Report in Accordance with BS EN ISO 10077-1:2017

Thermal Performance of Windows, Doors & Shutters

Calculation of Thermal Transmittance Part 1: Simplified Method

CONFIDENTIAL

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1 Introduction

This document details the thermal performance calculation of the doorset configuration with two glazing units as detailed below.

The frame profile results detailed below are provided by computer simulation using LBL software program THERM 5.2 and validated against proofs in Annex D (D1 to D10) of BS EN ISO 10077-2:2017. The frame profile results detailed below are provided from methods contained in BS EN ISO 10077-1:2017 and in accordance with thermal transmittance requirements detailed in BS EN 14351-1:2006 +A1:2010.

2 Summary of Results

2.1 Centre pane U-Value of glazing calculated in accordance with BS EN 673: 2011

Glazing units	Centre pane U-value (U_g)
Nominal dimensions 4-20-4 90% argon 10% air filled, normal emissivity 0.05 (4mm float, 20mm Superspacer Premium, 4mm Pilkington KS glass)	1.2 W/m^{2}K
Nominal dimension 6.8-18-4 90% argon 10% air filled, normal emissivity 0.05 (6.8mm laminate float, 18mm Superspacer Premium, 4mm Pilkington KS glass)	1.2 W/m^{2}K

2.2 Frame thermal transmittance (in accordance with BS EN ISO 10077-1: 2017)

Frame Profile	Frame Thermal Transmittance (U_f)
Head	1.3 W/m^{2}K
Threshold	5.4 W/m^{2}K
Jambs	1.3 W/m^{2}K
Glazing Cassette (4-20-4 unit)	1.3 W/m^{2}K
Glazing Cassette (6.8-18-4 unit)	1.3 W/m^{2}K

2.3 Linear thermal transmittance (in accordance with BS EN ISO 10077-1: 2017)

Frame Profile	Linear Thermal Transmittance (ψ)
Head	0.012 W/m.K
Threshold	0.0085 W/m.K
Jambs	0.014 W/m.K
Glazing Cassette (4-20-4 unit)	0.040 W/m.K
Glazing Cassette (6.8-20-4 unit)	0.044 W/m.K
Moulding	0.016 W/m.K

2.4 Centre pane U-Value of glazing calculated in accordance with BS EN 673: 2011

Panel build up	Centre Panel U-value (U_p)
Nominally 48mm thick leaf comprising 1.5mm PVC-U facings either side of a 45mm Kerto L core	1.6 W/(m²·K)

2.5 U-Value

The thermal performance of the doorset (U_W) in accordance with EN ISO 10077-1:2017 is:

Doorset with 4-20-4 glazing unit	**1.6 W/m²K**
Doorset with 6.8-18-4 glazing unit	**1.6 W/m²K**

All profile calculations based on BS EN ISO 10077-2:2017

3 Authorisation

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