

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



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

TEST REPORT

No. : 21A / 2016

Test item : **Insulating glass units**
- long term test method and requirements for moisture penetration according to ČSN EN 1279-2 (initial type test)

Client (address): Guangzhou Baiyun Chemical Industry Co., Ltd.
No.1 Yunan Road, Guangzhou Civilian Science & Technology Park, Taihe, Guangzhou, China

Producer (address): Guangzhou Baiyun Chemical Industry Co., Ltd.
No.1 Yunan Road, Guangzhou Civilian Science & Technology Park, Taihe, Guangzhou, China

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

Date of sample receiving : 2016-02-03

Date of test performance : 2016-03-08 to 2016-06-02

Date of issue : 2016-06-14

Number of pages : 5 + annex

Page No. : 1

Manager of testing laboratory : Jiří Stránský



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Normative foundations :

ČSN EN 1279-2 (2003): Glass in building – Insulating glass units – Part 2: Long term test method and requirements for moisture penetration

Sampling :

Following test specimens with dimensions 352x502 mm were supplied to testing:

15 pcs. float clear glass 4 mm / Al-12 mm, air / float clear glass 4 mm

Components list:

glass – float glass clear according to EN 572-9, Foshan ZNG Glass Co., Ltd.

spacer – aluminium, 12 mm, bended, steel key; producer – not provided

desiccant – filling: 4 sides; type, producer – not provided

inner sealant – polyisobutylene, seal width 5-6 mm; type, producer – not provided

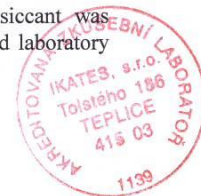
outer sealant – silicone SS528, Guangzhou Baiyun Chemical Industry Co., Ltd., seal width 11-12 mm (measured on glass)

Metrological provision of tests :

Calibrated measuring gauges of testing laboratory were used during testing. Dew point test was performed using of equipment according to ČSN EN 1279-2 in the vertical position, the temperature was measured with calibrated thermometer. The cooling was performed with solid carbon dioxide and ethanol.

Climatic test was performed in the climatic chamber CTS controlled by the calibrated thermo- and hygrometer and by the validated software CID-PRO.

Determination of moisture content and adsorption capacity of desiccant was performed using of oven Temptra with calibrated thermocouples and verified laboratory balances KERN 770-14.



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Test results :

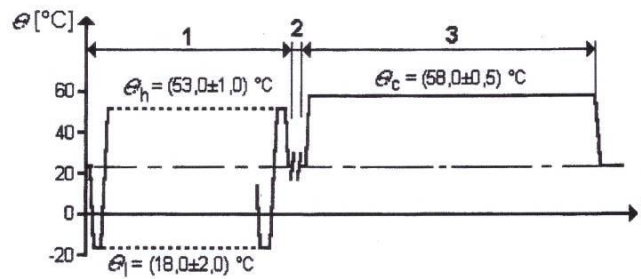
1. Dew point temperature measurement (ČSN EN 1279-2, art. 6.1, annex A)

Specimen No.	Dew point (°C)
1-15	- 60

Note: Inasmuch as no condensation appears at tested specimens, the specimens were numbered at random.

2. Climate test (ČSN EN 1279-2, art. 5, 6.2.2)

Climate test – specimens No.4, 5, 6, 11, 12



- 1 56 temperature cycles of 12 h (four weeks);
- 2 interval of 2 h to 4 h for moving test pieces from one cabinet to a second cabinet
- 3 (1176 ± 4) h (seven weeks) constant temperature and relative humidity $\geq 95\%$.



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2.1 Moisture content measurement

2.1.1 Initial moisture content (drying method at 950 °C)

specimen No.	m ₁ (g)	m ₂ (g)	T _i (%)	T _{i,av} (%)
7	29,8054	28,1199	5,66	5,77
8	26,1580	24,6844	5,63	
9	24,2813	22,8260	5,99	
10	23,9644	22,5713	5,81	

2.1.2 Final moisture content (drying method at 950 °C)

specimen No.	m ₁ (g)	m ₂ (g)	T _f (%)	T _{f,av} (%)
4	27,0081	25,2233	6,61	6,85
5	28,5529	26,5179	7,13	
6	25,9825	24,2203	6,78	
11	30,9846	28,9065	6,71	
12	29,7590	27,6721	7,01	

2.1.3 Standard moisture adsorption capacity (drying method at 950 °C)

specimen No.	m ₁ (g)	m ₂ (g)	T _c (%)	T _{c,av} (%)
1	30,2757	24,1883	20,11	20,14
15	26,7630	21,3679	20,16	

2.1.4 Moisture penetration index

specimen No.	moisture penetration index	
	I (%)	I _{av} (%)
4	5,81	7,89
5	9,43	
6	7,02	
11	6,50	
12	8,63	

Expert viewpoint:

Measured values: $I_{av} = 7,89 \%$; $I_{max} = 9,43 \%$ at specimen No.5

Requirement of ČSN EN 1279-2, cl.4.1: $I_{av} \leq 20 \%$; max. $I \leq 25 \%$

Viewpoint: test results are in agreement with requirement of the standard.



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

Distribution list :

2 x Guangzhou Baiyun Chemical Industry Co., Ltd.

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

Tests were performed by :

Report was performed by :

For correctness and validity of report is responsible :

End of the test report


Michal Hnilička



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Summary report No. 21AS/2016 Date: 2016-06-14

Insulating glass units – Moisture penetration results according to EN 1279-2

For details, see the test report No. 21A / 2016

Company : Guangzhou Baiyun Chemical Industry Co., Ltd.
No.1 Yunan Road, Guangzhou Civilian Science & Technology Park,
Taihe, Guangzhou, China

Plant : Guangzhou Baiyun Chemical Industry Co., Ltd.
No.1 Yunan Road, Guangzhou Civilian Science & Technology Park,
Taihe, Guangzhou, China

System description, file number: „IGU production system description“

Product name: Insulating glass unit

System conforms:

YES	NO
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A handwritten signature in blue ink, appearing to be 'JS', written over a dotted line.

Jiří Stránský
manager of testing laboratory

