



Test Report



Report No	2370/7782494	This Report consists of 12 pages
Client	Smart Systems Limited Arnolds Way Yatton BS49 4QN	
Authority & date	Requested by client dated 20 December 2012	
Items tested	2 off Single leaf hinged door assemblies, Smart Systems Alitherm Aluminium alloy Residential Door System	
Specification	PAS 24:2007 + A2:2011 Enhanced security performance requirements for door assemblies Single and double leaf, hinged external door assemblies to dwellings.	
Results	Pass	
Prepared by	D Kirsop 	(Senior Technician)
Authorized by	M Manito 	(Senior Engineer)
Issue Date	08 February 2012	
Conditions of issue	<p>This Test Report is issued subject to the conditions stated in current issue of CP0322 'Conditions of contract for testing'. The results contained herein apply only to the particular sample/s tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of the Managing Director, BSI who reserves the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.</p>	



0135

TEST, EXAMINATION AND ASSESSMENT OF TWO SINGLE LEAF HINGED DOOR ASSEMBLIES, SMART SYSTEMS ALITHERM ALUMINIUM ALLOY RESIDENTIAL DOOR SYSTEM

INTRODUCTION

The door assemblies submitted by Smart Systems Limited, detailed below and described on pages 4 and 5, were tested and assessed to the requirements of PAS 24:2007 + A2:2011 Enhanced security performance requirements for door assemblies – Single and double leaf, hinged external door assemblies in to dwellings, as indicated on the following pages of this Report.

This request was made on Quotation No BSI0000360080 dated 20 December 2012. It is emphasized that assessments have not been made against the other Clauses of the Specification.

TEST SAMPLE

2 off single leaf open in glaze in hinged door assemblies with glass above and below the midrail and a standard threshold

(Equipment Record No 10132931)

Date sample received: 2 February 2012

SUMMARY OF RESULTS

- | | |
|--|--|
| 1. Manipulation | The test samples met the requirements of the Specification in respect of Clause 7 Annex A.4 |
| 2. Infill removal | The test samples met the requirements of the Specification in respect of Clause 7 Annex A.5 |
| 3. Mechanical loading | The test samples met the requirements of the Specification in respect of Clause 7 Annex A.6 |
| 4. Security hardware and cylinder test | The test samples met the requirements of the Specification in respect of Clause 7 Annex A.11 |

CLAUSE 4 SAMPLE SELECTION

The samples submitted for tests were selected by the Client.

CLAUSE 5.1 TEST METHODS

The method of testing the samples followed the sequence detailed in Annex A of the Specification.

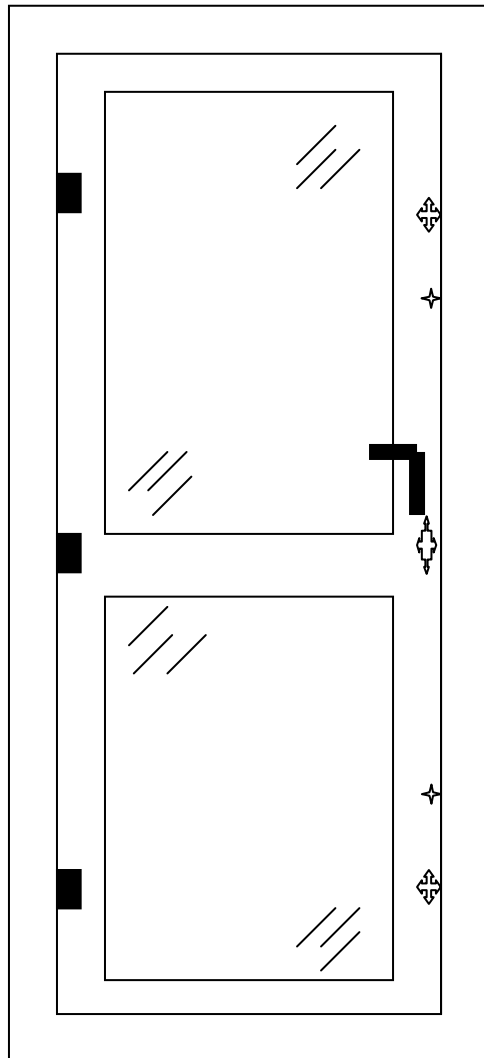
CLAUSE 6 REQUIREMENTS FOR TEST APPARATUS

The test apparatus for the manual and mechanical tests is shown in figures A.1 to A.10 inclusive.

DESCRIPTION OF SAMPLE

Sample type -	Single leaf open in glaze in door, with glass above and below the midrail and standard threshold	
Material -	Aluminium	
Finish -	Painted	
Fittings -	A five point locking (two hook/bolts, one deadbolt, two roller cams) Lockmaster espagnolette system, cylinder, a Hoppe key locking handle, three SDS pin hinges, and drip rail	
Weathersealing -	Double sealed with plastics ACET160	
Panel -	Not applicable	
Glass -	Double glazed 4 -20 - 4mm glass sealed units	
Glass retention system -	Internal beads and gaskets	
Sample dimensions -	Overall Length: 970mm	Height: 2175mm
	Active leaf Length: 910mm	Height: 2110mm
Date of test -	6 February 2012 - conducted by D Kirsop, M Manito and P Rossington	
Laboratory temperature -	17.3°C	
Laboratory humidity -	38.9%	

ELEVATION DRAWING OF DOOR ASSEMBLY
(indicating position of hardware)



- hinge



- dead bolt and latch



- roller cam



- handle, lockcase and cylinder



- hookbolt/bolt

CLAUSE 7 PERFORMANCE REQUIREMENTS

ASSESSMENT

Annex A.4 Manipulation Test

The sample was mounted, vertically and square, in the test rig as described in Clause 6.1 and Annex A.2.

The test was carried out in accordance with the given objective of this Annex using the procedure detailed in Annex A.4.2 and the tools described in Annex A.3.

The sample was closed and locked and the key removed.
Within the overall time limit of 15 minutes no one technique was used for more than 3 minutes.

No entry could be effected by any technique within 3 minutes

Pass

Annex A.5 Infill medium removal test

Annex A.5.2 Manual Test

The sample was mounted, vertically and square, in the test rig as described in Clause 6.1 and Annex A.2.

The test was carried out in accordance with the requirements of this Annex using the tools described in Annex A.3.

No entry could be effected within 3 minutes

Pass

Annex A.5.3 Mechanical Test

The sample was mounted, vertically and square, in the test rig as described in Clause 6.1 and Annex A.2.

The test was carried out with a perpendicular to plane load of 2.0kN applied to each corner of the glazing in turn as specified in this Annex.

No evidence of bead failure
No entry could be effected

Pass

EXAMINATION AND TEST (CONTINUED)

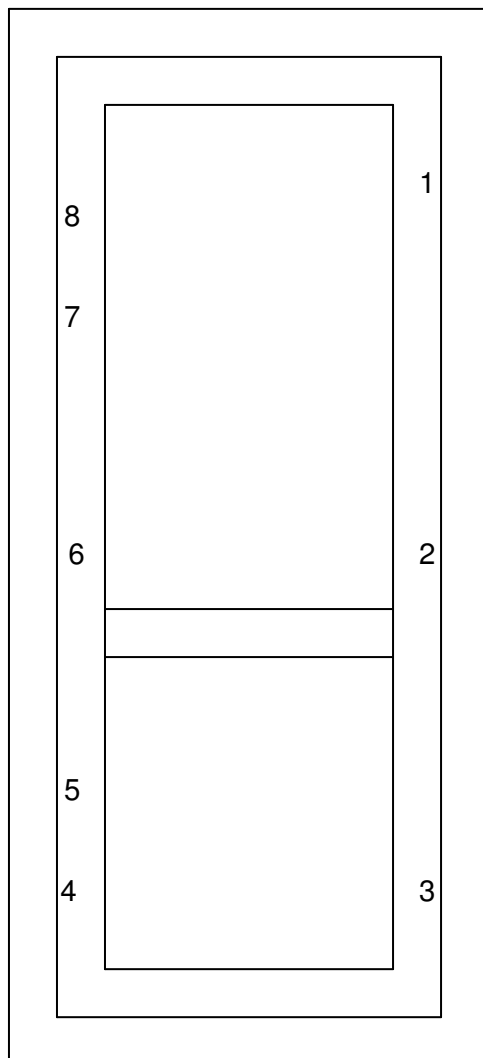
CLAUSE 7 PERFORMANCE REQUIREMENTS

Annex A.6 Mechanical Loading Test

The sample was mounted, vertically and square, in the test rig as described in Clause 6.1 and Annex A.2.

The test was carried out in accordance with the procedures detailed in Annex A.6, Table B.1 and Figures A.1, A.2, A.3, A.4 and A.11 using the test apparatus detailed in Figures A.5, A.6, A.7 and A.8.

Diagram of points of application of loads



EXAMINATION AND TEST (CONTINUED)

CLAUSE 7 PERFORMANCE REQUIREMENTS

ASSESSMENT

Annex A.6 Mechanical Loading Test

Annex A.6.2 Loading Procedures

Point of application of load

First Sequence

1. Hinge (upper right jamb)

Standard loading case used: 1

Load applied in plane: 1.5kN at right angles to the edge and towards the opposite edge

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

2. Hinge (centre right jamb)

Standard loading case used: 1

Load applied in plane: 1.5kN at right angles to the edge and towards the opposite edge

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

3. Hinge (lower right jamb)

Standard loading case used: 1

Load applied in plane: 1.5kN at right angles to the edge and towards the opposite edge

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

4. Roller cam (lower left jamb)

Standard loading case used: 4

Load applied in plane: 1.5kN along edge in a direction to disengage the cam

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

Loads applied in plane: 1.5kN at right angles to the edge and towards the opposite edge

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

5. Hookbolt/Bolt (lower left jamb)

Standard loading case used: 3/4

Load applied in plane: 1.5kN along edge in a direction to disengage the bolts

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

Loads applied in plane: 1.5kN at right angles to the edge and away from the opposite edge

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

EXAMINATION AND TEST (CONTINUED)

CLAUSE 7 PERFORMANCE REQUIREMENTS

ASSESSMENT

Annex A.6 Mechanical Loading Test

Annex A.6.2 Loading Procedures

Point of application of load

6. Deadbolt (centre left jamb)

Standard loading case used:

Load applied in plane: 1.5kN along edge in a direction to disengage the bolt

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

7. Hookbolt/Bolt (upper left jamb)

Standard loading case used: 3/4

Load applied in plane: 1.5kN along edge in a direction to disengage the bolts

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

Loads applied in plane: 1.5kN at right angles to the edge and away from the opposite edge

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

8. Roller cam (upper left jamb)

Standard loading case used: 4

Load applied in plane: 1.5kN along edge in a direction to disengage the cam

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

Loads applied in plane: 1.5kN at right angles to the edge and towards the opposite edge

Load applied perpendicular to plane: 4.5kN applied for 10 seconds

No entry effected

Pass

EXAMINATION AND TEST

CLAUSE 7 PERFORMANCE REQUIREMENTS

ASSESSMENT

Annex A.11 Security Hardware and Cylinder Test

Annex A.11.3.2 (Part 1)

The sample was mounted, vertically and square, in the test rig as described in Clause 6.1 and Annex A.2.

The test was carried out in accordance with the given objective of this Annex using the procedure detailed in Annex A.11.3.1 and the tools described in Annex A.11.2.1 to Annex A.11.2.4.

The sample was closed and locked and the key removed.

The total attack time was 3 minutes and the total rest time was 7 minutes

Could not remove the handle

No entry could be effected within 3 minutes

Pass

Annex A.11.3.3 (Part 2)

The sample was mounted, vertically and square, in the test rig as described in Clause 6.1 and Annex A.2.

The test was carried out in accordance with the given objective of this Annex using the procedure detailed in Annex A.11.3.1 and the tools described in Annex A.11.2.1 to Annex A.11.2.4 and in Annex A.3

The sample was closed and locked and the key removed.

The total attack time was 3 minutes and the total rest time was 7 minutes

Could not snap cylinder out due to cylinder guard in handle.

No entry could be effected within 3 minutes

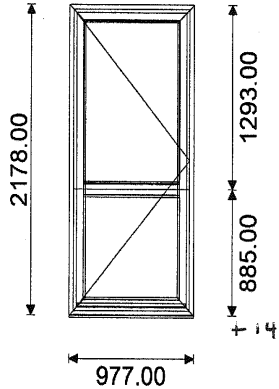
Pass

APPENDIX B

5

Door

- ETD 017:OuterFrame
- ETD 017:Threshold
- ETD 030:Mid Rail(s)
- ETD 024:Sash Profiles
- ETD095:Cill
- RUA090:Handle
- ACET18X:Lock
- ACVL117:Cylinder
- ACET250XX:Hinge



977 mm x 2,192 mm

QUALITY CONTROL	
Approved	
Cut	
Fabricated	
Checked	
Glazed	

Extrusions		End Prep	Qty	Total	Length	Status
ETC161	Bead - 28mm (ALI47) Square	0.0T	0.0T	2	4	704 mm []
ETC161	Bead - 28mm (ALI47) Square	0.0T	0.0T	4	8	753.5 mm []
ETC161	Bead - 28mm (ALI47) Square	0.0T	0.0T	2	4	1,112 mm []
ETD017	Square Outer Frame 70mm	45.0T	45.0T	2	4	977 mm []
ETD017	Square Outer Frame 70mm	45.0T	45.0T	2	4	2,178 mm []
ETD024N	Door Sash - Open In	-45.0	-45.0	2	4	910 mm []
ETD024N	Door Sash - Open In	-45.0	-45.0	2	4	2,111 mm []
ETD030	Square Transom/Mullion	0.0T	0.0T	1	2	754 mm []
ETD095	Door Threshold	0.0T	0.0T	1	2	977 mm []
PCX17BL	Door Leaf Filler (Black)	0.0T	0.0T	2	4	897 mm []
PCX17BL	Door Leaf Filler (Black)	0.0T	0.0T	2	4	2,098 mm []
VL72	Weather Bar	0.0T	0.0T	1	2	852.5 mm []
Glazing			Qty	Total	Width	Height
28MM	28mm Glazing		1	2	744 mm	724 mm [✓]
28MM	28mm Glazing		1	2	744 mm	1,132 mm []
Components			Qty	Total	Unit	
ACET045	Chevron S/S (for 47)		16	32	Each	[]
ACET057	Corner Cleat For ETD010		4	8	Each	[]
ACET131WP	Drain Hole Cover		2	4	Each	[]
ACET154	Corner Chevron (ETD024/ETD025)		4	8	Each	[]
ACET155	Mechanical Cleat		4	8	Each	[]
ACET160	Seal		11	21	Each	[]
ACET183	Lock & LH Keep Set		1	2	Each	[]
ACET200	Bridge Packer for ETD024N		4	8	Each	[]
ACET250WP	Hinge (White)(new)		3	6	Each	[]
ACVG31	Gasket - E Gasket 3mm		7	14	Each	[]

APPENDIX B (continued)

ACVG34	Gasket - Wedge Gasket 5mm	7	14	Each	[]
ACVL059W	End Cap pair - For VL72 (White)	2	4	Each	[]
ACVL061	Rivets (for VL72 drip)	3	6	Each	[]
ACVL117	Cylinder 30/50	1	2	Each	[]
ACVN162	Square Coupling Joint	4	8	Each	[]
PUA056SSZ	No.10 x 2" Csk Head Screw	4	8	Each	[]
RUA090WPZ	Lever/Lever Handle With Keyhole (White)	1	2	Each	[]
WCA106SSZ	Aluminium Corner Chevron (ETC105)	4	8	Each	[]

END OF REPORT