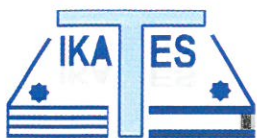


IKATES, s.r.o. – Laboratory for glass and building products testing



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*Testing laboratory No.1139 accredited by Czech Institute of Accreditation
acc to. ČSN EN ISO/IEC 17025 for glass and selected building products testing*

TEST REPORT

No. : 22 / 2016 / T

Test item : **Laminated glass - initial type tests acc. to ČSN EN 14449:**
- humidity test according to ČSN EN ISO 12543-4
- high temperature tests according to ČSN EN ISO 12543-4
- radiation test according to ČSN EN ISO 12543-4

Client (address): CAMGLASS Cam San. Ve Tic. AS
Osmangazi Mh. Mehmet Deinz Kopuz Cd. No:21-23,
Kıraç - ESENYURT- İSTANBUL, Turkey

Producer (address): CAMGLASS Cam San. Ve Tic. AS
Osmangazi Mh. Mehmet Deinz Kopuz Cd. No:21-23,
Kıraç - ESENYURT- İSTANBUL, Turkey

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

Date of sample receiving : 2016-02-05 and 2016-04-26

Date of test performance : 2016-04-19 to 2016-07-25

Date of issue : 2017-08-24

Number of pages : 3

Page No. : 1

Manager of testing laboratory : Jiří Stránský



Results and/or information out of accreditation range and subcontracts are in the test report identified. Copying and translating, using of report for other purposes (advertisement, extracts from the report) only with consent of the laboratory. Without consent of the laboratory can be the report reproduced whole only.

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	Page No. : 2

Normative foundations :

ČSN EN ISO 12543 (2012): Glass in building – Laminated glass and laminated safety glass

ČSN EN 14449 (2006): Glass in building – Laminated glass and laminated safety glass – Evaluation of conformity/Product standard

Sampling :

Following test specimens of laminated glass were used for testing :

6 pcs. 300 mm x 300 mm; 5 mm clear float glass + 0,38 mm PVB + 5 mm clear float glass

6 pcs. 300 mm x 300 mm; 5 mm clear float glass + 0,76 mm PVB + 5 mm clear float glass

6 pcs. 300 mm x 300 mm; 6 mm clear float glass + 0,76 mm PVB + 6 mm clear float glass

7 pcs. 300 mm x 300 mm; 8 mm clear float glass + 1,52 mm PVB + 8 mm clear float glass

2 pcs. 300 mm x 300 mm; 4 mm clear float glass + 1,52 mm PVB + 4 mm clear float glass

Note: Original edges without protection. Samples were cut into dimensions 300x300 mm from 900x300 mm.

Metrological provision of tests :

The radiation test was carried out using of testing equipment– radiation wall with Ultravitalux lamps. The light transmittance of samples before and after the test was measured using of spectrometer Perkin Elmer Lambda 2 with metrological traceability. Irradiance was measured with pyranometer Kipp & Zonen CM-6B with metrological traceability, the temperature using of calibrated thermocouple. Humidity test was carried out in the climate chamber Hygrotherm. For measuring and controlling of temperature was used calibrated thermometer. The high temperature test was carried out in climate chamber CTS with metrological traceability.

Test results :

1. High temperature test (ČSN EN ISO 12543-4, art.5.3.2 – procedure A)

Sample No.	state after the test
1-3 (55.1)	no changes in evaluated area
4-6 (55.2)	no changes in evaluated area
7-9 (66.2)	no changes in evaluated area
10-12 (88.4)	no changes in evaluated area

2. Humidity test (ČSN EN ISO 12543-4, art.6.3.1 – with condensation)

Sample No.	state after the test
1-3 (55.1)	no changes in evaluated area
4-6 (55.2)	no changes in evaluated area
7-9 (66.2)	no changes in evaluated area
10-12 (88.4)	no changes in evaluated area



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3. Radiation test (ČSN EN ISO 12543-4; 7.3.1)

Duration: 2000 hours; sources: 16 pcs. of OSRAM Ultravitalux 300 W

None of the tested specimens shows visually observable changes in the evaluated area.

Sample No.	Light transmittance before and after the test		Rel. difference (%)
	τ_{V1} (1)	τ_{V2} (1)	
1 (88.4)	0,835	0,833	-0,2
2 (44.4)	0,876	0,869	-0,8
3 (44.4)	0,868	0,866	-0,2

Note: According to ČSN EN 12543-2, art. 4.3, the allowable difference is max. ± 3 % rel..

Statement : Test results, given in this report, apply only to the tested items and do not replace other documents, e.g. administrative character, issued by other bodies, according to particular regulations. The official version is in the Czech language.

Distribution list :

2 x CAMGLASS Cam San. Ve Tic. AS

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

Tests were performed by :

Jiří Šnajdr, Jiří Stránský

Report was performed by :

For correctness and validity of report is responsible :

Jiří Stránský

end of the test report

