

IKATES, s.r.o. – Laboratory for glass and building products testing



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Accredited testing laboratory No.1139

*accredited by Czech Institute of Accreditation in Prague
for glass and selected building products testing*

TEST REPORT

No. : **84 / 2009**

Test item : **Glass Block: 1919/8 Energy Saving Glass Block**
- determination of the U-value according to ČSN EN 673

Client (address): VITRABLOK s.r.o., Bílinská 42, Duchcov, Czech Republic

Producer (address): SEVES S.p.A., Via Reginaldo Guiliani 360, Firenze, Italy

Place of test performance : IKATES, s.r.o., Teplice


Date of order receiving : 2009-03-17

Date of ITC : 2009-03-24

Date of issue : 2009-03-25

Number of pages : 3

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Manager of testing laboratory :  Jiří Stránský



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Normative foundations :

ČSN EN 673 (2002): Glass in building - Determination of thermal transmittance (*U* value)
- Calculation method (incl. amdt A1 and A2)

ČSN EN 1051-2 (2008): Glass in building – Glass blocks and glass pavers – Part 2:
Evaluation of conformity / Product standard

Sampling :

To the determination of *U*-value was supplied glass block:

- 1919/8 Energy Saving Glass Block (with pasted-in glass)

Note: Between two halves of glass block is pasted-in coated glass Silverstar EN plus 4 mm. The glass block is closed in the atmosphere of argon.

Metrological provision of tests :

For measurements of dimensions and weighing were used calibrated measuring gauges of lab. Calculation of *U*-value acc. to ČSN EN 673 was carried out using of validated MOTS-software (validation using of software WIS of company WINDAT).

Test results :

Determination of thermal transmittance (*U* value) according to ČSN EN 673

(modelling of glass block according to ČSN EN 1051-2, annex C)

thermal conductivity of soda lime glass	$r = 1,0 \text{ m}\cdot\text{K}/\text{W}$
temperature difference between boundary glass surfaces	$\Delta T = 15 \text{ K}$
mean temperature of gas gap	$T_m = 283 \text{ K}$
external heat transfer coefficient	$h_e = 23 \text{ W}/(\text{m}^2\cdot\text{K})$
internal heat transfer coefficient	$h_i = 8 \text{ W}/(\text{m}^2\cdot\text{K})$

Other conditions:

vertical position of glazing	
emissivity of glass block surface/ glass Silverstar EN plus:	$\varepsilon = 0,837 / \varepsilon = 0,037$
gas:	argon
glass density	$2500 \text{ kg}/\text{m}^3$

Note: Influence of thermal conductivity of adhesive was not taken into account with regard to negligible thickness.



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Test specimen : 1919/8 Energy Saving Glass Block

equivalent thickness $h_{eq} = 7,0$ mm; area $A_c = 277$ cm²

equivalent thickness $t_{eq} = 8,0$ mm

thermal transmittance $U_c = 0,86$ W.m⁻².K⁻¹

thermal transmittance $U_e = 4,0$ W.m⁻².K⁻¹

total thermal transmittance $U_f = 1,4$ W.m⁻².K⁻¹

Statement : Test results, given in this report, apply only to the tested items and does not replace other documents, e.g. administrative characters, issued from other bodies, according to particular regulations.

Distribution list :

2 x VITRABLOK, s.r.o.

1 x Laboratory for glass and building products testing IKATES, s.r.o. (archive)

Determination was performed by :

Report was performed by :

For correctness and validity of report is responsible :



Jiří Stránský

