

CERTIFIED PRODUCTS DIRECTORY

SEALED INSULATING GLASS
PHONE (315) 646-2234

February 2025



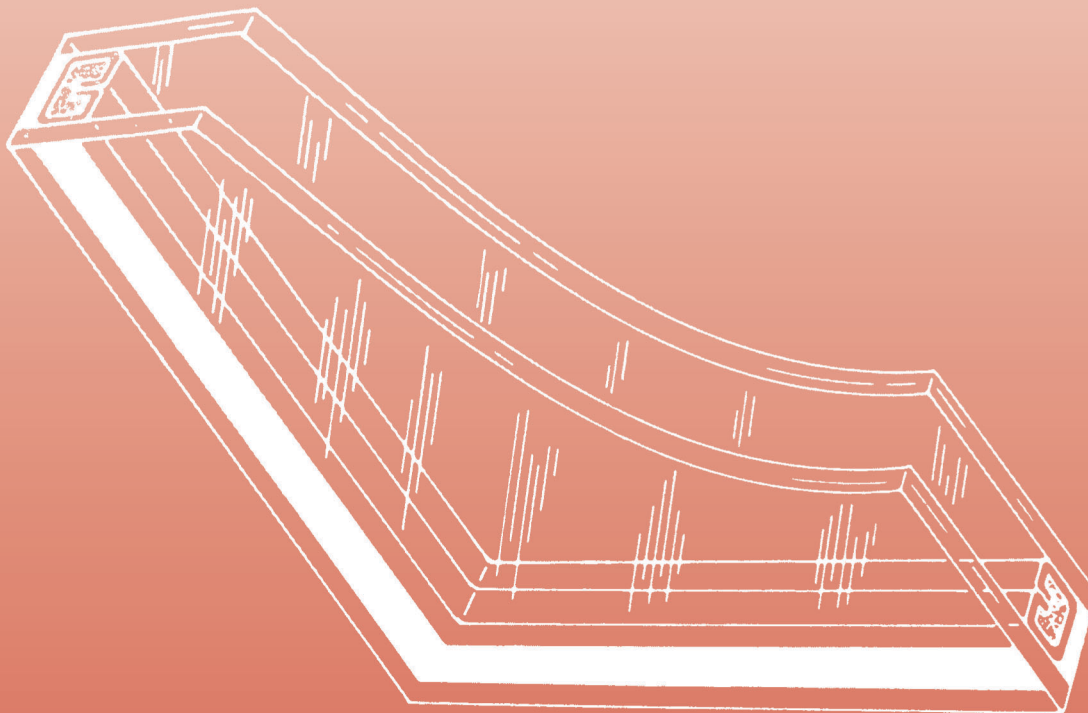
ANSI National Accreditation Board

ACCREDITED

ISO/IEC 17065

PRODUCT CERTIFICATION
BODY

#0961



IGCC® and IGMA® Certification programs have been combined into a single certification program designated IGCC®/IGMA®. IGCC® will license the use of the IGMA® trademark and direct certification with IGMA® support.

INSULATING GLASS
IGCC®
CERTIFICATION COUNCIL

IGMA®
 **FGIA**®
Fenestration & Glazing
Industry Alliance

igmac
CERTIFICATION

CREDIBILITY IN INDUSTRY CERTIFICATION THROUGH ACTIVE PUBLIC PARTICIPATION

Visit Our Websites @ WWW.IGCC.ORG @ WWW.FGIAONLINE.ORG

IGCC® 2025 Spring Certification Committee Meeting

May 5-7, 2025



Niagara Falls Marriott on the Falls

6755 Fallsview Blvd.

Niagara Falls, ON L2G3W7, CA

Book your reservation here:

Online: [IGCC Annual Meeting Group Rate](#)

Phone: 1-800-519-9911

Select Option '5' and request the convention rate under "AMS"

IGCC Meeting Schedule

Monday, May 5, 2025

6:30 – 8:30 Board of Governors Dinner – TBD (Board Members Only)

Tuesday, May 6, 2025

8:00 - 8:30 Breakfast for Board of Governors (Board members only)
8:30 - 12:00 IGCC® Board of Governors Meeting and lunch (Board members only)
1:00 - 5:00 IGCC® Certification Committee Meeting
5:00 - 5:15 Participants Meeting
6:00 - 7:00 Reception for Meeting Attendees & Guests

Wednesday, May 7, 2025

6:30 - 7:30 Complimentary Hotel Breakfast for all Guests served in Breakfast/Atrium Area
8:00 - 11:30 IGCC® Certification Committee Meeting
12:00 - 1:00 IGCC® Board of Governors Meeting and lunch (Board Members Only)

Reservations

Hotel Reservations can be made [online](#) or by calling 1-800-519-9911. The room rate is \$229 CAD per night for City View or \$265 CAD per night for Falls View plus taxes. Please reference the "AMS" Group if calling in your reservation.

Hotel reservations for the meeting must be made before April 5th, 2025.

Please Note: The hotel is 32 miles from the Buffalo Niagara International Airport. Taxi services and car rentals are available at the airport.

Please notify the IGCC office of your intent to attend this event. If you have any questions or difficulties, please contact igcc@amscert.com or 315-646-2234.

TABLE OF CONTENTS

IGCC® Program Concept	2
Accreditation	4
IGCC® Board of Governors	6
Certification Committee	7
Communications	13
Participants	13
Past IGCC® Presidents' Recognition	15
Meetings of the Certification Committee	15
Certified Products Key	16
IGCC®/IGMA® Certified Products (Alphabetically By Plant)	17
IGMAC® Certified Products (Alphabetically By Plant)	70
Prototypes in Progress	95
Procedural Guide	98
IGCC®/IGMA® Label Requirements	104
Advertising Guidelines	105
Quality Assurance Program	106
Gas Content Initial & After Weathering Certification & Testing (GCIA)	107
Component Validation	108
Guidelines & Interpretations	108
Guidelines: Always	108
Guidelines: Never	111
Internal Components	113
G.16 Failure to Comply	119
Specifications Used	120
IGCC®/IGMA® & IGMAC® Approved Laboratories	121
Appendix A – Certification Notes	124

Certification information and guidelines are included in the twice per year printing of the Certified Products Directory or are available from IGCC® upon request. Re-printing of this information in any other manual, material or document without the written permission of IGCC® is in conflict with the desire of IGCC® and should not be interpreted as being endorsed by or affiliated with IGCC®.

IGCC®/IGMA® PROGRAM

The IGCC®/IGMA® Certification Program is the product of the effort to harmonize the legacy IGCC® and IGMA® certification programs. After several years of reviewing the two former certification processes, best practices were identified and on February 3rd, 2009 an agreement was signed where IGCC® shall license the use of the IGMA® certification mark in the administration of a single combined program known as IGCC®/IGMA®. The single program will operate under one set of requirements and guidelines and allow former participants in either IGCC® or IGMA® certification to label with IGCC®/IGMA® thus enjoying the greater recognition of both marks. IGCC® shall administer and govern the IGCC®/IGMA® program on behalf of IGMA® and IGCC® in accordance with the program requirements as set forth in the IGCC®/IGMA® Certified Products Directory and Procedural Guide.

The IGCC® Board of Governors is responsible, pursuant to the IGCC® Corporate Bylaws, for all corporate decisions concerning certification of products under the IGCC®/IGMA® Certification Program. The IGCC® Board will at all times be composed of individuals representing the public interest and individuals representing the insulating glass industry in equal proportion.

IGMA® may make recommendations to the IGCC® Board regarding the IGCC®/IGMA® Certification Program and may appeal any decision of the IGCC® regarding certification or the IGCC®/IGMA® Certification Program.

IGCC® PROGRAM CONCEPT

Manufacturers of sealed insulating glass units, consumers, specifiers, and others who are responsible for or concerned with the quality and performance of products purchased in the public interest, recognizing a need for a sound product testing and performance certification program, have jointly established the Insulating Glass Certification Council (IGCC®). Founded in 1977, all IGCC® meetings are open to the public and public participation is encouraged.

IGCC® is a non-profit organization which sponsors and directs a program of periodic accelerated laboratory testing and plant audits to ensure continuing product performance through specified standards. The testing specifications used are outlined in "ASTM Specification E2190 for Sealed Insulating Glass." It is the policy of IGCC® to remain flexible in referencing specifications and test methods in order to best reflect changing technology and new developments.

IGCC®'s responsibilities through its administrator are to see that periodic audits and independent laboratory tests are performed on participating manufacturers' products and to validate the right of that manufacturer to use the IGCC® label on the product or products information claims. Additionally, IGCC® requires licensees to have a working quality assurance program for the fabrication of insulating glass. Adherence is verified during plant visits conducted twice per year. These requirements were adopted to improve the overall quality of IG units in the program, and to satisfy requirements established by the Department of Housing and Urban Development, HUD.

Management and control of the program is vested in a Board of Governors made up equally of industry and public interest members. The public interest representatives are empowered with 50 percent of the voting power to ensure against undue industry influence of IGCC® action.

The program is under the supervision of a qualified administrator who is not affiliated with any manufacturer of insulating glass, material supplier, or participating testing laboratory, and is hired by and responsible to the Insulating Glass Certification Council. The manufacturers of the products listed herein have certified that the labeled materials comply with the performance characteristics established by ASTM E2190. The compliance of the manufacturers with the requirements of that specification is validated periodically by the IGCC® administrator through audits and testing by an independent testing laboratory under the administrators' direction.

Every manufacturer of insulating glass is eligible and encouraged to apply for the right to use the IGCC® label. However, permission to use the label is not granted until an independent laboratory test verifies compliance with the requirements. Once all requirements have been met, each product is assigned an IGCC® number to identify the product, performance class, and the factory in which it is made. Throughout the year, IGCC® requires the manufacturer to certify that the labels are being used only on units that are produced in the same manner and with the same materials as the tested specimens. Based upon these declarations, IGCC® authorizes continued use of the IGCC® label and the product listing published in this directory.

The Insulating Glass Certification Council wishes to recognize the substantial contributions made by the Safety Glazing Certification Council, the Sealed Insulating Glass Manufacturers Association (SIGMA) (formally known as IGMA), American Society for Testing and Materials (ASTM), National Institute of Standards & Technology (NIST), FHA, HUD, Public Interest Persons, the Industry, and particularly consumers. Without input from such a broad cross-section, this program would not be possible.

IGMA®

The Insulating Glass Manufacturers Alliance is a North American association of insulating glass manufacturers, suppliers of component materials and other industry related professionals dedicated to upgrading product / service performance by promoting awareness of technological developments in the industry. IGMA® provides the leadership required to assure the continued growth of the Insulating Glass Industry.

IGMA® was formed as the result of the merger of IGMAC (Insulating Glass Manufacturers Association of Canada) and SIGMA (Sealed Insulating Glass Manufacturers Association) in October of 2000 to establish and advance insulating glass technologies and quality processes in order to create a standard of excellence that provides value to the insulating glass industry. As part of its mission, IGMA developed a voluntary certification program for insulating glass units.

The IGMA® Certification Program recognized the need for regular and impartial product testing, maintenance of quality control in the manufacturing process and identification of products that conform to these criteria. Manufacturers of insulating glass units were invited and encouraged to participate in the IGMA® Certification Program.

ACCREDITATION

In 2014 the American National Standards Institute (ANSI) issued ISO/IEC 17065 Accreditation to the IGCC®/IGMA® Certification Program and AMS, Inc., the program Administrator and Certification Body (CB). This Accreditation is a formal recognition of fulfilling the requirements of the ISO/IEC 17065:2012 standard, as well as ANSI's own accreditation requirements.

What is Accreditation?

Accreditation is similar to certification. Just like in certification there is an independent party who assesses and determines whether or not an organization meets specific requirements. In the case of ANSI National Accreditation Board (ANAB) assessment of the IGCC®/IGMA® Certification Program and AMS, Inc., they were assessed to ISO standard ISO/IEC 17065:2012. The end result is called accreditation.

Who is ANAB?

ANAB is a non-governmental organization and a wholly-owned subsidiary of American National Standards Institute (ANSI), which is a not-for-profit organization. Consistent with ANSI's nonprofit mission to administer procedures and criteria for accreditation of conformity assessment programs and to encourage organizations to prepare and submit such programs for accreditation, ANAB provides accreditation services, assessment services, and training to public- and private-sector organizations that serve the global marketplace. ANAB assesses and accredits organizations (i.e., conformity assessment bodies or "CABs") to international and domestic standards, requirements, and other programs. ANAB has comprehensive signatory status across multilateral recognition arrangements of the International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC).

Information from: <https://anab ansi.org/about-anab/>, About ANAB, 2024. Web. January 16, 2024.

What is ISO/IEC 17065:2012?

ISO/IEC 17065:2012 is an internationally recognized standard for bodies certifying products, processes, and services. It is the main source of criteria used to assess the IGCC®/IGMA® Certification Program and AMS, Inc. The standard specifies requirements that, according to ISO/IEC 17065:2012, "ensure that certification bodies operate certification programs in a competent, consistent and impartial manner..."

How will this affect a Fabricator's IGCC®/IGMA® Certification?

Accreditation of the IGCC®/IGMA® Certification Program and AMS, Inc. is the formal recognition that they have met strict requirements placed on them. This means that as a fabricator, operator, or provider of certified products, you can be sure that the IGCC®/IGMA® Certification Program is operated to some of the highest quality standards in the world. Because the IGCC®/IGMA® Certification Program and AMS, Inc. have always followed stringent guidelines there will be minimal changes to the certification program. When changes are necessary though, you will be notified in advance.

Though the IGCC®/IGMA® Certification Program requirements won't change much due to the accreditation, it does offer an opportunity for fabricators to show conformance to an ANAB-Accredited certification program, an invaluable association to set you apart in the market. For more information, and restrictions and limitations, please contact AMS, Inc.

Disclaimers

While there are significant benefits to being associated with this accreditation, accreditation doesn't mean that ANAB approves certified products, processes, or services of fabricators. In addition, the ANAB Accreditation symbol and ANAB logo are not permitted to be displayed on any product or its packaging.

Questions or Want to Learn More?

If you have any questions or need additional information regarding any of the topics presented above, please feel free to contact AMS, Inc. at (315) 646-2234, or email us at igcc@amscert.com

February 2025
IGCC® BOARD OF GOVERNORS

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IGCC® OFFICERS

William Davis, President
Bruce Kaskel, Vice President, Treasurer
Adina Dobre, Secretary

IGCC® CERTIFICATION COMMITTEE

Joe Erb, Chairman

Membership and voting privileges on the IGCC® Certification Committee shall be extended to (a) each IGCC® Public Interest Governor (b) each IGCC® Business Community Governor (c) each IGCC® or IGMA® participant supplier (d) Public Interest representatives appointed by IGMA® and IGCC® Boards, and (e) each IGCC®/IGMA® participant Licensee who designates a representative to serve on the Certification Committee (listed below).

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
A.N. ALODAN & SONS CO. GLASS & ALUMINIUM FACTORY	Dhanraj Singh Parmar	Rakesh Kumar Pal	
A3 Glass Fabricator LLC	Abbas Hussain	Y Halai	
AAG-AI Abbar Architectural Glass	Mohammad Asif Ali		
Advanced Impact Technologies	Ralph Henson	David Daley	
Advantage Glass Corp	Stan Rydzewski	Rony Gramajo	
AGC Flat Glass (Thailand) PLC.	Tharatorn Tantirak		
AGC INTERPANE Architectural Glass GmbH	Luis Hidalgo		
AGF Glass, Inc.	Aaron Day	Steve Tatum	
AGNORA LTD	Rene Govers	Brent Stannard	
Agstech Advanced Materials Corporation Limited	Yanchi Chan	Candy Yao	
Al Andalus Glass Factory Co.	Eng. Amir Abdullatif	Eng. Ahmed Arafa	
Al Cam Sanayi ve Ticaret Limited Sirketi	Volkan Caglar Ozcan		
Aldora Aluminum and Glass Products, Inc.	Manny Valladares	Bill Demato	Brian Crimmins
AL-Hadi Glass Industries	Michael Fernandes		
All Counties Glass Distributors	Dane Treiber	Jay Menjarez	
All Weather Windows	Thuy Vu	Hermann Basler	Robert Giles
Aluminum Manufacturers Co. Ltd - ALUMATEC	Wassim Hashash		
Aluminum Technology Auxiliary Industries	Varun C.R.	Suraj Thampi	
Andersen Corporation	Nicholas Zeman	Drew Pavlacky	
AntCam Cam Pazarlama San. Ve Tic. A.S.	Yasemin Budak	Firat Meteoglu	
Architectural Glass Products, LLC.	Sharon Gambill	Andy Zuniga	
Ardic Cam Sanayi A.S.	Beker Korkmaz		
Arino Duglass, S.A.	Raimundo Garcia-Figueras	Migual Mateo	
Associated Materials, Inc.	Seth Green	Steve Harp	
Beijing Guanhua Dongfang Glass Technology Co. Ltd	Jinsheng Zhang	Fly Way	
Beijing Hangglass New Material Technology Co., Ltd. Zaozhuang Branch	Yu Changsheng	Xu Ning	
Beijing NorthTech Haiyangshunda Glass Ltd.	Kun Wang	Sunny Zhang	
Beijing Wuhuatiabao Glass Co., Ltd.	Nan Zheng Bo		
Blue Star Glass Inc.	Alex Oanono		
Builders First Source	Jay Looney		
BVGLAZING SYSTEMS	Jed McKie	Andrew Dolphin	
Camyapi Cam Paz. Ins. Taah. Tic.ve San. A.S.	Volkan Erem	Yüksel Arslan	
Captivision Korea, Inc.	Eunyoung Han	Jaeyoung Choi	
Cardinal IG	Michelle Phan	Robert Grommesh	
Carey Glass UC	Michael Carew	Liam Gillespie	
Cascade Windows Inc.	Dylan McGuire		
Central Valley Glass & Screen, Inc.	Geoff Smith		
Changshu High-Tech Energy-Saving Dorwin Co., Ltd.	Fa Zhenju		
ChangShu Maybo Glass Co., Ltd.	Qian Lan		
Changshu Sysen Glass Products Co., Ltd.	Xia Jian		
Changshu Weier Glass Products Co. Ltd.	Denise Lu		
Changshu Zhongqin Building Material Co., Ltd	Mona Xu		
Changshu ZhongXin Building Materials Co., Ltd.	Rachel Chen	Mr. Yu Wei	
Changxing Kibing Energy Saving Glass Co., Ltd.	Zhang Xiaojun		
Chin Ta Glass Co., Ltd.	Hung Jui-Ting	Chen Yun-Ju	

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
Chongqing SYP Engineering Glass Co., Ltd.	Sun Dahai		
Ciraylar Cam Insaat Malzemeleri San. VE TIC. A.S.	Mehmet Emre Aslan		
Classy Glass Specialties Technology Co., Ltd	Li Zhenke	Ma Yun	
Clear Lite DBA Innovative Glass Products LLC	Tim Valek		
ClearVue Technologies Ltd.	Tao Zhang	Doug Hunt	
Cmech Ltd.	Justin Char		
Coastal Curved Glass	Pat Healy	Jen Healy	
Comercial Dialum SA	Erick Rozas	Rose Marie Bastias	
Complete Line Glass Wholesalers, Inc.	Kyle Russell	Chris McCumber	
Cristacurva	Claudia Valencia		
Cristalmax-Industria de Vidros, S.A.	Ana Margarida Silva	Dina Pais	
CS ECO Glass (M) Sdn Bhd	Zhang Xiaojun		
Custom Glass Prod. Of Carolina	Steven Reeder	Tony Kluttz	
Custom Glass Products Inc.	Eric Reeder	Jim Wocelka	
Dallas Flat Glass	Kristina Buckett	Robert Varela	
Diamond Glass	Darren Nevin		
DongGuan CSG Architectural Glass Co., Ltd.	Su Jingxi		
Donguan Ngai Wah Bending Tempering Glass Company Limited	Yang Shengyong	Kevin Reinthaler	
Dost Cam Sanayi ve Ticaret A.S.	Tankut Yuksel	Remzi Yildiz	
DoubleTree Glass & Windows	MattAbran	Crystal Salazar	
Dynamic Windows & Doors Inc.	Grant Wood		
ECO Glass Production	Samuel Bravo		
EFCO Corporation	Doug Bishop		
Elivate America Corporation	Ana Gabriela Assemat Moreno	Fransue Morales-Martinez	
Emirates Glass L.L.C.	Sandeep Nair		
Engineered Glass Products, L.L.C.	David Colombe	Dennis Carroll	
EPAL S.A. ALUMINUM WINDOWS & DOORS, PERPERIS-RISKOS S.A.	Panayiotis Sourvas		
Erdem Dis Ticaret A.S.	Tuncay Güven	Yavuz Selim Bodur	
Fairis C.A.	Jorge Jaramillo	Moises Flores	
FAKRO GP Sp. Z.O.O.	Pawel Szewczyk		
Fenplast, Inc.	Benoit Pepin	Manon Lemieux	
FG Glass Industries Pvt Ltd.	Tariq Kachwala		
Flat Glass Distributors, Inc.	Doug Lewis		
Flat Glass Group Co., Ltd.	David Wei	Li Chunpeng	
Foshan Ding Li Ye Glass Products Co., Ltd	Shun Li	Jun Hu	
Foshan Shengqian Glass Product Co., Ltd	Justin Xu		
Foshan Super Glass Industrial Company Limited	Ban Naimao		
Fujian Dengzhen Industrial Co., Ltd	Li Yong		
Future Architectural Glass LLC	Shankar Ganesh	Soihail Kachwala	
General Glass	Kristy Hackworth		
Gentek Building Products Ltd. Partnership	Seth Green		
GLASPRO	Ed Lemley	John Griffin	
Glass and Mirror Craft	Steve Gizicki	Patrick McEvoy	
Glass Enterprises Inc.	Mr. Josh Burg		
Glass Group & Seal Inc	Luis Deda		
Glass Insulators Inc.	Stacy Marik		
Glass Maestro Industries LLC	Ramez Mouawad	Russel Platon	
Glassbel Baltic JSC	Romas Zvirzdinas		
Glassecc Vidros de Seguranca Ltda. - GlasseccViracon	Renato Santana	Daniel Scarpato	
GlassFab Tempering Services, Inc.	Robert Gardner Black		
Glasstech Industries B.S.C.	Marwan Khadij	Hem Raj Arya	
Glasswerks LA, Inc.	Robert Mastrapa		
Glaz-Tech Industries, Inc.	Alex Miramontez		
Glenny Glass Co.	Chris Hawkins	Doug Bain	

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
Global Security Glazing	Scott Reynolds	Mark Johnson	
GnT Glass Co., Ltd.	Hao Bing Tian		
Great Day Improvements, LLC	Kent Nusser	Craig Cox	
Green Glass Industries LLC	Manoj Keshri		
G-TECH Optoelectronics Corporation	Channing Lafite		
Guang Dong Kibing Energy Saving Glass Co., LTD	Liao Shanshun		
Guangdong Haikong Special Glass Technology Co., Ltd.	Liu Fan	Sven Pan	
Guangdong Honghua Glass Technology Co., LTD.	Wang Feng	Lin Xiaolei	
Guangdong Qiangye Glass Products Co., Ltd	Zhu Wenwei	Jason Che	
Guangdong South Star Glass Limited	Taylor Lee		
Guangdong Xeyoung Glass Technology Co., Ltd	Liqi Liu	Andy Shen	
Guardian Glass, LLC - Auburn	John Lines		
Gulf Glass Industries, Co. LTD	Pascoal Dsilva		
Haojing Holdings Group Limited	Wong Xiang Yang		
Hartung Glass Industries	Tim Kroha	Peter Shoenfeld	
Harvey Building Products	Dave Lambert		
Hebi HaanGlas Co., Ltd	Han XiaoQing	Zhang YongJian	
Hebi Leadus Special Glass Manufacturing Co., Ltd.	Xiaolin Guo	Yongjian Zhang	
HuiZhou Longlass Company Limited	Ye Junfeng		
Infinity Glass Group Inc.	Bill Periku	Marina Mrdkovic	
Insulite Glass Co., Inc.	Larry Vasholz		
Intigral	Mark Hutchinson	Adina Dobre	
Isam M. Khairi Kabbani Glass Works LLC	Donald Cardenas	Roy Bassil	Mustafa Bokhari
Isoclima Specialty Glass, LLC	Tim Greene		
ITI Glass Company	David Wickham	Rick Law	
Jasan Glass - JSG	Kyungsoo Lee		
Jersey Tempered Glass, Inc	Dave Freeman		
Jiangmen Junfa Safety Glass Co., Ltd.	Xiaodan Li		
Jingmei Curtain Wall Technology Co., Ltd.	Mr. Feng Fanran		
Jinzhou Fortune Spring Glass Co., Ltd.	Grace Liu		
Jiuh Sheng Glass Co., Ltd.	Arthur Hung		
KRYSTALLA VASILIOU SA (VASGLASS)	Giannis Nikolias		
La Tecnica Nel Vetro SpA	Robert Sammarco		
Laurier Architectural	Melanie Mercier	David Levesque	
LTI Smart Glass, Inc.	Bill Baumann	Donnie Miller	
LuxWall, Inc.	Doug Walden		
LX Glas Corp	Kyungwan Kang		
M Industria S.A. DE C.V.	Mauricio Millet Median	Ricardo Tonueyo	Mex Yucatan
Maryland Glass & Mirror	Ashton Bird		
Megaglass DBA Megaluminio SA de CV	Fernando Lovera Colin	Luis Angel Sebastian Mateo	
Mid-American Glass, Inc.	Michelle Magyar		
Nashville Tempered Glass Corp.	Richard Roemke	Joseph Loos	Philip Contella
New Al Khalidiya Aluminium and Glass Co LLC	Abubucker Ajiwath	Anthony Mathew	
Northwest Glass Manufacturing Inc.	Ed Pemberton		
Northwestern Glass Fab	Eric Fortin	Chris Streeter	
Northwestern Industries, Inc- Yuma, AZ	John Butler		
Novatech Group Inc.	Erick Giroux	Eric Lessard	
Novatech Patio Doors Ontario Inc.	Claudio Sacilotto		
Novavetro S.r.l.	Cristiano Lucentini	Giuliano Toniolo	
ODL, Changshu ZhongXin Building Materials Co., Ltd.	Jim Allardyce	Tom Shan	
ODL, Inc.	Jim Allardyce	Scott Corley	
Oldcastle BuildingEnvelope®	Robert Jackson	Mark Le Munyon	
Opulux Glass	Donavan Soproni		
Panjin Truspacer Insulating Glass Material Co., Ltd.	Rao Desong		

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
Pella Corporation	Matt Waldren	Chris Chandler	
Perficom S.A. DE C.V.	Miguel Angel Robles Lopez		
PFG Glass Industries	Ryan Nielsen		
Philly Glass Industry Inc.	Felix Wu		
Piavevetro SRL	Massimo Rizzo		
Pilkington IGP Sp. z.o.o. Branch Skierniewice, Poland	Krzysztof Skarbinski		
Pioneer Window Mfg. Corp.	Eric Miller		
Piva Group North America LLC	Tim Perriguet		
Planet Construction Industry Glass Ltd	Zongyi Tang		
Precision Glass Industries	Abdeali Karimjee		
Prelco Inc.	Christian Lizotte		
Prelco MTL Inc.	Christian Lizotte		
PRESS GLASS SP ZOO	Milosz Majewski		
Press Glass, Inc.	Adrian Weżgowiec		
PRL Glass Systems	David Landeros		
Productora y Distribuidora de Espejos S.A. de C.V.	Jose Natividad Gonzalez	Andres Gonzalez	
ProTemp Glass, Inc.	Paul Ferguson		
Pulp Studio, Inc.	Oscar Ramirez		
Q4Glass sp z.o.o.	Bartek Jankowiak	Wioleta Bucka	
Qingdao Kingdom Glass Co., Ltd.	Luo Qiuliang		
Qinhuangdao High Tech Energy Saving Dorwin Co., Ltd.	Sherry Shi	Su Chang	
Qinhuangdao Qicaishi Glass Processing Co., Ltd.	Cindy Sun	Chen Qifei	
Qinhuangdao Qinsheng Glass Products Co., Ltd	Cai Zhiping	Dong Xiaoguang	
Qinhuangdao Rongsheng Glass Processing Co., Ltd.	Dongsheng Yan		
Qinhuangdao Shucheng Energy Saving Technology Co., Ltd	Zheng Lin		
Qinhuangdao Xinhua Glass Processing Ind. Co. Ltd.	Feng Jianqiao	Lucy Liu	
Qinhuangdao Zhenhong Door and Window Co., Ltd.	Yang Qi		
Quest Window Systems	Jody Cash	Daniel Zalcmán	
R&R Insulated Glass Products D.B.A. Aurora Windows and Doors	Ery Hernandez	Claudia Pardo	
Reem Emirates Aluminum & Glass	Hamed Hussein		
Reflex d.o.o.	Rudi Hajdinjak	Bostjan Kous	
Resman Glass PVC Aluminum SAN. VE TIC. A.S.	Buse Duygu Dagidir	Burak Koprulu	
SAAND Inc.	Frank Santangelo		
Sahti First	Sean Ross	Ernesto Ceja	
SAGE Electrochromics Inc.	Benjamin Trembl		
Saint-Gobain India Private Limited	Uprenda K.		
SAINT-GOBAIN POLSKA SP. Z.O.O. Oddzial Glassolutions w Jaroszwcu	Magdalena Morgiewicz	Kamil Włodarczyk	
Saudi American Glass Company	Liberto Gubat		
SC. Optimedia. SRL	Sergiu Pantis	Lucian Tamasiloniu	
Sejal Glass and Glass Manufacturing Products LLC	Girish Shenoy	Padmakumar Perumal	
Seretti SRL	Vigutto Stefano		
Shandong Blue Glass Technology Co., Ltd.	Ma Qiang	Dou Jie	
ShanDong HaanGlas Co., LTD	Han Xiao Qing	Zhang Yong Jian	
Shandong Jinjing Science & Technology Stock Co., Ltd. Boshan Branch.	Boyan Zhai		
Shandong Taishan Huayue Glass Co., Ltd.	Gao Hu		
Shandong Wensheng Glass Technology Co., Ltd.	Tony En	Anne Dou	
Shandong Yaohua Glass Co., Ltd.	James Hu		
Shanghai HJ Safety Glass Co., Ltd	Steven Shung	Yang Long	
Shanghai Lead Glass Co., Ltd.	Xu Wei		
Shanghai Yaohua Pilkington Glass Group Co., Ltd.	Dr. Sun Da Hai	Wang Genjie	
Shenbo Special Architectural Glass Industrial Co., LTD	Elena Tang		
ShenZhen LiaoYuan Glass Co., Ltd.	Xuanmin Fu		
Shinn Fu Pair Glass Co.	Huang Hsin Fu		

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
Sichuan CSG Energy Conservation Glass Co., Ltd.	Liu Song		
Sierra Glass Fabrication Inc.	Mike Fedyk	Justin King	
Sierra Pacific Windows	Rick Audsley	Cheryl Wibben	
SIGCO, Inc.	Steven Thurlow		
Sky Land Glass Corp.	Ricky Zeng		
Smart Glass Group LLC	Anton Yerkeyev	Iryna Teslia	
Soluciones Vitro Plano S.A. de C.V.	Alberto Vilchis Trujillo		
Stanley Glass Co., Ltd.	Tony Hsu		
Stargrup Cam A.S.	Ali Nurman		
Strong Tempering Glass Industry LLC	Mark Chen		
Sunglas Technics Co., Ltd.	Jianxin Zhao		
Suzhou Taifeng Glass Decoration Co. Ltd	Lily Ye		
Tacoma Glass Mfg. Inc.	Tim Conroy		
Taichang Yaohua Glass Co., LTD	Allen Wei		
Taiwan Glass USA Sales Corp.	Albert Wang		
Technical Glass & Aluminum Co. L.L.C.	Giri Sanker	Ali Hajj Hassan	
Techni-Glass, a Division of AROW Global Corp	Randy Aguilar		
Tecnoglass S.A.S.	Diana Lohrer		
Temp Glass Inc.	Sigfridio Martinez	Marcela Bolivar	
Tempco Glass and Fabrication, LLC	Kent He	Tiffany Wan	
Templados Del Centro SA DE C.V.	Victoria Nunez		
Templados Industriales S.A. de C.V.	Diana Gonzalez	Pedro Chavez	
Tengzhou Fenghua Glass Co., Ltd.	SL Chen		
Termototal PROD SRL Romania	Cristian Petric	Samuel Taylor	
TG Taichang Architectural Glass Co. Ltd	Li Zhang	Shenhua Wang	
TG Tianjin Glass Co., LTD	Zhengyue Wang	Jing Zhang	
Thermafix A.J. Inc.	Frederic Fillion	Francious Ouelette	
Thermo BSL	Pierre-Luc Bellavance	Claude Pelletier	Guy Poirier
Thompson I.G. , LLC.	Cameron Alford	Dale Houck	
Tianjin CSG Energy Conservation Glass Co., LTD	Honglei Dai		
Tianjin Northglass Industrial Technical Co., Ltd.	Hu Zhangyan		
TOTAL MONT LLC- (DBA WESTERN STATES GLASS)	Boris Djuric	Rodolo Ortega	
Tower Insulating Glass LLC.	Barry Litt		
Tristar Glass, Inc.	Doug Vail		
Trulite Glass and Aluminum Solutions	Jeff Haberer		
TSY-Fong Glass, Co., Ltd.	Hanss Huang		
TVITEC System Glass, S.L.	David Lopez	Pablo Alvarez Menendez	
Unicel Architectural Corp.	Vincent Couturier		
Uniglass	Fahad Al Fozan	Mohammed Haneef	
Union Glass s.r.l.	Franco Savian		
United Plate Glass Co., Inc.	George Tesnovich	Matt Anderson	
Unitex Glass Chengdu Co., Ltd	Andy Yu	Chen Xinhua	
US Glass Depot LLC	Harry Weng	Paul Huang	
Val y Val SA de CV	Jorge Aviles		
Vandaglas Eckelt GmbH	Guillaum Kaminski		
VELUX America LLC	Mike Rhoden	Mike Dorn	
VETRERIA CAPPELLETTI E ROLERI S.R.L.	Claudio Roleri	Davide Cappelletti	
Vetriko S.A.	Gonzalo Kozhaya	Luis Alfredo Pera	
Vetrodomus SpA	Federico Casaccio	Chiara Pastore	
Vidrio Duro de Mexico S.A. de C.V.	Carlos Benet Trad	Gabriel Howerton	
View Inc.	Derek Parker		
Viewmax Windows and Doors, Ltd.	Lu Houchang		
Viracon Inc.	Michael Schettler	Mike Nelson	
Vista Glass Corporation	Sajad Kazemeyni	Vanessa Tsiangos	

February 2025

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
Vitelsa Mosquera S.A.	John Lopez		
Vitre-Art C.A.B. (1988) Inc.	Nicolas Barazin	Martin Comeau	
VITROTERM-MUROW S.A.	Krzysztof Kolodziejczyk		
Vitrum Industries Ltd.	Jagdeep Singh		
W. A. Wilson Inc.	Rick Meredith	Robert Hartong	
W.C.P., Inc dba West Coast Insulated Glass Products	Rusty Neubauer		
White Aluminium Enterprises L.L.C	Jabr Doshan		
Wholesale Glass Distributors, Inc.	Robert Contreras		
WHTB Glass, LLC	Yufeng Peter Pan	Alan Tan	
Windsor Windows and Doors	Mark Mckenzie		
Wolverine Glass Products, Inc.	Rodger Ruff	Chelsie Cowles	
Wujiang CSG Huadong Architectural Glass Co., LTD	Yu Jinhui		
Xianning CSG Energy Conservation Glass Co., LTD.	Zhu Yu		
XYG North America Corp.	Joanne Loh	Lawrence Tao	
Yakut Cam A.S	Fatih Poyraz	Murat Tuncer	
Yantai Dongfang Glass Co., Ltd	Mr. Xing Jinwei		
Yildiz Cam San. Tic. A.S.	Onur Ercan	Cagla Bicer	
YinJian DongGuan Glass Engineering Co., Ltd.	Li Ming		
YKK AP America	Scott Blake		
Yorglass Cam Sanayi Ve Ticaret A.S.	Fatih Cam	Fehmi Turk	
Zhaoqing CSG Energy Conservation Glass Co., Ltd	Yubin Zeng	Edwin Cao	
Zhaoqing Ruilihui Glass Technology Co., Ltd.	Ziong Bin	Wendy Zhong	
Zhongli Glass Co., Ltd	Meng Qingxian		

COMMUNICATIONS

In all matters concerning the administration and implementation of the IGCC® Certification Program, correspondence may be directed to any of the following:

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February 2025

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Rick Wright
Richard E. Wright Associates
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Delran, NJ 08075

February 2025

IN RECOGNITION OF PAST PRESIDENTS WHO SERVED IGCC® SINCE ITS INCEPTION

Roger D. O'Shaughnessy	Cardinal IG	1977-1979
Donald J. Vild	LOF Glass	1979-1981
Colin S. Brady	Twin Pane	1981-1982
Robert G. Spindler	PPG	1982-1983
Jerry Catalano	Hordis Brothers	1983-1985
Dr. Joseph Minor	University of Missouri	1985-1989
Mitchell D. Edwards	SPI Glass Corp.	1989-1992
John Colapietro	Tempglass, Inc.	1992-1993
Robert G. Spindler	Cardinal IG	1993-1996
James Krahn	Marvin Windows	1996-1999
Mark Cody	AFG Industries	1999-2002
Lyle N. Krohnberg	Viracon, Inc.	2002-2004
Mike Grossman	Vitro America, Inc.	2004-2007
Ray Wakefield	Trulite Industries	2007-2011
James Krahn	Marvin Windows	2011-2012
Don Boutelle	Viracon, Inc	2012-2015
Bruce Kaskel	Wiss, Janney, Elstner Assoc. Inc.	2015-2019
Dennis Johnson	Raths, Raths & Johnson	2019-2023

MEETINGS OF THE CERTIFICATION COMMITTEE

The Certification Committee of the Insulating Glass Certification Council meets annually (Rev. 1/29/2018). Interested persons may obtain minutes of earlier meetings by visiting the webpage at www.igcc.org or by contacting the Insulating Glass Certification Council.

By-laws and a copy of the annual tax return are available by contacting the Insulating Glass Certification Council which is a 501 (C)(3) Not-for-Profit corporation.

Certification in this directory is up to date as of the date of issue; however, products may be authorized to use the permanent label or authorization removed from time to time. Please contact the IGCC® office for the latest up-to-date information or check the IGCC website (<https://igcc.org/>).

Direct all requests and/or any comments to:

~ ADMINISTRATION ~

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~ADMINISTRATIVE STAFF~

John G. Kent, Administrative Manager	
Terry Schaefer, Administrative Manager	
Kristin Best, Program Manager	Olivia Aubin, Program Coordinator
Erin Contryman, Program Coordinator	Taylor Rowe, Program Coordinator

CERTIFIED PRODUCT KEY

Revision Date 2/1/2025

Sealants:

HM	=	Hot Melt Butyl
MPS	=	Modified Polysulfide
RHM	=	Reactive Hot Melt
PIB	=	Polyisobutylene
PS2	=	Two-Component Polysulfide
PU2	=	Two-Component Polyurethane
S1	=	One-Component Silicone
S2	=	Two-Component Silicone

Construction Components/ Connectors/Fabrication Techniques:

K	=	Corner Key
LC	=	Linear Connection
BC#	=	Bent Corners (1, 2, 3, or 4)
MC#	=	Mechanical Corners (1, 2, 3 or 4)
AP	=	Aperture Plug
CT	=	Capillary Tubes
PT	=	Point Support Aperture
SP	=	Seal Penetration
AF	=	Aluminum Foil
B	=	Butyl
P	=	Plastic
MT	=	Mylar Tape

Cavity Pressure Compensation (CPC):

Ref Guideline G.0

TI	=	Tubes Inserted
HR	=	Holes Resealed
PA	=	Pressure Adjusted
RS	=	Relief System
PF	=	Post Fabrication
OT	=	Other (uncategorized)

Internal Components (IC): Ref. G.8

BA	=	Bars, grills, muntins
BL	=	Blinds
GI	=	Glass, or other glazing materials
OI	=	Other

Construction Materials:

AA	=	Anodized Aluminum
MA	=	Mill Finish Aluminum
GS	=	Galvanized Steel
SS	=	Stainless Steel
CS	=	Chrome Coated Steel
ZS	=	Nickel/Zinc Plated Steel
US	=	U-Channel (Stainless Steel)
UT	=	U-Channel (Tin Plate Steel)

Desiccants:

LF	=	Loose Fill Desiccant
IB	=	Imbedded Desiccant System
DM	=	Desiccated Matrix

Integrated Spacer Systems – Generic:

BCS	=	Butyl Composite Spacer
BFS	=	Butyl Flexible Spacer
BPS	=	Butyl Polycarbonate Spacer
BSS	=	Butyl Sealant Spacer
DPHS	=	Desiccated Plastic Hybrid Stainless Steel
FSA	=	Foam Spacer Aluminum
FSCS	=	Foam Spacer Chrome Steel
FSF	=	Foam Spacer Metalized Foil
FSNF	=	Foam Spacer Non-Metal Foil
PHA	=	Plastic Hybrid Aluminum
PHCS	=	Plastic Hybrid Chrome Steel
PHF	=	Plastic Hybrid Foil
PHNF	=	Plastic Hybrid Non-Metal Foil
PHSS	=	Plastic Hybrid Stainless Steel
RTP	=	Reactive Thermoplastic Spacer
TP	=	Thermoplastic Spacer

Substrates:

Ref Guideline G.19

U	=	Uncoated (Clear)
C3	=	Sputter Coated, Non-Edge Deleted (Soft)
C2	=	Sputter Coated, Edge Deleted (Soft)
C1	=	Pyrolytic Coated (Hard)
SCF	=	Suspended Coated Film

Gases:

AR	=	Argon
KR	=	Krypton
CO	=	Carbon Dioxide (CO ₂)
BG	=	Blend (Specifically % and Composition)

Gas Content: Ref. Guideline 11.0

Yes	=	GCIA measured valued for initial content, 90% or greater; after weather 80% or greater. Testing for Argon value only at this time. (See guideline A.GC.1)
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Other:

VG	=	Vacuum Insulating Glass Unit
IN	=	Inactive certification (See guideline G.38)
PC	=	Provisional Certification (See guidance note #2 & 13.0)

Note: The materials of construction as listed above are presented as general information only. The designations for the various component parts are generic and do not reflect specific product modifications or technical differences within a component. For more detailed information on components, contact your insulating glass supplier.

IGCC®/IGMA® CERTIFIED PRODUCTS

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
A.N. ALODAN & SONS CO. GLASS & ALUMINIUM FACTORY P.O. Box 797 Riyadh 1st Industrial Area Riyadh 11421 Saudi Arabia +966 11 448 3444 Komate IGCC®/IGMA® 2024	4929	BC4/ALLC	U/C/U	MA/MA	LF/LF	PIB/S2		
A3 Glass Fabricator LLC 13021 Windfern Rd. Houston, TX 77064 USA 281-955-0971	5810	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Advanced Impact Technologies 2310 Starkey Road Largo, FL 33771 USA 727-287-4620 ATI IGCC(R)/IGMA(R) 2024	5079 6023	BC4/GSLC BC3/MC1/PK	U/C2 U	AA AA	LF LF	PIB/S2 PIB/S2	OI	
Advantage Glass Corp 601 West Carboy Road Mount Prospect, IL 60056 USA 847-290-1707 Advantage Glass IGCC(R)/IGMA(R) 2024	5743	BC4/PLC	U/C2	ZS	LF	PIB/S2		Yes
AGC Flat Glass (Thailand) PLC. 200 Moo 1, Suksawad Road Pak Khlong Bang Pla Kod Phra Samut Chedi, Samut Prakan 10290 Thailand 66-2815-5000x1982	4432	MC4/ALK	U/C3/U	MA/MA	LF	PIB/S2		Yes
AGC INTERPANE Architectural Glass GmbH SohnreysstraBe, 21 Lauenforde D-37697 Germany 0049 5273 809-0 AIAG (Plant No) Date IGCC(R)/IGMA(R) #Licence No ++	4508 4509 4510 IN 4511 IN 5452 5453	BC4/SSLC BC4/SSLC BC4/ALLC BC4/ALLC BC3/MC1/MT BC3/MC1/MT	U/C3/U U/C3/U U/C3/U U/C3/U U/C3 U/C3/U	SS/SS PHSS/PHSS MA/MA MA/MA FSF FSF/FSF	LF/LF LF/LF LF LF/LF IB IB/IB	PIB/S2 PIB/S2 PIB/S2 PIB/PS2 PIB/S2 PIB/S2		Yes Yes Yes Yes Yes Yes
AGC INTERPANE Architectural Glass GmbH Robert Bosch Strasse, 2 Plattling, Germany D-94447 Germany 49-9931-950-0 AIAG (Plant No) + date +IGCC(R)/IGMA(R) +cert# ++	4034 4035 4044 IN 4045 IN 4882 IN 5639 5892	BC4/SSLC BC4/PLC BC4/ALLC BC4/ALLC BC3/MC1/MT BC3/MC1/MT BC4/PLC/PT	U/C3/U U/C3/U U/C3/U U/C3/U U/C3 U/C3/U U/C3	SS/SS PHSS/PHSS MA/MA MA/MA FSF FSF/FSF PHSS	LF/LF LF/LF LF/LF LF/LF IB IB/IB LF	PIB/S2 PIB/S2 PIB/PS2 PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes Yes Yes Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
AGF Glass, Inc. 2801 N. LeCompte Rd. Springfield, MO 65803 USA 417-866-8361 AGF Glass IGCC(R) IGMA (R) '24	6062	MC4/PK	U/C2	AA	LF	PIB/S2	BA	Yes
AGNORA LTD 200 Mountain Road Collingwood, ON L9Y4V5 Canada 7054446654 Yes	4766 5824	BC4/GSLC BC4/SSLC	U/C2 U/C2	PHSS SS	LF LF	PIB/S2 PIB/S2		Yes
Agsitech Advanced Materials Corporation Limited HL0107-A Dinghu District Zhaoqing, Guangdong Province 526070 China 86 139 2779 2035	5873 6066	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA PHSS	LF LF	PIB/S2 PIB/S2		Yes Yes
Al Abbar Architectural Glass Sanaa St., PO Box 1626 Ras Alkhor, Industrial Estate Dubai United Arab Emirates 104-333-1362 ABG@IGCC/IGMA 2977 2024	2977	BC4/ALLC	U/C2	MA	LF	PIB/S2		
Al Andalus Glass Factory Co. 7602 196 Street 2nd Industrial City Riyadh, Riyadh 14333 Saudi Arabia + 966 6 577 17215 Al Andalus@IGCC(R)/IGMA(R) 5403/5404 2024	5403 5404	BC4/ALLC BC4/ALLC	U/U U/U	AA AA	LF LF	PIB/S2 PIB/S2		
Al Cam Sanayi ve Ticaret Limited Sirketi Kemal Turkler mah. Yuva sk. No: 28 Istanbul, Sancaktepe 34785 Turkey 00905399260874 ALCAM IGCC(R)/IGMA(R) '24	6018	BC4/GSLC/AP	U/C2	MA	LF	PIB/S2		Yes
Aldora Aluminum and Glass Products Inc. 7421 E. Spartan Blvd. Charleston, SC 29418-8462 USA 843-552-6377 Aldora(SC) IGCC(R)/IGMA(R) 4QT 24	2853	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Aldora Aluminum and Glass Products, Inc. 280 Enterprise Dr. Newport News, VA 23603 USA 330-990-2541 Aldora VA IGCC®/IGMA® #5849 2024	5849	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Aldora Aluminum and Glass Products, Inc. 1903 Cypress Lake Dr Orlando, FL 32837-8459 USA 407-960-3933 Aldora Orlando IGCC(R)/IGMA(R)2024	5497	MC4/PK	U/C2	AA	LF	PIB/S2	BA	
AL-Hadi Glass Industries P.O. Box-5817 Safat, Kuwait 13059 Kuwait	5766 5767	BC4/GSLC BC4/GSLC	U/C3 U/C3	MA MA	LF LF	HM/S2 HM/S2		Yes
All Counties Glass 2020 A East Miner Avenue Stockton, CA 95205 USA 209-888-8720	5108	MC4/PK	U/C2	AA	LF	RHM/RHM	BA	
All Weather at Home 18550, 118A Avenue North West Edmonton, AB T5S 2K7 Canada 780-451-0670 AWW Line # IGCC®/IGMA® 2024 Cert #	2539 3938	BC3/MC1/MT BC3/MC1/SS	U/C2/U U/C2/U	FSF/FSF US/US	IB/IB DM/DM	RHM RHM	BA BA	Yes Yes
All Weather Windows Glass Ltd. 14415 - 128 Avenue Edmonton, AB T5L 3H3 Canada 780-482-8732 IGCC(R)/IGMA(R) AWWG 5094 2024	4815 4846 IN 5094 IN 5749 5750 5897	BC3/MC1/MT BC3/MC1/MT BC3/MC1/MT BC4 BC4 BC3/MC1/MT	U/C2/U U/C2/U U/C2/U U U U/C2	FSF/FSF FSF/FSF FSF/FSF RTP/RTP RTP/RTP FSF/FSF	IB/IB IB/IB IB/IB IB/IB IB/IB	PIB/S2 PS2 PS2 RTP/S2 RTP/PS2 PIB/PS2	BA BA BA BA	Yes Yes Yes Yes Yes Yes
Aluminum Manufacturers Co. Ltd - ALUMATEC Al Khomra Dist, Ware houses City Phase 1 PO Box 17916 Jeddah 2194- K.S.A Jeddah 21494 Saudi Arabia +966 12 635-1766	5634 5635	BC4/ALLC BC4/ALLC	U U/C2	MA MA	LF LF	PIB/PU2 PIB/PU2		Yes
Aluminum Technology Auxiliary Industries PO Box 40625 St #31 Salwa Industrial Area Doha 40625 Qatar 97444602334 Alutec IGCC(R)/IGMA(R) 2024	3267 5851 5862	BC4/GSLC MC4/PK BC3/MC1/MT	U/U U/C2 U/C2	MA PHSS FSNF	LF LF IB	PIB/S2 PIB/S2 PIB/S2		 Yes Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
American Insulated Glass 102 East Fields Street PO Box 475 Dallas, NC 28034 USA 704-917-0880 AIG IGCC(R)/IGMA(R) 2024	3158 3518 5293	MC4/PK BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	AA AA AA	LF LF LF	PIB/RHM PIB/S2 PIB/RHM	BA BA BA	Yes
American Insulated Glass Inc. 2700 19th St. North Birmingham, AL 35207 USA 336-341-1565	5083 5084	MC4/PK BC3/MC1	U/C2 U/C2	AA FSF	LF LF	PIB/S2 HM	BA BA	
American Insulated Glass LLC. 2190 Urbana Pike. Ijamsville, MD 21754 USA 301-831-1960 AIG MD IGCC/IGMA "date" "rack/slot"	5417 5565	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA AA	LF LF	PIB/PU2 PIB/S2		
American Insulated Glass LLC. 1330 Proctor St. Knoxville, TN 37921 USA +18655583043 AIG-01 TN IGCC(R) IGMA(R) '24	5975	MC4/PK	U/C2	MA	LF	PIB/RHM	BA	Yes
American Insulated Glass LLC. 12707 Eckles Road Plymouth Township, MI 48170 USA 734-656-3900 AIG 006 IGCC(R)/IGMA(R) 2024	3572 4420 IN 5521 5522	MC4/PK MC4/PK MC4/PK MC4/PK	U/C1 U/C1 U/C1 U/C1	AA AA PHSS PHSS	LF LF LF LF	PIB/PS2 PIB/S1 PIB/PS2 PIB/S2	BA BA BA BA	Yes Yes
American Insulated Glass, LLC 3965 East Conley Road PO Box 750 Conley, GA 30288 USA 404-361-9154	4967 5070 5700	MC4/PK BC3/MC1 MC4/PK	U/C2 U/C2 U/C2	AA FSF PHSS	LF IB LF	PIB/S2 RHM PIB/S2	BA BA BA	Yes
Andersen Corporation 71 Second St Strathoy, ON N7G 3H8 Canada 651-264-5150 Andersen IGCC(R)/IGMA(R) Date	2373 5039	BC3/MC1/MT BC3/MC1/MT	U/C2/U U/C2	FSF/FSF FSF	IB/IB IB	RHM RHM	BA BA	Yes Yes
AntCam Cam Pazarlama San. Ve Tic. A.S. Organize Sanayi Bolgesi 2.Kisim 21.Cad. No.18 Antalya, Dosemealti 07190 Turkey 00902423402037 ANTCAM IGCC(R)/IGMA(R) 2024	5351 5352	MC4/PK MC4/PK	U/C2 U/C2	PHSS PHSS	LF LF	PIB/S2 PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Architectural Glass Products, LLC. 6200 Maple Avenue St. Louis, MO 63130 USA 314-725-8088 Architectural Glass Products LLC IGCC®/IGMA® 24	2664	MC4/PK	U/C2	AA	LF	PIB/PU2		
	2666	MC4/PK	U/C2	PHSS	LF	PIB/PU2		
Ardic Cam Sanayi A.S. Kumpinar Mahallesi Kumpinar Kume Evleri NO: 31/A Kahramankazan, Ankara 06980 Turkey 903128143630	6073	MC4/PK	U/C3/U	PHSS/PHSS	LF/LF	PIB/S2		
Arino Duglass	5216	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		Yes
Poligono Industrial Royales Bajos S/N La Puebla De Alfinden Zaragoza 50171 Spain +34 976108008 Arino Duglass Cert#- IGCC(R)/IGMA(R)- Date	5217	BC4/SSLC	U/C2	MA	LF	PIB/S2		Yes
Associated Materials, Inc. - Central 3773 State Road Cuyahoga Falls, OH 44223 USA 330-922-2069 AWCC IGCC®/IGMA® + Date	3017 3332 3503 IN 3951 IN 4433	BC4/ZS BC4/ZS BC4/ZS BC4/ZS BC3/MC1/MT/TI	U/C3/U U/C3/U U/C3/U U/C3/U U/C3/U	UT/UT US/US US/US UT/UT FSF/FSF	DM/DM DM/DM DM/DM DM/DM IB/IB	HM HM HM HM HM	BA BA BA BA BA	Yes Yes Yes Yes Yes
Associated Materials, Inc. - Midwest 3820 44th Ave. SW Cedar Rapids, IA 52404 USA 330-922-2069 AWCMW IGCC®/IGMA® + date + Line#	3171 3481 IN 3717 IN 4407 4408	BC3/MC1/MT/TI BC4/ZS BC4/ZS BC4/ZS BC4/ZS	U/C3/U U/C3/U U/C3/U U/C3/U U/C3/U	FSF/FSF UT/UT US/US US/US UT/UT	IB/IB DM/DM DM/DM DM/DM DM/DM	HM HM HM HM HM	BA BA BA BA BA	Yes Yes Yes Yes Yes
Associated Materials, Inc. - Northwest 2801 78th Avenue East Fife, WA 98424 USA (425) 481-7101 AWCNW IGCC(R)/IGMA(R) + date	3034 4091 4252 5413 IN 5414 IN	BC3/MC1/MT/TI BC4/ZS BC4/ZS BC4/ZS BC4/ZS	U/C3/U U/C2/U U/C2/U U/C3/U U/C3/U	FSF/FSF US/US UT/UT UT/UT US/US	IB/IB DM/DM DM/DM DM/DM DM/DM	HM RHM/HM RHM/HM RHM/HM RHM/HM	BA BA BA BA BA	Yes Yes Yes Yes Yes
Associated Materials, Inc. - Southeast 3800 Farmgate Road Kinston, NC 28501 USA 252-527-5050 AWCSE IGCC(R)/IGMA(R) + date	3199 3702 3904 IN 3905 IN 5965	BC4/ZS BC4/ZS BC4/ZS BC4/ZS BC3/MC1/MT/TI	U/C3/U U/C3/U U/C3/U U/C3/U U/C3/U	UT/UT US/US UT/UT US/US FSF/FSF	DM/DM DM/DM DM/DM DM/DM IB/IB	HM HM HM HM HM	BA BA BA BA BA	Yes Yes Yes Yes Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Associated Materials, Inc. - Southwest 7550 E. 30th St. Yuma, AZ 85365 USA 928-344-6500 AWCSW IGCC(R)/IGMA(R) + date	2551 4108 IN 4309 4609 5530 IN 6249 6250	BC3/MC1/MT/TI BC4/ZS BC4/ZS BC4/ZS BC4/ZS BC4/ZS BC4/ZS	U/C2/U U/C2/U U/C3/U U/C2/U U/C3 U/C2/U U/C2/U	FSF/FSF US/US US/US UT/UT UT/UT US/US UT/UT	IB DM/DM DM/DM DM/DM DM/DM DM/DM DM/DM	HM HM HM HM HM RHM/HM RHM/HM	BA BA BA BA BA BA BA	Yes Yes Yes Yes Yes Yes Yes
Aurora Windows and Doors 44980 S. Grimmer Blvd Fremont, CA 94538 USA 650-780-9163	5541	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	
Beijing Guanhua Dongfang Glass Technology Co. Ltd South of Liangxiang Industrial Zone Fangshan District, Beijing 102425 China 0086-10-69308612	5987	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Beijing Hangglass New Material Technology Co., Ltd. Zaozhuang Branch 5500, Renmin West Road Yong'an Town, Shizhong District Zaozhuang, Shandong Province 277116 China 0632-3186230	6103	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Beijing NorthTech Haiyangshunda Glass Ltd. No. 1 North Road Daxing District, Beijing 102600 China +861082032601	4646 5772	BC4/GSLC BC4/GSLC	U/U U/C2/U	MA PHSS/PHSS	LF LF/LF	PIB/S2 PIB/S2		Yes
Beijing Wuhuatianbao Glass Co., Ltd. NO. 1 Renli Road Liqiao Town Shunyi District, Beijing 101304 China +86-10-69485045 IGCC®/IGMA® 4243 ASTM E2190 2024	4243 5353	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA PHSS	LF LF	PIB/S2 PIB/S2		Yes Yes
Blue Star Glass Inc. 2300 US Highway 1 Building 31 North Brunswick, NJ 08902 USA 732-422-1272	4618 4619 5543	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U	AA MA PHSS	LF LF LF	PIB/S2 PIB/S2 PIB/S2	BA BA BA	Yes Yes Yes
Blue Star Glass Texas, LLC 4651 Clover Haven St. Dallas, TX 75227 USA 945-223-1800	5806	BC4	U/C2	RTP/RTP	IB/IB	RTP/S2		Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Builders First Source 850 White Circle Court PO Box 4237 Marietta, GA 30060 USA 678-819-6163 BFS IGCC(R)/IGMA(R) 2024	3693	BC3/MC1	U/C2	BPS	IB	BPS	BA	
BVGLAZING SYSTEMS	5105	BC4/GSLC	U/C2/U	SS/SS	LF/LF	PIB/S2		Yes
131 Caldari Road	5106	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Concord, ON L4K 3Z9 Canada 905-738-8600 BV Glazing Systems IGCC(R)/IGMA(R) Concord 2024								
Camyapi Cam Paz. Ins. Taah. Tic.ve San. A.S. Bergama Organize Sanayi Bolgesi Mahallesi Ataturk Caddesi No: 8 Bergama, Izmir 35700 Turkey +90 (262) 722 93 92 CCP02TK IGCC(R)/IGMA(R) 2025	6132	BC4/PLC	U/C2	MA	LF	PIB/S2		
Captivision Korea, Inc. 298-42 Cheonbukjingang-ro Pyeongtaek-si, Cheongbuk-eup 17800 South Korea +82-70-5106-2800 CAPTIVISION KOREA Inc. IGCC®/IGMA® '24	5613	MC4/PK	U/C3	PHF	LF	PIB/S2		Yes
Cardinal CT 140 Carey Drive Utica, OH 43080 USA 740-892-2324	4897	BC3/MC1/MT	U/U	FSF	IB	HM		
Cardinal IG	4684 IN	BC4/PLC/TI	U/C2	SS	LF	PIB/S2		Yes
6415 South Apache Rd.	4725 IN	BC4/PLC	U/C2/U	SS/SS	LF/LF	PIB/S2		Yes
Buckeye, AZ 85326	5618	BC4/ALLC	U/C2	AA	LF	PIB/S1	BA	Yes
USA	5788	BC4/PLC/TI	U/C2	SS/SS	LF/LF	PIB/S1	BA	Yes
480-486-4105	5789	BC4/PLC/TI	U/C2	SS	LF	PIB/S1	BA	Yes
CIG 13 IGCC(R)/IGMA(R) + date								
Cardinal IG	1464	BC4/PLC/TI/MT	U/C2	SS	LF	PIB/S1	BA	Yes
4611 15th Ave N.W.	1492	BC4/ALLC/AF/TI	U/C2	AA	LF	PIB/S1	BA	Yes
Fargo, ND 58102	3456	BC4/PLC/MT/TI	U/C2/U	SS/SS	LF/LF	PIB/S1	BA	Yes
USA	3457	BC4/ALLC/AF/TI	U/C2/U	AA/AA	LF/LF	PIB/S1	BA	Yes
701-492-0920 Cardinal IGCC(R)/IGMA(R) CIG-6 Date LoE2								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Cardinal IG	1453	BC4/PLC/TI	U/C2	SS	LF	PIB/S1	BA	Yes
301 E. McSwain Drive	3447	BC4/PLC/TI	U/C2/U	SS/SS	LF/LF	PIB/S1	BA	Yes
PO Box 99	5544	BC4/ALLC/TI	U/C2	AA	LF	PIB/S1	BA	Yes
Fremont, IN 46737								
USA								
260-495-4105								
CIG-5 IGCC(R)/IGMA(R) date								
Cardinal IG	1030	BC4/PLC/TI	U/C2/U	SS/SS	LF/LF	PIB/S1	BA	Yes/CPC
716 North East 6th Street	3539	BC4/PLC/TI	U/C2	SS	LF	PIB/S1	BA	Yes
PO Box 99								
Greenfield, IA 50894								
USA								
641-343-7113								
Cardinal IG IGCC®/IGMA® CIG-2 "date"								
Cardinal IG	1923	BC4/ALLC/TI	U/C2	AA	LF	PIB/S1	BA	Yes
3125 Neal Creek Mill Road	1924	BC4/PLLC/TI	U/C2	SS	LF	PIB/S1	BA	Yes
Hood River, OR 97031	2553	BC4/ALLC/TI	U/C2/U	AA/AA	LF/LF	PIB/S1	BA	Yes
USA	2554	BC4/PLLC/TI	U/C2/U	SS/SS	LF	PIB/S1	BA	Yes
541-354-1280	4683	BC4/PLC	U/C2	SS	LF	PIB/S2	BA	Yes
Cardinal CIG-9 IGCC(R)/IGMA(R) 3-24								
Cardinal IG	2221	BC4/ALLC/TI	U/C2/U	AA/AA	LF/LF	PIB/S1	BA	Yes
50 Elmwood Road	2222	BC4/PLC/TI	U/C2	SS	LF	PIB/S1		Yes
Crestwood Industrial Park	4721	BC4/PLC/TI	U/C2/U	SS/SS	LF/LF	PIB/S1	BA	Yes
Mountain Top, PA 18707								
USA								
570-474-3100								
Cardinal IG IGCC(R)/IGMA(R) CIG-11 M-24								
Cardinal IG	3661	BC4/PLC/TI	U/C2	SS	LF	PIB/S1	BA	Yes
4185 SW 13th St.	4960	BC4/PLC	U/C2/U	SS/SS	LF/LF	PIB/S1		Yes
Ocala, FL 34474								
USA								
352-291-6879								
Cardinal IG IGCC(R)/IGMA(R) CIG-12 2024								
Cardinal IG	1036	BC4/PLC/TI	U/C2	SS	LF	PIB/S1	BA	Yes
1011 E. Madison St.	1306	BC4/ALLC/TI	U/C2	AA	LF	PIB/S1	BA	Yes
Spring Green, WI 53588	3168	BC4/ALLC/TI	U/C2/U	AA/AA	LF/LF	PIB/S1	BA	Yes
USA	3169	BC4/PLC/TI	U/C2/U	SS/SS	LF/LF	PIB/S1	BA	Yes
(608) 588-3846								
Cardinal IG IGCC(R)/IGMA(R) CIG-3								
Quarter/year/coating								
Cardinal IG	1039	BC4/PLC/TI	U/C2/U	SS/SS	LF/LF	PIB/S1	BA	Yes
1620 Town Line Road	1295	BC4/ALLC/TI	U/C2	AA	LF	PIB/S1	BA	Yes
Tomah, WI 54660	5728	BC4/PLC/TI	U/C2	SS	LF	PIB/S2		Yes
USA								
608-372-3300								
IGCC(R)/IGMA(R) CIG-4 current date								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Cardinal IG	1970	BC4/PLLC/TI	U/C2	SS	LF	PIB/S1	BA	Yes
2132 Cardinal Park Drive	1971	BC4/ALLC/TI	U/C2	AA	LF	PIB/S1	BA	Yes
Vinton, VA 21179	3768	BC4/PLC/TI	U/C2/U	SS/SS	LF	PIB/S1	BA	Yes
USA								
540-892-5600								
CIG 10 IGCC(R)/IGMA(R) + date; on glass								
Cardinal IG	1574	BC4/ALLC	U/C2	AA	LF	PIB/S1	BA	Yes
201 Cardinal Road	1718	BC4/PLC/TI	U/C2	SS	LF	PIB/S1	BA	Yes
Waxahachie, TX 75165	2838	BC4/PLC/TI	U/C2/U	SS/SS	LF/LF	PIB/S1	BA	Yes
USA								
972-937-4969								
Carey Glass UC	6070	MC4/PK	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Limerick Road								
Nenagh, Co. Tipperary E45 XV81								
Ireland								
353-87-204-2779								
Cascade Windows Inc.	4800	BC3/MC1/ZS	U/C2	UT	DM	HM	BA	Yes
2225 S 75th Avenue #140	5790	BC3/MC1	U/C2	FSF	IB	HM	BA	Yes
Phoenix, AZ 85043								
USA								
480-736-8988								
WPI20 IGCC(R)/IGMA(R) + date								
Cascade Windows Inc.	4318	BC3/MC1/ZS/CT	U/C2	UT	DM	HM	BA	Yes
5323 Harold Gatty Drive	5007	BC3/MC1	U/C2	FSF	IB	HM	BA	Yes
Salt Lake City, UT 84116	5844	BC3/MC1	U/C2	FSF	IB	HM	BA	Yes
USA								
801-359-2950								
IGCC(R)/IGMA(R) WPI4 + date								
Cascade Windows Inc.	3495 IN	BC3/MC1/ZS/TI	U/C2	UT	DM	HM		
10507 E. Montgomery Drive	3792	BC3/MC1	U/C2	FSF	IB	HM	BA	
Spokane, WA 99206	5606 IN	BC3/MC1	U/C2	FSF	IB	HM	BA	Yes
USA	5707	BC3/MC1/ZS/TI	U/C2	UT	DM	HM	BA	Yes
509-789-3049								
IGCC(R)/IGMA(R) WPI1 + date								
Central Valley Glass & Screen, Inc.	5104	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	HM	BA	
5854 88th St.	5466	BC4/GSLC	U/C2	AA	LF	PIB/PS2	BA	Yes
Sacramento, CA 95828-1104	5719	BC4/GSLC	U/C2	SS	LF	PIB/PS2		Yes
USA	5999	BC4	U/C2	RTP	IB	RTP/S2	BA	Yes
916-421-5293	6000	MC4/PK	U/C2	SS	LF	PIB/S2	BA	Yes
Changshu High-Tech Energy-Saving Dorwin Co., Ltd.	4894	MC4/PK	U/C2	PHA	LF	PIB/PS2	BL	
Industrial Park, Yanxiang Village	5125	MC4/PK	U/C2	AA	LF	PIB/PS2	BL	
Shanghu Town								
Changsu, Jiangsu 215551								
China								
86-0512-52122530								
IGCC(R)/IGMA(R) 4894 CSOTK 12/24								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
ChangShu MayBo Glass Co., Ltd	4225	BC3/MC1/MT	U/C1	FSNF	IB	PU2	GI	Yes
Zhouhang, Haiyu Town	4227	MC4/PK	U/C1	AA	LF	PIB/PU2	GI	Yes
Changshu, Jiangsu 215517	5775	BC3/MC1	U/C3	BCS	IB	BCS/PS2	GI	Yes
China	5983	BC3/MC1	U/C2	BCS	IB	BCS/PS2	GI	Yes
0512-52590663								
MB GLASS IGCC®/IGMA® 09/2024								
Changshu Sysen Glass Products Co., Ltd.	4459	MC4/PK	U/C3	AA	LF	PIB/PS2	GI	Yes
Zhoushi Road Shiqiao Village Meili Town								
Changshu								
Suzhou City, Jiangsu Province 215511								
China								
0512-52333829								
Changshu Weier Glass Products Co. Ltd.	3073	MC4/PK	U/C3	AA	LF	PIB/PU2	GI	Yes
Haiyu Town	4953	BC3/MC1	U/U	BCS	IB	BCS/PS2	GI	
Changshu, Jiangsu 215519	5367	MC4/PK	U/U	MA	LF	PIB/PS2	BL	
China	5713	BC3/MC1	U/U	BCS	IB	BCS/PS2	GI	
86-512-52569644	6030	BC4	U/C1	RTP	IB	RTP/PS2		Yes
Changshu Zhongqin Building Material Co., Ltd	5579	MC4/PK	U/C1	AA	LF	PIB/PS2	BL	
No. 18 Xuanli Road								
Meili Town, Changshu								
Suzhou, Jiangsu 215500								
China								
+86-512-52389805								
Changshu ZhongXin Building Materials Co., Ltd.	4012	MC4/PK	U/C2	AA	LF	PIB/PS2	GI	
Zhaoshi Meili Town	4122	BC3/MC1	U/C2	BCS	IB	BCS	GI	
Changshu, Jiangsu 215500	4124	BC3/MC1	U/C2	BCS	IB	BCS/PS2	GI	
China								
616-748-5401								
Changxing Kibing Energy Saving Glass Co., Ltd.	4732	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Shiquan Village, Lijiaxiang Town, Changxing County								
Huzhou City, Zhejiang 313100								
China								
+86-575-88730760								
Chinta Glass Co., Ltd.	4716	BC4/GSLC	U/C2	MA	LF	PIB/S2		
No 39-16 Chenggong Road								
Dounan Township								
Yunlin, Taiwan 630								
China								
886-5-5962492								
Chongqing SYP Engineering Glass Co., Ltd.	4724	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
No. 1 Yaopi Road,								
Wandong Town, Chongqing 400800								
China								
CSYPE IGCC®/IGMA® E2190 '24								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Ciraylar Cam Insaat Malzemeleri San. VE TIC. A.S. Fevzi Cakmak MH. Sila Cd. No:4 Karatay, Konya 42050 Turkey 905351083135 Ciraylar Cam IGCC(R)/IGMA(R) 24	5409 5447	MC4/PK MC4/PK	U U/C2	PHSS PHSS	LF LF	PIB/S2 RHM/S2		
Classy Glass Specialties Technology Co., Ltd No. 11, Qiaoxinxi 2nd Road Qiaotou Town Dongguan, Guangdong Province 523518 China +86 769 8356 1889	5904	BC4/GSLC	U/C2	AA	LF	PIB/S2		
ClearVue Technologies Ltd. Suite 9 567 Newcastle St. West Perth, Western Australia 6005 Australia +61 (8) 9220 9020	6011 6012	BC3/MC1/PK BC3/MC1/PK	U/C1 U/C1	AA AA	LF LF	PIB/S2 PIB/S2	OI OI	Yes
ClearVue Technologies Ltd. Suite 9 567 Newcastle St. West Perth, Western Australia 6005 Australia +61 (8) 9220 9020	6042	BC3/MC1/PK	U/C2	AA	LF	PIB/S2	OI	Yes
Cmech Ltd. 2 FengGuang Road ZhongXin Town ZengCheng City, Guangdong 511365 China 86-020-61737991 CMECH IGCC®/IGMA® 2025	3260 5276	MC4/PK MC4/PK	U/U U/C1	AA AA	LF LF	PIB/PS2 PIB/PS2	BL BL	
Coastal Curved Glass #507, 19100 Airport Way Pitt Meadows, BC V3Y0E2 Canada 604-457-4477	6016	BC3/MC1/MT	U	FSF	IB	PIB/SI		
Comercial Dialum SA Panamericana Norte 18.600, Lampa Santiago 9390306 Chile 56-2-24988600 DIALUM IGCC®/IGMA® 2024	4694	BC4/GSLC/TI	U/C2	MA	LF	PIB/S2		
Complete Line Glass Wholesalers, Inc. 8175 Bracken Creek Dr San Antonio, TX 78266 USA 210-651-9873	4811 5776	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA AA	LF LF	PIB/S2 PIB/S2	BA BA	

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Cristalmax-Industria de Vidros, S.A. Zona Industrial de Murtede Cantanhede, Murtede 3060-372 Portugal 351 231209510 ISOLMAX (Cert No) IGCC(R) / IGMA (R) 2024	6113	BC4/PLC	U/C2	PHSS	LF	PIB/PU2		Yes
	6114	LC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
CS ECO Glass (M) Sdn Bhd LOT 635 & 660 Kawasan Perindustrian Tuanku Jaafar Sungai Gadut, Negeri Sembilan 71450 Malaysia CS ECO IGCC®/IGMA® E2190 2024 5410	5410	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
	5942	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Custom Glass Prod. Of Carolina PO Box 2049 1475 Harrison Rd. Salisbury, NC 28144 USA 704-633-4946 CGPC IGCC(R)/IGMA(R) '24	6053	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Custom Glass Products Inc. 7515 Venture Circle Weston, WI 54476 USA 715-359-2252 "Custom Glass WI IGCC(R)/IGMA(R)2025"	2979	MC4/PK	U/U	MA	LF	PIB/S2		
Dallas Flat Glass 1304 Champion Circle Carrollton, TX 75006-6803 USA 972-506-9580 DFGD IGCC(R)/IGMA (R) 24-4	5688	MC4/PK	U/C1	AA	LF	PIB/PS2	BA	
Diamond Glass Unit S3B Le Brocquy Ave. Park West Ind. Estate Dublin D12KT91 Ireland +353 1620 5000 Diamond Glass IGCC(R)/IGMA(R) prod. #, 2024	5622	MC4/PK	U/C2/U	PHF/PHF	LF/LF	PIB/S2		Yes
Dongguan CSG Architectural Glass Co., Ltd. CSG Green Energy Industrial Park Machong Town Dongguan, Guangdong Province China 86-769-88288292	2660	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
	4601	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		
	4602	BC4/GSLC	U/C2	SS	LF	PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Donguan Ngai Wah Bending Tempering Glass Company Limited Hekeng Industrial Area, Qiaotou Town Donguan City, Guangdong Province 52300 China +86 769 81029188	4447	MC4/PK	U/C2	AA	LF	PIB/S2		
Dost Cam Sanayi ve Ticaret A.S. AOSB 10008 SK NO 15 Cigli, Izmir 35620 Turkey 0090 533 2956927 Dost Cam IGCC(R)/IGMA(R) 2024	5811 5812	MC4/PK MC4/PK	U/C2 U/C2	PHSS PHSS/PHSS	LF LF/LF	PIB/S2 PIB/S2		Yes
DoubleTree Glass & Windows 295 County Road 220 Alto, NM 88312 USA 575-336-2565	5876	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	
Dynamic Windows & Doors Inc. 30440 Progressive Way Abbotsford, BC V2T 6W3 Canada 604-864-8200	5527	MC4/PK	U/C2	PHNF	LF	PIB/RHM	BA	Yes
ECO Glass Production 9101 NW 87th Ave Medley, FL 33178 USA 7862533327	5928	BC4	U/C2	RTP	IB	RTP/S2		Yes
EFCO Corporation 1000 County Road Monett, MO 65708-9214 USA 417-235-6011 EFCO Corp. IGCC®/IGMA® 24 (Lisec)	2244 3459 4473 4865 4866 4901	BC3/MC1/AP BC4/GSLC BC4/GSLC BC4/GSLC BC4/GSLC BC3/MC1/AP	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2	UT PHSS AA AA PHSS UT	DM LF LF LF LF DM	RHM/HM PIB/S2 PIB/S2 PIB/S2 PIB/S2 RHM/HM	BA BA	Yes Yes Yes Yes Yes Yes
Elivate Mexico Supply S. de R.L. de C.V. 4045 Spencer Street Suite B24 Las Vegas, NV 89119 IGCC(R)/IGMA(R)E2190 (IGCC #) (month) (year)	5592 5593 5655 5896	BC4/GSLC BC4/SSLC BC4/SSLC BC4/SSLC	U/C2 U/C2 U/C2/U U/C2	MA PHSS PHSS/PHSS SS	LF LF LF/LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes
Emirates Glass L.L.C. PO Box 29769 Interchange 4, Al Quoz Industrial Area Dubai United Arab Emirates 00971-47094789 Emirates IGCC®/IGMA® 2334/5547- 2025	2334 5547	BC4/ALLC BC4/ALLC	U/C2 U/U	MA MA	LF LF	PIB/JS 562 PIB/S2		Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Engineered Glass Products, L.L.C. 2857 S. Halsted Street Chicago, IL 60608-5907 USA 3123264710 EGP 3526 IGCC(R)/IGMA(R) 2024	3526	BC3/MC1	U/C1	BCS	IB	BCS		
EPAL S.A. ALUMINUM WINDOWS & DOORS, PERPERIS-RISKOS S.A. 2nd km of Sindos-Halastra Rd. Sindos, Thessaloniki 57400 Greece +30 2310 795 200 Epal IGCC(R)/IGMA(R) 24	6004	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	PIB/PS2		Yes
Erdem Dis Ticaret A.S. Velibaba Mah. Aydos Cad. No:10 Pendik, Istanbul 34896 Turkey +902165856561 Erdem+ IGCC(R)/IGMA(R) 24	5138 5246	BC4/SSLC BC4/SSLC	U/C2/U U/C2	PHSS/PHSS AA/AA	LF/LF LF/LF	PIB/S2 PIB/S2		Yes
Fairis C.A. 298 Verde Loma y Quis Picacha Ambato, Tungurahua 18010112 Ecuador 59332520901 FAIRIS®Insulating Glass IGCC®/IGMA® ASTME2190(#) (year)	4758 4759 5172	BC4/GSLC BC4/GSLC BC4/GSLC	U/U U/U U/C2	AA AA AA	LF LF LF	PIB/PS2 PIB/PS2 PIB/S2		Yes Yes
FAKRO GP Sp. Z.O.O. ul. Wegierska 144A 33-300 Nowy Sacz VAT number: PL 734-30-11-797 Poland 481-844-4053 F.GP IGCC(R)/IGMA(R) + 24	4323 4914	BC4/GSLC BC4/GSLC	U/C2 U/C2	PHSS PHSS	LF LF	PIB/PU2 PIB/S2		Yes Yes
Fenplast, Inc. 160, boul. de L'industrie Candiac, QC J5R 1J3 Canada 514-990-0012 Fenplast - Candiac, QC MM/YYYY IGCC®/IGMA®	3451	BC3/MC1/MT	U/C1/U	FSF/FSF	IB/IB	HM	BA	Yes
FG Glass Industries Pvt Ltd. 1204 Tower A, Naman Midtown Elphinstone Road Mumbai, Maharastra 400013 India +91-22-40657777	5277	BC4/GSLC	U/C2	MA	LF	PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Flat Glass Distributors 5355 Shawland Road Jacksonville, FL 32254 USA 904-354-5413 FGD IGCC(R)/IGMA(R) 2024	2467 IN 5221	BC3/MC1/MT BC3/MC1/MT	U/C2 U/C2	FSF FSF	IB IB	HM RHM	BA	
Flat Glass Group Co., Ltd. 1999 Yunhe Rod., Xiuzhou Industrial Zone Jiaxing, Zhejiang 314001 China 86-139-05735930	4144	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Foshan Ding Li Ye Glass Products Co., Ltd Workshop D&E, Song Mu Lang of Plant Area No. 1 Guanyao Hongxing Village Shishan Town, Nanhai District Foshan, Guangdong Province 528225 China +86 180 2456 0792	6065	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Foshan Shengqian Glass Product Co., Ltd No 88, District B Shanshui Center Science Industry Zone Foshan, Guangdong Province 528137 China +86 13502818655	6013	BC4/GSLC	U/C1	AA	LF	PIB/S2		
Foshan Super Glass Ind. Co; Ltd. Boai Dong Road Shishan Science & Technology Zone B Nanhai District Foshan, Guangdong 528225 China +86 13101320231 US WEATHER SEAL IGCC®/IGMA® 2024	5371 5372	BC4/GSLC BC4/GSLC	U/C2 U/C2/U	PHSS PHSS/PHSS	LF LF/LF	PIB/S2 PIB/S2		
Fujian Dengzhen Industrial Co., Ltd No. 6 Kunmei Road Fengshan Town Huann County Zhangzhou, Fujian 363005 China 86596-7288156	5937	BC3/MC1/TP	U/C1	FSNF	IB	HM		
Future Architectural Glass LLC P 278, Al Ghail Industrial Area PO Box 86001 Al Ghail Ras Al Khaimah United Arab Emirates 072589274 Future ©IGCC/©IGMA 3641 2024	3641	BC4/SSLC	U/C2	MA	LF	PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
General Glass	3617	BC4/GSLC	U/C2	MA	LF	PIB/PS2	BA	
6601 NE 112th Court	4231	BC4/GSLC	U/C2	MA	LF	PIB/S2	BA	
Vancouver, WA 98662								
USA								
503-253-1147								
Gentek Building Products an Associated	6146	BC3/MC1	U/C2	FSF/FSF	IB/IB	HM	BA	Yes
Materials Inc. Company								
6320 Colonel Talbot Rd.								
London, ON N6P 1J1								
Canada								
519-652-3246								
Gentek IGCC(R)/IGMA(R) 2382 + date								
GLASPRO	5589	MC4/PK	U/C2	AA	LF	PIB/S2	OI	Yes
9401 Ann Street	5590	MC4/PK	U/C2	PHSS	LF	PIB/S2	OI	
Santa Fe Springs, CA 90670								
USA								
562-777-4148								
Glass and Mirror Craft	4428	BC4/PLC	U/C2	AA	LF	PIB/S2	BA	Yes
PO Box 930439	5049	BC4/GSLC	U/C2	SS	LF	PIB/S2		Yes
Wixom, MI 48393	5050	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		Yes
USA	5432	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
2486246922								
G&MC IGCC(R)/IGMA(R) '24								
Glass Enterprise Northeast	6101	BC4/ALLC	U/C2	AA	LF	PIB/S2		
40 Wisconsin Ave								
Norwich, CT 06360								
USA								
860-230-1405								
Glass Enterprises, Inc.	3701	BC4/GSLC	U/C2	AA	LF	PIB/PS2	BA	
2277 New York Avenue	5269	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Bensalem, PA 19020	5439	BC3/MC1/MT	U/C2	FSF	IB	PIB/S2		
USA	5440	BC3/MC1/MT	U/C2	FSF	IB	PIB/PS2		
215-638-1007								
BETA-PANE(R) IGCC(R)/IGMA(R) '24								
Glass Group & Seal Inc	6133	BC4/GSLC	U/C2	PHSS	IB	PIB/S2		Yes
316 Edgeley Blvd.								
Concord, ON L4K3Y3								
Canada								
416-543-3030								
GGG Inc Concord ON IGCC(R)/IGMA(R)								
2024								
Glass Insulators Inc.	3144	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	HM	BA	Yes
600 Industrial Blvd	3976	BC4/GSLC	U/C2/U	MA/MA	LF/LF	PIB/PS2	BA	Yes
Bloomer, WI 54724								
USA								
715-568-3649								
GII IGCC(R)/IGMA(R) 2024								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Glass Maestro Industries LLC 28b Street, Al Quoz Industrial Area 3 Dubai 0000 United Arab Emirates GMS@IGCC@IGMA 5981 2025	5981	BC4/ALLC	U/C2	MA	LF	PIB/S2		
Glassbel Baltic 11, Pramones Str. LT-94102 Klaipeda Lithuania +370-46-416380 Glassbel EN 1279; IGCC(R)/IGMA(R) mm/yyyy cycle	4729 4730	BC4/SSLC BC4/GSLC	U/C2/U U/C2/U	SS/SS PHSS/PHSS	LF/LF LF/LF	PIB/S2 PIB/S2		Yes Yes
GlasseccViracon Rodovia Dom Pedro I, KM 58 Nazare Paulista, Sao Paulo 12960-000 Brazil +551145978105 Glassecc Viracon IGCC@/IGMA@ 2024	5902	BC4/GSLC	U/C3	MA	LF	PIB/S2		
GlassFab Tempering Services Inc. Holly Drive 4101 Holly Drive Tracy, CA 95376 USA 209-229-1060 GlassFab IGCC@/IGMA@ 24	2685	MC4/PK	U/C2	MA	LF	PIB/S2		
Glasstech Industries B.S.C. PO Box No. 50968 Bahrain International Investment Park Building 325, Road No. 1506, Block-115 Hidd, Manama Bahrain +973 17464418	4925 5054	BC4/GSLC MC4/PK	U/C3 U/C2	MA SS	LF LF	PIB/S2 PIB/S2		
Glasswerks GWA- West 2323 Firestone Blvd. South Gate, CA 90280 USA 323-789-7800x351 GWA IGCC(R)/IGMA(R) 2024	2653 3727 3728 4023 4024 5763 IN	BC4/GSLC/TI BC4/GSLC BC4/GSLC BC3/MC1/MT BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2	AA MA AA FSF MA MA	LF LF LF IB LF LF	PIB/PS2 PIB/S2 PIB/S2 PIB/S2 PIB/PS2 PIB/S2		Yes Yes Yes Yes Yes Yes
Glasswerks GWLA- East 8600 Rheem Ave. South Gate, CA 90280 USA 323-789-7810 GWR IGCC(R)/IGMA(R) 2024	4340 5662 5765	BC4/GSLC BC4/GSLC BC3/MC1/MT	U/C2 U U/C2	AA AA FSF	LF LF IB	PIB/S2 PIB/PS2 PIB/S2		
Glasswerks GWT 42005 Zevo Drive Temecula, CA 92590 USA 323-636-1906 GWT IGCC(R)/IGMA(R) 2024	4404 4902	MC4/PK MC4/PK	U/C2 U/C2	MA AA	LF LF	PIB/S2 PIB/S2	BA BA	Yes Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Glaz-Tech Industries, Inc. 6700 Bluewater Rd. NW Albuquerque, NM 87121 USA GTI 04 IGCC(R)/IGMA(R) '24	5774	MC4/PK	U/C2	AA	LF	PIB/PS2	BA	
Glaz-Tech Industries, Inc. 6700 Bluewater Rd. NW Albuquerque, NM 87121 USA GTI 06 IGCC(R)/IGMA(R) 2024	5953	MC4/PK/TI	U/C2	AA	LF	PIB/HM	BA	
Glaz-Tech Industries, Inc. 10757 North Dual Street Baton Rouge, LA 70814 USA 225-442-7040 GTI-09 IGCC(R)/IGMA(R)24	4399	MC4/PK	U/C2	AA	LF	PIB/PS2	BA	
Glaz-Tech Industries, Inc. 1200 W Amity Road Boise, ID 83705-5413 USA 208-389-1080	3076	MC4/PK	U/C2	AA	LF	PIB/PS2	BA	
Glaz-Tech Industries, Inc. 4005 S. Clay St. Englewood, CO 80110 USA 303-399-8587 GTI 07 IGCC(R)/IGMA(R) 2024	3802 IN	MC4/PK	U/C2	AA	LF	PIB/PS2	BA	
	5678	MC4/PK	U/C2	AA	LF	PIB/HM	BA	
Glaz-Tech Industries, Inc. 4931 W. Brill Street Phoenix, AZ 85043 USA (602) 272-1544 GTI-02 IGCC(R)/IGMA(R) 2024	5280	MC4/PK	U/C2	AA	LF	PIB/PS2	BA	
Glaz-Tech Industries, Inc. 150 Industrial Rd. Santa Teresa, NM 88008 USA 505-589-4970 GTI 03 IGCC(R)/IGMA(R) 24	5482	MC4/PK	U/C2	AA	LF	PIB/PS2	BA	
Glaz-Tech Industries, Inc. 2207 East Elvira Road Tucson, AZ 85745 USA 520-629-0268 GTI 01 IGCC(R)/IGMA(R) 2025	2920	MC4/PK	U/C2	AA	LF	PIB/HM	BA	
	5693	MC4/PK	U/C2	AA	LF	PIB /PS2	BA	
Glenny Glass Co. 209 Castleberry Court Milford, OH 45150 USA 513-489-2233 GLG IGCC(R)/IGMA(R) 24	2427	BC4/PK	U/C1	MA	LF	PIB/PS2	BA	
	5386	MC4/PK	U/C2	MA	LF	PIB/S2	BA	Yes
	5387	MC4/PK	U/C2	PHSS	LF	PIB/S2	BA	Yes
	6063	BC3/MC1/MT	U/C2	FSF	IB	RHM	BA	Yes
	6064	MC4/PK	U/C2	MA	LF	PIB/RHM	BA	Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Global Security Glazing 616 Selfield Road Selma, AL 36703 USA 334-875-1900 GSG IGCC(R)/IGMA(R) 2024	3711 5320 5322 IN 5323	MC4/PK MC4/PK MC4/PK MC4/PK	U/C2 U/C2 U/C2 U/C2	MA SS PHSS AA	LF LF LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		
GnT Glass Co., Ltd. District A, St 1, Ring 3 Huaxia Industrial Zone, Qiatou Dongguan, Guangdong Province 523532 China +86-138-2373-5541 GNT GLASS IGCC®/IGMA® 2024 #5878	3791 4591 5028 5878	BC4/GSLC BC4/GSLC MC4/PK BC4/GSLC	U/C2 U/C2/U U/C2 U/C2	MA MA/MA SS PHSS	LF LF/LF LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes
Green Glass Industries LLC Al Ghail Industrial Area PO Box 34424 Ras Al Khaimah 34424 United Arab Emirates 00971-7-258-8369 Greem IGCC®/IGMA® 5941- 2024	5941	BC4/GSLC	U/U	MA	LF	PIB/S2		
G-TECH Optoelectronics Corporation No. 99, Chung Hsin Rd. Tongluo Township, Miaoli County 36647 Taiwan 037-236-988	4228	BC4/PLC	U/C3	AA	LF	PIB/S2		
Guang Dong Kibing Energy Saving Glass Co., LTD Guangdong Silicon Industry Basement Lankou Town, Dongyuan County Heyuan City, Guangdong Province 517564 China +86-762-8807993	4806	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Guangdong Haikong Special Glass Technology Co., Ltd. No. 23, Shihua Blvd West Xiangshui River Industrial Park, Daya Bay Huizhou, Guangdong Province 516083 China 075527633580 GUANGDONG SGT ASTM E2190 '24 IGCC®/IGMA®	2614 6153	BC4/GSLC BC4/GSLC	U/C2 U/C2/U	AA PHSS/PHSS	LF LF/LF	PIB/S2 PIB/S2		Yes Yes
Guangdong Honghua Glass Technology Co., LTD. Block 1, No 11 Boai Road Danzao Town, Nanhai District Foshan, Guangdong Province 528216 China 0757087281839	6017	BC4/GSLC	U/C2	AA	LF	PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Guangdong Qiangye Glass Products Co., Ltd No. 26, Xinshe Luduan, Shitang Road Songgang Tanglian Village, Shishan Town Nanhai District Foshan, Guangdong Province 528234 China +86-757-85238089	6116	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Guangdong South Star Glass Limited No. 6 Tuoye Road Sanshui Central Industrial Zone Leping Town, Sanshui District Foshan, Guangdong 528137 China +86 134 2768 7966	5016 5968	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA PHSS	LF LF	PIB/S2 PIB/S2		Yes
Guangdong Xeyoung Glass Technology Co., Ltd Haizhi Industrial Area No. 47 Shihua West Blvd Daya Bay Huizhou, Guangdong 516083 China 86 752 510 2779	5950	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Guardian Fabrication - Hialeah Gardens 14600 NW 112 Ave., Hialeah Gardens, FL 33018 USA 305-400-9300	5887	RTP	U/C2	RTP	IB	RTP/S2		Yes
Guardian Fabrication, LLC 1005 Meadow Street Galax, VA 24333 USA 276-236-7014 GRD-024 IGCC(R)/IGMA(R) 2024	3214 3215 3499 5148 5315 5720 5934	BC3/MC1 BC3/MC1 BC3/MC1 BC3/MC1/MT BC3/MC1 BC3/MC1 BC3/MC1	U/C2/U U/C2 U/C2 U/C2/U U/C2/U U/C2/U U/C2	FSF/FSF BCS BPS FSF/FSF BPS/BPS BPS/BPS BCS	IB/IB IB IB IB/IB IB/IB IB/IB IB	HM BCS BPS HM BPS BPS BCS	BA BA BA BA BA BA BA	Yes Yes Yes Yes Yes Yes Yes
Gulf Glass Industries, LLC Industrial Area 13 PO Box 6022 University City Road Sharjah 6022 United Arab Emirates 971-65-385500 GGI IGCC/IGMA 5438 2024	5438	BC4/ALLC	U/U	AA	LF	PIB/S2		
Haojing Holdings Group Limited No. 366 HaiBao Binjiang Street NanTong City, Haimen District 226100 China +86-021-56391128	4989 5623 5967	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2/U	AA PHSS PHSS/PHSS	LF LF LF/LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
Hartung Glass Industries 2150 E. Raymond St. Phoenix, AZ 85040 USA 602-323-9400	5103 5588	MC4/PK BC4	U/C2/U U/C2	MA RTP	LF IB	PIB/S2 RTP/S2	BA BA	

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Hartung Glass Industries	2494	BC4/GSLC/TI	U/C2/U	MA	LF	PIB /S2	BA	Yes
17830 West Valley Highway	4566	BC3/MC1/MT	U/C2	FSF	IB	PIB/S2		
Tukwila, WA 98188	5041	BC4/GSLC	U/C2	PHSS	LF	PIB/S2	BA	Yes
USA	5804	BC3/MC1/MT	U/C2	FSF	IB	PIB/S2		Yes
800-552-2227								
Hartung Glass Industries	2671	BC3/MC1/MT	U/C2	FSF	IB	RHM	BA	Yes
10450 SW Ridder Road	6080	BC4	U/C2	RTP	IB	RTP/S2	BA	
Wilsonville, OR 97070								
USA								
503-682-3846								
Harvey Building Products	2712	BC3/MC1/ZS/AP	U/C2/U	UT/UT	DM	HM/RHM	BA	Yes
30 Jack's Bridge Road	4559	BC3/MC1/ZS	U/C2	UT	DM	HM	BA	Yes
Londonderry, NH 03053-2145	4560	BC3/MC1/ZS	U/C3	UT	DM	HM	BA	Yes
USA	5418 IN	BC3/MC1/SS	U/C2/U	UT/UT	DM/DM	HM	BA	Yes
603-216-8400	6224	BC3/MC1/SS	U/C2	US	DM	HM	BA	Yes
HII-1 IGCC(R)/IGMA(R) mm/dd/yy Unit #	6225	BC3/MC1/SS	U/C2	US	DM	HM	BA	Yes
Harvey Building Products	2719	BC3/MC1/ZS/AP	U/C2/U	UT/UT	DM/DM	HM/RHM	BA	Yes
7 Ledgewood Boulevard	3744	BC3/MC1/ZS	U/C2	US	DM	HM	BA	Yes
North Dartmouth, MA 02747	5419 IN	BC3/MC1/SS	U/C2/U	UT/UT	DM/DM	HM	BA	Yes
USA								
508-998-9779								
HII-3 IGCC(R)/IGMA(R) Date line#								
Hebi HaanGlas Co., Ltd	5905	VG	U/C2	VG	VG	VG	OI	
Mansion B No 1 East Taihang Avenue, Qixian	5906	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
Hebi, Henan Province 456750								
China								
86-17705464660								
Hebi Leadus Special Glass Manufacturing	6075	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		
Co., Ltd.	6076	VG	U/C2	VG	VG	VG	OI	
1 Taihang Avenue East, Qiaomeng Township								
Qi County								
Hebi, Henan Province 456750								
China								
86-17732848612								
HuiZhou Longlass Company Limited	5872	BC4/GSLC	U/C2	AA	LF	PIB/S2		
563 Qiubao Rd, Qiuchang Street, Huiyang								
District								
Huizhou, Guangdong Province 516083								
China								
+8618507559239								
Infinity Glass Group Inc.	6123	BC4/ALLC	U/C2	AA	LF	PIB/PS2		Yes
45 Steelwell Rd	6124	MC4/PK	U/C2	PHSS	LF	PIB/S2		Yes
Brampton, ON L6T5P7	6125	MC4/PK	U/C2	SS	LF	PIB/PS2		Yes
Canada								
416-834-7511								
Infinity Glass Group /IGCC(R)/IGMA(R) 2024								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Innovative Glass Products LLC 1430 Bradley Lane Suite 102 Carrollton, TX 75007 USA 469-726-2662 IGP IGCC®/IGMA® MM/DD/YYYY (glass etch)	4922	BC3/MC1/MT	U/C2	FSF	IB	RHM	BA	
Insulite Glass Co., Inc. 780 W. Frontier Circle PO Box 2803 Olathe, KS 66061 USA 913-780-2233 ISL 8/2024 IGCC(R)/IGMA(R) 1702 xxxxxxxx	1702	BC4/GSLC	U/C1	MA	LF	PIB/S2	BA	Yes
	3281	BC4/GSLC	U/C1	PHSS	LF	PIB/S2	BA	Yes
Intigral 365 Victoria Rd. Austintown, OH 44515 USA 330-793-7677 INT AT IGCC(R)/IGMA(R) 'YY	3027	BC3/MC1/MT	U/C3/U	FSF/FSF	IB/IB	HM	BA	Yes
	3028	BC3/MC1/MT	U/C3/U	FSF/FSF	IB/IB	HM	BA	Yes
	4627 IN	BC4/SS	U/C2/U	US/US	DM/DM	RHM	BA	Yes
	4686 IN	BC3/MC1/SS	U/C3	UT	DM	RHM	BA	Yes
	5745	BC3/MC1/ZS	U/C3/U	UT/UT	DM/DM	HM	BA	Yes
	5746	BC3/MC1/ZS	U/C3/U	US/US	DM/DM	HM	BA	Yes
	6006	BC3/MC1/ZS	U/C3/U	US/US	DM/DM	HM	BA	Yes
Intigral 480 California Road Quakertown, PA 18951 USA 215-538-9424 INT QT IGCC(R)/IGMA(R) '24	4093	BC3/MC1/ZS	U/C3/U	UT/UT	DM/DM	HM	BA	Yes
	4648	BC3/MC1/ZS	U/C3/U	US/US	DM/DM	HM/HM	BA	Yes
	4673	BC3/MC1/MT	U/C3/U	FSF/FSF	IB/IB	HM	BA	Yes
	5538 IN	BC3/MC1/ZS	U/C3/U	US/US	DM/DM	RHM	BA	Yes
Intigral 7850 Northfield Rd. Walton Hills, OH 44146 USA 440-439-0980 INT WH IGCC(R)/IGMA(R) 'YY	3921 IN	BC3/MC1/SS	U/C3/U	US/US	DM/DM	RHM	BA	Yes
	3922 IN	BC3/MC1	U/C3/U	UT/UT	DM/DM	RHM	BA	Yes
	4052	BC3/MC1/MT	U/C3/U	FSF/FSF	IB/IB	RHM	BA	Yes
	5747	BC3/MC1/ZS	U/C3/U	UT/UT	DM/DM	HM	BA	Yes
	5748	BC3/MC1/ZS	U/C3/U	US/US	DM/DM	HM	BA	Yes
	6214	BC3/MC1/ZS/TI	U/C2	US	DM	RHM/RHM	BA BL	Yes
	6215	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	RHM	BA	Yes
	6216	BC3/MC1/SS	U/C3	UT	DM	RHM/RHM		Yes
Isam M. Khairi Kabbani Glass Works LLC Jeddah 3rd Industrial City Jeddah, Mecca 22772 Saudi Arabia +966126278877 IKK IGCC®/IGMA® 2024	5240	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Isoclima Specialty Glass, LLC 520 East Chestnut St. P O Box 510 Blairsville, PA 15717 USA 724-459-9540	4958	MC4/PK	U/C2	AA	LF	PIB/S2		
	5223	MC4/PK	U/C2	PHSS	LF	PIB/S2		
	5288	MC4/PK	U/C2	SS	LF	PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
ITI Glass Company	5646	BC4/GSLC	U/C2	AA	LF	PIB/S2	BA	Yes
4747 N. Webb Road	6054	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Bel Aire, KS 67226	6055	BC4/GSLC	U/C2	PHSS	LF	PIB/S2	BA	Yes
USA								
316-262-7411								
Jasan Glass - JSG	5946	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		Yes
Deungwon-RO 313, Jori-eup								
Paju, Gyeonggi 413-821								
South Korea								
JSG 5946 IGCC®/IGMA® 2024								
Jersey Tempered Glass, Inc.	689	MC4/PK	U/C1	AA	LF	PU2	BA	
2035 Briggs Rd.	750	MC4/PK	U/C1	AA	LF	PIB/PU2	BA	
Mt. Laurel, NJ 08054								
USA								
856-273-8700								
JTG IGCC(R)/IGMA(R) 24								
Jiangmen Junfa Safety Glass Co., Ltd.	5291	BC4/GSLC	U/U	AA	LF	PIB/S2		Yes
49 Gangzhou Avenue East	5970	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Huicheng, Xinhui District								
Jiangmen, Guangdong 529100								
China								
0750-6165699								
JFG IGCC®/IGMA® 5291 ASTM E2190								
11/2024								
Jiangmen SYP Engineering Glass Co, Ltd.	2856	BC4/GSLC	U/C2	AA	LF	PIB/S2		
10 Yinyuan Road	3237	BC4/GSLC	U/C2	SS	LF	PIB/S2		
Economic Development Zone, Xinhui	3238	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
Jiangmen, Guangdong Province 529141								
China								
86-750-6398999								
JSYPE IGCC®/IGMA® E2190 '24								
Jingmei Curtain Wall Technology Co., Ltd.	5159	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
North of Weiyi Road								
Yanjin County Textile Industrial Park								
Xinxiang, Henan 453000								
China								
+86 18637395700								
Jinzhou Fortune Spring Glass Co., Ltd.	2811	BC3/MC1	U/U	BCS	IB	BCS/PS2	GI	
Wuyi Mountain Road #2	2813	BC3/MC1/TI	U/U	BCS	IB	BCS/PS2	GI	
Binhai New District	4906	BC3/MC1	U/C2	BCS	IB	BCS/PS2	GI	
Jinzhou, Liaoning 121007								
China								
86-416-3581084								
IGCC®/IGMA® 2811 11/2024								
Jiuh Sheng Glass Co., Ltd.	4310	BC3/MC1/PK	U/U	AA	LF	PIB/S2		
No. 19, Zhongxing Road								
New Taipei City 236, Tucheng District 23678								
Taiwan								
886-2-2267-4929-225								

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KRYSTALLA VASILIOU SA (VASGLASS)	5702	MC4/PK/TI	U/C2/U	PHSS/PHSS	LF/LF	PIB/PS2		Yes
28th Octovriou St.	5703	MC4/PK/TI	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Vasiliko , Chalkida 34002	5704	BC4/PLC	U/C2/U	MA/MA	LF/LF	PIB/PS2		Yes
Greece	5705	BC4/PLC	U/C2/U	MA/MA	LF/LF	PIB/S2		Yes
+30 2221052607	5706	MC4/PK	U/C2/U	PHNF/PHNF	LF/LF	PIB/PS2		Yes
Vasglass IGCC(R)/IGMA(R) +Licence #+Year								
La Tecnica Nel Vetro SpA	4544	BC4/SSLC/AP	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Via. Domenico Catalano 88	4545	BC4/SSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/PS2		Yes
Scafati, Salerno 84018								
Italy								
39-392-771-2550								
Laurier Architectural	2559	MC4/PK	U/C2/U	PHSS/PHSS	LF/LF	PIB/PS2	BA	Yes
153 Laurier Blvd, #300	2629	MC4/PK	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2	BA	Yes
Laurier Station, QC G0S1N0	5151	MC4/PK	U/C2/U	PHNF/PHNF	LF/LF	PIB/PS2		Yes
Canada	5152	MC4/PK	U/C2/U	PHNF/PHNF	LF/LF	PIB/S2		Yes
4187282023	5848	MC4/PK	U/C2/U	PHNF	LF	PIB/PS2		Yes
IGCC(R)/IGMA(R) (cert#) Laurier (DD/YY)								
Louisville Plate Glass	1281	BC4/GSLC	U/C2	AA	LF	PIB/S2		
4301 Chefs Way	5664	BC4/GSLC	U/C1	AA	LF	PIB/PS2		
Louisville, KY 40218								
USA								
502-584-6145								
LPG IGCC(R)/IGMA(R) 2024								
LTI Smart Glass, Inc.	4930	BC4/GSLC	U/C2	MA	LF	PIB/RHM		
14 Federico Drive	5556	BC4/GSLC	U/C2	PHSS	LF	PIB/RHM		
Pittsfield, MA 01201								
USA								
413.637.5001								
LTI - IGCC(R)/IGMA(R) 2024								
LuxWall, Inc.	6212 PC	VG	U/C2	VG	VG	VG		
1130 James L Hart Pkwy								
Ypsilanti, MI 48197								
USA								
740-412-2685								
LX Glas Corp	2387	MC4/PK	U/C2	AA	LF	PIB/S2		
534, Teheran-ro								
Gangnam-gu								
Seoul, South Korea								
South Korea								
821073110822								
M Industria S.A. DE C.V.	5114	BC3/MC1	U/C2	RTP	IB	RTP/S2		Yes
Motul, Km 10	5852	BC3/MC1	U/C2/U	RTP/RTP	IB/IB	RTP/S2		
Parcela 273 Z8 P1/1								
Carretera Merida								
Conkal, Yucatán 97345								
Mexico								
771-109-32-10								
SGCC label + M Industrias - Conkal								
IGCC®/IGMA®2024								

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Maryland Glass & Mirror 710 W. Ostend St. Baltimore, MD 21230 USA 8003523380 Maryland Glass IGCC(R)/IGMA(R) '24	5324	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Megaglass DBA Megaluminio SA de CV Autopista Toluca-Atlaconulco KM 58.3 Atlaconulco, State of Mexico 50450 Mexico 7126901001	5491	BC4/GSLC/TI	U/C2	AA	LF	PIB/S2		
Mid-American Glass 147 S. Sturdevant St. PO Box 3428 Davenport, IA 52808-3428 USA 563-326-6294 Mid American Glass INC IGCC®/IGMA® 24-1	2315 5325	MC4/PK MC4/PK	U/C2 U/C2	AA AA	LF LF	PIB/RHM PIB/S2	BA BA	Yes Yes
Midwest Glass Fabricators 100 Transfer Drive Highland, MI 48357 USA 248-889-7900 MWGF IGCC(R)/IGMA(R) DD/MM/YYYY	5726 6040	BC4/GSLC BC4/GSLC	U/C2 U/C2	MA PHA	LF LF	PIB/S2 PIB/S2		Yes Yes
Nashville Tempered Glass LLC 1241 Avondale Dr. Hendersonville, TN 37075 USA 615-826-5522 NTGC IGCC(R)/IGMA(R) 2024	3991 4287 5060 5526	BC4/GSLC BC4/GSLC BC3/MC1 MC4/PK	U/C2 U/C1 U/C2 U/C2	MA AA RTP PHSS	LF LF IB LF	PIB/S2 PIB/S2 RTP/S2 PIB/S2	BA BA BA	Yes Yes Yes Yes
New Al Khalidiya Aluminium and Glass Co LLC Mussafah M/37 Abu Dhabi, Abu Dhabi 72778 United Arab Emirates +971 2 5538001 Al Khalidiya @IGCC®/IGMA 5777 2024	5777	BC4/ALLC	U/U	MA	LF	PIB/S2		
Northwest Glass Manufacturing Inc. 19926 Broadway Ave. Bldg B Snohomish, WA 98296 USA 360-799-6441	6129 PC 6130 PC	BC4/GSLC BC4/GSLC	U/U U/C2	AA AA	LF LF	PIB/PS2 PIB/S2	BA BA	Yes Yes
Northwestern Glass Fab 5301 Industrial Blvd., NE Fridley, MN 55421 USA 763-762-1750 BV IGCC(R)/IGMA(R) '24	5354 5355	BC4/GSLC BC4/GSLC	U/C2 U/C2	MA MA	LF LF	PIB/PU2 PIB/S2	BA BA	 Yes

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Northwestern Industries - Arizona, Inc. 7595 East 30th Street Yuma, AZ 85365-6532 USA (928) 726-3555 NWI Yuma, AZ IGCC(R)/IGMA(R) 2024	4754 5194 IN 5600 5982	BC4/GSLC/TI BC4/GSLC/TI BC4/GSLC/TI BC3/MC1/MT/TI	U/C2 U/C2 U/C2 U/C2	PHSS MA MA FSF	LF LF LF IB	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes
Novatech Canada Inc. 160 Rue Murano Sainte-Julie, QC J3E 0C6 Canada 418-728-2023 NovaTech YYYY-MM IGCC®/IGMA®	2877	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	HM		Yes
Novatech Patio Doors Ontario Inc. 500 Zenway Blvd Woodbridge, ON L4H 0S7 Canada 905-851-1006 NovaTech Patio Doors ONT IGCC(R) IGMA (R) yyyy-mm-dd	3013	BC3/MC1/MT	U/C2/U	FSF/FSF	IB	HM	BA	Yes
Novavetro S.r.l. Via Ferrante Ferranti 35 Zona Industriale Taccoli San Severino Marche, Province of Macerata 62027 Italy +39 0733 64371 IGCC/IGMA 5161 Novavetro EN1279 date	5160 5161 5211 5733	MC4/PK MC4/PK MC4/PK MC4/PK	U/C3 U/C3 U/C3 U/C3	MA PHSS MA PHSS	LF LF LF LF	PIB/S2 PIB/S2 PIB/PS2 PIB/PS2		Yes Yes Yes Yes
ODL Custom Solutions 5720 North Meadows Drive Grove City, OH 43123 USA 614-539-8740 ODL INC (K) IGCC(R)/IGMA(R) 2024	3680 4359 6056 6057 6058 6059 6243 6244 6245 6246	MC4/PK MC4/MT MC4/PK BC3/MC1/MT BC3/MC1 BC3/MC1 BC3/MC1 MC4/PK BC3/MC1/MT BC3/MC1	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2	AA FSF AA FSF BCS BCS BCS AA FSF BCS	LF IB LF IB IB IB IB LF IB IB	PU2 PU2 HM/PU2 HM BCS/PU2 BCS BCS/PU2 HM/PU2 HM BCS	BA GI BA GI GI GI GI GI GI GI GI GI	
ODL, Changshu ZhongXin Building Materials Co., Ltd. Zhaoshi Meili Town Changshu, Jiangsu 215500 China 616-748-5401 ODL Inc.(ZX) IGCC®/IGMA® '24	3997 4195 4198	MC4/PK BC3/MC1 BC3/MC1	U/C2 U/C2 U/C2	AA BCS BCS	LF IB IB	PIB/PS2 BCS BCS/PS2	GI GI GI	

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ODL, Inc.	3052	BC3/MC1/SS/TI	U/C2	UT	DM	RHM	BA BL	
215 E. Roosevelt Avenue	4338	MC4/PK	U/C2	AA	LF	PU2	BA	
Zeeland, MI 49464	5504	BC3/MC1	U/C2	BCS	IB	BCS	BA	
USA	6031	BC3/MC1	U/C2	BCS	IB	BCS	BA	
616-772-9111								
OLD Inc(z) IGCC(R)/IGMA(R) day month 2024								
ODL, Inc., Vidrio Decorativo Occidental S. A.	3083	MC4/PK	U/C2	AA	LF	HM/PU2	GI	
de C. V.	3309	MC4/PK/TI	U/C2	AA	LF	PU2	BA	
Poniente 4 Entre Norte 7 y Gral Pedro	4141	BC3/MC1	U/C2	BCS	IB	BCS/PU2	GI	
Hinojosa	4851	BC3/MC1	U/C2	BCS	IB	BCS	GI	
Ciudad Industrial	5207	BC3/MC1	U/C2	BCS	IB	BCS	BA	
Heroica Matamoros, Tamaulipas	5209	BC3/MC1/TI	U/C2/U	UT/UT	DM/DM	RHM	BA BL	
Mexico								
616-772-9111								
ODL Inc (Plant Code) /IGCC®/IGMA® (year) (Fab date)								
Oldcastle BuildingEnvelope®	6141	MC4/PK/TI	U/C2	MA	LF	PIB/S2	BA	Yes
5334 Barthel Industrial Drive, NE	6142	MC4/PK/TI	U/C2	PHSS	LF	PIB/S2	BA	Yes
Albertville, MN 55301								
USA								
763-497-3212								
OBE 22 IGCC(R)/IGMA(R) 2024								
Oldcastle BuildingEnvelope®	1537	MC4/PK	U/C2	AA	LF	PIB/S2	BA	Yes
1611 S.E. Commerce Avenue	2403	MC4/PK	U/C2	PHSS	LF	PIB/S2	BA	Yes
Battle Ground, WA 98604	5780	BC4	U/C2	RTP	IB	RTP/S2		Yes
USA								
360-816-7777								
Oldcastle BuildingEnvelope®	2725	MC4/PK	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2	BA	Yes
3601 - 72 Avenue SE	2878	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	RHM	BA	Yes
Calgary, AB T2C 2K3	2879	MC4/PK	U/C2/U	AA/AA	LF/LF	PIB/S2	BA	Yes
Canada	4767	BC3/MC1	U/C2/U	FSF/FSF	IB/IB	PIB/S2	BA	Yes
403-279-2544	5483	MC4/PK	U/C2/U	PHSS	LF	PIB/RHM	BA	Yes
Oldcastle 93 IGCC(R)/IGMA(R) '24	5484	MC4/PK	U/C2/U	AA/AA	LF/LF	PIB/RHM	BA	Yes
Oldcastle BuildingEnvelope®	1986	MC4/PK	U/C1	AA	LF	RHM	BA	
4161 S Morgan St.	4830	MC4/PK	U/C3	AA	LF	PIB/RHM	BA	
Chicago, IL 60609								
USA								
773-523-8400								
OBE 24 IGCC(R)/IGMA(R) '24								
Oldcastle BuildingEnvelope®	4450	BC4/GSLC	U/C2/U	MA/MA	LF/LF	PIB/S2		Yes
2195 Langstaff Rd.	5178	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Concord, ON L4K 2B2								
Canada								
905-660-3809								
OLDCASTLE B.E.94 IGMA(R)IGCC(R)2024								

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Oldcastle BuildingEnvelope® 14117 Industrial Park Blvd. Covington, GA 30014 USA 678-212-7700 OBE42 IGCC(R)/IGMA(R) 2024	5444 5680 914	BC4 BC4 BC4/SSLC	U/C2 U/C2 U/C2	RTP RTP MA	IB IB LF	RTP/S2 RTP/S2 PIB/S2	BA	Yes Yes Yes
Oldcastle BuildingEnvelope® 11205 E. 37th Avenue Denver, CO 80239 USA 303-371-5511 OBE 63 IGCC(R)/IGMA(R) '24	2689 3488 3937 5068	MC4/PK/TI MC4/PK/TI MC4/PK/TI BC3/MC1/MT/TI	U/C2/U U/C2 U/C2 U/C2	AA/AA AA PHSS FSF	LF/LF LF LF IB	PIB/S2 PIB /RHM PIB/S2 RHM	BA BA BA BA	Yes Yes Yes
Oldcastle BuildingEnvelope® 6850 Stevenson Blvd. Fremont, CA 94538 USA 510-651-2292 OBE 84 IGCC®/IGMA® 24	4336 5127 5947	MC4/PK/TI MC4/PK BC4	U/C2 U/C2 U/C2	MA PHSS RTP	LF LF IB	PIB/S2 PIB/S2 RTP/S2	BA BA	Yes Yes Yes
Oldcastle BuildingEnvelope® 1101 Fountain Parkway Grand Prairie, TX 75050 USA 972-647-4028 OBE 83 IGCC(R)/IGMA(R) 24	4438 6260	MC4/PK BC3/MC1/MT	U/C2 U/C2	MA FSF	LF IB	PIB/S2 PIB/S2	BA	Yes
Oldcastle BuildingEnvelope® 895 Motor Pkwy. PO Box 18039 Hauppauge, NY 11788-8839 USA 631-234-2200 OLDCASTLE 15 IGCC®/IGMA® + date	4326 5412 IN 5754 6271 6272 6273	MC4/PK MC4/PK MC4/PK MC4/PK MC4/PK MC4/PK	U/C2 U/C2 U/C2 U/C2/U U/C2/U U/C2/U	PHSS AA MA AA/AA MA/MA PHSS/PHSS	LF LF LF LF/LF LF/LF LF/LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2 PIB/S2 PIB/S2	BA BA BA BA GI BA GI BA GI	Yes Yes Yes Yes Yes Yes
Oldcastle BuildingEnvelope® 4822 Southerland Houston, TX 77092 USA 713-353-5800 OBE 65S IGCC(R)/IGMA(R)24	5922 5923 6269 6270	BC3/MC1/MT BC3/MC1/MT BC4 BC3/MC1/MT	U/C2 U/C2 U/C2 U/C2	FSF FSF RTP FSF	IB IB IB IB	PIB/S2 PIB/S2 RTP/S2 PIB/S2		
Oldcastle BuildingEnvelope® 8441 Bearing Dr. Indianapolis, IN 46268 USA 317-876-1155 OBE 29 IGCC(R)/IGMA(R) 24	4886 653	MC4/PK MC4/PK	U/C2 U/C2	PHSS MA	LF LF	PIB/S2 PIB/S2	BA BA	Yes Yes
Oldcastle BuildingEnvelope® 5075 275th Street Langley, BC V4W 0A8 Canada 604-607-1300 OBE 91 IGCC(R)/IGMA(R) 24	4256 5229 5735 5736	MC4/PK MC4/PK BC4 BC4	U/C2/U U/C2/U U/C2 U/C2	MA/MA PHSS/PHSS RTP RTP	LF/LF LF/LF IB IB	PIB/S2 PIB/S2 RTP/S2 RTP/S2		Yes Yes Yes

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Oldcastle BuildingEnvelope® 17851 Northwest Miami Ct Miami, FL 33169 USA 305-652-3350 OBE 82 IGCC(R)/IGMA(R) 2024	3580	MC4/PK	U/C2	MA	LF	PIB /S2	BA	
Oldcastle BuildingEnvelope® 1500 Glen Ave. Moorestown, NJ 08057 USA 856-234-9222 Oldcastle 12 IGCC(R)/IGMA(R) '24	4976 5644 6049	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	AA AA PHSS	LF LF LF	PIB/S1 PIB/S2 PIB/S2		Yes Yes Yes
Oldcastle BuildingEnvelope® Ampoint Industrial Park 291 "M" Street Perrysburg, OH 43551 USA 419-666-2000 OBE 81 IGCC(R)/IGMA(R) '24	2642 3262 IN 5174	BC4/SSLC BC4/SSLC BC4	U/C2 U/C2 U/C2	PHSS MA RTP	LF LF IB	PIB/S2 PIB/S2 RTP/S2		Yes Yes Yes
Oldcastle BuildingEnvelope® 3404 W. Papago Street #1 Phoenix, AZ 85009 USA 602-253-6980 OBE 63 IGCC(R)/IGMA(R) '24	4608 4838	MC4/PK BC3/MC1/MT	U/C2 U/C2	MA FSF	LF IB	PIB/S2 PIB/S2	BA	Yes
Oldcastle BuildingEnvelope® 1900 Midland Street Rock Hill, SC 29731 USA 803-366-5167 OBE 44 IGCC (R) / IGMA (R) 2024	5393 5568 5681 6180 6181	BC4 MC4/PK BC4 BC4 BC4	U/C2 U/C2 U/C2 U/C2 U/C2	RTP MA RTP RTP RTP	IB LF IB IB IB	RTP/S2 PIB/S2 RTP/S2 RTP/S2 RTP/S2	BA	Yes Yes Yes Yes
Oldcastle BuildingEnvelope® 5103 Janice Avenue Schofield, WI 54476 USA 715-359-2432 Oldcastle 27 IGCC®/IGMA® + date code	1312 1319 2583 2647 3337 3338	MC4/PK MC4/PK MC4/PK MC4/PK MC4/PK MC4/PK	U/C2/U U/C2/U U/C2/U U/C2/U U/C2/U U/C2/U	AA/AA AA/AA PHSS/PHSS PHSS/PHSS MA/MA MA/MA	LF/LF LF/LF LF/LF LF/LF LF/LF LF/LF	PIB/PU2 PIB/S2 PIB/S2 PIB/PU2 PIB/PU2 PIB/S2	BA BA BA BA BA BA	Yes Yes Yes Yes Yes Yes
Oldcastle BuildingEnvelope® 5115 East Hartford St. Tampa, FL 33619 USA 813-247-3184 OBE 43 IGCC (R)/IGMA (R) 2024	3621	MC4/PK	U/C2	MA	LF	PIB/S2	BA	
Oldcastle BuildingEnvelope® 1700 Daniel Boone Industrial Parkway Warrenton, MO 63380 USA 636-456-3452 OBE 21 IGCC®/IGMA® '24	3878 4036	MC4/PK MC4/PK	U/C2 U/C2	MA PHSS	LF LF	PIB/S2 PIB/S2	BA	Yes Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Oldcastle BuildingEnvelope®	2400	BC4/GSLC/TI	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
30 Cooperative Way	2893	BC4/GSLC/TI	U/C2/U	MA/MA	LF/LF	PIB/S2		Yes
Wright City, MO 63390								
USA								
636-745-3030								
OBE35 IGCC®/IGMA® + date								
Oldcastle BuildingEnvelope® Canada Inc.	2884	MC4/PK	U/C2	PHSS	LF	PIB/S2		Yes
12755 boul Industriel	4855	MC4/PK	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Pointe-aux-Trembles, QC H1A 4Z6	5657	BC4	U/C2	RTP	IB	RTP/S2		Yes
Canada	6003	BC4	U/C2/U	RTP/RTP	IB/IB	RTP/S2		Yes
514-640-5355	6005	BC4	U/C2/U	RTP/RTP	IB/IB	RTP/S2		Yes
OLDCASTLE 95 MONTREAL IGCC(R)IGMA (R)2024								
Opulux Glass	5624	BC4/GSLC	U/C2	MA	LF	PIB/PS2		
905 Murray Road								
East Hanover, NJ 07936								
USA								
973-795-0105								
Panjin Truspacer Insulating Glass Material Co., Ltd.	5175	BC3/MC1	U/U	BCS	IB	BCS/PS2		Yes
585 Xingsheng Road								
Dawa Town								
Panjin, Liaoning 12400								
China								
86-427-6852078								
Patio Enclosures	1851	BC3/MC1	U/C2	FSF	IB	RHM		Yes
720 East Highland Road								
Macedonia, OH 44056								
USA								
330-468-0700								
PE IGCC(R)/IGMA(R) + MMYR								
Pella Corporation	2688 IN	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
2000 Proline Place	4134	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
Gettysburg, PA 17325-8297	4932	BC3/MC1/ZS	U/C2	US	DM	RHM/RHM	BA	Yes
USA	5226	BC3/MC1/ZS	U/C2	US	DM	RHM/HM	BA	Yes
717.334.0099	6186	BC3/MC1/ZS	U/C2	US	DM	RHM/RHM	BA	Yes
IGCC(R)/IGMA(R) G03### Pella + date								
Pella Corporation	5021	BC4/PLC/AF/PA	U/C2	SS	LF	PIB/S1	BA	Yes/CPC
111 Pella Place	5826	BC3/MC1/MT	U/C2	FSF/FSF	IB/IB	HM/HM	BA	Yes
Macomb, IL 61455	5924	BC3/MC1/ZS	U/C2	US	DM	RHM	BA	Yes
USA	6102	BC3/MC1/ZS/PA	U/C2	US	DM	RHM	BA	Yes
309-351-0308								
IGCC(R)/IGMA(R) serial # NFRC# "date/time"								

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Pella Corporation	4133	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
307 Pella Way	4657	BC4/PLC/TI/PA	U/C2	SS	LF	PIB/S1	BA	Yes/CPC
Murray, KY 42071	4875	BC3/MC1/ZS	U/C2	US	DM	RHM	BA	Yes
USA	5227	BC3/MC1/ZS	U/C2	US	DM	RHM/HM	BA	Yes
270-767-2500	5518	BC4	U/C2	RTP	IB	RTP/PS2	BA	Yes
PELLA (date) (time) IGCC®/IGMA® NFRC #	5519	BC4	U/C2/U	RTP/RTP	IB/IB	RTP/PS2	BA	Yes
	5520 IN	BC4	U/C2	RTP	IB	RTP/S2		Yes
	5557 IN	BC4	U/C2	RTP/RTP	IB/IB	RTP/S2		Yes
	5666	BC3/MC1	U/C2	US	DM	RHM	BA	Yes
Pella Corporation	4078	BC4/PLC/PA	U/C2	SS	LF	PIB/S1	BA	Yes
18600 NE Wilkes Road	4103	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
Portland, OR 97230	4656 IN	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
USA	4879 IN	BC3/MC1/ZS/PA	U/C2	US	DM	RHM/RHM		Yes
503-405-9176	4880 IN	BC3/MC1/ZS/PA	U/C2	US	DM	RHM/RHM		Yes
Pella P52 IGCC(R)/IGMA(R) + date	5326	BC3/MC1/ZS/PA	U/C2	US	DM	RHM/RHM	BA	Yes
	5327	BC3/MC1/ZS	U/C2	US	DM	RHM/RHM	BA	Yes
	5877	BC3/MC1/ZS	U/C2	US	DM	RHM/RHM	BA	Yes
Pella Corporation	5239	BC3/MC1/ZS	U/C2	US	DM	RHM	BA	Yes
310 Rockingham Dr.	6227	BC3/MC1/ZS	U/C2	US	DM	RHM/RHM	BA	Yes
Reidsville, NC 27320								
USA								
336-496-3325								
Pella V02 date time IGCC(R)/IGMA(R)								
Pella Corporation	4077	BC4/PLC/PA	U/C2	SS	LF	PIB/S1	BA	Yes/CPC
1500 South Highway 59								
Shenandoah, IA 51601								
USA								
712-246-6324								
Pella IGCC®/IGMA® CIG 02.x (date)								
Pella Corporation	3291	BC4/PLC/PA	U/C2	SS	LF	PIB/S1	BA	Yes
1800 North Main Avenue	4021	BC4/PLC/PA	U/C2	SS	LF	PIB/S1	BA	Yes
Sioux Center, IA 51250								
USA								
712-722-5609								
Pella IGCC(R)/IGMA(R) CIG-2 F "serial number" date								
Pella Corporation	5952	BC3/MC1/ZS	U/C2	US	DM	RHM	BA	Yes
1501 Experiment Farm Road	6167	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
Troy, OH 45373								
USA								
937-875-4300								
IGCC(R)/IGMA(R) serial #, NFRC								
Perficom S.A. DE C.V.	6090	BC3/MC1	U/C2	BPS	IB	BPS		Yes
Avenida Central No. 3								
Fracc. Industrial Valle De Oro								
San Juan Del Rio, Queretaro 76803								
Mexico								
52-42 72 72 92 32								

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PFG Glass	2470	BC3/MC1/MT/TI	U/C2/U	FSF/FSF	IB/IB	PIB/S2	BA	Yes
27413 55th Avenue	3858	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	HM	BA	Yes
Langley, BC V4W 3Y1	3859	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	PIB/HM	BA	Yes
Canada								
1-604-607-4500								
PFG Glass IGCC(R)/IGMA(R) + Date								
Philly Glass Industry Inc.	5368	MC4/PK	U/C1	AA	LF	PIB/S2		
7363 Tulip Street Unit B								
Philadelphia, PA 19136								
USA								
917-803-6883								
Piavevetro SRL	5925	BC4/SSLC	U/C2	AA	LF	PIB/PS2		Yes
Via Postioma 103								
Villorba, Treviso 31020								
Italy								
390422608341								
Pilkington IGP Sp. z.o.o. Branch	4388	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
Skierniewice, Poland	4389	BC4/GSLC/AP	U/C2	PHSS	LF	PIB/PU2	BA	Yes
ul. Przemyslowa 4								
96-100 Skierniewice								
Poland								
48-601-50-60-51								
NSG IGCC(R)/IGMA(R) 24								
Pioneer Window Mfg. Corp.	5318	MC4/PK	U/U	PHSS	LF	PIB/HM		Yes
200 Union Avenue								
PO Box 70								
Johnstown, NY 12095								
USA								
518-762-5526								
Piva Group North America LLC	5559	BC3/MC1/MT	U/C2	FSNF	IB	HM	BA	Yes
5 Trautman Industrial Court	5560	BC3/MC1/MT	U/C3	FSNF	IB	HM	BA	Yes
Sainte Genevieve, MO 63670								
USA								
573-880-7133								
Piva 1223 IGCC (R)/IGMA (R) 2024								
Planet Construction Industry Glass Ltd	6094	BC4/GSLC	U/C2	PHSS	LF	PIB/PS2		Yes
75 Milliken Blvd.								
Unit 15								
Scarborough, ON M1V 1R3								
Canada								
647-637-3566								
Precision Glass Industries	5078	BC3/MC/MT	U/C2	FSF	IB	PIB/S2		
2330 Peyton Road	5665	BC3/MC1/MT	U/C2	FSF	IB	PIB/S2		
Houston, TX 77032								
USA								
281-671-5221								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Prelco Inc. 94 Boulevard Cartier Postal Box 338 Riviere-du-loup, QC G5R 3Y9 Canada 418-862-2274 PRELCO INC IGCC(R)/IGMA(R) 24	1388 2270 2458 5420	BC4/GSLC BC4/GSLC BC4/GSLC BC4/LC	U/C2 U/C2/U U/C2/U U/C2	AA PHSS/PHSS SS/SS SS	LF LF/LF LF/LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes
Prelco MTL Inc. 3740 Dollard-Desjardins Montreal, QC H1B 5X2 Canada 514-640-1122 PRELCO MTL IGCC(R)/IGMA(R) 2024	2491 3535 4746	BC4/GSLC BC4/GLSC BC4/GSLC	U/C2 U/C2/U U/C2/U	AA SS/SS PHSS/PHSS	LF LF/LF LF/LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
PRESS GLASS SP ZOO ul. Geodetow 4 Radomsko 97-500 Poland 48-44-685-87-00 PRESS GLASS (02PL) IGCC(R)/IGMA(R), Date, time, order	5023 5362 5364 5365 5366 5370 5498 5499	BC4/SSLC/PA BC4/SSLC BC4/PLC/PA BC4/SSLC/PA MC4/PK MC4/PK/PA BC4/SSLC BC4/SSLC	U/C2 U/C2/U U/C2/U U/C2/U U/C2/U U/C2/U U/C2/U U/C2/U	SS MA/MA PHSS/PHSS MA/MA PHF/PHF PHF/PHF PHSS/PHSS SS/SS	LF LF/LF LF/LF LF/LF LF/LF LF/LF LF/LF LF/LF	PIB/PS2 PIB/S2 PIB/S2 PIB/PS2 PIB/PS2 PIB/S2 PIB/PS2 PIB/S2	BA BA BA BA BA BA	Yes/CPC Yes Yes/CPC Yes/CPC Yes Yes/CPC Yes/CPC Yes/CPC
PRESS GLASS SP ZOO Ul Cielmicka Tychy 43-100 Poland 48-32-788-11-00 PRESS GLASS (01PL) IGCC(R)/IGMA(R), Date, Order No	3756 3760 4159	BC4/PLC/AP BC4/SSLC/AP BC4/PLC/AP	U/C2 U/C2 U/C2	PHSS MA PHSS	LF LF LF	PIB/PS2 PIB/PS2 PIB/S2		Yes Yes Yes
Press Glass, Inc. Commonwealth Crossing Pkwy 1000 Ridgeway, VA 24148 USA 336-932-3666 Press Glass VA IGCC(R)/IGMA(R) 2024	5334 5335 5336 5397 5398 5399	BC4/GSLC BC4/GSLC BC4/GSLC BC4/GSLC BC4/GSLC BC4/GSLC	U/C2/U U/C2/U U/C2/U U/C2 U/C2 U/C2	SS/SS MA/MA PHSS/PHSS MA PHSS SS	LF/LF LF/LF LF/LF LF LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2 PIB/S2 PIB/S2	BA BA BA BA BA BA	 Yes Yes Yes Yes
PRL Glass Systems 13644 E Nelson Ave City of Industry, CA 91746 USA 626-961-5890	2906 5868 5869	MC4/PK MC4/PLC MC4/PK	U/C2 U/C2 U/C2	MA MA PHSS	LF LF LF	PIB/S2 PIB/PS2 PIB/S2	BA BA BA	 Yes
Procesadora De Jalisco S.A. DE C.V. - Queretaro Yaquis 10 Nuevo Parque Industrial San Juan del Rio, Queretaro 76806 Mexico 52 1427 121 0224	4681	BC4/GSLC	U/U	AA	LF	PIB/S2		Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Procesadora de Jalisco, S.A. DE C.V. Pedro Martinez Rivas #728 Col Parque Industrial Belenes Norte Zapopan, Jalisco 45150 Mexico (01 33) 3342 7979 CC2 # IGCC®/ IGMA® (Year)	5004 5842 5843	BC4/GSLC BC4/GSLC MC4/PK	U/C2 U/U/C2 U/C2/U	MA AA/AA PHSS/PHSS	LF LF/LF LF/LF	PIB/S2 PIB/S2 PIB/S2		
Productora y Distribuidora de Espejos S.A. de C.V. Carretera a Dulces Nombres Km. 10.5 Pesqueria, Nuevo Leon 66650 Mexico +52-81-1156-7000	5392	BC4/GSLC	U/U	AA	LF	PIB/S2		
ProTemp Glass, Inc. 360 Applewood Crescent Concord, ON L4K 4V2 Canada 905-760-0701 IGCC(R)/IGMA(R) dd-mm-yyyy ProTemp order#	5150 5193 5864	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2/U U/C2/U U/C2	PHSS/PHSS PHSS/PHSS MA	LF/LF LF/LF LF	PIB/S2 PIB/PS2 PIB/PS2		Yes Yes Yes
Pulp Studio, Inc. 2100 West 139th Street Gardena, CA 90249 USA 310-815-4999	3589	MC4/PK	U/C2	SS	LF	PIB/S1		
Q4Glass sp z.o.o. BoWiD 10 Koszalin, West Pomeranian Voivodeship 75- 209 Poland +48 696 090 222 03/09/24 CE Q4Glass IGCC(R)/IGMA(R) '24	5985 5986	MC4/PK MC4/PK	U/C2/U U/C2/U	PHSS/PHSS PHSS/PHSS	LF/LF LF/LF	PIB/S2 PIB/PS2		Yes Yes
Qingdao Kingdom Glass Co., Ltd. North of the Southern Outer Ring No. 204 National Road Wangtai Town, Huangdao Qingdao, Shandong Province 266425 China +86 13695325318 Qingdao Kingdom Glass IGCC®/IGMA® '24	5256	MC4/PK	U/C1/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Qinhuangdao High Tech Energy Saving Dorwin Co., Ltd. 1 Haihe Road E&T Development Zone Qinhuangdao City, Hebei 066004 China 00863358016100 Qinhuangdao High-Tech IGCC(R)/IGMA(R) 2024	2595 2596	BC3/MC1 MC4/PK	U/U U/C2	BCS AA	IB LF	BCS/PS2 PIB/PS2	GI BL	

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Qinhuangdao Qicaishi Glass Processing Co., Ltd. 1/F, No.7 Songhuajiang West Road Economic and Technology Development Zone Qinhuangdao, Hebei 066004 China 86 335 5316825	5487	BC3/MC1	U/U	BCS	IB	BCS/PS2	GI	
Qinhuangdao Qinsheng Glass Products Co., Ltd. East of Chenguantun Village, Chenguantun Town Lulong County Qinhuangdao, Hebei 066000 China 86-18233561903	5500 5501 5502	BC3/MC1 BC3/MC1 MC4/PK	U/C2 U/C2 U/C2	BCS BCS MA	IB IB LF	BCS BCS/PS2 PIB/PS2	GI GI GI	
Qinhuangdao Rongsheng Glass Processing Co., Ltd. No. 3 Street, Sanjie Cunxi, Yanheying Town Lulong County Qinhuangdao, Hebei 066400 China 86.335.7179566 (RS) IGCC®/IGMA® '24	4671 4672 5607	BC3/MC1 MC4/PK BC3/MC1	U/C3 U/C2 U/C2	BCS MA BCS	IB LF IB	BCS PIB/PS2 BCS/PS2	GI GI GI	
Qinhuangdao Shucheng Energy Saving Technology Co.,Ltd 4 Qilianshan Road Economic & Technical Development Zone Qinhuangdao, Hebei 066000 China 86-335-8503784 Novatech IGCC(R)/IGMA(R) 4543 2024	4543	MC4/PK	U/C2	AA	LF	PIB/PS2	BL	Yes
Qinhuangdao Xinhua Glass Processing Ind. Co., Ltd. No. 5, Xihu Road Economic and Technical Development Zone Qinhuangdao, Hebei 066004 China 335-850-3784 IGCC®/IGMA® 2594 ASTM E2190 2024 08	2594 5535 5978 6097	BC3/MC1 BC3/MC1 BC3/MC1 BC3/MC1	U/U U/U U/C2 U/C1	BCS BCS BCS BCS	IB IB IB IB	BCS/PS2 BCS/PS2 BCS/PS2 BCS/PS2	GI GI GI BA	Yes
Qinhuangdao Zhenhong Door and Window Co., Ltd. Fan Nan Village, Liushouying Town FuNing County Qinhuangdao, Hebei 066301 China 86-13785999021 ZH GLASS PLANT IGCC®/IGMA® ASTM E2190 2024.08	4301 4490 4795 6052	BC3/MC1 MC4/PK BC3/MC1 BC3/MC1/MT	U/C3 U/C3 U/C3 U/C1	BCS AA BCS FSNF	IB LF IB IB	BCS/PS2 PIB/PS2 BCS/PS2 HM	GI BA GI	Yes Yes Yes Yes

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Quest USA, Inc. 1720 S. Jupiter Rd. Garland, TX 75042 USA 888-851-8588 Quest Windows USA IGCC®/IGMA® 2024	5142	BC4/GSLC	U/C2	PHSS	LF	PIB/PS2		Yes
Quest Window Systems 6811 Goreway Drive Mississauga, ON L4V 1L9 Canada 905-851-8588 QUEST WINDOWS IGCC(R)/IGMA(R) 2024	3860	BC4/SSLC	U/C2	PHSS	LF	PIB/PS2		Yes
Reem Emirates Aluminum & Glass ICAD-1 Musafah PO Box 36863 Abu Dhabi United Arab Emirates 0097125994301 REEM IGCC (R) / IGMA(R) 4247 2024	4247	BC4/ALLC	U/U	MA	LF	PIB/S2		
Reflex d.o.o.	4695	BC4/SSLC	U/C2	PHSS	LF	PIB/PS2		Yes
Podgrad 4 Gornja Radgona 9250 Slovenija 00-386256-4503 Reflex d.o.o IGCC(R) / IGMA(R) 24	4696	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		Yes
Resman Glass PVC Aluminum SAN. VE TIC. A.S. Sabanoglu Osb Mah. Organize Sanayi Bulvari No: 43/1 Samsun, Tekkekoy Turkey +90 (535 Resman Cam IGCC(R)/IGMA(R) 2024	5871 5951	BC4/SSLC BC4/SSLC	U/C2 U/C2	PHSS PHSS	LF LF	PIB/PU2 PIB/S2		Yes Yes
SAAND Inc. 250 Brockport Dr. Toronto, ON M9W5S1 Canada 4167982345 Saand Inc IGCC(R)/IGMA(R) 2024	3724 4257 4639	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	SS MA PHSS	LF LF LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
Safti First 100 N. Hill Drive Suite 12 Brisbane, CA 94005 USA 415-824-4900	6047 6048	BC4 MC4/PK	U/C2 U/C2	RTP AA	IB LF	RTP/S2 PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
SAGE Electrochromics Inc. Two Sage Way Faribault, MN 55021 USA 507-331-4848 SageGlass(R)SAINT-GOBAIN IGCC(R)IGMA (R) 24	4954	BC4/PLC/SP/TI	U/C2/U	SS/SS	LF/LF	PIB/S2	OI	Yes
Saint-Gobain India Private Limited Plot No. A-1 SIPCOT Industrial Park Sriperumbudur, Tamilnadu India 919840509386	4653 4669	BC4/GSLC BC4/GSLC	U/C3 U/C3/U	AA MA/SS	LF LF/LF	PIB/S2 PIB/S2		
SAINT-GOBAIN POLSKA SP. Z.O.O. Oddzial Glassolutions ul. Szklanych Domow 1 Dabrowa Gornicza 42-530 Poland (48 22) 7384700 Saint-Gobain GL PRU IGCC(R)/IGMA(R) 24	5988 5989 5990 6010	MC4/PK MC4/PK MC4/PK MC4/PK	U/C2/U U/C2/U U/C2/U U/C2/U	PHNF/PHNF AA/AA PHNF/PHNF AA/AA	LF/LF LF/LF LF/LF LF/LF	PIB/PS2 PIB/PS2 PIB/S2 PIB/S2		Yes Yes Yes Yes
SAINT-GOBAIN POLSKA SP. Z.O.O. Oddzial Glassolutions ul. Szklanych Domow 1 Dabrowa Gornicza 42-530 Poland (48 22) 7384700 GS JAR IGCC(R)/IGMA(R) 2024	5991 5992 5993	MC4/PK MC4/PK MC4/PK	U/C2/U U/C2/U U/C2/U	PHNF/PHNF AA/AA PHSS/PHSS	LF/LF LF/LF LF/LF	PIB/PU2 PIB/PU2 PIB/PU2	BA BA BA	Yes Yes Yes
Saudi American Glass Company PO Box 8418 Riyadh 11482 Saudi Arabia 01-2651212 SAGCO IGCC®/IGMA® 2024	3274	BC4/SSLC	U/C3	MA	LF	PIB/S2		Yes
SC. Optimedia. SRL Calea Santandrei Road, Number 38 Oradea, Bihor 410238 Romania 0040728110661	6195 PC 6196 PC	BC4 BC4/SSLC	U/C2/U U/C2/U	RTP/RTP PHCS/PHCS	IB/IB LF/LF	RTP/PS2 PIB/PS2	BA	Yes Yes
Sejal Glass and Glass Manufacturing Products LLC Al Ghail Industrial Zone Ras Al Khaimah United Arab Emirates 971 7235 9661 SEjal IGCC(R)/IGMA(R) 5945 2024	5945	BC4/LC	U/C3	MA	LF	PIB/S2		
SERETTI SRL-Glass Manufacturing Division Via del Commercio, 14/a Torviscosa 33050 Italy +39 0431929227 Seretti SRL-Serex IGCC(R)/IGMA(R) 2024	5645	BC4/PLC/AP	U/C2/U	PHSS	LF	PIB/PS2	BA	Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Shandong Blue Glass Technology Co., Ltd. No. 1408 Xiayi Rd, LinQu County Weifang, Shandong Province 262600 China 008617705364100	6027	BC4/GSLC	U	AA	LF	PIB/S2		Yes
ShanDong HaanGlas Co., LTD No. 2 Dongyue Ave. Taishan District Tai'an, Shandong Province 271000 China 86-17705464660	5863	VG	U/C2	VG	Ba-Al Getter	VG	OI	
Shandong Jinjing Science & Technology Stock Co., Ltd. Boshan Branch. West of Daqiao Village Economic and Technological Development Zone Boshan District Zibo City, Shandong Province 255200 China 0571-85119627 G-CRYSTAL IGCC®/IGMA® 2024	5430	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Shandong Taishan Huayue Glass Co., Ltd. Taishan Street and Jinghua Road Tai'an, Shandong Province 27100 China 0086-13002709917	5833	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Shandong Wensheng Glass Technology Co., Ltd. Qingning Industrial Zone Cuizhai Town Jiyang County Jinan City, Shandong Province 250100 China 86-531-84567077	5783	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
	5784	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
Shandong Yaohua Glass Co., Ltd. No. 7 Kaiyuan Road, Licheng Area Jinan, Shandong Province 250101 China 85-531-8880-2996 Shandong Yaohua Glass IGCC®/IGMA® 4539 E2190 2024	4539	BC4/GSLC	U/C2	AA	LF	PIB/S2		
	5957	BC4	U/C2/U	RTP/RTP	IB/IB	RTP/S2		Yes
	6098	BC3/MC1	U/C2/U	FSF/FSF	IB/IB	PIB/S2		Yes
Shanghai HJ Safety Glass Co., Ltd Building 1, No. 399 Yuanxi Road Xuanqiao Town, Pudong New Area Shanghai 201399 China 86-18001968180	5972	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Shanghai Lead Glass Co., Ltd. No. 88 West Heli Rd., Pudong Shanghai 201317 China 18637937146	4903	BC4/GSLC	U/C2	AA	LF	PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Shanghai SYP Engineering Glass 75 Kangliu Road Pudong New Area Pudong, Shanghai 201315 China 86-21-38108108 SYP IGCC®/IGMA® '24	2523 3231 3232 5690	BC4/GSLC BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2 U/C2/U	AA SS PHSS PHSS/PHSS	LF LF LF LF/LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes
Shenbo Special Architectural Glass Industrial Co., LTD No. 46, MYS Industry Park, Xinbeitou Xinqiang Community, Xinhua sub-district Guangming District Shenzhen, Guangdong Province 518017 China 13824330366	6001	BC4/GSLC	U/C2	AA	LF	PIB/S2		
ShenZhen LiaoYuan Glass Co., Ltd. Liaoyuan Industrial Area, Jinbei Villiage Shiyan Town, Baoan District Shenzhen, Guangdong Province 518108 China 86-13410765603	3833	BC4/GSLC	U	MA	LF	PIB/S2		
Shinn Fu Pair Glass Co. No. 1-1, Wen Ming 3 Street Kweishan, Taoyuan, Taiwan China 886-3-3283226	1822	MC4/PK	U/U	AA	LF	PIB/S2		
Sichuan CSG Energy Conservation Glass Co., Ltd. No. 16 Section 2 Huanglong Road The Southwest Airport Economic Development Zone Wuhou District Chengdu, Sichuan 610213 China +86 28 85689888 CSG IGCC®/IGMA® 2024	4883	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Sierra Glass Fabrication Inc. 905 Linda Way Sparks, NV 89431 USA 775-355-0700 SGF IGCC(R)/IGMA(R) 24	5699	BC4	U/C2	RTP	IB	RTP/S2	BA	Yes
Sierra Pacific Windows 575 S. Whelen Ave. Medford, WI 54451 USA (530) 528-3842 SPW67 IGCC® /IGMA® @ 24	4381	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	RHM	BA	Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Sierra Pacific Windows 300 Colin Powell Parkway Phenix City, AL 36869 USA 715-748-1716 SPW 61 IGCC(R)/IGMA(R) 2024	6148	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	RHM	BA	Yes
Sierra Pacific Windows 11605 Reading Road PO Box 8489 Red Bluff, CA 96080 USA 530-527-9620 SPW66 IGCC(R)/IGMA(R) 2024	4283 5514	BC3/MC1/MT/TI BC3/MC1/MT/TI/PA	U/C2/U U/C2	FSF/FSF FSF	IB/IB IB	RHM RHM	BA BA	Yes Yes/CPC
Sierra Pacific Windows - O 605 N. Ohio St. Merrill, WI 54452 USA 800-433-4873 SPW 62 IGCC®/IGMA® 24	5809	BC3/MC1	U/C2/U	FSF	IB	RHM	BA	Yes
Sierra Pacific Windows - W 1815 Water St. Merrill, WI 54452 USA 715-748-2011 SPW65 IGCC®/IGMA® coating/month/year	3653 3654 4625	MC4/PK BC3/MC1 BC3/MC1	U/C2 U/C2 U/C2	AA UT US	LF DM DM	PIB/HM HM HM	BA BA BA	Yes Yes Yes
SIGCO, Inc. 48 Spiller Drive Westbrook, ME 04092 USA 207-775-2676 SIGCO IGCC(R)/IGMA(R) 06/2024	5251 5684 5927	MC4/PK MC4/PK MC4/PK	U/C2 U/C2/U U/C2/U	AA PHSS/PHSS AA/AA	LF LF/LF LF/LF	PIB/S2 PIB/S2 PIB/S2	BA BA BA	Yes Yes Yes
Sky Land Glass Corp. 89-27 126th St. Richmond Hill, NY 11418 USA 718-707-0288	5998	BC4/GSLC	U/C1	AA	LF	PIB/S2	BA	
Smart Glass Group LLC 2530 N Powerline Rd., 401 Pompano Beach, FL 33069 USA 305-924-4287	6201	BC3/MC1/MT	U/U	FSF	IB	S2		
Soluciones Vitro Plano S.A. de C.V. Av. Rio de los Remedios No. 1 Col San Juan Ixhuatepec Tlalnepantla de Baz 54180 Mexico 52-55-5227-6000/6055 PVA 4884 IGCC®/IGMA® 24 on spacer bar	4884	MC4/PK	U/C2	MA	LF	PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Stanley Glass Co., Ltd.	4020	BC4/GSLC	U/U	MA	LF	PIB/S2		
No. 12, Wuxun Street	5718	BC4/GSLC	U/U	AA	LF	PIB/S2		
Dawulun Industrial District								
Keelung 20446								
Taiwan								
886-2-2432-1288								
Stargrup Cam A.S.	4548	MC4/PK	U/C2	PHSS	LF	PIB/S2		
Hadimkoy Mah. Mustafa Inan Cad.	4549	MC4/PK	U/C2	PHSS	LF	PIB/S2		Yes
No: 17 34555 Hadimkoy								
Arnavutkoy, Istanbul 34960								
Turkey								
90-212-771-38-18								
Stargrup Cam A.S. IGCC(R)/IGMA(R) 2024								
Strong Tempering Glass Industry LLC	4520	MC4/PK	U/C1	AA	LF	PIB/S2		
530B 63rd Street								
Brooklyn, NY 11220								
USA								
718-765-0007								
Sunglas Technics Co., Ltd.	4961	BC4/GSLC	U/C2	AA	LF	PIB/S2		
No. 16 Fenghuang Dadao								
National Ecological Industrial Park								
Danzao Town, Nanhai								
Foshan, Guangdong Province 828216								
China								
86 18602033514								
Sunglas 4961 IGCC®/IGMA® E2190 2024								
Suzhou Taifeng Glass Decoration Co. Ltd	3808	BC3/MC1	U/C2	BCS	IB	BCS	GI	
No. 9 Jing'er Road, Development Zone								
Taicang, Jiangsu 215400								
China								
0086-512-53553995								
Syracuse Glass Company, LLC	4371 IN	BC4/GSLC	U/C2	PHSS	LF	PIB/S2	BA	Yes
1 General Motors Drive	4934	BC4/GSLC	U/C2	AA	LF	PIB/S2	OI	Yes
PO Box 381	5428	BC4/GSLC	U/C2/U	AA/AA	LF/LF	PIB/S2	BA	Yes
Syracuse, NY 13206	6019	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2	BA	Yes
USA	828 IN	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
315-437-9971								
SGC IGCC(R)/IGMA(R) 2025								
Tacoma Glass Mfg. Inc.	6127 PC	K	U/C2	AA	LF	PIB/PS2		Yes
4414 176th Street East								
Tacoma, WA 98446								
USA								
253-307-0926								
Taicang Yaohua Glass Co., LTD	4631	BC4/GSLC	U/C2	AA	LF	PIB/S2		
RM 1104, 62 Xiyong Road	4632	BC4/GSLC	U/C2	AA	LF	PIB/PS2		
Pudong								
Shanghai 200126								
China								
86-21-58454541								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Taiwan Glass Industry Corp. No. 261, Sec. 3, Nanking E. Road Taipei, Taiwan 105 China 886-2-27130333	2053 3805	MC4/PK MC4/PK	U/C2 U/C2	AA AA	LF LF	PIB/S2 PIB/S2		
Technical Glass & Aluminum Factory LLC Plot number# 594-7418 Jabel Ali Industrial Area Jabel Ali, Dubai United Arab Emirates 971552446070 technical @IGCC(R)/IGMA(R) 5659 2024	5659	BC4/ALLC	U/C2	MA	LF	PIB/S2		
Techni-Glass, a Division of AROW Global Corp 924 North Park View Circle Mosinee, WI 54455 USA 715-318-7299 IGCC(R)/IGMA(R) 5677 0900220A 2024	5677	BC4/MT	U	FSF	IB	RHM		
Tecnoglass S.A.S. Avenida Circunvalar a 100 mts de la Via 40 Barrio Las Flores Barranquilla Colombia 57 5 373 4000 Tecnoglass SA /IGCC@/IGMA@(#) ASTM E 2190 CBA(Fab date)	1393 1813 2683 4757 4941 4942 4943 5348 5349 5959 5960 PC	BC4/GSLC BC4/GSLC BC4/GSLC BC3/MC1 BC4/GSLC BC4/GSLC BC4/GSLC BC4/GSLC BC4/GSLC BC4 BC4	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2/U	MA MA SS FSF MA MA SS PHSS PHSS RTP RTP/RTP	LF LF LF IB LF LF LF LF LF IB IB/IB	PIB/PS2 PIB/S2 PIB/S2 PS2 PIB/S2 PIB/S2 PIB /S2 PIB/S2 PIB/S2 RTP/S2 RTP/S2		Yes Yes Yes Yes Yes Yes Yes Yes Yes
Temp Glass Inc. 12 Zane Grey El Paso, TX 79906 USA 915-274-1374	6081	MC4/PK	U/C2	AA	LF	PIB/S2		
Tempco Glass 131-10 Maple Ave. Flushing, NY 11355 USA 718-461-6888	4230 4496	MC4/PK MC4/PK	U/C2 U/C2	AA MA	LF LF	PIB/S2 PIB/S2	BA BA	Yes Yes
Templados Del Centro SA DE C.V. Carretera Irapuato-Silao km 13.5 Irapuato, Guanajuato Mexico 00152462 800 60 60	5569	BC4/GSLC	U/C2	MA	LF	PIB/S2		

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Templados Industriales S.A. de C.V. C. Erasmo Dominguez 12303 Nombre De Dios Chihuahua, Chihuahua 31105 Mexico 614-201-0490 Templados Industriales IGCC®/IGMA® 24	5241	BC4/GSLC	U/C2	MA	LF	PIB/S2		Yes
Tengzhou Fenghua Glass Co., Ltd. Modern Glass Industrial Base No. 108 Tengzhou Zaozhuang, Shandong Province 277513 China	5980	BC4/GSLC	U/C1	AA	LF	PIB/S2		
Termototal PROD SRL Romania	5890	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		Yes
Strada Clujului 17 Gherla, Romania 405300 Romania +40 264 247 441 Termototal IGCC(R)/IGMA(R)24	5943	BC4/SSLC	U/C2	MA	LF	PIB/PU2		Yes
TG Taicang Architectural Glass Co. Ltd	4972	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
9 ShenJiang Road Taicang Suzhou, Jiangsu China 86-512-57440001 TG Taicang IGCC®/IGMA® 2024	4973	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
TG Tianjin Glass Co., Ltd.	5626	BC4/GSLC	U/C2	AA	LF	PIB/S2		
No.5, Taian Road Jinghai Development Zone Jinghai, Tianjin 301609 China	5977	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Thermafix A.J. Inc.	5113	MC4/PK	U/C3/U	PHSS/PHSS	LF/LF	PIB/RHM	BA	Yes
1232, Route 111 E	5771	MC4/PK	U/C3/U	PHNF/PHNF	LF/LF	PIB/RHM	BA	Yes
Amos, QC J9T 3A1 Canada 418-561-3073 PO#Therma ABI (YYYY/MM) IGCC®/IGMA®	5840	MC4/PK	U/C3/U	MA/MA	LF/LF	PIB/RHM	BA	Yes
Thermafix A.J. Inc.	3764	MC4/PK	U/C3/U	PHSS/PHSS	LF/LF	PIB/RHM	BA	Yes
63 Chemin St. Laurent	5015	MC4/PK	U/C3/U	PHNF/PHNF	LF/LF	PIB/RHM	BA	Yes
Baie St. Paul, QC G3Z 2L5	5191	MC4/PK	U/C3/U	PHNF/PHNF	LF/LF	PIB/RHM	BA	Yes
Canada	5570	MC4/PK	U/C3/U	PHSS/PHSS	LF/LF	PIB/S2	BA	Yes
418.668.6131	5571	MC4/PK	U/C3	PHNF/PHNF	LF/LF	PIB/S2	BA	Yes
THERMA BSP (YYYYMMDD) IGCC/IGMA	5572	MC4/PK	U/C3/U	PHNF/PHNF	LF/LF	PIB/S2	BA	Yes
(DIM.) (Unit Spec.)	5715	MC4/PK	U/C2/U	MA/MA	LF/LF	PIB/S2	BA	Yes
	5716	MC4/PK	U/C2/U	MA/MA	LF/LF	PIB/RHM	BA	Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Thermafix A.J. Inc.	5648	MC4/PK	U/C3	PHSS/PHSS	LF/LF	PIB/RHM	BA	Yes
1396 Route du Rondin	5649	MC4/PK	U/C3	PHF/PHF	LF/LF	PIB/RHM	BA	Yes
St. Nazaire, QC G0W 2V0	5717	MC4/PK	U/C2/U	MA/MA	LF/LF	PIB/RHM	BA	Yes
Canada	5954	MC4/PK	U/C2	PHNF/PHNF	LF/LF	PIB/RHM	BA	Yes
418-881-2303								
PO # therma STN (YYYY/MM) IGCC (R)/IGMA(R)								
Thermo BSL	3001	MC4/PK	U/C2/U	PHSS/PHSS	LF	PIB/RHM	BA	Yes
141 Chemin des Raymond								
Riviere-du-loup, QC G5R 4L9								
Canada								
418-862-2611								
Thermos BSL DD/MM/YY IGCC(R)/IGMA(R)								
lepage order code								
Thompson I.G. LLC.	4977	MC4/PK	U/C2	PHSS	LF	PIB/S2	BA	Yes
3196 Thompson Rd.	5389	BC4/GSLC	U/C2/U	SS/SS	LF/LF	PIB/S2	BA	Yes
Fenton Operation	5687	BC4/SSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2	BA	Yes
Fenton, MI 48430								
USA								
810-629-9558								
TIG 2024 IGCC(R)/IGMA(R)								
Tianjin CSG Energy Conservation Glass Co., Ltd	2276	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
No. 12 Quanfeng Road	2336	BC4/GSLC	U/C2	AA	LF	PIB/PS2		Yes
Tianjin New Technology Industrial Park	5132	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
Zones	5165	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Wuqing District, Tianjin 301726								
China								
86-150-22345565								
Tianjin Northglass Industrial Technical Co., Ltd	3862	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		
South of Baozhong Avenue	4999	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		Yes
West of Tianxing Road	5467	BC4/GSLC	U/U	MA	LF	PIB/S2		
Energy Conservation & Environmental Protection	5742	BC4	U/C2	RTP	IB	RTP/S2		Yes
Baodi District, Tianjin 301800								
China								
86-022-59281102								
NorthGlass ASTM E2190 '24 IGCC®/IGMA®								
Tianjin SYP Engineering Glass Co., Ltd.	2525	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
1 Huatai Road	3026	BC4/GSLC	U/C2	SS	LF	PIB/S2		Yes
Beichen District, Tianjin 300409	3227	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
China	5602	BC4/GSLC	U/C2/U	AA/AA	LF/LF	PIB/S2		Yes
86-22-86880204	5603	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
SYP 03 IGCC®/IGMA® E2190 '24								
TOTAL MONT LLC- (DBA WESTERN STATES GLASS)	5751	MC4/PK	U	AA	LF	PIB/PU2	BA	Yes
790 W 12th St.								
Long Beach, CA 90813								
USA								
562-457-3528								

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Tower Insulating Glass LLC. 2485 Charles Court Bellmore, NY 11710-2773 USA 516-887-3300 Tower Glass LLC IGCC(R)/IGMA(R) 2024	1470	MC4/PK	U/C3	AA	LF	PIB/S1	BA	Yes
Tristar Glass, Inc. 1120 West Main Pkway Catoosa, OK 74015 USA 918-392-9678 Tristar TUL IGCC(R)/IGMA(R) '24	2627	BC4/GSLC	U/C2	MA	LF	PIB/S2	BA	Yes
	5815	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		
	5899	BC4	U/C2	RTP	IB	RTP/S2		
Tristar Glass, Inc. 3405 Roy Orr Blvd Grand Prairie, TX 75050 USA 817-262-5960 Tri Star DFW IGCC®/IGMA® '24	5974	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Tristar Glass, Inc. 19522 Aldine Westfield Houston, TX 77073 USA 281-960-6840 Tristar Hou IGCC(R)/IGMA(R)24	4316	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Trulite Glass and Aluminum Solutions 11950 E. 33rd Ave. Aurora, CO 80010 USA 303-340-4290 W-31 IGCC(R)/IGMA(R) 2024	4885	MC4/PK/TI	U/C2	MA	LF	PIB/PS2	BA	
Trulite Glass and Aluminum Solutions 100 Business Center Drive Cheswick, PA 15024 USA 800-232-9050 IGCC(R)/IGMA(R) Trulite W-43 YEAR	3527	BC4/GSLC	U/C2	PHSS	LF	PIB/S2	BA	Yes
	4636	BC4/GSLC	U/C2	MA	LF	PIB/S2	BA	Yes
Trulite Glass and Aluminum Solutions 19430 E. San Jose Ave. City of Industry, CA 91748 USA 800-774-4224 Trulite W47 IGCC®/IGMA® 2024	4364	MC4/PLLC	U/C2	MA	LF	PIB/S2	BA	Yes
	5845	MC4/PK	U/C2	PHSS	LF	PIB/S2	BA	Yes
Trulite Glass and Aluminum Solutions 4400 Cambridge Rd. Fort Worth, TX 76155 USA 817-785-1220 IGCC(R)/IGMA(R) Trulite W35 2024	5580	MC4/PK	U/C1	MA	LF	PIB/S2	BA	Yes

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Trulite Glass and Aluminum Solutions 3333 Holly Hall Houston, TX 77021 USA 713-747-5430 Trulite W46 2024 IGCC(R)/IGMA(R)	5525	MC4/PK	U/C2	MA	LF	PIB/S2	BA	
Trulite Glass and Aluminum Solutions 7701 W. New York St. Indianapolis, IN 46214 USA 800-876-0646 Trulite W-14 IGCC(R)/IGMA(R) 2024	5563 5612	MC4/PK MC4/PK	U/C2 U/C2	PHSS MA	LF LF	PIB/S2 PIB/S2	BA BA	
Trulite Glass and Aluminum Solutions 2522 Westcott Blvd. Knoxville, TN 37931 USA 865-691-2040 Trulite W631IGCC(R)IGMA(R)2024	2220	MC4/PK	U/C2	MA	LF	PIB/S2	BA	Yes
Trulite Glass and Aluminum Solutions 1513 North A St. Las Vegas, NV 89106 USA 702-385-3095	5429	MC4/PK	U/C2	MA	LF	PIB/S2	BA	
Trulite Glass and Aluminum Solutions 660 Campbell Court Lithia Springs, GA 30122 USA 770-434-2041 TruliteW74 IGCC(R)IGMA(R) 2024	4488 4489	BC4/GSLC BC4/GSLC	U/C2 U/C2	MA SS	LF LF	PIB/S2 PIB/S2		Yes Yes
Trulite Glass and Aluminum Solutions 5700 South Moreland Road New Berlin, WI 53155 USA 800-242-2071 IGCC(R)/IGMA(R) Trulite W23 2024	4536 4820 IN 5528	BC4/ALLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	MA AA PHSS	LF LF LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
Trulite Glass and Aluminum Solutions 3320-B Maggie Blvd. Orlando, FL 32811 USA 800-367-7211 IGCC(R)/IGMA(R) Trulite W-04 2024	5358	MC4/PK	U/C2	MA	LF	PIB/S2	BA	
Trulite Glass and Aluminum Solutions 1825 S. 43rd Avenue Phoenix, AZ 85009 USA 800-854-8022 Trulite W30 IGCC(R)/IGMA(R) 2024	4120	MC4/PK	U/C2	MA	LF	PIB/S2	BA	

<u>LICENSEE</u>	<u>CERTIFICATION NUMBER</u>	<u>FRAME CONSTRUCTION</u>	<u>SUBSTRATE</u>	<u>SPACER</u>	<u>DESICCANT</u>	<u>SEALANT</u>	<u>INTERNAL COMPONENTS</u>	<u>GCIA</u>
Trulite Glass and Aluminum Solutions	5803	MC4/PK/TI	U/C2	MA	LF	PIB/S2	BA	Yes
1655 South Awl Circle	5828	MC4/PK	U/C2	PHSS	LF	PIB/S2	BA	Yes
Salt Lake City, UT 84104	6178	BC4	U/C2	RTP	RTP	RTP/S2		Yes
USA								
801-656-1660								
Trulite W34 IGCC(R)/IGMA(R) 2024								
Trulite Glass and Aluminum Solutions	6021	MC4/PK	U/C2	MA	LF	PIB/PS2	BA	
4363 S. 86th East Avenue								
Tulsa, OK 74145								
USA								
918-665-6655								
Trulite W41 IGCC(R)/IGMA(R) 2024								
Trulite Glass and Aluminum Solutions	2032	BC4/GSLC	U/C1/U	AA/AA	LF/LF	PIB/S2		Yes
20 Royal Group Crescent	2295	BC4/GSLC	U/C2/U	SS/SS	LF/LF	PIB/S2		Yes
Woodbridge, ON L4H 1X9	3806	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Canada	6036	BC4	U/C2/U	RTP/RTP	IB/IB	RTP/S2		Yes
905-670-7040								
Trulite W90 IGCC(R) IGMA (R) 2024								
Trulite Glass and Aluminum Solutions	5301	MC4/PK	U/C2	MA	LF	PIB/S2	BA	Yes
285 Northbrook Drive	5341	MC4/PK	U/C2	PHSS	LF	PIB/S2		Yes
Youngsville, NC 27596	5883	MC4/PK	U/C2	PHSS	LF	PIB/S2		Yes
USA								
919-435-3050								
Trulite W43 IGCC®/IGMA® 2023								
TSY-Fong Glass Co., Ltd	3170	MC4/PK	U/U	AA	LF	PIB/S2		Yes
83-1 Jiasing Road								
Wanluan Township								
Pintung County								
Taiwan 923								
China								
886-8-7835-002								
Tvitec System Glass	5118	MC4/PK	U/C2	AA	LF	PIB/S2		Yes
Parque Empresarial Prado del Espino	5119	MC4/PK	U/C2	AA	LF	PIB/PU2		Yes
C/Impresores 20, despacho 120	5120	MC4/PK	U/C2	PHSS	LF	PIB/S2	BL	Yes
Boadilla del Monte, Madrid 28660	6024	MC4/PK/TI	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Spain								
+34-915 670 896								
TVITEC ISOLAR Date Batch Line IGCC								
(R)/IGMA(R) Cert #								
Unicel Architectural Corp.	3941	MC4/PK	U/C1	PHSS	LF	PIB/S2	BL	Yes
2155 Fernand Lafontaine	4563	MC4/ALK	U/C1	MA	LF	PIB/S2	BL	Yes
Longueuil, QC J4G 2J4								
Canada								
450-670-6844x233								
Vision Control IGMA(R)IGCC(R) Month/year								

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Uniglass 4636 Al Marwa - Al Mishal Unit No. 2 PO. Box 40179 Riyadh 11499 Saudi Arabia +9665471446 UNIGLASS IGCC(R)/IGMA(R) 5033-2024	5033	BC4/ALLC	U/C3	AA	LF	PIB/S2		
Union Glass s.r.l. Via Istria Motta Di Livenza , Treviso 31045 Italy 0039 34752 62997 UNION GLASS SRL - IGCC®/IGMA® 2024	5673 5674 5675 5676	BC4/SSLC BC4/SSLC BC4/SSLC BC4/SSLC	U/C2/U U/C2/U U/C2/U U/C2/U	AA/AA AA/AA PHSS/PHSS PHSS/PHSS	LF/LF LF/LF LF/LF LF/LF	PIB/PS2 PIB/S2 PIB/S2 PIB/PS2		Yes Yes Yes Yes
United Plate Glass Co., Inc. 108 Grundman Drive Butler, PA 16001 USA 800-772-7783 UPG 01 IGCC(R)/IGMA(R) MM/DD/YYYY	1513 4699 5072	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	MA MA MA	LF LF LF	PIB/PU2 PIB/S2 PIB/PS2	BA BA	Yes Yes
United Plate Glass Company of Charlotte 1104 Lincoln County Parkway Lincolnton, NC 28092 USA 828-970-6110 UPG NC IGCC(R)/IGMA(R) 08/21/24	5778 5961	MC4/PK MC4/PK	U/C2 U/C2	MA MA	LF LF	PIB/PS2 PIB/S2	BA BA	
Unitex Glass Chengdu Co., Ltd 1 Second Section Street Yingbin Jintang County Chengdu, Sichuan 610042 China 86-592-6215300	4436	BC4/GSLC	U/U	AA	LF	PIB/S2		
US Glass Depot LLC 15 E Bethpage Rd Plainview, NY 11803 USA 5168999999	6108	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Val y Val SA de CV Av. Framboyanes Lote 19 Manzana 6 Cd. Industrial Bruno Pagliai Heroica Veracruz, Veracruz 91697 Mexico 52-229-9811036 IGCC®/ IGMA® (year)(IGCC#) Val y Val	4948	BC4/GSLC	U/C2	AA	LF	PIB/S2		

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Vandaglas Eckelt GmbH	2229	BC4/SSLC/AP	U/C2/U	SS/SS	LF/LF	PIB/PS2		Yes
ResthofstraBe 18	2230	BC4/SSLC/AP	U/C2/U	SS/SS	LF/LF	PIB/S2		Yes
Steyr A4403	5396	BC4/SSLC	U/C3/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Austria								
43 7252 894 0								
Vandaglas Eckelt - Date - IGCC®/IGMA®								
VELUX America LLC	2035	BC4/PLC	U/C2	SS	LF	PIB/S1		Yes
450 Old Brickyard Rd	5907	BC4	U/C2	RTP/RTP	IB	RTP/S2		Yes
PO Box 5001	5914 IN	BC4	U/C2	RTP	IB	RTP/S2		Yes
Greenwood, SC 29649								
USA								
864-941-5309								
Velux.com IGCC®/IGMA® +date								
VETRERIA CAPPELLETTI E ROLERI S.R.L.	5331	BC4/PLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2	BL	Yes
Via Berlinguer, 67 / 69								
Settima di Gossolengo (PC) 29020								
Italy								
Vetriko S.A.	5996	BC3/MC1/MT	U/C2	FSF	IB	PIB/S2		
KM 8.5 Via Duran Tambo								
Duran, Guayas 090701								
Ecuador								
59346607927								
Vetrodomus SpA	4491	BC4/SSLC	U/C3	PHSS	LF	PIB/S2		Yes
Via Giovanni Bormioli n°48	4492	BC4/SSLC	U/C3	PHSS	LF	PIB/PS2		Yes
Brescia, Province of Brescia 25135	5087	BC4/SSLC	U/C3	AA	LF	PIB/S2		Yes
Italy								
390303363005								
Vetrodomus SPA IT IGCC(R)/IGMA(R) 2024								
Vidrio Duro de Mexico S.A. de C.V.	3516	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Avenida Las Industrias #500								
Escobedo, Nuevo Leon 66062								
Mexico								
81-8154-5600								
View Inc.	3934	BC3/MC1/MT/SP	U/C2	FSF	IB	PIB/S2		Yes
12380 Kirk Road	5650	BC3/MC1/MT/SP	U/C2/U	FSF/FSF	IB/IB	PIB/S2		Yes
Olive Branch, MS 38654								
USA								
662-892-3415								
View, Inc. OB IGCC(R)/IGMA(R) '24								
Viewmax Windows and Doors, Ltd.	5259	MC4/PK	U/C2/U	PHNF/PHNF	LF/LF	PIB/S2		Yes
Huaxin Road 297								
Yanggu								
Liaocheng, Shandong Province 252323								
China								
+86-18706356127								
VIEWMAX 5259 IGCC®/IGMA® 2024								

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Viracon Inc.	1462	BC4/GSLC/TI	U/C3/U	MA/MA	LF/LF	PIB/S2		Yes
800 Park Drive	1911	BC4/SSLC/TI	U/C3/U	SS/SS	LF/LF	PIB/S2		Yes
PO Box 990	4682	BC4/PA	U/C3/U	RTP/RTP	IB/IB	RTP/S2		Yes/CPC
Owatonna, MN 55060	980	BC4/GSLC/TI	U/C3/U	AA/AA	LF/LF	PIB/S2		Yes
USA								
507-451-9555								
Viracon MN IGCC(R)/IGMA(R) 24								
Vista Glass Corporation	5858	BC4/GSLC	U/C2	PHSS	LF	PIB/PS2		Yes
8865 Highway 50, Unit 2	5865	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
Vaughan, ON L4H 3V9								
Canada								
416-646-1421								
VGC IGCC(R)/IGMA(R) DATE and Time								
Vitelsa Mosquera	5630	MC4/PK	U/U	MA	LF	PIB/S2		
Parque Industrial San Jorge,								
Av. Troncal de Occidente KM19								
Via Mosquera - Madrid, Lote 90 Mz C4 Bod 1								
Bogota, Cundinamarca 00								
Colombia								
3154272038								
Vitre-Art C.A.B. (1988) Inc.	6183 PC	BC3/MC1/MT	U/C2/U	FSF/FSF	IB/IB	HM		Yes
6430 Boul. Henri Bourassa E								
Montreal Nord, QC H1G 5W9								
Canada								
514-328-4795								
VITROTERM-MUROW S.A.	4525	BC4/SSLC/AP	U/C3/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Wolnosci 33	5273	BC4/SSLC/AP	U/C2/U	PHSS/PHSS	LF/LF	PIB/PS2		Yes
Murow 46-030								
Poland								
48-601-499-290								
Date, product details, IGCC(R)/IGMA(R),								
prod. #								
Vitrum Industries Ltd.	4888	BC4/PLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2	BA	Yes
9739 - 201st Street	4889	BC4/PLC	U/C2/U	MA/MA	LF/LF	PIB/S2	BA	Yes
Langley, BC V1M 3E7	6095	BC4/SSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/PS2	BA	Yes
Canada	6096	BC4/ALLC	U/C2/U	MA/MA	LF/LF	PIB/PS2	BA	Yes
604-614-9081								
IGCC®/IGMAC® Vitrum 2024 Langley								
W. A. Wilson Inc.	3854	BC4/GSLC	U/C3	AA	LF	PIB/S2		Yes
6 Industrial Park Dr.	5253	BC4/GSLC	U/C3	PHSS	LF	PIB/S2	BA	Yes
PO Box 6712	5465	BC3/MC1/MT	U/C3	FSF	IB	PIB/S2	BA	Yes
Wheeling, WV 26003	5669	MC4/PK	U/C3	AA	LF	PIB/PU2	BA	Yes
USA	5670	BC3/MC1/MT	U/C3	FSF	IB	PIB/PU2	BA	Yes
304-232-2200	5671	MC4/PK	U/C3	PHSS	LF	PIB/PU2	BA	Yes
Starlite IGCC(R)/IGMA(R) 2024	6089	BC4/SSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes

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W.C.P., Inc dba West Coast Insulated Glass Products	2383	MC4/PK	U/C2	AA	LF	PIB/PU2	BA	Yes
17730 Crusader Avenue	2384	MC4/PK	U/C2	AA	LF	PU2		
Cerritos, CA 90703	4366	MC4/PK	U/C2/U	SS/SS	LF/LF	PIB/PU2	BA	Yes
USA	5040	MC4/PK	U/C2	PHNF	LF	PIB/PU2	BA	Yes
562-653-9797	5545	MC4/PK	U	AA	LF	PIB/S2	BA	Yes
White Aluminum Enterprises LLC	2335	BC4/ALLC	U/U	AA	LF	PIB/S2		
Plot D14 (51) D11 (48,49) ICAD-1								
PO Box 30665								
Abu Dhabi								
United Arab Emirates								
97-154-7931702								
WAE IGCC(R)/IGMA(R) 2024								
Wholesale Glass Dist.	2279	BC4/GSLC	U/C2	MA	LF	PIB/S2	BA	Yes
4287 Delp Street	2280	BC4/GSLC	U/C2	MA	LF	PIB/PS2		
Memphis, TN 38118								
USA								
901-332-2200								
WGD 24 IGCC®/IGMA® ASTM E2190								
WHTB Glass, LLC	5258	BC4/GSLC	U/C2	AA	LF	PIB/S2		
101 Precision Dr.								
Shirley, NY 11967								
USA								
347-382-9892								
Windsor Windows and Doors	6276	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
1400 North Sutherland Avenue	6277	BC3/MC1	U	FSF/FSF	IB/IB	HM		Yes
Monroe, NC 28110								
USA								
704-283-7459								
Windsor Windows and Doors	5022	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
901 S. Sunset Drive								
Norwalk, IA 50211								
USA								
Windsor "order number" IGCC®/IGMA® low-e 366 IA-1 mm/yy								
Windsor Windows and Doors	2285	BC3/MC1/MT	U/C2	FSF	IB	HM	BA	Yes
900 South 19th Street								
West Des Moines, IA 50265								
USA								
515-223-6660								
Windsor "order number" IGCC®/IGMA® low-e xxx IA-2 mm/yy								
Wolverine Glass Products, Inc.	5929	BC4/MT	U/C2	FSF	IB	HM		
3400 Wentworth Dr. SW	5931	MC4/PK	U/C2	AA	LF	PIB/S2		Yes
Wyoming, MI 49519								
USA								
616-538-0100								

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Wujiang CSG Huadong Architectural Glass Co., LTD 869 Pangjin Road Economic Development Zone, Wujiang Suzhou, Jiangsu 215200 China 86-512-81559999	5785	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
	5786	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		
Xianning CSG Energy Conservation Glass Co., LTD. Guishan Road No. 35 Changjiang Industrial Park Economic Development Zone Xianning, Hubei 437000 China 18827318411	3915	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Xinyi Glass (Tianjin) Co. Ltd. No. 33 Quanfa Road Wuqing Development Area Wuqing District, Tianjin 301700 China 86-22-59610666 XYG IGCC®/IGMA® #5761 E2190 JUL-2024	5757	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
	5758	BC4/GSLC	U/C2	MA	LF	PIB/S2		Yes
	5759	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
	5760	BC4/GSLC	U/C2/U	AA/AA	LF/LF	PIB/S2		Yes
	5761	BC4/GSLC	U/C2/U	MA/MA	LF/LF	PIB/S2		Yes
	5762	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Xinyi Glass (Yingkou) Co., Ltd. Xin Yi Industrial Zone Xin Yi Road Yingkou, Liaoning 115007 China 86-417-8205076	4733	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
	4734	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
	4735	BC4/GSLC	U/C2	MA	LF	PIB/S2		Yes
	5232	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
	5236	BC4/GSLC	U/C2/U	MA/MA	LF/LF	PIB/S2		Yes
	5237	BC4/GSLC	U/C2/U	AA/AA	LF/LF	PIB/S2		Yes
Xinyi Group (Glass) Co., Ltd. Xinyi Glass Industrial Zone Humen Town Dongguan, Guangdong Province 52935 China 604-273-0813 XYG ASTM E2190 IGCC®/IGMA® 2024	2350	BC4/GSLC	U/C2	MA	LF	PIB/S2		Yes
	2352	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
	2353	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Yakut Cam A.S A.gazi mah. Atayolu cad: No. 197 Sancaktepe, Istanbul 34791 Turkey 0216-561-80-81 Yakut Glass IGCC(R)/IGMA(R) 24	5369	MC4/PK	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
	5654	MC4/PK	U/C2	PHSS	LF	PIB/S2		
Yantai Dongfang Glass Co., Ltd No. 17, Tonghuang Road Zhifu District Yantai, Shandong Province 264004 China +86 135 8594 0662	5155	BC4/GSLC	U/C2	PHSS	LF	PIB/PS2		Yes
	5197	BC4/GSLC	U/C2/U	PHSS/PHSS	LF/LF	PIB/PS2		Yes

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Yildiz Cam San. Tic. A.S. Uzunçiftlik Mah. Rauf Denктаş Cad. No: 105 Kocaeli, Kartepe 41180 Turkey YILDIZ CAM IGCC(R)/IGMA(R) 24	5400 5710 5820 5881	BC4/SSLC MC4/PK MC4/PK MC4//PK	U/C2 U/C2/U U/C2 U/C2	PHSS PHSS/PHSS PHSS PHSS	LF LF/LF LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes
YinJian DongGuan Glass Engineering Co., Ltd. No. 1 Building, No. 82 Chaodong Road Chashan Town Dongguan, Guangdong Province 523998 China 13763279690	4965	BC4/GSLC	U/C2	AA	LF	PIB/S2		
YKK AP America 100 YKK AP Way Macon, GA 31216 USA 866-348-9091	6043 6044 6045 IN 6046	BC3/MC1 BC4/SS BC4/ZS BC3/MC1	U/C2 U/C2 U/C2 U/C2	BCS US UT BCS	IB DM DM IB	BCS RHM RHM BCS	BA BA BA BA	Yes Yes Yes Yes
Yorglass Cam Sanayi Ve Ticaret A.S. Kecilikoy OSB Mahallesi Metin Ersan Cad. No.13 Yunusemre, Manisa 45125 Turkey 90-850-622-0226 Yorglass IGCC(R)/IGMA(R) 24	5888 5889	MC4/PK MC4/PK	U/C2 U/C2/U	MA MA/MA	LF LF/LF	PIB/PU2 PIB/PU2		Yes
Zhaoqing CSG Energy Conservation Glass Co., Ltd No.8 Baolong Road Zhaoqing High-tech Industrial Development Zone Zhaoqing, Guangdong Province 526238 China +8615813898213	6106	BC4/GSLC	U/C2	MA	LF	PIB/S2		Yes
Zhaoqing Ruilihui Glass Technology Co., Ltd. Factory 3, No.4 Wende Second Street Zhaoqing High-Tech Zone Zhaoqing, Guangdong 526238 China 86 758 3645111	6168	BC4/GSLC	U/U	AA	LF	PIB/S2		
Zhongli Glass Co., Ltd No. 8 Beihu Road Tianzihu Modern Industrial Park, Anji Huzhou, Zhejiang 313309 China 0752-5898366	3067 4362	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA PHSS	LF LF	PIB/S2 PIB/S2		Yes Yes

<u>Company Name & Location</u>	<u>IGMAC #</u>	<u>Connector</u>	<u>Spacer</u>	<u>Desiccant</u>	<u>Sealant</u>	<u># of Lites**</u>	<u>Certified for Internal Components</u>	<u>Gas Content Program & Type *</u>
24 Hour Thermal Glass Insulated Ltd. Concord, Ontario	011709G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
A Plus Seal Incorporated Concord, Ontario	012302	MC4/PK	MA	LF	PIB+PS2	2	N	AIR
AGM Inc. Winnipeg, Manitoba	011404G	BC3/MC1/MT	FSF	IB	PIB+S2	3	N	GCIA
AGM Inc. Winnipeg, Manitoba	012308G	BC3/MC1/MT	FSF	IB	PIB+RHM	3	N	GCIA
AGM Inc. Winnipeg, Manitoba	012310G	BC3/MC1/MT	FSF	IB	PIB+S2	3	N	GCIA
Airtite Insulating Glass Concord, Ontario	010809G	MC4/PK	PHSS	LF	PIB+PS2	2	Y	GCIA
Airtite Insulating Glass Concord, Ontario	020715G	MC4/PK	AA	LF	PIB+PS2	2	Y	GCIA

February 14, 2025

*GCIA – Gas Content Initial and After Weathering – Initial 90% and After Cycling 80% Gas Content Requirements for test specimens

AIR – Not certified for gas content

**Triple glazed units qualify double glazed units with the same construction

<u>Company Name & Location</u>	<u>IGMAC #</u>	<u>Connector</u>	<u>Spacer</u>	<u>Desiccant</u>	<u>Sealant</u>	<u># of Lites**</u>	<u>Certified for Internal Components</u>	<u>Gas Content Program & Type *</u>
Aluminum Window Designs LTD Woodbridge, Ontario	022223G	BC4/GSLC	PHSS	LF	PIB+S2	2	N	GCIA
Atlantic Windows Amherst, Nova Scotia	012312G	BC4/MT	FSF	IB	HM	3	N	GCIA
Atlantic Windows Port Elgin, New Brunswick	019517G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Berdick Mfg. (Pacific) Ltd. Penticton, British Columbia	02317G	BC4	BPS	IB	BPS	3	Y	GCIA
Bethel Windows & Doors Ltd. Coaldale, Alberta	028822G	BC4	BPS	IB	BPS	3	Y	GCIA
Blackline Aluminum Systems Markham, Ontario	012301G	BC4/SSLC	SS	LF	PIB+S2	3	N	GCIA
Blackline Aluminum Systems Markham, Ontario	022016G	MC4/PK	SS	LF	PIB+PS2	3	N	GCIA

February 14, 2025

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Bronco Industries, Inc. Delta, British Columbia	020214G	MC4/PK	AA	LF	PIB+S2	3	Y	GCIA
Bronco Industries, Inc. Delta, British Columbia	022411G	MC4/PK	PHSS	LF	PIB+S2	2	Y	GCIA
Canada Glass Industries, Inc. Maple Ridge, British Columbia	012403G	BC4/MC1/MT	FSF	IB	PU2	2	N	GCIA
Can-Am Glass Products Ltd. Edmonton, Alberta	019216	MC4/PK	AA	LF	PIB+RHM	2	Y	AIR
Can-Am Glass Products Ltd. Edmonton, Alberta	021420G	BC3/MC1	FSF	IB	RHM	3	Y	GCIA
Caron et Guay Inc Beaupre, Quebec	011216G	BC3/MC1/MT	FSF	IB	RHM	3	Y	GCIA
Centennial Windows London, Ontario	010602G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA

February 14, 2025

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Centra Windows AB Inc. Calgary, Alberta	010905G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Century Glass (85) Ltd. Kamloops, British Columbia	010714G	BC3/MC1	FSF	IB	HM	2	N	GCIA
Changshu ZhongXin Building Materials Co., Ltd. Changshu, Jiangsu, China	012305G	MC4/PK	AA	LF	PIB+PS2	2	N	GCIA
CLEARREX INC. Concord, Ontario	012408G	K	PHSS	LF	PIB+PU2	3	Y	GCIA
Clearview Industries Ltd. Toronto, Ontario	011211G	MC4/PK	PHSS	LF	PIB+PS2	2	Y	GCIA
Clearview Industries Ltd. Toronto, Ontario	011214G	MC4/PK	SS	LF	PIB+PS2	2	Y	GCIA
Clera Windows & Doors Concord, Ontario	011212G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA

February 14, 2025

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CS ECO Glass (M) Sdn Bhd Sungai Gadut, Negeri Sembilan, Malaysia	012216G	BC4/GSLC	PHSS	LF	PIB+S2	2	N	GCIA
Dalumex Products St-Isadore, Ontario	011312G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Double Seal Insulating Glass Ltd. Toronto, Ontario	010608G	MC4/PK	MA	LF	PIB+S2	2	Y	GCIA
Double Seal Insulating Glass Ltd. Toronto, Ontario	011804G	MC4/PK	MA	LF	PIB+PS2	2	Y	GCIA
Double Seal Insulating Glass Ltd. Toronto, Ontario	011903G	MC4/PK	PHSS	LF	PIB+PU2	3	Y	GCIA
Double Seal Insulating Glass Ltd. Toronto, Ontario	021324G	BC3/MC1/MT	FSF	IB	PU2	3	Y	GCIA
Double Seal Insulating Glass Ltd. Toronto, Ontario	021325G	MC4/PK	PHSS	LF	PIB+PS2	3	Y	GCIA

February 14, 2025

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Durabuilt Windows & Doors Inc. Edmonton, Alberta	012214G	BC4/ZS	US	DM	RHM	3	N	GCIA
Durabuilt Windows & Doors Inc. Edmonton, Alberta	021717G	BC3/MC1	FSF	IB	HM	3	Y	GCIA
Emirates Glass L.L.C. Dubai, United Arab Emirates, United Arab Emirates	011712G	BC4/ALLC	AA	LF	PIB+S2	2	N	GCIA
Extreme Window & Entrance Systems Moncton, New Brunswick	020835G	BC3/MC1/MT	FSF	IB	HM	2	Y	GCIA
Fancy Windows MFG (2020) Inc. Edmonton, Alberta	011904G	MC3/MC1	FSF	IB	PS2	3	Y	GCIA
Fenêtres Lajeunesse Inc. Lanoraie, Quebec	011402G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Fusion Glass Works Toronto, Ontario	011504	MC4/PK	AA	LF	PIB+PS2	2	Y	AIR

February 14, 2025

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G.E. Silliker & Sons Ltd. Borden-Carleton, Prince Edward Island	012407G	BC3/MC1/MT	FSF	IB	RHM	3	N	GCIA
G.E. Silliker & Sons Ltd. Borden-Carleton, Prince Edward Island	021917G	BC3/MC1/MT	FSF	IB	HM	3	N	GCIA
G.E. Silliker & Sons Ltd. Borden-Carleton, Prince Edward Island	022109G	MC4/PK	PHSS	LF	PIB+S2	3	N	GCIA
G.E. Silliker & Sons Ltd. Borden-Carleton, Prince Edward Island	022111G	MC4/PK	PHSS	LF	PIB+RHM	3	N	GCIA
G.E. Silliker & Sons Ltd. Borden-Carleton, Prince Edward Island	022112G	MC4/PK	PHSS	LF	PIB+HM	3	N	GCIA
Garibaldi Glass Ind. Inc. Burnaby, British Columbia	011412G	MC4/PK	AA	LF	PIB+S2	3	Y	GCIA
Garibaldi Glass Ind. Inc. Burnaby, British Columbia	011415G	MC4/PK	PHSS	LF	PIB+S2	3	Y	GCIA

February 14, 2025

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Garibaldi Glass Ind. Inc. Burnaby, British Columbia	012410G PC	BC4	RTP	IB	RTP+S2	3	Y	GCIA
Garibaldi Glass Ind. Inc. Burnaby, British Columbia	022219G	MC4/PK	PHSS	LF	PIB+PS2	3	N	GCIA
Garibaldi Glass Ind. Inc. Burnaby, British Columbia	022220G	MC4/PK	AA	LF	PIB+PS2	3	Y	GCIA
Glassfab Canada Aldergrove, British Columbia	012201	BC3/MC1	FSF	IB	HM	3	N	GCIA
Glassfab Canada Aldergrove, British Columbia	022218G	MC4/PK	PHSS	LF	PIB+PS2	3	N	GCIA
Golden Windows Ltd Kitchner, Ontario	011704G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Golden Windows Ltd Kitchner, Ontario	021036G	BC3/MC1/ZS	UT	DM	RHM	2	Y	GCIA

February 14, 2025

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Gulf Glass Industries, LLC Sharjah, United Arab Emirates, United Arab Emirates	011801G	BC3/MC1	AA	LF	PIB+S2	2	N	GCIA
Hartung Glass Canada Ltd. Burnaby, British Columbia	010911G	MC4/PK	PHSS	LF	PIB+S2	2	Y	GCIA
Hartung Glass Canada Ltd. Burnaby, British Columbia	019317G	BC4/ALLC	AA	LF	PIB+S2	2	Y	GCIA
Hartung Glass Canada Ltd. Burnaby, British Columbia	021220G	BC4/ALLC	AA	LF	PIB+RHM	2	Y	GCIA
High Performance Glazing Inc. Concord, Ontario	020617G	MC4/PK	MA	LF	PIB+S2	2	N	AIR
High Performance Glazing Inc. Concord, Ontario	020710G	BC3/MC1/PK	MA	LF	PIB+PS2	2	N	GCIA
High Performance Glazing Inc. Concord, Ontario	021518G	BC3/MC1/MT	FSF	IB	PS2	3	N	GCIA

February 14, 2025

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High Performance Glazing Inc. Concord, Ontario	021519G	BC3/MC1	FSF	IB	PIB+S2	2	N	GCIA
Hoover Glass Inc. Wallenstein, Ontario	021319G	BC4	BPS	IB	BPS	2	N	GCIA
Huron Window Corporation Morden, Manitoba	020007G	BC3/MC1	FSF	IB	HM	3	Y	GCIA
Industries Vanier Inc. Anjou, Quebec	021913G	BC4/SSLC	SS	LF	PIB+S2	2	N	GCIA
Industries Vanier Inc. Anjou, Quebec	021914G	BC4/ALLC	AA	LF	PIB+S2	2	N	GCIA
Insul-lite Manufacturing (2008) Ltd. Calgary, Alberta	011507G	BC3/MC1	FSF	IB	HM	3	Y	GCIA
Insul-lite Manufacturing (2008) Ltd. Calgary, Alberta	022113G	BC4/SSLC	DPHS	DM	PIB+S1	3	Y	GCIA

February 14, 2025

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Integral Seal Mfg. Inc. Concord, Ontario	010206G	BC3/MC1/PK	AA	LF	PIB+PS2	2	Y	GCIA
Integral Seal Mfg. Inc. Concord, Ontario	019611G	MC4/PK	PHSS	LF	PIB+PS2	2	N	GCIA
Kento Windows & Doors St. John's, Newfoundland and Labrador	011601G	BC4	BPS	IB	BPS	2	Y	GCIA
Kohltech International North Bay, Ontario	020840G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Kohltech International Ltd. Debert, Nova Scotia	011024G	BC3/MC1/ZS	US	DM	RHM	2	Y	GCIA
Kohltech International Ltd. Debert, Nova Scotia	019506G	BC3/MC1	FSF	IB	HM	3	Y	GCIA
Kohltech International Ltd. (AB) Edmonton, Alberta	011210G	BC3/MC1	FSF	IB	HM	3	Y	GCIA

February 14, 2025

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KP Building Products Limited Alexandria, Ontario	011512G	BC3/MC1/ZS	US	DM	RHM	3	Y	GCIA
KRYSTALLA VASILIOU SA (VASGLASS) Vasiliko Chalkida, Greece, Greece	012203G	MC4/PK	PHSS	LF	PIB+S2	3	N	GCIA
KRYSTALLA VASILIOU SA (VASGLASS) Vasiliko Chalkida, Greece, Greece	012205G	MC4/PK	PHNF	LF	PIB+PS2	3	N	GCIA
KRYSTALLA VASILIOU SA (VASGLASS) Vasiliko Chalkida, Greece, Greece	012206G	MC4/PK	PHSS	LF	PIB+PS2	3	N	GCIA
KRYSTALLA VASILIOU SA (VASGLASS) Vasiliko Chalkida, Greece, Greece	012207G	BC4/GSLC	MA	LF	PIB+PS2	3	N	GCIA
KRYSTALLA VASILIOU SA (VASGLASS) Vasiliko Chalkida, Greece, Greece	012208G	BC4/GSLC	MA	LF	PIB+S2	3	N	GCIA
KRYSTALLA VASILIOU SA (VASGLASS) Vasiliko Chalkida, Greece, Greece	022204G	MC4/PK	PHNF	LF	PIB+S2	3	N	GCIA

February 14, 2025

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KV Custom Windows & Doors Ltd. Vaughan, Ontario	011604G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Laserseal Insulating Glass Ltd. Concord, Ontario	010812G	MC4/PK	PHSS	LF	PIB+PS2	2	Y	GCIA
Laserseal Insulating Glass Ltd. Concord, Ontario	012217G	LC	FSF	IB	HM	3	Y	GCIA
Laserseal Insulating Glass Ltd. Concord, Ontario	021327G	MC4/PK	MA	LF	PIB+PS2	2	Y	GCIA
Laserseal Insulating Glass Ltd. Concord, Ontario	021613G	MC4/PK	SS	LF	PIB+PS2	2	N	GCIA
Lifestyle Sunrooms Inc. Peterborough, Ontario	010803G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Marlboro Windows & Doors Ottawa, Ontario	021148G	BC3/MC1/PK	PHSS	LF	PIB+PS2	2	Y	GCIA

February 14, 2025

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Modern Aluminum & Vinyl Powell River, British Columbia	010707G	BC3/MC1	FSF	IB	HM	2	Y	GCIA
Multiver Ltee Saint-Leonard, Quebec	022010	MC4/PK	PHSS	LF	PIB+S2	3	Y	AIR
Multiver Ltée. Vanier, Quebec	011703G	MC4/PK	PHSS	LF	PIB+S2	3	Y	GCIA
Multiver Ltée. (Div. Isover) Québec, Quebec	010301G	MC4/PK	PHSS	LF	PIB+RHM	3	Y	GCIA
Multiver Ltée. (Div. Isover) Québec, Quebec	011001G	BC3/MC1	FSF	IB	RHM	2	Y	GCIA
Multiver Ltée. (Div. Isover) Québec, Quebec	020507G	MC4/PK	US	DM	RHM	2	Y	GCIA
Newglass Technical Solutions, Inc Scarborough, Ontario	022221G	MC4/PK	AM	LF	PIB+PS2	2	N	GCIA

February 14, 2025

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Newmar Window Mfg. Inc. Mississauga, Ontario	011110G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Nordik Windows Inc. Vars, Ontario	021140	BC3/MC1/MT	FSF	IB	HM	3	Y	AIR
North Star Manufacturing Ltd. St. Thomas, Ontario	010705G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Northern Windows (RAB Energy Group Inc.) Whitehorse, Yukon	019901G	BC3/MC1/MT	FSF	IB	HM	4	Y	GCIA
Northern Window Mfg. Thunder Bay, Ontario	011026G	BC4	BPS	IB	BPS+PS2	3	Y	GCIA
Novatech Group Inc. Ste-Julie, Quebec	011025G	BC3/MC1/ZS	US	DM	RHM	2	Y	GCIA
Novatech Group Inc. Ste-Julie, Quebec	020213G	BC3/MC1/ZS	UT	DM	RHM	2	Y	GCIA

February 14, 2025

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ODL, Changshu ZhongXin Building Materials Co., Ltd. Changshu, Jiangsu, China	011706G	MC4/PK	AA	LF	PIB+PS2	2	Y	GCIA
ODL, Changshu ZhongXin Building Materials Co., Ltd. Changshu, Jiangsu, China	02318G	BC3/MC1	BCS	IB	BCS	2	Y	GCIA
ODL, Inc. Zeeland, MI, USA	011102	BC3/MC1/ZS	UT	DM	RHM+HM	2	Y	AIR
ODL, Inc. - VDO H. Matamoros, Tamps, Mexico	012008	BC3/MC1/ZS	UT	DM	RHM	3	Y	AIR
PlyGem Canada Calgary, AB	012502G	BC3/MC1/MT	FSF	IB	HM	3	N	GCIA
Pollard Windows Ltd. Burlington, Ontario	011115G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Qinhuangdao Rongsheng Glass Processing Co., Ltd. Qinhuangdao, Hebei, China	022107G	BC2/MC2	BCS	IB	PIB	2	Y	GCIA

February 14, 2025

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Qinhuangdao Rongsheng Glass Processing Co., Ltd. Qinhuangdao, Hebei, China	022108G	MC4/PK	AA	LF	PIB+PS2	2	Y	GCIA
Quintif Glass Mississauga, Ontario	012409G	BC4/LC	PHSS	LF	PIB+PS2	3	N	GCIA
Retro Teck Window Burnaby, British Columbia	021149G	BC3/MC1/MT	FSF	IB	HM	2	Y	GCIA
Robover Inc. Quebec City, Quebec	021051G	BC3/MC1/ZS	US	DM	RHM	3	Y	GCIA
Robover Inc. Quebec City, Quebec	021326G	BC4/PLC	PHNF	LF	PIB+RHM	3	Y	GCIA
Saand London Inc. London, Ontario	011133G	MC4/PK	PHSS	LF	PIB+S2	2	Y	GCIA
Saand London Inc. London, Ontario	021139G	BC3/MC1/PK	MA	LF	PIB+S2	2	Y	GCIA

February 14, 2025

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Saand Ottawa Inc. Stittsville, Ontario	011705G	BC3/MC1/PK	PHSS	LF	PIB+S2	3	N	GCIA
Saand Ottawa Inc. Stittsville, Ontario	022014G	BC3/MC1/PK	MA	LF	PIB+S2	3	N	GCIA
Sabcon s.r.l. Braila, Braila, Romania	012309G	BC4/GSLC	PHSS	IB	PIB+PU2	3	N	GCIA
Seaview Glass Nanaimo, British Columbia	021614G	BC3/MC1/MT	FSF	IB	HM	2	Y	GCIA
SGP (Security Glass Products) Winnipeg, Manitoba	021222G	BC3/MC1/MT	FSF	IB	RHM	3	Y	GCIA
Silliker Glass dba. City Thermo Pane Beresford, New Brunswick	011010G	MC4/PK	AA	LF	PIB+RHM	3	Y	GCIA
Silliker Glass dba. City Thermo Pane Beresford, New Brunswick	011011G	MC4/PK	PHSS	LF	PIB+RHM	3	Y	GCIA

February 14, 2025

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Silliker Glass dba. City Thermo Pane Beresford, New Brunswick	011516G	MC4/PK	PHSS	LF	PIB+S2	2	N	GCIA
Silliker Glass dba. City Thermo Pane Beresford, New Brunswick	011517G	MC4/PK	AA	LF	PIB+S2	2	N	GCIA
Silliker Glass dba. City Thermo Pane Beresford, New Brunswick	020931G	BC3/MC1/MT	FSF	IB	RHM	3	Y	GCIA
Standard Doors Inc. Laval, Quebec	011205G	BC3/MC1/MT	FSF	IB	HM	2	Y	GCIA
T.C. Insulating Glass Inc. Woodbridge, Ontario	011003G	MC4/PK	MA	LF	PIB+PS2	3	Y	GCIA
T.C. Insulating Glass Inc. Woodbridge, Ontario	019615G	MC4/PK	PHSS	LF	PIB+PS2	3	Y	GCIA
Thermos Rive Nord Terrebonne, Quebec	011417G	MC4/PK	PHSS	LF	PIB+RHM	3	Y	GCIA

February 14, 2025

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Thermos Rive Nord Terrebonne, Quebec	022015G	MC4/PK	PHF	LF	PIB+RHM	3	Y	GCIA
ThermosTek Glass Ltee Shippagan, New Brunswick	011203G	BC3/MC1/MT	FSF	IB	RHM	3	Y	GCIA
ThermosTek Glass Ltee Shippagan, New Brunswick	022222G	MC4/PK	PHSS	IB	PIB+RHM	3	Y	GCIA
Tvitec System Glass Cubillo del Sil, Spain, Spain	022106G	MC4/PK	MA	LF	PIB+S2	2	N	GCIA
Tyee Manufacturing Inc. Abbotsford, British Columbia	021316G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Ultimate Creative Designs Vaughan, Ontario	012002G	MC4/PK	PHSS	MS	PIB+PS2	2	N	GCIA
Ultraseal Glass Etobicoke, Ontario	022012G	MC4/GSLC	PHSS	LF	PIB+PS2	3	N	GCIA

February 14, 2025

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Van Isle Windows Ltd. Victoria, British Columbia	021907G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA
Verre Select Inc. Terrebonne, Quebec	012209G	MC4/PK	AA	LF	PIB+PU2	3	Y	GCIA
Vinyl-Pro Window Systems, Inc. Concord, Ontario	012404G	BC3/MC1	FSF	IB	HM	3	Y	AIR
Vista Glass Corporation Vaughan, Ontario	022110G	MC4/PK	PHSS	LF	PIB+PS2	2	N	GCIA
Vista Glass Corporation Vaughan, Ontario	022224G	BC4	RTP	IB	RTP+PS2	2	N	GCIA
Vitalite Industries Inc. Kelowna, British Columbia	010820G	BC3/MC1/MT	FSF	IB	PU2	3	Y	GCIA
Vitalite Industries Inc. Kelowna, British Columbia	012104G	MC4/PK	PHSS	LF	PIB+PU2	3	Y	GCIA

February 14, 2025

*GCIA – Gas Content Initial and After Weathering – Initial 90% and After Cycling 80% Gas Content Requirements for test specimens

90

AIR – Not certified for gas content

**Triple glazed units qualify double glazed units with the same construction

<u>Company Name & Location</u>	<u>IGMAC #</u>	<u>Connector</u>	<u>Spacer</u>	<u>Desiccant</u>	<u>Sealant</u>	<u># of Lites**</u>	<u>Certified for Internal Components</u>	<u>Gas Content Program & Type *</u>
Vitalite Industries Inc. Kelowna, British Columbia	020003G	MC4/PK	AA	LF	PIB+PU2	3	Y	GCIA
Vitre-Art C.A.B. (1988) Inc. Montreal Nord, Quebec	022011G	MC4	PHSS	LF	PU2	3	Y	GCIA
Vitre-Art C.A.B. (1988) Inc. Montreal Nord, Quebec	022414G	MC4/PK	PHSS	LF	PIB+S2	3	N	GCIA
Vitre-Art C.A.B. (1988) Inc. Montreal Nord, Quebec	022415G	MC4/PK	PHSS	LF	PIB+PS2	3	Y	GCIA
Vitre-Art C.A.B. (1988) Inc. Montreal Nord, Quebec	022416G	MC4/PK	PHSS	LF	PS2	3	N	GCIA
Vitro Flat Glass Canada Inc. Barrie, Ontario	012202G	BC3/MC1/ZS	US	DM	RHM	3	Y	GCIA
Vitro Flat Glass Canada Inc. Bedford, Nova Scotia	011017G	BC3/MC1/MT	FSF	IB	HM	3	Y	GCIA

February 14, 2025

*GCIA – Gas Content Initial and After Weathering – Initial 90% and After Cycling 80% Gas Content Requirements for test specimens

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**Triple glazed units qualify double glazed units with the same construction

<u>Company Name & Location</u>	<u>IGMAC #</u>	<u>Connector</u>	<u>Spacer</u>	<u>Desiccant</u>	<u>Sealant</u>	<u># of Lites**</u>	<u>Certified for Internal Components</u>	<u>Gas Content Program & Type *</u>
Vitro Flat Glass Canada Inc. Bedford, Nova Scotia	020616G	MC4/PK	PHSS	LF	PIB+S2	2	N	GCIA
Vitro Flat Glass Canada Inc. Bedford, Nova Scotia	020705G	MC4/PK	MA	LF	PIB+HM	3	Y	GCIA
Vitro Flat Glass Canada Inc. Bedford, Nova Scotia	021047G	BC3/MC1/ZS	US	DM	RHM	3	Y	GCIA
Vitro Flat Glass Canada Inc. Calgary, Alberta	011120G	BC3/MC1/ZS	US	DM	RHM	3	Y	GCIA
Vitro Flat Glass Canada Inc. Calgary, Alberta	019039G	MC4/PK	AA	LF	PIB+RHM	2	N	GCIA
Vitro Flat Glass Canada Inc. Calgary, Alberta	029916G	BC3/MC1/MT	FSF	IB	RHM	3	Y	GCIA
Vitro Flat Glass Canada Inc. Winnipeg, Manitoba	010610G	BC3/MC1/ZS	US	DM	RHM	3	Y	GCIA

February 14, 2025

*GCIA – Gas Content Initial and After Weathering – Initial 90% and After Cycling 80% Gas Content Requirements for test specimens

AIR – Not certified for gas content

**Triple glazed units qualify double glazed units with the same construction

<u>Company Name & Location</u>	<u>IGMAC #</u>	<u>Connector</u>	<u>Spacer</u>	<u>Desiccant</u>	<u>Sealant</u>	<u># of Lites**</u>	<u>Certified for Internal Components</u>	<u>Gas Content Program & Type *</u>
Vitro Flat Glass Canada Inc. Winnipeg, Manitoba	029319G	BC3/MC1	FSF	IB	HM	3	Y	GCIA
Vitrum Industries Ltd. Langley, British Columbia	012210G	BC4/SSLC	PHSS	LF	PIB+PS2	3	Y	GCIA
Vitrum Industries Ltd. Langley, British Columbia	021427G	BC4/SSLC	PHSS	LF	PIB+S2	3	Y	GCIA
Vitrum Industries Ltd. Langley, British Columbia	021915G	BC4/ALLC	AA	LF	PIB+PS2	3	Y	GCIA
Vitrum Industries Ltd. Langley, British Columbia	021916G	BC4/ALLC	AA	LF	PIB+S2	3	Y	GCIA
West Seal Ltd.(AWG Northern Dist.) Prince George, British Columbia	020009	MC4/PK	AA	LF	RHM	2	N	AIR
West Seal Ltd.(AWG Northern Dist.) Prince George, British Columbia	020402G	BC3/MC1/MT	FSF	IB	RHM/RHM	3	Y	GCIA

February 14, 2025

*GCIA – Gas Content Initial and After Weathering – Initial 90% and After Cycling 80% Gas Content Requirements for test specimens

93

AIR – Not certified for gas content

**Triple glazed units qualify double glazed units with the same construction

<u>Company Name & Location</u>	<u>IGMAC #</u>	<u>Connector</u>	<u>Spacer</u>	<u>Desiccant</u>	<u>Sealant</u>	<u># of Lites**</u>	<u>Certified for Internal Components</u>	<u>Gas Content Program & Type *</u>
White Aluminum Enterprises LLC Abu Dhabi, United Arab Emirates, United Arab Emirates	012005G	MC4/PK	PHSS	LF	PIB+S2	3	Y	GCIA
White Aluminum Enterprises LLC Abu Dhabi, United Arab Emirates, United Arab Emirates	012307G	MC4/PK	PHSS	LF	PIB+S2	2	N	GCIA
Window City Industries Vaughan, Ontario	02316G	LC1	RTP	IB	RTP+PS2	3	N	GCIA
Window Seal Glass Woodbridge, Ontario	021428G	BC3/MC1	FSF	IB	HM	2	Y	GCIA

February 14, 2025

*GCIA – Gas Content Initial and After Weathering – Initial 90% and After Cycling 80% Gas Content Requirements for test specimens

94

AIR – Not certified for gas content

**Triple glazed units qualify double glazed units with the same construction

"IGCC®/IGMA® PROTOTYPES IN PROGRESS"

The following candidate Licensees have a prototype test in progress for possible inclusion in the Program.

MANUFACTURERS

A Apollo Windows & Doors	Calgary, Alberta
Advanced Impact Technologies	Largo, FL
Agsitech Advanced Materials Corporation Limited	Zhaoqing, Guangdong Province
Al Qasr Glass Industrial Company	Ad Difa, Riyadh
Alpen High Performance Products	Louisville, CO
Anhui Xinyu FiberGlass Door Co., Ltd	Xuancheng, Anhui
Apollo, Changshu Sedyglass Specialities Co., Ltd.	Changshu, Jiangsu
BOJAR SP z.o.o.	Poland
Brick Glass	Houston, TX
California Safety Glass S.A. de C.V.	Tijuana, Baja California
Cardinal IG	Greenfield, IA
Changshu Weier Glass Products Co. Ltd.	Changshu, Jiangsu
Ching Chyau Co., Ltd.	Kaohsiung, Taiwan
ClearSecure	Centreport, MB
Covipor-Companhia Vidreira Do Porto	SANTO TIRSO, Portugal
Crystal Glass International SDN BHD	Shah Alam, Selangor
EFCO Corporation	Monett, MO
FG Glass Industries Pvt Ltd.	Mumbai, Maharastra
Foshan Weisidun Glass Co., LTD	Foshan, Guangdong Province
Foshan Xinxingye Glass Co., Ltd.	Foshan, Guangdong Province
Fujian Mingwu Glass Company	Fuzhou, Fujian
Fuso Glass India PVT. LTD.	Sriperumbudur, Tamil Nadu
Glass Enterprises Inc.	Norwich, CT
Glass Fabricators, Inc	Grimes, IA
Glass Insulators Inc.	Bloomer, WI
Grup Cam San. ve Tic. Ltd. Sti.	Sincan, Ankara
Guangdong Hengbo Engineering Glass Co., Ltd	Zhongshan City, Guangdong
Guangdong Longde Glass Products Co., Ltd.	Foshan City, Guangdong Province
	Foshan, Guangdong Province
Guangdong South Star Glass Limited	Zhaoqing City, Guangdong Province
Guangdong Zhongrong Glass Technology Co., Ltd.	
	Sharjah, United Arab Emirates
Gulf Glass Industries, Co. LTD	Harbin, Heilongjiang
Harbin Sayyas Windows Stock Co., Ltd	North Dartmouth, MA
Harvey Building Products	Quanzou, Fujian
Huahui Glass (China) Co., Ltd.	Jiujiang, Jiangxi
Jiangxi Shouhua Building Materials Co., Ltd	Gunsan, North Jeolla, South Korea
Korea OTK High-Tech Co., Ltd.	Vasiliko Chalkida, Greece
KRYSTALLA VASILIOU SA (VASGLASS)	Austin, Georgetown, TX
M3 Glass Technologies	

ML System SA	Podkarpacie, Poland
North Pointe Inc.	Gaylord, MI
ODL, Inc.	Heroica Matamoros, Tamaulipas
Oldcastle BuildingEnvelope®	Calgary, Alberta
Panorama Glass Factory	Doha, Qatar
Pella Corporation	Murray, KY
Pilkington IGP Sp. z.o.o. Branch Skierniewice, Poland	Skierniewice, Poland
Press Glass, Inc.	Ridgeway, VA
Qinhuangdao High Tech Energy Saving Dorwin Co., Ltd.	Qinhuangdao, Hebei
Qinhuangdao Hongning Door & Window Co., LTD	Qinhuangdao, Hebei
Qinhuangdao Xiangchen Energy Conservation Technology Co., Ltd.	Qinhuangdao, Hebei
Roland Stone (Guangdong) Energy Saving Glas Co. Ltd.	Foshan, Guangdong Province
SAINT-GOBAIN POLSKA SP. Z.O.O. Oddzial Glassolutions w Jaroszowcu	Barczewo, Poland
SC. Optimedia. SRL	Oradea, Bihor
Seretti SRL	Torviscosa, Italy
Shandong Xingguan Glass Technology Co., Ltd.	Weifang City, Shandong Province
Shanxi Jingfeng Industry & Trade Co., Ltd.	Xi'an City, Shanxi Province
Sichuan CSG Energy Conservation Glass Co., Ltd.	Chengdu, Sichuan
Sky Land Glass Corp.	Richmond Hill, NY
Suntech Glass Industries L.L.C.	Dubai, United Arab Emirates
Suzhou Taifeng Glass Decoration Co. Ltd	Taicang, Jiangsu
Tacoma Glass Mfg. Inc.	Burlington, WA
Tacoma Glass Mfg. Inc.	Clackamas, OR
Taicang Zhuogao Glass Product Co., Ltd.	Taicang, Jiangsu
Tang Hong Yi	Liu Zhou, Guangxi
Tecnoglass S.A.S.	Barrio Las Flores, Barranquilla
Thompson I.G. , LLC.	Fenton, MI
Tristar Glass, Inc.	Grand Prairie, TX
Trulite Glass and Aluminum Solutions	Columbus, OH
TVITEC System Glass, S.L.	Cubillo del Sil, Spain
Versatile Glass Solution LLP	Nandasan, Gujarat
VETRERIA CAPPELLETTI E ROLERI S.R.L.	Settima di Gossolengo (PC), Italy
Vidraria Mortagua, vidros & espelhos, S.A.	Mortagua, Portugal
Vista Glass Corporation	Vaughan, Ontario
Vistamatic, LLC	Coral Springs, FL
Vitre-Art C.A.B .(1988) Inc.	Montreal Nord, Quebec
W. A. Wilson Inc.	Wheeling, WV
Weifang Guanghua Glass Technology Co., Ltd.	Weifang City, Shandong
Wholesale Glass Distributors, Inc.	Memphis, TN
Wolverine Glass Products, Inc.	Wyoming, MI
Xinye Ankang Technology Co., Ltd	Huangshan City, Anhui
YKK AP America	Macon, GA
Zanatta Vetro S.R.L.	Montebelluna, Treviso

NOTICE: In accordance with the terms of the Procedural Guide, the IGCC® Standard License Agreement, a manufacturer with a prototype product test in progress is not authorized to use the permanent Certification label for that product or to certify that its product is in compliance with Program Standards and Procedures until a passing prototype test report for that product is presented by the manufacturer to the Certification office and the manufacturer is otherwise in compliance with IGCC®/IGMA® Program Procedures.



February 2025

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PROCEDURAL GUIDE

(IGCC® Document ID-07)

**INSULATING GLASS CERTIFICATION COUNCIL AND FENESTRATION AND GLAZING INDUSTRY ALLIANCE
IGCC®/IGMA® AND THE IGMAC®
CERTIFICATION PROGRAMS FOR SEALED INSULATING GLASS**

This procedural guide is maintained by IGCC in coordination with FGIA as an overview of administrative procedures and routine operations of the certification programs.¹

1.0 FOREWORD

1.1 Certification Concept (Modified 1/2025)

Acceptance of certified sealed insulating glass comes with the conviction that such certification assures a high level of quality and the integrity of the identifying mark or certification label is being reliably maintained by a competent certifying agency.

The existing ASTM and Canadian General Standards Board (CGSB) specification(s) for sealed insulating glass provides a sound technical basis for the required quality of sealed insulating glass. With the addition of independent administration plus periodic routine in-plant visits and product evaluation, a program of product certification is developed in accordance with accepted standards. The certification programs described here are predicated upon the concept of independent and impartial administration of the certification procedures in the IGCC® and the IGMAC® license agreements.

To ensure administration of the certification program in a uniform and equitable manner, this procedural guide has been prepared for the information and guidance of the licensees.

It should be noted that there are several agreements already established that are the governing documents for the operation of each of the certification programs. This procedural guide, which is not an extension of that document, serves merely to describe the administrative procedures and routine operation of the certification programs.

The standards utilized for authorizing certification are set as ASTM E2190-19 for the IGCC®/IGMA® program and CAN/CGSB 12.8-2017 for the IGMAC program.

1.2 Relationship between IGCC, IGMA and FGIA (Added 1/2025)

This procedural guide is intended to address two separate programs; the IGCC®/IGMA® Certification program which provides testing to the ASTM E2190 standard, and the IGMAC® program which provides testing to the CAN/CGSB 12.8 standard. While these programs are separate, normalization and commonality have been maximized whenever and wherever possible with the intent of creating a single program in the future. Though ultimate responsibility rests with each organization's Board (IGCC and FGIA) the IGCC Certification committee will take the lead to establish requirements for both programs that FGIA could either adopt or decline.

¹ The IGCC Certification Committee and the IGMA/IGMAC Certification Committees have worked towards the development of a "Normalized" Procedural Guide: ***The Procedural Guide for Use in the IGCC®/IGMA® Certification Program and the IGMAC® Certification Program***. The final draft (attached) of this *Procedural Guide* has been reviewed and approved by both Certification Programs with an implementation date of **January 31, 2025**

2.0 GENERAL INFORMATION (Modified 1/2025)

The Certification Concept

To buyers, specifiers, code officials and users, the IGCC®/IGMA® and IGMAC® certification labels offer the manufacturer's assurance that their sealed insulating glass units have been produced in conformance to Program Requirements and the testing specification(s).

Who Can Participate?

All fabricators of sealed insulating glass are eligible, on a voluntary basis, to participate in the IGCC®/IGMA® and/or IGMAC® programs.

Who Conducts the Program?

The Insulating Glass Certification Council (IGCC®) and the Fenestration and Glazing Industry Alliance (FGIA, formerly IGMA®), are the sponsors of this certification program. Under separate Licenses with both FGIA and IGCC®, Administrative Management Systems, Inc. (AMS) administers and governs the certification program under which the Administrator periodically checks and reports compliance of the fabricators of products having the IGCC®/IGMA® or IGMAC® certification label.

Administration

Administrative Management Systems, Inc. (AMS) is the independent administrator of the certification program(s). AMS maintains the IGCC®/IGMA® and IGMAC® office of certification and handles the routine day-to-day business.

How Can You Become a Licensee?

The following steps must be accomplished before AMS can authorize a fabricator to use the IGCC®/IGMA® or IGMAC® permanent label:

- a) The fabricator must present a passing prototype report from an approved testing laboratory to the office of certification. Fabrication of prototype test samples shall be witnessed by a representative of AMS during a plant audit, at which time the manufacturers compliance with the Quality Assurance requirements is validated. (See *Section 10.0*)
- b) The manufacturer signs a copy of the respective License Agreement and sends it to the office of certification. The program sponsor and AMS will countersign this copy and email it to the licensee.
- c) The licensee sends the office of certification payment for the necessary fees (see respective Program Fee Schedules).
- d) After receipt by the office of certification of the above, the administrator validates that particular model and sends to the licensee the respective certification program certificate. The permanent label must be affixed on each certified sealed insulating glass unit.
- e) The certified model will then be listed in the next published Certified Products Directory and on the public websites.

IGCC®/IGMA®: igcc.org

IGMAC® and FGIA®: fgiaonline.org

3.0 HOW THE CERTIFICATION PROGRAM WORKS (Modified 1/2025)

American Society for Testing and Materials (ASTM) and Canadian General Standards Board (CGSB) have test methods and specifications for sealed insulating glass. Sealed insulating glass units must meet or exceed the applicable specification before it can be certified.

Recognized independent testing laboratories conduct all tests. The certification committee shall approve all laboratories whose test reports are utilized by this certification program.

As the sole judge of compliance with the applicable specifications, the administrator authorizes a product, which has been approved to be listed in the Certified Products Directory.

Licensees label sealed insulating glass units in accordance with the labeling requirements established by the Certification Committees.

Approved products are listed in the Certified Products Directory, which is published every six months. It is sent to door, sash and building manufacturers, glazing contractors, homebuilders, architects, regulatory agencies and code-making groups, etc. Directory listings contain the licensee's name, plant location and product description.

Term of Certification

The administrator verifies the production at the licensee's manufacturing location(s) during twice per year audits. Audits are performed by a representative of the administrator. At the discretion of the Administrator, one audit each year may be performed virtually (more frequent virtual audits may be deemed necessary in consideration of external factors, i.e., public health conditions). During each of these audits, in addition to established plant and product requirements, the fabricator's compliance with Quality Assurance requirements is validated (See *Section 10.0*). The prototype test report must be submitted within one year of the report date in order for the report to be considered as the test for the first year, two audits will take place at which time the auditor will compare current production with the product authorized to use the permanent label.

A. During the first audit in the second year, specimens will be fabricated for testing. The certification programs will require the fabricator to produce the required test specimens. The fabrication of these test specimens is witnessed and verified that they are produced in accordance with the construction certified. During test specimen fabrication, only the auditor and employees of the licensee being audited shall be present. The licensee is instructed to send these test specimens to an approved testing laboratory where they are tested.

- a. Licensees participating under the IGMAC® program must ship specimens, along with a copy of the completed facility audit form, to the laboratory within 90 days from the date of fabrication. Laboratories provide interim reports of testing to the licensees during testing.
- b. Licensees participating under the IGCC®/IGMA® program must ship specimens to the laboratory within 28 days from the date of fabrication. Monthly status reports of testing are provided to the licensee by the office of certification on or about the 15th of each month.

Auditing Cycle

Compliance of program requirements is assured through twice per year audits occurring in both the First (F) half of the calendar year and Last (L) half of the calendar year. Actual audit assignment dates are at the discretion of the administrator in coordination with participants.

- a. For IGCC®/IGMA® Certification Fees and Lab Pricing list please contact IGCC®/IGMA®: igcc.org
- b. For IGMAC® Certification Fees please contact FGIA®: fgiaonline.org. For IGMAC® Testing Fees please contact the approved testing laboratory.

Frequency of Testing

After initial certification (prototype) testing, and second year certified testing, certified product testing shall occur once every two (2) years.

- a. IGCC for the IGCC®/IGMA® program shall retain property of test specimens, reports, and related information upon fabrication (with the exception of prototypes)
- b. IGMAC® licensees shall retain property of test specimens, reports, and related information.

4.0 COMPLIANCE SAFEGUARDS

How is Compliance Assured?

Any certified product found in the course of routine audit and evaluation not to be in compliance with the model description or quality assurance requirements is subject to having authorization to use the IGCC®/IGMA® and/or IGMAC® permanent label removed. The licensee is sent a request for clarification giving 30 days in which to demonstrate to the satisfaction of the administrator that the product is in compliance with the model description

that is certified. If the licensee does not respond, a warning of possible removal of authorization to use the certification permanent label is sent giving an additional 30 days to respond. If the licensee does not respond, authorization to use the permanent label is **automatically terminated** at the end of that 30-day period.

In the case of a routine test failing to comply with the specifications, the licensee will be officially notified that within 15 days they must respond by stating that a retest fabrication is requested and by paying all administrative and test fees. If there is no response within the 15 days, authorization to use the IGCC®/IGMA® and/or IGMAC® permanent label is **automatically terminated**. If the retest option is accepted, the auditor will perform an audit and witness fabrication of the retest specimens within 60 days of the notification of failure date (See *Section 13.6* guideline G.16)

Challenging a Certified Product

Complaints of non-compliance of certification requirements from any corporation or business source will be investigated promptly upon receipt of the complaint in writing along with an appropriate surety deposit. A minimum surety deposit of \$1,500 will be required for each complaint of non-compliance. The surety deposit will be assessed at the rate of \$300 per man-day plus the reasonable cost of travel and other expenses entailed in resolving such incidents. Refunds of part or all of the surety deposit will be made when applicable. The surety deposit will cover all costs involved, unless the investigation proved non-compliance, in which case all costs will be borne by the licensee found to be in non-compliance.

Complaints by Consumers

Only complaints of non-compliance with certification requirements from consumers who are owners or lessees of the premises in which the product has been installed may submit a complaint. The administrator shall receive and log the complaint. It will be the consumer's responsibility to identify the label, information appearing on the spacer or glass and advise the administrator of the same. Note: If no certification label exists, the administrator and IGCC®/FGIA have no further responsibilities and the complaint will not be processed.

Once the consumer has identified the label, name, etc. they should advise the administrator. The administrator shall respond, advising the consumer of the name, address, primary contact, model description and other pertinent information at hand as it pertains to the subject licensee. Note: If the complaint is being made for reasons of product appearance or reasons other than failure to meet certification program requirements, the complaint will not be processed and the consumer shall be advised to contact the licensee fabricator directly. Some fabricators and their dealers or distributors offer warranties on their products. Normal claims, procedures and legal remedies are available to consumers on a state-by-state basis.

If the consumer wishes to determine whether or not a labeled product is in compliance with the model described through an investigation by AMS/IGCC®, the corporation or business challenge procedure shall be utilized. The surety deposit shall be modified to \$400 and charges per man-day and shall be assessed against the surety deposit in the amount of \$300 plus reasonable travel costs and other expenses.

Withdrawal of Certified Product (Modified 1/2025)

Any product which has been authorized to use the IGCC®/IGMA® or IGMAC® permanent label may be voluntarily withdrawn from the Certification Program by the licensee at any time. Licensees who desire to voluntarily withdraw from participation in the IGCC®/IGMA® or IGMAC® Certification Program or desire to de-certify specific product(s) must contact the office in writing to request same. Letters and/or emails should be addressed to:

IGCC®/IGMA®
Insulating Glass Certification Council
PO Box 730, 205 West Main Street
Sackets Harbor, NY 13685
Telephone: (315) 646-2234
E-mail: igcc@amscert.com

IGMAC®
Fenestration Glazing Industry Alliance
1900 E Golf Rd, Suite 1250
Schaumburg, IL 60173
Telephone: (847) 303-5859
Email: igmac@amscert.com and igmac@fgiaonline.org

5.0 COSTS - What Does the Program Cost?

5.1 IGCC®/IGMA®

The initial administration fee will be based on the date of authorization to use the IGCC®/IGMA® permanent label in a manner that participation in the Certification Program will be on a February 1 to January 31 basis thereafter. If the authorization date is between August 1 and December 1, 50% of the administration fee for the first year will be charged for participation and will include one audit prior to the following February 1 date. A licensee is invoiced for each item that is certified and listed separately in the Certified Products Directory. An additional invoice for testing laboratory fees will be issued upon fabrication of test units. For current fee schedule, contact the Administrative office or visit www.igcc.org.

Testing of these units will not begin until payment has been received. Should failure of these units occur during certification testing, any remaining balance will be refunded to the licensee upon request. (Modified 8/2009)

5.2 IGMAC® (Added 1/2025)

Fees will be set by the Fenestration and Glazing Industry Alliance (FGIA). A copy of the Schedule of Fees can be found at www.fgiaonline.org. All costs associated with the fabrication of test units, boxing and delivery to a test laboratory, testing, report, etc., shall be paid by the fabricator.

Testing of these units will not begin until payment has been received.

6.0 DOCUMENTS AND AGREEMENTS

Standard License Agreements

These agreements, incorporating independent program administration and routine, periodic, independent plant audits, sampling and evaluation, govern the relationship between the certification program sponsor, the accredited Certification Body (CB), the administrator (AMS), and the licensee.

Future amendments or revisions to the Standard License Agreements will be recommended by the respective Certification Committees and enacted by the respective Board of Governors/Directors.

IGCC® Certification and Administrative Service Agreement

This agreement entered into by IGCC® and Administrative Management Systems, Inc. (AMS) governs the relationship between IGCC® and AMS, the independent administrator. In general, it provides that the administrator:

- a) Routinely audits licensee fabrication facilities twice per year, witnesses fabrication of specimens for testing at one of the approved testing laboratories;
- b) Has the right to witness any and all testing;
- c) Reviews all test reports in order to determine compliance of the certified product with the specifications;

- d) Audits and recommends for approval, all test laboratory facilities for use in these certification programs Test laboratories are recognized and/or approved by the Certification Committee;
- e) Publishes and mails/emails the Certified Products Directory twice each year and handles all routine clerical duties with respect to certification matters;
- f) In all of its actions acts in the name of IGCC® and the respective certification program.

IGMAC® Certification and Services Agreement (Added 1/2025)

This agreement entered into by FGIA® and Administrative Management Systems, Inc. (AMS) governs the relationship between FGIA® and AMS, the independent administrator. In general, but not limited to, it provides that the administrator is responsible for:

- a. Routinely auditing licensee fabrication facilities twice per year, witnesses fabrication of specimens for testing at one of the approved testing laboratories;
- b. Exercising their right to witness any and all testing;
- c. Reviews all test reports in order to determine compliance of the certified product with the specifications;
- d. Publishing and distributing mails/emails and the Certified Products Directory twice each year and handles all routine clerical duties with respect to certification matters;

Procedural Guide

This guide outlines program procedures in accordance with the provisions of the applicable License Agreements and the Administrative Service Agreements, for the guidance of those concerned with the procedural details of the Certification Programs' operations. It covers the steps to be taken in any given procedural situation in the interest of equitable and uniform treatment of licensees and the preservation of the integrity of the certification program(s).

Certified Products Directory (Modified 1/2025)

Each program's directory is a publication that contains a listing of the certified sealed insulating glass units of each licensee.

Certification Label

The licensee permanently affixes this certification mark to each unit of certified sealed insulating glass. This certification mark may be referenced to the Licensee's listing in the Certified Products Directory. The listing then provides a product description including the company name, plant location, etc. (Modified 8/2009)

7.0 PROGRAM RESPONSIBILITY

IGCC is a legal entity and the sole owner of the IGCC®/IGMA® Certification Program. FGIA is a legal entity and the sole owner of the IGMAC® Certification Program. FGIA has licensed the IGMA mark to IGCC for use in the IGCC®/IGMA® Certification Program.

IGCC Board of Governors

The IGCC Board of Governors overall responsibility is for the well-being and acceptance of the Certification Program by the industry, building officials and the public. It also bears legal corporate responsibility.

FGIA Board of Directors

The FGIA Board of Directors may make recommendations to the IGCC Board (or it's committees) regarding the IGCC®/IGMA® or IGMAC® Certification Program and procedural guide, and may appeal any decision of IGCC regarding certification or the IGCC®/IGMA® and IGMAC® Certification Program.

IGCC Certification Committee

The IGCC Certification Committee has the responsibility for the general procedure and policy pertaining to operation of the Certification Programs. As a part thereof, it: (Modified 8/2009)

- a) establishes "guidelines",
- b) determines the applicability of the specifications in a specific situation where a question is raised by a licensee or the administrator,
- c) approves test laboratories,
- d) determines which of the specifications are to be designated effective for the purposes of product certification and the date or dates on which they become effective, and
- e) recommends to the IGCC® Board of Governors changes to be made in the IGCC® /IGMA® License Agreement.

IGMA/IGMAC Certification Committee (Added 1/2025)

The IGMA/IGMAC Certification Committee of FGIA:

- a) serves to review the activities or directives of the IGCC Certification Committee
- b) may adopt or decline actions pertaining to the IGMA, IGMAC or FGIA marks or brands, guidelines or interpretations
- c) recommends to the FGIA® Board of Directors changes to be made in the IGMAC® Standard License Agreement.

8.0 LABEL REQUIREMENTS (Modified 1/2025)

THE IGCC®/IGMA® AND/OR IGMAC® CERTIFICATION LABEL MUST BE PERMANENTLY MARKED ON A VISIBLE PORTION OF EACH SEALED INSULATING GLASS UNIT AFTER INSTALLATION OR IT IS NOT CERTIFIED BY THE MANUFACTURER TO THE PUBLIC. The label shall be etched, sand blasted, embossed, printed, painted or otherwise permanently marked on the spacer or at least one component pane of the sealed unit. (See Note #1 & #2 below).

8.1 IGCC®/IGMA®

- Label must be in block letters and have a minimum height of 0.05 inches (1.27 mm)
- Must contain IGCC®/IGMA® with registered trademarks
- Must contain the company identification (company name, trade name, company code, etc.)
- *Plant code (as applicable, only required when there is more than one plant with certified products under the same company name)
- Date code spanning no more than 12-month period, plus or minus three months

8.2 IGMAC®

- IGMAC® trademark
- Company name
- Location of production facility (city, town, etc)
- Year of manufacture

The permanent label must not be sold, transferred, or otherwise disposed of in any manner other than being affixed to the licensee's certified production. The permanent label must not be affixed to any product from which certification has been withdrawn or which is produced with a process basically different from the one used when certification was obtained.

Example of Minimum Label:

For IGCC/IGMA: **ABC Glass Co. (#*) IGCC®/IGMA® '24**

For IGMAC: **ABC Glass Co. City IGMAC® '24**

For Both: **ABC Glass Co. City (#*) IGCC®/IGMA® IGMAC® '24**

* The “#” is used to designate the plant code. A plant code will only be required when there is more than one plant with an IGCC®/IGMA® certified product operating under the same company name.

The respective permanent label is listed under each company's name in the "Certified Products" section of this directory.

Note#1:

When an NFRC certified window, door, skylight fabricator also fabricates IGCC®/IGMA® certified IG units and glazes these IG units into their own NFRC certified product, the IGCC®/IGMA® permanent label may appear on the window, door, skylight NFRC permanent label in lieu of the certification programs' permanent label appearing on the actual IG unit. IGCC®/IGMA® required label content and NFRC permanent label requirements shall apply. (Modified 8/2010)

For Example:

IGCC®/IGMA®

NFRC 123 - N - 456

ABC Windows – (Plant Code) IGCC®/IGMA® 2025

IGMAC®

NFRC 123 - N - 456

ABC Windows - Dallas IGMAC®2025

IGCC®/IGMA® & IGMAC® (Both)

NFRC 123 - N - 456

ABC Windows – Dallas (Plant Code) IGCC®/IGMA® IGMAC® 2025

Note#2:

When a certification listing bares a "PC" designation, this means the product has been certified by the Provisional Certification process (see also IGCC Certification Note CN IG1010 – Provisional Certification). Actual product does not need to be labelled with the PC designation, but all other label requirements shall apply.

9.0 ADVERTISING GUIDELINES (Modified 1/2025)

The following concepts are important to remember whether you are a participant, licensee in the IGCC®/IGMA® and/or IGMAC® Certification Program(s), or a supplier to the sealed insulating glass industry. This discussion is intended to provide you with an accurate background description of the certification programs, to help you avoid making possibly misleading, deceptive, or ambiguous statements regarding the programs in the advertising of your products. (Modified 8/2009)

- 1) IGCC®/IGMA® and IGMAC® are the sponsors of certification programs. IGCC®/IGMA® and IGMAC® do not certify products. Licensees certify that their products comply with the specific program requirements.
- 2) The administrator audits laboratories and checks their equipment, audits licensees' production and fabrication of specimens, and validates test reports and certification claims.
- 3) Laboratories test specimens to specific test methods and specifications referenced by the certification programs.

- 4) Licensees "certify" their products, affirming that their products are constructed similarly to specimens which were audited, tested, and found to pass the stated criteria. A Licensee's Certification Statement is the imprinting, sandblasting, etching or other form of permanent marking of an IGCC®/IGMA® or IGMAC® certification program designation to its product.
- 5) A licensee may specify that a specific certified product is certified under the IGCC and/or IGMAC Certification programs, respective of the certification program under which said product is certified (it may be both in some instances).
- 6) Unit specimens, not their components, are tested under the IGCC®/IGMA® or IGMAC® program. Thus, if you are a supplier to the industry, statements indicating that your components have complied with the test methods would be incorrect. A better nomenclature for example, would be, that "Units tested to ASTM E2190 (CAN/CGSB 12.8 for IGMAC®) contained our X component have been found to meet the requirements of the specification(s)."
- 7) Should you have any questions concerning either Certification Program, please contact:

IGCC®/IGMA®

Insulating Glass Certification Council
PO Box 730, 205 West Main Street
Sackets Harbor, NY 13685
Telephone: (315) 646-2234
E-mail: igcc@amscert.com

IGMAC®

Fenestration Glazing Industry Alliance
1900E Golf Rd, Suite 1250
Schaumburg, IL 60173
Telephone: (847) 303-5859
Email: igmac@amscert.com and igmac@fgiaonline.org

8) ****ANSI/ANAB Disclaimer**

Although both the IGCC®/IGMA® and IGMAC® Programs are ANSI/ANAB-accredited and use the ANSI/ANAB accreditation symbol on its publicity material the certified Licensee cannot use the ANSI/ANAB trademark nor the ANSI/ANAB accreditation symbol, on any of its products, packaging, stationary, letterheads, or any other form of media.

10.0 QUALITY ASSURANCE (QA) PROGRAM

IGCC®/IGMA® and IGMAC® require licensees to have a working quality assurance program for the fabrication of insulating glass. IGCC ® has established use of the IGMA TM-4000-02(07) "Insulating Glass Manufacturing Quality Procedures Manual", though the direct use of the TM-4000-02(07) is at the participants discretion, and not a requirement. The IGMA TM-4000-02(07) "Insulating Glass Manufacturing Quality Procedures Manual," an FGIA technical manual which establishes general requirements for quality systems and provides practical solutions for implementing such a system. IGCC®/IGMA® and IGMAC® do not define the specifics of the quality assurance system which should be appropriate for the type, range and volume of work performed.

Adherence is verified during twice per year audits. These requirements were adopted to improve the overall quality of IG units in the program, and also to satisfy requirements established by the Department of Housing and Urban Development, HUD, the National Fenestration Rating Council (NFRC) and other regulatory and consumer driven organizations.

A licensee's QA program shall contain the following: (Modified 02/03/2015)

- 1) A quality systems manual
- 2) A designated person responsible for quality assurance

- 3) Process Control
- 4) Inspection and Testing (Spacer, Desiccant, Sealant, Gas Fill, Finished Product, Glass)
- 5) Calibration
- 6) Non-Conforming Products and Corrective Action
- 7) Storage and Handling
- 8) Field Service
- 9) Internal Quality Audits
- 10) Training
- 11) Statistical Techniques

11.0 GAS CONTENT INITIAL AND AFTER WEATHERING CERTIFICATION AND TESTING (GCIA)

A licensee must certify to seal durability requirements to participate in the gas content program. The Gas Content program is voluntary if gas content units will NOT use IGCC®/IGMA® and/or IGMAC® marks, but is mandatory if IGCC®/IGMA® and/or IGMAC® marks will be used for gas content units. The program is intended to demonstrate a licensee's ability to initially fill to a minimum level and the ability of the construction of the IG unit to retain a minimum gas content level after exposure to the weathering cycle of the test method.

Licensees meeting a tested initial gas content of 90% or greater and a final after weathering gas content of 80% or greater shall be identified in the Certified Products Directory (CPD) with the designation "GCIA" for "Gas Content, Initial and After Weathering". Both initial and after weathering gas content must be compliant in order to be listed as "GCIA". The gas content certification process will be as follows: (Modified 8/2010)

To be listed as complying with gas content certification, initial and after weathering (GCIA) the average gas content level must be 90% or greater initially and 80% or greater after weathering, and each of the tested units shall have a gas concentration of 50% or greater. These levels were selected as levels that can reasonably be reached by insulating glass fabricators on a consistent basis. It takes into consideration a) variations that may occur in the filling process, and b) variations that may occur in the testing process. If a licensee's gas content is consistently greater than these gas content values, the licensee can include this information in the licensee's literature.

It is recognized that actual production units may not necessarily be 90% or greater initial gas content but shall meet the manufacturer's stated initial content values.

Special arrangements need to be made if regulatory compliance is required for gas content other than argon

11.1 IGCC®/IGMA®

- a. The normal minimum of thirteen (13) 14x20 in (~350x500 mm) test units for seal durability, fifteen (15) for multiple air space units, shall be fabricated under auditor witness during normal durability certification fabrication audits. Additionally, 3 units (5 multi air space) will be required for applicable testing under the G.8 guideline (Internal Components). All test units shall be gas filled with argon. All multiple air space units shall have both cavities filled and tested. Per guideline G.19 as applicable, coated glass shall be used and multiple air space units shall have coated glass as the center lite for at least ten (10) test units intended for testing in accordance with ASTM E2188 and have coated glass on one outer lite for at least two (2) (4 multi airspace) test units intended for testing in accordance with ASTM E2189. The test lab shall randomly select ten (10) units for initial gas content testing. Units shall be inspected for any damage, and any damaged units not used. Testing for gas content in between testing cycles, and after weathering shall be performed on the six (6) ASTM E2190 weathering test units. The calculation of results shall be an average.
- b. Units shall be tested for gas content percent by non-destructive spark emission spectrography (SES) in accordance with ASTM E2649 Determining Argon Concentration in Sealed Insulating Glass Units Using

Spark Emission Spectroscopy. Up to two (2) test units (14x20 in [~350x500 mm]) may be used to replace any unit broken in shipping or handling.

- c. Laboratories shall report results of testing as “percent initial gas content”, “percent of weathering phase”, and “percent after weathering gas content” to the nearest whole percent.

11.2 IGMAC® (Added 1/2025)

- a. The normal twenty (20) 350x500 mm (~14x20 in) test units for seal durability shall be fabricated under auditor witness during normal durability certification fabrication audits, to test in accordance with the Can/CGSB 12.8. Additionally, three (3) dual pane, five (5) multiple cavity units will be required for applicable testing under the G.8 (Internal Components) guideline. All test units shall be gas filled with argon. All multiple air space units shall have both cavities filled and tested. Per guideline G.19 as applicable, coated glass shall be used and multiple air space units shall have coated glass as the center lite for the units intended to undergo the weathering cycles. Units intended to undergo the volatile fogging shall have the coated glass on one outer lite for two (2) test units.
- b. The test lab shall randomly select ten (10) units for initial gas content testing. Units shall be inspected for any damage, and any damaged units not used. Testing for gas content after weathering shall be performed on the same ten (10) test units.
- c. Laboratories shall report results of testing as “percent initial gas content” and “percent after weathering gas content” to the nearest tenth of a percent.

12.0 COMPONENT VALIDATION

Sealant Fingerprinting - To help understand variability in an IG total unit performance, an optional tool, sealant “Fingerprinting” can provide fabricators with an avenue to better understand test results and material variability. The output of a sealant fingerprint is a graphical representation of the generic make-up of a material that then can be compared to other fingerprints of the fabricator to better understand the material. Fabricators can create their own “vault” for their company’s “pre” and/or “post” weathering testing. The information (Fingerprint) shall be the property of the company requesting the test. Contact IGCC at igcc@amscert.com for more information or visit the IGCC®/IGMA® website (www.igcc.org). (Adopted 7/12/2018)

13.0 CERTIFICATION GUIDELINES AND INTERPRETATIONS

For guidance in labeling and certifying sealed insulating glass units the Certification Committee has adopted the below guidelines.

Any changes within the certified products must be communicated to the administrative office in writing.

Additionally, certain topics that required added explanation and clarification have been presented in a series of Certification Notes as referenced. These Certification Notes are available on the website (www.igcc.org) or by contacting the administrative office at (315) 646-2234.

ID #	Title	Initial Publish Date	Approval Date
CN IG 1009	Certification of Internal Components (IC)	10/28/09	05/08/2019
CN IG 1109	Certification of Capillary Tube, Breather Tube Systems (Deleted 5/4/22)	10/28/09	10/28/09
CN IG 0310	Certification of Multiple Air Space Units	03/01/10	03/02/11
CN IG 1010	Provisional Certification	10/14/10	09/16/22
CN IG 0211	Certification and Testing of Vacuum Insulating Glass VIG	02/18/11	09/26/22
CN IG 0112	Desiccant Quantity Review of Changes (ACPF)	01/31/12	10/31/12

ALWAYS

13.1 The following situations permit the licensee to **always** certify the sealed insulating glass units with the same certification number.

13.1.1 GLASS

A.GL.1

Any change in glass thickness from that tested. (Modified 3/15/2006)

A.GL.2

Any change in glass tint or color from that tested (clear glass is required in test specimens).

A.GL.3

Any change in glass size from that tested (14x20-in or 350x500 mm is required for testing).

A.GL.4

Any change in glass type (i.e., tempered, heat strengthened, laminated or patterned glass) from that tested (annealed glass is normally used in all test specimens).

A.GL.5

Any change in glass shape from that tested (rectangular glass is required in test specimens). This guideline permits the same certification number for triangular, circle head, trapezoidal and other shapes.

A.GL.6

Any change in glass supplier from that tested.

A.GL.7 (Deleted 3/15/2006)

A.GL.8 (Deleted 3/15/2006)

A.GL.9 (Deleted 3/2/2011)

13.1.2 SPACER

A.SP.1

Any change in air space dimension from that tested

A.SP.2

Any change in spacer wall thickness from that tested.

A.SP.3

Any change in spacer seam design (i.e., butt seam or lock seam) from that tested.

A.SP.4

Any change in supplier of spacer from that tested, everything remaining the same.

A.SP.5

Corners or connections which are soldered, welded, brazed or bent, but uncut, may be used interchangeably with the same certification number. (Adopted 2/19/1985)

A.SP.6

Corners or connections may be changed from mechanical connections (MC) to bent-uncut corners (BC), using the same certification number utilizing joiners or corner keys of plastic, aluminum, stainless, or galvanized steel. (Modified 5/14/2008)

A.SP.7

Any change in spacer profile from that tested. (Adopted 7/29/2004)

13.1.3 INTEGRATED SPACER SYSTEMS

Defined as a pre-fabricated multi-component, multi-material and/or multi-function spacer system. Contact the Administrative Office for the most current list of reviewed integrated spacer systems and their generic class.

A.SS.1

A licensee may certify a Plastic Hybrid Integrated Spacer System (ISS) on the List of Reviewed Integrated Spacer Systems" utilizing the same certification number as the base spacer generic material (single homogeneous component) provided regular test units include the plastic hybrid ISS, all other guidelines applicable. (Adopted 1/31/2012)

A.SS.2

A licensee may use a temporary alternate integrated spacer system on the List of Reviewed integrated spacer systems (most current version) in the same generic class by:

- a. notifying the administrator of the change,
 - b. having test specimens witnessed by the administrator's representative at the next regular audit, and
 - c. sending the test specimens to an approved testing laboratory:
 - a. Licensees participating under the IGCC®/IGMA® program must ship specimens to the laboratory within 28 days from the date of fabrication.
 - b. Licensees participating under the IGMAC® program must ship specimens, along with a copy of the completed facility audit form, to the laboratory within 90 days from the date of fabrication.
- (Added 1/2025)

However, Guideline G.26 shall apply where applicable. The licensee may temporarily use the certification label on a provisional basis commencing with written notification from the administrator and ending when test results are received by the administrator. (Modified 1/31/2012)

13.1.4 DESICCANT

A.DE.1

A fabricator may use the same certification number on production units having air space thickness equal to, or greater than the model tested provided the desiccant Adsorption Capacity per Perimeter Foot (ACPF) remains the same (-10%) or is greater. A manufacturer may use the same certification number on production units having an air space thickness smaller than the model tested provided the manufacturer maintains the same or more sides filled with desiccant (Modified 1/31/2012)

A.DE.2

A change in supplier or model of the same generic type of desiccant from that tested will not require a different certification number provided the new material is on the List of Reviewed desiccants and the ACPF is maintained or increased. However, Guideline A.SS.2 shall apply where applicable. (Modified 10/28/2015)

A.DE.3

The use of the same loose fill desiccant manufactured in different particle size ranges will not require a different certification number. (Modified 1/31/2012)

A.DE.4 (Deleted 1/31/2012)

A.DE.5 (Deleted 1/31/2012)

A.DE.6 (Deleted 1/31/2012)

13.1.5 SEALANT

A.SE.1

If a fabricator produces IGUs with the same sealant/spacer system, but with different sightline dimensions (i.e., with a narrow and standard sightline dimension), they must certify the system with the smallest sealant/spacer sightline dimension. Verification of smallest sightline shall be confirmed during certification fabrication audits. (Revised 9/26/2018).

A.SE.2

A licensee may use a temporary alternate sealant on the list of reviewed sealants (most current version) in the same generic class by:

- a. notifying the administrator of the change,
 - b. having test specimens witnessed by the administrator's representative at the next regular audit, and
 - c. sending the test specimens to an approved testing laboratory:
 - a. Licensees participating under the IGCC®/IGMA® program must ship specimens to the laboratory within 28 days from the date of fabrication.
 - b. Licensees participating under the IGMAC® program must ship specimens, along with a copy of the completed facility audit form, to the laboratory within 90 days from the date of fabrication.
- (Added 1/2025)

The licensee may temporarily use the certification label on a provisional basis commencing with written notification from the administrator and ending when test results are received by the administrator. (Modified 6/23/2010)

13.1.6 GAS CONTENT

A.GC.1

Any change in gas from that tested providing 1) the same gas filling fabrication process is used; argon is required for each regular testing, and 2) a one-time after weathering gas content test is done for each exotic gas other than argon (acceptable methods of test shall be GC, SES, O2 analyzer, other acceptable to the certification programs).(Revised 2/1/2020)

NEVER

13.2 The following situations never permit the licensee to certify with the same certification number. They require the use of a different certification number.

13.2.1 SPACER

N.SP.1

A change in spacer material, i.e., aluminum to steel or any other material will require a different certification number.

N.SP.2

A change in spacer surface finish, i.e., anodized to mill finish or hot dip to electro galvanized will require a different certification number.

N.SP.3

A change in corner design from soldered, welded, braised or bent (BC) to mechanical corner (MC) will require a different certification number. (Modified 5/14/2008)

N.SP.4

A change in corner key material to another material, except to the same material as the spacer, will require a different certification number. All plastic keys and joiners are considered generically equivalent. This guideline does not apply to A.SP.6. (Modified 5/14/2008)

N.SP.5

If bent, uncut spacer corners or connections (BC) are changed to mechanically fastened spacer corners (MC); a new certification number is required. (Modified 5/14/2008)

13.2.2 DESICCANT

N.DE.1

A change in generic type of desiccant will require a different certification number. For purpose of desiccant guidelines, the generic types of desiccants are 1) LF=Loose Fill desiccant, 2) IB=Imbedded desiccant system, 3) DM=Desiccant Matrix. (Modified 1/31/2012)

13.2.3 SEALANT

N.SE.1

In a single sealant system, a change in generic type of sealant will require a different certification number.

N.SE.2

In a two sealant system, a change in generic type of primary sealant will require a different certification number.

N.SE.3

In a two-sealant system, a change in generic type of secondary sealant will require a different certification number.

N.SE.4 (Deleted 9/26/2018)

N.SE.5 (Deleted 9/26/2018)

GENERAL

13.3 CLASS I - UNIT MODIFICATION

DEFINITIONS

Breather Tube - Tube inserted into the I.G. spacer that is intended to be permanently sealed at some point either prior to final glazing of the unit or by access to the end of the breather tube after glazing. This sealing is generally intended to be done after the unit is at or near its final installation elevation.

Capillary Tube - Tube inserted into the I.G. spacer and intended to be left permanently open.

Cavity Pressure Compensation Systems (CPC) – Any IG unit component or process which is designed to manage the cavity pressure of an IG unit.

CPC and How It Is Related to Membrane - The certification programs observe that organically sealed insulating glass units are not actually hermetically sealed, but rather are composed of sealing systems which demonstrate sufficiently low water and gas transmission rates as to pass the accelerated weathering conditions imposed in testing standard(s). We acknowledge that certain capillary tube designs may also control the passage of water and gases in such a manner as to allow breathing but still demonstrate the ability to pass the test conditions.

TI = Tubes Inserted (TI units intended to be closed at some point after fabrication may be certified (durability and GCIA) if passing results are achieved. TI units intended to be left open, with no additional gas capture, shall not be GCIA certified.)

HR = Holes Resealed (Holes into the sealed airspace, created either in the field or at the factory, that are permanently sealed in the field for the purpose of cavity pressure compensation)

PA = Pressure Adjusted (Units initially made with a positive or negative preset)

RS = Relief System (Bladder or diaphragm)

PF = Post Fabrication (Designs requiring a secondary fabrication process at or near the installed altitude. Example, closing of a valve)

OT = Other (uncategorized)

G.0 Cavity Pressure Compensation (CPC) Systems

An I.G. construction incorporating a CPC system will be certified and listed (durability and gas content) as equivalent to a previously program durability certified I.G. model without a CPC system, provided the following applies: (Modified 05/04/2022)

- a) Material and construction of the units are identical, except for the inclusion of the CPC system.
- b) Both sets of I.G. units pass when tested according to ASTM standard(s) durability and gas content (GCIA) if applicable. The units with CPC system need only be tested once, but each type of CPC must be tested and will be listed accordingly (see product key). TI units intended to be closed at some point after fabrication may be certified (durability and GCIA) if passing results are achieved. TI units intended to be left open, with no additional gas capture, shall not be GCIA certified.
- c) The test must be run by an approved lab. Unit installation instruction must be supplied to the lab.
- d) Preparation of test specimens must be witnessed to ensure all fabrication steps of the CPC system process are adhered to. Evidence of an SOP shall be provided. Test results shall be submitted to and reviewed and approved by the administrator.

G.1 (Deleted 05/04/2022)

G.2 (Deleted 05/04/2022)

G.3 (Deleted 05/04/2022)

G.7 (Deleted 1/1/2007)

G.8 Internal Components (IC)

Baseline volatile fog testing shall be performed during each regular certification test on units identical to those fabricated for the high humidity and accelerated weathering testing. Initially and at least each 4 years, sets of three (3) double pane, five (5) multiple cavity test specimens shall be constructed under auditor witness for volatile fog internal component performance testing utilizing all the components of an internal components (IC) system, which are used in the ultimate product. Only volatile fog testing shall be required in each of the following categories of internal components. The specific internal component to test in each category shall be 1) worst case product or 2) highest sales volume product, at the fabricator's discretion:

- 1) Bars, grills or muntins (BA)
- 2) Blinds (BL)
- 3) Glass, or other glazing materials (GI)
- 4) Other internal components not in the above categories (i.e., insulating materials, electronics) (OI)

When testing muntins or grills, test samples shall be fabricated dividing the sample into four areas in an off-set pattern. A licensee may use the same certification number for units manufactured with and without internal

components (IC) providing regular testing has been accomplished in accordance with the above procedure. (Modified 5/8/2019)

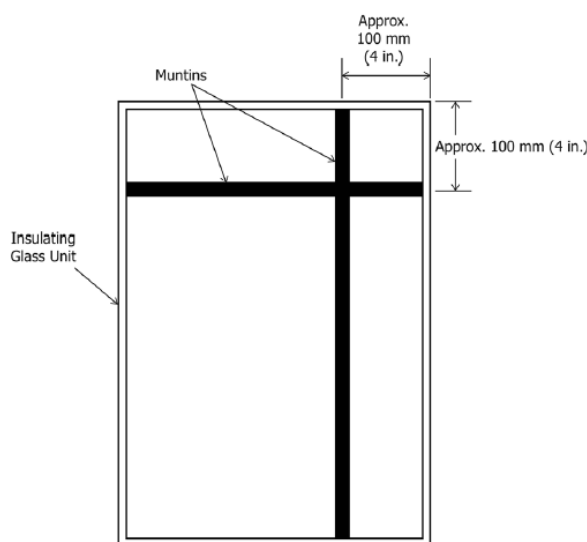


FIG. 1 Schematic Drawing of Insulating Glass Unit with Muntin Bars

G.15 Multi-Cavity

ASTM E2189-19

Multiple air space units may be certified with the same IGCC®/IGMA® or IGMAC® number as single air space units, provided that the construction of each space complies with the guidelines for single space units; pressure communication of spaces is permitted, but not required. This guideline shall apply to multiple air space products that use glass or a suspended coated film (SCF) as an airspace barrier. Testing of multiple air space units shall be performed initially and in lieu of single air space unit testing at least once each (4) years. When testing multiple air space units with coated glass, the coated glass shall be on at least one outer lite for the units intended to be tested for volatile fog in accordance with the testing standards. (Modified 6/23/2010)

G.17 (Deleted 1/1/2007)

G.18 (Deleted 1/1/2007)

G.19 Coated Glass

An Insulating glass unit constructed with coated glass with the coating toward the air space (pyrolytic or sputter coated) shall be certified utilizing the same IGCC®/IGMA® or IGMAC® number provided regular test units include one lite of the coated product per test sample. Only the highest volume coated product need be tested. Testing of sputter coated non-edge deleted will cover sputter coated edge deleted, Pyrolytic and uncoated (clear). Testing of sputter coated edge deleted will cover Pyrolytic and uncoated. Testing of Pyrolytic will cover Pyrolytic and uncoated. Testing uncoated (clear) will only cover uncoated (clear). When testing multiple air space units with coated glass, the coated glass shall be on at least one outer lite for the units intended to be tested for volatile fog in accordance with the testing standards. (Modified 6/23/2010)

From	To			
	Clear	Pyrolytic	Sputtered (edge-deleted)	Sputtered (non edge-deleted)
Clear	Y	N	N	N
Pyrolytic	Y	Y	N	N
Sputtered (edge-deleted)	Y	Y	Y	N
Sputtered (non-edge-deleted)	Y	Y	Y	Y

(Table Key: Y- Yes; N – No)

(Chart provided for illustration)

G.26 Adsorption Capacity per Perimeter Foot (ACPF)

For all Certified Products and prototypes for Certification testing, the fabricator shall have on file a copy of the **Desiccant supplier's specification showing the minimum equilibrium water adsorption capacity (weight %) as measured at 25°C (77°F) and 50% Relative Humidity (+/- 5%)**. Additionally, the fabricator shall document the weight of desiccant or desiccant system (grams) in the certified product or prototype. From this data, the fabricator shall document the adsorption capacity per perimeter foot (ACPF) using the following formula: (Modified 1/31/2012)

$$\text{ACPF (grams/ ft.)} = \frac{\text{Weight of Desiccant Product (g)} \times \text{Adsorption Capacity (wt \%)}}{\text{Perimeter (Feet)} \times 100}$$

Note: For all 14x20-in (350x500 mm) test specimens the perimeter is 5.66 feet (1.73 meters)

G.27 Structural Modification, i.e., Hole for Gas Fill; Electrical Connectors or Conductors

A sealed insulating glass unit that has been structurally modified, (i.e., hole or holes for gas filling (AP), connectors or conductors that penetrate the seal (primary or secondary) (SP)) shall be tested regularly for certification assembled with standard production procedures including these modifications. (Modified 5/7/2014)

G.29 IG Integrated Sash Technology

When testing units using IG Integrated Sash Technology, IG fabricators would have the option of testing integrated IG units in one of two methods:

- 1) glass size shall be 14x20-in (350x500mm) and the sash shall be cut away to fit in a 14x20-inch testing opening, or
- 2) a larger sash which accommodates 14x20-in (350x500mm) glass may be tested. This option would need to be reviewed with the test lab ahead of time to ensure the test chamber can accommodate the larger sash size.

All testing is completed with no glazing beads and all fabrication holes or simulated hole punches in place. If the sash is cut away, this function must be performed by the IG fabricator. (Adopted 5/3/2005)

G.30 Applied Surface Coatings to an IG Spacer and Spacer Components

An insulating glass unit utilizing an applied surface coating to an IG spacer and spacer components shall be initially certified under the normal certification testing process. The application of the coating will be documented in the product audit report. A surface coating may be added to or removed from an already certified product utilizing the same certification number by applying guideline G.5. Applied surface coatings would include, but not be limited to paints, coatings and adhesion promoters. Spacer and spacer components with an embedded or etched into the surface color are not subject to this guideline and may be certified with the same certification number. (Modified 3/2/2011)

G.32 GCIA and Capillary and Breather Tubes and Systems

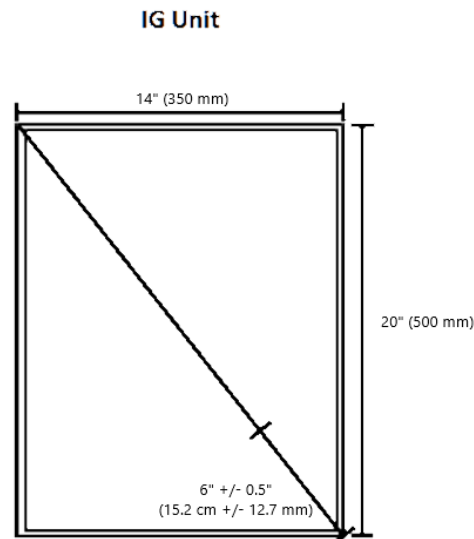
(Refer to guideline(s) G.0, G.1, and G.2) An IG construction incorporating a permanently or temporarily open system or tube, (Capillary, breather or other) may be Gas Content Initial and After Weathering certified (GCIA) with the same certification number provided regular test units include all the components of the system or tubes. Unit installation and/or final sealing instructions must be supplied to the laboratory and performed at the laboratory. (Modified 8/6/2013)

G.34 IG Units with Bent or Curved Glass

Special note should be taken that the ASTM E2190, and the CAN/CGSB 12.8 test method do not provide for testing of Bent or Curved IG units. As such, it is only flat IG units that fall within the Certification Program. This, however, in no way precludes the ultimate use of Bent or Curved IG units. Labeled spacer may be used in IG units, other than flat glass, but in that case, certification does not apply. (Adopted 3/2/2011)

G.37 Point Support Aperture

Point support aperture units may be certified with the same certification number as the base model, non-point support units, provided construction of the units are the same except for the point support aperture and testing of point support units shall be performed initially and in lieu of the base model, non-point support unit, at least once each (4) years. Only one point support aperture shall be present in each test unit and the center of the support shall be located 6-inches \pm 1/2-inch (15.2 cm \pm 12.7 mm) on the unit diagonal. Any components fixed to the IG by the IG fabricator and associated with the aperture shall be included in the test units. Changes in the shape or geometry of the through hole will not require retesting, but changes in the generic material of the seal will require retesting. (Adopted 5/4/2017)



13.4 CLASS II - SPECIMEN

G.6 Specimens – Quantity

No more than 4 additional test units shall be labeled by the auditor for testing. When gas content testing (GCIA), it is recommended to ship some or all of the additional auditor "labeled" units to the testing laboratory. (Modified 9/26/2018)

G.9 Specimens - Production (Deleted 1/1/2007)

G.10 Specimens - Production

If a licensee is not producing units at the time of an audit a labeled unit from inventory shall be inspected, provided that the date code is within the audit period.

G.11 Specimens - Production

A portion of the audit will be used to determine whether a licensee is using the certification label on unauthorized units.

G.12 Specimens - Shipment

Units fabricated for test during an audit must be shipped directly to the approved test facility within the allotted time frame. If they are not, the audit may be considered invalid and another audit must take place. But for normal in plant quality inspection processes performed by the manufacturer, there shall be no 'pre-testing' of any test sample being forwarded to the approved test facility. In situations where fabricated test units are deemed unacceptable for test by the licensee as a result of a normal plant quality inspection process, the licensee shall be allowed to re-fabricate test samples only once. This re-fabrication must occur within 45 days of the original fabrication date. All costs related to this guideline are to be borne by the licensee. (Modified 5/14/2008)

G.14 (Deleted 1/2025)

G.31 Suspension of Testing

There may be situations where the program participant wishes to suspend testing (gas or durability) before completion. For prototype fabrications this shall be at the discretion of the program participant and has no effect on the certification listing. For certified unit testing, with consideration for guideline G.12, any suspension of the test, gas or durability, shall be deemed as a failure of that portion of the test. G.12 would not be applicable once testing has started. (Adopted 5/14/2008)

13.5 CLASS III - EQUIVALENCY

G.5 Gray Area

Situations that are not included in the "Always" or "Never" categories listed above, fall into the gray area. When there is a change and the licensee desires to use the same certification number, the licensee shall immediately notify the administrator with all details of the change and also satisfy either 1,2, or 3 below:

- 1) Establish equivalency by passing the same level of ASTM test as certified to by having specimens tested at an independent testing laboratory. Witness of test sample fabrication is not required but specimens must be fabricated and submitted within two weeks and sent to the laboratory within 4 weeks after notification of the administrator. During the test period, the licensee may temporarily use the certification label on an interim basis.
- 2) With approval by the administrator, establish equivalency by passing Rapid Assessment Chamber (RAC) testing. Witness of test sample fabrication is not required. Testing shall be at an approved independent testing laboratory. (RAC only available to IGCC® licensees)
- 3) Demonstrate the equivalency of the change to the satisfaction of the Certification Committee or a subcommittee. (Specimens not required.)

G.21 Transfer

If a licensee manufactures the same model using the same technology at a different location, an IGCC®/IGMA® number with a temporary status will be issued provided that testing (durability and/or gas content) of the model is initiated at the next scheduled testing audit. (Modified 5/4/2022)

- This guideline may not be applied to products for which certification has been previously removed due to test failure.
- This guideline may be used when a plant relocates (physical relocation) under existing Ownership (IGCC shall be notified prior to plant's physical relocation).
- This guideline may be used if valid compliant test report(s) are within 12 months (one year) of the report date.

G.23 Equivalency

A licensee needs to establish equivalency for a model only once.

G.24 Vision Glass Areas

Special note should be taken that the test methods only provides testing for "Vision glass areas." As such, it is only these types of units that fall within the Certification Programs. This, however, in no way precludes the ultimate use of these units in other applications, e.g., Spandrel units. (Adopted 8/28/1986)

Labeled spacer may be used in IG units, other than vision glass, but in that case, certification does not apply. (Adopted 4/16/1991)

G.28 Certifying Additional Constructions

A current licensee with currently certified products may certify additional constructions or replace a certified construction at the same plant location by having specimens tested at an approved testing laboratory. These samples need not be witnessed by an auditor. Upon completion of passing test results the construction shall be eligible for certification. Witnessed testing must occur at the next regular audit. (Adopted 7/28/1999)

G.33 Duplicate Certification

There may be situations where the program participant wishes to certify separately a model variation for which the certification programs would allow equivalency, both variations under a single certification number. Some examples of this duplicate certification may be dual pane and multiple air space, various moisture vapor transmission path lengths (sightlines), variations in coated glass. This duplicate certification shall be allowed, and each variation given a separate certification number. Each certification number will be treated as its own certified model and be subject to normal product fees, testing and auditing requirements.

G.35 Multiple Sources of Same Generic Category

If a licensee regularly uses multiple sources of supply within the same generic category each source of supply (A and B) shall be tested on a rotational basis. If one source of supply (A) is tested and fails to comply, the same source of supply (A) must be tested to maintain certification for that source of supply. If certification for (A) is no longer required by the licensee the retest due to failure must still occur with (B) or a new alternate source of supply (C). (Modified 8/6/2013)

G.36 Sale of Plant and Transfer to New Ownership

When a fabrication facility (plant) with a currently certified IGCC®/IGMA® or IGMAC® product, or pending prototype(s), is sold to new owners, the certification may be transferred to the new owners. The following steps shall be followed for the new owners and plant to maintain certification: (Adopted 5/4/2017)

- 1) Notify the Administrative Office, in writing, when the sale is to take place or when sale is finalized. Notification shall include a description of any interruptions in production or changes that may affect the status of certification, including product marking.
- 2) A new license agreement shall be signed and returned to Administrative Office, if the new owner is a new licensee.
- 3) The new owner shall be responsible for any outstanding certification and testing fees unpaid.
- 4) While it is encouraged for the new owners to utilize new certification numbers, retention of the same certification number(s) from the prior owner shall be allowed. Regardless of prior testing history, testing will need to be completed during the next regular facility visit.
- 5) The above is only applicable if a majority of plant personnel and fabrication equipment is maintained. New prototype testing may be necessary if significant changes are made.

G.38 Inactive Certification

After initial certification, a licensee, with multiple certified products, may place a different (non-equivalent) certified product into an "inactive status". During inactive status, directory listing would still occur but with an "IN" designation. Regular retesting would not be required. Returning to a "Certified" status and labelling of production units would not be allowed without notification of the Administrative office. When returned to "Certified" status, an audit and witness fabrication of retest specimens must occur within 45 days of reactivation, unless current test reports are within one year of the report date. A product may only remain in "IN" for up to 5 years. (Modified 9/26/2018)

13.6 CLASS IV - APPEALS, REVIEW AND DE-CERTIFICATION

G.13 Monetary

The administrator shall remove authorization to use the permanent certification label from all of any licensee's products for failure to pay monies due within 60 days of invoice date (reference License Agreement A. 13 and B.6).

G.16 Failure to Comply

In cases where a routine test fails to comply with the specifications: (Modified 2/4/2015)

- 1) Upon notification of failure of routine test samples to reach the certified level, the licensee will be officially notified. Within 15 days the licensee must respond stating a retest fabrication is requested by paying all required administrative and test fees. If there is no response within 15 days, authorization to use the permanent certification label will be removed.
If the retest option is accepted:
 - a) Request for retest option is granted only upon receipt in full of any administrative and retest fees within 15 days of date of mailing of the notification of failure.
 - b) The Administrator's representative will perform an audit and witness fabrication of retest specimens within 60 days of the date of notification of failure.
 - c) Licensee must ship and deliver retest specimens to the testing laboratory within the allotted timeframe from fabrication date.
- 2) There is to be no change in certification status during the retest period. All routine audits will continue. Sample fabrication for subsequent routine testing of the questionable model will be suspended pending the outcome of the retest.
- 3) If the retest units comply, they shall be considered as the next routine test.
- 4) If the retest units fail, the licensee is issued a cease-and-desist order on use of the label immediately.
- 5) The licensee may choose to accept certification at any level passed by the retest, although it might be a lower level than originally desired.

G.20 Authorization to use the Permanent Certification Label (Modified 1/2025)

Authorization to use the permanent certification label will be removed if a routine audit discloses that a licensee is labeling units containing the same unauthorized construction for the second time.

G.22 Clarification of Due Process Appeal Process

Clarification of due process appeal process under License Agreement, Paragraph A.11:

A Licensee's appeal from a final adverse decision by the Administrator, under License Agreement Paragraph A.11, shall in the first instance be to the Certification Appeals Subcommittee of the Certification Committee, which acts as an executive committee for the Certification Committee in order to provide a prompt hearing for the Licensee and to act on the Licensee's appeal as quickly as possible. A decision by the Certification Appeals Subcommittee favorable to the Licensee shall be a final decision. A decision by the Certification Appeals Subcommittee adverse to the Licensee may be appealed to the full Certification Committee for a due process review and hearing. Such an appeal to the Certification Committee must be made in writing within 30 days of an adverse decision by the Certification Appeals Subcommittee and this appeal will be heard at the next meeting of the Certification Committee. Pending a hearing by the Certification Committee on such an appeal, the Licensee may maintain certification for the product at issue.

Committee rule to clarify guideline G.22 as adopted by the Certification Committee at minute 10.31.12.10

The Chairman of the Certification Committee may call for a special meeting of the Committee (with notice provided in the same way as for a special meeting of the Board of Governors under the Bylaws), and the Committee may conduct a special meeting (at the physical location identified in the notice or by use of conference telephone or other communication equipment by means of which all persons participating in the meeting can communicate with each other), with such special meeting to be at a date and time other than the next regularly scheduled meeting of the Committee, and at which special meeting any proper business of the Committee, including business under Procedural Guideline G.22, may be conducted. (Modified 10/31/2012)

SPECIFICATIONS USED FOR SEALED INSULATING GLASS

IGCC®/IGMA® Program:

ASTM E2190

ASTM E2188

ASTM E2189

ASTM E2649

ASTM E546

Specification may be obtained by contacting:

ASTM:

100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Telephone: (610) 832-9585
Web Address: www.astm.org

IGMAC® Program:

CAN/CGSB 12.8

Specification may be obtained by contacting:

Standards Council of Canada (SCC):

55 Metcalfe Street, Suite 600
Ottawa, ON K1P 6L5
Canada
Telephone: (613) 238-3222
Web Address: www.scc.ca

**IGCC®/IGMA® APPROVED LABORATORIES PRESENTLY CONDUCTING
TESTS IN ACCORDANCE WITH ASTM E2190 & E2649 (ID-151)**

Participants in the program may choose any laboratory from the approved lab list.

California	Pennsylvania
125 - Architectural Testing Inc. (an Intertek Company) Architectural Testing Inc. (an Intertek Company), 2524 East Jensen Ave.; Fresno, CA 93706 Attn: Kenny White, Mr. Joshua Lannum, Mr. Tyler Westerling, Ms. Marisela Saavedra, Ms. Shannon Stein Phone: (559) 233-8705 Fax: (559) 233-8360 Email: kenny.white@intertek.com , joshua.lannum@intertek.com , Tyler.Westerling@Intertek.com , Marisela.Saavedra@Intertek.com , Shannon.Stein@Intertek.com	911 - Molimo, LLC. Molimo, LLC., 1410 Eden Road; York, PA 17402 Attn: Mr. Lance Cunningham, Mr. Joseph Descheemaeker, Mr. Justin Bupp, Mr. Nathaniel Young, Ms. Wendy Allison Phone: (717) 916-6300 Fax: (717) 318-5788 Email: lcunningham@molimo.com , jDescheemaeker@molimo.com , jbupp@molimo.com , nyoung@molimo.com , wallison@molimo.com
Florida	Texas
850 - PRI Construction Materials Technologies PRI Construction Materials Technologies, 6412 Badger Dr; Tampa, FL 33610 Attn: Tim Efaw, Mr. Chris Moskal Phone: (813) 621-5777 Fax: (813) 621-5840 Email: tim.efaw@pri-group.com , chris.moskal@pri-group.com	175 - Architectural Testing Inc. (an Intertek Company) Architectural Testing Inc. (an Intertek Company), 1909 10th Street, Suite 100; Plano, TX 75074-8009 Attn: Mr. Jacob MacMaster, Mr. Jeff Crump, Cassandra Matthews Phone: (469) 814-0687 Fax: Email: Jacob.MacMaster@intertek.com , jeffrey.crump@intertek.com , cassandra.matthews@intertek.com
Minnesota	Washington
150 - Architectural Testing Inc. (an Intertek Company) Architectural Testing Inc. (an Intertek Company), 40 51st Way NE Suite 100; Fridley, MN Attn: Mr. Lukas Bayer, Georgia Degel, Mr. John Wegscheider Phone: (651) 636-3835 Fax: (651) 636-3843 Email: lukas.bayer@intertek.com , georgia.degel@intertek.com , John.Wegscheider@intertek.com	195 - Architectural Testing Inc. (an Intertek Company) Architectural Testing Inc. (an Intertek Company), 22155 68th Ave. South; Kent, WA 98032-1937 Attn: Mr. Steve Kim, Che Rodriguez, Mr Arbind Raj, Mr. Aeron Reddy, Ms. Rachel Pankaskie Phone: (253) 395-5656 Fax: (717) 764-4129 Email: steve.y.kim@intertek.com , che.rodriguezfigueroa@intertek.com , arbind.raj@intertek.com , aeron.reddy@intertek.com , rachel.pankaskie@intertek.com
Pennsylvania	Canada
100 - Architectural Testing Inc. (an Intertek Company) Architectural Testing Inc. (an Intertek Company), 130 Derry Court; York, PA 17406-9405 Attn: Intertek York IGCC, Mr. Chad Peterman, Mr. Cory Straub, Amanda Ashby, Mr. Thomas Mickley, Mr. Travis Hoover Phone: (717) 764-7700 Fax: (717) 764-4129 Email: yorkiggroup@intertek.com , chad.peterman@intertek.com , cory.straub@intertek.com , amanda.ashby@intertek.com , tom.mickley@intertek.com , Travis.Hoover@Intertek.com	60 - CAN-BEST CAN-BEST, 38 Regan Road, Unit 4 ; Brampton, ON L7A 1C6 Attn: Elie Alkhoury, Ms. Brenda Da Silva Phone: 905-840-2014 Fax: 905-840-2847 Email: elie@can-best.com , brenda@can-best.com

**IGCC®/IGMA® APPROVED LABORATORIES PRESENTLY CONDUCTING
TESTS IN ACCORDANCE WITH ASTM E2190 & E2649 (ID-151)**

Participants in the program may choose any laboratory from the approved lab list.

China
55 - China National Safety Glass China National Safety Glass, 1# Guanzhuang Dongli, Chaoyang District; Beijing 100024 Attn: Wang Geng, Mr. Ding Zuoxin Phone: +86-10-51167367 Fax: +86-10-65711591 Email: wg@ctc.ac.cn , dingzuoxin@ctc.ac.cn
80 - Shanghai Institute of Quality Inspection (SQI) Shanghai Institute of Quality Inspection (SQI), No. 900 Jiangyue Road, Minhang District; Shanghai Attn: Longmei Wang, Mr. Zhou Lei Phone: +86.21.54336371 Fax: Email: walm74@163.com , 438835686@qq.com

**IGMAC® APPROVED LABORATORIES PRESENTLY CONDUCTING
TESTS IN ACCORDANCE WITH CAN-CGSB 12.8 (MD-151)**

Canada
Ontario
60 - CAN-BEST CAN-BEST, 38 Regan Road, Unit 4 ; Brampton, ON L7A 1C6 Attn: Elie Alkhoury, Ms. Brenda Da Silva Phone: 905-840-2014 Fax: 905-840-2847 Email: elie@can-best.com , brenda@can-best.com

Appendix A

Certification Notes

ID #	Title	Initial Publish Date	Approval Date
CN IG 1009	Certification of Internal Components (IC)	10/28/09	7/24/2019
CN IG 1109	Certification of Capillary Tube, Breather Tube Systems (Deleted 5/4/22)	10/28/09	10/28/09
CN IG 0310	Certification of Multiple Air Space Units	3/1/10	5/7/14
CN IG 1010	Provisional Certification	10/14/10	9/16/22
CN IG 0211	Certification and Testing of Vacuum Insulating Glass VIG	2/18/11	9/26/22
CN IG 0112	Desiccant Quantity Review of Changes (ACPF)	1/31/12	10/31/12



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Certification Notes

(CN IG1009)

Certification of Internal Components (IC)

References:

G.8 Internal Components (IC) - Per minutes of the May 7-8, 2019 Certification Committee Meeting, after January 1, 2020 the guidelines below will be mandatory:

Baseline testing to ASTM E2189 shall be performed during each regular certification test on units identical to those fabricated for ASTM E2188 testing. Initially and at least each 4 years, sets of three (3) double pane, five (5) multiple cavity test specimens shall be constructed under auditor witness for E2189 internal component performance testing utilizing all the components of an internal components (IC) system, which are used in the ultimate product. Only ASTM E2189 testing shall be required in each of the following categories of internal components. The specific internal component to test in each category shall be 1) worst case product or 2) highest sales volume product, at the fabricator's discretion:

- 1) Bars, grills or muntins (BA)
- 2) Blinds (BL)
- 3) Glass, or other glazing materials (GI)
- 4) Other internal components not in the above categories (i.e. insulating materials, electronics) (OI)

When testing muntins or grills, test samples shall be fabricated dividing the sample into four areas in an off-set pattern in accordance with ASTM E2189. A licensee may use the same IGCC®/IGMA® number for units manufactured with and without internal components (IC) providing regular testing has been accomplished in accordance with the above procedure. (Modified 5/8/2019)

Certification Notes (CN IG1009)

Page 1 of 3

Initial Publish Date: 10/28/09

Approval Date: 7/24/19

Revision Date: 7/24/19

It is recognized that a given company may utilize numerous Internal Components (IC) in production units and it is not practical to regularly test all IC variations. The following shall serve to supplement guideline G.8 and guide the licensee and auditor in selection of the IC to be tested:

1. Favor shall be given to testing worst case IC
2. Favor shall be given to testing highest volume production IC
3. Consideration shall be given to testing IC on a rotational basis
4. Licensees are encouraged, but not required to utilize guideline G.5 to establish compliance and equivalency of various IC materials. Fog test only is required.

The following direction is also provided:

- **Muntins or Grills (BA)**- When testing muntins or grills, test samples shall include all components of the muntin or grill system (i.e. holes, clips, brackets) and shall be fabricated dividing the sample into four equal areas (1 by 1 offset). Muntins or grills need only be included in one air space of a multiple air space unit.
- **Air Space Inserts (decorative or other) (GI or OI)** - Units for IC testing of inserts (glass, film, leaded glass, electrical panels or other) shall include all components of the insert system except that non-transparent glazing or material should be replaced with transparent material with care taken not to obstruct the center viewing area of the unit. Inserts for fog test units shall approximate inserts used in actual production.
- **Grooved Spacer for IC** - Some frame/spacer systems are grooved to accommodate the air space insert but do not generally create 2 separate sealed airspaces and as such will be considered and tested as a single airspace unit. For proper durability testing of these units, the groove may need to be filled and at the fabricator's discretion may use the same insert as the fog test units, a center insert of clear glass, or a simplified center insert. In these cases, the center groove should be filled with an insert of appropriate thickness to support the spacer during testing and compression to help facilitate "wetout".
- **Blinds (BL)**- Units for IC testing of blinds between glass (BBG) shall include all components of the blind system in the approximate correct proportions, although the blinds do not need to be operational. Components may be placed in the unit with care taken to not obstruct the center viewing area of the unit. Any frame modifications (i.e. holes, clips or brackets for operators) shall be included. Other than cleaning BBG ICs of oils and residue created by cutting or slicing components in correct proportions, BBG ICs used for testing are not to be treated or to undergo processing that differs from normal production processes, e.g., pre-conditioning with high heat or chemical treatments not used in the production process.
- **GCIA Testing of IC** - At present IGCC/IGMA does not require GCIA testing of IC. It has been recognized that practical limitations may exist in GCIA testing some IC. As of the date of this document, a task group within IGCC/IGMA is working on guidance for GCIA testing of IC and it is expected to include this work in future certification procedures. With this said, there is nothing

precluding a fabricator from GCIA testing IC, and if done so, certification documentation will reflect such testing. This may be necessary for certain code or jurisdictional requirements.



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Certification Notes

(CN IG 0310)

Certification of Multiple Air Space Units

1. References:

G. 15 Multiple Air Spaces

Multiple air space units may be certified with the same IGCC®/IGMA® number as single air space units, provided that the construction of each space complies with the guidelines for single space units; pressure communication of spaces is permitted, but not required. This guideline shall apply to multiple air space products that use glass or a suspended coated film (SCF) as an airspace barrier. Testing of multiple air space units shall be performed initially and in lieu of single air space unit testing at least once each (4) years. When testing multiple air space units with coated glass, the coated glass shall be on at least one outer lite for the units intended to be tested for volatile fog in accordance with ASTM E2189. (Modified 6/23/10)

2. General: Guideline G.15 is the governing directive for IGCC®/IGMA® certification and testing of multiple air/gas space units. There are however various construction and process variations that require further clarification. This document is intended to reflect current thinking and provide added direction for the certification and testing of these products.

3. Glass and Air Space Dimensions for Multiple Airspace units: While some variation exists as to the interpretation of the required dimensions for multiple airspace units, this issue has been discussed between representatives of IGCC®/IGMA® and the ASTM committee. There is general agreement that paragraph 5.3 of ASTM E2190 "Glass or airspace thickness or both may be increased ..." applies to multiple airspace units.

Therefore for IGCC®/IGMA® certification testing, multiple airspace test units may be made with 4mm (5/32-inch) or greater glass and 6mm (1/4-inch) or greater airspace.

This is also in recognition that there maybe physical limitations in fabrication of 6mm (1/4-inch) airspace units (i.e. muntins, gas fill lances, bending processes).

In situations where normal fabrication techniques utilize pressure communication of spaces thus reducing the stress on the center lite, thinner glass, and sizes other than 14 X 20 may be used, on the center lite only, as long as the practice is consistent with normal fabrication.

Certification Notes (CN IG0310)

Page 1 of 2

Initial Publish Date: 03/01/2010

Approval Date: 05/07/2014

Revision Date: 9/05/2014

Please note: If certification testing with coated (**low-e**) glass, test units shall include one lite of coated glass per test sample. Note coated glass requirements. When testing air space material (ASM), coated glass, and GCIA testing, the 10 non-ASM units shall have the coated glass on the interior lite (3 or 4 surface), and the 4 ASM units shall have coated glass on one outboard lite.

4. Certification of Various Spacer Combinations: When an IGCC®/IGMA® certified licensee is certified with multiple airspace construction (A/A) and multiple airspace construction (B/B), the licensee may also certify combinations of these 2 certified constructions (A/B).

5. Internal Suspended Film Products: Suspended film products (i.e. Heat Mirror) that use multiple spacers and create multiple air/gas spaces shall be fabricated for test and tested in accordance with multiple air space unit guidelines. Both cavities shall be tested for durability, fog and gas content. If suspended film products also use coated glass, one outboard lite should include the coated glass. In this situation only the cavity without the coated lite shall be tested for gas content.

6. Quad Units with Interior Glass Lites:

Glass: 4 – 4mm glass lites

Airspace: Each airspace is 6 mm.

Low e: Low e coating on surface #3 and #6.

Interior Lites: Using a diamond tipped drill to prevent glass breakage; a 3 mm hole shall be drilled into each of the interior lites. The cavity equalization drill holes are to be located on the long centerline of each interior lite, 30 mm from the sightline, or 38 mm from edge of glass to allow for gas content equalization and establishing an edge seal pressure consistent with the ASTM E 2190 standard.

(Note: It has been suggested that the internally drilled hole could, in certain situations, affect the gas fill process sensor. Fabricators should be aware of this possibility)

GCIA: Each outside cavity is measured for initial and after weathering. The middle cavity is not measured for GCIA. The cavity equalization drill holes allow for the equalization of the gas content across the three airspaces of the unit.

Durability: As specified in ASTM E 2190 - Each outer cavity tested

Volatile Fog: As specific in ASTM E 2190 - Each outer cavity tested



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Certification Notes

(CN IG1010)

Provisional Certification (PC) (Formerly Interim Certification)

1. General:

IGCC®/IGMA® requires, as one of the conditions of certification, a passing test report for the specific model to be certified. The total IG unit testing is intended to 1) demonstrate performance of materials and components, 2) ensure compatibility of the assembled components as a system, and 3) ensure operator skill and workmanship is adequate to successfully fabricate the IG unit. With the adoption of IG certification requirements by NFRC and others, IG certification is becoming more mandatory and less voluntary. With ever increasing frequency a company cannot sell a window/door/skylight/other, without IG certification. Many IG designs lend themselves to allow a fabricator to purchase a small quantity of a new component or material to fabricate initial test units. A decision on final production and certification may be delayed until completion of testing (approximately 6 months). Other designs require capital investment, small or large, before test samples can be made. If IG certification is needed to sell the window product, in these situations, the production equipment would sit dormant for the 6-month test period.

The intent of this Certification Note and interpretation is to provide options for relief to this potential delay in production while still ensuring an adequate level of product/production research and development is performed.

2. Current Guideline: (Excerpt from IGCC®/IGMA® Procedural Guide/CPD)

How Can You Become a Licensee?

The following steps must be accomplished before IGCC®/IGMA® can authorize a manufacturer to use the IGCC®/IGMA® permanent label:

- 1) The manufacturer must present a passing prototype report from an approved IGCC®/IGMA® testing laboratory to the office of certification (see also IGCC Certification Note CN IG1010 – Provisional Certification). Fabrication of prototype test samples shall be witnessed by a representative of the Administrator during a plant audit, ...

3. IGCC®/IGMA® Options and Interpretation

In cases where a fabricator wishes to initially certify a new IG construction (model) at a specific fabrication location and guideline G.21 may not be applied, the following may be considered to possibly achieve certification sooner than full ASTM E2190 testing:

Option 1- Supplier Assistance: IGCC®/IGMA® shall permit portions of the test sample fabrication process to be performed at a supplier location (equipment, material, component), **or at a 3rd party fabricator location aided with in-person supplier assistance**. This fabrication does not need to be under auditor witness. A product development plan must be submitted and approved by the Administrator which will address as a minimum 1) schedule 2) personnel training on the new product process 3) any changes to the quality system as a result of the new product 4) general description of product R&D.

Fabrication at the intended certification location must be maximized. The resulting report of testing may be presented for Provisional Certification (PC) prior to completion of the final production process. Re-testing must be performed at the first certification audit within 45 days after completion of the final production process.

Option 2 – Rapid Assessment Chamber (RAC): Through an extensive research and development process IGCC has developed the Rapid Assessment Chamber (RAC). The RAC was developed to accelerate and simulate the most

detrimental long-term conditions an insulating glass unit might be exposed to. By encapsulating the test units in a UV rich, highly humid environment with elevated temperatures, and then oscillating pressure over a 14-day period, the units are durability tested to determine if defects (workmanship, materials, design, other) are present.

IGCC®/IGMA® shall permit fabrication of prototype test samples under auditor witness as normal except that a minimum of six (6) additional 14 X 20-inch test units shall be fabricated. The standard minimum number of IG units shall be submitted for full ASTM E2190 testing at an IGCC®/IGMA® Approved Testing Laboratory. It is recommended, but not mandatory, that the six (6) additional IG units be submitted for RAC testing at the same IGCC®/IGMA® Approved Testing Laboratory used for full ASTM E2190 testing. Upon initial gas testing (if applicable) and passing ASTM E2189 *Standard Test Method for Testing Resistance to Fogging in Insulating Glass Units* and RAC testing of the six (6) additional units, provisional certification (PC) may be granted prior to completion of the final ASTM E2190 testing. See below **Provisional Certification Workflow for New Products**.

If testing fails, (ASTM E2190 for Option 1 supplier assist, RAC for Option 2) authorization to certify this product will not be offered. If a product gains PC by RAC for a period of time, but then fails the parallel E2190 testing, the product will be decertified. PC may be attempted again after process adjustments.

4. Certification Listing:

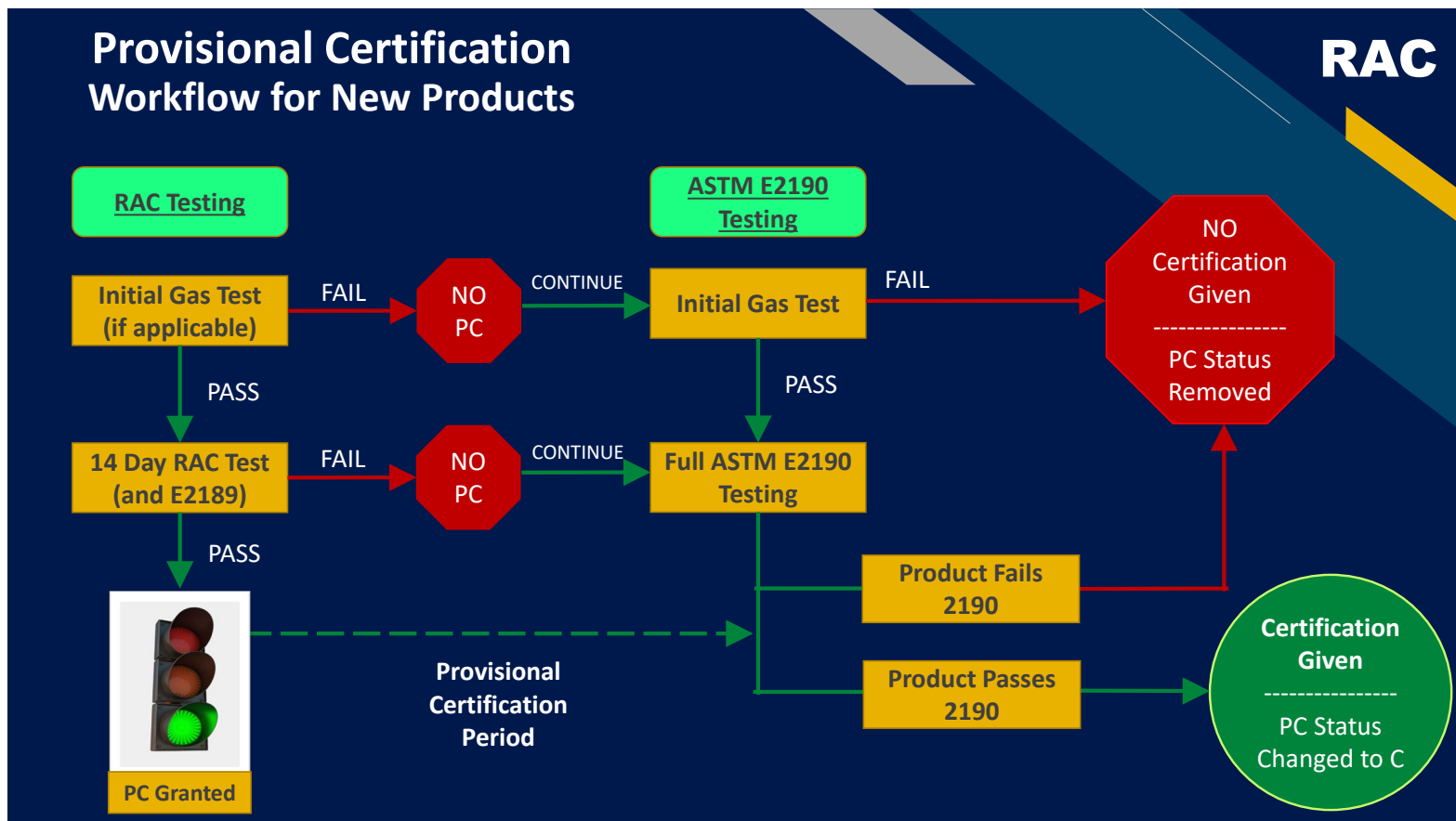
If certified under either option 1 or option 2, normal product certification labelling may occur (authorization to label) but all certification listings (CPD, Website) and paperwork shall bare the “PC” designation until full auditor witness of test sample fabrication at the certified production facility and successful ASTM E2190 testing is completed.

5. Specific Examples:

A) Option 1: Intercept/Intercept Ultra – The equipment supplier may provide bent (dry) spacer that then could be used by the intended certification location to fabricate test units utilizing existing equipment for the remainder of the fabrication process.

B) Option 1: Thermal Plastic Spacer – Plant personnel could travel to an equipment supplier to build IG test units on like equipment under training conditions

C) Option 2: Fabricator wishes to switch to a different generic type of sealant or spacer and has the capability to fabricate with the new material





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Certification Notes

(CN IG 0211)

Certification and Testing of Vacuum Insulating Glass (VIG)

1. Reference:

At the June 23, 2010 IGCC/IGMA Certification meeting a motion was made that ASTM E2190 may not be the best standard to evaluate Vacuum Insulating Glass (VIG), but in the absence of another more applicable standard, IGCC/IGMA shall allow certification and testing of VIG with a qualifying note. This motion passed.

2. General:

- A. The IGCC/IGMA certification program encourages new products and technologies and has always attempted to structure guidelines and procedures to be inclusive rather than exclusive. With this in mind, IGCC/IGMA has agreed to offer certification for Vacuum Insulating Glass (VIG), although the ASTM E2190 standard was not written with VIG as a focus and may not give consideration to issues specific to VIG. IGCC/IGMA would encourage the VIG industry to develop a standard specific for VIG. Until such time as there is a specific VIG test, those submitting products for IGCC/IGMA Certification shall provide any additional testing documentation that has been done that would support ASTM E 2190 testing and provide evidence of consistent performance over time.
- B. Sample Fabrication Requirements – It is recognized that some VIG processes may not be able to meet the sample fabrication requirements of ASTM E2190 for glass and cavity thickness. In these situations, testing of the closest normal production practices to ASTM E2190 shall be allowed.
- C. Apertures, Ports, Other - Test specimens shall be constructed utilizing all the components of the VIG system, which are used in the ultimate product.
- D. Guidelines – All IGCC/IGMA certification guidelines shall apply to VIG.
- E. HVIG - When a VIG is utilized as 1 or more lites of an IGU (an HVIG see *Section 4. Definition* below), guideline A.GL.4 shall apply and certification of the IGU would also certify the HVIG.

3. CPD Listing (sample)

Example	FRAME CONSTRUCTION	SUBSTRATE	SPACER	DESICCANT	SEALANT	GCIA
VG Unit	VG	U/C	VG	VG	VG	

U/C = Uncoated, Coated

VG = Vacuum Insulating Glass Unit

Certification Notes (CN IG0211)

Page 1 of 2

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Approval Date: 09/26/2022

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4. Definition:

Hybrid VIG (HVIG) - Consists of 3 (or more) pieces of glass. HVIG utilizes two glass lites constructed into a VIG assembly with a third lite attached to the VIG assembly by usual means of spacer/sealant(s)/desiccant components. The cavity between the VIG and mate lite may be filled with air or other gasses. The mate lite can be clear or coated. Other HVIG combinations are possible, such as a VIG sandwiched between two outer mate lites having two gas cavities, or two VIG units with a single gas cavity between them.

Desiccant Quantity Review of Changes (ACPF)
(CN IG 0112)

Overview:

A number of concerns had been raised regarding IGCC®/IGMA® desiccant guidelines. This prompted a comprehensive review resulting in approval of new guidelines at the January 31st, 2012 meeting. This was further reviewed at the October 31, 2012 meeting as below:

- 10.31.12.4 A) Desiccant Quantity – IGCC/IGMA adopted the Adsorption Capacity per Perimeter Foot (ACPF) rating and related guidelines at the January 2012 meeting to address desiccant quantity and changes in desiccant. An implementation date of 1/1/13 was established. It was noted that some suppliers have been slow to provide the specification values needed to determine ACPF, while others have questions the parameters (temperature and humidity) used to establish the desiccant suppliers specification values. **After discussion it was agreed to continue with the current requirements and enforcement of the ACPF rating 1/1/13.** IGCC/IGMA shall maintain a list of desiccants and suppliers who have provided a specification, but IGCC/IGMA will not present the actual specification values.

IGCC/IGMA Desiccant Guideline Changes

G.26 For all Certified Products and prototypes for Certification testing, the fabricator shall have on file a copy of the **Desiccant supplier's specification showing the minimum equilibrium water adsorption capacity (weight %) as measured at 25 °C (77 °F) and 50 % Relative Humidity (+/- 5%).** Additionally the fabricator shall document the weight of desiccant or desiccant system (grams) in the certified product or prototype. From this data, the fabricator shall document the adsorption capacity per perimeter foot (ACPF) using the following formula: **(Modified 1/31/12)**

$$\text{ACPF (grams/ ft.)} = \frac{\text{Weight of Desiccant Product (g)} \times \text{Adsorption Capacity (wt \%)}}{\text{Perimeter (Feet)} \times 100}$$

Note: For all 14 x 20 inch test specimens the perimeter is 5.66 feet

ALWAYS

A.DE.1 A manufacturer may use the same IGCC®/IGMA® number on production units having air space thicknesses equal to, or greater than the model tested provided the desiccant Adsorption Capacity per Perimeter Foot (ACPF) remains the same (- 10%) or is greater. A manufacturer may use the same IGCC®/IGMA® number on production units having an air space thickness smaller than the model tested provided the manufacturer maintains the same or more sides filled with desiccant. **(Modified 1/31/12)**

A.DE.2 A change in supplier of the same generic type of desiccant from that tested will not require a different IGCC®/IGMA® number. However, Guideline A.SS.2 shall apply where applicable. **(Modified 1/31/12)**

A.DE.3 The use of the same loose fill desiccant manufactured in different particle size ranges will not require a different IGCC®/IGMA® number. **(Modified 1/31/12)**

NEVER

N.DE.1 A change in generic type of desiccant will require a different IGCC®/IGMA® number. For purpose of desiccant guidelines, the generic types of desiccant are 1) LF = Loose Fill desiccant, 2) IB = Imbedded desiccant system, 3) MX = Desiccant Matrix. **(Modified 1/31/12)**

Example of ACPF Calculation

Product Type	Weight of Desiccant Product (grams)	X	Adsorption Capacity (Wt %)	÷	Spacer Perimeter (feet) X 100 (5.66X100) = 566	=	ACPF
Stainless Steel Box Spacer (LF Desiccant)	39 (Desiccant Only)	X	14.0 (Supplier minimum specification)	÷	566 (based on standard 14 X 20 unit)	=	0.96