ±1mm for tape measures ± 0.01mm for dial gauges ▪ Times: ±5s

Element Materials Technology
Unit Three, Wednesbury One
Black Country New Road
Wednesbury
WS10 7NZ, UK

0121 506 7500
Element.com

REVISION HISTORY

This issue of the report replaces all previous issues that are now withdrawn.

Issue No :	**Re - Issue Date :**
Revised By:	**Approved By:**
Reason for Revision:	

END OF REPORT