



PAS24:2012



Test of: R.A.I.L Espagnolette

Date: 12/03/13

PAS24:2012: Enhanced security requirements for doorsets and windows in the UK -

Copy: 1

Issue No.: 1

External doorsets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk

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A Report To: Solutions by KG Ltd T/a TimberPlus

Report Reference: PAS24/13-1008

**MACO DOOR & WINDOW
HARDWARE (U.K.) LTD**
EUROLINK INDUSTRIAL CENTRE
CASTLE ROAD,
SITTINGBOURNE KENT, ME10 3LY
TEL. +44 (0) 1795 433900
FAX +44 (0) 1795 433902
enquiry@macouk.net www.macouk.net

**Indicative
Type
Testing**



Test Conclusions

Samples of:	Full length side hung outward opening sash opposite small top hung outward opening sash and fixed light.
Manufacturer:	Solutions by KG Ltd T/a TimberPlus
Product:	Casement window fitted with MACO R.A.I.L espagnolettes
Have been tested in accordance with:	PAS24:2012

By **MACO Door and Window Hardware (U.K.) Ltd**, Eurolink Industrial Center, Castle Road, Sittingbourne, Kent ME10 3LY.

Clause No.	Description	Compliance
C.4.3	Manipulation test	Yes
C.4.5	Mechanical loading test	Yes
C.4.6	Manual check test	Yes

No inferences can be made with regards to performance against any other requirements of this standard.

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



Authorisation

Test performed By: Leon Gayle

Report issued by: Craig Bryant

Signed:

A handwritten signature in black ink, appearing to read 'Craig Bryant', written over a horizontal line.

Date: 12/03/13

For and on behalf of **MACO Door and Window Hardware (U.K.) Ltd**

Report Issued: 12/03/13

NOTE:

MACO UK is "Not UKAS accredited" and are not covered by the Laboratory UKAS accreditation schedule.

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

MACO UK has tested the product supplied by the customer as sampled in accordance with their own requirements.

MACO UK carries out all indicative testing in-line with the latest copies of the published standard.



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Test Details

Customer Details:

Company Name	Solutions by KG Ltd T/a TimberPlus
Address	Unit 20G Longrock Industrial Estate Longrock Penzance Cornwall
Postcode	TR20 8HX
Contact	Katey

Order Details:

Order Number	N/A
Date	N/A

Sample Details:

Product	Full length side hung outward opening sash opposite small top hung outward opening sash and fixed light
Model	Timber / Sapele Hardwood
Manufacturer	N/A
Frame Dimensions	1200mm x 1200mm
Sash 1 Dimensions	558mm x 1122mm
Sash 2 Dimensions	558mm x 398mm
Material	PVC
Details of Hardware	Timber
Hinges	Securistyle Defender
Hinge Protection	MACO Egress Hinge Protectors
Locking System	MACO R.A.I.L Espagnolette
Backset	22mm
Mushroom Cams	7.7mm
Mushroom Strikes	94275
Shootbolt Strikes	N/A
Other	N/A

Test Details:

Test specification	PAS24:2012
Full test	
Test to clauses	C4.3, C4.5, C4.6
Test methods	

Sample received	11/03/13
Test started	12/03/13
Test completed	12/03/13

Special test requirements	None
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Other reports to be used in conjunction with this report

Air and Water test carried out. Report appended to this document.



Test Procedure

Introduction	The test report should be read in conjunction with PAS24:2012 and the testing of reverse action inline espagnolette
Instruction To Test	The test was conducted on the 12/03/13 on behalf of Solutions by KG Ltd T/a TimberPlus.
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 customer.
Installation	The sample was supplied mounted within a timber sub-frame of nominal section 75mm x 100mm fitted flush with the external face, in accordance with the customers fitting instructions. The sample was then installed into the test apparatus by a representative of MACO UK on the day of test.
Test Climate	The sample was conditioned in the test centre in the range of 10-30 °C.



Initial Observations

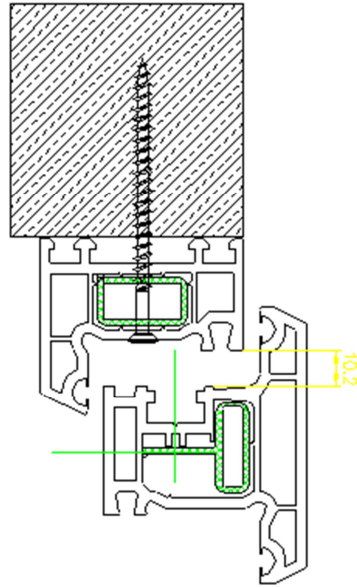
Introduction

(CUSTOMER
ATTENDED TEST
AND CAPTURED
PHOTOS AND
VIDEOS)



Test Specimen

Figure 1 – General Elevation of Test Specimen



Not to Scale



Schedule of Components

Item

1. Frame

Profile system : Timber / Sapele Hardwood
 Profile code : N/A
 Reinforcing : N/A
 Dimension : 1200mm x 1200mm

2. Sash

Profile system : Timber / Sapele Hardwood
 Profile code : N/A
 Reinforcing : N/A
 Dimension : 558mm x 1122mm & 558mm x 398mm

3. Mullion

Profile system : N/A
 Profile code : N/A
 Reinforcing : N/A

4. Transom

Profile system : Timber / Sapele Hardwood
 Profile code : N/A
 Reinforcing : N/A

5. Gaskets

Description : Coastal SP7015

6. Glazing

Thickness : Unknown?
 Sizes: : Unknown?
 Top hung sash : Unknown?
 Side hung sash : Unknown?
 Fixed sash : 538mm x 684mm
 Nominal edge : Unknown?
 clearance : Unknown?

**Item****7. Glazing Retention**

Tape : Security Tape
 Supplier : Hodgesons
 Reference : N/A
 Glazing Clips : Unknown?
 Supplier : Unknown?
 Reference : Unknown?

8. Glazing Beads

Profile system : TimberPlus
 Profile code : N/A

9. Hinges

Supplier : Securistyle
 Description : Defender
 Reference : EDS12 & EDT6
 Quantity : 1 of each

Fixing Hinge to sash

I. type : Side Hung
 II. size : 300mm
 III. quantity : 2

Fixing Hinge to frame

I. type : Top Hung
 II. size : 150mm
 III. quantity : 2

10 Hinge Protectors

Supplier : MACO
 Description : Egress Hinge Protector
 Reference : Sash: 352928 Frame: 353309
 Quantity : 2 pairs per sash

Fixing Hinge to sash

I. type : Hinge Protector
 II. size : 40mm aprx
 III. quantity : 2

Fixing Hinge to frame

I. type : Hinge Protector
 II. size : 40mm aprx
 III. quantity : 2



11 Locking System

Supplier : MACO
 Description : R.A.I.L Espagnolette Gr. 5 & Gr. 2
 Reference : 202703 & 202700
 Quantity : 1 each per sash
 Fixings : Timber screws
 I. type :
 II. size :
 III. quantity :

12 Striker Plates

Supplier : MACO
 Description : NV mushroom striker silver timber
 Reference : 94275
 Quantity : 4
 Fixings : Timber screws
 I. type :
 II. size :
 III. quantity :

13. Handle

Supplier : Titon
 Description : Select espag RH locking 7x30 RAL9010 semigloss
 Reference : TF1430RH7/020
 Fixings : Standard fine pitch handle to espag screws
 I. type :
 II. size :
 III. quantity : 2



Performance Criteria & Test Results

Clause No.	Result	Pass/Fail
C.4.3	No entry was gained to the window	PASS
C.4.5	All loads were applied and no entry could be gained to the window	PASS
C.4.6	No entry was gained to the window	PASS



Conclusions

Evaluation against objective

The sample supplied by the customer was subjected to the requirements in accordance with PAS24:2012

Observations and comments

This was the second test on an identical window. Test started on small top hung sash and went through without incident. Moved onto larger sash and reached 1st locking point (top left if viewing from the outside) where the cams disengaged. Test paused for investigation. It was decided to try triple screw hole keeps instead of the twin hole keeps currently fitted. All keeps changed over and test recommenced. Consequently, all hinge and locking points went through testing without incident. It was recommended that triple screw hole keeps are used for any future testing (MACO Part Number 365068) as they are less likely to twist under perpendicular loading.

Limitations

Limitations

The results relate only to the behaviour of the specimen of the element of construction under the particular conditions of the 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.

Range of assemblies covered by this report

It is our opinion that the range of assemblies covered by this report are covered by the following

- Assemblies with identical hardware fitted no further apart than in the tested assembly
- Assemblies of the same or smaller overall dimensions to the tested assembly

Uncertainty of Measurements

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

- Forces $\pm 2\%$
- Distance $\pm 1\text{mm}$ for tape measures ± 0.1 for dial gauges
- Times $\pm 5\text{s}$