Report in Accordance with PAS 24:2016

Enhanced security performance requirements for doorsets and windows in the UK

CONFIDENTIAL

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Project:	Tilt & turn window above fixed light
Prepared for:	UAB „Doleta” Vilniaus 52 Jieznas LT-59422 Lithuania
Test Engineer(s):	Dennis Humm

Build Check Ltd
Unit 5
Lincoln Park Business Centre
Lincoln Road
High Wycombe
Bucks HP12 3RD

Tel: 01494 452713 Fax: 0870 210 1013
E-mail: info@buildcheck.co.uk

UKAS TESTING
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1 Introduction

This document describes the testing conducted in accordance with PAS 24:2016 on the Tilt & Turn window. The testing was commissioned by Andrius Paliokas on behalf of UAB „Doleta".

The testing was carried out by Build Check Ltd test laboratory at Unit 3 Lincoln Park Business Centre, Lincoln Road, High Wycombe, HP12 3RD. The testing was conducted on 7 January 2020. The testing was witnessed by Andrius Paliokas and Nerijus Vilkas of UAB „Doleta".

This report is only valid for the conditions under which the test was conducted. All measurement devices, instruments and other relevant equipment were calibrated and traceable to National Standards.

2 Summary of Results

Overall test result	Pass

The following summarises the results of testing carried out, in accordance with the relevant test methods of PAS 24: 2016.

The overall results achieved for enhanced security performance consisted of the following tests on the supplied samples (see section 5 for more details).

Sample	Test date	Test	Test ref	Pass/fail
1	07/01/2020	Manipulation test A	C.4.3	Pass
1	07/01/2020	Infill medium removal manual test	C.4.4.2	Pass
1	07/01/2020	Manual check test	C.4.6	Not vulnerable
2	07/01/2020	Infill medium removal mechanical test	C.4.4.3	Pass
2	07/01/2020	Mechanical loading test	C.4.5	Pass
2	07/01/2020	Manipulation test B	C.4.3	Pass

The window passed PAS 24:2016 requirement for W.

The window range covered by this report is only applicable to the size and configuration tested.

3 Authorisation

	Issued by:	Checked by:
Signature:		
Name:	Dennis Humm	Richard Bate
Title:	Test Engineer	Technical Director

4 Test Details

Configuration: Tilt and turn over fixed light

Nominal Overall Dimensions:

Outer frame (w x h):	1230mm x 1600mm
Opening light (w x h):	1155mm x 1145mm
Fixed light (glass sightline) (w x h)	1060mm x 255mm

The specimens were received on: 12 December 2019

The test sample(s) were selected and provided direct from the client.

The specimen was conditioned in the laboratory at a temperature between 15 to 30°C and a relative humidity between 25 to 75%. The conditioning time was a minimum of 12 hours.

Sample	Test Date	Temperature	Recorded Humidity	Correct Humidity
1&2	07/01/2020	20°C	34%RH	44%RH

The window specimens were supplied mounted into a nominally 50mm x 100mm timber sub-frame in accordance with the manufacturer's installation requirements. They were secured into the test rig (TR1) by the responsible engineer.

4.1 Description of Specimen

Frame Profiles	Ref. No.	Material Type, Manufacturer's Name, Density (timber only) & Surface Treatment	Dimensions (Height & Width)
Outer Frame	19-2061	Jointed pine, 520 kg/m3, painted	78mm x 78mm
Opening Vent	19-2061	Jointed pine, 520 kg/m3, painted	79mm x 78mm
Glazing Bead	30.5	Jointed pine, 520 kg/m3, painted	30.5mm x 20mm
Mullion	19-2061	Jointed pine, 520 kg/m3, painted	92mm x 78mm
Joint Type	-	Stud joint	

Reinforcements	Ref. No.	Material Type/ Manufacturer's Name	Dimensions (Height & Width)
Outer Frame	19-2061	Jointed pine, 520 kg/m3, painted	78 mm x 78 mm
Transom/ Mullion	19-2061	Jointed pine, 520 kg/m3, painted	92 mm x 78 mm
Casement Vent	19-2061	Jointed pine, 520 kg/m3, painted	79 mm x 78 mm

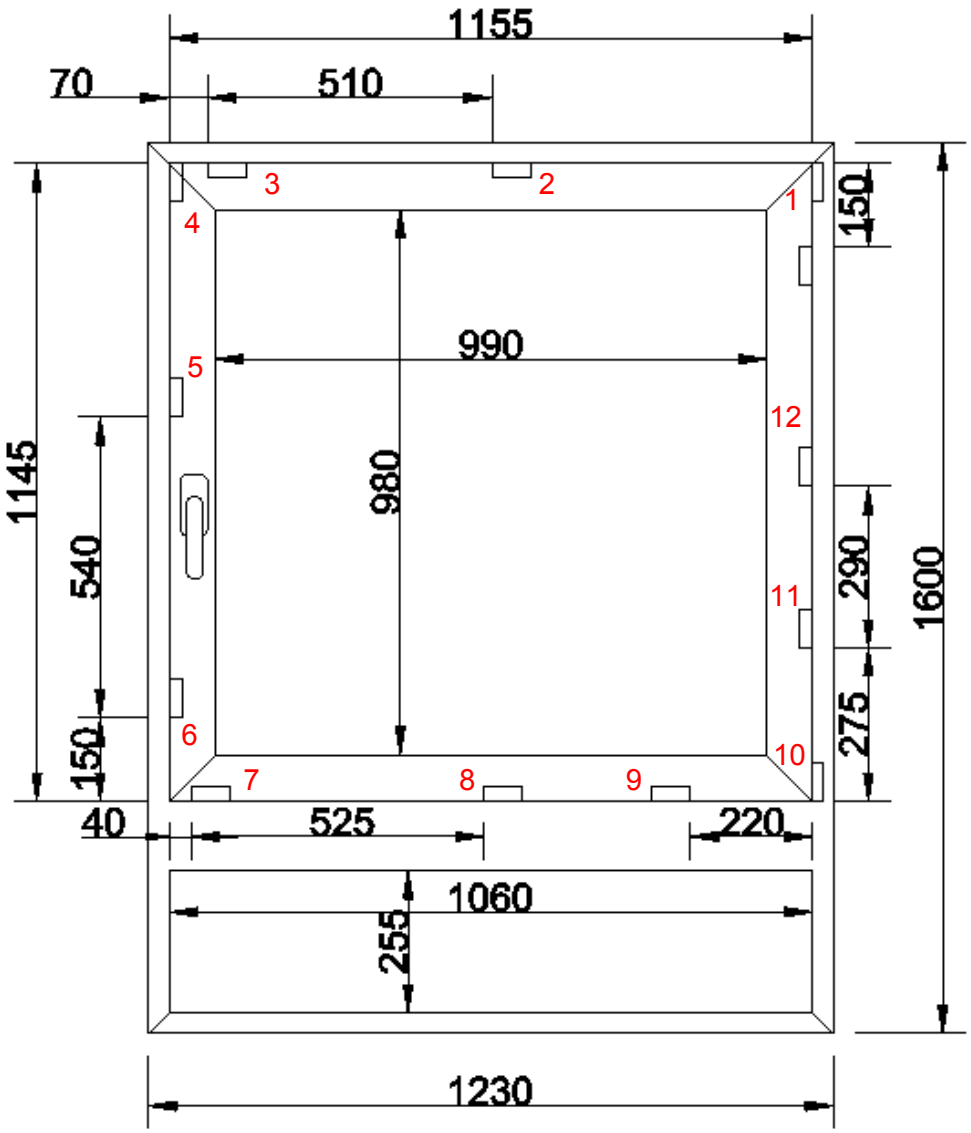
Weather Seals	Ref. No.	Material Type/ Manufacturer's Name	Continuous or Joined @ Corners
Glazing Bead	30.5	30.5 mm x 20 mm	Joined at corners 45*
Glazing Rebate	-	13 mm	
Casement Perimeter Seal	ASTORS	ASTORPROFIL 8 mm	
Frame Rebate	-	18 mm	

Hardware	Manufacturer's, Product Name and ref no	Fixings (Quantity and type with dimensions)
BOTTOM HINGE	SI, FBEL0010-100060	3 pcs 4x40
TOP HINGE	SI, FBSB0010-100060	4 pcs 4x40
STAY	SI, FBSL0100-100060	4 pcs 4x40
STOP FBS	SI, FRZF0010-100060	2 pcs 4x40
REB. COR. HINGE	SI, TBFE8411-100050	7 pcs 4x40
BOTTOM HINGE PIN	SI, TBLB0010-100060	Clicking to another piece
STAY HINGE	SI, TBWB0030-100060	Clicking to another piece
COR. DRIVE BS	SI, TEUL2380-100044	4 pcs 4x40
COR. DRIVE VSO	SI, TEUL4070-100050	4 pcs 4x40
COR. DRIVE VSU	SI, TEUL5020-100050	4 pcs 4x40
MISHANDLING DEVICE	SI, TFBS0010-040072	Clicking to another piece
PRESSURE PIECE	SI, TFFD0021-023070	Clicking to another piece
GEAR 15 AF	SI, TGKK4060-100040	8 pcs 4x40
STRIKER PLATE	SI, TRSK1260-100060	3 pcs 4x40
STRIKER PLATE	SI, TRSK1481-100010	2 pcs 4x40
STAY AF	SI, TSKT2040-100040	6 pcs 4x40
EXTENSION	SI, TVSL0330-100051	3 pcs 4x40
LINKAGE	SI, TZBS0190-100043	3 pcs 4x40
HANDLE	GU, L-11 white	2 pcs, M5x50
STRIKER PLATE	SI, FRKB0251-100060	2 pcs 4x40
GUIDE BLOCK	SI, FRFL0020-040050	2 pcs 4x40
BLOCK LIFT	SI, TFAH0020-100040	

Glazing Component	Specification
Overall sealed unit: 1. Thickness (mm)	 1. 28 mm
1. Outer pane (mm) 2. Cavity (mm) 3. Inner pane (mm)	1. 4mm clear toughened glass 2. 20mm 3. 4mm clear toughened glass

The above specimen specification was supplied by the client and not checked by the testing laboratory.

Figure 1 – Window elevation including hardware positions (external face) with mechanical loading points shown



Points 1 to 12 refer to perpendicular/parallel loading points (see Section 5.)

5 Performance Requirements and Results

PAS 24 Clause	Result	Pass/Fail
C.4.3 Manipulation test A	Used paint scraper and electrical screwdriver to attack the bottom hinge for 3 minutes. Used the paint scraper and electrical screwdriver to attack the bottom opening corner lock for 3 minutes. No entry was gained.	Pass
C.4.3 Manipulation test B	Used the paint scraper to attack the bottom hinge corner for 3 minutes, no entry was gained.	Pass
C.4.4.2 Infill manual test	Used a craft knife and 25mm chisel to attempt to remove the cladding for 3 minutes, no entry was gained.	Pass
C.4.4.3 Infill mechanical test	A 2.0kN load was applied to each corner of the glazing in turn. All loads were held for 10 seconds and no entry was gained.	Pass
C.4.5 Mechanical loading test	Mechanical loads were applied to hinge points and locking points with results as follows: 1a. 1.0kN up and 3.0kN perpendicular. 1b. 1.0kN towards the lock side and 3.0kN perpendicular. 1c. 1.0kN down and 3.0kN perpendicular. 2a. 1.0kN towards the lock side and 3.0kN perpendicular. 2b. 1.0kN down and 3.0kN perpendicular. 3a. 1.0kN towards the lock side and 3.0kN perpendicular. 3b. 1.0kN down and 3.0kN perpendicular. 4a. 1.0kN towards the hinge side and 3.0kN perpendicular. 4b. 1.0kN down and 3.0kN perpendicular. 5a. 1.0kN towards the hinge side and 3.0kN perpendicular. 5b. 1.0kN down and 3.0kN perpendicular. 6a. 1.0kN down and 3.0kN perpendicular. 6b. 1.0kN towards the hinge side and 3.0kN perpendicular. 6c. 1.0kN up and 3.0kN perpendicular. 7a. 1.0kN towards the hinge side and 3.0kN perpendicular. 7b. 1.0kN up and down with 3.0kN perpendicular. 8a. 1.0kN towards the hinge side and 3.0kN perpendicular. 8b. 1.0kN up and down with 3.0kN perpendicular. 9a. 1.0kN towards the hinge side and 3.0kN perpendicular. 9b. 1.0kN up and down with 3.0kN perpendicular. 10a. 1.0kN up and 3.0kN perpendicular. 10b. 1.0kN towards the lock side and 3.0kN perpendicular. 11a. 1.0kN up and 3.0kN perpendicular. 11b. 1.0kN towards the lock side and 3.0kN perpendicular. 12a. 1.0kN up and 3.0kN perpendicular. 12b. 1.0kN towards the lock side and 3.0kN perpendicular. All loads were held for 10 seconds and no entry was achieved.	Pass
C.4.6 Manual check test	1. Used nail bar and screwdriver to attack next to the bottom lock side corner for 3 minutes. 2. Used nail bar and screwdriver to attack next to bottom hinge side corner for 3 minutes. 3. Used nail bar and screwdriver to attack above the bottom lock side corner for 3 minutes. 4. Used 2 nail bars to attack next to the bottom lock corner for 3 minutes. 5. Used 2 nail bars to attack above the bottom lock corner for 3 minutes. No entry was gained.	Not vulnerable

Figure 2 – Photograph of Specimen