

CERTIFIED PRODUCTS DIRECTORY

SEALED INSULATING GLASS
PHONE (315) 646-2234

August 2019



#0961
ISO/IEC 17065
Product Certification Body



Now ISO/IEC 17065 Accredited

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 INSULATING
GLASS
MANUFACTURERS
ALLIANCE

CREDIBILITY IN INDUSTRY CERTIFICATION THROUGH ACTIVE PUBLIC PARTICIPATION

Visit Our Website @ WWW.IGCC.ORG

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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 also 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) (now 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's 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 ANSI?

The American National Standards Institute is a not-for-profit entity providing assessment and accreditation of bodies performing third-party conformity assessment (certification), among other services. ANSI also brings global recognition to conformity assessment through several international and regional arrangements for multi-lateral recognition, including the International Accreditation Forum (IAF). In addition, ANSI has a memorandum of understanding (MoU) with the Standards Council of Canada (SCC). All of this helps bring global acknowledgement to conformity assessment.

Information from: *ansica.org*, Why Seek Accreditation?, 2015. Web. August 19, 2015.

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 ANSI-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 ANSI approves certified products, processes, or services of fabricators. In addition, the ANSI Accreditation symbol and ANSI 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 staff@amscert.com.

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Jeff Haberer, Vice President, Treasurer
Michelle Phan, 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>
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AGNORA LTD	Rene Govers	Brent Stannard	
Ajiya Safety Glass Sdn Bhd	Tam Woan Ting		
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All Counties Glass Distributors	Dane Treiber		
All Weather Windows	Thuy Vu	Tabrez Kassam	Robert Giles
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Aluminum Technology Auxiliary Industries	Varun C.R.	Suraj Thampi	
American Insulated Glass Inc.	Billy Blair	Shane Ellerbee	Eddy Green
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Ching Chyau Co., Ltd.	Tony Chang		
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Comercial Dialum SA	Maria Jesus Encina		
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Consolidated Glass and Mirror, LLC	Mike Frazier	Doug Osborne	
Cristacurva	Richard Roemke	Fransue Morales	
Cristec Glass S.L.	Silvia Berdala	Juame Planes	
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Dallas Flat Glass Distributors, Inc.	Robert Varela	Melvin Armstrong	

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
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DongGuan CSG Architectural Glass Co., Ltd.	Su Jingxi		
Dongguan Longhui Architectual Glass Co., Ltd.	Dizun Zhuang	Huiru Zhuang	
Donguan Ngai Wah Bending Tempering Glass Company Limited	Yang Shengyong		
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FAKRO GP Sp. Z.O.O.	Pawel Szweczyk		
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General Glass	Kristy Hackworth		
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GLASPRO	Rafael Perez		
Glass and Mirror Craft	Mike McKenzie	Patrick McEvoy	
Glass Enterprises Inc.	Mr. Josh Burg		
Glass Insulators Inc.	Stacy Marik		
Glassbel Baltic JSC	Romas Zvirzdinas		
GlassFab Tempering Services, Inc.	Erwin Sanjay		
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Glasswerks LA, Inc.	Robert Mastrapa		
Glaz-Tech Industries, Inc.	Alex Miramontez		
Glenny Glass Co.	Braxton Smith		
Global Security Glazing	Mark Johnson		
GnT Glass Co., Ltd.	Hao Bing Tian		
Great Day Improvements, LLC	Kent Nusser	Craig Cox	
Great Lakes Glass Distributors LLC	John McEachen	Vitally Besmen	
Grupo Vidrios el Castillo	Carlos Benet Trad	Gabriel Howerton	
G-TECH Optoelectronics Corporation	Lin Shu Huang	Gu Hongyu	
Guang Dong Kibing Energy Saving Glass Co., LTD	Liao Shanshun		
Guangdong Avic Special Glass Technology Co., Ltd	Liu Fan	Sven Pan	
Guangdong Golden Glass Technologies Limited	Wu Cong Zhen		
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Harvey Building Products	Dave Lambert	Peter Gent	
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Interpane Glasgesellschaft, mbH - Plattling	Luis Hidalgo		
Intigral	Mark Hutchinson		
Isoterglass SAS	Sirio Pierobon	Maurizio Zanotto	
Jasan Glass - JSG	Kyungsoo Lee		
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Jiangmen Yamako Glass Co., Ltd.	Carol Chan		
Jinzhou Fortune Spring Glass Co., Ltd.	Sophie Tu		
Jiuh Sheng Glass Co., Ltd.	Arthur Hung		
La Tecnica Nel Vetro SpA	Michele Inserra	Pascual Pellegrina	
M Industria S.A. DE C.V.	Mauricio Millet Median	Ricardo Tonueyo	Mex Yucatan

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
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ODL, Inc.	Todd Schauder		
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Pella Corporation	Aaron Ryan	Tyler Owens	
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PFG Glass Industries	Ryan Nielsen		
Pietta Glass Working Srl	Sorin Niteseu		
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Pioneer Window Mfg. Corp.	Eric Miller		
Poma Glass & Specialty Windows Inc. dba AGC Glass Company N.A.	Mark Cody	Mark Ford	
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Prelco MTL Inc.	Nancy Stuart	Stephane Bisson	
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Press Glass, Inc.	Michael Lankford	Conrad Lankford	
Price Mechanical Limited	Randy Aguilar		
PRL Glass Systems	David Landeros		
Productora y Distribuidora de Espejos S.A. de C.V.	Jose Natividad Gonzalez	Andres Gonzalez	
Productos De Valor Agregado en Cristal S.A. de C.V.	Edgar Valverde Chong		
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Pulp Studio, Inc.	Sue Delgado	Oscar Ramirez	
Qatar Glass Industries	Fouad Al Masri		
Qinhuangdao High Tech Energy Saving Dorwin Co., Ltd.	Sherry Shi	Su Chang	
Qinhuangdao Rongsheng Glass Processing Co., Ltd.	Dongsheng Yan		
Qinhuangdao Shucheng Energy Saving Technology Co., Ltd	Zheng Lin		
Qinhuangdao Xinhua Glass Processing Ind. Co. Ltd.	Cao Minghua		
Qinhuangdao Zhenhong Door and Window Co., Ltd.	Wang Yong		
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Reflex d.o.o.	Rudi Hajdinjak	Bostjan Kous	
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SAGE Electrochromics Inc.	Nicole Byre		
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Shandong Wensheng Glass Technology Co., Ltd.	Tony En	Anne Dou	
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Shanghai Yaohua Pilkington Glass Group Co., Ltd.	Dr. Sun Da Hai	Zhou Cai Fu	
Shanghai Yaohua Tempered Glass Co. Ltd.	Allen Wei	Ningke Zhang	
Shenbo Special Architectural Glass Industrial Co., LTD	Phoebe Hu	Alan Chan	
Shennng Mwuh Enterprise Co., Ltd	Tsai Chih Hung		

<u>Licensee</u>	<u>Primary Member</u>	<u>First Alternate</u>	<u>Second Alternate</u>
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ShenZhen LiaoYuan Glass Co., Ltd.	Xuanmin Fu		
Shine Glass Co., Ltd.	Xu Jiali		
Shinn Fu Pair Glass Co.	Huang Hsin Fu		
Sichuan CSG Energy Conservation Glass Co., Ltd.	Liu Song		
Sierra Pacific Windows	Rick Audsley	Neil Raleigh	
SIGCO, Inc.	David McElhinny	Troy Johnson	
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Skyland Insulated Glass Corp.	Ricky Zeng		
Solar Seal Company-MA	Alex Bradaran	Jim Miller	
Standard Building Products, Inc.	Candy Qin		
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Stargrup Cam A.S.	Emrah Arslankara		
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Sunview Patio Doors Ltd.	Claudio Sacilotto		
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Syracuse Glass Co., Inc.	John Dwyer		
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Taiwan Glass USA Sales Corp.	Albert Wang		
Tecnoglass S.A.	Christian Daes		
Tecnovidrio S.A. de C.V.	Sara Ivonne Penalosa		
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Templados Del Centro SA DE C.V.	Victoria Nunez		
Thai-German Specialty Glass Co., Ltd.	Zane Mercurio		
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Thermo BSL	Pierre-Luc Bellavance	Claude Pelletier	Guy Poirier
Thompson I.G. , LLC.	Dale Houck	Brian Satkowiak	
Tianjin CSG Energy Conservation Glass Co., LTD	Liu Liyao		
Tianjin Northglass Industrial Technical Co., Ltd.	Hu Zhangyan		
Tower Insulating Glass LLC.	Barry Litt		
TRACO (Three Rivers Alum)-PA	Frank Hayson		
Tristar Glass, Inc.	Doug Vail		
Triview Glass Industries	Alex Kastaniuk		
Trulite Glass and Aluminum Solutions	Jeff Haberer	Adrian Casas	
TSY-Fong Glass, Co., Ltd.	Hanss Huang		
TVITEC System Glass, S.L.	David Lopez	Alexandra Gonzalez	
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View Inc.	Steve Strawinski		
Vinyl Window Designs Ltd.	Kaz Feret	Barb Restrepo	
Viracon Inc.	Don Boutelle	Brian Louks	
Vitelsa Mosquera S.A.	John Lopez		
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Vitrum Industries Ltd.	David Buck	Adriano Harary	
W. A. Wilson Inc.	Rick Meredith	Robert Hartong	
W.C.P., Inc dba West Coast Insulated Glass Products	Rusty Neubauer		
Westeck Windows Mfg. Inc.	Terry Adamson		

August 2019

Licensee

Primary Member

First Alternate

Second Alternate

Whalley Glass Co
White Aluminium Enterprises L.L.C
Wholesale Glass Distributors, Inc.
Windsor Windows and Doors
Wujiang CSG Huadong Architectural Glass Co., LTD
Wujiang Golden Glass Technologies, Ltd.
Xiamen Togen Building Products Co., Ltd.
Xianning CSG Energy Conservation Glass Co., LTD.
Xinyi Energy-Smart Glass (Wuhu) Co., Ltd.
Xinyi Glass (Yingkou) Co., Ltd.
Xinyi Group (Glass) Co. Ltd.
YinJian DongGuan Glass Engineering Co., Ltd.
YKK AP America
Zhejiang Kibing Energy Saving Glass Co., Ltd.
Zhejiang Zhongli Energy Efficient Glass Mfg. Co., Ltd
Zhong Shan Grandglass Industrial Co. Ltd

Maurice Poma
Jabr Doshan
Kevin Boudreaux
Casey Coppock
Yu Jinhui
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February 2019

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11320 Watertown Plank Road
Wauwatosa, WI 53226
Telephone: (414)774-2250
Jeff Ogren
Email: jeff.ogren@bostik-us.com

Chem Source
2751 East Chapman Avenue
Fullerton, CA 92831
Telephone: (714) 871-5520
Diana Dai
Email: Chems@msn.com

CR Laurence
2503 East Vernon Avenue
Los Angeles, CA 90058
Telephone: (877) 421-6144
Bill Gyore
Email: bill_gyore@crlaurence.com

The Dow Chemical Company
2200 W. Salzburg Rd.
Midland, MI 48686
Telephone: (989) 496-5976
Fax: (989) 496-5956
Steve Altum
Email: s.altum@dow.com

FDR Design Inc.
303 12th Avenue South
Buffalo, MN 55313
Telephone: (763) 682-6096
Randi Ernst
Email: rle@fdrdesign.com

Fenzi North America Inc.
11 Dansk Court
Toronto, ON M9W 5N6 CANADA
Telephone: (416) 674-3831
James Rodo
Email: j.rodo@fenzi-na.com

HB Fuller/Kommerling
1200 Willow Lake Boulevard
St. Paul, MN 55110
Telephone: (651) 236-5401
Brian White
Email: brian.white@hbfuller.co

February 2019

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(continued)

Helima-Helvetion International
795 Duncan Reidville Road
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PDS IG
1850 Prairie Street
Prairie du Sac, WI 53578
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Michael Rapp
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RPM Rollformed Metal Products
101 Spinnaker Way
Concord, ON L4K 2T2 Canada
Telephone: (416) 665-7622
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Holly Money

Sika Corporation
30800 Stephenson Highway
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Jim Blamble
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Tremco
3735 Green Road
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Fax: (216) 292-503
Kevin Zuege
Email: KZuege@tremcoinc.com

Leading Edge
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Macedonia, OH 44056
Telephone: (440) 786-2444
Fax: (440) 735-7013
Dave Thoman
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Quanex, Inc.
800 Cochran Avenue
Cambridge, OH 43725
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Fax: (740) 439-0121
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Ramapo Sales & Marketing, Inc.
2440 Clements Ferry Road, Suite C
Charleston, SC 29492
Telephone: 843-747-2577
Jason Douglas
Email: jason@ramaposales.com

Technoform Glass Insulation, NA
1755 Enterprise Parkway, #300
Twinsburg, OH 44087
Telephone: (330) 487-6663
Fax: (330) 487-6691
Milind Jhaveri
Email: mjhaveri@technoform.us

Vetrotech Saint Gobain
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Switzerland
41-71-686-9286
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February 2019

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Robert Schwartz
Skidmore, Owings & Merrill
103 Hooverton Place
East Windsor, NJ 08520

Dan Johnson
ATI, Inc./ Intertek
40 51st Way
Fridley, MN 55421

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	Wiis, Janney, Elstner Associated, Inc	2015-2019

**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 web-page at www.igcc.org or by contacting the Insulating Glass Certification Council.

By-laws and a copy of the annual tax return is 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.

Direct all requests and/or any comments to:

~ ADMINISTRATION ~

Administrative Management Systems, Inc. (AMS)
PO Box 730
205 West Main Street
Sackets Harbor, New York 13685
Telephone: 315-646-2234
Fax: 315-646-2297
E-mail: staff@amscert.com
Website: www.igcc.org

~ADMINISTRATIVE STAFF~

John G. Kent, Administrative Manager
Katrina Stafford, Program Manager
Alicia Deveau, Program Coordinator
Erin Ackley, Program Coordinator
Jennifer Mackey, Program Coordinator

CERTIFIED PRODUCT KEY

Revision Date 5/31/2019

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
PL	=	Plastic
MT	=	Mylar Tape

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
AL	=	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
FS	=	Foam Spacer
PCS	=	Polycarbonate Spacer
PHA	=	Plastic Hybrid Aluminum
PHCS	=	Plastic Hybrid Chrome Steel
PHF	=	Plastic Hybrid Foil
PHNF	=	Plastic Hybrid Non-Metal Foil
PHSS	=	Plastic Hybrid Stainless Steel
PPS	=	Polymer Plastic Spacer
PSS	=	Polymer Spacer System
TBAA	=	Thermally Broken Anodized Aluminum
TBCA	=	Thermally Broken Coated Aluminum
TBCS	=	Thermally Broken Chrome Steel
TBGS	=	Thermally Broken Galvanized Steel
TBTS	=	Thermally Broken Tin Steel
TP	=	Thermoplastic Spacer

Substrates:

U	=	Uncoated
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 Insulated Glass Unit
IN	=	Inactive certification (See guideline G.38)

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.

UNDER EACH COMPANY'S NAME IS THEIR IGCC®/IGMA® PERMANENT LABEL

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	4929	BC4/ALLC	U/C3/U	MA/MA	LF/LF	PIB/S2		Yes
Advantage Glass Corp 601 West Carboy Road Mount Prospect, IL 60056 847-290-1707 Advantage Glass Corp IGCC(R)/IGMA(R) 2019	4457	BC4/PLLC	U/C1	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/LF	PIB/S2		Yes
AGC, Poma Glass Co. N.A. 365 McClurg Road-Suite E Boardman, OH 44512 330-965-1000 AGC 61 IGCC(R)/IGMA(R) 19	2903 2904 3705 4173 4268 4277 4584 4655 4985 4986 4987 4988 4991 4992	BC3/MC1/ZS/IC BC3/MC1/ZS/IC BC3/MC1/MT/IC BC3/MC1/IC BC3/MC1/ZS/IC BC3/MC1/ZS/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/MT/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC	U/C3/U U/C3/U U/C3/U U/C3 U/C3/U U/C3/U U/C3 U/C3/U U/C3/U U/C3 U/C3/U U/C3 U/C3/U U/C3/U	UT/UT US/US FS/FS BCS US/US UT/UT BPS BCS/BCS FS/FS BCS BCS/BCS BPS UT/UT US/US	DM/DM DM/DM IB/IB IB DM/DM DM/DM IB IB/IB IB/IB IB IB/IB IB DM/DM DM/DM	HM HM HM BCS RHM RHM BPS BCS HM BCS BCS BPS/HM HM HM	IC IC IC IC IC IC IC IC IC IC IC IC IC IC IC	Yes Yes Yes Yes Yes Yes Yes Yes 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>
AGC-Poma Glass Co. N.A. 480 California Road Quakertown, PA 18951 215-538-9424 AGC 63 IGCC(R)/IGMA(R) 19	3982 4093 4094 4099 4236 4648 4673 4674 4874 4980 4981 4982 4983 4984	BC3/MC1/ZS/IC BC4/ZS/IC BC4/ZS/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/ZS/IC BC3/MC1/MT/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/MY/IC BC3/MC1/ZS/IC BC3/MC1/ZS/IC	U/C3/U U/C3/U U/C3/U U/C3 U/C3/U U/C3/U U/C3/U U/C3 U/C3 U/C3 U/C3 U/C3/U U/C3/U U/C3/U	US/US UT/UT UT/UT BPS BCS/BCS US/US FS/FS BPS BPS/BPS BPS BCS FS/FS US/US US/US	DM/DM DM/DM DM/DM IB IB/IB IB/IB IB IB/IB IB DM/DM DM/DM DM/DM	HM HM HM BPS BCS HM HM BPS BPS BPS BCS HM HM HM	IC IC IC IC IC IC IC IC IC IC IC IC IC IC IC	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
AGNORA LTD 200 Mountain Road Collingwood, ON L9Y 4V5 Canada 7054446654	3329 4766	BC4/GSLC BC4/SSLC	U/C1/U U/C1	SS/SS PHSS	LF/LF LF	PIB/S2 PIB/S2		Yes Yes
Ajiya Safety Glass Sdn Bhd Lot 575, 1 KM Lebuhraya Segamat-Kuantan Segamat, Johor 85000 Malaysia 607-9313133	2871	MC4/PLK	U/C2	MA	LF	PIB/S2		
Al Abbar Architectural Glass Sanaa St., PO Box 1626 Ras Alkhor, Industrial Estate Dubai United Arab Emirates 104-333-1362	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	5000 5001	BC4/ALLC BC4/ALLC	U/U U/U	AA AA	IB LF	PIB/S2 PIB/PU2		
Aldora Aluminum and Glass Products Inc. 7421 E. Spartan Blvd. Charleston, SC 29418-8462 843-552-6377 ALDORA(SC) IGCC(R)/IGMA(R) 1 QT 19	2853	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	
All Counties Glass 2020 A East Miner Avenue Stockton, CA 95205 209-888-8720	4465	MC4/PLK/IC	U/C2	AA	LF	HM/RHM	IC	

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All Weather Windows 18550, 118A Avenue North West Edmonton, AB T5S 2K7 Canada 780-451-0670 AWW-1 IGCC®/IGMA® E2190 2019	2539 3938 4856	BC3/MC1/MT/IC BC3/MC1/SS/IC BC3/MC1/MT/IC	U/C2/U U/C2/U U/C2/U	FS/FS US/US FS/FS	IB/IB DM/DM IB/IB	RHM RHM RHM	IC IC IC	Yes Yes Yes
All Weather Windows Glass Ltd. 14415 - 128 Avenue Edmonton, AB T5L 3H3 Canada 780-482-8732	4815 4846	BC3/MC1/MT/IC BC3/MC1/MT/IC	U/C2/U U/C2	FS/FS FS	IB/IB IB	PIB/S2 PS2	IC IC	Yes Yes
Aluminum Manufacturers Co. Ltd - ALUMATEC Al Komra Dist, Ware houses City Phas 1 PO Box 17916 Jeddah 2194- K.S.A Jeddah 21494 Saudi Arabia +966 12 635-1766	4895 4896	BC4/ALLC BC4/ALLC	U/C2 U/C1	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	3267	BC4/GSLC	U/U	MA	LF	PIB/S2		
American Insulated Glass 102 East Fields Street PO Box 475 Dallas, NC 28034 704-917-0880 IGA IGCC(R)/IGMA(R) 2019	3158 3518	MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2	AA AA	LF LF	PIB/HM PIB/S2	IC IC	Yes Yes
American Insulated Glass, LLC 3965 East Conley Road PO Box 750 Conley, GA 30288 404-361-9154	4967	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	
Andersen Corporation 71 Second St Strathoy, ON N7G 3H8 Canada 651-264-5150 Andersen IGCC(R)/IGMA(R) Date	2373 5039	BC3/MC1/MT/IC BC3/MC1/MT/IC	U/C2/U U/C2/U	FS/FS FS/FS	IB/IB IB/IB	RHM RHM	IC IC	Yes Yes
Anhui Weshutter Energy-Saving Win-Door Co., Ltd. Zhuang Mu Town, Chang Feng County Hefei, Anhui 230000 China 86-13817695957	4613	MC4/PLK/IC	U/U	AA	LF	PIB/PS2	IC	

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Architectural Glass Products, LLC. 6200 Maple Avenue St. Louis, MO 63130 314-725-8088 Architectural Glass Products LLC IGCC®/IGMA® 19	2664	BC4/PLLC	U/C2	AA	LF	PIB/PU2		
	2666	BC4/PLLC	U/C2	PHSS	LF	PIB/PU2		
Associated Materials, Inc. - Central 3773 State Road Cuyahoga Falls, OH 44223 330-922-2069 AWCC IGCC®/IGMA® + date	3017	BC4/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
	3018	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
	3332	BC3/MC1/ZS/IC	U/C3/U	US/US	DM/DM	HM	IC	Yes
	3503	BC4ZS/IC	U/C3/U	US/US	DM/DM	HM	IC	Yes
	3951	BC4/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
	4081	BC3/MC1/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
	4433	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
Associated Materials, Inc. - Midwest 3820 44th Ave. SW Cedar Rapids, IA 52401 330-922-2069 AWCMW IGCC®/IGMA® + date + Line #	3171	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
	3481	BC3/MC1/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
	3519	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
	3717	BC3/MC1/ZS/IC	U/C3/U	US/US	DM/DM	HM	IC	Yes
	4407	BC3/MC1/ZS/IC	U/C3/U	US/US	DM/DM	HM	IC	Yes
	4408	BC3/MC1/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
Associated Materials, Inc. - Northwest 2801 78th Avenue East Fife, WA 98424 (425) 481-7101 AWCNW IGCC(R)/IGMA(R) + date	2587	BC3/MC1/MT/CT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
	3034	BC3/MC1/MT/CT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
	4091	BC3/MC1/ZS/IC	U/C3/U	US/US	DM/DM	RHM/HM	IC	Yes
	4252	BC4/ZS/IC	U/C3/U	UT/UT	DM/DM	RHM/HM	IC	Yes
	4638	BC4/ZS/IC	U/C3/U	US/US	DM/DM	RHM/HM	IC	Yes
	5126	BC4/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
Associated Materials, Inc. - Southeast 3800 Farmgate Road Kinston, NC 28501 252-527-5050 AWCSE IGCC(R)/IGMA(R) + date	2068	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
	3103	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
	3199	BC3/MC1/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
	3702	BC3/MC1/ZS/IC	U/C3/U	US/US	DM/DM	HM	IC	Yes
	3904	BC4/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
	3905	BC3/MC1/ZS/IC	U/C3/U	US/US	DM/DM	HM	IC	Yes
Associated Materials, Inc. - Southwest 7550 E. 30th St. Yuma, AZ 85365 928-344-6500 AWCSW IGCC(R)/IGMA(R) + date	2551	BC3/MC1/MT/CT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
	4108	BC3/MC1/ZS/IC	U/C3/U	US/US	DM/DM	HM	IC	Yes
	4308	BC4/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
	4309	BC4/ZS/IC	U/C3/U	US/US	DM/DM	HM	IC	Yes
	4609	BC4/ZS/IC	U/C3/U	UT/UT	DM/DM	HM	IC	Yes
	4610	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
Beijing Northglass Technologies Co. Ltd No. 1 North Road Beijing 100000 China +861082032601	4646	BC4/GSLC	U/U	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>
Beijing Wuhua Tianbao Glass Co. 1 Renli Road Liqiao Town Shunyi District Beijing 101304 China +86-10-69485045	4243	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Belgium Aluminum and Glass Works Factory Al Ejayyz, Sanaiya Near Nissan Service Center PO Box 17693 Al Ain, Abu Dhabi United Arab Emirates 971-3-721-3800	4414	MC4/ALK	U/C2	MA	LF	PIB/S2		
Berkowitz, J.E. One Gateway Boulevard PO Box 427 Pedricktown, NJ 08067 856-456-7800 JEB IGCC(R)/IGMA(R) 19	3458 4374 5006 5179	BC4/PLLC BC4/GSLC BC3/MC1/MT/IC MC4/PLK/IC	U/C2 U/C2 U/C2 U/C2	SS AA FS PHSS	LF LF IB LF	PIB/S2 PIB /S2 PIB/S2 PIB/S2		Yes Yes Yes Yes
Blue Star Glass Inc. 2300 US Highway 1 Building 31 North Brunswick, NJ 08902 732-422-1272	4618 4619	BC4/GSLC/IC BC4/GSLC/IC	U/C2 U/C2	AA MA	LF LF	PIB/S2 PIB/S2	IC IC	Yes Yes
BMC (Building Materials & Construction Services) 850 White Circle Court PO Box 4237 Marietta, GA 30060 678-819-6163 BMC IGCC(R) IGMA(R) + Date	3693	BC3/MC1/IC	U/C2	BPS	IB	BPS	IC	
Burhani Glass Factory, LLC 20A St., Ras 71 Khor Ind. Area 1 PO Box 294214 Dubai United Arab Emirates 971-4-3200-448	4232 4233	MC4/PLK MC4/PLK	U/U U/U	MA SS	LF LF	PIB/S2 PIB/S2		
BVGLAZING SYSTEMS 131 Caldari Road Concord, ON L4K 3Z9 Canada 905-738-8600 BV Glazing Systems IGCC(R)/IGMA(R) Concord ON 2019	4293 4464	BC4/GSLC MC4/PLK	U/C2 U/C2	PHSS SS	LF LF	PIB/S2 PIB/S2		Yes Yes
Cardinal CT 140 Carey Drive Utica, OH 43080 740-892-2324	4897	BC3/MC1/MT	U/U	FS	IB	HM		

<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	4684	BC4/PLLC/CT/IC	U/C2	SS	LF	PIB/S2	IC	Yes
6415 South Apache Rd. Buckeye, AZ 85326 480-486-4105 CIG 13 IGCC(R)/IGMA(R) + date	4725	BC4/PLLC/IC	U/C2/U	SS/SS	LF/LF	PIB/S2	IC	Yes
Cardinal IG	1464	BC4/PLLC/CT/MT/IC	U/C2	SS	LF	PIB/S1	IC	Yes
4611 15th Ave N.W. Fargo, ND 58102 701-492-0920 Cardinal IGCC(R)IGMA(R) CIG-6 Date LoE2	1492 3456 3457	BC4/ALLC/CT/AF/IC BC4/PLLC/CT/MT/IC BC4/ALLC/AF/CT/IC	U/C2 U/C2/U U/C2/U	AA SS/SS AA/AA	LF LF/LF LF/LF	PIB/S1 PIB/S1 PIB/S1	IC IC IC	Yes Yes Yes
	4878 IN	BC4/PLLC/CT/MT/IC	U/C2/U	SS/SS	LF/LF	PIB/S1	IC	Yes
Cardinal IG	1452	BC4/PLLC/AF/CT/IC	U/C2	AA	LF	PIB/S1	IC	Yes
301 E. McSwain Drive PO Box 99 Fremont, IN 46737 260-495-4105 (customer)IGCC(R)/IGMA(R)(glasstype/gas) CIG-5 MM-YY	1453 3446 3447	BC4/SSLC/AF/CT/IC BC4/PLLC/AF/CT/IC BC4/PLLC/AF/CT/IC	U/C2 U/C2/U U/C2/U	SS AA/AA SS/SS	LF LF/LF LF/LF	PIB/S1 PIB/S1 PIB/S1	IC IC IC	Yes Yes Yes
Cardinal IG	1030	BC4/PLLC/IC	U/C2/U	SS/SS	LF/LF	PIB/S1	IC	Yes
716 North East 6th Street PO Box 99 Greenfield, IA 50894 641-343-7113 "Customer Name" IGCC® IGMA® CIG-2 "date"	3539	BC4/PLLC/CT/IC	U/C2	SS	LF	PIB/S1	IC	Yes
Cardinal IG	1923	BC4/ALLC/CT/IC	U/C2	AA	LF	PIB/S1	IC	Yes
3125 Neal Creek Mill Road Hood River, OR 97031 541-354-1280 Cardinal IG CIG 9 IGCC(R)/IGMA(R) + quarter/year	1924 2553 2554 4683	BC4/PLLC/CT/IC BC4/ALLC/CT/IC BC4/PLLC/CT/IC BC4/PLLC/IC	U/C2 U/C2/U U/C2/U U/C2	SS AA/AA SS/SS SS	LF LF/LF LF/LF LF	PIB/S1 PIB/S1 PIB/S1 PIB/S2	IC IC IC IC	Yes Yes Yes Yes
Cardinal IG	2221	BC4/ALLC/CT/IC	U/C2/U	AA/AA	LF/LF	PIB/S1	IC	Yes
50 Elmwood Road Crestwood Industrial Park Mountain Top, PA 18707 570-474-3100 CIG 11 IGCC(R)IGMA(R) Date code	2222 4721	BC4/PLLC/CT/IC BC4/SSLC/CT/IC	U/C2 U/C2/U	SS SS/SS	LF LF/LF	PIB/S1 PIB/S1	IC IC	Yes Yes
Cardinal IG	3661	BC4/PLLC/IC	U/C2	SS	LF	PIB/S1	IC	Yes
1300 SW 44th Avenue Ocala, FL 34474 3522916810 Cardinal IG IGCC(R)IGMA(R) CIG12 2019	4960	BC4/PLLC	U/C2/U	SS/SS	LF/LF	PIB/S1	IC	Yes
Cardinal IG	1036	BC4/PLLC/CT/IC	U/C2	SS	LF	PIB/S1	IC	Yes
1011 E. Madison St. Spring Green, WI 53588 (608) 588-3846 Cardinal IG IGCC(R)/IGMA(R) CIG-3 Quarter/year/coating	1306 3168 3169	BC4/ALLC/CT/IC BC4/ALLC/CT/IC BC4/PLLC/CT/IC	U/C2 U/C2/U U/C2/U	AA AA/AA SS/SS	LF LF/LF LF/LF	PIB/S1 PIB/S1 PIB/S1	IC IC IC	Yes Yes Yes

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Cardinal IG	1039	BC4/PLLC/CT/IC	U/C2/U	SS/SS	LF/LF	PIB/S1	IC	Yes
1620 Town Line Road Tomah, WI 54660 608-372-3300 IGCC(R)IGMA(R) CIG-4 10-15-2019	1295	BC4/ALLC/CT/IC	U/C2	AA	LF	PIB/S1	IC	Yes
Cardinal IG	1970	BC4/PLLC/CT/IC	U/C2	SS	LF	PIB/S1	IC	Yes
2132 Cardinal Park Drive	1971	BC4/ALLC/CT/IC	U/C2	AA	LF	PIB/S1	IC	Yes
Vinton, VA 21179 540-892-5600 IGCC(R)IGMA(R) CIG 10 Date Q/19	3768	BC4/PLLC/MT/CT/IC	U/C2/U	SS/SS	LF/LF	PIB/S1	IC	Yes
Cardinal IG	1574	BC4/ALLC/IC	U/C2	AA	LF	PIB/S1	IC	Yes
201 Cardinal Road	1718	BC4/PLLC/CT/IC	U/C2	SS	LF	PIB/S1	IC	Yes
Waxahachie, TX 75165 972-937-4969 Cardinal IG IGCC(R)IGMA(R) CIG-8 Date	2838	BC4/PLLC/CT/IC	U/C2/U	SS/SS	LF/LF	PIB/S1	IC	Yes
Cascade Windows Inc.	4788	BC3/MC1/ZS/IC	U/C2	UT	DM	HM	IC	Yes
2225 S 75th Avenue #140 Phoenix, AZ 85043 480-736-8988 WPI20 IGCC(R)IGMA(R) + date	4800	BC3/MC1/ZS/IC	U/C2	UT	DM	HM	IC	Yes
Cascade Windows Inc.	3633	BC3/MC1/CT/IC	U/C2	UT	DM	HM	IC	Yes
5323 Harold Gatty Drive	3826	BC3/MC1/IC	U/C2	FS	IB	HM	IC	
Salt Lake City, UT 84116	4318	BC3/MC1/ZS/CT/IC	U/C2	UT	DM	HM	IC	Yes
801-359-2950	4770	BC3/MC1/ZS/IC	U/C2	US	DM	HM	IC	Yes
IGCC(R)IGMA(R) WPI4 + date	5007	BC3/MC1/MT/IC	U/C3	FS	IB	HM	IC	Yes
	5008	BC3/MC1/ZS/IC	U/C2	US	DM	HM	IC	Yes
Cascade Windows Inc.	3495	BC3/MC1/ZS/CT/IC	U/C2	UT	DM	HM	IC	Yes
10507 E. Montgomery Drive	3792	BC3/MC1/IC	U/C2	FS	IB	HM	IC	Yes
Spokane, WA 99206	4771	BC3/MC1/ZS/IC	U/C2	US	DM	HM	IC	Yes
509-789-3049	5009	BC3/MC1/MT/IC	U/C3	FS	IB	HM	IC	Yes
IGCC(R)IGMA(R) WP1 + date	5010	BC3/MC1/ZS/IC	U/C2	US	DM	HM	IC	Yes
Cascade Windows Inc.	4528	BC4/ZS/IC	U/C2	US	DM	HM	IC	Yes
10255 SW Spokane Court	4640	BC4/ZS/IC	U/C2	UT	DM	HM	IC	Yes
Tualatin, OR 97062-8823	5011	BC3/MC1/MT/IC	U/C3	FS	IB	HM	IC	Yes
503-692-6167	5012	BC3/MC1/ZS/IC	U/C2	US	DM	HM	IC	
	5013	BC3/MC1/ZS/IC	U/C2	UT	DM	HM	IC	Yes
Chain Glass Enterprises Inc.	4634	BC4/ALLC	U/C1	MA	LF	PIB/S2		
2710 Rizal Ave, Sta. Cruz Manilla 1007 Philippines 7816791								
Changshu High-Tech Energy-Saving Dorwin Co., Ltd.	4439	MC4/PLK/IC	U/C2	AA	LF	PIB/PS2	IC	
Industrial Park, Yanxiang Village Shanghu Town Changsu, Jiangsu 215551 China 86-0512-52122530	4894	MC4/PLK/IC	U/C2	TBAA	LF	PIB/PS2	IC	

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ChangShu MayBo Glass Co., Ltd Zhouhang, Haiyu Town Changshu, Jiangsu 215517 China 0512-52590663	4225 4226 4227 5036	BC3/MC1/MT/IC BC3/MC1/IC MC4/PLK/IC BC3/MC1/IC	U/C3 U/C3 U/C3 U/C3	FS BCS AA BCS	IB IB LF IB	PU2 BCS/PU2 PIB/PU2 BCS/PU2	IC IC IC IC	Yes Yes Yes Yes
Changshu Sedy Glass Specialties Co., Ltd Shengfa Village, Meili Town Changshu, Jiangsu 215511 China 0512-52215318	3804	BC3/MC1/IC	U/U	BCS	IB	BCS	IC	
Changshu Sysen Glass Products Co., Ltd. Zhoushi Road Shiqiao Village Meili Town Changshu Suzhou City, Jiangsu Province 215511 China 0512-52333829	4459 4460	MC4/PLK/IC BC3/MC1/IC	U/C3 U/C3	AA BCS	LF IB	PIB/PS2 BCS/PS2	IC IC	Yes Yes
Changshu Weier Glass Products Co. Ltd. Haiyu Town Changshu, Jiangsu 215519 China 86-512-52569644	3073 4953	MC4/PLK/IC BC3/MC1/IC	U/C3 U/U	AA BCS	LF IB	PIB/PU2 BCS/PS2	IC IC	Yes
Changshu ZhongXin Building Materials Co., Ltd. Meili Town Changshu, Jiangsu 215500 China	3435 4012 4122 4124	MC4/PLK/IC MC4/PLK/IC BC3/MC1/IC BC3/MC1/IC	U/C2 U/C2 U/C2 U/C2	AA AA BCS BCS	LF LF IB IB	PIB/PS2 PIB/PS2 BCS BCS/PS2	IC IC IC IC	
Chin Ta Glass Co., Ltd. No 39-16 Chenggong Road Dounan Township Yunlin, Taiwan 630 China 886-5-5962492	4716	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Ching Chyau Co., Ltd. No. 560, Feng-lin Second Road, Da-liao District Kaohsiung City, Taiwan 831 China 886-7-7878959	2891	MC4/PLK	U/C2	AA	LF	PIB/S2		
Chongqing SYP Engineering Glass Co., Ltd. No. 1 Yaopi Road, Wandong Town, Economic and Technological Development Zone Chongqing 400800 China	4724	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Cmech Ltd. 2 FengGuang Road ZhongXin Town ZengCheng City, Guangdong 511365 China 86-020-61737991 Cmech IGCC®/IGMA® 2019	3260	MC4/PLK/IC	U/U	AA	LF	PIB/PS2	IC	

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Columbia Commercial Bldg Prod. 1200 East Washington Street Rockwall, TX 75087 972-771-7100 CCBP IGCC®/IGMA® 19	3583 4416	BC3/MC1/MT BC4/GSLC	U/C2 U/C2	FS AA	IB LF	PIB/S2 PIB/S2		
Comercial Dialum SA Panamericana Norte 18.600, Lampa Santiago 9390306 Chile 56-2-24988600	4694	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Complete Line Glass Wholesalers, Inc. 8175 Bracken Creek Dr San Antonio, TX 78266 210-651-9873 CLGW IGCC(R)/IGMA(R) 2019	4811	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	
Consolidated Glass and Mirror, LLC 110 Jack Guynn Drive Galax, VA 24333 276-236-5196 GRD-024 IGCC(R)/IGMA(R) 2019	3214 3215 3499 4477	BC3/MC1/MT/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC	U/C2/U U/C2 U/C2 U/C2/U	FS/FS BCS BPS BPS/BPS	IB/IB IB IB IB/IB	HM BCS BPS BPS	IC IC IC IC	Yes Yes Yes Yes
Cristacurva 4822 Southerland Houston, TX 77092 713-353-5800 Cristacurva Houston IGCC(R)/IGMA(R) 19	1868 4240	BC4/GSLC BC3/MC1/MT	U/C2 U/C2	MA FS	LF IB	PIB/S2 PIB/S2		
Cristec Glass S.L. C/Marinada 10-12 Balaguer, Lleida 25600 Spain +34 973 446 902 CRISTEC IGMA(R)/IGCC(R) + date	4212	MC4/PLK/AP	U/C3	AA	LF	PIB/S2		Yes
CS ECO Glass LOT 635 & 660 Kawasan Perindustrian Tuanku Jaafar Sungai Gadut, Negeri Sembilan 71450 Malaysia	4781	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Custom Glass Prod. Of Carolina PO Box 2049 1475 Harrison Rd. Salisbury, NC 28144 704-633-4946 CGCP IGCC®/IGMA® 03-19	3876	MC4/PLK	U/U	AA	LF	PIB/RHM		
Custom Glass Products Inc. 7515 Venture Circle Weston, WI 54476 715-359-2252 Custom Glass Products WI IGCC®/IGMA® 2019	2979	MC4/PLK	U/U	MA	LF	PIB/S2		

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Dallas Flat Glass 1304 Champion Circle Carrollton, TX 75006-6803 972-506-9580 DFGD IGCC@/IGMA® 19-3	3038 4956	MC4/PLK/IC MC4/PLK/IC	U/C3 U/C3	AA AA	LF LF	PIB/PS2 PIB/S2	IC IC	
DES Building Innovate Sdn. Bhd. 2518, Lorong Perusahaan Baru 2 Perindustrian Estate Perai, Pulau Pinang 13600 Malaysia +60-4-397-0211	4786	MC4/PLK/IC	U/U	AA	LF	PIB/PS2	IC	
Dlubak Specialty Glass Corporation 520 East Chestnut St. P O Box 510 Blairsville, PA 15717 724-459-9540	4958	MC4/PLK	U/U	AA	LF	PIB/S2		
Dong Yang Glass Co., Ltd. Jungang-ro, Gwangju-si 354-12, Jungang-ro Gwangju-si, Gyeonggi-do 464-903 South Korea 82-2-2164-0027	4072 4073 4898	BC4/GSLC BC4/GSLC MC4/PLK	U/C2 U/C2/U U/C2	PHSS PHSS/PHSS PHSS	LF LF/LF LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
Dongguan CSG Architectural Glass Co., Ltd. CSG Green Energy Industrial Park Machong Town Dongguan, Guangdong China 86-769-88288292	2660 4601 4602	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	AA PHSS SS	LF LF LF	PIB/S2 PIB/S2 PIB/S2		Yes
Dongguan Longhui Architectural Glass Co. Ltd Taokeng Wulian Industrial Park, Wulian Village Fenggang Town Dongguan, Guangdong 532695 China 86-0769-87298666	4333	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Donguan Ngai Wah Bending Tempering Glass Company Limited Hekeng Industrial Area, Qiaotou Town Donguan City, Guangdong Province 52300 China +86 769 81029188	4447	MC4/PLK	U/U	AA	LF	PIB/S2		
Dynamic Windows & Doors Inc. 30440 Progressive Way Abbotsford, BC V2T 6W3 Canada 604-864-8200	2680 3713	MC4/PLK/IC BC3/MC1/MT/IC	U/C2 U/C2	AA FS	LF IB	PIB/RHM PIB/RHM	IC IC	Yes Yes

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Eckelt Glas GmbH ResthofstraBe 18 Postfach 10 Steyr A4403 Austria 43 7252 894 0 Eckelt IGCC®/IGMA® 2019 Saint Gobain CE Mark, CDP	2228 2229 2230	BC4/SSLC/AP BC4/SSLC/AP BC4/SSJ/AP	U/C2/U U/C2/U U/C2/U	MA/MA SS/SS SS/SS	LF/LF LF/LF LF/LF	PIB/PS2 PIB/PS2 PIB/S2		Yes Yes Yes
EFCO Corporation 1000 County Road Monett, MO 65708-9214 417-235-6011 EFCO Corp. IGCC®/IGMA®/prod #, time date	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		Yes Yes Yes Yes Yes Yes
Emirates Glass L.L.C. PO Box 29769 Interchange 4, Al Quoz Industrial Area Dubai United Arab Emirates 00971-47094713	2334	BC4/ALLC	U/C2	MA	LF	PIB/S2		
Engineered Glass Products, L.L.C. 2857 S. Halsted Street Chicago, IL 60608-5907 3123264710 3526 IGCC(R)/IGMA(R) 2019	3526	BC3/MC1	U/C1	BCS	IB	BCS		
Fairis C.A. 298 Verde Loma y Quis Picacha Ambato, Tungurahua 18010112 Ecuador 59332520901	4758 4759 4760 4761 4828 4829	BC4/ALLC BC4/ALLC/CT BC4/ALLC BC4/ALLC BC4/ALLC BC4/ALLC	U/U U/U U/U U/U U/C1 U/C1	AA AA AA AA AA AA	LF LF LF LF LF LF	PIB/PS2 PIB/PS2 PIB/S1 PIB/S1 PIB/S1 PIB/S1		Yes Yes Yes
FAKRO GP Sp. Z.0.0. ul. Wegierska 144A 33-300 Nowy Sacz VAT nubmer: PL 734-30-11-797 Poland 481-844-4053 F.GP IGCC(R)/IGMA(R) date, batch/date	4323 4914	BC4/GSLC BC2/MC2/PLK/AP	U/C2 U/C3	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 Fenplas, Candiac, QC (MM, YYY) IGCC®/IGMA®	3451	BC3/MC1/MT/IC	U/C1/U	FS/FS	IB/IB	HM	IC	Yes

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Flat Glass Distributors 5355 Shawland Road Jacksonville, FL 32254 904-354-5413 FGD IGCC(R) IGMA(R) 2019	2467	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	
Flat Glass Group Co., Ltd. 1999 Yunhe Rod., Xiuzhou Industrial Zone Jiaxing City, Zhejiang 314001 China 86-139-05735930	4144	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Future Architectural Glass LLC P 278, Al Ghail Industrial Area PO Box 86001 Al Ghail Ras Al Khaimah United Arab Emirates 072589274	3641	BC4/SSLC	U/U	MA	LF	PIB/S2		
General Glass 6601 NE 112th Court Vancouver, WA 98662 503-253-1147	3617	BC4/GSLC/IC	U/C2	MA	LF	PIB/PS2	IC	
	4231	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Gentek Building Products an Associated Materials Inc. Company 6320 Colonel Talbot Rd. London, ON N6P 1J1 Canada 519-652-3246 Gentek IGCC(R)/IGMA(R) 2382 + date	2382	BC3/MC1/MT/IC	U/C3	FS	IB	HM	IC	Yes
GLASPRO 9401 Ann Street Santa Fe Springs, CA 90670 562-777-4148	4421	MC4/PLK	U/C2	AA	LF	PIB/S2		
Glass and Mirror Craft PO Box 930439 Wixom, MI 48393 2486246922 G&MC IGCC(R) IGMA(R) 2019	4428	BC4/PLLC/IC	U/C2	AA	LF	PIB/S2	IC	Yes
	4833	BC3/MC1/MT/IC	U/C2	FS	IB	RHM	IC	
Glass Enterprises, Inc. 2277 New York Avenue Bensalem, PA 19020 215-638-1007 BETA-PANE IGCC(R)/IGMA(R) '19	3701	BC4/GSLC/IC	U/C2	AA	LF	PIB/PS2	IC	
	4849	BC4/GSLC	U/C2	AA	LF	PIB/PS2		
Glass Insulators Inc. 507 Main Street Bloomer, WI 54724 715-568-3649 GII IGCC(R)IGMA(R) 2019	3144	BC3/MC1/MT/IC	U/C2/U	FS/FS	IB/IB	HM	IC	Yes
	3976	BC4/GSLC/IC	U/C2/U	MA/MA	LF/LF	PIB/PS2	IC	

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Glassbel Baltic 11, Pramonės Str. LT-94102 Klaipėda Lithuania +370-46-416380 Glassbel IGCC(R)/IGMA(R) + year + other info	4728 4729 4730	BC4/GSLC/AP BC4/SSLC/AP BC4/GSLC/AP	U/C2/U U/C2/U U/C2/U	MA/MA SS/SS PHSS/PHSS	LF/LF LF/LF LF/LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
GlassFab Tempering Services Inc. Holly Drive 4101 Holly Drive Tracy, CA 95376 209-229-1060 GlassFab IGCC®/IGMA® 19	2685	MC4/PLK	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	BC4/GSLC	U/C3	MA	LF	PIB/S2		
Glasswerks GWA- West 2323 Firestone Blvd. South Gate, CA 90280 323-789-7800x351 GWA IGCC(R)/IGMA(R) 2019	2653 3727 3728 4023 4024	BC4/GSLC BC4/GSLC BC4/GSLC BC3/MC1/MT BC4/GSLC	U/C2 U/C2 U/C2 U/C2 U/C2	AA MA AA FS MA	LF LF LF IB LF	PIB/PS2 PIB/S2 PIB/S2 PIB/S2 PIB/PS2		Yes Yes Yes Yes Yes
Glasswerks GWLA- East 8600 Rheem Ave. South Gate, CA 90280 323-789-7810 GWLA IGCC(R)/IGMA(R) 2019	4340 4812	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA AA	LF LF	PIB/S2 PIB/PS2		
Glasswerks GWT 42005 Zevo Drive Temecula, CA 92590 323-636-1906 GWT IGCC(R)/IGMA(R) 2019	4404 4902	MC4/PLK/IC BC4/GSLC	U/C2 U/C2	MA AA	LF LF	PIB/S2 PIB/S2	IC	Yes
Glaz-Tech Industries, Inc. 8017 Edith Blvd. Albuquerque, NM 87113 (505) 898-1460 GTI 04 IGCC(R)/IGMA(R) '19	1285	MC4/PLK/CT/IC	U/C2	AA	LF	PIB/PS2	IC	
Glaz-Tech Industries, Inc. 10757 North Dual Street Baton Rouge, LA 70814 225-442-7040 GTI-09 IGCC(R)/IGMA(R) 19	4399	MC4/PLK/IC	U/C2	AA	LF	PIB/PS2	IC	
Glaz-Tech Industries, Inc. 1200 W Amity Road Boise, ID 83705-5413 208-389-1080	3076	MC4/PLK/IC	U/C2	AA	LF	PIB/PS2	IC	

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Glaz-Tech Industries, Inc. 4005 S. Clay St. Englewood, CO 80110 303-399-8587 GTI 07 IGCC(R)/IGMA(R) '19	3802	MC4/PLK/IC	U/C2	AA	LF	PIB /PS2	IC	
Glaz-Tech Industries, Inc. 4931 W. Brill Street Phoenix, AZ 85043 (602) 272-1544 GTI-02 IGCC(R)/IGMA(R) 19	2926 4611	MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2	AA AA	LF LF	PIB/PS2 PIB/S2	IC IC	
Glaz-Tech Industries, Inc. 2191 South 300 West, Suite # 5 Salt Lake City, UT 84115 801-467-3136 GTI-06 IGCC(R)/IGMA(R) 2019	2330	MC4/PLK/CT/IC	U/C2	AA	LF	PIB/HM	IC	
Glaz-Tech Industries, Inc. 150 Industrial Rd. Santa Teresa, NM 88008 505-589-4970 GTI03 IGCC(R)/IGMA(R) 19	2340	MC4/PLK/IC	U/C2	AA	LF	PIB/PS2	IC	
Glaz-Tech Industries, Inc. 2207 East Elvira Road Tucson, AZ 85745 520-629-0268 GTI-01 IGCC(R)/IGMA(R) 19	2919 2920	MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2	AA AA	LF LF	PIB/PS2 PIB/HM	IC IC	
Glenny Glass Co. 205 Castleberry Court Milford, OH 45150 513-489-2233 GLG IGCC(R)/IGMA(R) 19	2427	BC4/PLLC/IC	U/C1	MA	LF	PIB/PS2	IC	
Global Security Glazing 616 Selfield Road Selma, AL 36073 334-875-1900 GSG IGCC(R)/IGMA(R) 2019	3711	MC4/PLK	U/C2	MA	LF	PIB/S2		
GnT Glass Co., Ltd. District A, St 1, Ring 3 Huaxia Industrial Zone, Qiatou Dongguan, Guangdong 523532 China +86-138-2373-5541	3791 4591 4945 5028	BC4/GSLC BC4/GSLC MC4/PLK MC4/PLK	U/U U/C2/U U/C2 U/C2	MA MA/MA SS SS	LF LF/LF LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes
Great Lakes Glass Distributors 12707 Eckles Road Plymouth Township, MI 48170 734-656-3900 GLGD IGCC(R)/IGMA(R) 2019	3572 4420	MC4/PLK/IC MC4/PLK/IC	U/C1 U/C1	AA AA	LF LF	PIB/PS2 PIB/S1	IC IC	

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Grupo Vidrios el Castillo Avenida Las Industrias #500 Escobedo, Nuevo Leon 66062 Mexico 81-8154-5600	3516	BC4/GSLC	U/C2	MA	LF	PIB/S2		
G-TECH Optoelectronics Corporation No. 99, Chung Hsin Rd. Tongluo Shian Miaoli County, Taiwan 36647 China 037-236-988	4228	BC4/PLLC	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 517564 China +86-762-8807993	4806	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Guangdong Avic Special Glass Technology Co., Ltd No. 23, Shihua Blvd West Xiangshui River Industrial Park, Daya Bay Huizhou, Guangdong 516083 China 075527633580	2614 4727 4798 4817	BC4/GSLC BC4/GSLC MC4/PLK/GSLC BC4/GSLC	U/C2 U/C2 U/C2 U/C2	AA SS SS PHSS	LF LF LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
Guangdong Golden Glass Technologies Diejin Enterprise District Shantou College Road Shantou, Guangdong China +86 754 8253 2833	2386	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Guardian Fabrication, LLC 24145 W Moline Martin Road Millbury, OH 43447 734-654-4719	4712 IN 4713	VG VG	U/C2 U/C2	VG VG	VG VG	VG/HM VG/S1		
Guardian Fabrication, LLC 150 Business Park Drive Sun Prairie, WI 53590 608-825-9907 "Laser Etch Julian Calendar Date +Time"	3607 4647 4707 4711 4907 IN 4908 4909 4910	BC4/SSLC/CT/IC BC4/SSLC/IC MC4/PLK/IC MC4/PLK/IC MC4/PLK/IC BC4/SSLC/IC VG/BC4/SSLC/IC VG/MC4/PLK/IC	U/C2 U/C2 U/C2 U/C2 U/C2/U U/C2/U U/C2/U U/C2/U	PHSS PHSS AA SS AA/AA PHSS/PHSS VG/PHSS VG/SS	DM DM LF LF LF/LF DM/DM VG/DM VG/LF	PIB/S1 PIB/S1 PIB/S1 PIB/S1 PIB/S1 PIB/S1 VG/PIB/S1 VG/PIB/S1	IC IC IC IC IC IC IC IC	Yes 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	4784	BC4/ALLC	U/U	MA	LF	PIB/S2		

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Hankuk Glass Industries, Inc. 17, Oehang 6-gil Gunsan-si, Jeollabuk-do 54007 South Korea 82-63 460 4521	2387	MC4/PLK	U/C2	AA	LF	PIB/S2		
Hartung Glass Industries 12900 Nicholson Road Farmers Branch, TX 75234 972-629-6890	4417	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Hartung Glass Industries 17830 West Valley Highway Tukwila, WA 98188 800-552-2227	2494	MC4/PLK/CT/IC	U/C2/U	MA/MA	LF/LF	PIB/S2	IC	
	3208	MC4/PLK/CT/IC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2	IC	
	4566	BC3/MC1/MT	U/C2/U	FS/FS	IB/IB	PIB/S2		
	4664	BC3/MC1/MT	U/C2	FS	IB	PIB/S2		Yes
	4969	MC4/PLK/IC	U/C2	SS	LF	PIB/S2	IC	
	5149	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	Yes
Hartung Glass Industries 10450 SW Ridder Road Wilsonville, OR 97070 503-682-3846	2671	BC3/MC1/MT/IC	U/C2	FS	IB	RHM	IC	Yes
	2673	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	Yes
	3614	MC4/PLK/IC	U/C2	MA	LF	PIB/RHM	IC	Yes
Harvey Building Products 30 Jack's Bridge Road Londonderry, NH 03053-2145 603-216-8400 HII-1 IGCC(R)/IGMA(R) date time	2712	BC3/MC1/SS/AP/IC	U/C2/U	UT/UT	DM/DM	HM/RHM	IC	Yes
	4559	BC3/MC1/SS/IC	U/C2	UT	DM	HM	IC	Yes
	4560	BC3/MC1/SS/IC	U/C3	UT	DM	HM	IC	Yes
	4845	BC3/MC1/SS/IC	U/C2	US	DM	HM	IC	Yes
Harvey Building Products 7 Ledgewood Boulevard North Dartmouth, MA 02747 508-998-9779 H113IGCC(R)/IGMA(R) date	2719	BC3/MC1/SS/AP/IC	U/C2/U	UT/UT	DM/DM	HM/RHM	IC	Yes
	3744	BC3/MC1/SS/IC	U/C2	US	DM	HM	IC	Yes
	3842	BC3/MC1/SS/AP/IC	U/C2	UT	DM	HM	IC	Yes
	4185	BC3/MC1/SS/AP/IC	U/C3	UT	DM	HM	IC	Yes
Huizhou Wei Jin Yuan Glass Technology Co., Ltd. Lian-Da Industry Zone Xinxu Town, Huiyang District Huizhou, Guangdong 516223 China 86-138-2373-6090	3787	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Innovative Glass Products LLC 1430 Bradley Lane Suite 102 Carrollton, TX 75007 469-726-2662	4922	BC3/MC1	U/C2	FS	IB	RHM		
Insulite Glass Co., Inc. 780 W. Frontier Circle PO Box 2803 Olathe, KS 66063-0803 913-780-2233 ISL 2019 IGCC®/IGMA®	1702	BC4/GSLC/IC	U/C1	MA	LF	PIB/S2	IC	Yes
	3281	BC4/GSLC/IC	U/C1	PHSS	LF	PIB/S2	IC	Yes
	4398	BC3/MC1/MT	U/C1	FS	IB	PIB/S2		Yes

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Interpane Glasgesellschaft, mbH - Lauenforde	4508	BC4/SSLC	U/C3/U	SS/SS	LF/LF	PIB/S2		Yes
SohnreystraBe, 21 Lauenforde 37697 Germany	4509	BC4/SSLC	U/C3/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
49-1609-728-7363	4510	BC4/ALLC	U/C3/U	AA/AA	LF/LF	PIB/S2		Yes
Interpane 2 + date + IGCC(R)/IGMA(R) + cert #	4511	BC4/ALLC	U/C3/U	AA/AA	LF/LF	PIB/PS2		Yes
Interpane Glasgesellschaft, mbH - Plattling Robert Bosch Strasse, 2 Plattling, Germany 94447	4034	BC4/SSLC	U/C3/U	SS/SS	LF/LF	PIB/S2		Yes
Germany	4035	BC4/PLLC	U/C3/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
49-9931-950-0	4044	BC4/ALLC	U/C3/U	AA/AA	LF/LF	PIB/PS2		Yes
Interpane, date, batch, glass, IGCC®/IGMA®, cert#	4045	BC4/ALLC/AP	U/C2/U	AA/AA	LF/LF	PIB/S2		Yes
Intigral	1200 IN	BC3/MC1/AP/IC	U/C3	UT	DM	HM	IC	Yes
6750 Vistoria East Austintown, OH 44515	3027	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
330-793-7677	3028	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
INT AT IGCC(R)/IGMA(R) 19	3301 IN	BC3/MC1/SS/IC	U/C3/U	SS/SS	MX/MX	HM	IC	Yes
	4627	BC4/SS/IC	U/C2/U	US/US	DM/DM	RHM	IC	Yes
	4686	BC3/MC1/SS/IC	U/C3	UT	DM	RHM	IC	Yes
Intigral 7280 Dutton Drive Twinsburg, OH 44087 440-317-0715 INT TW IGCC(R) IGMA(R) 2019	4689	BC3/MC1/SS/IC	U/C3	US	DM	RHM	IC	
Intigral	3663	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	HM	IC	Yes
7850 Northfield Rd. Walton Hills, OH 44146	3664 IN	BC3/MC1/MT/IC	U/C1/U	FS/FS	IB/IB	HM	IC	Yes
440-439-0980	3921	BC3/MC1/SS/IC	U/C3/U	US/US	DM/DM	RHM	IC	Yes
INT WH IGCC(R)/IGMA(R) 2019	3922	BC3/MC1/IC	U/C3/U	UT/UT	DM/DM	RHM	IC	Yes
	4052	BC3/MC1/MT/IC	U/C3/U	FS/FS	IB/IB	RHM	IC	Yes
Isoterglass SAS Val 1 Maggio 8 Galliera Veneta, Padova 35015 Italy 390495965411	4816	BC4/SSLC/AP	U/C3	PHSS	LF	PIB/S2		Yes
Jasan Glass - JSG 459-1 Neojo-Ri, Jori-Eup Paju, Gyeonggi 413-821 South Korea 82-31-941-6289	2275	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		Yes
Jersey Tempered Glass, Inc. 2035 Briggs Rd. Mt. Laurel, NJ 08054 856-273-8700 JTG IGCC(R)/IGMA(R) '19	689	MC4/PLK/IC	U/C1	AA	LF	PU2	IC	
	750	MC4/PLK/IC	U/C1	AA	LF	PIB/PU2	IC	

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Jiangmen SYP Engineering Glass Co, Ltd. 10 Yinyuan Road Economic Development Zone, Xinhui Jiangmen, Guangdong 529141 China 86-750-6398999 SYPE IGCC®/IGMA® E2190 19	2856 3237 3238	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	AA SS PHSS	LF LF LF	PIB/S2 PIB/S2 PIB/S2		Yes
Jiangmen Yamako Glass Co., Ltd. No. 10, Hongye three road Daze Town Xinhui District Jiangmen, Guangdong China 852-279-6886 JYG IGCC®/IGMA® 2019	3642	BC3/MC1/MT/IC	U/U	FS	IB	HM	IC	
Jinzhou Fortune Spring Glass Co., Ltd. Wuyi Mountain Road #1 The Economic Development Zone Jinzhou, Liaoning 121007 China 86-416-3581084	2811 2813 4905 4906	BC3/MC1/IC BC3/MC1/CT/IC BC3/MC1/IC BC3/MC1/IC	U/U U/U U/C2 U/C2	BCS BCS BCS BCS	IB IB IB IB	BCS/PS2 BCS/PS2 BCS/PS2 BCS/PS2	IC IC IC IC	
Jiuh Sheng Glass Co., Ltd. No. 19, Zhongxing Road New Taipei City 236, Tucheng District 23678 Taiwan 886-2-2267-4929-225	4310	BC3/MC1/PLK	U/U	AA	LF	PIB/S2		
Kawneer - (Cranberry) an Arconic Company 71 Progress Ave. Cranberry Ind. Pk. Cranberry Township, PA 16066-3596 724-776-7000 Kawneer Cranberry IGCC(R)IGMA(R)Date	4487 4576 4577 4617	BC4/IC BC4/SSLC/IC BC4/SSLC BC4/IC	U/C2 U/C2 U/C2 U/C2	TP MA MA TP	IB LF LF IB	TP/S2 PIB/S2 PIB/S2 TP/S2	IC IC IC IC	Yes Yes
Kenyon's Stained Glass Factory, LLC. 5720 North Meadows Drive Grove City, OH 43123 614-539-8740 KENYON IGCC(R)IGMA(R) 2019	3680 3929 4178 4359 4360 4409 4410 4502 5026	MC4/PLK/IC BC3/MC1/IC MC4/PLK/IC BC3/MC1/MT/IC BC3/MC1/MT/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2	AA BCS AA FS FS BCS BCS BCS BCS	LF IB LF IB IB IB IB IB IB	PU2 BCS PU2 PU2 PU2 BCS/PU2 BCS/PU2 BCS BCS/PU2	IC IC IC IC IC IC IC IC IC	
La Tecnica Nel Vetro SpA Via. Domenico Catalano 88 Scafati, Salerno 84018 Italy 39-392-771-2550	4544 4545 4998	BC4/SSLC/AP BC4/SSLC BC4/SSLC/IC	U/C2/U U/C2/U U/C2	PHSS/PHSS PHSS/PHSS PHSS	LF/LF LF/LF LF	PIB/S2 PIB/PS2 PIB/S2		Yes Yes Yes

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Louisville Plate Glass 4301 Chefs Way Louisville, KY 40218 502-584-6145 LPG IGCC(R)/IGMA(R)2019	1281 2897	MC4/PLK MC4/PLK	U/C2 U/C2	AA AA	LF LF	PIB/S2 PIB/PS2		
LTI Smart Glass, Inc. 14 Federico Drive Pittsfield, MA 01201 413.637.5001	4904 4930	BC3/MC1/MT BC4/GSLC	U/C2 U/C2	FS MA	IB LF	RHM PIB/RHM		
M Industria S.A. DE C.V. AV. Circuito Colonias N. 319 Y 321 Colonia Pedregales De Tanlum R.F.C. MIN 120224147 Merida, Yucatan 97210 Mexico 999-930-23-70	4074	BC3/MC1/MT	U/C2	FS	IB	PIB/S2		
Mannix Exterior Wall Systems, Inc. 345 Crooked Hill Road Brentwood, NY 11717 631-231-0800 MANNIX IGCC®/IGMA® 1746 2019	1746	MC4/PLK/IC	U/C2	AA	LF	PIB/PU2	IC	
Mid-American Glass 147 S. Sturdevant St. PO Box 3428 Davenport, IA 52808-3428 563-326-6294 Mid American Glass INC IGCC®/IGMA® 19-1	2315	MC4/PLK/IC	U/C2	AA	LF	PIB/RHM	IC	Yes
Mirroirs Laurier 153 boul. Laurier Laurier-Station, QC G0S 1N0 Canada 418-728-2023	2559 2629	MC4/PLK/IC MC4/PLK/IC	U/C2/U U/C2/U	PHSS/PHSS PHSS/PHSS	LF/LF LF/LF	PIB/PS2 PIB/S2	IC IC	Yes Yes
Nashville Tempered Glass LLC 1241 Avondale Dr. Hendersonville, TN 37075 615-826-5522 NTGC IGCC(R)/IGMA(R)2019	3991 4244 4287	BC4/GSLC/IC BC4/GSLC/IC BC4/GSLC	U/C2 U/C1 U/C1	MA AA AA	LF LF LF	PIB/S2 PIB/S2 PIB/S2	IC IC	
Ningbo Jianghua Glass Science And Technology Co., Ltd. 88 Haichuan Road Jiangbei District Ningbo, Zhejiang 315000 China 86-0574-87560918	3475	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Northwestern Glass Fab 5301 Industrial Blvd., NE Fridley, MN 55421 763-762-1750 BV IGCC®/IGMA® 2019	1580 4971	BC4/GSLC/IC BC4/GSLC/IC	U/C1 U/C1	MA MA	LF LF	PIB/PU2 PIB/S2	IC IC	

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Northwestern Industries, Inc. 2501 Commodore Way Seattle, WA 98199 206-285-3140 NWI-SEA WA IGCC®/IGMA® + DATE & TIME	1635 5041	BC2/MC2/PLK/CT/IC BC4PLK/IC	U/C2/U U/C2	MA/MA PHSS	LF/LF LF	PIB/S2 PIB/S2	IC IC	Yes Yes
Northwestern Industries, Inc. 7595 East 30th Street Yuma, AZ 85365-6532 (928) 726-3555 NWI Yuma, AZ IGCC(R)/IGMA(R) 2019	2249 4754	BC4/GSLC/CT BC4/GSLC	U/C2 U/C2	MA PHSS	LF LF	PIB/S2 PIB/S2		Yes Yes
Novatech Patio Doors Inc. 100, 181e Rue Beauceville, QC G5X 2T1 Canada 418-774-2949 ext. 265 NovaTech YYYY-MM IGCC®/IGMA®	2877	BC3/MC1/MT/IC	U/C2/U	FS/FS	IB/IB	HM	IC	Yes
ODL, Changshu ZhongXin Building Materials Co., Ltd. Meili Town Changshu, Jiangsu 215500 China 616-748-5401 ODL Inc. (ZX) IGCC(R)/IGMA(R) 19	3188 3189 3997 3998 4195 4198	BC3/MC1/IC BC3/MC1/IC MC4/PLK/IC MC4/PLK/IC BC3/MC1/IC BC3/MC1/IC	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2	BCS BCS AA AA BCS BCS	IB IB LF LF IB IB	BCS BCS/PS2 PIB/PS2 PIB/PS2 BCS BCS/PS2	IC IC IC IC IC IC	
ODL, Inc. 215 E. Roosevelt Avenue Zeeland, MI 49464 616-772-9111 ODL INC. (Z) IGCC(R)/IGMA(R) 19	1892 3052 3407 4192 4337 4338	BC4/IC BC3/MC1/CT/SS/IC MC4/PLK/CT/IC BC3/MC1/SS/CT/IC BC4/IC MC4/PLK/IC	U/C1 U/C2 U/C2 U/C2 U/C1 U/C2	BCS UT AA UT BCS AA	IB DM LF DM IB LF	BCS RHM PU2 RHM BCS PU2	IC IC IC IC IC IC	

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ODL, Inc., Vidrio Decorativo Occidental S. A. de C. V.	2637	BC3/MC1/CT/IC	U/C1	BCS	IB	BCS	IC	
Poniente 4 Entre Borte 7 y Gral Pedro Hinojosa	3083	MC4/PLK/IC	U/C2	AA	LF	HM/PU2	IC	
Ciudad Industrial Heroica Matamoros, Tamaulipas Mexico	3089	BC3/MC1/IC	U/C2	BCS	IB	BCS	IC	
616-772-9111	3116	BC3/MC1/ZS/CT/IC	U/C1/U	UT/UT	DM/DM	RHM	IC	
ODL Inc (V) IGCC®/IGMA® 19	3118	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	
	3309	MC4/PLK/CT/IC	U/C2	AA	LF	PU2	IC	
	4005	BC3/MC1/ZS/CT/IC	U/C2	UT	DM	RHM	IC	
	4075	MC4/PLK/CT/IC	U/C2	AA	LF	PU2	IC	
	4076	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	
	4080	BC3/MC1/ZS/CT/IC	U/C2	UT	DM	RHM	IC	
	4141	BC3/MC1/IC	U/C2	BCS	IB	BCS/PU2	IC	
	4259	BC3/MC1/IC	U/C2	BCS	IB	BCS	IC	
	4262	MC4/PLK/IC	U/C2	AA	LF	HM/PU2	IC	
	4265	BC3/MC1/CT/IC	U/C1	BCS	IB	BCS	IC	
	4267	BC3/MC1/IC	U/C2	BCS	IB	BCS/PU2	IC	
	4332	BC3/MC1/ZS/CT/IC	U/C1/U	UT/UT	DM/DM	RHM	IC	
	4851	BC3/MC1/IC	U/C2	BCS	IB	BCS	IC	
	5133	BC3/MC1/ZS/IC	U/C1/U	UT/UT	DM/DM	RHM	IC	
OKALUX GmbH	2656	BC4/GSLC	U/C2	SS	LF	PIB/PS2		Yes
Am Jospershecklein 1	4702	MC4/PLK	U/C2	MA	LF	PIB/S2		
97828 Marktheidenfeld								
Altfeld								
Germany								
939-190-00								
Okalux + Date +composition+IGCC(R)/IGMA (R)								
Oldcastle BuildingEnvelope®	4701	BC4/GSLC/IC	U/C2/U	MA/MA	LF/LF	PIB/S2	IC	Yes
5334 Barthel Industrial Drive, NE	4776	BC4/GSLC/IC	U/C2	MA	LF	PIB/S2	IC	Yes
Albertville, MN 55301	4777	BC4/GSLC/IC	U/C2	PHSS	LF	PIB/S2	IC	Yes
763-497-3212								
OBE 22 IGCC(R)/IGMA(R) 19								
Oldcastle BuildingEnvelope®	1537	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	Yes
1611 S.E. Commerce Avenue	2403	MC4/PLK/IC	U/C2	PHSS	LF	PIB/S2	IC	Yes
Battle Ground, WA 98604								
360-816-7777								
OBE 73 IGCC(R)/IGMA(R) 19								
Oldcastle BuildingEnvelope®	1424	MC4/PLK/IC	U/C2	AA	LF	PIB/PU2	IC	Yes
PO Box 54	3698	MC4/PLK	U/C2	SS	LF	PIB/S2		Yes
Burnips, MI 49314	732	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	Yes
616-896-8341								
Oldcastle 28 IGCC(R)/IGMA(R) 19								

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Oldcastle BuildingEnvelope® 3601 - 72 Avenue SE Calgary, AB T2C 2K3 Canada 403-279-2544 Oldcastle 93 IGCC(R)/IGMA(R) '19	2703 2725 2878 2879 4700 4767 4917	MC4/PLK/IC MC4/PLK/IC BC3/MC1/MT/IC MC4/PLK/IC BC3/MC1/MT/IC BC3/MC1/IC BC3/MC1/IC	U/C2/U U/C2/U U/C2/U U/C2/U U/C2/U U/C2/U U/C2/U	SS/SS PHSS/PHSS FS/FS AA/AA FS/FS FS/FS FS/FS	LF/LF LF/LF IB/IB LF/LF IB/IB IB/IB IB/IB	PIB/S2 PIB/S2 RHM PIB/S2 PIB/S2 PIB/S2 PIB/S2	IC IC IC IC IC IC IC	Yes Yes Yes Yes Yes Yes Yes
Oldcastle BuildingEnvelope® 4161 S Morgan St. Chicago, IL 60609 773-523-8400 OBE 24 IGCC(R)/IGCC(R) '19	1289 1986 4830	BC4/PLLC MC4/PLK/IC MC4/PLK/IC	U/C3 U/C3 U/C3	AA AA AA	LF LF LF	PIB/RHM RHM PIB/RHM	IC IC IC	
Oldcastle BuildingEnvelope® 2195 Langstaff Rd. Concord, ON L4K 2B2 Canada 905-660-3809 OLDCASTLE B.E.94IGMA(R)IGCC(R)2019	4450	BC4/GSLC	U/C2/U	MA/MA	LF/LF	PIB/S2		Yes
Oldcastle BuildingEnvelope® 14117 Industrial Park Blvd. Covington, GA 30014 678-212-7700 OBE 42 IGCC (R) IGMA (R) 19	914	BC4/SSLC/IC	U/C2	MA	LF	PIB/S2	IC	Yes
Oldcastle BuildingEnvelope® 11205 E. 37th Avenue Denver, CO 80239 303-371-5511 OBE 71 IGCC(R)/IGMA(R) '19	2689 3488 3937 5068	MC4/PLK/CT/IC MC4/PLK/CT/IC MC4/PLK/CT/IC BC3/MC1/MT/IC	U/C2/U U/C2 U/C2 U/C2/U	AA/AA AA PHSS FS/FS	LF/LF LF LF IB/IB	PIB/S2 PIB/RHM PIB/S2 RHM	IC IC IC IC	Yes Yes Yes Yes
Oldcastle BuildingEnvelope® 6850 Stevenson Blvd. Fremont, CA 94538 510-651-2292 OBE 84 IGCC®/IGMA® 19	4336 5127	MC4/PLK/CT/IC MC4/PLK/IC	U/C2 U/C2	MA PHSS	LF LF	PIB/S2 PIB/S2	IC IC	Yes Yes
Oldcastle BuildingEnvelope® 1101 Fountain Parkway Grand Prairie, TX 75050 972-647-4028 OBE 83 IGCC(R)/IGMA (R) 19	3974 4438 4850	MC4/PLK/IC MC4/PLK/IC BC3/MC1/MT	U/C2 U/C2 U/C2	MA MA FS	LF LF IB	PIB/S1 PIB/S2 PIB/S2	IC IC IC	Yes Yes Yes
Oldcastle BuildingEnvelope® 895 Motor Pkwy. PO Box 18039 Hauppauge, NY 11788-8839 631-234-2200 Oldcastle 15 IGCC®IGMA® 2019	2235 4326 4562	MC4/PLK/IC MC4/PLK/IC MC4/PLK/IC	U/C2/U U/C2/U U/C2	MA/MA PHSS/PHSS MA	LF/LF LF/LF LF	PIB/S2 PIB/S2 PIB/S2	IC IC IC	Yes Yes Yes
Oldcastle BuildingEnvelope® 1331 W Sam Houston Pkwy N Houston, TX 77043 713-464-5611 OBE 65 IGCC(R)/IGMA(R) 2019	1137 5121	MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2	AA AA	LF LF	PIB/S2 PIB/S2	IC IC	Yes Yes

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Oldcastle BuildingEnvelope® 4635 W. 84th St., Ste. 100 Indianapolis, IN 46268 317-876-1155 OBE 29 IGCC(R)/IGMA(R) 19	4886	MC4/PLK/IC	U/C2	PHSS	LF	PIB/S2	IC	Yes
	653	MC4/PLK/AP/IC	U/C2	MA	LF	PIB/S2	IC	Yes
Oldcastle BuildingEnvelope® 5075 275th Street Langley, BC V4W 0A8 Canada 604-607-1300 OBE 91 IGCC(R)/IGMA(R) '19	2324	BC3/MC1/MT/CT/IC	U/C2/U	FS/FS	IB/IB	RHM	IC	Yes
	3367	MC4/PLK/IC	U/C2/U	PHSS/PHSS	LF/LF	PIB/RHM	IC	Yes
	3740	MC4/PLK/IC	U/C2	PHSS	LF	PIB/S2	IC	Yes
	4256	MC4/PLK/IC	U/C2/U	MA/MA	LF/LF	PIB/S2	IC	Yes
Oldcastle BuildingEnvelope® 5631 Ferguson Dr. Los Angeles, CA 90022 323-887-6000	4352	MC4/PLK/IC	U/C2/U	MA/MA	LF/LF	PIB/RHM	IC	Yes
	3303	MC4/PLK/CT/IC	U/C2	MA	LF	PIB/S2	IC	Yes
	3733	MC4/PLK/CT/IC	U/C2	SS	LF	PIB/S2	IC	Yes
Oldcastle BuildingEnvelope® 17851 Northwest Miami Ct Miami, FL 33169 305-652-3350 OBE 82 IGCC(R) IGMA(R)19	4518	MC4/PLK/IC	U/C2	PHSS	LF	PIB/S2	IC	Yes
	3580	BC4/GSLC/IC	U/C2	MA	LF	PIB/S2	IC	
Oldcastle BuildingEnvelope® 1500 Glen Ave. Moorestown, NJ 08057 856-234-9222 Oldcastle 12 IGCC(R)/IGMA(R) '19	4868	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	Yes
	4869	BC3/MC1/MT/IC	U/C2	FS	IB	PIB/S2	IC	Yes
	4976	MC4/PLK/IC	U/C2	AA	LF	PIB/S1	IC	
Oldcastle BuildingEnvelope® Ampoint Industrial Park 291 "M" Street Perrysburg, OH 43551 419-666-2000 OBE 81IGCC(R)/IGMA(R) 2019	2642	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
	3262	BC4/SSLC	U/C2	MA	LF	PIB/S2		Yes
	5174	BC4	U/C2	TP	IB	TP/S2		Yes
Oldcastle BuildingEnvelope® 3404 W. Papago Street #1 Phoenix, AZ 85009 602-253-6980 OBE 63 IGCC(R)/IGMA(R) '19	4608	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	Yes
	4838	BC3/MC1/MT	U/C2	FS	IB	PIB/S2		Yes
Oldcastle BuildingEnvelope® 1900 Midland Street Rock Hill, SC 29731 803-366-5167 OldcastleBE® 44 IGCC®/IGMA® 19	3081	BC4/GSLC/IC	U/C2	MA	LF	PIB/S2	IC	
	5005	BC4/GSLC/IC	U/C2	MA	LF	PIB/RHM	IC	
Oldcastle BuildingEnvelope® 5103 Janice Avenue Schofield, WI 54476 715-359-2432 Oldcastle 27 IGCC®/IGMA® + date code	1312	MC4/PLK/IC	U/C2/U	AA/AA	LF/LF	PIB/PU2	IC	Yes
	1319	MC4/PLK/IC	U/C2/U	AA/AA	LF/LF	PIB/S2	IC	Yes
	2583	MC4/PLK/IC	U/C2/U	PHSS/PHSS	LF/LF	PIB/S2	IC	Yes
	2647	MC4/PLK/IC	U/C2/U	PHSS/PHSS	LF/LF	PIB/PU2	IC	Yes
	3337	MC4/PLK/IC	U/C2/U	MA/MA	LF/LF	PIB/PU2	IC	Yes
3338	MC4/PLK/IC	U/C2/U	MA/MA	LF/LF	PIB/S2	IC	Yes	

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Oldcastle BuildingEnvelope® 10000 N. Harrison Shawnee, OK 74804 405-275-5510 OBE 61 IGCC(R)/IGMA(R) '19	1168 4959	MC4/PLK/IC BC4	U/C2 U/C2	AA TP	LF IB	PIB/S1 TP/S2	IC	Yes
Oldcastle BuildingEnvelope® 5115 East Hartford St. Tampa, FL 33619 813-247-3184 OBE 43 IGCC(R)/IGMA(R)19	3621	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	
Oldcastle BuildingEnvelope® 1700 Daniel Boone Industrial Park Dr. Warrenton, MO 63383 636-456-3452 OBE 21 IGCC®/IGMA® 19	3878 3879 IN 4036	MC4/PLK/IC MC4/PLK/IC MC4/PLK	U/C2 U/C2/U U/C2	MA MA/MA PHSS	LF LF/LF LF	PIB/S2 PIB/S2 PIB/S2	IC IC	Yes Yes Yes
Oldcastle BuildingEnvelope® 30 Cooperative Way Wright City, MO 63390 636-745-3030 OBE35 IGCC®/IGMA® + date	2400 2893	BC4/GSLC/CT BC4/GSLC/CT	U/C2/U U/C2/U	PHSS/PHSS MA/MA	LF/LF LF/LF	PIB/S2 PIB/S2		Yes Yes
Oldcastle BuildingEnvelope® Canada Inc. 12755 boul Industriel Pointe-aux-Trembles, QC H1A 4Z6 Canada 514-640-5355 OLDCASTLE 95 MONTREAL IGCC(R)IGMA (R)2019	2883 2884 3856 4855	MC4/PLK MC4/PLK MC4/PLK MC4/PLK	U/C2/U U/C2 U/C2 U/C2/U	AA/AA PHSS AA PHSS/PHSS	LF/LF LF LF LF/LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes
Panjin Truspacer Insulating Glass Material Co., Ltd. 585 Xingsheng Road Dawa Town Panjin, Liaoning 12400 China 86-427-6852078	4665	BC3/MC1/IC	U/U	BCS	IB	BCS/PS2	IC	
Patio Enclosures 720 East Highland Road Macedonia, OH 44056 330-468-0700 PE IGCC(R)IGMA(R) exact Date code	1851	BC3/MC1/MT	U/C1	FS	IB	RHM		
Pella Corporation 2000 Proline Place Gettysburg, PA 17325-8297 717.334.0099 IGCC(R)IGMA(R) PEL G03 NFRC info PEL Web ADD Date	2688 4134 4932	BC3/MC1/MT/IC BC3/MC1/MT/IC BC3/MC1/ZS/IC	U/C2 U/C2 U/C2	FS FS US	IB IB DM	HM HM RHM	IC IC IC	Yes Yes Yes
Pella Corporation 111 Pella Place Macomb, IL 61455 309-295-1407 Pella "date/time" IGCC(R)IGMA(R) serial # NFRC#	5020 5021	BC3/MC1/ZS/IC BC4/PLLC/IC	U/C2 U/C2	US SS	DM LF	RHM PIB/S1	IC IC	Yes Yes

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Pella Corporation	4133	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	Yes
307 Pella Way	4449	BC4/PLLC/CT/IC	U/C2	SS	LF	PIB/S1	IC	Yes
Murray, KY 42071	4657	BC4/PLLC/CT/IC	U/C2	SS	LF	PIB/S1	IC	Yes
270-767-2500	4875	BC3/MC1/ZS/IC	U/C2	US	DM	RHM	IC	Yes
2-9 PELLA Jun 19 2019 (time) IGCC®/IGMA®								
Pella Corporation	4078	BC4/PLLC/IC	U/C2	SS	LF	PIB/S1	IC	Yes
18600 NE Wilkes Road	4103	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	Yes
Portland, OR 97294	4289	BC4/ZS/IC	U/C2	US	DM	RHM	IC	Yes
503-405-9176	4656	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	Yes
IGCC(R)/IGMA(R) "serial #" "NFRC #"	4879	BC4/IC	U/C2	US	DM	RHM	IC	Yes
Pella.com & "date"	4880	BC4/IC	U/C2	US	DM	RHM	IC	Yes
Pella Corporation	4077	BC4/PLLC/IC	U/C2	SS	LF	PIB/S1	IC	Yes
1500 South Highway 59								
Shenandoah, IA 51601								
712-246-6324								
Pella IGCC®/IGMA® CIG 02.F (date)								
Pella Corporation	3291	BC4/PLLC/IC	U/C2	SS	LF	PIB/S1	IC	Yes
1800 North Main Avenue	4021	BC4/PLLC/IC	U/C2	SS	LF	PIB/S1	IC	Yes
Sioux Center, IA 51250								
712-722-5609								
Pella IGCC(R)/IGMA(R) CIG-2 F "serial number S12"								
Perficom S.A. DE C.V.	5014	BC3/MC1	U/C2	BCS	BCS	BCS		Yes
AV. Central No. 3								
Fracc. Industrial Valle De Oro								
San Juan Del Rio, Queretaro 76802								
Mexico								
52-42 72 72 92 32								
PFG Glass	2470	BC3/MC1/MT/CT/IC	U/C2/U	FS/FS	IB/IB	PIB/S2	IC	Yes
27413 55th Avenue	3858	BC3/MC1/MT/IC	U/C2/U	FS/FS	IB/IB	HM	IC	Yes
Langley, BC V4W 3Y1	3859	BC3/MC1/MT/IC	U/C2/U	FS/FS	IB/IB	PIB/HM	IC	Yes
Canada								
1-604-607-4500								
PFG Glass IGCC(R)/IGMA(R) + Date								
Pietta Glass Working Srl	4328	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
St. Berevoiesti, 77-79	4329	BC4/PLLC	U/C2	PHSS	LF	PIB/S2		Yes
Valenii De Munte 106400								
Romania								
0040244280959								
Pilkington IGP Sp. z.o.o. Branch	4188	BC4/GSLC/AP	U/C2	SS	LF	PIB/S2		Yes
Skierniewice, Poland	4388	BC4/GSLC/AP	U/C2	PHSS	LF	PIB/S2		Yes
ul. Przemyslowa 4	4389	BC4/GSLC/AP	U/C2	PHSS	LF	PIB/PU2		Yes
96-100 Skierniewice	4390	BC4/GSLC/AP	U/C2	SS	LF	PIB/PU2		Yes
Poland								
48-601-50-60-51								

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Pioneer Window Mfg. Corp. 200 Union Avenue PO Box 70 Johnstown, NY 12095 518-762-5526	2663	MC4/PLK	U/U	AA	LF	PIB/HM		
Prelco Inc. 94 Boulevard Cartier Postal Box 338 Riviere-du-loup, QC G5R 3Y9 Canada 418-862-2274 PRELCO INC IGCC(R)/IGMA(R) 19	1388	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
	2270	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
	2458	BC4/GSLC	U/C2	SS	LF	PIB/S2		Yes
Prelco MTL Inc. 3740 Dollard-Desjardins Montreal, QC H1B 5X2 Canada 514-640-1122 PRELCO MTL IGCC(R)/IGMA(R) 2019	2491	BC4/GSLC	U/C2/U	AA/AA	LF/LF	PIB/S2		Yes
	3535	BC4/GSLC	U/C2	SS	LF	PIB/S2		Yes
	4746	BC4/GSLC	U/C2	PHSS	LF	PIB/S2		Yes
PRESS GLASS SA ul. Cielmicka 44 43-100 Tychy, Poland Poland 48-32-788-11-00	3742	BC4/SSLC/AP	U/C2	SS	LF	PIB/PS2		Yes
	3756	BC4/PLLC/AP	U/C2	PHSS	LF	PIB/PS2		Yes
	3758	BC4/SSLC/AP	U/C2	GS	LF	PIB/PS2		Yes
	3760	BC4/SSLC/AP	U/C2	MA	LF	PIB/PS2		Yes
PRESS GLASS IGCC (R)/IGMA(R), Date, time, order number	4157	BC4/SSLC/AP	U/C2	MA	LF	PIB/S2		Yes
	4159	BC4/PLLC/AP	U/C2	PHSS	LF	PIB/S2		Yes
	4161	BC4/SSLC/AP	U/C2	SS	LF	PIB/S2		Yes
	4162	BC4/SSLC/AP	U/C2	GS	LF	PIB/S2		Yes
	4703	MC4/AF	U/C2	FS	IB	PIB/PS		Yes
	4705	MC4/AF	U/C2	FS	IB	PIB/S2		Yes
PRESS GLASS SA Geodetow 4 Radomsko 97-500 Poland 48-44-685-87-00	3813	BC4/ALLC/AP	U/C2	MA	LF	PIB/PS2		Yes
	3814	BC4/PLLC/AP	U/C2	PHSS	LF	PIB/PS2		Yes
	4147	BC4/SSLC/AP	U/C2	MA	LF	PIB/S2		Yes
	4153	BC4/SSLC/AP	U/C2	SS	LF	PIB/S2		Yes
PRESS GLASS IGCC (R)/IGMA(R), Date, time, order number	4154	BC4/PLLC/AP	U/C2	PHSS	LF	PIB/S2		Yes
	4156	BC4/SSLC/AP	U/C2	SS	LF	PIB/S2		Yes
	5023	BC4/SSLC/AP	U/C2	SS	LF	PIB/PS2		Yes
	5024	BC4/SSLC/AP	U/C2	GS	LF	PIB/PS2		Yes
Press Glass, Inc. 8901 US Highway 220 Bypass PO Box 938 Stoneville, NC 27048 336-573-2393 Press Glass IGCC(R)/IGMA(R) 2019	3627	BC4/SSLC	U/C2	PHSS	LF	PIB/S2		
	4604	BC4/SSLC	U/C2	MA	LF	PIB/S2		Yes

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Price Mechanical Limited 404 Egesz St Winnipeg, MB R2R 1X5 Canada 204-631-0136 Price Mechanical Product# IGCC®/IGMA® 2019	4765	BC3/MC1/MT	U/U	FS	IB	RHM		
PRL Glass Systems 13644 E Nelson Ave City of Industry, CA 91746 626-961-5890	2905 2906	MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2	MA MA	LF LF	PIB/PS2 PIB/S2	IC IC	
Procesadora De Jalisco S.A. DE C.V. - Queretaro Yaquis 10 Nuevo Parque Industrial San Juan del Rio, Queretaro 76809 Mexico 52 1427 121 0224	4680 4681	BC4/GSLC BC4/SSLC	U/C3 U/U	UT AA	DM LF	RHM PIB/S2		Yes
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	5004	BC4/SSLC	U/C2	MA	LF/LF	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	4768	BC4/ALLC	U/U	AA	LF	PIB/S2		
Productos De Valor Agregado en Cristal S.A. de C.V. Rio de los Remedios No. 1 Col San Juan Ixhuatepec Tlalnepantla Mexico 52-55-5227-6000/6055	4884	MC4/PLK	U/C2	MA	LF	PIB/S2		
ProTemp Glass, Inc. 360 Applewood Crescent Concord, ON L4K 4V2 Canada 905-760-0701 IGCC®/IGMA® mm/dd/yyyy Protemp	4840	BC4/GSLC	U/C1	PHSS	LF	PIB/PS2		Yes
Pulp Studio, Inc. 2100 West 139th Street Gardena, CA 90249 310-815-4999	3589	MC4/PLK	U/C2	SS	LF	PIB/S1		

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Qatar Glass Industries Street 53 Gate No 7 Industrial Area Doha Qatar 97444605522	3672	BC4/ALLC	U/C3	MA	LF	PIB/S2		
Qinhuangdao Allide Art Glass Co., Ltd. 3 Miluojiang Road Economic & Technical Development Zone Qinhuangdao, Hebei 066004 China 86-335-8503726	3092	MC4/PLK/IC	U/U	AA	LF	PIB/PS2	IC	
Qinhuangdao High Tech Energy Saving Dorwin Co., Ltd. 1 Haihe Road E&T Development Zone Qinhuangdao City, Hebei 066004 China 00863358016100	2595 2596 4140 4887	BC3/MC1/IC MC4/PLK/IC MC4/PLK/IC MC4/PLK/IC	U/U U/C2 U/C2/U U/C2	BCS AA AA/AA TBCA	IB LF LF/LF LF	BCS/PS2 PIB/PS2 PIB/PS2 PIB/PS2	IC IC IC IC	 Yes Yes
Qinhuangdao Rongsheng Glass Processing Co., Ltd. No. 3 Street, Sanjie Cunxi, Yanheying Town Lulong County Qinhuangdao, Hebei 066400 China 86.335.7179566 Rongsheng IGCC®/IGMA® '19	4098 4572 4671 4672	BC3/MC1/IC BC3/MC1/IC BC3/MC1/IC MC4/PLK/IC	U/C3 U/C3 U/C3 U/C3	BCS BCS BCS MA	IB IB IB LF	BCS/PS2 BCS/PS2 BCS PIB/PS2	IC IC IC IC	
Qinhuangdao Xinhua Glass Processing Ind. Co., Ltd. No. 14 Huashan Road Economic and Technical Development Zone Qinhuangdao, Hebei 066004 China 335-850-3784	2594 4495 4561 4575	BC3/MC1/IC MC4/PLK/IC MC4/PLK/IC BC3/MC1/IC	U/U U/C3 U/U U/C3	BCS AA AA BCS	IB LF LF IB	BCS/PS2 PIB/PS2 PIB/PS2 BCS/PS2	IC IC IC IC	
Qinhuangdao Zhenhong Door and Window Co., Ltd. Fan Nan Village, Liushouying Town FuNing County Qinhuangdao 066301 China 86-13785999021	4301 4490 4795 4836 4931	BC3/MC1/IC MC4/PLK/IC BC3/MC1/IC BC3/MC1/MT BFS	U/C3 U/C3 U/C2 U/C2 U/C3	BCS AA BCS FS BFS	IB LF IB IB IB	BCS/PS2 PIB/PS2 BCS/PS2 PS2 BFS/PS2	IC IC IC IC	Yes Yes Yes Yes Yes
Quest Window Systems 6811 Goreway Drive Mississauga, ON L4V 1L9 Canada 905-851-8588 QUEST WINDOWS IGCC(R)/IGMA(R) 2019	3860	BC4/SSLC	U/C2	PHSS	LF	PIB/PS2		Yes

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Reem Emirates Aluminum & Glass ICAD-1 Musafah PO Box 36863 Abu Dhabi United Arab Emirates 0097125994301	4247	BC4/ALLC	U/U	MA	LF	PIB/S2		
Reflex d.o.o.	4695	BC4/SSLC/AP	U/C2	PHSS	LF	PIB/PS		Yes
Podgrad 4	4696	BC4/SSLC/AP	U/C2	PHSS	LF	PIB/S2		Yes
Gornja Radgona 9250 Slovenija 00-386256-4503								
Regalead Ltd. Unit B, Burnfoot Industrial Estate Hamilton Road Hawick, Scotland TD9 8SL United Kingdom 004 161 946 2142 Regalead-UK IGCC(R)/IGMA(R) 2019	3911	BC3/MC1/MT	U/C1	FS	IB	HM		Yes
SAAND Toronto Inc. 250 Brockport Dr. Toronto, Ontario, ON M9W5S1 Canada 4167982345 Saand Inc. IGCC(R)/IGMA(R) 2019	3724	BC4/PLLC	U/C1	SS	LF	PIB/S2		Yes
	4257	BC4/PLLC	U/C2	MA	LF	PIB/S2		Yes
	4639	MC4/PLK	U/C1	PHSS	LF	PIB/S2		Yes
SAGE Electrochromics Inc. Two Sage Way Faribault, MN 55021 507-331-4848 SageGlass(r)SAINT-GOBAIN IGCC(R)IGMA (R) 19	3893	BC4/PLLC/SP/CT/IC	U/C2	SS	LF	PIB/S2	IC	Yes
	4747	BC4/PLLC/SP/IC	U/C2	SS	LF	PIB/S2	IC	Yes
	4954	BC4/PLLC/SP/CT/IC	U/C2/U	SS/SS	LF/LF	PIB/S2	IC	Yes
	5019	BC4/PLLC/SP/CT/IC	U/C2	SS	LF	PIB/S2	IC	Yes
Saint-Gobain India Private Limited Plot No. A-1 Cipcot Industrial Park Sriperumbudur, Tamilnadu India 919840509386	4653	BC3/MC1	U/C3	AA	LF	PIB/S2		
	4669	BC4/GSLC	U/C3/U	MA/SS	LF/LF	PIB/S2		
Saudi American Glass Company PO Box 8418 Riyadh 11482 Saudi Arabia 01-2651212	3274	BC4/SSLC	U/C3	MA	LF	PIB/S2		Yes
	4962	BC4/SSJ	U/C3	MA	LF	PIB/PS2		Yes
Shandong Taishan Huayue Glass Co., Ltd. Taishan Qingchun Co-pioneering Development Zone Tai'an, Shandong 27100 China 0086-13583859881	4737	BC4/GSLC	U/C2	AA	LF	PIB/S2		

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Shandong Wensheng Glass Technology Co., Ltd. Qingning Industrial Zone Cuizhai Town Jiyang County Jinan City, Shandong Province 250100 China 86-531-55583837	4709 4726	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA AA	LF LF	PIB/S2 PIB/PS2		
Shandong Yaohua Glass Co., Ltd. No. 7 Kaiyuan Road, Licheng Area Jinan City, Shandong Province 250101 China 85-531-8880-2996	4539	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Shanghai Haojing Glass Co., Ltd. 300 Gougyue Road Shanghai, Baoshan District 201901 China +86-021-56391128 Shanghai Haojing IGCC® 2015	4989	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Shanghai Lead Glass Co., Ltd. No. 88 West Heli Rd., Pudong Shanghai, Shanghai 201317 China 18637937146	4903	BC4/GSLC	U/C2	AA	LF	PIB/PS2		
Shanghai SYP Engineering Glass 75 Kangliu Road Pudong New Area Shanghai 201315 China 86-21-38108108 SYPE IGCC®/IGMA® E2190 '19	2523 3231 3232	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	AA SS PHSS	LF LF LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes
Shanghai Yaohua Tempered Glass Co. Ltd. 199 Hengxi Road Minhang Shanghai 201114 China 86-21-58454541	4631 4632	BC4/GSLC BC4/GSLC	U/C3 U/C3	AA AA	LF LF	PIB/S2 PIB/PS2		
Shenbo Special Architectural Glass Industrial Co., LTD Macau Industry Zone, Zhangge Village Guanlan Town Shenzhen, Guangdong China 86-852-21173390	2573	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Shengng Mwuh Enterprise Co., Ltd No. 51, Ln. 33 Zhunan Road Renwu District Kaohsiung City 81448 Taiwan 886-7-374-0888	4919	MC4/PLK	U/U	AA	LF	PIB/S2		Yes

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Shenzhen Jiayeda Glass Processing Co., Ltd. No. 2 Zone A Tangtou Industrial Area, Shiyuan Shenzhen, Guangdong 581000 China 86-13068406800	3123	BC4/GSLC	U/U	AA	LF	PIB/S2		
ShenZhen LiaoYuan Glass Co., Ltd. Liaoyuan Industrial Area, Jinbei Villiage Shiyuan Town, Baoan District Shenzhen, Guangdong 518108 China 86-13410765603	3833	BC4/GSLC	U/C2	MA	LF	PIB/PS2		Yes
Shine Glass Co., Ltd. No. 3-1, Gongye 5th Road Pingzhen City Taoyuan County Taiwan China 886-3-469-1599	4013	MC4/PLK	U/C3	AA	LF	PIB/S2		
Shinn Fu Pair Glass Co. No. 1-1, Wen Ming 3 Street Kweishan, Taoyuan, Taiwan China 886-3-3283226	1822	MC4/PLK	U/U	AA	LF	PIB/S2		
Shu Cheng Energy Saving Technology Co., Ltd. 4 Qilianshan Road Economic & Technical Development Zone Qinhuangdao, Hebei 066000 China 86-335-8503784	4543	MC4/PLK/IC	U/C2	MA	LF	PIB/PS2	IC	Yes
Sichuan CSG Energy Conservation Glass Co., Ltd. No. 16 Section 2Huanglong Road The Southwest Airport Economic Development Zone Chengdu, Sichuan 610213 China +86 28 85689888	4883	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Sierra Pacific Windows 575 S. Whelen Ave. Medford, WI 54451 (530) 528-3842 SPWM IGCC® IGMA® 2019	4381 5029 5031 5032	BC3/MC1/MT/IC BC3/MC1/MT/IC BC3/MC1/MT/IC BC3/MC1/MT/IC	U/C2/U U/C2 U/C2/U U/C2	FS/FS FS FS/FS FS	IB/IB IB IB/IB IB	RHM RHM HM HM	IC IC IC IC	Yes Yes Yes Yes

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Sierra Pacific Windows 1815 Water St. Merrill, WI 54452 715-748-2011	3653	MC4/PLK/IC	U/C2	AA	LF	PIB/HM	IC	Yes
SPWW IGCC(R)/IGMA(R) month julian code	3654	BC3/MC1/IC	U/C2	UT	DM	HM	IC	Yes
	4625	BC3/MC1/IC	U/C2	US	DM	HM	IC	Yes
	5185	MC4/PLK/IC	U/C2	AA	LF	PIB/HM	IC	
	5186	BC3/MC1/IC	U/C2	UT	DM	HM	IC	
	5187	BC3/MC1/IC	U/C2	US	DM	HM	IC	
Sierra Pacific Windows 11605 Reading Road PO Box 8489 Red Bluff, CA 96080 530-527-9620	3636	BC3/MC1/MT/CT/IC	U/C2	FS	IB	RHM	IC	Yes
SPWM IGCC(R)/IGMA(R) 19	4283	BC3/MC1/MT/CT/IC	U/C2/U	FS/FS	IB/IB	RHM	IC	Yes
	4284	BC3/MC1/MT/CT/IC	U/C2/U	FS/FS	IB/IB	RHM	IC	
	4624	BC3/MC1/MT/IC	U/C2	FS	IB	RHM	IC	Yes
	5086	BC3/MC1/MT/IC	U/C2	FS	IB	RHM	IC	Yes
	5181	BC3/MC1/MT/IC	U/C2/U	FS/FS	IB/IB	RHM	IC	Yes
SIGCO, Inc. 48 Spiller Drive Westbrook, ME 04092 207-775-2676	2203	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	Yes
SIGCO IGCC®/IGMA® Month/Year	3131	MC4/PLK/IC	U/C2	PHSS	LF	PIB/S2	IC	Yes
Silliker Glass 68 Industrial Drive Borden-Carleton, PEI C0B 1X0 Canada 902-437-5758	5018	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	
Skyland Insulated Glass Corp. 39-16 23rd Street Long Island City, NY 11101 718-707-0288	4180	BC4/GSLC	U/C1	AA	LF	PIB/S2		
Solar Seal Massachusetts 55 Bristol Dr. #1 South Easton, MA 02375 508-238-0112	4190	MC4/PLK/IC	U/C2	PHSS	LF	PIB/S2	IC	Yes
Solar Seal MA Prod# IGCC(R) IGMA(R) Date	4341	MC4/PLK/IC	U/C2	SS	LF	PIB/S2	IC	
	4342	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	Yes
Southern Wholesale Glass, Inc. 111 Industrial Blvd. Americus, GA 31719 229-928-5656	5027	BC3/MC1/IC	U/C2	FS	IB	HM	IC	
Stanley Glass Co., Ltd. No. 12, Wuxun Street Dawulun Industrial District Keelung, Taiwan 20446 China 886-2-2432-1288	4020	MC4/PLK	U/U	MA	LF	PIB/S2		

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Stargrup Cam A.S. Hadimkoy Mah. Mustafa Inan Cad. No: 17 34555 Hadimkoy Arnavutkoy, Istanbul 34960 Turkey 90-212-771-38-18 Stargrup + IGCC(R)/IGMA(R) + date, etc	4548 4549	MC4/PLK MC4/PLK	U/C2 U/C2	PHSS PHSS	LF LF	PIB/S2 PIB/S2		Yes
Strong Tempering Glass Industry LLC 530B 63rd Street Brooklyn, NY 11220 718-765-0007	4520	MC4/PLK	U/C1	AA	LF	PIB/S2		
Sunglas Technics Co., Ltd. No. 16 Fenghuang Dadao National Ecological Industrial Park Danzao Town, Nanhai Foshan City, Guangdong 828216 China 86 18602033514	4315 4961	BC4/GSLC BC4/GSLC	U/C2 U/C2	MA AA	LF LF	PIB/S2 PIB/S2		Yes
Sunview Patio Doors Ltd. 500 Zenway Blvd Woodbridge, ON L4H 0S7 Canada 905-851-1006 Sunview Patio Doors Ltd IGCC®/IGMA® YYDDMM Time	3013	BC3/MC1/MT/IC	U/C2/U	FS/FS	IB/IB	HM	IC	Yes
Suzhou Taifeng Glass Decoration Co. Ltd No. 9 Jing'er Road, Development Zone Taicang, Jiangsu 215400 China 0086-512-53553995 Suzhou Taifeng IGCC®/IGMA® 2019	3003 3808	MC4/PLK/IC BC3/MC1/IC	U/C2 U/C2	AA BCS	LF IB	PIB/PS2 BCS	IC IC	
Syracuse Glass Co., Inc. 1 General Motors Drive PO Box 381 Syracuse, NY 13206 315-437-9971 SGC IGCC(R) IGMA(R) 19	4371 4934 823 828	BC4/SSLC MC4/PLK/IC BC4/GSLC/IC BC4/GSLC/IC	U/C2 U/C2 U/C2 U/C2	PHSS AA AA AA	LF LF LF LF	PIB/S2 PIB/S2 PIB/PS2 PIB/S2		Yes Yes Yes Yes
Tai Shan City Da Heng Art Glass Ltd. 1 Toi Hok Road, South Industrial Zone Shui Bu Town Tai Shan, Guangdong 529000 China 86-750-5456889 Taishan City DaHeng IGCC®/IGMA® 2019	2534	BC3/MC1/IC	U/U	BCS	IB	BCS	IC	
Taiwan Glass Industry Corp. No. 261, Sec. 3, Nanking E. Road Taipei, Taiwan 105 China 886-2-27130333	2053 3805	MC4/PLK MC4/PLK	U/C2 U/C2	AA AA	LF LF	PIB/S2 PIB/S2		

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Tecnoglass S.A. Avenida Circunvalar a 100 mts de la Via 40 Barrio Las Flores Barranquilla Colombia 57 5 373 4000	1393 1813 2683 4757 4941 4942 4943	BC4/SSLC/AP BC4/SSLC/AP BC4/SSLC BC3/MC1 BC4/SSLC BC4/SSLC BC4/SSLC	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2 U/C2	MA MA SS FS MA MA MA	LF LF LF IB LF LF LF	PIB/PS2 PIB/S2 PIB/S2 HM PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes Yes Yes Yes
Tecnovidrio S.A. de C.V. Cafetal 240 Colonia Granjas Mexico Delegacion Iztacalco, Mexico City 08400 Mexico 52-55-3000-2000	3754	BC4/SSLC	U/C2	AA	LF	PIB/S2		
Temp Glass Inc. 12 Zane Grey El Paso, TX 79906 915-274-1374	4848	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Tempco Glass 131-10 Maple Ave. Flushing, NY 11355 718-461-6888 Tempco Glass Fabrication LLC IGCC (R)/IGMA(R) 2019	4230 4496 4939	MC4/PLK/IC MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2 U/C2	AA MA PHSS	LF LF LF	PIB/S2 PIB/S2 PIB/S2	IC IC IC	Yes Yes Yes
Templados Del Centro SA DE C.V. Carretera Irapuato-Silao km 13.5 Irapuato, Guanajuato Mexico 00152462 800 60 60	4809 4810	BC4/SSLC BC4/SSLC	U/U U/C2	AA AA	LF LF	PIB/S2 PIB/S2		
TG Taicang Architectural Glass Co. Ltd 9 ShenJiang Road Gangkou Area Taicang City, Jiangsu China 86-512-57440001	4972 4973	BC4/GSLC BC4/GSLC	U/C2/U U/C2	PHSS/PHSS AA	LF/LF LF	PIB/S2 PIB/S2		Yes Yes
Thai-German Specialty Glass Co., Ltd. 63 Moo 6 Banga-Trad Road, (Km32) Banragard Bangbo Samutprakarn 10560 Thailand 662-294-6287	2059 2067	BC4/ALLC BC4/ALLC	U/C1 U/C1	AA AA	LF LF	PIB/PS2 PIB/S2		
Thermafex A.J. Inc. 1232, Route 111 E Amos, QC J9T 3A1 Canada 418-561-3073 PO# ThermaABI(Y/YY/MM/DD)IGCC®/IGMA®	4413	MC4/PLK/IC	U/C2/U	PHSS/PHSS	LF/LF	PIB/RHM	IC	

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Thermafix A.J. Inc. 63 Chemin St. Laurent Baie St. Paul, QC G3Z 2L5 Canada 418.668.6131 Client#ThermaBSP YR/M/D IGCC@/IGMA@ "Dimm""Class""Spec"	3764	MC4/PLK/IC	U/C3/U	PHSS/PHSS	LF/LF	PIB/RHM	IC	Yes
Thermo BSL 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	3001	MC4/PLK/IC	U/C2/U	PHSS/PHSS	LF/LF	PIB/RHM	IC	Yes
Thompson I.G. LLC. 3196 Thompson Rd. Fenton Operation Fenton, MI 48430 810-629-9558 TIG 2019 IGCC(R)/IGMA(R)	1367 3420 4344 4801 4977	BC4/PLLC/IC MC4/PLK/IC BC4/SSLC/IC MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2 U/C2 U/C2 U/C2	MA PHSS SS SS PHSS	LF LF LF LF LF	PIB/PS2 PIB/PS2 PIB/PS2 PIB/S2 PIB/S2	IC IC IC IC IC	Yes Yes Yes Yes Yes
Tianjin CSG Energy Conservation Glass Co., Ltd No. 12 Quanfeng Road Tianjin New Technology Industrial Park Zones Tianjin China 86-150-22345565 CSG IGCC@/IGMA@ 2019	2276 2336 4599 4600	BC4/GSLC BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2 U/C2	AA AA SS PHSS	LF LF LF LF	PIB/S2 PIB/PS2 PIB/S2 PIB/S2		Yes Yes
Tianjin Northglass Industrial Technical Co., Ltd South of Baozhong Avenue West of Tianxing Road Energy Conservation & Environmental Protection Tianjin 301800 China 86-022-59281102	3862 4999	BC4/SSLC BC4/SSLC	U/C2 U/C2	PHSS PHSS	LF LF	PIB/S2 PIB/S2		Yes
Tianjin SYP Engineering Glass Co., Ltd. 1 Huatai Road Beichen District Tianjin 300409 China 86-22-86880204 TSYP IGCC@IGMA@ E2190 '19	2525 3026 3227	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	AA SS PHSS	LF LF LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
Tower Insulating Glass LLC. 2485 Charles Court Bellmore, NY 11710-2773 516-887-3300 Tower IG IGCC(R)/IGMA(R) 2019	1470	MC4/PLK/IC	U/C3	AA	LF	PIB/S1	IC	Yes

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Tristar Glass, Inc. 1120 West Main Pkwy Catoosa, OK 74015 918-392-9678 Tristar IGCC(r)/IGCC(r) '19	2627 4644	BC4/GSLC/IC BC3/MC1/MT/IC	U/C2 U/C2	MA FS	LF IB	PIB/S2 PIB/S2	IC IC	
Tristar Glass, Inc. 1790 Westpark Drive Grand Prairie, TX 75050 817.262.5960 Tri Star DFW IGCC@/IGMA@ '19	3594	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Tristar Glass, Inc. 19522 Aldine Westfield Houston, TX 77073 281-960-6840 Tristar Hou IGCC(R)/IGMA(R) 19	4316	BC4/GSLC	U/C2	MA	LF	PIB/S2		
Tristar Glass, Inc. 4325 SW 29th Street Oklahoma City, OK 73119 918-739-3611	4557	BC4/GSLC/IC	U/C2	MA	LF	PIB/S2	IC	
Triview Glass Industries 711 South Stimson Avenue City of Industry, CA 91745 626-703-6519 Triview IGCC(R)/IGMA(R) 2019	3310 3311 4629	MC4/PLK/IC MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2 U/C2	MA PHSS AA	LF LF LF	PIB/S2 PIB/S2 PIB/S2	IC IC IC	Yes Yes
Trulite Glass and Aluminum Solutions 11950 E. 33rd Ave. Aurora, CO 80010 303-340-4290 W-31 IGCC(R)/IGMA(R) 2019	4885	MC4/PLK/CT/IC	U/C2	MA	LF	PIB/PS2	IC	
Trulite Glass and Aluminum Solutions 100 Business Center Drive Cheswick, PA 15024 800-232-9050 Trulite W43 IGCC(R)/IGMA(R) 2019	3527 4636	BC4/GSLC BC4/GSLC	U/C2 U/C2	PHSS MA	LF LF	PIB/S2 PIB/S2		Yes
Trulite Glass and Aluminum Solutions 19430 E. San Jose Ave. City of Industry, CA 91748 800-774-4224 Trulite W47 IGCC@/IGMA@ 2019	4364 4418 4532	MC4/PLK/IC MC4/PLK/IC MC4/PLK/IC	U/C2 U/C2 U/C2	MA PHSS MA	LF LF LF	PIB/S2 PIB/S2 PIB/S2	IC IC IC	Yes Yes Yes
Trulite Glass and Aluminum Solutions 4400 Cambridge Rd. Fort Worth, TX 76155 817-785-1220 IGCC@/IGMA@ TruLite W35 2019	4516	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	Yes
Trulite Glass and Aluminum Solutions 43443 Osgood Road PO Box 6058 Fremont, CA 94538-0912 510-623-5000	4751	MC4/PLK/IC	U/C2	AA	LF	PIB/PS2	IC	

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Trulite Glass and Aluminum Solutions 3333 Holly Hall Houston, TX 77021 713-747-5430	4564	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	
	4808	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	
	4994	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	
	4995	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	
Trulite Glass and Aluminum Solutions 7701 W. New York St. Indianapolis, IN 46214 800-876-0646 Trulite W-14 IGCC(R)/IGMA(R) 2019	2002	BC4/GSLC/IC	U/C2	AA	LF	PIB/S2	IC	
Trulite Glass and Aluminum Solutions 2522 Westcott Blvd. Knoxville, TN 37931 865-691-2040 Trulite IGCC(R)/IGMA(R)2019	2063	MC4/PLK/IC	U/C2	MA	LF	PIB/PS2	IC	
	2220	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	Yes
Trulite Glass and Aluminum Solutions 1513 North A St. Las Vegas, NV 89106 702-385-3095	2368	MC4/PLK/CT/IC	U/C2	AA	LF	PIB/S2	IC	
Trulite Glass and Aluminum Solutions 660 Campbell Court Lithia Springs, GA 30122 770-434-2041 Trulite W74 IGCC(R)/IGMA(R)2019	4488	BC4/GSLC	U/C2	MA	LF	PIB/S2		
	4489	BC4/GSLC	U/C2	SS	LF	PIB/S2		Yes
	4697	BC4/GSLC	U/C2	MA	LF	PIB/PS2		
Trulite Glass and Aluminum Solutions 5700 South Moreland Road New Berlin, WI 53155 800-242-2071 IGCC(R)/IGMA(R) Trulite W23 2019	4536	BC4/ALLC	U/C2	MA	LF	PIB/S2		Yes
	4820	BC4/GSLC	U/C2	AA	LF	PIB/S2		Yes
Trulite Glass and Aluminum Solutions 3320-B Maggie Blvd. Orlando, FL 32811 800-367-7211 IGCC(R)/IGMA(R) Trulite W-04 2019	1908	BC4/GSLC/IC	U/C2	AA	LF	PIB/S2	IC	
Trulite Glass and Aluminum Solutions 1825 S. 43rd Avenue Phoenix, AZ 85009 800-854-8022	4120	MC4/PLK/IC	U/C2	MA	LF	PIB/S2	IC	
	5034	MC4/PLK/IC	U/C2	AA	LF	PIB/S2	IC	
Trulite Glass and Aluminum Solutions 1655 South Awl Circle Salt Lake City, UT 84104 801-656-1660 Trulite W34 IGCC(R)/IGMA(R) 19	3935	MC4/PLK/CT/IC	U/C2	MA	LF	PIB/S2	IC	
Trulite Glass and Aluminum Solutions 5807 Business Park San Antonio, TX 78218 210-653-7790	2355	BC4/GSLC/IC	U/C2	MA	LF	PIB/S2	IC	

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Trulite Glass and Aluminum Solutions 20 Royal Group Crescent Woodbridge, ON L4H 1X9 Canada 905-670-7040 Trulite W90 IGCC(R)/IGMA(R) 2019	2032 2295 3806	BC4/GSLC BC4/GSLC BC4/GSLC	U/C1/U U/C2/U U/C2/U	AA/AA SS/SS PHSS/PHSS	LF/LF LF/LF LF/LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
Trulite Glass and Aluminum Solutions 285 Northbrook Drive Youngsville, NC 27596 919-435-3050 Trulite W20 IGCC@/IGMA@ 2019	1647 4714	MC4/PLK MC4/PLK	U/C2 U/C2	AA AA	LF LF	PIB/S2 PIB/S2		Yes
TSY-Fong Glass Co., Ltd 83-1 Jiasing Road Wanluan Township Pintung County Taiwan 923 China 886-8-7835-002	3170	MC4/PLK	U/U	AA	LF	PIB/S2		Yes
TVITEC Calle Vitoria 38 Quijorna, Madrid 28693 Spain +34-915 670 896 ISOLAR IGCC (R)/IGMA(R) + Date + production Line	4854 4920 4921 5118 5119 5120	MC4/PLK MC4/PLK MC4/PLK MC4/PLK MC4/PLK MC4/PLK	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2	PHSS SS AA AA AA PHSS	LF LF LF LF LF LF	PIB/PU2 PIB/S2 PIB/S2 PIB/S2 PIB/PU2 PIB/S2		Yes Yes Yes Yes Yes Yes
Unicel Architectural Corp. 2155 Fernand Lafontaine Longueuil, QC J4G 2J4 Canada 450-670-6844x233 Vision Control IGMA(R)IGCC(R) Month/yea	3941 4563	MC4/PLK/IC MC4/ALK/IC	U/C1 U/C1	PHSS MA	LF LF	PIB/S2 PIB/S2	IC IC	Yes Yes
Union Glass s.r.l. Via Pasubio 52 Villafranca di Verona (VR) , Verona 37069 Italy 0039.0422.86.12.35 Union Glass + date + IGCC(R)/IGMA(R)	4512 4514 4748 4749	BC4/SSLC/AP BC4/SSLC/AP BC4/SSLC/AP BC4/SSLC/AP	U/C3/U U/C3/U U/C3 U/C3	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 800-772-7783 UPG IGCC(R)IGMA(R)2019	1513 4011 4699	BC4/GSLC/IC BC3/MC1/MT/IC BC4/GSLC/IC	U/C2 U/C2 U/C2	MA FS MA	LF IB LF	PIB/PU2 PIB PIB/S2	IC IC IC	
United Plate Glass Company of Charlotte 1104 Lincoln County Parkway Lincolnton, NC 28092 828-970-6110	3992	MC4/PLK/IC	U/C2	MA	LF	PIB/PU2	IC	

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Unitex Glass Chengdu Co., Ltd 1 Second Section Street Yingbin, Jintang Chendu, Sichuan 610042 China 86-592-6215300	4436	BC4/GSLC	U/U	AA	LF	PIB/S2		
Val y Val SA de CV Av. Framboyanes Lote 19 Manzana 6 Cd. Industrial Bruno Pagliai Heroica Veracruz, Veracruz 91697 Mexico 52-229-9811036	4948	BC4/SSLC	U/C2	AA	LF	PIB/S2		
VELUX America LLC PO Box 5001 Greenwood, SC 29648-5001 864-941-5309 velux.com FBsize glazing code(week #)1918 IGCC@/IGMA@	2035	BC4/PLLC	U/C2	SS	LF	PIB/S1		Yes
Vetrodomus SpA Via Giovanni Bormioli n°48 Brescia, Brescia 25135 Italy 390303363005 Vetrodomus SpA + date + IGCC(R)/IGMA(R)	4491	BC4/SSLC	U/C3	PHSS	LF	PIB/S2		Yes
	4492	BC4/SSLC	U/C3	PHSS	LF	PIB/PS2		Yes
View Inc. 12380 Kirk Road Olive Branch, MS 38654 662-892-3415 View, Inc. OB IGCC(R)/IGMA(R) '19	3934	BC3/MC1/MT/SP	U/C2	FS	IB	PIB/S2		Yes
Vinyl Window Designs Ltd. 550 Oakdale Road North York, ON M3N 1W6 Canada 416-741-7820 Vinyl Window designs Ltd IGCC(R)/IGMA(R) Date	2248	BC3/MC1/MT/IC	U/C2/U	FS/FS	IB/IB	HM	IC	Yes
	2521	BC3/MC1/SS/IC	U/C2/U	US/US	DM/DM	RHM	IC	Yes
	4519	BC3/MC1/MT/IC	U/C2	FS	IB	PIB/S2	IC	Yes
	5025	BC3/MC1/MT/IC	U/C2	FS	IB	RHM	IC	Yes
Viracon Inc. 800 Park Drive PO Box 990 Owatonna, MN 55060 507-451-9555 VIRACON MN IGCC(R)/IGMA(R) YR	1462	BC4/GSLC/CT	U/C3/U	MA/MA	LF/LF	PIB/S2		Yes
	1911	BC4/GSLC/CT	U/C3/U	SS/SS	LF/LF	PIB/S2		Yes
	4682	BC4	U/C3/U	TP/TP	IB/IB	TP/S2		Yes
	980	BC4/GSLC/CT	U/C3/U	AA/AA	LF/LF	PIB/S2		Yes
Viracon Inc. 8373 Zell Miller Parkway Statesboro, GA 30458 912-871-3500 VIRACON GA IGCC (R) / IGMA (R) 19	1529	BC4/GSLC	U/C3	MA	LF	PIB/S2		Yes
	1530	BC4/GSLC	U/C3	AA	LF	PIB/S2		Yes
	2909	BC4/GSLC	U/C3	SS	LF	PIB/S2		Yes
	3534	BC4/GSLC	U/C3/U	AA/AA	LF/LF	PIB/S2		Yes
	4253	BC4/GSLC	U/C3/U	SS/SS	LF/LF	PIB/S2		Yes
	4254	BC4/GSLC	U/C3/U	MA/MA	LF/LF	PIB/S2		Yes

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Vitelsa Mosquera Parque Industrial San Jorge, Av. Troncal de Occidente KM19 Via Mosquera - Madrid, Lote 90 Mz C4 Bod 1 Bogota, Cundinamarca 00 Colombia 3154272038 VITELSA-IGCC®/IGMA® 19-4736 ASTM2190- 2019	4736	BC3/MC1/PLK	U/U	AA	LF	HM/S2		Yes
Vitro Flat Glass, LLC 400 Park Drive Carlisle, PA 17013 717-486-3366 VITRO CAR IGCC(R)IGMA()Date #	3389	BC3/MC1/SS/IC	U/C3/U	US/US	DM/DM	RHM	IC	Yes
Vitrogena, SA De Cv Tlatilco 138 Tlatilco, Mexico City 02860 Mexico 52-55-4165-5200 VG IGCC® (day#)(year)(Shift)(Work Group#)	4552	BC4/SSLC	U/C2	AA	LF	PIB/S2		
VITROTERM-MUROW S.A. Wolnosci 33 Murow 46-030 Poland 48-601-499-290	4524	BC4/SSLC/AP	U/C2/U	PHSS/PHSS	LF/LF	PIB/PS2		Yes
	4525	BC4/SSLC/AP	U/C3/U	PHSS/PHSS	LF/LF	PIB/S2		Yes
Vitrum Industries Ltd. 9739 - 201st Street Langley, BC V1M 3E7 Canada 604-614-9081	4888	BC4/PLLC/IC	U/C2	PHSS/PHSS	LF/LF	PIB/S2	IC	Yes
	4889	BC4/PLLC/IC	U/C2	MA/MA	LF/LF	PIB/S2	IC	Yes
W. A. Wilson Inc. 6 Industrial Park Dr. PO Box 6712 Wheeling, WV 26003 304-232-2200 Starlite IGCC(R)IGMA(R)2019	3854	BC4/GSLC/IC	U/C3	AA	LF	PIB/S2	IC	Yes
W.C.P., Inc dba West Coast Insulated Glass Products 17730 Crusader Avenue Cerritos, CA 90703 562-653-9797	2383	MC4/PLK/IC	U/C2	AA	LF	PIB/PU2	IC	Yes
	2384	MC4/PLK	U/C2	AA	LF	PU2		
	2590	MC4/PLK/IC	U/C2	AA	LF	PIB/S1	IC	Yes
	4366	MC4/PLK/IC	U/C2/U	SS/SS	LF/LF	PIB/PU2	IC	Yes
	4367	BC3/MC1/MT/IC	U/C2/U	FS/FS	IB/IB	RHM	IC	Yes
Westeck Windows Mfg. Inc. 8104 Evans Road Chilliwack, BC V2R 5R8 Canada 604-792-6700 Westeck Windows MFG IGCC®/IGMA® #4775 + date	4775	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	Yes

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Western Reflections, Changshu ZhongXin Building Materials	31881	BC3/MC1/IC	U/C2	BCS	IB	BCS	IC	
Meili Town	31891	BC3/MC1/IC	U/C2	BCS	IB	BCS/PS2	IC	
Changshu, Jiangsu 215500	39971	MC4/PLK/IC	U/U/U	AA/AA	LF/LF	PIB/PS2	IC	
China	39981	MC4/PLK/IC	U/C2	AA	LF	PIB/PS2	IC	
616-748-5401	41951	BC3/MC1/PLK/IC	U/U	BCS	IB	BCS	IC	
XYG IGCC®/IGMA® 2019	41981	BC3/MC1//PLK/IC	U/U	BCS	IB	BCS/S2	IC	
	49131	MC4/PLK/IC	U/C2	AA	LF	PIB/PS2	IC	
Western Reflections, Vidrio Decorativo Occidental S. A. de C.V.	26371	BC3/MC1/IC	U/C1	BCS	IB	BCS	IC	
Poniente 4 Entre Borte 7 y Gral Pedro Hinojosa	30831	MC4/PLK/IC	U/C2	AA	LF	PIB/PU2	IC	
Ciudad Industrial	30891	BC3/MC1/IC	U/C2	BCS	IB	BCS	IC	
Heroica Matamoros, Tamaulipas Mexico	31161	BC3/MC1/SS/CT/IC	U/C1/U	UT/UT	DM/DM	RHM	IC	
868-812-9152	31181	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	
VDO IGCC®/IGMA® 2019	33091	MC4/PLK/CT/IC	U/C2	AA	LF	PU2	IC	
	40051	BC3/MC1/ZS/IC	U/C2	UT	DM	RHM	IC	
	40751	MC4/PLK/CT/IC	U/C2	AA	LF	PU2	IC	
	40761	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	
	40801	BC3/MC1/ZS/CT/IC	U/C2	UT	DM	RHM	IC	
	41411	BC3/MC1/IC	U/C2	BCS	IB	BCS/PU2	IC	
	42591	BC3/MC1/IC	U/C2	BCS	IB	BCS	IC	
	42621	MC4/PLK/IC	U/C2	AA	LF	HM/PU2	IC	
	42651	BC3/MC1/CT/IC	U/C2	BCS	IB	BCS	IC	
	42671	BC3/MC1/IC	U/C2	BCS	IB	BCS/PU2	IC	
	43321	BC3/MC1/ZS/CT/IC	U/C1/U	UT/UT	DM/DM	RHM	IC	
	48511	BC3/MC1/IC	U/C2	BCS	IB	BCS	IC	
	48581	MC4/PLK/IC	U/C2	AA	LF	HM/PU2	IC	
	48591	BC3/MC1/IC	U/C2	BCS	IB	BCS	IC	
	48601	MC4/PLK/IC	U/C2	AA	LF	PU2	IC	
	48611	BC3/MC1/IC	U/C1	BCS	IB	BCS	IC	
	48621	BC3/MC1/IC	U/C2	BCS	IB	BCS/PU2	IC	
Western Reflections, Zeeland 215 E. Roosevelt Avenue	18921	BC3/MC1/MT/IC	U/C2	BCS	IB	BCS	IC	
Zeeland, MI 49464	30521	BC3/MC1/CT/IC	U/C2	UT	DM	RHM	IC	
616-772-9111	34071	MC4/PLK/CT/IC	U/C2	AA	LF	PU2	IC	
ODL Zeeland IGCC®/IGMA® 2019	41921	BC3/MC1/SS/CT/IC	U/C2	UT	DM	RHM/HM	IC	
	43371	BC4/IC	U/C1	BCS	IB	BCS	IC	
	43381	MC4/PLK/IC	U/C2	AA	LF	PU2	IC	
	48761	BC4/IC	U/C1	BCS	IB	BCS	IC	
Whalley Glass Co 72 Chapel St. Derby, CT 06418 203-735-4665	4538	MC4/PLK	U/C3	AA	LF	PIB/PS2		

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White Aluminum Enterprises LLC Plot D14 (51) D11 (48,49) ICAD-1 PO Box 30665 Abu Dhabi United Arab Emirates 97-150-6429735	2335	BC4/ALLC	U/U	AA	LF	PIB/S2		
Wholesale Glass Dist. 4287 Delp Street Memphis, TN 38118 901-332-2200 WGD 19 IGCC®/IGMA® ASTM E2190	2279	BC4/GSLC	U/C2	MA	LF	PIB/S2		Yes
	2280	BC4/GSLC	U/C2	MA	LF	PIB/PS2		
Windsor Windows and Doors 2210 Stafford St. Ext. Monroe, NC 28110 704-283-7459 Date/Time WW&D-NC IGCC(R)IGMA(R) Sales order	2349	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	Yes
Windsor Windows and Doors 901 S. Sunset Drive Norwalk, IA 50211 Windsor "order number" IGCC®/IGMA® low- e 366 IA-1 mm/yy	5022	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	Yes
Windsor Windows and Doors 900 South 19th Street West Des Moines, IA 50265 515-223-6660 Windsor "order number" IGCC®/IGMA® low- e 366 IA-2 mm/yy	2285	BC3/MC1/MT/IC	U/C2	FS	IB	HM	IC	Yes
Wujiang CSG Huadong Architectural Glass Co., LTD 869 Pangjin Road Economic Development Zone Wujiang, Jiangsu 215200 China 86-512-81559999	3500	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Wujiang Golden Glass Technologies, Ltd. No 168 Caizi Rd Tongjin Ave. Economic & Technological Wujiang City Wujiang City 215200 China 86 75482532833 WJGG IGCC®/IGMA® 2019	3930	BC4/GSLC	U/C2	AA	LF	PIB/S2		
	3931	BC4/GSLC	U/C2	SS	LF	PIB/S2		
Xiamen Togen Building Products Co., Ltd. 7th Floor, No. 1 Office Building Wuyuan Bay Business Center Xiamen, Fujian 361000 China 86-592-5723009	4378	BC4/GSLC	U/C2	AA	LF	PIB/S2		

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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 Energy-Smart Glass (Wuhu) Co., Ltd. Xinyi Glass Industrial Park No. 2 Xinyi Road Economic and Technical Development Zone Wuhu, Anhui China 604-273-0815	4873	MC4/PLK	U/C2	SS	LF	PIB/S2		Yes
Xinyi Glass (Tianjin) Co. Ltd. No. 33 Quanfa Road Wuqing Development Area Tianjin 301700 China 86-22-59610666	4167 4168 4169 4170 4933	BC2/MC2/PLK/CT BC2/MC2/PLK/CT BC2/MC2/PLK/CT BC2/MC2/PLK/CT BC2/MC2/PLK	U/C2 U/C2 U/C2 U/C2 U/C2/U	AA PHSS MA SS PHSS/PHSS	LF LF LF LF LF/LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes Yes
Xinyi Glass (Yingkou) Co., Ltd. Xin Yi Industrial Zone Xin Yi Road Yingkou, Liaoning 115007 China 86-417-8205076	4733 4734 4735	BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2	AA PHSS MA	LF LF LF	PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes
Xinyi Group (Glass) Co., Ltd. Xinyi Glass Industrial Zone Humen Town Dongguan, Guangdong 52935 China 604-273-0813	2047 2350 2352 2353	MC4/PLK BC4/GSLC BC4/GSLC BC4/GSLC	U/C2 U/C2 U/C2 U/C2	SS MA PHSS AA	LF LF LF LF	PIB/S2 PIB/S2 PIB/S2 PIB/S2		Yes Yes Yes Yes
YinJian DongGuan Glass Engineering Co., Ltd. 86 Huanbao Road Yisha Village, Shatian Town Dongguan, Guangdong 523998 China 13763279690	4965	BC4/GSLC	U/C2	AA	LF	PIB/S2		
YKK AP America 4234 Ocmulgee East Blvd Macon, GA 31217 YKK AP America Inc IGCC(R)IGMA(R) IGCC# Date Code	3870 3901 3903 4554 4555 4923	BC3/MC1/IC BC3/MC1/SSLC/IC BC3/MC1/SS/IC BC4/TLC/IC BC3/MC1/TLC/IC BC3/MC1/IC	U/C2 U/C2 U/C2 U/C2 U/C2 U/C2	BCS US US UT UT BCS	IB DM DM DM DM IB	BCS RHM RHM RHM RHM BCS	IC IC IC IC IC IC	Yes Yes Yes Yes Yes Yes

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Zhejiang Kibing Energy Saving Glass Co., Ltd. Road 104 Baitatou Village, Taoyan Town Shaoxing City, Zhejiang 312036 China +86-575-88730760	4732	BC4/GSLC	U/C2	AA	LF	PIB/S2		
Zhejiang Zhongli Energy Efficient Glass Mfg. Co., Ltd Weiba Road Linjiang Industrial Zone, Xiaoshan District Hangzhou, Zhejiang 311228 China +86 571 82988386	3067 4362	BC4/GSLC BC4/GSLC	U/C2 U/C2	AA PHSS	LF LF	PIB/S2 PIB/S2		Yes Yes
Zhong Shan Grandglass Industrial Co., Ltd 20 Shagang Middle Road Gangkou Town Zhongshan, Guangdong 528447 China 86-760-85595422	3501	BC4/GSLC	U/C2	AA	LF	PIB/S2		

"IGCC®/IGMA® PROTOTYPES IN PROGRESS"

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

MANUFACTURERS

Advanced Impact Technologies	Largo, FL
AGC Flat Glass (Thailand) PLC.	Samut Prakan, Thailand
Albico Glass SAS	Cota, Cundinamarca
Aldora Aluminum and Glass Products, Inc.	Orlando, FL
AL-Hadi Glass Industries	Safet, Zipeode
All Counties Glass Distributors	Stockton, CA
All Weather Tempering of Arizona, LLC.	Phoenix, AZ
All Weather Windows	Edmonton, AB
Alumco LLC	Dubai, United Arab Emirates
American Insulated Glass Inc.	Birmingham, AL
American Insulated Glass Inc.	Conley, GA
Ant-Cam Pazarlama A.S.	Antalya, Dosemealti
Berkowitz J. E., LP	Pedricktown, NJ
Budget Glass Company	Richmond, VA
BVGLAZING SYSTEMS	Concord, ON
Carey Glass	Nenagh, Co. Tipperary
Cascade Windows Inc.	Salt Lake City, UT
Cascade Windows Inc.	Tualatin, OR
Central Valley Glass & Screen, Inc.	Sacramento, CA
Changshu High-Tech Energy-Saving Dorwin Co., Ltd.	Changshu, Jiangsu, China
ChangShu Maybo Glass Co., Ltd.	Changshu, Jiangsu, China
Compagnie de Portes Énergétique EDC	L'Assomption, Quebec
Consolidated Glass and Mirror, LLC	Galax, VA
Cristec Glass S.L.	Balaguer, Lleida
Dalian Yihai Safety Glass Science & Technology Co., Ltd.	Dalian, Liaoning, China
DES Building Innovate Sdn. Bhd.	Perai, Pulau Pinang
Double Seal Insulating Glass Ltd.	Toronto, ON
ECO Glass Production	Medley, FL
Erdem Dis Ticaret A.S.	Istanbul, Pendik
Fairis C.A.	Ambato, Tungurahua, Ecuador
Foshan Xinxingye Glass Co., Ltd.	Chencun Town,
Fujian Ferro Smith Windows and Doors Co., Ltd	Zhangzhou, Fujian
Glass and Mirror Craft	Wixom, MI
Glassecviracon	Nazaré Paulista, São Paulo
Glasstech Industries B.S.C.	Hidd, Manama, Bahrain
GnT Glass Co., Ltd.	Dongguan, Guangdong, China
G-Smatt Co., Ltd (G-Frame)	Pyeongtaek-si, Gyeonggi-do
Guangdong South Star Glass Limited	Foshan, Guangdong
Horizontal Tempering Glass SAL	MKalles, Beirut
Interpane Glasgesellschaft, mbH - Plattling	Plattling, Germany
Jingmei Curtain Wall Technology Co., Ltd.	Xinxiang, Henan

La Tecnica Nel Vetro SpA	Scafati, Salerno, Italy
M Industria S.A. DE C.V.	Conkal
Manna Glass Company	Riyadh, Riyadh
Maryland Glass & Mirror	Baltimore, MD
Mirroirs Laurier	Laurier-Station, QC
Nashville Tempered Glass Corp.	Hendersonville, TN
Novavetro S.r.l.	San Severino Marche,
Oldcastle BuildingEnvelope®	Burnips, MI
Oldcastle BuildingEnvelope®	Concord, ON
Opulux Glass	East Hanover, NJ
Panjin Truspacer Insulating Glass Material Co., Ltd.	Panjin, Liaoning, China
PFG Glass Industries	Langley, BC
Piva Group North America LLC	Sainte Genevieve, MO
Poma Glass & Specialty Windows Inc. dba AGC Glass Company N.A.	Boardman, OH
Precision Glass Industries	Houston, TX
Press Glass, Inc.	Stoneville, NC
Progress Power-Saving Glass (Guizhou) Co. Ltd.	Guizhou, Guizhou
ProTemp Glass, Inc.	Concord, ON
Qinhuangdao Xinhua Glass Processing Ind. Co. Ltd.	Qinhuangdao, Hebei, China
Quest USA, Inc.	Garland, TX
SAGE Electrochromics Inc.	Faribault, MN
Senneca Holdings Inc, (Thermoseal Brand)	Gloucester City, NJ
Senneca Holdings Inc, (Thermoseal Brand)	Irving, TX
Shandong Jinjing Science & Technology Stock Co., Ltd. Boshan Branch.	Zibo City, Shandong Province
Sierra Pacific Windows	Medford, WI
Sierra Pacific Windows	Red Bluff, CA
Standard Building Products, Inc.	Changshu, Jiangsu, China
Suzhou Taifeng Glass Decoration Co. Ltd	Taicang, Jiangsu, China
Syracuse Glass Co., Inc.	Syracuse, NY
Technical Glass & Aluminum Co. L.L.C.	Doha, Qatar
Thermafix A.J. Inc.	Amos, QC
Thermafix A.J. Inc.	Baie St. Paul, QC
Tianjin CSG Energy Conservation Glass Co., LTD	Tianjin, China
Tower Insulating Glass LLC.	Bellmore, NY
Trophy Windows LLC	Houston, TX
Trulite Glass and Aluminum Solutions	Cheswick, PA
Uniglass	Riyadh, Saudi Arabia
United Plate Glass Co., Inc.	Butler, PA
Universal Glass and Aluminum LLC.	Al Ghail, Ras Al Khaimah
Valda 90 Ltd.	Sofia,
Vetrodomus SpA	Brescia, Italy
Vetrotech Saint-Gobain North America	Auburn, WA
Vitelsa Mosquera S.A.	Bogota, Cundinamarca, Columbia
Vitroform SP. Z.O.O.	Gdow,
W.C.P., Inc dba West Coast Insulated Glass Products	Cerritos, CA
Xinyi Energy-Smart Glass (Wuhu) Co., Ltd.	Wuhu, Anhui

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.



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PROCEDURAL GUIDE

(IGCC® Document ID-07)

INSULATING GLASS CERTIFICATION COUNCIL AND INSULATING GLASS MANUFACTURERS ALLIANCE IGCC®/IGMA® CERTIFICATION PROGRAM FOR SEALED INSULATING GLASS

1.0 FOREWORD

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 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 program described here is predicated upon the concept of independent and impartial administration of the certification procedures in the IGCC® license agreement.

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 the "IGCC® License Agreement" is the governing document for operation of the certification program. This procedural guide, which is not an extension of that document, serves merely to describe the administrative procedures and routine operation of the certification program.

The standards utilized in the IGCC®/IGMA® program for authorizing certification to is the **ASTM E2190-10** (Modified 2/2003)

2.0 GENERAL INFORMATION

The Certification Concept

The IGCC®/IGMA® Certification Program is based upon the conviction that no standard of quality is good without the continuous adherence of the licensees to that standard. To buyers, specifiers, code officials and users, the IGCC®/IGMA® certification label offers the

manufacturers assurance that his sealed insulating glass units have been produced in conformance to the ASTM specification(s).

Who Can Participate?

Every manufacturer of sealed insulating glass is eligible, on a voluntary basis, to participate.

Who Conducts the Program?

The Insulating Glass Certification Council (IGCC®) and the Insulating Glass Manufacturers Alliance (IGMA®), are the sponsors of this certification program. Under License with IGMA®, IGCC® administers and Governs the certification program under which the Administrator periodically checks and reports compliance of the manufacturers of products having the IGCC®/IGMA® certification label.

Administration

Administrative Management Systems, Inc. (AMS) is the independent administrator of the certification program. AMS maintains the IGCC®/IGMA® office of certification and handles the routine day-to-day business. All transactions are done in the name of IGCC®/IGMA®.

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: (Modified 8/2009)

- a) The manufacturer must present a passing prototype report from an approved IGCC®/IGMA® testing laboratory to the office of certification. Fabrication of prototype test samples shall be witnessed by a representative of the Administrator during a plant audit, at which time the manufacturers compliance with IGCC®/IGMA® Quality Assurance requirements is validated. (See *Section 10.0*)
- b) The manufacturer signs a copy of the IGCC® License Agreement and sends it to the office of certification. IGCC® will countersign this copy and email it to the licensee.
- c) The licensee sends the office of certification the necessary certification fee.
- d) After receipt by the office of certification of the above, the administrator validates that particular model and sends to the licensee a "Notice of Authorization to Use the IGCC®/IGMA® Permanent Label." 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 IGCC® website at www.igcc.org.

3.0 HOW THE CERTIFICATION PROGRAM WORKS

American Society for Testing and Materials (ASTM) has test methods and specifications for sealed insulating glass. Sealed insulating glass 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 Committee.

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.

The administrator verifies the production at the licensee's manufacturing location during twice per year audits. Audits are performed by a representative of the administrator. During each of these audits, the manufacturer's compliance with IGCC®/IGMA® 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 IGCC®/IGMA® permanent label. At the discretion of the administrator, when a licensee is located outside of North America and test sample fabrication is not required, one audit in a given year may be performed internally by personnel of the licensee. In this case the required audit information will be transmitted to the licensee's internal auditor and upon completion reviewed by the administrator.

During the first audit in the second year, specimens will be fabricated for testing. IGCC®/IGMA® will ask the manufacturer to produce a minimum of thirteen test specimens. The fabrication of these test specimens is witnessed and verifies that they are produced in accordance with the construction certified. During test specimen fabrication, only the IGCC®/IGMA® auditor and employees of the licensee being audited shall be present. The licensee is instructed to send these test specimens to an approved IGCC®/IGMA® testing laboratory where they are tested. The specimens must be shipped to the laboratory within four weeks of fabrication. Tests are made at the laboratory recommended by the licensee and selected by the administrator from the approved list.

A monthly report listing the status of testing is provided to the licensee by the office of certification on the 15th of each month. Upon completion of the test, the administrator e-mails results promptly to the licensee.

After initial certification (Prototype) testing, ASTM E2190 testing shall occur annually for the first 2 years of certification. If no failures occur, then testing may occur once every 2 years, at the discretion of the participant. Except for prototypes, upon fabrication, test specimens, and related information and reports, become the property of the certification program (IGCC). (Modified 5/3/2017)

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® 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 IGCC®/IGMA® permanent label is sent giving an additional 30 days to respond. If the licensee does not respond, authorization to use the IGCC®/IGMA® 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® permanent label is **automatically terminated**. If the retest option is accepted, the administrator will perform an audit and witness fabrication of the retest specimens within 45 days. (See *Section 12* guideline G.16)

Challenging a Certified Product

Complaints of non-compliance 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

The administrator shall receive and log the complaint. It will be the consumer's responsibility to identify the label, information appearing on the spacer of glass and advise the administrator of the same. Note: If no IGCC®/IGMA® label exists, the product has not been certified by the manufacturer to IGCC®/IGMA® and the administrator and IGCC®/IGMA® have no further responsibilities or options.

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 failure such as glass quality, fogging, seal failure, dust, etc., the consumer shall be advised to contact the licensee for manufacturer directly. Some manufacturers 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 IGCC®/IGMA®, 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

Any product which has been authorized to use the IGCC®/IGMA® permanent label may be voluntarily withdrawn from the Certification Program by the licensee at any time. (Modified 8/2009)

5.0 COSTS

What Does the Program Cost?

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)

6.0 DOCUMENTS AND AGREEMENTS

License Agreement

This agreement, incorporating independent program administration and routine, periodic, independent plant audits, sampling and evaluation, governs the relationship between IGCC® and the licensee.

Future amendments or revisions to the License Agreement will be recommended by the Certification Committee and enacted by the IGCC® Board of Governors.

Effective Date, Duration, and Termination

The License Agreement becomes effective on the date of its execution, has an initial duration of twelve months (adjustable to a February 1 to January 31 basis), and is automatically renewed for successive twelve-month periods, unless either party gives notice, at least sixty days prior to date of expiration, that cancellation is requested or unless revoked by IGCC® for causes set forth in the document.

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 manufacturing facilities twice per year, and during the first audit in the second and subsequent years, witnesses fabrication of specimens for testing at one of the IGCC®/IGMA® 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 this certification program Test laboratories are recognized or approved by the Certification Committee;
- e) Publishes and mails/emails the IGCC®/IGMA® Certified Products Directory twice each year and handles all routine clerical duties of IGCC®/IGMA® with respect to certification matters;
- f) Acts as IGCC® treasurer, invoicing licensees, maintaining a bank account and dispersing funds (fiscal reports are made to the Board of Governors);
- g) Attends all scheduled meetings of the Certification Committee; and
- h) In all of its actions acts in the name of IGCC®.

IGCC®/IGMA® Administration Services and Exclusive Licensing Agreement

This agreement defines the relationship where IGMA® and IGCC® desire to combine the administration and marketing of their two certification programs into one certification program administered and governed by IGCC® under which both the IGCC® Mark and the IGMA® Mark are licensed to certification program participants meeting the requirements (“IGCC®/IGMA® Certification Program”)

Procedural Guide

This guide outlines program procedures in accordance with the provisions of the License Agreement and the Administrative Service Agreement, for the guidance of those concerned with the procedural details of the Certification Program's operation. 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.

Certified Products Directory

This directory is the one document and publication that is normally in the public's eye and contains a listing of the certified seal 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 reference 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® 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.

IGMA® Board of Directors

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

IGCC® Certification Committee

The IGCC® Certification Committee has the responsibility for the general procedure and policy pertaining to operation of the Certification Program. 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 License Agreement.

8.0 LABEL REQUIREMENTS

THE IGCC®/IGMA® CERTIFICATION LABEL MUST BE PERMANENTLY MARKED ON A VISIBLE PORTION OF EACH SEALED INSULATING GLASS UNIT 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 below)

This label must be visible after installation in the building. The IGCC®/IGMA® permanent label must be in block capital letters and have a minimum height of 0.050 inches (1.27 mm). The letters IGCC®/IGMA® must be followed by the ® registration mark or a close facsimile, i.e., IGCC®/IGMA®. The IGCC®/IGMA® permanent label must contain the company identification (company name, trade name or company code), plant code*, registered "IGCC®/IGMA®" mark and a date code spanning no more than a 12-month period, plus or

minus three months. The date code should commence with the beginning of each calendar year (effective for both the beginning and the ending of each period). Outdated spacers may be hand stamped to bring the label up to date. The 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 IGCC®/IGMA® permanent label must be affixed to certified products only at the time and place of manufacture. The labeling must be approved by the administrator. The permanent label must be affixed only to the sealed insulating glass units of the licensee's own manufacture which have been certified by the manufacturer through IGCC®/IGMA®.

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:

ABC Glass Co. (*) IGCC®/IGMA® '19

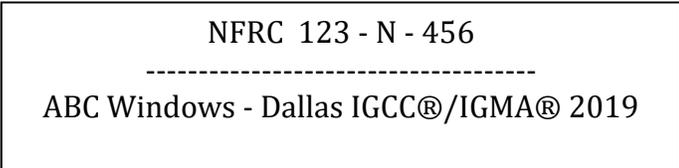
The IGCC®/IGMA® permanent label is listed under each company's name in the "Certified Products" section of this directory.

* 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.

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 IGCC®/IGMA® 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:



9.0 ADVERTISING GUIDELINES

The following concepts are important to remember whether you are a participant, licensee in the IGCC®/IGMA® Certification Program, or a supplier to the sealed insulating glass industry. This discussion is intended to provide you with an accurate background description of the IGCC®/IGMA® Certification Program, to help you avoid making possibly misleading,

deceptive, or ambiguous statements regarding the program in the advertising of your products.
(Modified 8/2009)

- 1) IGCC®/IGMA® is the sponsor of a certification program. IGCC®/IGMA® does not certify products.
- 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 IGCC®/IGMA®
- 4) Manufacturers/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® certification program designation and number to its product.
- 5) The IGCC®/IGMA® Certification Program does not have "members," inasmuch as the term "members" carries with it a connotation that some detailed criteria must be met in order to participate in the organization. Under the IGCC®/IGMA® concept, anyone can participate, and "participants" simply must possess a "legitimate interest in the purposes of IGCC®/IGMA®." Manufacturers, on the other hand, which are "fabricators of sealed insulating glass units," become participants by virtue of executing a License Agreement with IGCC®. Any manufacturer of insulating glass may voluntarily enter into a License Agreement, provided that they intend to certify at least one product under the IGCC®/IGMA® Certification Program. Thus, the proper term to use for a manufacturer participant is "Licensee." A manufacturer, with a prototype in progress, is termed a "Candidate Licensee."
- 6) Unit specimens, not their components, are tested under the IGCC®/IGMA® 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 contained our X component have been found to meet the requirements of the specification(s)."
- 7) Should you have any questions concerning the IGCC®/IGMA® Certification Program, please contact:
Insulating Glass Certification Council
Mr. John G. Kent
PO Box 730, 205 West Main Street
Sackets Harbor, NY 13685
Telephone: (315) 646-2234
E-mail: staff@amscert.com
- 8) **ANSI Disclaimer
Although the IGCC Program is ANSI-accredited and uses the ANSI accreditation symbol on its publicity material the IGCC-certified Licensee cannot use the ANSI trademark nor the

ANSI accreditation symbol, this includes its products, packaging, stationary, letterhead, or any other form of media.

10.0 QUALITY ASSURANCE PROGRAM

IGCC®/IGMA® require licensees to have a working quality assurance program for the fabrication of insulating glass. As a minimum, the licensee's quality assurance system must comply with the general requirements of IGMA TM-4000-02(07) "Insulating Glass Manufacturing Quality Procedures Manual" which established 1) general requirements for quality systems and 2) provides practical solutions for implementing such a system. IGCC®/IGMA® requires compliance to these general requirements of IGMA TM-4000-02(07) "Insulating Glass Manufacturing Quality Procedures Manual" but does 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 plant visits. 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 comply with IGMA TM-4000-02(07) "Insulating Glass Manufacturing Quality Procedures Manual" which establishes requirements for 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 IGCC®/IGMA® Gas Content program is voluntary if gas content units will NOT use IGCC®/IGMA® marked spacer, but is mandatory if IGCC®/IGMA® marked spacer 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 ASTM E2190 weathering cycle.

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)

- 1) The normal minimum of thirteen (13) 14x20-inch (355x505 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. 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 at least one outer lite for at least four (4) test units intended for testing in accordance with ASTM E2189. The test lab shall randomly select ten (10) units for initial gas content testing except that units containing internal components (IC) (i.e. grills or muntins) shall not be considered for 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 six (6) ASTM E2190 weathering test units.
- 2) Production Units – As of 6/23/2010 selection and testing of production units is not required.
- 3) Units shall be tested for initial and after weathering 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") may be used to replace any unit broken in shipping or handling.
- 4) Laboratories shall report results of testing as "percent initial gas content" and "percent after weathering gas content" to the nearest whole percent.
- 5) The calculation of percent initial gas content shall be the average of all ten (10) units tested. The calculation of percent after weathering gas content shall be the average of all six (6) weathered test units.
- 6) 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 feels that its gas content is consistently greater than these gas content values, the licensee can include this information in the licensee’s literature.

- 7) 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.
- 8) Special arrangements need to be made if regulatory compliance is required for gas content other than argon.

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” ASTM weathering testing. The information (Fingerprint) shall be the property of the company requesting the test. Contact IGCC at staff@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.

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 IGCC®/IGMA® website (www.igcc.org) or by contacting the administrative office.

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

ALWAYS

13.1 The following situations permit the licensee to **always** certify the sealed insulating glass units with the same IGCC®/IGMA® 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 (14 by 20 inches is required for test specimens).

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 IGCC®/IGMA® 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 (one-quarter inch to one-half inch air space is allowed for testing).

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 IGCC®/IGMA® 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 IGCC®/IGMA® 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 IGCC®/IGMA® Administrative Office for the most current list of reviewed integrated spacer systems and their generic class.

A.SS.1

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

A.SS.2

A licensee may use a temporary alternate integrated spacer system on the IGCC®/IGMA® 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 IGCC®/IGMA® approved testing laboratory within four (4) weeks of the test specimens' fabrication date. 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 manufacturer may use the same IGCC®/IGMA® 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 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 1/31/2012)

A.DE.2

A change in supplier or model of the same generic type of desiccant from that tested will not require a different IGCC®/IGMA® number provided the new material is on the list of IGCC®/IGMA® 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 IGCC®/IGMA® 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 IGCC®/IGMA® fabrication audits. (Revised 9/26/2018).

A.SE.2

A licensee may use a temporary alternate sealant on the IGCC®/IGMA® 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 IGCC®/IGMA® approved testing laboratory within four (4) weeks of the test specimens' fabrication date. 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 IGCC®/IGMA®). This guideline shall become effective as of 1/2/2020 in consideration of a pilot program. (Revised 1/30/2018)

NEVER

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

N.SP.3

A change in corner design from soldered, welded, braised or bent (BC) to mechanical corner (MC) will require a different IGCC®/IGMA® 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 IGCC®/IGMA® 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 IGCC®/IGMA® 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 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) 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 IGCC®/IGMA® number.

N.SE.2

In a two sealant system, a change in generic type of primary sealant will require a different IGCC®/IGMA® number.

N.SE.3

In a two sealant system, a change in generic type of secondary sealant will require a different IGCC®/IGMA® 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 and intended to be sealed prior to glazing of the unit.

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

Capillary, Tube and How It Is Related to Membrane - IGCC®/IGMA® observes 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 ASTM 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.

G.0 Capillary Tube (Permanently Open Tube)

An I.G. construction incorporating a permanently open capillary tube will be considered and listed for durability as equivalent to a previously IGCC®/IGMA® program durability certified I.G. model without a capillary tube, provided the following applies: (Modified 10/28/2009)

- a) Material and construction of the units are identical, except for the inclusion of the capillary tubes.
- b) Both sets of I.G. units reach the same performance level when tested according to ASTM standard(s). The units with capillary tubes need only be tested once.
- c) The test must be run by an IGCC®/IGMA® approved lab. Unit installation instruction must be supplied to the lab.
- d) Preparation of test specimens need not be witnessed. However, the test result must be reviewed and approved by the administrator.

G.1 Breather Tube (Temporarily Open Type)

A licensee is permitted to insert the open end of a breather tube in a bag or container of desiccant during shipment of a specimen to the test laboratory for durability testing. The

breather tube must be sealed prior to testing. Unit installation/sealing instruction must be supplied to the lab. (Modified 10/28/2009)

G.2 Breather Tube (Temporarily Open Type)

The addition of a breather tube is acceptable, for shipping only, even though not in the durability test specimen. The breather tube should be properly sealed before installation. Unit installation/sealing instructions must be supplied to the lab. (Modified 10/28/2009)

G.3 Edge Protection

The addition of edge protection such as metal banding, metallic foil, barrier coat, etc., is acceptable with the same IGCC®/IGMA® number.

G.7 (Deleted 1/1/2007)

G.8 Internal Components (IC)

The Current:

A minimum of three (3) of the thirteen (13) double pane, five (5) of the fifteen (15) multiple airspace test specimens shall be constructed utilizing all of the components of an internal components (IC) system, which are used in the ultimate product. Such systems may include but are not limited to blinds, films, decorative glass inserts, grills and muntins. These units shall be used for volatile fog testing in accordance with ASTM E2189. When testing muntins or grills, test samples shall be fabricated dividing the sample into nine equal areas (3 by 3). A licensee may use the same IGCC®/IGMA® number for units manufactured without internal components (IC) providing regular testing has been accomplished in accordance with the above procedure. (Modified 1/31/2012)

New Guideline:

Per minutes of the September 25-26, 2018 and May 7-8, 2019 Certification Committee Meeting, with the adoption of the new 2019 ASTM standards on or before January 1, 2020 the guidelines below will be required. Certification listing to the new 2019 version shall begin August 2020. Initial sample fabrication for supplemental internal component testing shall not require auditor witness.

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

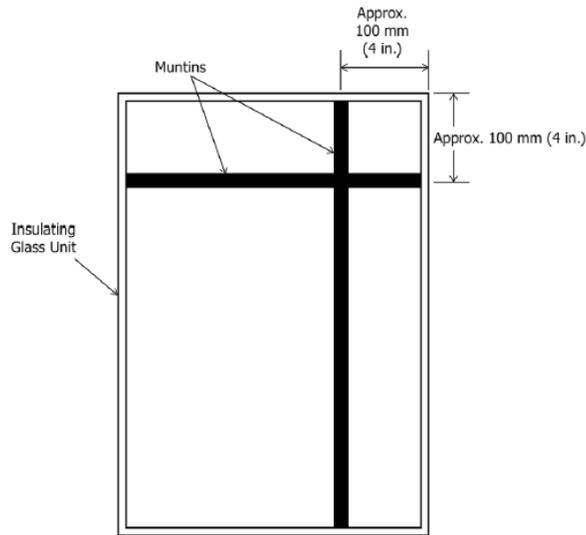


FIG. 1 Schematic Drawing of Insulating Glass Unit with Muntin Bars

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)

G.15 Multi-Cavity

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 6/23/2010)

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® 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 ASTM E2189. (Modified 6/23/2010)

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 14 x 20 inch test specimens the perimeter is 5.66 feet

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 IGCC®/IGMA® 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-inch and the sash shall be cut away to fit in a 14x20-inch testing opening, or 2) a larger sash which accommodates 14x20-inch 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 IGCC®/IGMA® 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 IGCC®/IGMA® number provided regular test units include all the components of the system or tubes. Unit installation and/or final sealing

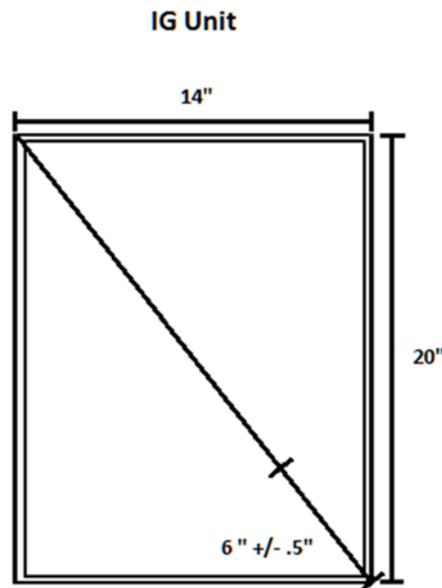
instructions must be supplied to the laboratory and performed at the laboratory. (Modified 8/6/2013)

G.34 Bent or Curved IG Units

Special note should be taken that the ASTM E2190 test method does not provide for testing of Bent or Curved IG units. As such, it is only flat IG units that fall within the IGCC®/IGMA® 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 IGCC®/IGMA® 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 +/- 1/2-inch 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 (up to 17 for double pane, VIG and VIG Hybrid; and up to 19 for multiple air space.) 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 may be cut apart for inspection, 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 IGCC®/IGMA® 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 four weeks of the date of fabrication. 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. All costs related to this guideline are to be borne by the licensee. (Modified 5/14/2008)

G.14 Specimen Frequency

The prototype test will be considered as the test for the first year of certification (providing application is made within 12 months from the date of the test report). This is effective for matters initiated after May 1982. The next fabrication for testing purposes will be in the first half of the second year. (Modified 1/31/2012)

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. The gray area situation is covered by Minutes item 10.10.77.10 and is repeated here.

When there is a change and the licensee desires to use the same IGCC®/IGMA® number, the licensee shall immediately notify the administrator with all details of the change and also satisfy either 1 or 2 below:

- 1) Establish equivalency by passing the same level of ASTM test as certified to by:
 - a) having specimens tested at an IGCC®/IGMA® independent testing laboratory or
 - b) having specimens tested at an in house (licensee) facility, testing done in house by a licensee must be done under the surveillance of the administrator.Specimens must be fabricated and submitted to the laboratory within two weeks after notification of the administrator. During the test period, the licensee may temporarily use the certification label on a provisional basis or:
- 2) 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, a 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. This guideline may not be applied to products for which certification has been previously removed due to test failure. (Modified 12/06/2006)

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 ASTM E2190 test method only provides testing for "Vision glass areas." As such, it is only these types of units that fall within the IGCC®/IGMA® Certification Program. 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 IGCC®/IGMA® independent testing laboratory. These samples need not be witnessed by an IGCC®/IGMA® representative. Upon completion of passing test results the construction shall be eligible for IGCC®/IGMA® certification. IGCC®/IGMA® 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 IGCC®/IGMA® 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 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 IGCC®/IGMA® 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 IGCC/IGMA 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 IGCC®/IGMA® permanent label from all of any licensee's products for failure to pay monies due to IGCC®/IGMA® 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 to the certified letter 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 IGCC®/IGMA® permanent label will be removed.
If the retest option is accepted:
 - a) Request for retest option is granted by IGCC®/IGMA® only upon receipt in full of any administrative and retest fees within 15 days of date of mailing of the notification of failure.
 - b) IGCC®/IGMA® will perform an audit and witness fabrication of retest specimens within 45 days of payment of fees in 1) above.
 - c) Licensee must ship and deliver retest specimens to the testing laboratory within 4 weeks of fabrication.
- 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 IGCC®/IGMA® Permanent Label

Authorization to use the IGCC®/IGMA® permanent label will be removed if a routine audit discloses that a licensee is labeling units containing the same unauthorized construction for the third 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)

SPECIFICATION USED FOR SEALED INSULATING GLASS

August 2019

- **ASTM E2188**
- **ASTM E2189**
- **ASTM E2190**
- **ASTM E2649**

Per minutes of the September 25-26, 2018 and May 7-8, 2019 Certification Committee Meeting, with the adoption of the new 2019 ASTM standards testing to the 2010 version of the standard shall be considered equal to testing to the 2019 version of the standard except for the supplemental internal component testing.

Initial sample fabrication for supplemental internal component testing shall not require auditor witness. Testing to the 2019 version of the standard shall begin on or before January 1, 2020 and certification (listing) to the 2019 version shall begin August 2020.

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

Adopted: May 13, 1977
Revised: August 1, 1981
Revised: January 15, 1986
Revised: January 17, 2012

IGCC® STANDARD PARTICIPANT'S AGREEMENT APPLICABLE TO "SUPPLIER" (NON-IG UNIT MANUFACTURER), "PUBLIC INTEREST", "TEST LABORATORY", "TRADE ASSOCIATION", IG-UNIT "USER", "OTHER PERSON/ORGANIZATION WITH LEGITIMATE INTEREST" OR "CONSUMER" PARTICIPANTS IN IGCC®

This Agreement, made and effective this _____ day of _____, 20____, by and between _____ (hereinafter called "PARTICIPANT") and INSULATING GLASS CERTIFICATION COUNCIL, INC. (hereinafter called IGCC®), an Illinois not-for-profit tax-exempt corporation having its administrative office at 205 West Main Street, Sackets Harbor NY 13685, hereby provides as follows:

In consideration for being approved as an IGCC® Program Participant, and for the right to vote under the IGCC® Corporate Bylaws as an IGCC® Program Participant, I attest and agree, personally or on behalf of my employer, as follows:

A. IGCC Corporate Bylaws: I attest that I have read the IGCC ® Corporate Bylaws and that I or my employer have a legitimate interest in the goals of IGCC®, and I agree, personally or on behalf of my employer, to be bound by the IGCC® Corporate Bylaws.

B. Eligibility and Participant Category: I attest as follows, personally or on behalf of my employer, and request to be recognized, either personally or on behalf of my employer, as a PARTICIPANT in IGCC® in one of the following participation categories: Supplier (Non-IG Unit Manufacturer); Public Interest; Test Laboratory; Trade Association; IG-Unit User; Consumer; Other person/organization with legitimate interest in the purposes of the IGCC® corporation: _____ (Please indicate category).

1. I understand that IGCC®-approved test laboratory participants conducting tests in the IGCC® Certification Program also sign and are obligated to follow the provisions of the IGCC® standard test laboratory agreement, and that IGCC® IG-Unit manufacturer licensee-participants sign and are obligated to follow the provisions of the IGCC® standard license agreement for IG-unit manufacturers, and become participants in IGCC® thereby.

2. I attest that I do not manufacture IG-units nor am I employed by an IG-unit manufacturer (as such, neither I nor my employer qualify to become an IGCC®-IG Unit manufacturer-licensee). If my Participant category or eligibility changes (e.g. by beginning fabrication of IG units), this Agreement will be null and void.

C. Annual Fee: The annual fee for a Supplier (Non-IG Unit Manufacturer) Participant is \$350.00 per company (as of 1/17/2012), subject to change by the IGCC® Board of Governors. There is no fee for public interest or consumer participants. On behalf of my employer, I agree this

annual fee for a Supplier Participant (Non-IG Unit Manufacturer) in IGCC® shall be payable upon receipt of an invoice and shall be non-refundable.

D. Voting Rights and Responsibilities: (1) I understand and agree the IGCC®/IGMA certification program is structured and operated such that program policies and decisions are made in open parliamentary due-process committees whose meetings and actions shall be conducted with impartial review and implementation governance and administrative process. (2) I understand and agree that the IGCC® Certification Committee, as the primary working committee in which I may cast a vote as a Participant (if eligible under the Bylaws), shall operate free from commercial, financial or other interests that might conflict with IGCC's best interests and goals as set forth in IGCC's Corporate Bylaws, and I shall recuse myself from casting any vote in which a conflict of interest may exist. (3) I understand and agree that members of the Certification Committee provide a balance of interests where no single interest dominates. (4) I understand and agree each Participant is responsible for maintaining the confidentiality of specific information as may be requested and appropriate. (5) I understand and agree that the IGCC Board of Governors has ultimate governance authority under the IGCC Corporate Bylaws and applicable law, and that IGCC Participants and Participants' meetings are governed specifically by IGCC Corporate Bylaws Articles III and IV.

E. Dispute Resolution Process: I agree, personally or on behalf of my employer, to the following dispute resolution process, which is the same dispute resolution process applicable to IGCC® IG-Unit Manufacturer-Licensee Participants under the IGCC® standard license agreement for IG-Unit Manufacturers:

Any claim, complaint, dispute or related controversy asserted by me or my employer arising out of or regarding participation in IGCC® under this Agreement, or the operation of IGCC® under the IGCC® Corporate Bylaws, including the determination of the scope or applicability of this Agreement, and any arbitration pursuant to this standard IGCC® Participant's Agreement, shall be governed by the laws of the State of Illinois and the Illinois Not-for-Profit Corporation Act (under which IGCC® is incorporated), and the parties to this IGCC® Participant's Agreement agree that any such claim, complaint, dispute or related controversy not settled amicably between the parties will be resolved exclusively by submitting any such claim, complaint, dispute or related controversy (following a mandatory 20 day period in which no claim, complaint, dispute or related controversy shall be submitted to arbitration and during which the parties will seek a mutually agreeable resolution of any claim, complaint, dispute or related controversy) to binding contract arbitration, unless both parties consent to mediation or some other form of dispute resolution. In the event of contract arbitration, the arbitration will be conducted by a neutral third party arbitrator accepted by both parties. In the event that the parties do not agree to the appointment of any arbitrator, any claim, complaint, dispute or related controversy asserted by me or my employer regarding participation in IGCC® under this Agreement, or the operation of IGCC® under the IGCC® Corporate Bylaws, shall be resolved under the most-current Commercial Arbitration Rules of the American Arbitration Association. The place of the arbitration shall be in Illinois or some other mutually agreeable location. In any arbitration proceeding, reasonable discovery of evidence shall be allowed, and strict conformity to legal rules of evidence shall not be necessary, and the parties may offer evidence as is relevant and material to the dispute, which shall be considered in the arbitrator's reasonable discretion. The arbitrator, exercising his or her discretion, shall conduct the

proceedings with a view to expediting the resolution of the claim, complaint, dispute or related controversy. The prevailing party in the arbitrator's Decision and Final Award shall be entitled to recover reasonable attorney's fees and costs it may incur in connection with the arbitration proceeding. The arbitrator's Decision and Final Award shall be enforceable in any court of competent jurisdiction.

F. To maintain or commence Participant status, this Agreement needs to be signed by Participant. This Agreement supersedes and replaces any predecessor IGCC® Standard Participant's Agreement to which I or my employer is a party.

SIGNED and DATED:

PARTICIPANT: _____
Please sign and print name and title/authority; and date

Company/Business/Organization Name: _____

Street Address: _____

Telephone Number: _____; Fax Number: _____

Email Address: _____; Website: _____

Primary IGCC® Program contact for Participant: _____ (Please print)

APPROVED and AGREED:

INSULATING GLASS CERTIFICATION COUNCIL, INC. (IGCC®)
P.O. Box 730, 205 West Main Street, Sackets Harbor, NY 13685
Telephone: (315) 646-2234 Fax: (315) 646-2297 Email: staff@amscert.com

By: _____ (Please sign and date _____)
John G. Kent, IGCC® Administrative Manager

* A copy signed by IGCC® will be returned to Participant



AMS, INC.
Administrative Management
Systems, Inc.

205 West Main, PO Box 730
Sackets Harbor, NY 13685
Phone: (315) 646-2234
Fax: (315) 646-2297
E-mail: staff@amscert.com



**STANDARD LICENSE AGREEMENT FOR AMS CERTIFICATION UNDER IGCC®/IGMA®
CERTIFICATION PROGRAM FOR SEALED INSULATING GLASS UNITS
(ID-30)**

(as revised effective June 21st, 2016, and constituting the successor effective agreement, pursuant to the terms herein, for all preceding fully-executed IGCC®/IGMA® Certification Program standard license agreements)

This Agreement, made this _____ day of _____, 20____, by and between Administrative Management Systems, Inc. (AMS), a New York corporation, hereinafter called "LICENSOR", and INSULATING GLASS CERTIFICATION COUNCIL, INC, (hereinafter "IGCC®" or PROGRAM SPONSOR), an Illinois not-for-profit tax-exempt corporation each having their office at 205 West Main St. P.O. Box 730, Sackets Harbor, NY 13685, and (legal entity) _____ having its principal office at (location) _____, (hereinafter called "LICENSEE"), hereby provides as follows:

WITNESSETH:

1. WHEREAS, Licensor is the certification body for the certification program noted below and as designated in the attached addendum(s) and hereinafter referred to as the Certification Program, sponsored by designated Program Sponsor for Sealed Insulating Glass Units, which will provide for (1) the validation of a manufacturers certification of such products by means of independent laboratory testing and evaluation to the requirements of applicable Specification(s) and applicable Test Method(s) and ASTM Standards; and under the further terms and conditions of the Certification Program set forth in this Agreement and the Program's Procedural Guide, and also providing for (2) the stipulation by each such manufacturer that the manufacturer maintains a quality assurance program which covers the production of all the units to which this agreement refers; and
 2. WHEREAS, the term "Sealed Insulating Glass Certification Program(s)" as used herein refers to the sealed insulating glass certification program as designated and described in greater detail in the Addendum(s) which are attachment(s) to this Standard License Agreement and hereby made a part thereof;
 3. WHEREAS, The responsibilities of the Licensor and Program Sponsor are limited to the tasks set forth in this Certification Program Standard License Agreement and any requirements as may be necessary to maintain accreditation to applicable standards; Licensor and Program Sponsor do not endorse, warrant, or guarantee products validated or certified under the Certification Program, and
 4. WHEREAS, Licensor and Program Sponsor are willing to accept participation in said Certification Program by all manufacturers of Sealed Insulating Glass Units under the terms set forth herein; and
 5. WHEREAS, Program Sponsor is the uncontested sole owner of the designated program mark and label IGCC®; the aforesaid mark/label, and/or other mark(s)/label(s) cross-licensed to Program Sponsor IGCC® are hereby licensed by Program Sponsor to Licensor

(AMS), which has entered into a valid service agreement with Program Sponsor IGCC® for authorization of use of the mark, and which mark(s) is/are hereby licensed by Licensor and Program Sponsor to Licensee and said label(s)/mark(s) shall be permitted to appear on Licensee's registered Certification Program marks/labels which are permitted by Licensor to be affixed to the Sealed Insulating Glass Units complying with the pertinent requirements of the Certification Program; and
 6. WHEREAS, the Licensor and Program Sponsor may contract for services with independent laboratories which have signed and meet the requirements of the Testing Laboratory Agreement, and with auditors and other service providers deemed necessary for the operation of the program who have entered into a valid agreement ; and
 7. WHEREAS, the Program Sponsor shall appoint a "Certification Committee" which shall be structured and operate in accordance with the requirements of the IGCC® By-laws: meetings of this committee shall be called by the Chairman of the Certification Committee at least once each year; and
 8. WHEREAS, the procedural guide shall be adhered to by the Licensor, Program Sponsor and the Licensee; and
 9. WHEREAS, the Licensor shall conduct all aspects of the program in accordance with standards and accreditation requirements that may be identified by the certification program, this license agreement, the procedural guide and program documents and procedures; and
 10. WHEREAS, Licensee is willing to participate in and support said Program under the terms and conditions set forth in this Agreement.

Therefore, be it
 RESOLVED, that it is agreed by and between the parties hereto as follows:

LICENSEE:

A.1) Shall sign this Agreement by providing the signature of its corporate officer or authorized representative, and also its primary Certification Program contact, where noted herein.

A.2) Shall allow the Licensor's representative, and observers from accreditation bodies or program sponsor without prior notice, free access at any time during regular business hours, to Licensee's place of manufacture of Sealed Insulating Glass Units certified hereunder and to witness the manufacture of samples which are to be tested for compliance with the requirements. Licensee's refusal to permit access for audit purposes hereunder is cause for removal of its entire product listing from the Certified Products Directory and the withdrawal of its rights to affix Certification Marks/Labels thereto. Acceptable reasons for not permitting entrance for audits would include strikes, acts of God, and circumstances beyond immediate control of the manufacturer. Areas which may have been set aside for research or prototype development may be restricted. It is understood that the Licensor or his representative shall be allowed to pick up samples from the field for audit or testing. It is understood that periodic tests will be made on each model to be certified and that said tests will be made at the laboratory selected by the Licensor or Licensee from the approved list. Licensor will notify the Licensee of compliance or non-compliance. It is further understood that routine expense of sampling and testing will be borne by the Licensee. The Licensor will charge each Licensee accordingly and so contract for applicable services. Expenses for packaging, shipping, and purchasing of glass for testing will also be borne by the Licensee.

A.3) Shall affix to each of its certified products the permanent Certification Mark/Label assigned by the Licensor:

- a) Only at the time and place of manufacture; and
- b) Only to Sealed Insulating Glass Units of Licensee's own manufacture, which have been so approved by the Licensor.

A.4) Shall not sell, transfer or otherwise dispose of Certification Mark/Labels in any manner other than affixing to Licensee's certified production.

A.5) Shall not affix hereafter the Certification Program registered mark, or Participant's Certification Mark/Label registered with Licensor, 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. A model change shall be as defined by the certification program.

A.6) Shall upon a finding by the Licensor that a certified product of Licensee has been changed as defined by the Certification Committee have thirty (30) days in which to submit a request for waiver of retest or request a new audit and retest at Licensee's expense if no waiver is granted. Failure of Licensee to act as required immediately above shall constitute due cause for exclusion of this product from the program.

A.7) May withdraw a certified product from the Program by written declaration and request for removal of said product from the Licensor's listing signed by the authorized representative of the Licensee.

A.8) Shall use all practical means at its command continuously to assure that its products hereunder certified fully comply with the Specification requirements, and are manufactured in the same manner as test specimens, and are subject to a quality assurance program maintained by Licensee, and Licensee shall so stipulate to the Licensor's representatives during the periodic visits of said representatives to Licensee's facilities described above in Section A.2) or when otherwise requested by the Licensor.

A.9) Shall refrain from using terms implying or claiming certification, validation, accreditation, or the like in connection with advertising referring to products which have not been certified, or from which validation of certification claim has been suspended, withdrawn, or terminated.

A.10) In connection with the advertising of model systems which the Licensor has approved and granted a certification number or mark/label, the Licensee must use the following concepts as guidelines: Licensor (AMS) is the Certification Body or certifier, (IGCC®) the Certification Program Sponsor. Licensee (Manufacturer) certifies that the product is the same as the model which has been

tested. Licensor validates the test results through Audits according to the certification program guidelines.

A.11) Shall abide by the decision of the Licensor as to the conformance or non-conformance of Licensee's products with the requirements of the Certification Program, determined in accordance with the requirements of the specification testing and quality assurance requirements as defined by the Certification Program. It is understood that the Licensor shall be the sole judge of conformance or non-conformance with the Specifications applicable to the Certification Program, for purposes of Licensor's validation of Licensee's certification of such a product under this Program. Where questions involving interpretation arise, the matter will be referred to the Program Sponsor for ruling.

A.12) Agrees that notice regarding the status of any of its certified products shall be carried in the Certified Products Directory maintained by Licensor on behalf of Program Sponsor.

A.13) Shall pay the participation fees shown in the Schedule of Fees, current version, upon signing of this Agreement and at each regular renewal thereof. It is understood, that this Schedule of Fees may be changed from time to time by the Licensor and Program Sponsor.

A.14) Agrees that the Licensor may, at his discretion, use any and all data, exclusive of Licensee's Company name, address, proprietary product designation or any other information which may provide clues as to the manufacture of the products, for the purpose of comparing test methods and correlating test methods with field performance.

A.15) Shall legibly and permanently mark or label each certified product in accordance with the current label requirements of the certification program, which may be changed from time to time.

A.16) Shall furnish Licensor with any information regarding its product as may be necessary to properly identify Licensee's Certified Product for listing in the Certified Products Directory.

A.17) Shall regularly mail to the Licensor, at the same time as such material is furnished others, copies of its catalogs and other literature, excluding price and discount information, where such materials list Licensee's products certified hereunder. The Licensee shall not reference its product certification in a manner as to bring the Licensor or Program Sponsor into disrepute and shall not make statements regarding its product certification that may be considered misleading or unauthorized. If certification documents are provided to others, the documents shall be reproduced in their entirety.

A.18) Shall abide by and comply with all procedural details which the Licensor and Program Sponsor may prescribe for the implementation of the Certification Program, provided that such procedural details are not inconsistent with the provisions and purposes of this License Agreement.

A.19) Shall have the right, at its option, to designate a nominee from Licensee's organization for consideration for appointment to the IGCC® Certification Committee.

A.20) Shall notify Licensor within (120) days, of any changes that may affect its ability to conform with the Certification Program requirements;

A.21) Shall in making reference to product certification in communication media such as documents, brochures, or advertising, including websites, comply with Certification Program requirements;

A.22) Shall keep a record of all complaints made known to it relating to compliance with certification requirements and makes the records available to the Licensor when requested, and

- 1) Take appropriate action with respect to such complaints and any deficiencies found in products that affect compliance with the requirements for certification;
- 2) Document the actions taken

LICENSOR AND PROGRAM SPONSOR:

B.1) Shall prepare and publish at least twice each year, with such interim supplements as may be desirable, a Certified Products Directory (hard copy and/or electronic) containing a listing of the Certified Insulating Glass Products which have been found by testing and audit of quality assurance programs to be in compliance with each

required specification for each Licensee then in good standing with Licensor and Program Sponsor. This directory shall include the Licensee's assigned certification number, name, location and product certification status.

B.2) Shall promptly distribute (hard copy and/or electronic) substantial quantities of each Directory and supplement to door, sash, and building products manufacturers, glazing contractors, home builders, architects, regulatory agencies and code-making groups, and publicize the Directory to trade publications.

B.3) Shall provide and maintain a list of approved laboratories qualified to perform tests required hereunder and to authorize tests herewith specified. Said list of approved laboratories is to be developed by the IGCC® Certification Committee.

B.4) Shall prepare and maintain a procedural guide and the standard forms which may be adopted for use with the Licensee and the approved laboratories in connection with the operation and program requirements of the Certification Program, including the testing and quality assurance requirements thereof.

B.5) Shall hold all test reports and correspondence with Licensees and others, relating to Licensee's products or tests, in strict confidence, except for communication necessary to effect proper listing in the Certified Products Directory, communication necessary to effect any program approvals or accreditation, and as required by law.

B.6) Shall not list in or remove from the Certified Products Directory any product or Licensee except on due notification in writing from an authorized representative of the Licensee or because Licensee fails to pay applicable fees as provided in the most current Schedule of Fees.

B.7) Shall administrate the Certification Program to provide and authorize all sampling and testing, review and approve test data, perform periodic evaluations or other duties and functions herein provided for including granting maintaining, extending, suspending or withdrawing certification.

IT IS FURTHER AGREED THAT:

C.1) A certification test hereunder denotes and is limited to a test in accordance with the requirements of the appropriate specifications and related test methods.

C.2) Each branch or affiliated plant of each Licensee manufacturer must be registered individually, and products therefrom tested and certified separately and apart from products manufactured in other plants or branches of any Licensee manufacturer.

C.3) A procedure exists for handling appeals and complaints and may include complaints of non-conformance which provides for samples of like product to be provided by Licensee in a specified manner for repetition of tests within thirty (30) days, the total cost of which, including test specimens, is to be borne by the complainant, unless the test proves non-conformance, in which case the costs will be borne by the Licensee; tests are to be initiated by the Licensor promptly upon receipt of a complaint in writing along with the appropriate surety deposit. Complaints and Appeals regarding the Certification Program that cannot be resolved by Licensor shall be resolved by the Program Sponsor.

C.4) This agreement shall become effective on the date of signing and shall extend for a period of 12 months and shall be renewed automatically for successive periods of 12 months each, and remain in effect unless Licensor, Program Sponsor or Licensee, at least sixty (60) days prior to the date of expiration, gives notice in writing that cancellation or termination is requested (which shall be deemed agreed and effective at the conclusion of said notice period) and unless revoked and terminated by Licensor or Program Sponsor for causes set forth in this Agreement and in accordance with procedures set forth in the Agreement and the Certification Program Procedural Guide.

C.5) If this agreement is terminated, then upon the effective date of such termination, Licensee shall:

- a) Not affix the registered quality Certification Mark/Labels to any product which Licensee shall thereafter manufacture; and
- b) Make no further reference to, or use of, Licensor's certification or Program Sponsor's Certification Program or registered

Certification Mark/Labels as used earlier in the Certification Program.

C.6) Licensor, in the event it shall be necessary to exclude Licensee from participation in the Certification Program in accordance with the provisions hereof, may do so by giving Licensee thirty (30) days written notice of Licensor's termination of the License Agreement.

C.7) The terms of this Agreement and any disputes arising from or about this Agreement, and any arbitration pursuant to this Agreement, shall be governed by the laws of the State of Illinois, in which the program sponsor is incorporated. The parties agree that all disputes relating to the interpretation of, or otherwise about or arising from the terms of this Agreement not settled amicably between them will be submitted (following a mandatory 20 day period in which no claim shall be submitted to arbitration and during which the parties will seek a mutually agreeable resolution of any claim or dispute) exclusively and solely to binding contract arbitration, unless each party consents to mediation or some other form of dispute resolution. In the event of contract arbitration, the arbitration will be conducted by a neutral third party arbitrator accepted by each party. In the event that the parties do not agree to the appointment of any arbitrator, any controversy or claim arising out of or relating to this contract, or the breach thereof, shall be resolved under the most-current Commercial Arbitration Rules of the American Arbitration Association. The place of the arbitration shall be in Illinois, or some other mutually agreeable location. In any arbitration proceeding, reasonable discovery of evidence shall be allowed, and strict conformity to legal rules of evidence shall not be necessary, and the parties may offer evidence as is relevant and material to the dispute, which shall be considered in the arbitrator's reasonable discretion. The arbitrator, exercising his or her discretion, shall conduct the proceedings with a view to expediting the resolution of the dispute. If any party submits an arbitration claim to enforce any of the terms of this Agreement, the prevailing party shall be entitled to recover reasonable attorney's fees and costs it may incur in connection with the arbitration proceeding. A final award by the arbitrator shall be enforceable in any court of competent jurisdiction.

C.8) In the event any part or parts of this Agreement are found to be void, the remaining provisions shall nevertheless be binding with the same effect as though the void parts were deleted.

C.9) The use of any Mark/Label governed by this Agreement on any unqualified product, or the use of any such Mark/Label by a manufacturing or assembly or other facility other than that registered will not be permitted by the Licensee, its employees, its representatives, and its agents. If the use of any Mark/Label in contravention of this Agreement is discovered, after a due process hearing review by the Certification Committee, the Licensor and Program Sponsor will have cause to institute or seek all or any of the following actions: a) Revocation of license; b) Imposition of an award in favor of Licensor or Program Sponsor of liquidated damages of five thousand dollars (\$5,000); c) Legal action preventing the Licensee from having the applicable Mark/Labels printed, attached, or used in any manner by Licensee, with the entire cost of such legal action to be borne by the Licensee.

C.10) In the event Licensor promptly notified all those to whom it has sent the then most recent issue of the Certified Products Directory or supplement thereto, as well as the National Better Business Bureau and the trade press, regarding any incorrect listing or reference to Licensee's product(s) published in any Certified Products Directory, supplement thereto, or elsewhere, Licensee agrees not to hold Licensor or Program Sponsor liable in any way for any damage caused by such incorrect listing or reference, unless such damage was the result of an intentional tort, willful act or gross negligence by Licensor or Program Sponsor.

C.11) Licensee shall indemnify and hold Licensor and Program Sponsor harmless as to any expense whatsoever for, or incurred in connection with, any claims, losses, or defense of claims or losses, which may be asserted by a third party against Licensor and Program Sponsor by reason of this Agreement and services performed hereunder,

C.12) No party shall make use of the others' trademarks, trade names or name in any manner without the prior written approval of the other provided each party hereby authorizes the other, during the term of this Agreement, to state that the Licensee is a participant in this Certification Program.

THIS LICENSE AGREEMENT may not be transferred, assigned, or otherwise disposed of to any other company, individual, or successor company without the express prior written consent of the Licensee, Licensor, and Program Sponsor.

By mutual agreement of Licensee, Licensor, and Program Sponsor, THIS AGREEMENT supersedes and replaces the predecessor IGCC®

Standard License Agreement, in the form executed between the parties, if Licensor, Program Sponsor and Licensee have executed any such predecessor IGCC® Standard License Agreement. If such a predecessor agreement was executed, that predecessor agreement is hereby cancelled, by mutual agreement, effective as of execution of THIS AGREEMENT (which is a successor standard agreement to the earlier IGCC® Standard License Agreement), with the 60 days notice of cancellation period for the predecessor agreement hereby waived by Licensee.

LICENSEE: Company _____

Street Address _____

City, State and Zip _____

Telephone Number _____

Signed By _____ Title _____

(Corporate Officer or Authorized Representative)

E-Mail Address: _____

Date _____

Signed By _____ Title _____

(Primary IGCC® Certification Program Contact)

E-Mail Address: _____

Date _____

LICENSOR: Administrative Management Systems, Inc. (AMS)

By _____ Title President

Date _____

PROGRAM SPONSOR: Insulating Glass Certification Council, Inc. (IGCC®)

By _____ Title Administrative Manager

Date _____

AMS/IGCC
P.O. 730 205 West Main St.
Sackets Harbor, NY 13685
Telephone: (315) 646-2234 E-mail: staff@amscert.com

***A COPY SIGNED BY LICENSOR AND PROGRAM SPONSOR WILL BE RETURNED TO LICENSEE.**

Addendum

Where referenced “Sealed Insulating Glass Certification Program” refers to the below certification programs.

IGCC®/IGMA® Program

On February 3, 2009 the IGCC® Certification Program and IGMA® Certification Program were combined into one program called the IGCC®/IGMA® Certification Program in a formal documented agreement called the ADMINISTRATION SERVICES AND EXCLUSIVE LICENSING AGREEMENT.

The IGCC®/IGMA® ADMINISTRATION SERVICES AND EXCLUSIVE LICENSING AGREEMENT names Insulating Glass Certification Council (IGCC®) responsible for governance of IGCC®/IGMA® Certification Program. As such, the following responsibilities for the IGCC®/IGMA® Certification Program are:

Program Sponsor: IGCC® Insulating Glass Certification Council
Program Administrator and Certification Body: Administrative Management Systems, Inc.

Relevant and Applicable Requirements:
IGCC® Procedural Guide and Standards
IGCC®-IGMA® Certified Products Directory

**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	Florida
125 - Intertek/ATI 2524 East Jensen Avenue; Fresno, CA 93706 Attn: Kenny White, Tyler Westerling Phone: (559) 233-8705 Fax: (717) 764-4129 Email: kenny.white@intertek.com , Tyler.westerling@intertek.com	285 - Fenestration Testing Laboratory 8148 N.W. 74th Avenue; Medley, FL 33166 Attn: Jose Sanchez Phone: (305) 885-3328 Fax: (305) 885-3329 Email: jose@ftl-inc.com
Minnesota	New Jersey
150 - Intertek/ATI 40 51 st Way NE, Suite 100; Fridley, MN 55421 Attn: Dan Johnson, Lukas Bayer, Wendy Rusinyak Phone: (651) 636-3835 Fax: (651) 636-3843 Email: dan.johnson@intertek.com , Lukas.bayer@intertek.com , wendy.rusinyak@intertek.com	65 – Intertek (fka MT Group) 403 Country Road, Unit 1 Cliffwood, NJ 07721 Attn: Frank Pennisi Phone: (732) 725.6177 Email: Frank.Pennisi@intertek.com
Pennsylvania	
100 - Intertek/ATI 130 Derry Court; York, PA 17406 Attn: Jacob Weichert, Thomas Mickley Phone: (717) 764-7700 Fax: (717) 764-4129 Email: Jacob.Weichert@intertek.com , tom.mickley@intertek.com	800 - NCTL 5 Leigh Dr.; York, PA 17406 Attn: Justin Bupp, Denise Osman, Drew Klinedinst Phone: (717) 846-1200 Fax: (717) 767-4100 Email: jbupp@nctlinc.com , dosman@nctlinc.com , dklinedinst@nctlinc.com
Texas	
175 - Intertek/ATI 1909 10 th St, Suite 100; Plano, TX 75074 Attn: Lucio “Fred” Munoz, Cassandra Matthews Phone: (469) 814-0687 Email: lucio.munoz@intertek.com , cassandra.matthews@intertek.com	
Washington	
195 - Intertek/ATI 22155 68th Avenue South; Kent, WA 98032-1937 Attn: Patricia Cain Phone: (253) 395-5656 Email: patricia.cain@intertek.com	750 - National Certified Testing Labs – Northwest 3310 Hill Avenue; Everett, WA 98201 Attn: Amy Becker Phone: (425) 259-6799 Fax: (425) 259-4936 Email: abecker@nctlinc.com
Canada	
60 - CAN-BEST 38 Regan Road, Unit 4; Brampton, ON L7A 1C6 Canada Attn: Elie Alkhoury, Michael Barrera Phone: 905-840-2014 Email: elie@can-best.com , michael@can-best.com	50 - Element Materials Technology Canada Inc. (fka Exova) 2395 Speakman Drive; Mississauga, ON L5K 1B3 Canada Attn: Greg Murawsky Phone: 905-822-4111 Email: Greg.murawsky@exova.com
China	
55 - China National Safety Glass & Quartz Glass Test Center Guanzhuang Dongli 1# Chaoyang District Beijing, PR CHINA 100024 Attn: Mr. Wang Geng Phone: +86-10-51167155 Email: wq@ctc.ac.cn	925 - Intertek Block E. No 7-2 Guang Dong Software Science Park Caipin Road, Guangzhou Science City Guangzhou, CHINA 510663 Attn: Fred Bao Phone: +86 21 61136116 Email: Fred.bao@intertek.com
80-Shanghai Institute of Quality Inspection & Technical Research (SQI) No. 900, Jiangyue Road, Minhang District, Shanghai CHINA 201114 Attn: Ms. Longmei Wang Phone: +86-21-54336371 Email: Walm74@163.com	