Performance of Windows and Doors

Following the principles of BS 1191: 2012 Windows and Doors- Resistance to repeated opening and closing

CONFIDENTIAL

Report reference:	CW19098
Issue date:	2nd September 2019
Project:	Single leaf doorset
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1 Introduction

This document describes the testing on the Single leaf doorset, conducted in accordance with BS EN 1191: 2012 and BS EN 12046-1.

The testing was commissioned by Ahmet Kocat on behalf of Yildoz Entegre A.S. All specimens were selected and supplied by the client.

The testing was carried out by Build Check Ltd test laboratory at Unit 3 Lincoln Business Centre, Lincoln Road, High Wycombe, HP12 3RD. The testing was conducted from 17 March. The testing was not witnessed.

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

2 Summary of Results

The following summarises the results of testing carried out, in accordance with the relevant test methods and classification standards (see section 5 for more details).

Operating Forces	Test Method Ref	Classification Ref	Classification Achieved
Operating Forces	BS EN 12046-1	BS EN 12217	2

Mechanical Strength	Test Method Ref	Classification Ref	Classification Achieved
Resistance to repeated opening and closing	BS EN 1191	BS EN 12400:2002	5

The doorset 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: Single leaf doorset

Nominal Overall Dimensions:

Outer frame (w x h):	865mm x 2025mm
Door leaf (w x h):	800mm x 1980mm

The specimen(s) were received on: 17/03/2019

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

The specimen was conditioned in the laboratory for at least four hours, at a temperature between 15 to 30°C and a relative humidity between 25 to 75%.

The laboratory ambient air temperature at the start of test was 16°C

The doorset specimens were supplied in good condition, mounted into a nominally 50mm x 100mm sub-frame in accordance with the manufacturer's installation requirements. They were secured into the test rig by the responsible engineer.

4.1 Description of Specimen

Description of specimen was supplied by the client and not verified by Build Check – for further information see drawings.

Frame Profiles	**Ref. No.**	**Material Type, Manufacturer's Name, Density (timber only) & Surface Treatment**	**Dimensions (Height & Width)**
Outer Frame	-	Monoblok Mdf / Yildiz entegre SA	865mm x 2025mm
Door leaf	-	Monoblok Mdf / Yildiz entegre SA	800mm x 1980mm
Joint Type	Screw Jointing		

Weather Seals	**Ref. No.**	**Material Type/ Manufacturer's Name**	**Continuous or Joined @ Corners**
Frame Rebate	-	Monoblok Mdf / Yildiz entegre SA	Joined

Hardware	**Ref. No.**	**Manufacturer's and Product Name**	**Fixings**
Lock	221	Kale kilit	2No. Kale 3.8x18mm Chipboard screws
Lock Keeps	-	Kale Kilit	2No. Kale 3.8x18mm Chipboard screws
Handles	-	Hafele	4No. Sofuoğlu 3.5x18mm chipboard screws.
Hinges/ Friction Stays	-	3No. Variodor, Lift off Hinges	4No. Sofuoğlu 5.7x40mm Chipboard Screws into frame. 4No. Sofuoğlu 5.7x40mm into leaf each.

5 Performance Requirements and Results

5.1 Resistance to repeated opening and closing

Primary sash

Initial measurements

Description	Test 1	Test 2	Test 3	Average	Stroke of moving component
Disengage Latch (Measured on handle in N)	31.0	29.6	30.8	30.47	45°
Commence Opening (Measured on handle in N)	9.9	5.9	3.6	6.47	90°
Commence Closing (Measured on handle in N)	13.2	5.9	3.7	7.6	90°

Final measurements

Description	Test 1 (N)	Test 2 (N)	Test 3 (N)	Average (N)	Stroke of moving component
Disengage Latch (Measured on handle in N)	20.1	23.2	19.8	21.03	45°
Commence Opening (Measured on handle in N)	7.2	11.1	10.2	9.5	90°
Commence Closing (Measured on handle in N)	14.1	9.8	10.1	11.33	90°

Variation in performance

Description	Variation in performance %
Handle down force	31%
Leaf opening force	46.8%
Leaf closing force	49.1%

The number of cycles completed by the opening leaf was 100,000, as required by class 5 of the standard. Lubrication and maintenance was not performed. The stroke of the leaf was 90 degrees with a casement weight of 37kg and a dead load of 0.2kg. The fastening system was operated. No signs of excessive wear were apparent.

Figure 1 – Photograph of Specimen