

Testing. Advising. Assuring.

Final Report

October 19, 2012

IGCC® / IGMA®

P.O. Box 730, Sackets Harbour, New York, 13685

Telephone: 315-646-2234

Fax: 315-646-2297

Contact Name: Ms. Erin Ackley

Sample Description: Corner: BC4/SSJ; Desiccant: MS; Spacer: MA; Sealant: PIB/S2

Exova Sample Number: 12-06-M0265 (IGL2012514)

INTRODUCTION

A sample of twelve insulating sealed unit glazing specimens for conventional accelerated weathering testing and initial and after weathering gas (argon) content analysis was submitted to Exova. The sample was identified as **IGCC® / IGMA® – 3274-P L11**, manufactured by **Saudi American Glass Company**, plant location, **Riyadh, KSA** (plant and product inspection worksheet attached).

PROCEDURE

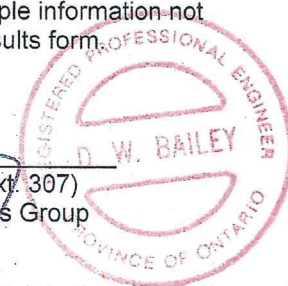
The conventional evaluation program was completed in accordance with the procedures outlined in the current ASTM standard E2188 "Standard Test Method for Insulating Glass Unit Performance" and the ASTM standard E2189 "Standard Test Method for Testing Resistance to Fogging in Insulating Glass Units". The ASTM standard E2190 "Standard Specification for Insulating Glass Unit Performance and Evaluation" was then used to determine ASTM standards acceptance criteria. The initial and after weathering gas content testing was performed according to the procedures outlined in the current ASTM standard E2649 "Standard Test Method for Determining Argon Concentration in Sealed Insulating Glass Units Using Spark Emission Spectroscopy".

RESULTS

Based on the test results in the attached data summary, these units **meet** the requirements of the ASTM E2190 standard for conventional weathering testing. The units **meet** the requirements for initial and after weathering gas content as specified in ASTM E2190 and the IGCC®/IGMA® Certification Program Procedural Guide (IGCC® Document II-10) "Insulating Glass Certification Council and Insulating Glass Manufacturers Alliance IGCC®/IGMA® Certification Program for Sealed Insulating Glass". For sample information not included in the data summary please refer to the attached IGCC®/IGMA® Audit Results form.

Greg Murawsky, C.Tech. (Ext. 585)
Senior Technologist, Building Performance
Products Division

David W. Bailey, P.Eng. (Ext. 307)
Technical Director, Products Group
Products Division



This report refers only to the particular sealed glass units used and referred to in it, and is limited by the tests and/or analyses performed. Similar sealed units may not be of like quality, and other testing and/or analysis programs might give different results. Please note that unless otherwise notified by client, the sample(s) will be disposed of ten (10) working days on completion of test program. The client is responsible for any costs associated with returning test units.

ACCREDITATION

International Accreditation Service Accredited Testing Laboratory # 407 for a defined scope of testing. ASTM E2649 is not covered by this accreditation.

This report and service are covered under Exova Canada Inc.'s Standard Terms and Conditions of Contract which may be found on our company's website www.exova.com, or by calling 1-866-263-9268

Date: 2012.10.19

Data Summary**Supplier : IGCC® / IGMA®****IGCC® / IGMA® Number: 3274-P L11**

Location: Sackets Harbour, New York

Telephone: 315-646-2234

Fax: 315-646-2297

Contact Name: Ms. Erin Ackley

Exova Sample Number: 12-06-M0265 (IGL2012514)**Licensee Name: Saudi American Glass Company**

Plant Location: Riyadh, KSA

Primary Contact: Andrew Manalo

Test Method: ASTM E2190

Date Specimens Fabricated: 2011-12-13

Date Authorized to Test: 2012-04-26

Invoice Amount: \$1,450 (USD)

Date Received by Laboratory: 2012-05-22

Date Test Started: 2012-06-05

Sample Description: Corner: BC4/SSJ; Desiccant: MS; Spacer: MA; Sealant: PIB/S2; Septum plug: N; Argon: Y

Tested in accordance with the current ASTM E2190 Harmonized Insulating Glass Standard

Exova Specimen # (Auditor Specimen #)	Initial Gas (Argon) Content SES Analysis (%)		Initial Frost/Dew Point (°C) [* Ø]		Frost/Dew Point (°C) after 2 weeks HHC @ 60 °C [*]		Frost/Dew Point (°C) after 9 weeks WCT cycles [*]		Frost/Dew Point (°C) after 4 weeks HHC @ 60 °C [*]		Exova Specimen # Final Argon Analysis	After Weathering Gas (Argon) Content SES Analysis (%)	
	A Side	B Side	A Side	B Side	A Side	B Side	A Side	B Side	A Side	B Side		A Side	B Side
1 ()	99		NF		NF		NF		NF		1	97	
2 ()	98		NF		NF		NF		NF		2	96	
3 ()	99		NF		NF		NF		NF		3	96	
4 ()	99		NF		NF		NF		NF		4	97	
5 ()	99		NF		NF		NF		NF		5	97	
6 ()	98		NF		NF		NF		NF		6	96	
7 ()	97		NF		VFT Pass		VFT --		VFT --				
8 ()	99		NF		VFT Pass		VFT --		VFT --				
9 ()	99		NF										
10 ()	98		NF										
11 ()			NF										
12 ()			NF										
Avg. 10 Units	98										Avg. 6 Units	97	
Overall Avg.											Overall Avg.		
Argon (Initial) minimum avg. 90% required; Argon (After Weathering) minimum avg. 80% required.													
Primary Seal MVTP Dim.: 4.5 mm to 6.5 mm; Secondary Seal MVTP Dim.: 6.3 mm to 7.2 mm													

* NF = No visible fog or deposit at - 73 °C

WCT = Weather Cycle Test

W = Water in Cavity

NP = Not Provided

No unit/cavity shall have <50% Argon Content.

Ø = No pass / fail criteria in ASTM E2190

HHC = High Humidity Cycle Test

SES = Spark Emission Spectrography

U = Unledgible or No Label

B = Broken Lite

VFT = Volatile Fogging Test

M = Muntin Bars A Cavity Only

