

**Report in Accordance with  
BS EN ISO 10077-1:2006**

# **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 of the Profile Developments Palladio Composite Door which was commissioned by Mike O'Sullivan of Profile Developments. The frame profile results detailed below are provided from methods contained in BS EN ISO 10077-1:2006 by computer simulation using LBL THERM 5.2 software and validated against proofs in Annex D of BS EN ISO 10077-2:2003

The Palladio Doorset in this analysis measures 974 mm x 2047 mm.

## 2 Summary of Results

### 2.1 Frame thermal transmittance (in accordance with BS EN ISO 10077-1:2006)

Frame Profile	Frame Thermal Transmittance ( $U_f$ )
Head & Cill	1.4 W/(m <sup>2</sup> ·K)
Jamb	1.4 W/(m <sup>2</sup> ·K)
Glazing Casette	0.68 W/(m <sup>2</sup> ·K)

### 2.2 Linear thermal transmittance (in accordance with BS EN ISO 10077-1:2006)

Frame Profile	Linear Thermal Transmittance ( $\psi$ )
Head & Cill	0.027 W/(m·K)
Jamb	0.026 W/(m·K)
Glazing Edge Glass side	0.25 W/(m·K)
Glazing Edge Panel side	0.036 W/(m·K)

### 2.3 Centre pane U-Value of glazing calculated in accordance with BS EN 673:1998

Door Panel	Centre panel U-value ( $U_g$ )
Nominal dimensions 65mm door slab consisting of 1.2mm ABS skin to each side of Glass Reinforced Polyurethane Foam monocoque with 5.5mm outer thickness each side and webbing through it's centre.	0.57 W/m <sup>2</sup> K

### 2.4 Centre pane U-Value of glazing calculated in accordance with BS EN 673:1998

Panel unit	Centre pane U-value ( $U_g$ )
Nominal dimensions 4-12-4-12-4 Triple glazed unit with uncoated clear float glass and air filled cavities separated by Edgetech Super Spacer warm edge spacer bar with 5mm Butyl secondary seal.	1.9 W/m <sup>2</sup> K


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**2.5 U-Value thermal performance of the door ( $U_w$ ) in accordance with EN ISO 10077-1:2006 is:**

**0.94 W/m<sup>2</sup>K**

All profile and PSI calculations are in accordance with BS EN ISO 10077-2:2003

### **3 Authorisation**

	<b>Issued by:</b>
<b>Signature:</b>	
<b>Name:</b>	Michael Handley
<b>Title:</b>	Senior Engineer

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