

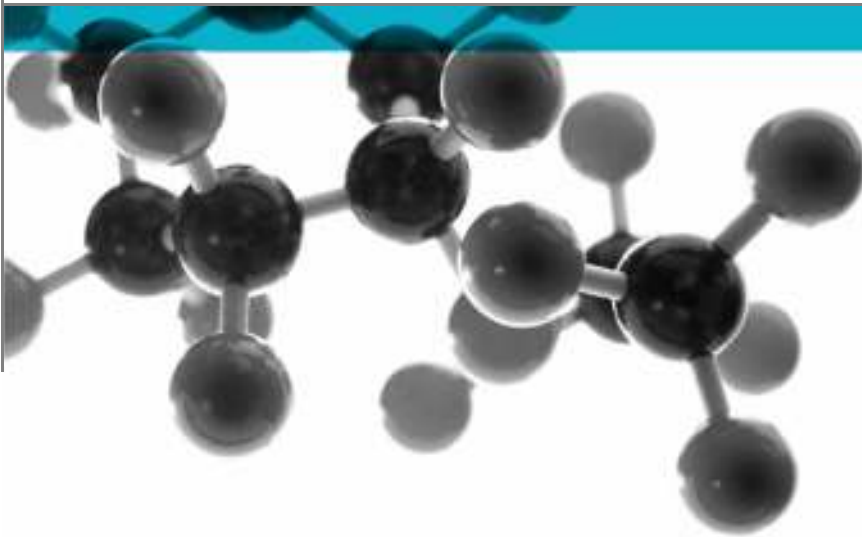
Exova  
Key Industrial Park  
Fernside Road  
Willenhall  
West Midlands  
WV13 3YA

T : +44 (0) 1902 722 122  
F : +44 (0) 1902 727 242  
E : [willenhall@exova.com](mailto:willenhall@exova.com)  
W : [www.exova.com](http://www.exova.com)



# PAS 24:2012

## Annex A&B



**Test of: 3 Pane Bi Folding Sliding Doorset**

**Enhanced security performance requirements for doorsets**

A Report To:  
Aluminios Cortizo S.A.U  
Extramundi, S/N. 15910, Padrón (A Coruña), España

Document Reference:  
WIL 389715

Date: 21/11/2017

Copy: 1

Issue No.: 1

Page 1

Testing  
Advising  
Assuring



## TEST CONCLUSIONS

Samples of:  
 Manufacturer Aluminios Cortizo S.A.U  
 Product Bi Folding Sliding Doorset  
 Model 3 pane

have been tested in accordance with: PAS24:2012 Annex A & B  
 By Exova Willenhall, a UKAS accredited Testing Laboratory (No. 0621)

At Key Industrial Park, Fernside Rd, Willenhall, West Midlands, WV13 3YA.  
 Results and comments as detailed below:

Clause No.	Description	Compliance
<b>4</b>	<b>Enhanced security performance requirements</b>	<b>No</b>
4.1.1	Classification of use	No
4.1.2	Locking cylinder	Yes
4.2	Infill medium	Yes
4.3	Letterplates	N/A
4.4	Classification	DK
<b>5</b>	<b>Marking</b>	<b>No</b>
<b>6</b>	<b>Design and general requirements</b>	<b>Yes</b>
<b>Annex A</b>	<b>Security hardware and cylinder test and assessment</b>	<b>Yes</b>
A.3	Test procedure	Yes*
A.4	Cylinder vulnerability assessment	Yes
<b>Annex B</b>	<b>Enhanced security performance for doorsets</b>	<b>Yes</b>
B.4.3	Manipulation test	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.4.6	Manual check test	Yes*
B.4.7	Additional mechanical loading test	Yes*
B.4.8	Soft body impact test	Yes*
B.4.9	Hard body impact test	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

\* Performance assessed from Debar report : BMT/MTP/F15279/01

\*\* Performance assessed from Debar report WIL 358356

Document No.: WIL 389715 Page No.: 2 of 25  
 Author: M. West Issue Date: 21/11/2017  
 Client: Aluminios Cortizo S.A.U Issue No.: 1



## AUTHORISATION

Tests performed by: Mark Garfield, Senior Test Engineer  
 Assessment performed by: Mark West, Door & Window Laboratory Manager

Report issued by: Mark West, Door & Window Laboratory Manager

Signed 

Date 9<sup>th</sup> November 2017

For and on behalf of Exova

Report authorised by: Chris Bryan, Senior Test Engineer

Signed 

Date 9<sup>th</sup> November 2017

For and on behalf of Exova

Report issued: 21 November 2017



**NOTE.**

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

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

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## TEST DETAILS

### CLIENT DETAILS

Company name Aluminios Cortizo S.A.U  
Address Extramundi,  
S/N. 15910,  
Padrón (A Coruña),  
España

Contact David Macía Arias

### ORDER DETAILS

Order number DMA email 260917  
Dated 26/09/2017

### SAMPLE DETAILS

Outer frame 2701 x 2517mm  
Opening leaves 859 x 2406mm  
Material Aluminium  
Details of Hardware  
Hinges Debar  
Hinge protection N/A  
Lock Debar  
Cylinder Yale  
Handles Hoppe  
Seals Debar / Cortizo

### TEST DETAILS

Test specification PAS 24:2012  
Full test Yes  
Test to clauses

Sample received 13/11/2015  
Test started 17/11/2015  
Test completed 04/02/2016

Special Test requirements

Other reports to be used in conjunction with this report  
Exova BM Trada report for Debar : BMT/MTP/F15279  
Exova Willenhall report for Debar: WIL 385356

## TEST PROCEDURE

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<b>Introduction</b>	<p>This test report should be read in conjunction with the Standard PAS 24:2012 Enhanced security performance requirements for doorsets and windows in the UK.</p> <p>The specimens were judged on their ability to comply with the performance criteria as required in Clause B.4.5 PAS24:2012..</p>
<b>Instruction To Test</b>	<p>Initial requirement was for a classification of DKT for non-key locking doorsets..</p>
<b>Test Specimen Construction</b>	<p>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.</p>
<b>Installation</b>	<p>The doorset was supplied mounted within a timber sub-frame of nominal section 50mm x 100mm fitted flush with the exterior face, in accordance with the clients fitting instructions.</p> <p>A representative of Debar Ltd witnessed the test.</p>
<b>Sampling</b>	<p>The samples were not independently witnessed or selected and were provided direct from the test sponsor.</p>
<b>Test Climate</b>	<p>The sample was conditioned in the laboratory in the range 10-30 °C and 25-75% humidity.</p>

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Client:	Aluminios Cortizo S.A.U	Issue No.:	1

## INITIAL OBSERVATIONS

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**The internal face  
of the sample**



**The external face  
of the sample**



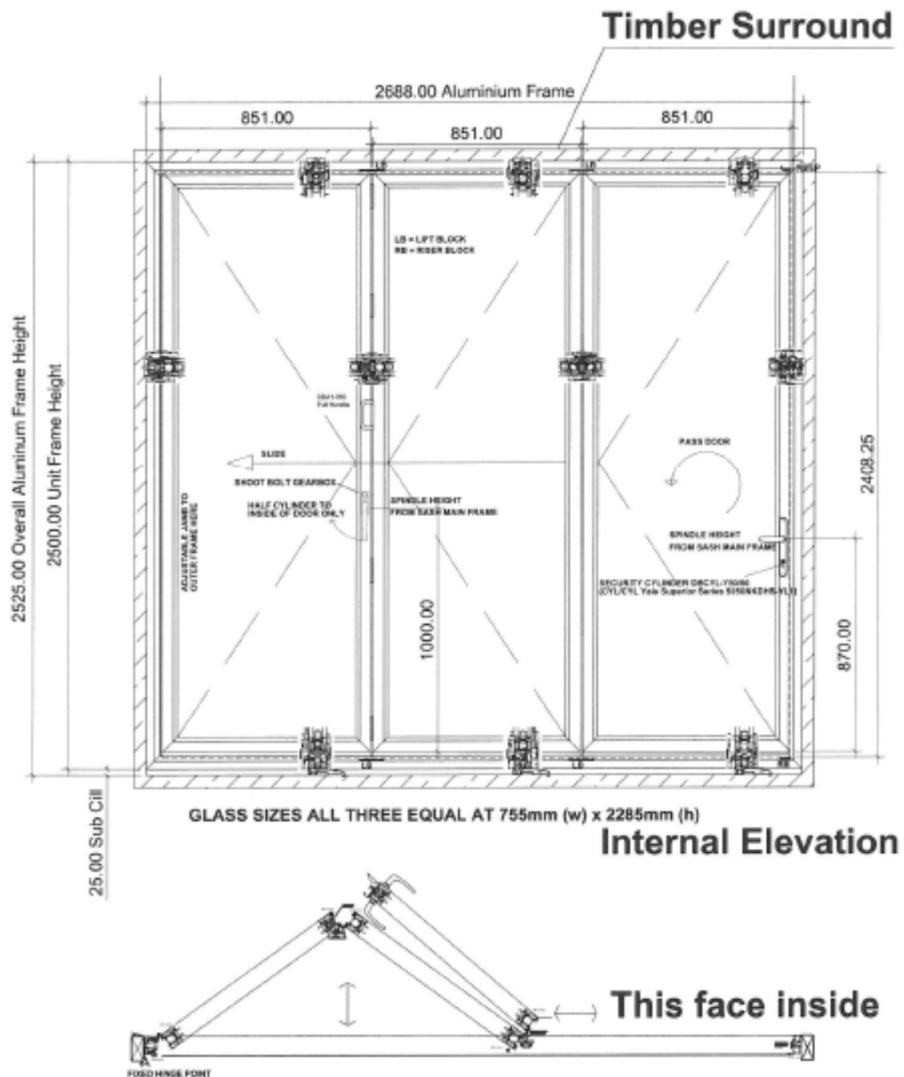
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# TEST SPECIMEN

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

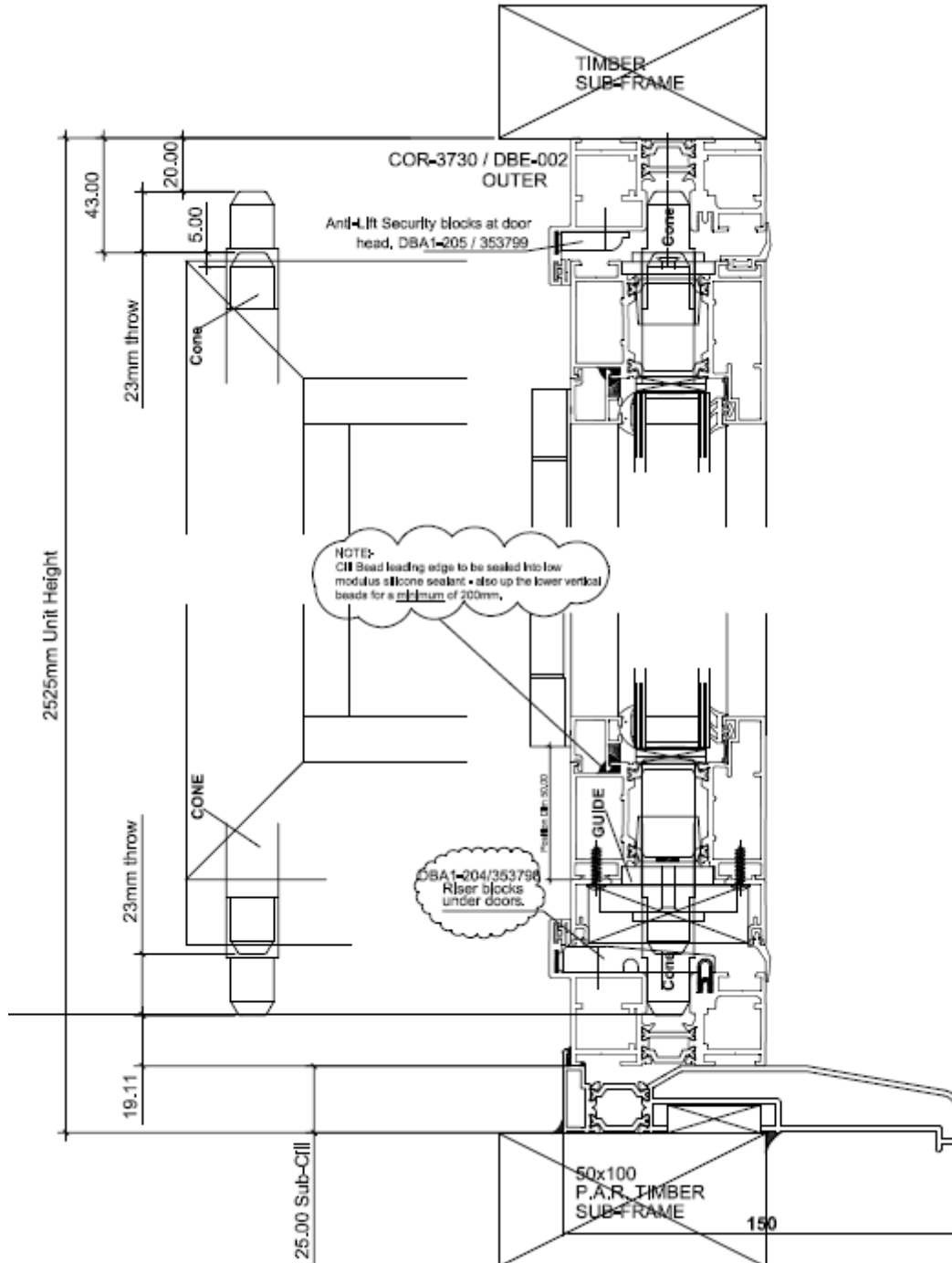


Do not scale. All dimensions are in mm





Figure 3 – Vertical section



Do not scale. All dimensions are in mm

## 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. Hinges

Supplier	:	DEBAR Limited
Description	:	Bespoke Extruded Aluminium Hinge with Modified Stainless Steel Clamp Plates at 3.0mm Thickness
Reference	:	353720 (Debar ref. DBA1-350) Hinges Hinges are captive in the following part Numbers - 353721 (Debar ref. DBA1-351) BTM roller/hinge 353722 (Debar ref. DBA1-352) TOP Guide/hinge 353725 (Debar ref. DBA1-355) pull handle hinge
Primary material	:	Aluminium
Quantity	:	353720 x 12; 353721 x 1; 353722 x 1; 353725 DBA1-355 x 1
Size of knuckle	:	12.7mm
Size of blades	:	97.5mm
Fixing hinge to doorleaf		
i. type	:	By clamping plate with final fix screw
ii. size	:	97mm
iii. quantity	:	2 Plate sets per hinge
Fixing hinge to frame		
i. type	:	By clamping plate with final fix screw
ii. size	:	97mm
iii. quantity	:	2 sets per hinge
Position of hinge		
i. top hinge	:	48mm from top of door to top of hinge
ii. middle hinge	:	497mm from top of door to top of hinge 947mm from top of door to top of hinge 1592mm from top of door to top of hinge
iii. bottom hinge	:	2237mm from top of door to top of hinge
<b>2. Lock</b>		
Supplier	:	DEBAR Limited
Description	:	Lever-lever latch lock with deadbolt, 2 security hooks and top extension shoot bolt
Reference	:	353730 (Debar ref. DBLK-50) Lock 353734 (Debar ref. DBLK-51) Extension 353733 (Debar ref. DBLK-52) Shoot bolt
Fixings		
i. type	:	Screw fix through to internal clamp
ii. size	:	N/A
iii. quantity	:	24 Screws

<u>Item</u>	<u>Description</u>
<b>3. Lock Keeps</b>	
Supplier	: DEBAR Limited
Description	: One part Lever latch lock keep
Reference	: 353730 (Debar ref DBLK-50) Keep
Material	
i. top keep	: Stainless Steel 4mm thick
ii. centre keep	: 1 pc Full Length Lock and Hook Keep Plate
Overall size	
i. top keep	: 50(w)x70(L)x4mm(thick)
ii. centre keep	: 1640 mm
Fixing - keeps to frame	
i. type	: Screw fix
ii. size	: N/A
iii. quantity	: 15 Screws
<b>4. Shoot bolts</b>	
Supplier	: DEBAR Limited
Description	: 10mm ROBUS heavy duty intermediate lock
Reference	: 353728 (Debar ref DBLK-06)
i. shoot bolt	: 353729 (Debar ref DBA1-200) Shoot bolt cone and guide kit
ii. keep	: N/A – Shoots into outer frame head and cill section
Material	
Fixing bolt to doorleaf	: Through handle fixing into lock, self-tapping screws for shoot end guides into aluminium top and bottom rails
<b>5. Cylinder</b>	
Supplier	: DEBAR Limited -
Description	: High security Yale Superior Series cylinders keyed both sides. Anti snap, bump, pick.
Kite mark	: Yes
Reference	: 353793 (Debar ref DBCYL-Y50/50)
Fixings	
i. type	: Standard cylinder fix screw
ii. size	: M5 x 50mm csk
iii. quantity	: 1
<b>6. Lever handles</b>	
Supplier	: DEBAR Limited
Description	: Security lever /lever handle in white
Reference	: 353781 (Debar ref DBHP-SEC Type 1530/3259N-ZA)
Material	: Aluminium die cast
Fixings	
i. type	: Bespoke Security 'through' fixings PAS24 approved
ii. size	: N/A
iii. quantity	: 1 pair

<u>Item</u>	<u>Description</u>
<b>7. Security escutcheon</b>	
Supplier	: DEBAR Limited
Description	: Escutcheon is inclusive with handle plate
<b>8. Cylinder guard</b>	
Supplier	: DEBAR Limited
Description	: Cylinder Guard is inclusive in the handle plate
<b>9. Door leaf framing</b>	
Supplier	: DEBAR Limited / Cortizo
Profile codes	
i. stile profile code	: COR-3720 (Debar ref. DBE-102) 61.5mm sash frame. Jamb.
ii. rail profile code	: COR-3720 (Debar ref. DBE-102) 61.5mm sash frame. Top Rail. COR-3720 (Debar ref. DBE-102) 61.5mm sash frame. Btm Rail.
Material	: Aluminium
Grade	: Aluminium Alloy 6063.T6 with non-filled polyamide.
Gauge	: 1.8mm General thickness
Overall size	: 73mm(w) x 61.5mm(h)
Fixing jamb to head/sill joints	: Mitre and cleat
i. type	: Mitred (COR-3720) and screw cleat Joint at all corners, glue bonded cleats. Mitres sealed with low modulus silicone.
ii. size	: 16mm Wide
iii. quantity	: 2 Each corner
Fixing jamb to midrail joints	:
i. type	: N/A
ii. size	: N/A
iii. quantity	: N/A
Details of adhesive	
i. supplier	: DEBAR Limited / Cortizo
ii. reference	: 317150 (Debar ref. DBA1-180)
<b>10. Door leaf glass (IGU)</b>	
Supplier	: Morley Glass Limited
Configuration	: IGU, 2 x 4mm toughened clear glass.
Thickness	: 28mm Overall Thickness
Overall size	
i. top pane	: 756mm(w) x 2285mm(h)
ii. bottom pane	: N/A
Nominal edge clearance	: 5.0mm
<b>11. Glazing gasket (internal)</b>	
Supplier	: DEBAR Limited (by Reddiplex)
Reference	: 240136 (Debar ref DBA1-136) Wedge glazing seal
Fixing method	: Push fit

**Item****Description****12. Glazing gasket (external)**

Supplier : DEBAR Limited (by Reddiplex)  
 Reference : 930060 (Debar ref DBA1-135) Captive glazing seal  
 Fixing method : Push fit

**13. Glazing beads**

Glazing method : Internally beaded  
 Supplier : DEBAR Limited  
 Profile code : COR-3780 (Debar ref DBE-170)  
 Material : Aluminium  
 Grade : Alloy 6063.T6  
 Gauge : 1.5mm General thickness  
 Overall size : 17.3mm(h) x 19.0mm(w)  
 Fixing method : Lead edge silicone seal, clip fit

**14. Door frame head**

Supplier : DEBAR Limited  
 Profile code : DBE-001  
 Material : Aluminium  
 Grade : Alloy 6060.T6 with non-filled polyamide strips  
 Gauge : 1.7mm general thickness  
 Overall section size : 73mm(w) x 55mm(h) including rebate upstand  
 Rebate : Integral 20mm rebate is in extruded DEBAR DBE-001 section.  
 Fixing jamb to head joints : Mitred 353755 (Debar ref DBA1-100) Screw Cleats at all corners, glue bonded cleats. Mitres sealed with low modulus silicone.  
 i. type : Mitre and cleat  
 ii. size : 19.45 wide  
 iii. quantity : 2 each corner  
 Details of adhesive  
 iii. supplier : Debar Limited  
 iv. reference : 317150 (Debar ref DBA1-180)

**15. Door frame jamb**

Supplier : DEBAR  
 Profile code : COR-3731 (Debar ref. DBE-001) Locking Jamb  
 COR-3730 (Debar ref. DBE-002) Adjustable Heel Jamb  
 COR 3740 (Debar ref. DBE-201) Adjustable Heel section  
 Material : Aluminium  
 Grade : Alloy 6060.T6 with non-filled polyamide strips  
 Gauge : 1.7mm general thickness  
 Overall size : COR-3730 and COR-3731 - 73mm(w) x 55mm(h) including rebate upstand  
 COR-3740 – 73mm(w) x 28.8mm(h)

**Item****Description****16. Door frame sill**

Supplier	:	DEBAR Limited / Cortizo
Profile code	:	COR-3730 (Debar ref. DBE-001)
Material	:	Aluminium
Grade	:	Alloy 6060.T6 with non-filled polyamide
Gauge	:	1.7mm general thickness
Overall size	:	73mm(w) x 55mm(h) including rebate upstand
Fixing jamb to sill joints		
i. type	:	Mitre and cleat
ii. material	:	Aluminium extrusion
iii. size	:	19.45 wide
iv. quantity	:	2 each corner

**17. Door frame threshold**

Supplier	:	DEBAR Limited / Cortizo
Profile code	:	COR-3735 (Debar ref. DBE-011) 150mm Sub Cill
Material	:	Aluminum
Grade	:	Alloy 6063.T6 with non-filled polyamide
Gauge	:	2mm General thickness
Overall size	:	150mm(w) x 25mm(h)
Fixing method		
i. type	:	Screw fix into COR-3730 bottom rail
ii. material	:	N/A
iii. size	:	N/A
iv. quantity	:	13 Screws

**18. Door frame weather seal**

Supplier	:	DEBAR Limited / Cortizo
Reference	:	353769 (Debar ref. DBA1-138) Outer frame rebate 'flipper' seal
Material	:	EPDM
Fixing method	:	Push fit

## PERFORMANCE CRITERIA & TEST RESULTS

Clause	Result	Compliance
<b>4.1.1 Classification of use</b>	Doorsets shall be classified according to their intended use for all relevant characteristics in accordance with BS 6375:2009 and the relevant material specific standard.	No evidence supplied by client. <b>NO</b>
<b>4.1.2 Doorsets</b>	Doorsets must meet the requirements of Annex A of PAS24:2012 and either Annex B of PAS24:2012 or RC3 of BS EN 1627	Doorset meets the requirements of Annex B of PAS24. Doorset meets the requirements of Annex A of PAS24 <b>YES</b>
	Cylinders falling within the scope of EN1303 used in the tested door assembly shall meet the requirements of key related security to grade 5 and Resistance to drilling grade 2.	Evidence supplied by client. BSI Report: KM 559658 <b>YES</b>
<b>4.2 Infill medium requirements</b>	Each glazed area shall include at least one pane of laminated glass meeting the requirements of BS EN 356 Class P1A.	Evidence supplied by client <b>YES</b>
<b>4.3 Letterplates</b>	Letter plates shall have a maximum aperture size of 260 x 40mm	N/A <b>N/A</b>
	Letter plates shall meet the installation height requirements of BS EN 13724 clause 5.3.1 (between 700 and 1700mm from the floor)	N/A <b>N/A</b>
	The fixing shall not be removable from the attack side of the door	N/A <b>N/A</b>



Clause	Result	Compliance
	The letterplate shall be tested in accordance with BS EN 13724, and following the test the aperture dimensions must not exceed 260 x 40mm	N/A
	When fitted with non-key locking hardware letter plates shall be positioned a minimum of 400mm from the internal locking point, or should be fitted with a suitable security device	N/A
<b>4.4 Classification</b>	<p>Following testing to Annex A &amp; Annex B with an entry definition defined in 3.9 &amp; 3.10, the final classification shall be determined as:</p> <ul style="list-style-type: none"> <li>• DK for a doorset fitted with a lock operated from both sides with a removable key.</li> <li>• DKT for a doorset fitted with either a lock operated by a non-removable key or fixed element on the inside and a removable key on the outside or a lock operated from both sides with a removable key.</li> </ul>	Doorset classified as DK for removable key locking hardware only <b>DK</b>

Clause	Result	Compliance
<b>5 Marking</b>	<p>Door assembly shall be permanently marked, in a position that is visible and accessible when the door is open, with the following information:</p> <ul style="list-style-type: none"> <li>• The number and date of the specification, i.e. PAS24:2012</li> <li>• The date of manufacture (at least year and quarter)</li> <li>• The name or trade mark or other means of identifying the manufacturer</li> <li>• The classification to 4.4</li> </ul>	Pre certification prototype only. No labels supplied as yet. Customer advised of labelling requirements for production doorsets. <b>NO</b>
<b>6.1 Doorsets</b>	Where a doorset includes dummy vents, fixed lights, fixed panels and/or opening lights these shall meet the requirements for a doorset	No dummy vents, fixed panels or opening lights included in doorset. <b>N/A</b>
<b>6.2 Installation instructions</b>	The manufacturer shall supply full instructions for assembly, installation and maintenance	Evidence supplied by client <b>YES</b>

Clause	Requirement	Result	Pass / Fail
<b>A.3</b> Security hardware and cylinder test	* Performance assessed from Debar report BMT/MTP/F15279/01		<b>PASS</b> DK / DKT
	* Performance assessed from Debar report BMT/MTP/F15279/01		<b>PASS</b> DK / DKT
<b>Annex B: Enhanced security performance requirements for doorsets</b>			
<b>B.4.3</b> Manipulation test	* Performance assessed from Debar report BMT/MTP/F15279/01		<b>PASS</b> DK / DKT
<b>B.4.4.2</b> Manual test on infill	* Performance assessed from Debar report BMT/MTP/F15279/01		<b>PASS</b> DK / DKT
<b>B.4.4.3</b> Mechanical test on infill	* Performance assessed from Debar report BMT/MTP/F15279/01		<b>PASS</b> DK / DKT
<b>B.4.4.4</b> Manual cutting test	* Performance assessed from Debar report BMT/MTP/F15279/01		<b>PASS</b> DK / DKT
<b>B.4.5</b> Mechanical loading test	** Performance assessed from Debar report WIL 358356 Attempts to apply Mechanical loads to all the hinge points and locking points were made with the following results obtained.  <b>Point 1: Top Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.  <b>Point 2: 2<sup>nd</sup> Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s  <b>Point 3: 3<sup>rd</sup> Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s  <b>Point 4: 4<sup>th</sup> Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.  <b>Point 5: Bottom Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.  <b>Point 6: Bottom Shoot Bolt 3<sup>rd</sup> leaf</b> 1.5kN parallel (up) and 4.5kN perpendicular load held for 10s.  <b>Point 7: Bottom Hinge 2<sup>nd</sup> Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s		<b>PASS</b> DK

Clause	Requirement	Result	Pass / Fail
	<b>Point 8: 2<sup>nd</sup> Hinge 2<sup>nd</sup> Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s		
	<b>Point 9: 3<sup>rd</sup> Hinge 2<sup>nd</sup> Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 10: 4<sup>th</sup> Hinge 2<sup>nd</sup> Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 11: Top Hinge/ Shootbolt 2<sup>nd</sup> Leaf</b> 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s		
	<b>Point 12: Top Hinge Active Leaf/ roller</b> 1.5kN parallel (down) and 4.5kN perpendicular load held for 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 13: 2<sup>nd</sup> Hinge Active Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 14: 3<sup>rd</sup> Hinge Active Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 15: 4<sup>th</sup> Hinge Active Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 16: Bottom Hinge/roller Active Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 17: Bottom Locking Point Active Leaf</b> 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s. 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		
	<b>Point 18: Centre Locking Point Active Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		
	<b>Point 19: Top Locking Point Active Leaf</b> 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s. 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		
	<b>Point 20: Top Shoot bolt Active Leaf</b> 1.5kN parallel (down) and 2.8kN perpendicular load held applied before deflection was achieved. 1.5kN additional perpendicular load held for 10s DKT entry was achieved.		

Clause	Requirement	Result	Pass / Fail
	<b>Point 1: Top Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		
	<b>Point 2: 2<sup>nd</sup> Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s		
	<b>Point 3: 3<sup>rd</sup> Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s		
	<b>Point 4: 4<sup>th</sup> Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		
	<b>Point 5: Bottom Hinge 3<sup>rd</sup> Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		
	<b>Point 6: Bottom Shoot Bolt 3<sup>rd</sup> leaf</b> 1.5kN parallel (up) and 4.5kN perpendicular load held for 10s.		
	<b>Point 7: Bottom Hinge 2<sup>nd</sup> Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s		
	<b>Point 8: 2<sup>nd</sup> Hinge 2<sup>nd</sup> Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s		
	<b>Point 9: 3<sup>rd</sup> Hinge 2<sup>nd</sup> Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 10: 4<sup>th</sup> Hinge 2<sup>nd</sup> Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 11: Top Hinge/ Shootbolt 2<sup>nd</sup> Leaf</b> 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s		
	<b>Point 12: Top Hinge Active Leaf/ roller</b> 1.5kN parallel (down) and 4.5kN perpendicular load held for 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 13: 2<sup>nd</sup> Hinge Active Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 14: 3<sup>rd</sup> Hinge Active Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 15: 4<sup>th</sup> Hinge Active Leaf</b>		

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Clause	Requirement	Result	Pass / Fail
	1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 16: Bottom Hinge/roller Active Leaf</b> 1.5kN parallel (equal and opposite) and 4.5kN perpendicular load held for 10s.		
	<b>Point 17: Bottom Locking Point Active Leaf</b> 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s. 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		
	<b>Point 18: Centre Locking Point Active Leaf</b> 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		
	<b>Point 19:Top Locking Point Active Leaf</b> 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s. 1.5kN parallel (horizontal) and 4.5kN perpendicular load held for 10s.		

**Defined  
mechanical  
loading points**



<b>B.4.6 Manual check test</b>	<i>* Performance assessed from Debar report BMT/MTP/F15279/01</i>	<b>PASS DK / DKT</b>
<b>B.4.7 Additional mechanical loading test</b>	<i>* Performance assessed from Debar report BMT/MTP/F15279/01</i>	<b>PASS DK / DKT</b>
<b>B.4.8 Soft body impact test</b>	<i>* Performance assessed from Debar report BMT/MTP/F15279/01</i>	<b>PASS DK / DKT</b>

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Clause	Requirement	Result	Pass / Fail
<b>B.4.9</b> Hard body impact test	<i>* Performance assessed from Debar report BMT/MTP/F15279/01</i>		<b>PASS</b> DK / DKT

## CONCLUSIONS

<b>Evaluation against objective</b>	The doorsets as provided by the client were subjected to enhanced security testing in accordance with PAS24:2012 and achieved the requirements for a classification of DK for key-key locking only.
<b>Observations &amp; comments</b>	<p>Clauses A.3, B.4.3, B.4.4.2, B.4.4.3, B.4.4.4, B.4.6, B.4.8 and B.4.9 have been assessed from Debar report : BMT/MTP/F15279/01</p> <p>Clause B.4.5 assessed from Debar report : WIL 358356</p> <p>The self-gripping pliers used during the security hardware test were Irwin Vise Grip 10R (straight jaw) and 10WR (curved jaw)</p>

## LIMITATIONS

<b>Limitations</b>	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.
<b>Range of assemblies covered by this report</b>	<p>It is our opinion that the range of assemblies covered by this report are limited to the following</p> <ul style="list-style-type: none"> <li>▪ Assemblies with identical hardware fitted no further apart than in the tested assembly</li> <li>▪ Assemblies of the same or smaller overall dimensions to the tested assembly</li> </ul>
<b>Uncertainty of Measurement</b>	<p>The uncertainties of measurements calculated for a confidence level of 95% throughout these tests are within the limits of these tolerances.</p> <p>The standard specifies the following tolerances</p> <ul style="list-style-type: none"> <li>▪ Forces: <math>\pm 2\%</math></li> <li>▪ Distances: <math>\pm 1\text{mm}</math> for tape measures <math>\pm 0.01\text{mm}</math> for dial gauges</li> <li>▪ Times: <math>\pm 5\text{s}</math></li> </ul>



## REVISION HISTORY

<b>Issue No :</b>	<b>Re - Issue Date :</b>
<b>Revised By:</b>	<b>Approved By:</b>
<b>Reason for Revision:</b>	

<b>Issue No :</b>	<b>Re - Issue Date :</b>
<b>Revised By:</b>	<b>Approved By:</b>
<b>Reason for Revision:</b>	

END OF REPORT