Element Materials Technology
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PAS 24:2022

Annex A&B

Test of: COR VISION 2 pane aluminium sliding doorset

Enhanced security performance requirements for doorsets

A Report To:
Aluminios Cortizo
Extramundi, Padr+¦n, A Coru+¦a

Document Reference:
WIL 539748

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Element Materials Technology Wednesbury Limited
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TEST CONCLUSIONS

Samples of:
Manufacturer Aluminios Cortizo
Product Doorset
Model COR VISION 2 pane aluminium sliding doorset

have been tested in accordance with: PAS24:2022 Annex A&B
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:

Clause No.	Description	Compliance
4	**Enhanced security performance requirements**	*
5	**Marking**	*
6	**Design and general requirements**	*
Annex A	**Security hardware and cylinder test and assessment**	**N/A**
A.3	Test procedure	N/A
A.4	Cylinder vulnerability assessment	N/A
Annex B	**Enhanced security performance for doorsets**	**Yes**
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	N/A
B.4.5	Mechanical loading test	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	N/A

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

Test marked * are not assessed by test

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

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AUTHORISATION

Tests performed by:	Brett Devey, Test Engineer Thomas Ready, Apprentice Test Engineer Thomas Maybery, Apprentice Test Engineer

Report issued by: Brett Devey, Test Engineer

Signed 

Date 6th February 2024

For and on behalf of Element Materials Technology

Report authorised by: Mark Garfield, Door & Window Laboratory Manager

Signed 

Date 06/02/2024

For and on behalf of Element Materials Technology

Report issued: 06 February 2024

UKAS TESTING
0621

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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CONTENTS **PAGE NO.**

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TEST DETAILS

CLIENT DETAILS

Company name	Aluminios Cortizo
Address	Extramundi, Padr+¦n, A Coru+¦a
Contact	Alejandro Gonz+ílez

ORDER DETAILS

Order number	CORTIZO-Q-23-DW-6959
Dated	14/12/2023

SAMPLE DETAILS

Outer frame	3200 x 2895 x 115mm
Opening sash	1593 x 2835 x 35mm
Configuration	Horizontal sliding doorset
Material	Aluminium
Details of Hardware	
Rollers	CORTIZO Needle tandem bearing, adjustable, 100 kg. Ref: 304351
Lock	CORTIZO Bidiretional frontal box. Ref: 394800
Handles	CORTIZO Inlay handle. Ref: 394012

TEST DETAILS

Test specification	PAS 24:2022
Full test	Yes
Test to clauses	Annex A&B
Sample received	12/12/2023
Test started	19/12/2023
Test completed	20/12/2023
Special Test requirements	None
Other reports to be used in conjunction with this report	None
Test rig used	Testing carried out in PAS24 test rig reference NEW

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TEST PROCEDURE

Introduction	This test report should be read in conjunction with the Standard PAS 24:2022 Enhanced security performance requirements for doorsets and windows in the UK. The specimens were judged on their ability to comply with the performance criteria as required in PAS24:2022 Annex A&B.
Instruction to test	Initial requirement was for a classification of D for doorsets.
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. The sample was locked from the internal face.
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 for at least 12 hours. The temperature and humidity in the lab was maintained in the range 16.5-17.9°C and 41.2-47.6% humidity for the duration of the test.

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INITIAL OBSERVATIONS

The internal face of the sample

Sample handle

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Sample interlock

Sample shoot bolt keep

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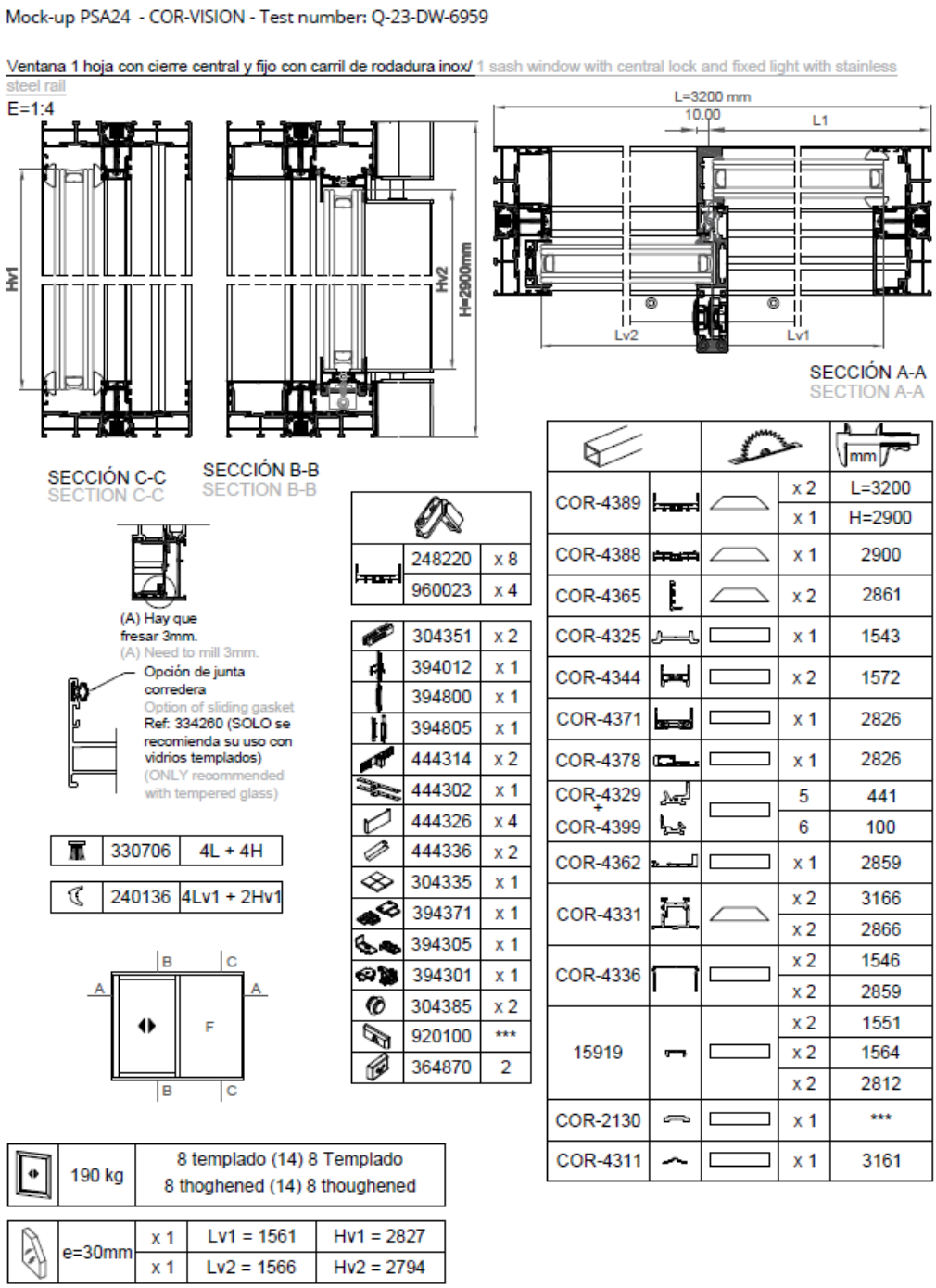
TEST SPECIMEN

Figure 1- Detailed drawing



Do not scale. All dimensions are in mm

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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		
Supplier	:	CORTIZO
Profile code	:	COR-4389
Material	:	Aluminium
Grade	:	6063 T5
Gauge	:	1.7 mm general thickness
Section size	:	44.00 x 115.80 mm
Fixing jamb to head joints		
i. type	:	Mitred corners with aluminium cleats
ii. size	:	Ref 248220 + Ref 960023
iii. quantity	:	Both in each corner
Details of adhesive		
i. supplier	:	Dow
ii. reference	:	Dowsil 895
2. Door frame jamb		
Supplier	:	CORTIZO
Profile code	:	COR-4389 / COR-4388 + COR4365
Material	:	Aluminium
Grade	:	6063 T5
Gauge	:	1.7 mm general thickness
Section size	:	44.00 x 115.80 mm
3. Door frame sill		
Supplier	:	CORTIZO
Profile code	:	COR-4389
Material	:	Aluminium / Steel
Grade	:	6063 T5
Gauge	:	1.7 mm general thickness
Section size	:	44.00 x 115.80 mm
Fixing jamb to sill joints		
i. type	:	Mitred corners with aluminium cleats
ii. material	:	Zamak and aluminium
iii. size	:	Ref 248220 + Ref 960023
iv. quantity	:	Both in each corner

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Item		Description
4. Door frame threshold/track		
Supplier	:	CORTIZO
Profile code	:	COR-4311
Material	:	Stainless Steel
Grade	:	AISI 316
Gauge	:	0.80 mm
Section size	:	18.00 x 4.05 mm
Fixing method to sill	:	Fitting into the groove
5. Door frame weather seal		
Supplier	:	CORTIZO
Reference	:	COR-330706
Material	:	Base propylene + mohair pile
Fixing method	:	Fitting into the groove
Position	:	All four edges
Continuity	:	Uninterrupted by hardware
6. Door frame mullion		
Supplier	:	CORTIZO
Profile code	:	COR-4362
Material	:	Aluminium
Grade	:	6063 T5
Gauge	:	1.7 mm general thickness
Section size	:	69.20 x 20 mm
Fixing mullion to head & sill joints		
i. type	:	Screws
ii. material	:	Stailess steal
iii. size	:	DIN 7981 3.5 x 32 mm
iv. quantity	:	2
7. Glazing setting blocks		
Supplier	:	CORTIZO
Material	:	PLASTIC
Thickness	:	17mm
8. Sidelight glazing gasket (internal)		
Supplier	:	CORTIZO
Reference	:	240135
Fixing method	:	Push fit
9. Sidelight glazing gasket (external)		
Supplier	:	CORTIZO
Reference	:	240135
Fixing method	:	Push fit
10. Door leaves		
Supplier/manufacturer	:	CORTIZO
Overall leaf size	:	2826 mm
i. active leaf	:	2826 mm

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Item		Description
11. Door leaf framing		
Supplier	:	CORTIZO
Profile codes		
i. locking stile profile code	:	COR-4371
ii. meeting stile profile code	:	COR-4378
iii. top rail profile code	:	COR-4344
iv. bottom rail profile code	:	COR-4344
Material	:	Aluminium
Grade	:	6063 T5
Gauge	:	1.7 mm general thickness
Doorleaf framing section sizes		
i. locking stile	:	20.30 x 36.40 mm
ii. meeting stile	:	114.00 x 20.00 mm
iii. top rail	:	27.00 x 36.40 mm
iv. bottom rail		
Fixing corner joints	:	Screwed + window side sash caps.
i. type	:	Specific of the system (see catalogue)
ii. quantity	:	In each corner
Details of adhesive		
i. supplier	:	Dow
ii. reference	:	Dowsil 796
12. Door leaf glazed panel		
Supplier	:	Guardian Glass
Configuration	:	8 toughened / 14 / 8 toughened
Thickness	:	30 mm
Overall size		
i. active leaf	:	1566 x 2794 mm
ii. Inactive leaf	:	1561 x 2827 mm
Nominal edge clearance	:	2 mm window sash / 17 mm window fixed
13. Glazing gasket (internal)		
Supplier	:	Dow
Reference	:	Dowsil 895
Fixing method	:	Silicone Sealing
14. Glazing gasket (external)		
Supplier	:	Dow
Reference	:	Dowsil 895
Fixing method	:	Silicone Sealing

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Item		Description
15. Door leaf interlocks		
Supplier	:	CORTIZO
Profile code	:	COR-4329 / COR-4399
Material	:	PVCr / Aluminium
Grade	:	Sh80 D / 6005 T6
Gauge	:	2.5 mm / 2.0 mm
Overall size	:	17.60 x 22.25 mm / 17.50 x 23.60 mm
Fixing interlock to active leaf		
i. type	:	Fitting into the groove / Fitting into the groove
ii. size	:	441 mm / 100 mm
iii. quantity	:	5 / 6
Fixing interlock to inactive leaf		
i. type	:	Fitting into the groove / Fitting into the groove
ii. size	:	441 mm / 100 mm
iii. quantity	:	5 / 6
16. Sliding Leaf Roller Set		
Supplier	:	CORTIZO
Description	:	Needle tandem bearing, adjustable, 100 kg
Reference	:	304351
Primary material	:	Zamak / acetal / Inox
Quantity	:	2
Fixing method	:	Screwed
Fixings		
i. type	:	Included in the ref. 304351
ii. size	:	As ref.304351
iii. quantity	:	As ref.304351
17. Sliding Leaf Anti-Lift Kit		
Supplier	:	CORTIZO
Description	:	Anti-Lift
Reference	:	364870
Primary material	:	PVC
Quantity	:	2
Fixing method		
i. type	:	Screwded
ii. size	:	DIN7982 4,2x19 mm
iii. quantity	:	2 per piece
18. Sliding Leaf Gearbox Mechanism		
Supplier	:	CORTIZO
Description	:	Bidiretional frontal box
Reference	:	394800
Primary material	:	Various
Quantity	:	1

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Item		Description
19. Sliding Leaf Handle		
Supplier	:	CORTIZO
Description	:	Inlay handle
Reference	:	394012
Primary material	:	Various
Quantity	:	1
Fixing method	:	Screwed to frontal box
i. type	:	Included in ref 394012
ii. material	:	As 394012
iii. size	:	As 394012
iv. quantity	:	2
20. **Sliding Leaf Locking Points**		
Supplier	:	CORTIZO
Description	:	Bolt with jammed pointer set + PAS24 pieces
Reference	:	394805 + 444336
Primary material	:	Steel, plastic
Overall size	:	
Quantity	:	1 set
Fixing method	:	Clipped to the transmission
21. Sliding Leaf Lock Keeps		
Supplier	:	CORTIZO
Description	:	PAS24 Lock keeps
Reference		
i. top & bottom keeps	:	444314+444302+444326
Material	:	Aluminium
Overall size		
i. top & bottom keeps	:	44mm
Fixing keeps to frame		
i. type	:	Screwed
ii. size	:	M5x20 mm
iii. quantity	:	4

Clause	Requirement	Results & Observations	Pass / Fail
A.3 Security hardware and cylinder test	**Part 1** No cylinder fitted, not applicable.		**N/A**
	Part 2 No cylinder fitted, not applicable.		**N/A**
	Part 3 No cylinder fitted, not applicable.		**N/A**
A.4 Cylinder vulnerability assessment	Additionally cylinders shall have been successfully assessed in accordance with the requirements of Annex A.4 of PAS24:2022 cylinder vulnerability assessment.	No cylinder fitted, not applicable.	**N/A**
Annex B: Enhanced security performance requirements for doorsets			
B.4.3 Manipulation test	Attacks were made to the 5th interlock using a craft knife to remove any material covering the lock in order to expose it but to no success total attack time 3 minutes. Entry not achieved. Attacks were made to the 5th interlock using 2 paint scrapers in an attempt to disengage the lock but to no success total attack time 3 minutes. Entry not achieved. Attacks were made to the 4th interlock using a craft knife to remove any material covering the lock in order to expose it but to no success total attack time 3 minutes. Entry not achieved. Attacks were made to the 4th interlock using 2 paint scrapers in an attempt to disengage the lock but to no success total attack time 3 minutes. Entry not achieved.		**Pass**
B.4.4.2 Manual test on infill	Attacks were made to the glazed infill using a craft knife to cut away any gaskets then manual force was used in an attempt to remove beading from the internal side but to no success total attack time 3 minutes. Attacks were made to the glazed infill using a craft knife to cut away any gaskets then manual force was used in an attempt to remove beading from the internal side but to no success total attack time 3 minutes.		**Pass**

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Clause	Requirement	Results & Observations	Pass / Fail
B.4.4.3 Mechanical test on infill	2.0kN loads were applied to the top left, top right, bottom right and bottom left corners of the glazing vision panel on the active door sash and the fixed light. All loads were held and no entry was achieved.		**Pass**
B.4.4.4 Manual cutting test	**Zone 1** Insufficient surface area for failure criteria, not applicable.		**N/A**
	Zone 2 Insufficient surface area for failure criteria, not applicable.		**N/A**
B.4.5 Mechanical loading test	Attempts to apply Mechanical loads to all the hinge points and locking points were made with the following results obtained. **Point 1: Top free corner of sash** 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s. 4.5kN parallel (horizontal) and 1.5kN perpendicular load held for 10s. **Point 2: Bottom free corner of sash** 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s. 4.5kN parallel (horizontal) and 1.5kN perpendicular load held for 10s. **Point 3: Bottom shoot bolt / bottom interlock** 1.5kN parallel (up) and 4.5kN perpendicular load held for 10s. 4.5kN perpendicular (Equal & opposite) load held for 10s. **Point 4: 5th interlock** 4.5kN perpendicular (Equal & opposite) load held for 10s. **Point 5: 4th interlock** 4.5kN perpendicular (Equal & opposite) load held for 10s. **Point 6: 3rd interlock** 4.5kN perpendicular (Equal & opposite) load held for 10s. **Point 7: 2nd interlock** 4.5kN perpendicular (Equal & opposite) load held for 10s. **Point 8: Top shoot bolt / bottom interlock** 1.5kN parallel (down) and 4.5kN perpendicular load held for 10s. 4.5kN perpendicular (Equal & opposite) load held for 10s. All loads were held and no entry was achieved.		**Pass**

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Clause	Requirement	Results & Observations	Pass / Fail
B.4.6 Manual check test	Attacks were made along the locking side using a flatblade screwdriver and nail bar in an attempt to lever the door open in order to meet the failure criteria but to no success total attack time 3 minutes. Entry not achieved. Attacks were made between the rollers using a flatblade screwdriver and nail bar in an attempt to lever the door open in order to meet the failure criteria but to no success total attack time 3 minutes. Entry not achieved. Attacks were made between the rollers using 2 flat blade screwdrivers in an attempt to lever the door open but to no success total attack time 3 minutes. Entry not achieved. Attacks were made between the rollers using 2 flat blade screwdrivers in an attempt to lever the door open but to no success total attack time 3 minutes. Entry not achieved.		**NO VULNER-ABILITY IDENTIFIED**
B.4.7 Additional mechanical loading test	Testing was not required as no vulnerabilities were identified in the manual check test.		**NOT REQUIRED**
B.4.8 Soft body impact test	The sample withstood 3 soft body impacts to points 800mm above floor level, 1250mm above floor level, and 1700mm above floor level in the centre of the active door sash and the fixed light. No visible damage was caused by these impacts and no entry was gained.		**Pass**
B.4.9 Hard body impact test	Insufficient surface area for hard body impactor, not applicable.		**N/A**

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CONCLUSIONS

Evaluation against objective	The doorsets as provided by the client were subjected to enhanced security testing in accordance with PAS24:2022 Annex A&B and achieved the requirements for a classification of D for doorsets.
Observations & comments	The self-gripping pliers used during the security hardware test were Irwin Vise Grip 10R (straight jaw) and 10WR (curved jaw)

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.
Uncertainty of Measurement	The uncertainties of measurements calculated for a confidence level of 95% throughout these tests are within the limits of these tolerances.

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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