

**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 Permadoor, Byron GRP Doorset detailed below which was commissioned by Trevor Wild of Permadoor.

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 10077-2:2003 / The frame profile results detailed below are provided from methods contained in BS EN ISO 10077-1:2006.

## 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	1.4 W/m <sup>2</sup> K
Jamb	1.4 W/m <sup>2</sup> K
Jamb Lock	2.2 W/m <sup>2</sup> K
Cill	4.7 W/m <sup>2</sup> K
Glazing Cassette	1.6 W/m <sup>2</sup> K

### 2.2 Linear thermal transmittance using glazing from 2.5 (in accordance with BS EN ISO 10077-1:2006)

Frame Profile	Linear Thermal Transmittance ( $\psi$ )
Head	0.060 W/m.K
Jamb	0.11 W/m.K
Jamb Lock	0.11 W/m.K
Cill	0.11 W/m.K
Glazing Cassette	0.081 W/m.K

### 2.3 Linear thermal transmittance using glazing from 2.6 (in accordance with BS EN ISO 10077-1:2006)

Frame Profile	Linear Thermal Transmittance ( $\psi$ )
Head	0.060 W/m.K
Jamb	0.11 W/m.K
Jamb Lock	0.11 W/m.K
Cill	0.11 W/m.K
Glazing Cassette	0.087 W/m.K

### 2.4 Linear thermal transmittance using glazing from 2.7 (in accordance with BS EN ISO 10077-1:2006)

Frame Profile	Linear Thermal Transmittance ( $\psi$ )
Head	0.060 W/m.K
Jamb	0.11 W/m.K
Jamb Lock	0.11 W/m.K
Cill	0.11 W/m.K
Glazing Cassette	0.093 W/m.K

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

Glazing unit	Centre pane U-value ( $U_g$ )
Double glazed nominal dimensions 4-18-4, 100% air filled, Low E coated glass emissivity 0.15N (K glass) with aluminium box spacer bar with hot melt secondary seal secondary seal.	1.7 W/m <sup>2</sup> K

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

Glazing unit	Centre pane U-value ( $U_g$ )
Double glazed nominal dimensions 4-18-4, 100% air filled, Low E coated glass emissivity 0.04N (Planitherm Total) with aluminium box spacer bar with hot melt secondary seal secondary seal.	1.4 W/m <sup>2</sup> K

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

Glazing unit	Centre pane U-value ( $U_g$ )
Double glazed nominal dimensions 4-18-4, 90% Argon and 10% air filled, Low E coated glass emissivity 0.04N (Planitherm Total) with aluminium box spacer bar with hot melt secondary seal secondary seal.	1.2 W/m <sup>2</sup> K

## 2.8 U-Value using glass from 2.3

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

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

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

## 2.9 U-Value using glass from 2.4

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

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

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

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## 2.10 U-Value using glass from 2.5

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

**1.4 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>	Richard Bate
<b>Title:</b>	Technical Director

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