

Bagatelos Architectural Glass Systems, Inc.

Nick Bagatelos, President

Swiss-US Energy Innovation Days

October 7, 2019



About BAGS, Inc.

- Established in 1999 in Sacramento, Ca.
- Founded by Nick Bagatelos, President & Chris Bagatelos, CEO
- Previously ran and operated family glazing business for 13 years, Commercial Window Systems
- Union-based sub-contractor - 21 years
- Design, Engineering, Fabrication and Installation of Exterior Facades

BAGS company philosophy is to be the premiere provider of glazing solutions in the State of California, by building superior quality exterior facades, safely and with integrity.



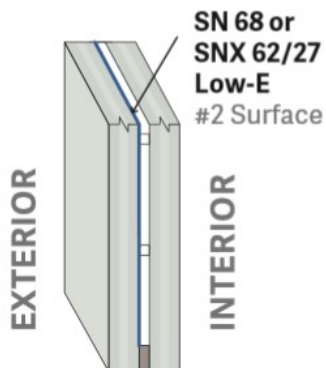
BAGS Commitment to Innovation

- **BAGS has been committed to Net Zero Construction for nearly 13 years.**
- **BAGS headquarters boast a completely Net Zero Fabrication Plant and Management Offices**
 - **Electrified Vertical Walls,**
 - **Electric Heat Pump HVAC system,**
 - **High efficiency lighting and monitoring system,**
 - **100 skylights for daylighting, and**
 - **Approximately 200kW rooftop solar array,**
- **Onsite testing lab with full water reclamation system, collecting grey water into a 10,000 Gallon storage tank for use and reuse during Curtain Wall Testing.**



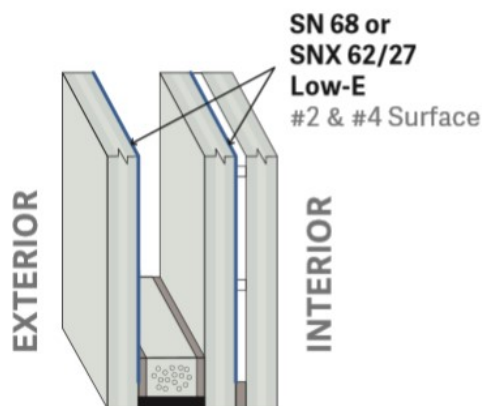
Guardian Vacuum IG

Two glass panes, sealed airtight, creating a vacuum in the 0.3 mm gap between two panes—preventing heat transfer and achieving thermal insulation up to R-14.



Guardian Vacuum IG

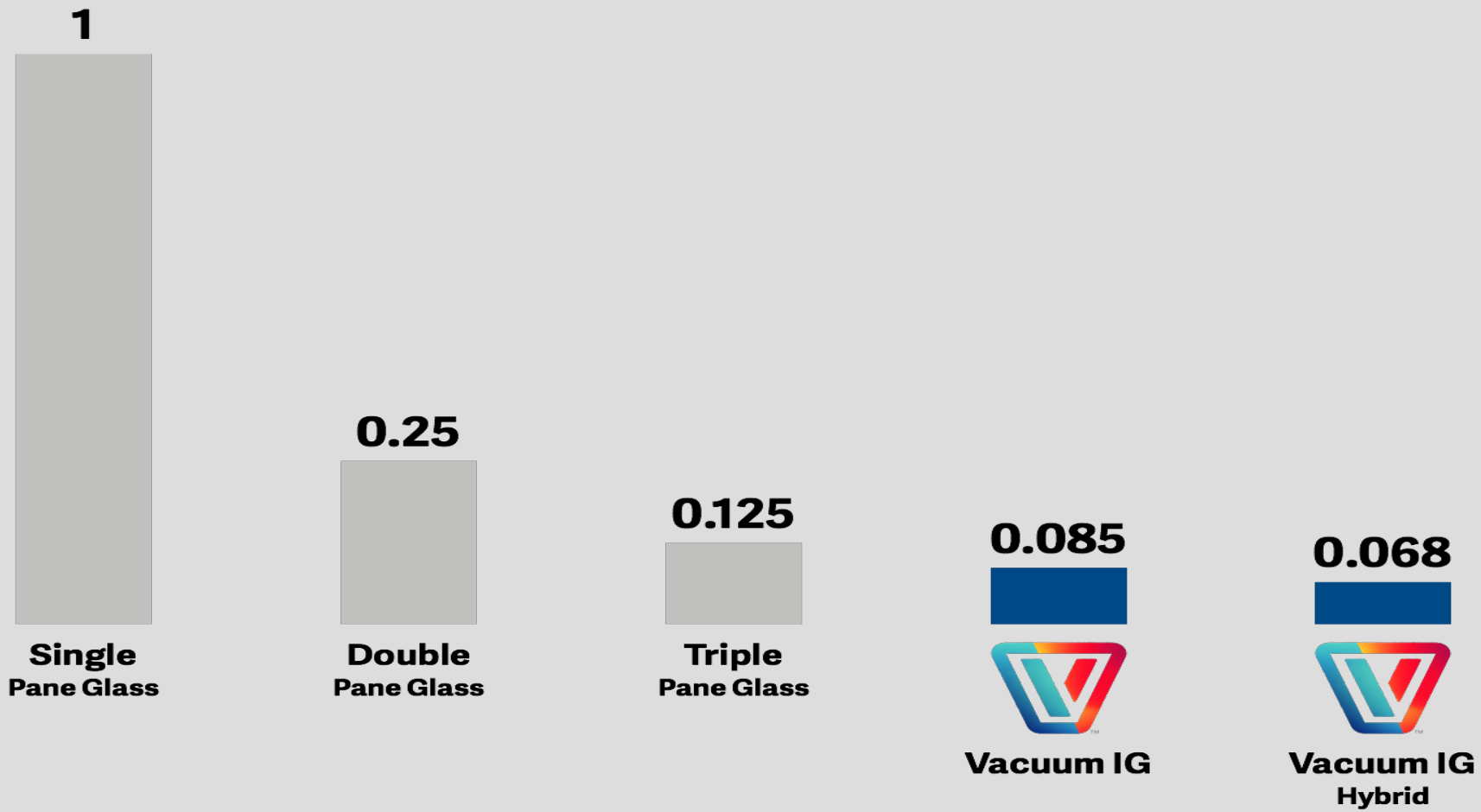
PRODUCT	VISIBLE LIGHT %	REFLECTANCE (Out %/In %)	U-FACTOR	R-VALUE	SOLAR HEAT GAIN COEFFICIENT
8.3mm Thickness (4mm/0.3mm vacuum gap/4mm), Low-E coating #2					
VIG + SN 68	70%	11/12	0.089	11.3	0.372
VIG + SNX 62/27	62%	11/12	0.085	11.8	0.266



Guardian Vacuum IG Hybrid

PRODUCT	VISIBLE LIGHT %	REFLECTANCE (Out %/In %)	U-FACTOR	R-VALUE	SOLAR HEAT GAIN COEFFICIENT
25.4mm IG Unit (6mm/11.1mm air gap/4mm/0.3mm vacuum gap/4mm), Low-E coating on #2 and #4					
VIG + SN 68	54%	13/15	0.071	14.1	0.265
VIG + SNX 62/27	42%	13/14	0.068	14.6	0.180

The performance values shown are nominal and subject to variations due to manufacturing tolerances. Guardian performance data are calculated for center-of-glass only (no spacer or framing) in accordance with the LBNL Window 7 program. Guardian reserves the right to change product performance characteristics without notice or obligation.



R-value

U-value

All

BAGS Curtain Wall System, *Performance Results with Guardian IG Installed:*

- BAGS systems typically range from 0.36 to 0.38 U-Value when glazed with a standard 1" low-e IGU on a 4-sided structural glazed curtain wall.
- Glazed with the 1" Hybrid VIG; overall system improved to 0.17 U-Value.

Note that the report separates results based on AAMA 1503-09 (which includes condensation resistance factors) and NFRC 102-2017.

TEST REPORT FOR BAGATELOS ARCHITECTURAL GLASS SYSTEMS, INC.

Report No.: J3985.02-301-46 R0

Date: 03/25/19

REPORT ISSUED TO

BAGATELOS ARCHITECTURAL GLASS SYSTEMS, INC.

2750 Redding Avenue
Sacramento, California 95820

SECTION 1

SCOPE

SERIES/MODEL: VIG Curtain Wall

TYPE: Glazed Wall System

Intertek Building & Construction (Intertek B&C) was contracted by Bagatelos Architectural Glass Systems, Inc. to evaluate the thermal performance per AAMA 1503-09. The purpose of this testing was to evaluate the Condensation Resistance and Thermal Transmittance. Results obtained are tested values and were secured by using the designated test method. Testing was conducted at Intertek B&C test facility in Fresno, California. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

Condensation Resistance Factor - Frame (CRFf):	85
Condensation Resistance Factor - Glass (CRFg):	87
Thermal Transmittance (U):	0.17 Btu/hr·ft ² ·F

Improving Sound Control

Acoustical Performance

From traffic and neighbors to construction and airports, Guardian Vacuum IG™ mitigates outdoor noise and improves indoor acoustics. It has excellent Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC) ratings. When compared to standard dual-pane windows, windows with Vacuum IG can improve the STC rating to 35, or up to 38 in a HVIG.

Glass Construction	STC	OITC	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
VIG - 4mm, 4mm - 8.3mm overall	35	30	25	24	25	26	28	28	31	33	35	37	38	39	40	35	35	32	34	31
HVIG - 4mm, 4mm, 12.7mm argon, 4mm - 24.7mm overall (1" nominal)	38	31	29	28	24	24	26	30	31	24	28	42	45	47	49	50	45	37	42	50

• Testing in accordance with ASTM E90 - HVIG performance in frame.

Questions?

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