

# Evidence of Performance

## Thermal transmittance



### Test Report

No. 15-004068-PR04

(PB 02-K20-06-en-01)

**Client** OKNOPLUS Sp. z o.o.  
ul. Zgodna 55  
30-444 Kraków - Libertów  
Poland

#### Basis \*)

EN 14351-1:2006+A1:2010-03  
EN 12412-2:2003-07

\*) Correspond/s to the national standard/s  
(e.g. DIN EN)

#### Product

Plastic profile, profile combination: frame - case-  
ment

ift - test report 15-004068-PR04  
(PB01-K20-06-en-01) dated  
23.03.2016

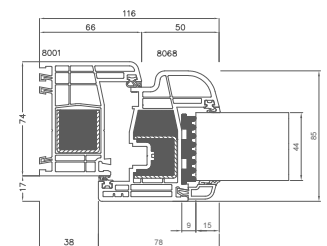
#### Designation

THERMO S 8000

#### Performance-relevant product details

Material Plastic - Polyvinylchlorid (PVC-U) rigid; Project-  
ed width in mm 116; Frame member; Profile section, width in  
mm 66; Profile section, depth in mm 74; Reinforcement; Mate-  
rial Metal – steel galvanized; Inlay foam; Material Rigid  
polyurethane foam “Purex WG-2132”; Density in kg/m<sup>3</sup>  
40 (nominal value); Width in mm 24; Depth in mm 26;  
Casement member; Profile section, width in mm 78; Profile  
section, depth in mm 85; Reinforcement; Material Metal –  
steel galvanized; Inlay foam; Material Rigid polyure-  
thane foam “Purex WG-2132”; Density in kg/m<sup>3</sup> 40 (nom-  
inal value); Width in mm 28; Depth in mm 42; Inlay foam of  
glazing rebate; Material Flexible polyurethane foam  
“NOMATEC® XPE038”; Density in kg/m<sup>3</sup> 25 (nominal  
value); Width in mm 9; Depth in mm 45; Replacement pan-  
el; Edge cover in mm 15; Thickness in mm 44

#### Representation



Special features --

#### Instructions for use

The results obtained can be used by the manufacturer for preparing the Declaration of Performance in accordance with the Construction Products Regulation 305/2011/EU. The provisions of the applicable product standard have to be observed.

#### Results

##### Thermal transmittance



$$U_f = 1.1 \text{ W/(m}^2\text{K)}$$

#### Validity

The data and results given refer solely to the described and tested specimen.

#### Notes on publication

The ift-Guidance Sheet "Conditions and Guidance for the Use of ift Test Documents" applies. The cover sheet can be used as abstract.

#### Contents

The report contains a total of 6 page/s and annex (1 page).

ift Rosenheim

29.03.2016

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## 1 Object

### 1.1 Description of test specimen

<b>Product</b>	Plastic profile, profile combination: frame - casement
Manufacturer	Original client
Date of manufacture	4.12.2015
System designation	THERMO S 8000
Material	Plastic - Polyvinylchlorid (PVC-U) rigid
Projected width in mm	116
<b>Frame member</b>	
Shipping name / Type / Item number	8001
Profile cross section, width in mm	66
Profile cross section, depth in mm	74
<b>Reinforcement</b>	
Shipping name / Type / Item number	--
Material	Metal – steal galvanized
Profile cross section, width in mm	28
Profile cross section, depth in mm	28
Profile cross section, thickness in mm	2
<b>Inlay Foam of reinforcement</b>	
Material	Rigid polyurethane foam “Purex WG-2132” (data sheet version 2008-06-03, POLYCHEM SYSTEMS Sp. z o.o.)
Density in kg/m <sup>3</sup>	40 (nominal value)
Thermal conductivity in (W/mK)	0.022-0.025 (nominal value)
Width in mm	24
Depth in mm	26
<b>Casement member</b>	
Shipping name / Type / Item number	8068
Profile cross section, width in mm	78
Profile cross section, depth in mm	85
<b>Reinforcement</b>	
Shipping name / Type / Item number	--
Material	Metal – steal galvanized
Profile cross section, width in mm	28
Profile cross section, depth in mm	28
Profile cross section, thickness in mm	2
<b>Inlay Foam of reinforcement</b>	
Material	Rigid polyurethane foam “Purex WG-2132” (data sheet version 2008-06-03, POLYCHEM SYSTEMS Sp. z o.o.)
Density in kg/m <sup>3</sup>	40 (nominal value)
Thermal conductivity in (W/mK)	0.022-0.025 (nominal value)

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Width in mm 28

Depth in mm 42

### Inlay Foam of glazing rebate

Material Flexible polyethylene foam "NOMATEC<sup>®</sup> XPE038" (ift test report 10-001118-PB01-K05-06-de-01, dated 2010-11-02)

Density in kg/m<sup>3</sup> 25 (nominal value)

Thermal conductivity in (W/mK) 0.038 (nominal value)

Width in mm 9

Depth in mm 45

**Rebate design** 1 rebate seal in frame member  
1 overlap seal in casement member

### Replacement panel

Edge cover in mm 15

Thickness in mm 44

The description is based on specifications provided by the client and on inspection of the test specimen at the ift. (Item designations/ numbers as well as material specifications were provided by the client, unless designated as „ift-tested“.)

Test specimen are described in the annex "Product/Sample description".

## 1.2 Sampling

The following data for sampling have been presented to ift:

Sampler: Original client

Documentation: ift Rosenheim did not receive a sampling report.

Date of delivery: 15.12.2015

ift-test specimen-No.: 15-004068-PK03 / WE: 41005-005, WE: 41005-006, WE: 41005-007, WE: 41005-008

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## 2 Procedure

### 2.1 Basic documents \*) of the processes

EN 12412-2:2003-07

Thermal performance of windows, doors and shutters - Determination of thermal transmittance by hot box method - Part 2 Frames

EN 14351-1:2006+A1:2010-03

Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics

\*) correspond/s to the national standard/s, e.g. DIN EN

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### 2.2 Short description of process

#### Thermal transmittance

The test is performed according to the regular hot box. The thermal transmittance is determined in steady state.

The specimen is located in a wall of insulation, which is surrounded by two half shells and the interior and exterior space.

Air and surface temperatures as well as the heating power are measured.

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### 3 Detailed results

#### Thermal transmittance

1508

Project-No. 15-004068-PR04 Task No. 15-004068  
Basis of testing EN 12412-2:2003-07  
Thermal performance of windows, doors and shutters - Determination of thermal transmittance by hot box method - Part 2 Frames  
Test equipment used Pst/022762 - Hot Box U-Wert  
PstZ/022764 - Wand 1 (Hot Box)  
Test specimen PK  
Number of test specimen 41005-005, 41005-006, 41005-007, 41005-008  
Date of testing 17 February 2016  
Testing personnel in charge Konrad Huber

#### Informationen regarding test arrangement / test method

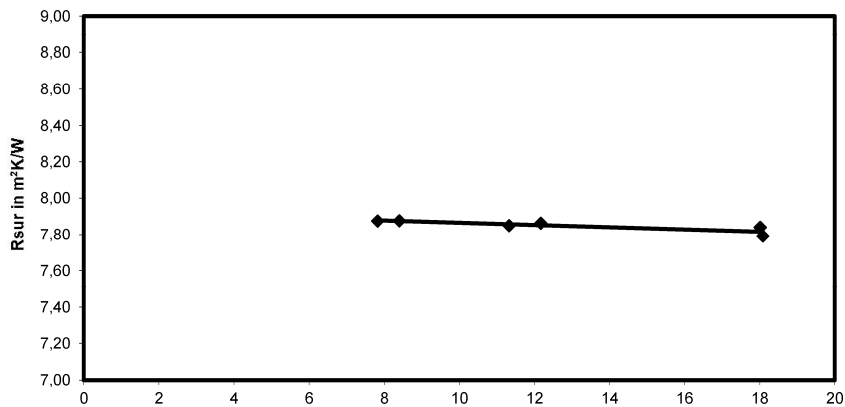
Test method There have been no deviations from the test methods according to standard/basis.

#### Implementation of tests / Test results

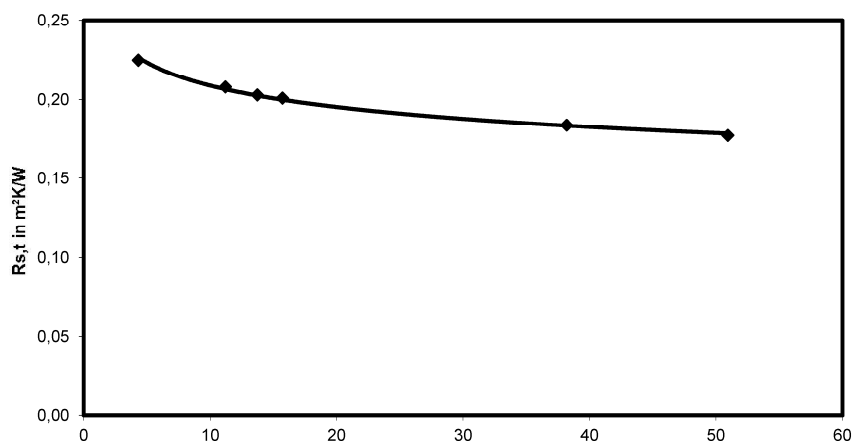
Designation	Symbol	Value	Unit
<b>Results <math>U_f</math></b>			
Air temperature warm side	$\theta_{ci}$	22,9	°C
Air temperature cold side	$\theta_{ce}$	2,3	°C
Environmental temperature - warm	$\theta_{ni}$	23,1	°C
Environmental temperature - cold	$\theta_{ne}$	2,3	°C
Air velocity internal (air flow down)	$v_i$	approx. 0,1	m / s
Air velocity external (air flow down)	$v_e$	1,7	m / s
Input power to hot box	$\Phi_{in}$	34,8	W
Heat flow density of specimen	$q_{sp}$	23,2	W / m <sup>2</sup>
Total surface resistance	$R_{st}$	0,196	(m <sup>2</sup> K) / W
<b>Measured value <math>U_f</math></b>			
Thermal transmittance	$U_f$	1,1	W / (m <sup>2</sup> K)
Uncertainty of measurement (absolute)	$\Delta U_f$	0,07	W / (m <sup>2</sup> K)



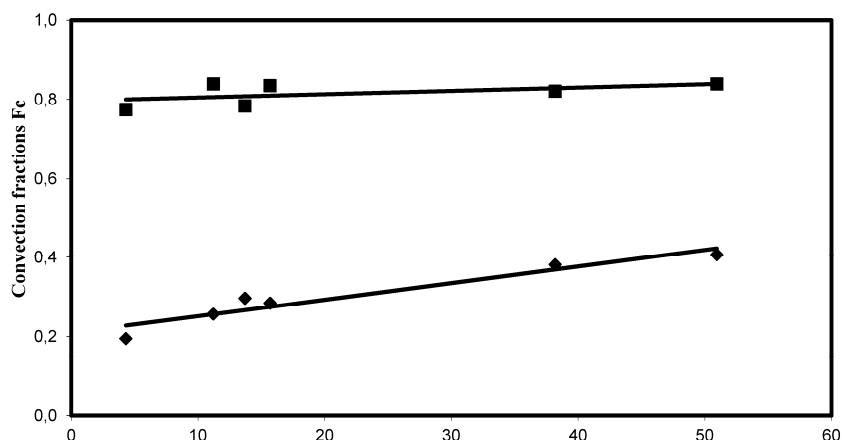
Diagrams showing results of calibration measurement



Surround panel, mean temperature



Density of heat flow rate  $q$  in  $W/m^2$



Density of heat flow rate  $q$  in  $W/m^2$

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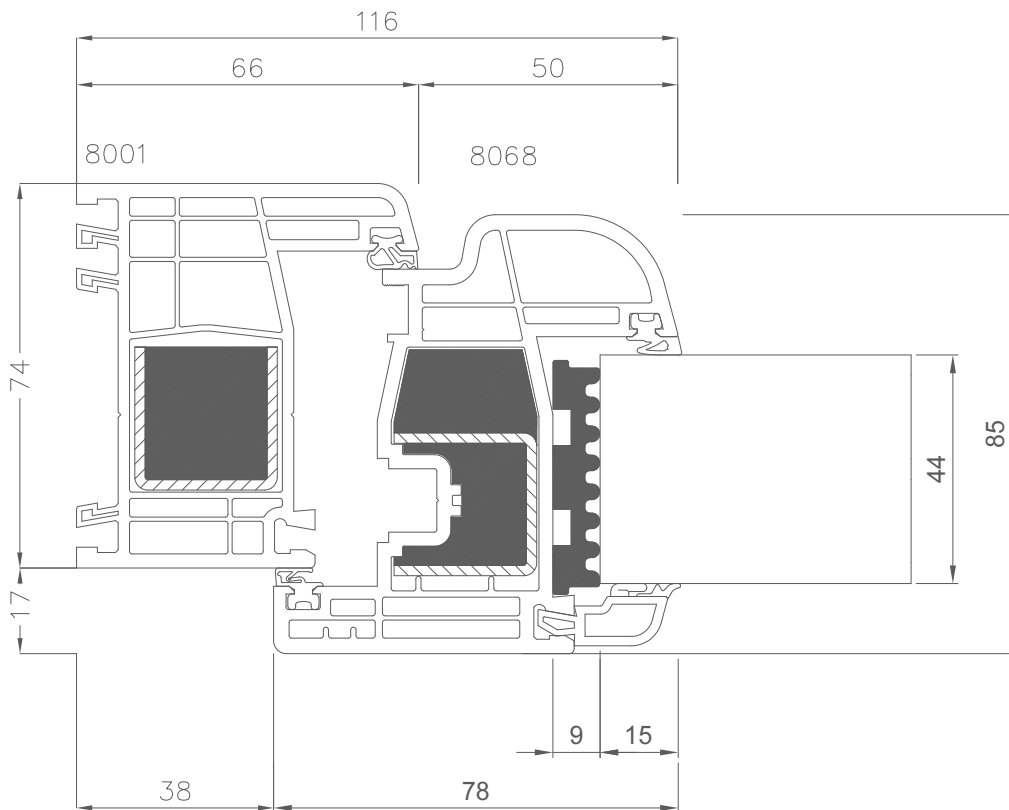


Figure 1: Cross section of the profile