FGIA
Fenestration & Glazing Industry Alliance

IGMA INSULATING GLASS MANUFACTURERS ALLIANCE

igmac

Certification Program Manual

Certification requirements for the CAN/CGSB 12.8 Standard and the IGMA Gas Content and Quality Management Program

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IGMAC Certification Program Manual
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A.0

PROGRAM

A.1 CONCEPT

IGMAC, the Insulating Glass Manufacturers Association of Canada, was formed in 1968 to establish high standards of professional conduct in the design, manufacture, application, installation and maintenance of hermetically sealed insulating glass units.

The IGMAC Certification Program recognizes 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.

A.2 ADMINISTRATION

The IGMAC Certification Program is sponsored by the Fenestration and Glazing Industry Alliance (or "FGIA") and administered by Administrative Management Systems, Inc. (hereinafter called "Program Administrator") who contract with independent agencies to perform audit and testing services.

A.3 PARTICIPATION

All manufacturers of insulating glass units produced and/or sold in Canada are invited and encouraged to participate in the IGMAC Certification Program.

A.4 ARBITRATION

In instances where matters regarding compliance cannot be resolved, the IGCC-IGMA Appeals Committee will be called upon to arbitrate same. All information regarding the unresolved compliance matter will be presented to the Committee without identification of the manufacturer. The decision of this Committee will be final.

A.5 STANDARD

For durability, the minimum standard of performance required for participation in the Certification Program is the highest level of the National Standard of Canada CAN/CGSB 12.8, latest issue.

For gas content, the minimum standard of performance required for participation in the Certification Program is established by the IGMA Certification Committee.

B.0

PROCEDURES

B.1 APPLICATION

Application for participation is made to:
Fenestration and Glazing Industry Alliance
1769 St. Laurent Blvd, Suite 104
Ottawa, ON K1G 5X7
Tel: (613) 233-1510 / Fax: (613) 482-9436 / e-mail: igmac@amscert.com

The IGMAC Certification Program has three components:

- Durability or conventional testing for air filled insulating glass units per the CGSB 12.8 latest standard specification.
- Gas Concentration testing for insulating glass units with inert gas content as established by the IGMA Certification Committee. As the gas concentration certification portion of the program has initial and final (after cycling) requirements, durability or conventional testing for air filled insulating glass units to the CGSB 12.8, latest standard specification is required.
- Implementation, maintenance, and compliance with the Quality Assurance Program.

The Application Form and Licensing Agreement are available from the IGMA website. Upon completion and return of these forms and payment of application fees to the Program Administrator, a Facility Audit will be arranged with the manufacturer so that the assembly of test samples may be witnessed and labeled by the agency. **It is recommended that the manufacturer should obtain a copy of the CAN/CGSB 12.8 standard directly from Canadian General Standards Board in Ottawa (prior to the facility audit being performed) for information regarding sample sizes and detail of tests to be performed.** (Call CGSB Sales Branch at 819-956-0425 or fax at 819-956-5644)

The manufacturer will submit the "labeled" test samples directly to:

Element Materials Technology Canada Inc. 2395 Speakman Drive Mississauga, ON L5K 1B3 Attention: Mark Balonzo Tel: 905-822-4111	**OR**	CAN-BEST 38 Regan Road, Unit #4 Brampton, ON L7A 1C6 Attention: Michael Barrera Tel: 905-840-2014

along with a copy of the completed facility audit form and payment for testing.

To obtain current pricing on testing, manufacturers should contact the testing facility directly for a schedule of test fees.

The completed audit form and a copy of the test results will be duly forwarded directly to the administrator by the testing laboratory. The Licensing Agreement will then be executed, and a notice of certification will be sent to the manufacturer by the administrator.

B.2 TESTING

(a) Full testing to the latest edition of the CGSB 12.8 Standard and additional requirements as may be established from time to time by the IGMA Certification Committee is required before IGMAC Certification is granted to a product. A waiver of this requirement may be granted by the IGMAC Program Administrator or the IGMA Certification Committee.

(b) If the product to be IGMAC Certified is gas filled, then sample units for testing must be constructed in a gas fill configuration and subsequently filled with argon gas for testing under the IGMA test method provision for argon gas fill concentration.

Product lines meeting a tested initial gas content of 90% or greater averaged over ten test specimens selected at random from the test set and a final after conventional testing gas content of 80% or greater averaged over the ten test specimens selected for initial gas content shall be qualified for the Gas Content Certification Program. Products that have successfully completed the Gas Content Certification Program will be identified in the Certified Products Directory (CPD) with the designation "GCIA" for "Gas Content Initial and After Durability". Both initial and after weathering gas content must be compliant in order to be listed as "GCIA".

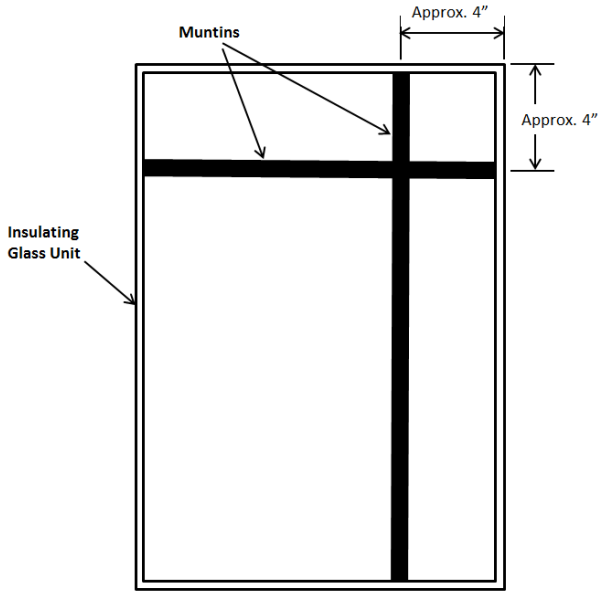
(c) As of July 1, 2020; Baseline testing to CAN/CGSB 12.8 volatile fog test shall be performed during each regular certification test on units identical to those fabricated for High Humidity and Weathercycling. Initially and at least each 4 years, sets of three (3) double paned, five (5) multiple cavity test specimens shall be constructed under auditor witness for the CAN/CGSB 12.8 volatile fog test for internal component performance testing utilizing all components of an internal components (IC) system, which are used in the ultimate product. Only CAN/CGSB 12.8 volatile fog testing shall be required in each of the following categories of internal components. The specific internal component to test in each category shall be 1) worst case product or 2) highest sales volume product, at the fabricator's discretion:

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

When testing muntins or grills, test samples shall be fabricated dividing the sample into 1 X 1 offset, with 4" as demonstrated in Figure B2-1, Muntin Bar Test Sample Configuration. A licensee may use the same IGMAC® number for units manufactured without internal components (IC) providing regular testing has

been accomplished in accordance with the above procedure.

Fig.B.2-1, Muntin Bar Test Sample Configuration



Cavity Inserts (decorative or other) - Units for IC testing of inserts (glass, film, leaded glass, electrical panels or other) shall include all components of the insert system except that non-transparent glazing or material should be replaced with transparent material with care taken not to obstruct the center viewing area of the unit. Inserts for fog test units shall approximate inserts used in actual production.

Grooved Spacer for IC - Some frame/spacer systems are grooved to accommodate the cavity insert but do not generally create 2 separate sealed cavities and as such will be considered and tested as a single cavity unit. For proper durability testing of these units, the groove may need to be filled and at the fabricator's discretion may use the same insert as the fog test units, a center insert of clear glass, or a simplified center insert. In these cases, the center groove should be filled with an insert of appropriate thickness to support the spacer during testing and compression to help facilitate "wet-out".

Blinds - Units for IC testing of blinds between the glass lites (BBG) shall include all components of the blind system in the approximate correct proportions, although the blinds do not need to be operational. Components may be placed in the unit with care taken to not obstruct the center viewing area of the unit. Any frame modifications (i.e. holes, clips or brackets for operators) shall be included. Other than cleaning BBG ICs of oils and residue created by cutting or slicing components in correct proportions, BBG ICs used for testing are not to be treated or to undergo processing that differs from normal production processes, e.g., pre- conditioning

with high heat or chemical treatments not used in the production process.

- GCIA Testing of IC - At present IGCC/IGMA/IGMAC does not require GCIA testing of IC. It has been recognized that practical limitations may exist in GCIA testing some IC. As of the date of this document, a task group within IGCC/IGMA is working on guidance for GCIA testing of IC and it is expected to include this work in future certification procedures. With this said, there is nothing precluding a fabricator from GCIA testing IC, and if done so, certification documentation will reflect such testing. This may be necessary for certain code or jurisdictional requirements.

- All test samples shall be forwarded directly to the approved test facility within 90 days of fabrication. There shall be no "pre-testing" of any test sample being forwarded to the approved test facility except for normal in plant quality control inspection processes performed by the manufacturer and at the manufacturer's discretion.

- Should a new product under consideration for IGMAC certification fail any of the CGSB 12.8 test requirements then the manufacturer must notify the IGMAC Program Administrator if they wish to retest, within 90 days. If the new product fails only the argon gas concentration test, then testing may proceed on those test samples for certification as a conventional air-filled product only. If the initial gas fill requirement is not met but the final gas fill requirement is, then the manufacturer may submit new test samples for initial gas content certification only. For failures of either the initial and final or final gas content certification then complete retesting of the product is required if the product is to be certified for initial argon gas concentration.

- Gas filled insulating glass units cannot be identified as IGMAC certified unless manufacturers participate in and have successfully completed the gas content portion of the IGMAC Certification Program. Products that have successfully completed the gas content portion can be identified by the addition of the letter "G" added to the IGMAC number.

- A full retest is required every 2 years to meet the standard, or earlier if:

  i) Any of the generic component types of the product is changed.
  ii) The location of the facility as listed on the license agreement is changed.
  iii) The manufacturing process is changed.

- Minor changes of product design or process, which are deemed not to affect test results may be exempted from retesting. Notification of such changes is to be made on the form 'Request for Waiver of Retest'.

- During a retest, should an IGMAC certified product fail any of the CGSB 12.8 test requirements, then the manufacturer has 60 days from the date of the first notification of failure to produce a full set of new test samples and submit same for testing or withdraw that product from the IGMAC Certification Program. If the administrator has not been notified within the 60-day period, then that product may be de-listed. If the product fails only the initial or final argon gas concentration test, then testing may proceed on those test samples for certification as a conventional air-filled product only. If the product is to be certified for gas concentration certification then complete retesting of the product is required.

- There will be no change in certification status during the first retest period. Should a product fail the first retest, excluding the gas concentration test, then that product may be de-listed by IGMAC. No product will be de-listed for failing only the gas concentration test. In this case the product will be listed in the IGMAC Certified Products Directory as an air-filled product.

- The construction of all test samples is to be witnessed by the IGMAC designated auditor. Only plant personnel and the designated auditor are to be present in the plant at the time of the facility audit.

C.0

NON-COMPLIANCE

C.1 Any participating manufacturer who fails to comply with the requirements of the Certification Program as set out in the Licensing Agreement is subject to delisting from the program. Grounds for delisting are, but not limited to the following:

(a) Failure to provide a "Pass" Test Report within 6 months of the expiry of test date,
  a.l Failure to Pass First retest
(b) Use of IGMAC® trademark on a product other than that type, which was certified,
(c) Use of IGMAC® trademark on a product manufactured in a different location than that listed on the Licensing Agreement,
(d) Cessation of business, receivership or bankruptcy at the location listed on the Licensing Agreement,
(e) Non-payment of Certification Program Fees,
(f) Failure to maintain adequate quality control records.
(g) Failure to demonstrate compliance with the procedural requirements of this program.
(h) Noncompliance with the terms of the IGMAC License Agreement.

Final decision on all matters pertaining to non-compliance shall rest with the program IGCC-IGMA Appeals Committee.

Manufacturers who are not in compliance with the Program and subject to delisting will be notified in writing either by electronic submission (email or fax) or registered mail and given 5 business days in which to respond to the allegation in writing to the Program Administrator. The IGCC-IGMA Appeals Committee considers formal appeals which may be made either in writing or in person. This committee will respond within 30 days of receipt of appeal and will ultimately recommend an action to address the appeal. The decision of this committee is final.

A manufacturer who is delisted must reapply to the program as though he is a new manufacturer in order to regain a listing.

C.2 Suspension of Product

1. Products lines may be suspended for any of the following reasons:

a. Failure to provide a "Pass" Test Report within 6 months of the expiry of test date,
b. Failure to pass the first retest
c. Non generic change in component
d. Failure to complete quality control records per program requirements
e. Failure to pay program fees
f. Violation of the IGMAC License Agreement
g. Marking of non-certified product as IGMAC
h. Marking of triple glazed units if only double glazed have been certified
i. Change in Low e coating from pyrolitic to sputtered
j. Marking of gas-filled units not participating in the gas content program
k. Failure to allow an authorized IGMAC auditor entry to the plant to conduct an audit (this results in immediate suspension)

Licensees will be notified in writing for any product that has been suspended. This Notice will include the following:

1. Identification of Manufacturer and location.
2. Identification of suspended product by IGMAC ID and generic composition.
3. Reason for Suspension.
4. Actions to resolve the suspension.
5. Length of time allowed to resolve the reason for suspension.

Upon resolution of the reason for suspension which includes provision of relevant documentation to demonstrate resolution, the Licensee will be notified in writing (electronic submission / e-mail, fax, letter) that the suspension has been lifted.

C.3 Voluntary Delisting of Product

Participation in the IGMAC® Certification Program is voluntary. Any manufacturer may at any time voluntarily withdraw from participation in the program.

Licensees who desire to voluntarily withdraw from participation in the IGMAC Certification Program or desire to delist a specific product(s) must contact the office in writing to request same.

Acceptable forms of notice are electronic submission (e-mail), mail or fax. Licensees are to indicate the reason for withdrawal or delisting in the Notice.

1. Once the Licensee has been removed from the program or a product has been delisted, the Manufacturer will be advised in writing of Dissolution of the License Agreement.
2. The Manufacturer is no longer authorized to use the certification program mark and must refrain from using the IGMAC name or the mark "IGMAC®" or the term "IGMAC® certified" in connection with any advertising or other public announcement which refers to IGMAC® for the above product/s;

3. Not affix the mark "IGMAC®" or the IGMAC® certification label to any product that you manufacture as above referring to IGMAC® after the effective date of your termination of products produced at this plant.

4. Make no further reference to or use of the IGMAC®'s certification program or certification labels for the manufacturer's product(s).

5. Make no further reference to or use of the "IGMAC®" or any other trademark, service mark, certification mark, trademark, or name belonging to IGMAC® and / or IGMA® in any manner for the manufacturer's product(s).

D.0

PRODUCT IDENTIFICATION

D.1 The minimum requirement for identification of Certified Products is as follows:

(a) IGMAC® Trademark
(b) Company name (or abbreviation as approved by the IGMAC Program Administrator)
(c) Location of production facility (city, town, etc.), (or abbreviation as approved by the IGMAC Program Administrator)
(d) Year of manufacture.

D.2 Product identification must be permanently marked on each insulating glass unit to be visible after installation. Method of identification may be by a label applied to the spacer, die stamping the spacer, sandblasting, or etching into the glass, or other acceptable methods as agreed upon by the IGMAC Certification Procedures Committee.

D.3 Products that are not identified by the permanent marking are not considered IGMAC certified irrespective of whether that product configuration has successfully met the program requirements.

E.0

AUDITS

E.1 The Audits will be performed by an Inspector of the Agency who shall have authority to:

(a) Observe and record the production process,
(b) Inspect components as prepared for production,
(c) Review quality control records,
(d) Check units on hand, in stock, or awaiting shipment.

E.2 The basis of the audits pertaining to Quality Control will be the In-plant Quality Control Requirements, Appendix F.

E.3 FACILITY AUDIT

(a) The purpose of the Facility Audit is to record specifically requested data related to the manufacturing of the insulating glass units; to witness the fabrication of test units and to verify the maintenance and documentation of Quality Assurance Checks. **During any facility audit, only employees of the firm being audited shall be present with the auditor**. At no time during the 24 hour period preceding the construction of test samples shall an employee or representative of any insulating glass component supplier, whether currently supplying product(s) to the manufacturer/licensee or not, have worked on, made modifications and/or improvements to or provided maintenance on the production line and/or equipment from which units submitted for testing are fabricated other than modifications or improvements which will be maintained as part of the regular fabrication process. Regular maintenance as prescribed in the manufacturer's quality manual is permitted.

This audit will be performed:

(i) After an initial application for Certification,
(ii) Within the 2-year retesting cycle,
(iii) After a request for retesting by the manufacturer (for example due to change of generic component(s) or manufacturing process).
(iv) Upon receipt of a new licensing agreement due to change of location.

(b) **Each lite of glass shall have a 4 mm nominal thickness**. The overall thickness of a sealed unit for testing shall not exceed 40 mm to accommodate existing apparatus. The test specimens shall be fully representative of manufacturer's standard with regard to design and construction. **No other glass thickness is permitted. Test samples received with other glass thickness will not be accepted for testing.**

E.4 COMPLIANCE AUDIT

The purposes of the Compliance Audit are to ensure that the Manufacturer is

continuing to produce insulating glass units of the same construction as what has been certified, to verify the maintenance and documentation of Quality Assurance Checks and that all certified units are being properly identified.

E.5 Two unannounced Compliance Audits will be performed per year. If a Facility Audit is performed, it may replace one of the two Compliance Audits scheduled for that same year.

F.0

SCHEDULE OF FEES

F.1 Fees will be set by the Fenestration and Glazing Industry Alliance. A copy can be found at igmaonline.org.

F.2 The Certification Program Annual Fee will include two audits per year and other administrative costs. If additional audits are required to verify compliance with the Program, this additional cost will be paid by the manufacturer.

F.3 All costs associated with the fabrication of test units, boxing and delivery to a test laboratory, testing, reports, etc., will be paid by the manufacturer.

G.0

COMPONENT CODES

G.1 FGIA will maintain a Certified Products Directory, which will include the name and location of each participating Manufacturer and a generic description of the product as certified. The IGMAC Certification Program will maintain a list of component equivalencies (Appendix A) grouped by generic component types. Components listed within a generic category are considered equivalent for the IGMAC certification purposes.

G.2 The Certified Products Directory will be made available through the IGMA website (www.igmaonline.org) to public and private sector architects, specifiers, building code authorities, and other interested parties.

G.3 Listed Insulating Glass Manufacturers may state for advertising purposes that their product meets the requirements of the IGMAC Certification Program. Manufacturers are to adhere to the IGMAC guidelines for approved use of the IGMAC trademark. Copies of the IGMAC guidelines may be obtained by contacting the IGMAC Program office.

G.4 The IGMAC Certification Program does not certify or approve components used in the manufacture of insulating glass units.

G.5 The codes for generic component types as tested and as used on the listing are detailed in Appendix H.

G.6 A change of unit design, which would change any of the components listed on the "Application for Participation in the Certification Program" will be considered new generic type and will be subject to retesting unless a "Request for Waiver of Retest" is approved. Changes from one listed generic component to another listed generic component in the same category will require notification through a "Request for Waiver of Retest" but will not require a retest. Refer to Appendix A, Desiccant, Sealant, and Spacer Chart for equivalencies. Waivers must be submitted in advance of the change.

G.7 The IGMAC Program will use the following criteria for listing a specific component in Appendix A on its list of generic component types.

(a) Sealants

1. The sealant manufacturer will state which sealant category is appropriate for the specific sealant and shall submit a Material Safety Data Sheet (MSDS) and a Technical Data Sheet (TDS) to the IGMAC Certification Program Administrator.for confirmation.
2. The sealant manufacturer shall submit a CGSB 12.8 or IGMAC test report from one of the approved IGMAC testing facilities on units manufactured with the sealant to the IGMA Technical Policy Committee. The units shall conform to all CGSB 12.8 requirements. Every component used in the manufacture of the units (other than the sealant) shall be from materials on the generic components list. No muntins or grills are necessary, no gas filling is required, and clear glass may be used for the purposes of this test.
3. In addition, if the sealant is to be used in single seal units, the manufacturer shall submit either ASTM F1249 or ASTM E96 (desiccant method) test data conducted under the conditions outlined in IGMA TB-2701-95 to the IGMA Administrator for review. The test data shall be considered confidential by the IGMA Administrator and may not be released without the consent of the sealant manufacturer.

(b) Desiccants – 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 ºC (77 ºF) 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:

$$\text{ACPF (grams/ ft.)} = \frac{\text{Weight of Desiccant (g) x adsorption capacity (wt \%)}}{\text{Perimeter (Feet) x } 100}$$

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

(c) Spacer and Integrated Spacer Systems – qualification criteria is under development. Please contact the IGMAC Program office for further

information.

G.8 As a general guide, any of the following may be changed without requiring a retest or a waiver approval:

(a) **Glass** - thickness, size, tint, type, shape or supplier (**Note:** It is recommended that glass supplier's recommendations be followed when insulating glass units utilize coated glass products);

(a.2) **Assembly** – Certified sealed triple glazing changed to sealed double glazing.

(b) **Spacer** - width, height, wall thickness or supplier, the addition of an air space muntin frame.

(c) **Desiccant** - A change in desiccated material that maintains or increases the Adsorption Capacity per Perimeter Foot (ACPF)

(d) **Sealant** - color, increased MVT path, supplier.

(e) **Connector** - changes of components within generic Connector.

(f) **Coatings** - Non-edge deleted sputtered (soft coat) coatings meeting the Main Criteria 1 and 2. Pyrolytic coatings.

(f.2) **Low E Coatings** – Edge deleted sputtered (soft coat) coatings to any other edge-deleted sputtered coating, Pyrolytic (hard coat) or plain glass.
Non-edge deleted sputtered (soft coat) coatings meeting the Main Criteria 1 and 2, and only when recommended for such use by the coating manufacturer to any other edge-deleted sputtered coating, Pyrolytic (hard coat) coatings, or clear glass.
Pyrolytic (hard coat) coatings to any other Pyrolytic coating or clear glass.

G.10 As a general guide, the Program Administrator should be notified by means of a "Request for Waiver of Retest" for interim approval. Items not covered by Items G.6 and G.7 shall be reviewed by the IGMAC Certification Program Administrator. Final approval shall be granted by the IGCC-IGMA Appeals Committee at its next scheduled meeting.

G.11 As a general guide, none of the following may be changed without a retest:

(a) **Glass** - construction of triple glazed units if tested for double glazed.

(b) **Spacer** - material or finish (i.e. anodized/galvanized/painted), Generic Type.

(c) **Desiccant** - A change in desiccated material that decreases the Adsorption Capacity per Perimeter Foot (ACPF).

(d) **Sealant** - decreased MVT path, change from a single sealant system to a dual sealant system or vice versa, Generic Type.

(e) **Connector** - Generic Type.

(f) **Low E** – Clear (non-coated) to Pyrolytic (hard) low E, sputtered edge-deleted low E coating to non-edge deleted sputtered low E coating. Pyrolytic coating to sputtered coating (both edge and non-edge deleted).

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

(Table Key: Y- Yes; N – No) (Chart provided for illustration)

Manufacturers are advised that before switching from the product supplied from one component manufacturer to another one, even those that may be considered equivalent and carry the same component code, the form "Request for Waiver of Retest" must be submitted to the IGMAC program office for review and approval. The request will be reviewed by the Program Administrator and in some cases by the IGMA Certification Committee. The manufacturer will be advised as to whether the waiver has been granted or declined.

H.0

DOCUMENTATION & FORMS

H.1 The following described Documents and Forms will be used in the administration of the IGMAC Certification Program:

(a) IGMAC Certification Program Manual.
(b) Application for Participation in the IGMAC Certification Program.
(c) Audit Form and Test Report.
(d) License Agreement.
(e) Request for Waiver of Retest.
(f) Certified Products List.
(g) IGMAC Program Fee Schedule.

For Further Information on the IGMAC Certification Program for the CGSB 12.8 Standard or on FGIA Glass Products Council Technical Developments

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