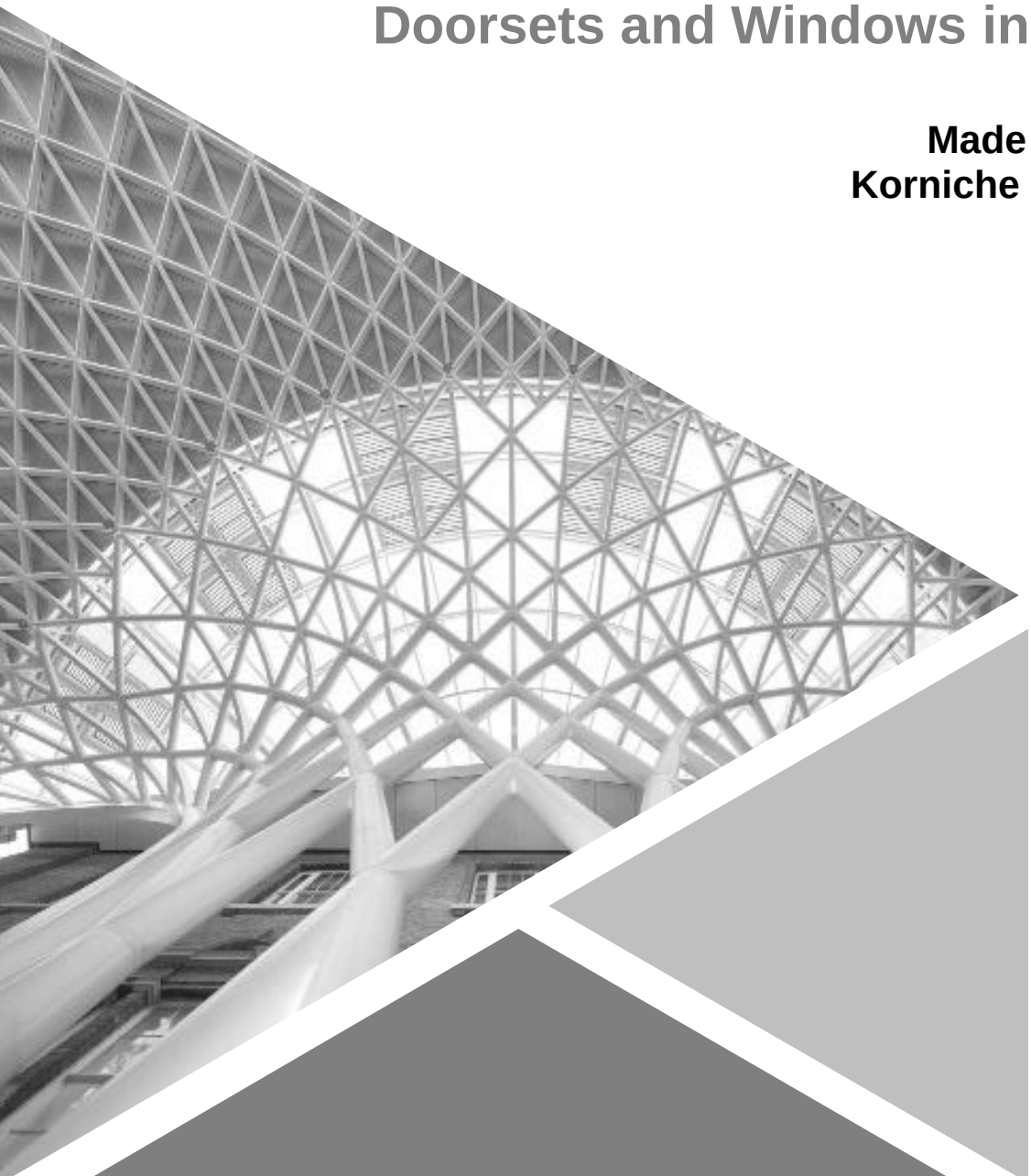
# Technical Report – R4791043254-2 PAS 24:2022 - Enhanced Security Performance Requirements for Doorsets and Windows in the UK

**Made For Trade**
**Korniche Flat Glass**



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**Contents**

## 1. Introduction

This report describes tests carried in order to determine compliance with PAS 24:2022 of the test specimen supplied as follows:

| **Test Details** | |
|---|---|
| Customer: | Made for Trade<br>Wellington House<br>Wynyard Avenue<br>Billingham<br>TS22 5TB<br>GB |
| Product Tested: | Korniche Flat Glass |
| Date of Test: | 25th October 2023 |
| Test Conducted at: | UL International (UK) Limited<br>Halesfield 2<br>Telford<br>Shropshire<br>TF7 4QH |
| Test Conducted by: | C Holden *Senior Laboratory Assistant*<br>S Ward *Engineering Technician* |

| **Report Authorisation** | |
|---|---|
| Report Compiled by: | T Smith<br>Engineering Project Handler |
| Authorised by: | R Cadwallader<br>*Project Engineer Associate* |

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*This report and the results shown within are based upon the information, drawings, samples and tests referred to in the report. The results obtained only apply to the sample tested and do not necessarily relate to samples from the production line of the above-named company and in no way constitute any form of representation or warranty as to the performance or quality of any products supplied or to be supplied by them. UL International (UK) Limited or its employees accept no liability for any damages, charges, cost or expenses in respect of or in relation to any damage to any property or other loss whatsoever arising either directly or indirectly from the use of the report.*



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## 2. Summary of Results

The following summarises the results of testing carried out, in accordance with PAS 24:2022.

The performance of the sample tested has been assessed against the criteria described in the standards below.

| ***Test Description*** | ***Result*** |
|---|---|
| C.4.4.2 – Infill manual test | ***Pass*** |
| C.4.4.3 – Infill mechanical test | ***Pass*** |
| Overall classification in accordance with PAS 24:2022 | ***W*** |

More comprehensive details are reported in section 6.

**Note:** *These results are valid only for the conditions under which the test was conducted.*

*All measurement devices, instruments and other relevant equipment were calibrated and traceable to National Standards.*

*This PAS 24 test was conducted through the use of our flexible scope of accreditation.*

### 2.1 Decision rule

Classifications reported in section 6 indicate that the product conforms with the relevant accuracy requirements of section B.3 and C.3 of PAS 24:2022.

### 2.2 Measurement uncertainty

The results as reported in this test report are not accounting measurement of uncertainty as no numerical values were recorded during the test.

## 3. Description of Test Sample

The details shown in section 3 and drawings shown in section 7 have been supplied by and confirmed as typical of normal production by Made For Trade and have not been verified by UL International (UK) Limited.

See section 7 for test sample drawings as provided by the customer.

| **General Information** | |
|---|---|
| **Project number:**<br>**(Please refer to all applicable projects)** | Project 20 |
| **Product range name:** | Flat Glass |
| **Project name to appear on front page of the test report:** | Korniche Flat Glass |
| **Configuration:** | 2000 x 1600 |
| **Opening direction:** | Non-opening |
| **Product manufacturer:** | Made for Trade (Aanco UK ltd) |
| **The sample is typical of normal production:** | Yes |
| **Please define the closing condition of the sample:**<br>**I.e. Closed, fastened, latched, locked and secured etc.** | Non opening |
| **Weight of Sample including subframe (kg):** | 80kg |
| **Weight of sash (kg) - applicable for sample tested with accordance with BS 6375-2:2009** | |

| **Outer Frame** | | | |
|---|---|---|---|
| Height: | 2000mm | **Outer frame gasket** | |
| Width: | 1600mm | Gasket type: | |
| Outer frame material: | Aluminium | Manufacturer: | |
| Surface finish | Powder Coat | Product name: | |
| **Outer frame Part Numbers** | | Product code: | |
| Top: | | **Threshold** | |
| Bottom: | | Manufacturer: | |
| Lock side: | | Product name: | |
| Hinge side: | | Product code: | |
| **Outer frame section size** | | Material: | |
| Width: | | **Outer frame joint method** | |
| Depth: | | Head: | |
| **Reinforcing:** | | Foot: | |
| Manufacturer: | | | |
| Product name: | | | |
| Product code: | | | |
| Material: | | | |

| **Glazing** | | | |
|---|---|---|---|
| **Glass unit** | | **Glazing gasket** | |
| Manufacturer: | Clayton Glass | Gasket type: | TPE |
| Inner thickness: | 4mm | Manufacturer: | |
| Spacer material: | Edge Tech Super Spacer | Product name: | |
| Outer thickness: | 6mm | Product code: | |
| Unit sizes: | 28mm | **Glazing clip** | |
| **Bead** | | Manufacturer: | |
| Manufacturer: | | Product name: | |
| Product name: | | Product code: | |
| Product code: | | **Glazing tape details** | |
| Bead size: | | Manufacturer: | |
| Bead material: | | Product name: | |
| | | Product code: | |

**Confirmation**

| **Customer is to confirm that the samples provided for testing are representative of standard production. Please note: the details given above, as well as the drawings supplied by the customer as confirmed as typical of normal production are not verified by UL International (UK) Limited.** | |
|---|---|
| **Company:** | Made for Trade (Aanco UK ltd) |
| **Name:** | Gavin Herdman |
| **Position:** | Head of Engineering |
| **Date:** | 07/12/23 |

## 4. Test Arrangement

### 4.1 Environmental conditioning

The test samples were stored in a non-destructive laboratory environment at a temperature of between 15 – 30°C and between a humidity of 25 – 75% RH for a minimum of 12 hours before, and during, the testing.

### 4.2 Test rig

The test sample was supplied mounted horizontally, to an approximately 100 x 50 mm timber kerb in accordance with manufacturer's installation requirements.

### 4.3 Mechanical load application

Mechanical loading to the infill was applied with a pad (as described above) centrally attached to a 150x150±5 mm plywood pad with a thickness of not less than 25 mm.

### 4.4 Attack tool groups

The following list of tools were available for use during the relevant manual attack tests.

The tools were not used to strike the test sample, or strike one another, nor were they connected in any way to increase the leverage available.

#### 4.4.1 Tool group A

| Section reference | Tool description |
|---|---|
| A.2.2.1 | Assorted mild steel wire |
| A.2.2.2 | Two credit cards |
| A.2.2.3 | Two paint scrapers |
| A.2.2.4 | One craft knife |
| A.2.2.5 | Two flat blade screwdrivers, 150mm length |

#### 4.4.2 Tool group B

| Section reference | Tool description |
|---|---|
| A.2.3.1 | One 25mm wood chisel |
| A.2.3.2 | One 6mm wood chisel |
| A.2.3.3 | One flat blade screwdriver, 200mm length |
| A.2.3.4 | One brick bolster |
| A.2.3.5 | One cross point screwdriver, 200mm length |
| A.2.3.6 | One cross head screwdriver, 200mm length |
| A.2.3.7 | One interchangeable bit screwdriver, 200mm length, PH1 to PH3, PZ1 to PZ3, T5 to T30, H2 to H6, Hexagon heads range from 4mm to 10mm and slotted 3.5mm to 6.5mm bits. This screwdriver was only used for removal of exposed fixings if applicable. |

### 4.5 Entry cylindroids

A 500±25 mm long cylindroid of a diameter 50±0.5 mm was used to confirm that any aperture created did not satisfy the entry definition as of section 3.9 in PAS 24:2022, for any relevant tests.

## 5. Test Procedures

### 5.1 Infill – manual test

The objective of this test was to attempt to remove gaskets, beads, security devices (if applicable) and the infill, using tools group A and tools group B described in section A.2.1 & A.2.2 of PAS 24:2022 for a maximum period of 3 minutes.

### 5.2 Infill – mechanical test

The objective of this test was to assess the ability of any infill medium to withstand a load of 2.0 kN applied to the exterior face at each corner. The load was applied to the top left corner before working clockwise around the remaining corners of the infill medium. The force was applied over a period of between 10 and 20 seconds and the force maintained until it had been held for between 8 to 12 seconds.

The loads and loading sequence were in accordance with section C.4.4.3 of PAS 24:2022.

### 5.3 Entry definitions

The performance of the window was measured against the entry definitions as described in 3.10 PAS 24:2022.

For all tests attempts were made to pass the 500 mm long cylindroid of diameter 50 mm through any aperture(s) created.

## 6. Test Results

### 6.1 Laboratory conditions

Prior to the start of the test, the laboratory conditions were measured as follows:

| | |
|---|---|
| **Date** | 25th October 2023 |
| **Temperature (°C)** | 19.6 |
| **Humidity (% RH)** | 47.7 |

**Note:** *The test samples were stored in a non-destructive environment at a temperature of 15 – 30°C for a minimum of 12 hours, testing was also conducted at those conditions.*

### 6.2 Locking condition

Before testing, the window was closed and locked in the most onerous condition based on its intended use and any keys were removed.

| | |
|---|---|
| **Tested locking condition** | Fixed |

### 6.3 Infill manual test

Attempts were made from the external face to remove gaskets and beading in order to gain access to and remove the infill using tools A.2.1 & A.2.2 in accordance with Section C.4.4.2 of PAS 24:2022.

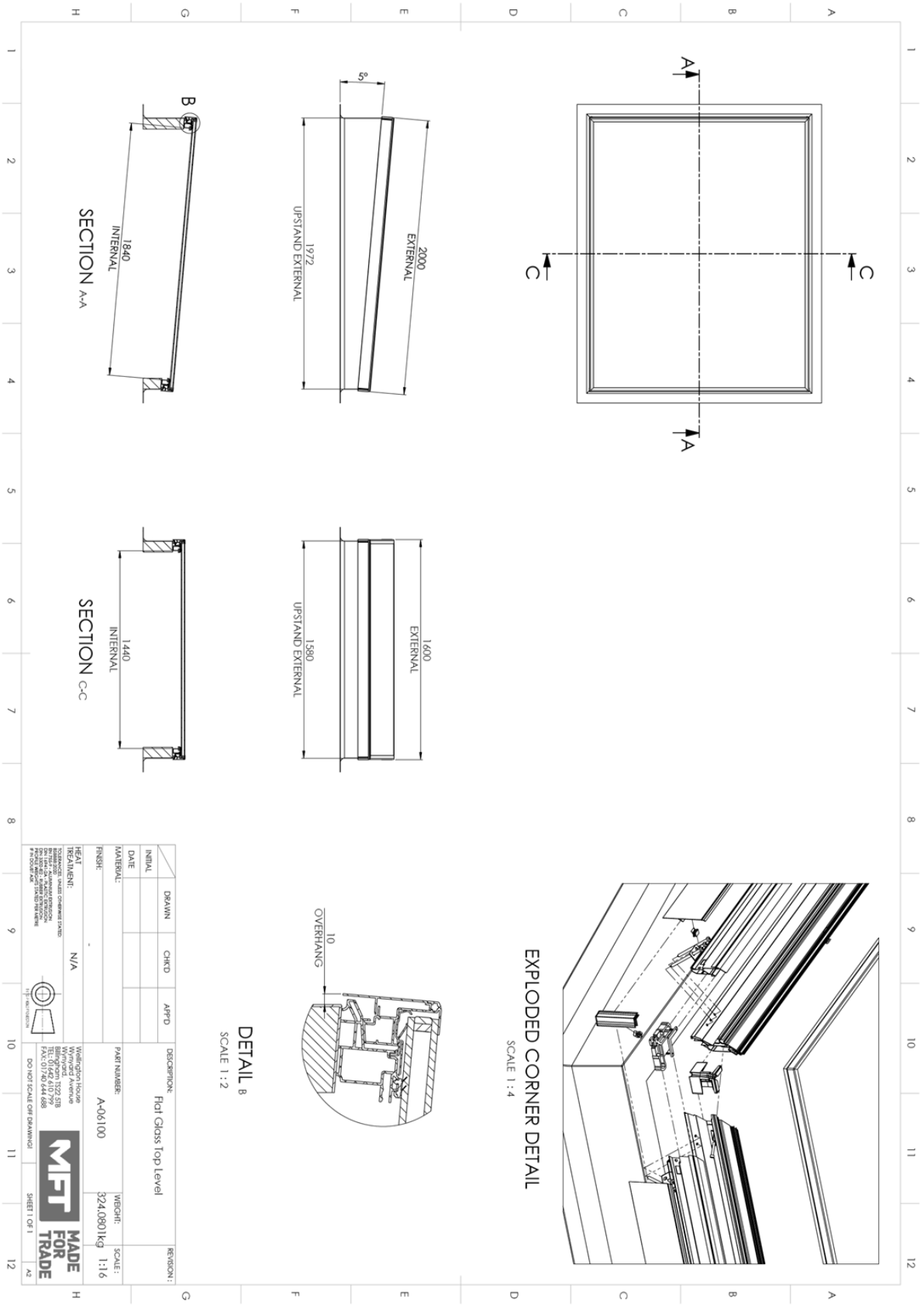
No entry was gained throughout the test.

### 6.4 Infill – mechanical test

A series of loads were applied to the external face of the infill as defined in section C.4.4.3 of PAS 24:2022. A perpendicular-to-plane load of 2.0kN was applied and held for 8-12 seconds at each corner of the infill. Starting in the top left corner and working clockwise in turn and in a direction towards the inside.

No entry was gained during this test.

## 7. System Drawings



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