



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

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*Testing laboratory No.1139 accredited by Czech Accreditation Institute, o.p.s.  
acc. to ČSN EN ISO/IEC 17025:2018*

## **TEST REPORT**

**No. : 106B / 2022**

Test item : **Insulating glass units**  
**- long term test method of gas leakage rate according to**  
**ZP-SOP 09018 (ČSN EN 1279-3) - type test**

Client (address): JSC "Bodesa"  
J.Basanavičiaus g. 166, LT-76128 Šiauliai  
Lithuania

Producer (address): JSC "Bodesa"  
J.Basanavičiaus g. 166, LT-76128 Šiauliai  
Lithuania

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

Date of sample receiving : 2022-04-27

Date of test performance : 2022-05-11 to 2022-08-02

Date of issue : 2022-08-03

Number of pages : 4

Page No. : 1

Manager of testing laboratory: Jiří Stránský



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**Normative foundations :**

ČSN EN 1279-3 (2019): Glass in building – Insulating glass units – Part 3: Long term test method and requirements for gas leakage rate and for gas concentration tolerances

ZP 00001-02 (2004): Determination of gas concentration in insulating glass units

ZP-SOP 09018-01 (2009): Determination of gas leakage rate of IGU's according to ČSN EN 1279-3

**Sampling :**

Following samples of IGU's were supplied to the testing laboratory:

Samples description provided by the producer	
IGU construction :	float glass clear 4 mm + 12 mm, argon + float glass clear 4 mm
Number of pieces and external dimensions :	6 pcs 352 x 502 mm x 20 mm
Production date :	2022-04-07
Glass (name, producer, type) :	float glass clear 4 mm; EUROGLASS Polska
Spacer (material, name, producer) :	Chromatech Ultra, 12 mm, Rolltech A/S, Denmark
Corner keys (name, producer, add. sealing) :	-
Joint (name, producer, additional sealing) :	Stainless steel connector, Kronenberg, Germany
Desiccant (name, producer, type, filled sides, T <sub>c</sub> ) :	Zeolan K, 3Å; 0,5 - 0,9 mm; Nedex, Turkey; 2 sides; >16 %
Outer sealant (name, producer, type) :	Polysulphide PS-EN, Tenachem, Latvia
Average sealant depth on spacer back (u) :	4 mm
Average sealant depth on glass surface (s) :	5,5 mm
Inner sealant (name, producer, type) :	IGK 511; Germany; polyisobutylene
Average sealant depth (r) :	4 mm
Mass of inner sealant / length and side (R):	3,04 g/m/side
Coating (name, producer) :	-
Edge deletion :	-
Gas filling (type) :	Argon; chamber filling
Closing of gap filling holes (type) :	-
Production conditions:	25,6 °C; 977 hPa





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### **Metrological provision of tests :**

Calibrated measuring gauges of testing laboratory were used during testing. 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 gas leakage rate was performed using of gas chromatograph Shimadzu GC-2010 and calibration gas supplied by Air Products. Gas concentration measurement was carried out using of equipment ISO-GAS-CONTROL.

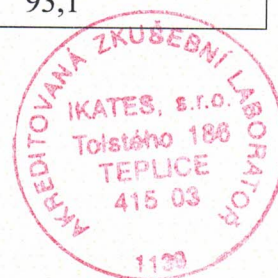
### **Test results :**

#### **1. Sample description**

Outer dimensions:	352 x 502 mm
Total thickness before ageing:	20,2 mm
Product name:	Insulating glass unit
Corner construction:	bent, stainless teel connector
Dessicant amount (side No.):	2 sides (long+ short)
Average sealant depth on spacer back ( <i>u</i> )	5 mm
Average sealant depth on glass surface ( <i>s</i> )	5-6 mm
Average sealant width ( <i>r</i> ):	5-6 mm
Edge deletion:	-
Special features:	-

#### **2. Initial gas concentration (ZP 00001)**

Test specimen No.	3	4
c <sub>Ar</sub> (%)	92,2	93,1



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**3. Gas leakage rate measurements and gas concentration in the tested specimens (ZP - SOP 090018-01/ČSN EN 1279-3, ZP 00001)**

Test specimen No.	1	2
$V_{\text{int}}$ (mm <sup>3</sup> )	1 960 068	1 960 068
$c_{\text{Ar}}$ (%)	89,2	91,8
$L_{\text{Ar}}$ (μl/h)	0,33	0,26
$L_{\text{Ar}}$ (%/a)	0,16	0,12
$L_{\text{Ar}}$ (%/a) - average	0,14	
Test pass	<b>YES</b>	

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

**Distribution list :**

2 x JSC "Bodesa"

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

**Test results approved and for correctness  
of the report is responsible :**

end of the test report

**Jiří Stránský**

