

**Report in Accordance with  
PAS 24:2016**

**Enhanced security performance  
requirements for doorsets and  
windows in the UK**

**CONFIDENTIAL**

Report reference: CW21150-1 Rev2

Issue date: 30 July 2021

Project: Single timber door

Prepared for: VLine Doorsets  
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## 1 Introduction

This document describes the testing conducted in accordance with PAS 24:2016 on the single inward opening timber doorset. The testing was commissioned by Wayne Humphries on behalf of VLine Doorsets.

The testing was carried out by Build Check Ltd test laboratory at Unit 3 Lincoln Park Business Centre, Lincoln Road, High Wycombe, HP12 3RD. The testing was conducted on 14 May 2021. The testing was not witnessed.

This report is only valid for the conditions under which the test was conducted. All measurement devices, instruments and other relevant equipment were calibrated and traceable to National Standards.

## 2 Summary of Results

<b>Overall test result</b>	Pass
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The following summarises the results of testing carried out, in accordance with the relevant test methods of PAS 24: 2016.

The overall results achieved for enhanced security performance consisted of the following tests on the supplied samples (see section 5 for more details).

Sample	Test Date	Test	Test ref	Pass/fail
1	13/05/2021	Manipulation test A	B.4.3	Pass
2	13/05/2021	Manipulation test B	B.4.3	Pass
-	-	Infill manual test	B.4.4.2	-
-	-	Infill mechanical test	B.4.4.3	-
1	13/05/2021	Manual cutting test A	B.4.4.4	Pass
1	13/05/2021	Manual cutting test B	B.4.4.4	Pass
2	13/05/2021	Mechanical loading test	B.4.5	Pass
1	13/05/2021	Manual check test	B.4.6	Vulnerable
2	13/05/2021	Additional mechanical loading test	B.4.7	Pass
3	13/05/2021	Soft body impact test	B.4.8	Pass
3	13/05/2021	Hard body impact test – door leaf	B.4.9.2.2	Pass
-	-	Hard body impact test – infill medium	B.4.9.2.3	-
1	13/05/2021	Security hardware and cylinder test	Annex A	Pass

The doorset passed PAS 24:2016 requirement for D.

The doorset range covered by this report is only applicable to the size and configuration tested.

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### 3 Authorisation

	<b>Issued by:</b>	<b>Checked by:</b>
<b>Signature:</b>		
<b>Name:</b>	Dennis Humm	Richard Bate
<b>Title:</b>	Test Engineer	Technical Director

Revision 1 – August 2021 – Revision of report CW21150-1 by including description of door leaf

Revision 2 – May 2022 – Revision of report CW21150-1 by improving description of doorset and removing spelling error, added in missing hardware.

### 4 Test Details

Configuration: single doorset

Nominal Overall Dimensions:

Outer frame (w x h): 2085mm x 995mm x 80mm  
 Door Leaf (w x h): 2035mm x 925mm x 52mm

The specimen(s) were received on: 12/05/2021

The test sample(s) were selected and provided direct from the client.

The specimen was conditioned in the laboratory at a temperature between 15 to 30°C and a relative humidity between 25 to 75%. The conditioning time was a minimum of 12 hours.

Sample	Test Date	Temperature	Recorded Humidity	Correct Humidity
1-3	13/05/2021	16°C	39%RH	49%RH

The doorset specimens were supplied mounted into a nominally 50mm x 100mm sub-frame in accordance with the manufacturer's installation requirements. They were secured into the test rig (TR1) by the responsible engineer.

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#### 4.1 Description of Specimen

Frame Profiles	Ref. No.	Material Type, Manufacturer's Name, Density (timber only) & Surface Treatment	Dimensions (Height & Width)
Outer Frame	-	Sapele, 640kgm <sup>3</sup> , Sawed	80mm x 44mm
Joint Type	Trenched, Glued and Screws (94 x 60mm)		

Door Leaf	Ref. No.	Material Type, Manufacturer's Name, Density (timber only) & Surface Treatment	Dimensions (Height & Width)
Stiles and Rails	-	Sapele, 640kgm <sup>3</sup> , Sawed	45mm x 44mm
Core	-	Chipboard 44mm, 600 kgm <sup>3</sup> , stapled (14x13x9mm) to stiles and rails	44mm thickness
Facings	-	HDF subface 4mm, 700 kgm <sup>3</sup> , glued to surface of leaf with PVAc adhesive	4mm thickness
Joint Type	Glue and staples (14x13x9mm)		

Weather Seals	Ref. No.	Material Type/ Manufacturer's Name	Continuous or Joined @ Corners
Frame Rebate	Pyro1504-9010FS	Pyrosist 9010 (15 x 4 2mm)	Butt Joint at corners (head)

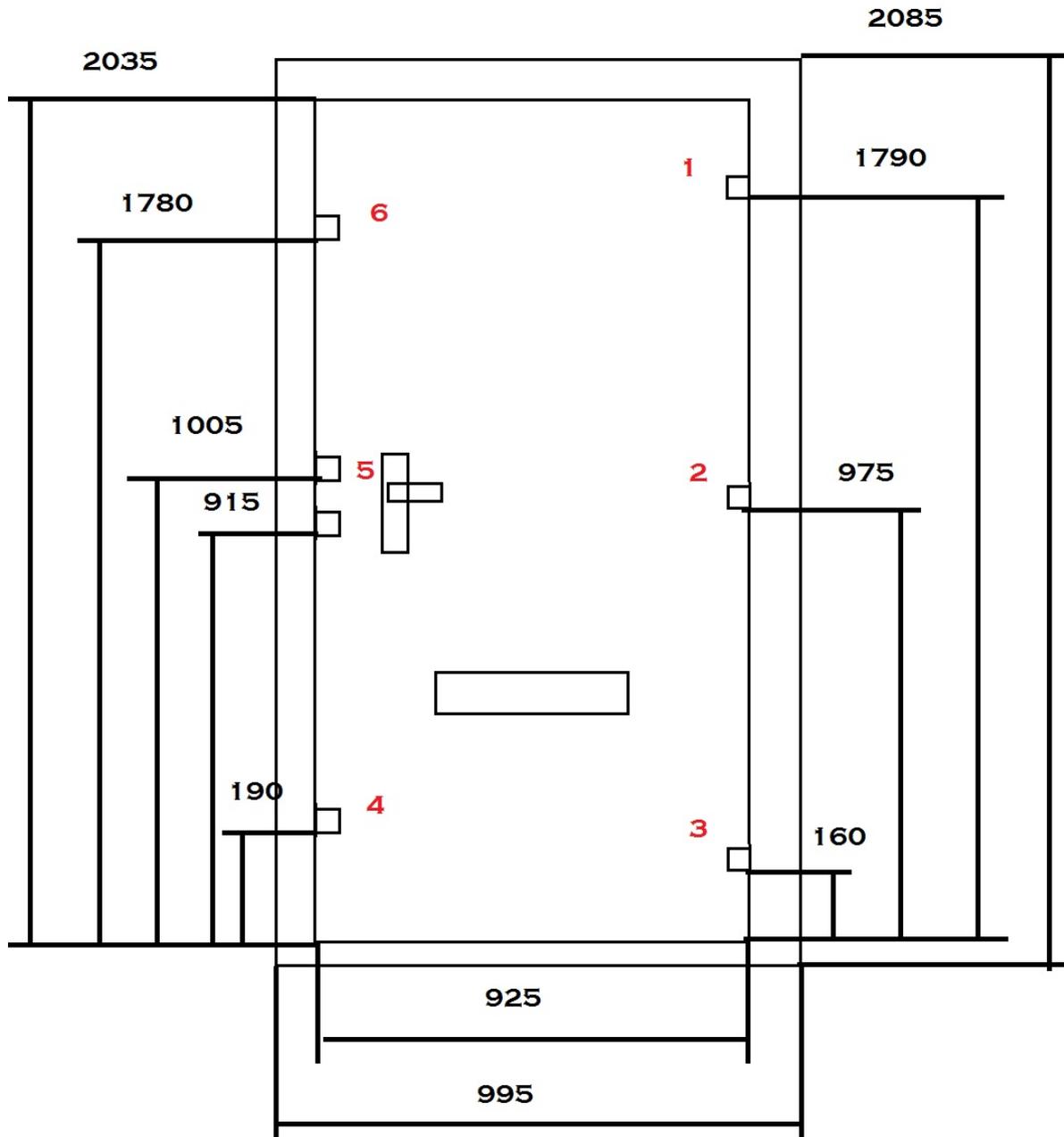
Hardware	Ref. No.	Manufacturer's and Product Name	Fixings
Lock	GU 6-36030-69-0-1	GU Secury Automatic vds	10No. 4 x 40mm Wood Screws
Lock Keeps	L- 1000-09 +24	09- centre keep 24- dead bolt keep	2No. 4 x 40mm Wood Screws
Handles	Deyve-SN-DEV	Darcel 90C	Machine screw as kit
Hinges/ Friction Stays	BRI – 3 CE	Heroyma – BRI – 3 CE	4No. 4 x 40mm Wood Screw
Cylinder	Kentico	UAP - Kinetica	Machine Screw as kit
Door Viewer	EX114	Exitex Door viewer 14mm	-
Letter Plate	UAP Soterian	UAP Soterian TS008 305x75mm letter plate	2No. 5x52mm machine screws
Drop Sea,	A8100	Exisound Concealex A8100 20x12.5mm	2No. 4x30mm wood screws

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The above specimen specification was supplied by the client and not checked by the testing laboratory.

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**Figure 1 – Doorset elevation including hardware positions (external face) with mechanical loading points shown**



Points 1 to 6 refer to perpendicular/parallel loading points (see Section 5.)

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## 5 Performance Requirements and Results

PAS 24 Clause	Result	Pass/Fail
B.4.3 Manipulation test A	Used paint scraper and craft knife on the bottom lock for 3 minutes. Used the paint scraper and craft knife on the bottom hinge for 3 minutes. No entry was gained.	Pass
B.4.3 Manipulation test B	Used a paint scraper on the bottom lock for 3 minutes. No entry was gained.	Pass
B.4.4.4 Manual cutting test A	Used the craft knife to cut for 40 seconds Used the 25mm chisel to gouge until 1 minute 20 seconds Used the craft knife to cut until 2 minutes Used the 25mm chisel to gouge until 3 minutes No entry was gained.	Pass
B.4.4.4 Manual cutting test B	Used the 6mm chisel to gouge for 3 minutes. No entry was gained.	Pass
B.4.5 Mechanical loading test	Mechanical loads were applied to hinge points and locking points with results as follows (see figure 1 for positions): 1. 1.5kN towards the opposite edge and 4.5kN perpendicular. 2. 1.5kN towards the opposite edge and 4.5kN perpendicular. 3. 1.5kN towards the opposite edge and 4.5kN perpendicular. 4. 1.5kN towards the opposite edge and 4.5kN perpendicular. 5. 1.5kN towards the opposite edge and 4.5kN perpendicular. 6. 1.5kN towards the opposite edge and 4.5kN perpendicular. All loads were held for 10 seconds and no entry was gained.	Pass
B.4.6 Manual check test	Attacked below the bottom hinge with the nail bar and screwdriver for 3 minutes. Attacked below the bottom lock with the nail bar and screwdriver disengaging the bottom and mid lock in 3 minutes. Used 2 nail bars below the top lock for 3 minutes. Used a nail bar and screwdriver to attack below the top lock disengaging it in 2 minutes and 7 seconds gaining entry.  The additional load was located on the bottom lock corner where the initial point of failure was.	Vulnerable
B.4.7 Additional mechanical loading test	Extra: 1.5kN towards the opposite edge and 4.5kN perpendicular. This load was on the bottom lock corner. This load was held for 10 seconds and no entry was gained.	Pass
B.4.8 Soft body impact test	1. 800 position – impacted three times 2. 1250 position – impacted three times 2. 1700 position – impacted three times No entry gained	Pass
B.4.9.2.2 Hard body impact test (leaf)	1. Top hinge corner – impacted three times 2. Top hinge – impacted three times 3. Mid hinge – impacted three times 4. Bottom hinge – impacted three times 5. Bottom hinge corner – impacted three times 6. Bottom lock corner – impacted three times 7. Bottom lock – impacted three times	Pass

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PAS 24 Clause	Result	Pass/Fail
	8. Cylinder – impacted three times 9. Top lock – impacted three times 10. Top lock corner – impacted three times No entry gained	
Annex A Security hardware and cylinder test	<b>Part 1:</b> Used a craft knife to cut access for 38 seconds. Used the torque bar to remove the escutcheon until 44 seconds. Used the curved mole grips to snap the cylinder until 1 minute. Used the flat bladed screwdriver to attempt to unlock until 3 minutes. No entry gained. <b>Part 2:</b> Used a 3.9 x 45mm screw and the phillips screwdriver to screw into the cylinder for 45 seconds. Used the torque bar to attempt to pull on the screw until 3 minutes. No entry gained.	Pass

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**Figure 2 – Photograph of Specimen**



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