

PAS 24:2016

Test of:

Profile Developments open in door sets

Enhanced security performance requirements
for doorsets and windows in the UK

Customer:

Profile Developments



2526

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Signed:



Date: 7th August 2017

For and on behalf of ASSA ABLOY UK Test Laboratory

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Signed:



Date: 7th August 2017

For and on behalf of ASSA ABLOY UK Test Laboratory

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Note:

Tests marked "Not UKAS Accredited" are not covered by the Laboratory UKAS accreditation schedule

Results are valid only for the conditions under which the test was conducted and for the specific range of door sets / windows

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Origin of Request

Client Details

Company Name Profile Developments
Address Ballygiltenan North,
Glin,
Co. Limerick,
Ireland

Contact John Fletcher

Order Details

Order Number N/A
Dated N/A

Test Details

Sample Details

Product Single open in composite door sets
Model Number Palladio doors
Marking / Brand Profile developments
Manufacturer Profile developments
Date of Manufacture Not known
Other information None

Test Specification / Details PAS 24:2016– Enhanced security performance requirements for doorsets and windows in the UK
Date samples received 28th April 2017
Date test commenced 15th May 2017
Date test completed 16th May 2017
Job Number 2017-119
Any special test requirements None

Test Sample

Figure 1 – General Elevation

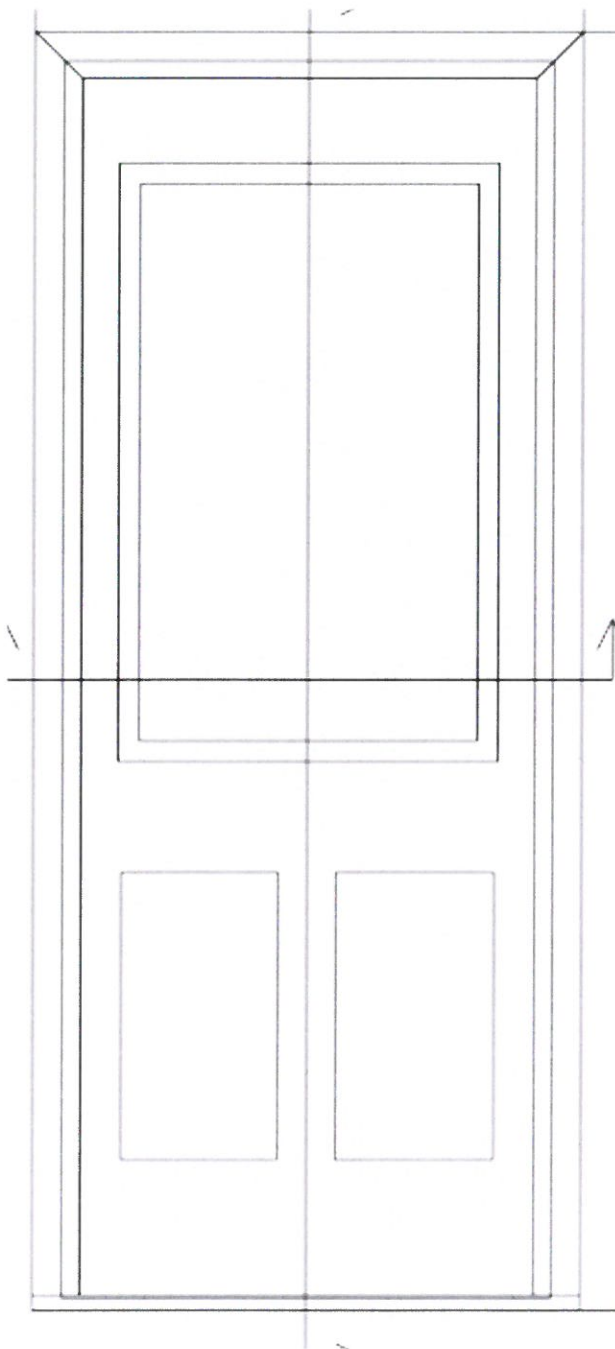


Figure 2 – Vertical Section

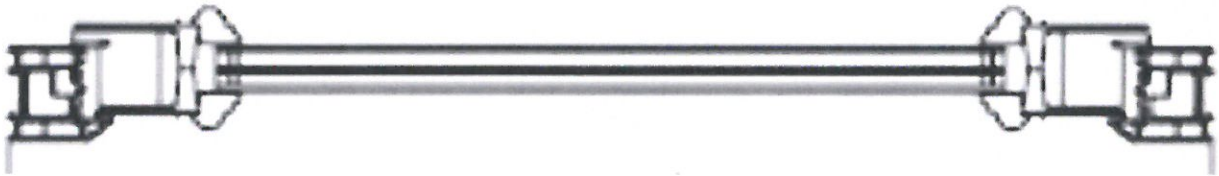
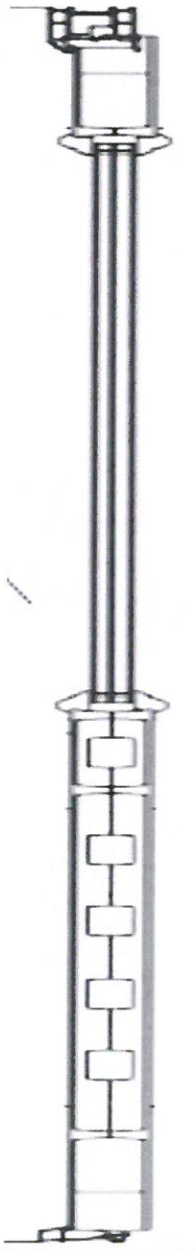


Figure 3 – Horizontal Section



Component Details

Sample Details:	Profile Developments Palladio door set
Fabricator:	Profile Developments & Liniar
Material:	UPVC FRAME & GRP DOOR LEAF. OUTER FRAME CORNERS WELDED, THRESHOLD MECHANICAL FIXED Outer frame : LSW016 Reinforcement : Steel LSR106 Leaf : 68mm Composite slab
Finish:	White
Lock:	Lock : Yale Mantis Keeps : Yale OPK
Hinges:	Palladio composite door hinge with dog bolt
Cylinder:	YALE 1* Superior cylinder
Handle:	Mila Pro Secure lever/Lever
Fixings:	Lock : 4.3 x 30 CSK Keep : 4.3 x 30 CSK Hinge to frame: 4.8 x 38 CSK drill point Hinge to leaf : 5.0 x 40 wood screw Handle : Supplied with handle set Glazing/Panel fixings : Glued
Letterplate:	N/A
Weather sealing:	Threshold : Stormguard
Glass:	Total thickness : Triple Glazing Supplier : Profile Developments
Glazing system:	Glued internal and external beads
Sample dimensions:	Frame : 1000 X 2100 Each Leaf : 850 X 1970

Note: The sample details are as supplied by the customer and have not been verified by the Laboratory

Hardware Positions

Locking Point	Position
Top roller	280mm from top of leaf
Top hook	400mm from top of leaf
Top middle roller	885mm from top of leaf
Middle bolt	1100mm from top of leaf
Bottom middle roller	750mm from bottom of leaf
Bottom hook	290mm from bottom of leaf
Bottom roller	130mm from bottom of leaf
Top hinge	150mm from top of leaf
Top dog bolt	245mm from top of leaf
Top middle hinge	670mm from top of leaf
Bottom middle hinge	670mm from bottom of leaf
Bottom dog bolt	300mm from bottom of leaf
Bottom hinge	145mm from bottom of leaf

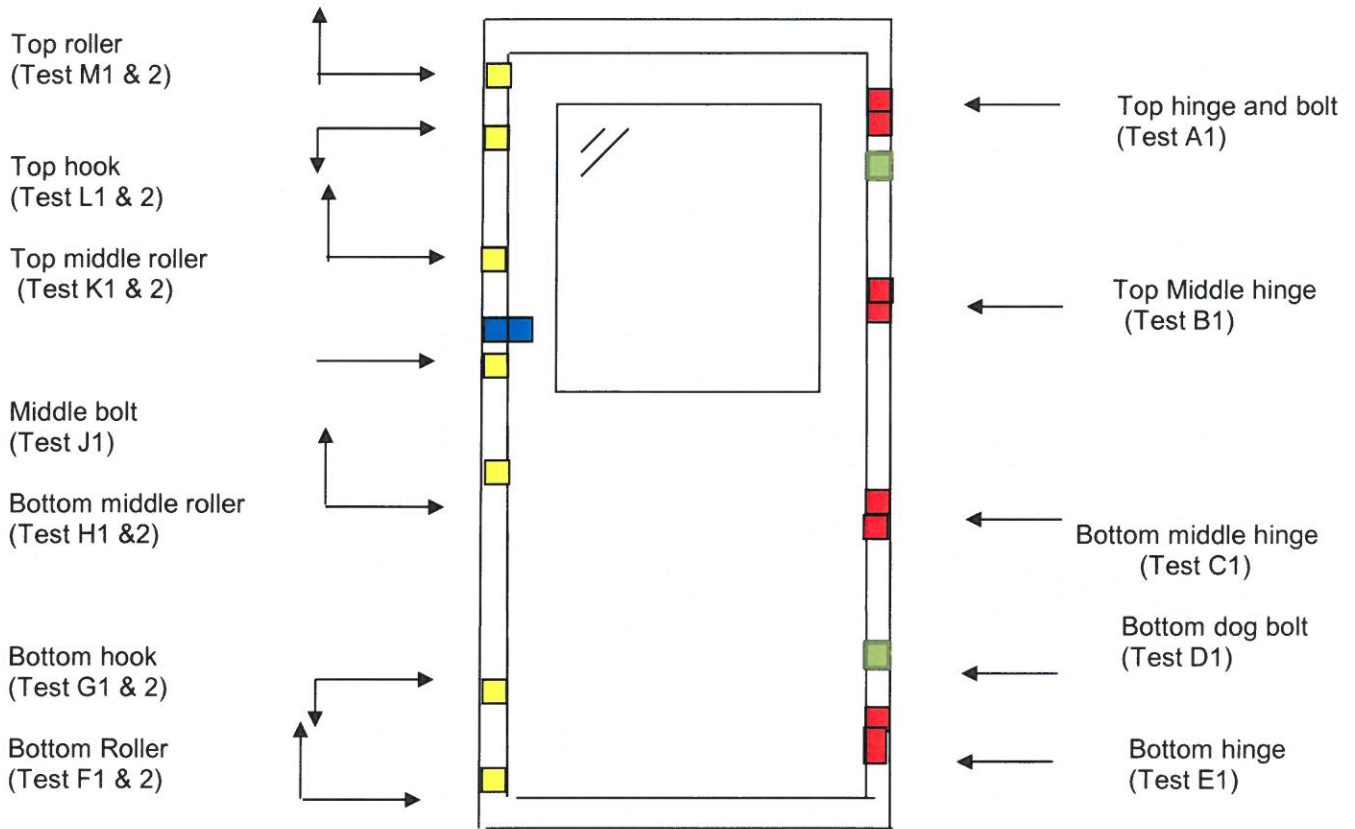
Test Conclusions

Clause No.	Description	Compliance / Comment
A.3	Security hardware and cylinder test	Yes
B.4.3	Manipulation test (a)	Yes
B.4.4.2	Infill manual test	Yes
B.4.4.3	Infill mechanical test	Yes
B.4.4.4	Manual cutting test	Yes
B.4.5	Mechanical loading test	Yes
B.4.3	Manipulation test (b)	Yes
B.4.6	Manual check test	Yes
B.4.7	Additional mechanical loading test	N/A
B.4.8	Soft body impact test	Yes
B.4.9	Hard body impact test	Yes
4.3	Letter plates	N/A

Classification (according to 4.4)	Code
Without letter plate	D

Test Results

Door Layout & Loading Directions (external view)



- Hinges ■
- Dog bolts ■
- Bolts & rollers ■
- Handle ■

All hardware was checked for correct operation prior to the commencement of the test

Test Clause	Test Date	Laboratory Temperature
B.4.3 – Manipulation test (a)	15/5/17	21°C
B.4.4.2 – Infill manual test	15/5/17	21°C
B.4.4.3 – Infill mechanical test	15/5/17	21°C
B.4.4.4 – Manual cutting test	15/5/17	21°C
B.4.5 – Mechanical Load test	15/5/17	21°C
B.4.3 – Manipulation test (b)	15/5/17	21°C
B.4.6 – Manual Check test	15/5/17	21°C
B.4.8 – Soft Body Impact test	16/5/17	20°C
B.4.9 – Hard Body Impact test	16/5/17	20°C
A.3 – Security Hardware & Cylinder test	16/5/17	20°C
4.3 – Letter plates	N/A	N/A

Test	Sample / Actual	Pass/Fail
B.4.3 – Manipulation Test (a)	<p>Craft knife used to cut away frame near bottom hinge and dog bolt – 3 minutes</p> <p>Craft knife used to cut away frame near bottom hook bolt and dead bolt – 3 minutes</p> <p>Flat bladed screwdrivers used in an attempt to manipulate the bottom dog bolt – 3 minutes</p> <p>Paint scrapper used in an attempt to manipulate bottom hook bolt – 3 minutes</p> <p>Paint scrapper used in an attempt to manipulate bottom hinge – 3 minutes</p> <p>No progress was made with the techniques and testing was terminated after 15 minutes total working time</p>	Pass
B.4.4.2 – Infill Manual Test	<p>The craft knife was used to cut away the cassette adhesive. The 25mm wood chisel was then used in an attempt to lever the cassette from the bottom corners.</p> <p>Following 3 minutes the glazing remained secure.</p>	Pass
B.4.4.3 – Infill Mechanical Test	<p>4 corners of the glazed infill were loaded to 2 kN for 10 seconds each</p>	Pass
B.4.4.4 – Manual Cutting Test	<p>Zone 1 – The craft knife and the 25mm wood chisel were used independently in an attempt to create a 50mm hole through the leaf.</p> <p>Following 3 minutes a 50mm x 40mm aperture was produced in the external skin but no hole was produced through the sample.</p> <p>Zone 2 – The craft knife was used to cut the external skin. Following 3 minutes no hole was produced through the sample.</p>	Pass

B.4.5 – Mechanical Load Test

Test Ref.	Load Position	Requirement	Actual	Pass/Fail
A1 – Top Hinge and bolt	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4518N	Pass
B1 – Top Middle Hinge	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4520N	Pass
C1 – Bottom middle Hinge	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4515N	Pass
D1 – Bottom dog bolt	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4507N	Pass
E1 – Bottom Hinge	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4508N	Pass
F1 – Bottom roller	Parallel to plane along the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4510N	Pass
F2 – Bottom roller	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4505N	Pass
G1 – Bottom hook	Parallel to plane along the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4506N	Pass
G2 – Bottom hook	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4507N	Pass
H1 – Bottom middle roller	Parallel to plane along the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4505N	Pass

H2 – Bottom middle roller	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4510N	Pass
J1 – Centre Bolt	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4508N	Pass
K1 – Top middle roller	Parallel to plane along the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4509N	Pass
K2 – Top middle roller	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4517N	Pass
L1 – Top hook	Parallel to plane along the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4518N	Pass
L2 – Top hook	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4509N	Pass
M1 – Top roller	Parallel to plane along the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4503N	Pass
M2 – Top roller	Parallel to plane at right angles to the edge	1.5kN (153Kg)	153Kg	----
	Perpendicular to plane	4.5kN	4515N	Pass

Test	Sample / Actual	Pass/Fail
B.4.3 - Manipulation Test (b)	No fixings were accessible	Pass

Test	Sample / Actual	Pass/Fail
B.4.6 – Manual Check Test	The sample was attacked above the top middle roller, below the bottom middle roller, the bottom corner lock side, between the top middle and bottom middle hinge and between the bottom dog bolt and bottom middle hinge using the two nail bars. Each area was attacked for 3 minutes resulting in a total attack time of 15 minutes. Door remained secure and no weaknesses were identified.	

Test	Sample / Actual	Pass/Fail
B.4.8 – Soft Body Impact Test	Impact points were marked on the centreline of the door at 0.8m, 1.25m and 1.7m. The door bolts were thrown and locked. Each impact point was struck 3 times with the impactor. In each instance the door remained closed	Pass

Test	Sample / Actual	Pass/Fail
B.4.9 – Hard Body Impact Test	Impact points were marked on the door as follows; <ul style="list-style-type: none"> - at each corner of the leaf - on the door at each hinge point - on the door at each locking point - at the cylinder <p>The door bolts were thrown and locked. Each impact point was struck 3 times with the impactor. In each instance the door remained secure</p>	Pass

Test	Sample / Actual	Pass/Fail
A.3 – Security Hardware & Cylinder Test A.3.2 – Part 1	The craft knife was used to cut along the sides of the handle to create access for the curved jaw grips to gain a good purchase on the back plate. The curved jaw grips once attached were used in a side to side motion in an attempt to remove the handle. Following 3 minutes the cylinder and handle remained secure.	Pass
A.3 – Security Hardware & Cylinder Test A.3.3 – Part 2	4.8mm self-cutting screw was inserted into the keyway The screw was then levered with the torque wrench until the screw lost traction and was removed from the cylinder. Total test time 1 minute 31 seconds the cylinder remained secure	Pass

4.3 – Letter plates

Test	Sample / Actual	Assessment
The letter plate shall have a maximum aperture size of 260mm x 40mm	N/A	N/A
The letter plate shall meet the installation height requirements specified in EN 13724:2013 clause 5.4.1.2	N/A	N/A
The letter plate shall meet the requirements of TS008:2015, enhanced security grade 2 with all fixings accessible from the external face removed	N/A	N/A

Test Equipment Used

Equipment No.	Description
LEN 195	loading frame
LEN 127	Max / min thermometer
LEN 087	PAS 24 marking out block
LEN 090	Tool sets A & B
LEN 091	Tool set (clause A.7)
LEN 109	Torque wrench
LEN 118	Wood block
LEN 156	Spring balance
LEN 177	Curved jaw grips

Pictures



Sample received in a good working condition



Sample following clause B.4.4.4 Zone 1



Sample following Annex A part 1 attack testing