IGMAC Certification Program Manual

Certification Requirements for the CGSB 12.8 Standard and the IGMA Gas Content Certification Program

Copyright Insulating Glass Manufacturers Alliance – September 2009. All rights reserved
The information contained in this document is the exclusive property of the Insulating Glass Manufacturers Alliance. Distribution and/or reproduction of any part of this document is strictly prohibited.
# IGMAC Certification Program Manual

## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SECTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
<td>1</td>
</tr>
<tr>
<td>Procedures</td>
<td>2</td>
</tr>
<tr>
<td>Non-compliance</td>
<td>4</td>
</tr>
<tr>
<td>Product identification</td>
<td>4</td>
</tr>
<tr>
<td>Audits</td>
<td>5</td>
</tr>
<tr>
<td>Schedule of fees</td>
<td>6</td>
</tr>
<tr>
<td>Components codes</td>
<td>6</td>
</tr>
<tr>
<td>Documentation</td>
<td>8</td>
</tr>
</tbody>
</table>

## APPENDIX

- A  Desiccant, Sealant and Spacer component code category charts.
- B  Application for Participation in the Program
- C  IGMAC License Agreement
- D  Auditor Guidelines and Audit Report
- E  Diagram of Shipping Box for Sample Units
- F  In-Plant Quality Control Requirements
- G  Quality Control Forms
- H  IGMAC Product Component List
- I  Request for Waiver of Retests
- J  Application for Membership
- K  Fee Schedule
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 and administered by the Insulating Glass Manufacturers Alliance (hereinafter call “the Alliance”) who contract with an independent agency (hereinafter called “the Agency”) to perform audit 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. Participation in the IGMAC or IGCC-IGMA Certification Program is a prerequisite for manufacturing membership in IGMA.

A.4 ARBITRATION

In instances where matters regarding compliance cannot be resolved, the IGMA Technical Policy 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:
Insulating Glass Manufacturers Alliance (IGMA)
1769 St. Laurent Blvd, Suite 104
Ottawa, ON  K1G 5X7
Tel: (613) 233-1510 / Fax: (613) 482-9436 / e-mail: kate@igmaonline.org

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, IGMAC Certification Program. Upon completion and return of these forms and payment of application fees to the Administrator of the Program, 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. (previously Exova)
2395 Speakman Drive
Mississauga, ON L5K 1B3
Attention: Greg Murawsky
Tel: 905-822-4111 ext. 585

OR

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 IGMA.

(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) A minimum of four (4) of the double-glazed or multiple cavity 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 CGSB 12.8. 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 IGMAC® number for units manufactured without internal components (IC) providing regular testing has been accomplished in accordance with the above procedure.

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

1. Favor shall be given to testing worst case IC
2. Favor shall be given to testing highest volume production IC
3. Consideration shall be given to testing IC on a rotational basis
4. Fog test only is required.

The following direction is also provided:
Muntins or Grills - When testing muntins or grills, test samples shall include all components of the muntin or grill system (i.e. holes, clips, brackets) and shall be fabricated dividing the sample into nine equal areas (3 by 3). Muntins or grills need only be included in one air space of a multiple air space unit.

![Muntin Bar Test Sample Configuration](image)

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

- 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 IGMA 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 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,
(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 IGMA Technical Policy 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 IGMA Technical Policy 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 IGMA)
(c) Location of production facility (city, town, etc.), (or abbreviation as approved by IGMA)
(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 Alliance (See Appendix K, Certification Fee Schedule).

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 IGMA 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. IGMA 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 IGMA guidelines for approved use of the IGMAC trademark. Copies of the IGMA guidelines may be obtained by contacting the IGMA office.

G.4 IGMA 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.

G.7 IGMA 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 IGMA Technical Policy Committee 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.
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 °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:

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

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

Spacer and Integrated Spacer Systems – qualification criteria is under development. Please contact the IGMA 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 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 IGMA Technical Policy Committee. Final approval shall be granted by the IGMA Technical Policy 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 or non-edge deleted low E coating to non-edge deleted sputtered low E coating. Pyrolytic coating to sputtered coating (both edge and non-edge deleted).

<table>
<thead>
<tr>
<th>From</th>
<th>Clear</th>
<th>Pyrolytic</th>
<th>Sputtered (edge-deleted)</th>
<th>Sputtered (non edge-deleted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Pyrolytic</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Sputtered (edge-deleted)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Sputtered (non edge-deleted)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

(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 IGMA office for review and approval. The request will be reviewed by the Program Administrator and in some cases by the IGMA Technical Policy 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) Application for Participation in the IGMAC Certification Program;
(b) Audit Form and Test Report;
(c) License Agreement;
(d) Request for Waiver of Retest;
(e) Certified Products List.
APPENDICES
<table>
<thead>
<tr>
<th>Generic Code</th>
<th>Generic Description</th>
<th>Supplier</th>
<th>Trade name</th>
<th>Available for Waiver</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Aluminum (Anodized)</td>
<td>Allmetal</td>
<td>Yes</td>
<td></td>
<td><a href="http://www.allmetalinc.com">www.allmetalinc.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Feni</td>
<td>Yes</td>
<td></td>
<td><a href="http://www.feni-na.com">www.feni-na.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>RPM Rolfomed Metal Products</td>
<td>T-Spacer</td>
<td>Yes</td>
<td><a href="http://www.rpmroll.com">www.rpmroll.com</a></td>
</tr>
<tr>
<td>AM</td>
<td>Aluminum (Mill Finished)</td>
<td>Allmetal</td>
<td>Yes</td>
<td></td>
<td><a href="http://www.allmetalinc.com">www.allmetalinc.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Feni</td>
<td>Yes</td>
<td></td>
<td><a href="http://www.feni-na.com">www.feni-na.com</a></td>
</tr>
<tr>
<td>AO</td>
<td>Aluminum (Painted, Anodized, Powder, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS</td>
<td>Butyl composite spacer</td>
<td>TruSeal</td>
<td>Duraseal</td>
<td>Not at the present time</td>
<td><a href="http://www.truseal.com">www.truseal.com</a></td>
</tr>
<tr>
<td>DL</td>
<td>Butyl polycarbonate spacer</td>
<td>Truseal</td>
<td>Duralite</td>
<td>Not at the present time</td>
<td><a href="http://www.truseal.com">www.truseal.com</a></td>
</tr>
<tr>
<td>IX</td>
<td>Polymer plastic spacer</td>
<td>INEX</td>
<td>Inex</td>
<td>Not at the present time</td>
<td><a href="http://www.inexspacer.com">www.inexspacer.com</a></td>
</tr>
<tr>
<td>INS</td>
<td>U-channel (Stainless Steel) spacer</td>
<td>GED Integrated Solutions</td>
<td>Intercept Tin-Plated</td>
<td>Yes</td>
<td><a href="http://www.ged-usa.com">www.ged-usa.com</a> <a href="http://www.ppg.com">www.ppg.com</a></td>
</tr>
<tr>
<td>INT</td>
<td>U-channel (Tin plated steel) spacer</td>
<td>GED Integrated Solutions</td>
<td>Intercept Steel</td>
<td>Yes</td>
<td><a href="http://www.ged-usa.com">www.ged-usa.com</a> <a href="http://www.ppg.com">www.ppg.com</a></td>
</tr>
<tr>
<td>FSM</td>
<td>Foam Spacer Metalized multi-layer vapour barrier</td>
<td>Quanex</td>
<td>SuperSpacer, SuperSpacer Premium, Premium Plus</td>
<td>Yes</td>
<td><a href="http://www.quanex.com">www.quanex.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tremco</td>
<td>EnerEDGE, EnerEDGE Pro</td>
<td>Yes</td>
<td><a href="http://www.tremcosealants.com">www.tremcosealants.com</a></td>
</tr>
<tr>
<td>FSS</td>
<td>Foam Spacer Solid aluminum multi-layer vapour barrier</td>
<td>Quanex</td>
<td>Tri-Seal, T-Spacer/Tri-Seal Premium, T-Spacer/Tri-Seal Premium Plus</td>
<td>Not at the present time</td>
<td><a href="http://www.quanex.com">www.quanex.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tremco</td>
<td>EnerEDGE PRO-DS</td>
<td>Not at the present time</td>
<td><a href="http://www.tremcosealants.com">www.tremcosealants.com</a></td>
</tr>
<tr>
<td>FSP</td>
<td>Foam Spacer Plastic/Polymer foam back of spacer - No metal based multi-layer vapour barrier</td>
<td>Quanex</td>
<td>nxT</td>
<td>Not at the present time</td>
<td><a href="http://www.quanex.com">www.quanex.com</a></td>
</tr>
<tr>
<td>PPA</td>
<td>Polymer Plastic Aluminum</td>
<td>Saint-Gobain</td>
<td>Swissspacer</td>
<td>Not at the present time</td>
<td><a href="http://www.saint-gobain.com">www.saint-gobain.com</a></td>
</tr>
<tr>
<td>PHSS</td>
<td>Plastic Hybrid Stainless Steel</td>
<td>Saint-Gobain</td>
<td>Swissspacer Ultimate</td>
<td>Not at the present time</td>
<td><a href="http://www.saint-gobain.com">www.saint-gobain.com</a></td>
</tr>
</tbody>
</table>

**NOTE:** Equivalency and availability for waiver are based on material equivalency and submission of a successful test report submitted by an IGMA program participant. There are other spacer systems listed under a generic category which have not applied for equivalency and waiver. Spacers and spacer systems above that have met the current equivalency and waiver requirements under the IGMA Certification Program are denoted by “Yes”. For further information please contact the supplier or the IGMA office (613-233-1510). This list is intended to be a guide to assist in determining generic categories of spacers and spacer systems is not any indication of approval or acceptance. IGMA does not certify components.
<table>
<thead>
<tr>
<th>Generic Code</th>
<th>Generic Description</th>
<th>Supplier 1</th>
<th>Supplier 2</th>
<th>Available for Waiver</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPSS</td>
<td>Polymer Plastic Stainless Steel</td>
<td>Saint-Gobain</td>
<td>SwissSpacer V</td>
<td>Not at the present time</td>
<td></td>
</tr>
<tr>
<td>SG</td>
<td>Steel (Galvanized)</td>
<td>Allmetal</td>
<td></td>
<td>Yes</td>
<td><a href="http://www.allmetalinc.com">www.allmetalinc.com</a></td>
</tr>
<tr>
<td>SM</td>
<td>Steel (Mill Finished)</td>
<td>Allmetal</td>
<td></td>
<td>Yes</td>
<td><a href="http://www.allmetalinc.com">www.allmetalinc.com</a></td>
</tr>
<tr>
<td>SS</td>
<td>Stainless Steel</td>
<td>Allmetal</td>
<td></td>
<td>Yes</td>
<td><a href="http://www.allmetalinc.com">www.allmetalinc.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fenzi</td>
<td>RollTech</td>
<td></td>
<td><a href="http://www.fenzi-na.com">www.fenzi-na.com</a></td>
</tr>
<tr>
<td>SO</td>
<td>Steel Other (Painted etc.)</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SZ</td>
<td>Nickel/Zinc Plated Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBA</td>
<td>Thermally broken anodized aluminum</td>
<td>RPM Rollforming</td>
<td>Aluminum-T</td>
<td>Not at the present time</td>
<td><a href="http://www.rpmrollforming.com">www.rpmrollforming.com</a></td>
</tr>
<tr>
<td>TBC</td>
<td>Thermally Broken Chrome</td>
<td>RPM Rollforming</td>
<td>Climatech Edge</td>
<td>Yes</td>
<td><a href="http://www.rpmrollforming.com">www.rpmrollforming.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fenzi</td>
<td>Thermaledge (Hygrade Metals)</td>
<td>Yes</td>
<td><a href="http://www.fenzi-na.com">www.fenzi-na.com</a></td>
</tr>
<tr>
<td>TBS</td>
<td>Thermally Broken Steel</td>
<td>Fenzi</td>
<td>Chromatech Ultra</td>
<td>Yes</td>
<td><a href="http://www.fenzi-na.com">www.fenzi-na.com</a></td>
</tr>
<tr>
<td>TBT</td>
<td>Thermally Broken Tin</td>
<td>Fenzi</td>
<td>Warmedge (Manufacture Industrielle)</td>
<td>Not at the present time</td>
<td><a href="http://www.fenzi-na.com">www.fenzi-na.com</a></td>
</tr>
<tr>
<td>TS</td>
<td>Butyl sealant spacer (Aluminum or Stainless Steel)</td>
<td>Enlinger</td>
<td>Thermix</td>
<td>Not at the present time</td>
<td></td>
</tr>
<tr>
<td>TX</td>
<td>Polycarbonate spacer</td>
<td>Chemetall</td>
<td>NaphoTherm</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>TP</td>
<td>Thermoplastic spacer</td>
<td>Kommerling</td>
<td>Kodimelt / TPS</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Equivalency and availability for waiver are based on material equivalency and submission of a successful test report submitted by an IGMA program participant. There are other spacer systems listed under a generic category which have not applied for equivalency and waiver. Spacers and spacer systems above that have met the current equivalency and waiver requirements under the IGMA Certification Program are denoted by "Yes". For further information please contact the supplier or the IGMA office (613-233-1510). This list is intended to be a guide to assist in determining generic categories of spacers and spacer systems is not any indication of approval or acceptance. IGMA does not certify components.
<table>
<thead>
<tr>
<th>Company</th>
<th>Molecular Sieve“MS”</th>
<th>MS/SG Blend“BL”</th>
<th>Desiccated matrix“DM”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkema</td>
<td>NK 30 Siliporite 82 (S82)</td>
<td></td>
<td>CA 4100 Cold Applied Matrix WA 4200 HA 4300 A 44855</td>
</tr>
<tr>
<td>Bostik</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elegant</td>
<td>3A 980119 980164</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fenzi</td>
<td>Molver 3A Molver 3A/13X MGM01</td>
<td></td>
<td>Molver DM</td>
</tr>
<tr>
<td>Grace Davison</td>
<td>Phonosorb 551 LD-3 LD-5 LD-7 MS 555 MS 558</td>
<td>801 LD 802 LD 806 LD 807 LD</td>
<td>Phonosorb MTX P350</td>
</tr>
<tr>
<td>HB Fuller / Kömerling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Sales Corp (ISC)</td>
<td>Purex 2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PQ Corporation</td>
<td>3A &amp; 8A 3A-X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEDEX</td>
<td>ZEOLAN NA3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SilicaStar Industries</td>
<td>MS 3A MS 13X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Equivalency and availability for waiver are based on material equivalency and submission of a successful test report submitted by an IGMA program participant. There are other desiccant/desiccated matrices listed under a generic category which have not applied for equivalency and waiver. These are identified in italics. For further information please contact the supplier or the IGMA office [613-233-1510]

This list is intended to be a guide to assist in determining generic categories of desiccant/desiccated matrices and is not any indication of approval or acceptance. IGMA does not certify components.
<table>
<thead>
<tr>
<th>Company</th>
<th>Molecular Sieve &quot;MS&quot;</th>
<th>MS/SG Blend &quot;BL&quot;</th>
<th>Desiccated matrix &quot;DM&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>UOP</td>
<td>Molsiv™-2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Molsiv™-4000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zeochem</td>
<td>Isomil M13</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Isomil M83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M-43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Equivalency and availability for waiver are based on material equivalency and submission of a successful test report submitted by an IGMAC program participant. There are other desiccant/desiccated matrices listed under a generic category which have not applied for equivalency and waiver. These are identified in italics. For further information please contact the supplier or the IGMA office (613-233-1510).

This list is intended to be a guide to assist in determining generic categories of desiccant/desiccated matrices and is not any indication of approval or acceptance. IGMA does not certify components.
<table>
<thead>
<tr>
<th>Company</th>
<th>Hot Melt Butyl Thermoplastic “HM”</th>
<th>Hot Melt Thermoset “RHM”</th>
<th>Polyisobutylene “PIB”</th>
<th>Poly-sulfide “PS”</th>
<th>Polyurethane Two component “PUR”</th>
<th>Silicone One component “Si”</th>
<th>Silicone Two component “SZ”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bostik</td>
<td>5190 Series 5190 5192 5197</td>
<td>CPS 9000</td>
<td>3500 Series 3523</td>
<td>3190 Series</td>
<td>3190A 3190B 3199 48375</td>
<td>3-0117 795</td>
<td>3362 3363 982 982 FS DC 993N</td>
</tr>
<tr>
<td>Delchem</td>
<td>Delchem 100 Series 130</td>
<td>D2000</td>
<td>Delchem 180 Series</td>
<td>Delchem 80 Series</td>
<td>Delchem 90 Series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dowsil/Dow Corning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fenzi</td>
<td>Hotver 2000 Hotver A+</td>
<td>Butylever KC</td>
<td>Thiover</td>
<td>Poliver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Momentive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Equivalency and availability for waiver are based on material equivalency and submission of a successful test report submitted by an IGMAC program participant. There are other sealants listed under a generic category which have not applied for equivalency and waiver. These are identified in italics. For further information please contact the supplier or the IGMA office (613-233-1510). This list is intended to be a guide to assist in determining generic categories of spacers and spacer systems is not any indication of approval or acceptance. IGMA does not certify components.
<table>
<thead>
<tr>
<th>Company</th>
<th>Hot Melt Butyl Thermoplastic &quot;HM&quot;</th>
<th>Hot Melt Thermoset &quot;RHM&quot;</th>
<th>Polyisobutylene &quot;PIB&quot;</th>
<th>Poly-sulfide &quot;PS&quot;</th>
<th>Polyurethane Two component &quot;PUR&quot;</th>
<th>Silicone One component &quot;SI&quot;</th>
<th>Silicone Two component &quot;SI2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>HL-5145, HL-5147 Isomelt M Kodimelt IG</td>
<td>HLS5180 Isomelt R</td>
<td>PIB 1 PIB 2 PIB 32 PIB 29 PIB 7HNB</td>
<td>IGK 711</td>
<td>IGK 511 IGK 330 IGK 130</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IGK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HM 1000</td>
</tr>
<tr>
<td>Quanex</td>
<td>EdgeTherm 3000</td>
<td>JS-780</td>
<td>JS-786</td>
<td>JS-780</td>
<td>GS 1 GS 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sika</td>
<td>Sikasil IG-25 HM Plus</td>
<td></td>
<td></td>
<td></td>
<td>Sikasil SG-10 Sikasil IG-25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenachem</td>
<td></td>
<td></td>
<td></td>
<td>Tenaglas-2</td>
<td>Tenaglas-PU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tremco</td>
<td>EnerSEAL 332 EnerSEAL 340R EnerSEAL 360R</td>
<td>EnerSEAL JS780S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>JS-5Ω</td>
</tr>
</tbody>
</table>

**NOTE:** Equivalency and availability for waiver are based on material equivalency and submission of a successful test report submitted by an IGMA program participant. There are other sealants listed under a generic category which have not applied for equivalency and waiver. These are identified in italics. For further information please contact the supplier or the IGMA office (613-233-1510).

This list is intended to be a guide to assist in determining generic categories of spacers and spacer systems is not any indication of approval or acceptance. IGMA does not certify components.
**APPLICANT INFORMATION**

| Contact | ☐ New Applicant |
| Company | ☐ Existing Program Participant – IGMA member |
| Street Address | ☐ Existing Program Participant – IGMA Non-member |

| City | ☐ New Product Line (prototype) |
| State/Province | ☐ Prototype: re-fabrication of test specimens |
| Zip/Postal Code | Select this box if prototype has previously failed testing |
| Telephone | ☐ Certified Product Line: re-fabrication of test specimens IGMA #: |
| Fax | |
| E-mail | |

**PRODUCT IDENTIFICATION & CONFIGURATION (refer to IGMAC Certification Program Component Codes)**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>IGMAC Code</th>
<th>SUPPLIER</th>
<th>SUPPLIER PRODUCT CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desiccant / Desiccated Matrix</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spacer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Sealant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary Sealant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low E Coating</td>
<td></td>
<td>☐ Edge Deleted</td>
<td></td>
</tr>
<tr>
<td>Interior Films</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Content:</td>
<td>☐ Air-filled</td>
<td>☐ Argon (AR)</td>
<td>☐ Krypton (AR)</td>
</tr>
<tr>
<td># of glazing lites:</td>
<td>☐ Double glazed</td>
<td>☐ Triple glazed</td>
<td>☐ Other</td>
</tr>
</tbody>
</table>

**FEES (for Canadian and US Locations Only – all other locations, please contact the IGMA office)**

<table>
<thead>
<tr>
<th></th>
<th>Fee</th>
<th>Qty</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Program Participants Only:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application Administrative Fee (non-members)</td>
<td>$500.00</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>Initial Registration Audit Fee (prototype) – non-member rate</td>
<td>$790.00</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>Initial Registration Audit Fee (prototype) – member rate</td>
<td>$590.00</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>Existing Program Participants:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audit Fee for Re-fabrication of Test Specimens (prototype and existing product lines) – non members</td>
<td>$790.00</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>Audit Fee for Re-fabrication of Test Specimens (prototype and existing product lines) – members</td>
<td>$590.00</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>Canadian residents add tax appropriate for your province</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td></td>
<td>$</td>
</tr>
</tbody>
</table>

**ORDER CONFIRMATION & INVOICE INFORMATION (OFFICE USE ONLY)**

| Received |  | Invoice Date |
| Processed |  | Invoice # |
| IG MAC # |  | Invoice Total |
|  | ITS |  |

IGMAC Certification Program Manual  Version 42  Revised: October 2019

IGMAC # 1769 St. Laurent Blvd, Suite 104
Ottawa, ON, Canada K1G 5X7
Telephone: 613-233-1510, 101
Fax: 613-482-9436
Website: www.igmaonline.org
A signed, completed IGMAC Certification Program Licenses Agreement must accompany all new applications. Please fax your completed application form and signed license agreement to the IGMA office at 613-482-9436.

Program Testing Fees
(contact the IGMA approved testing facility of your choice to obtain a fee schedule)

Element Materials Technology Canada Inc. (formerly Exova)
2395 Speakman Drive
Mississauga, ON L7J 2L8
(905) 822-4111 (ext. 585)
Contact: Greg Murawsky

CAN-BEST
38 Reagan Road, Unit 4
Brampton, ON L7A 1C6
(905) 840-2014
Contact: Michael Barrerra

CODE CONNECTORS (CON)
MC-1 Single Connector (Single Key or Screw)
MC-4 4 Corner Mechanical Connector
CC CC = Continuous Welded
LC LC = Linear Connection
N/A Not Applicable

CODE SEALANT
PIB Polyisobutylene
PS Two Component Polysulfide
SI One Component Silicone
S2 Two Component Silicone
HM Hot Melt Butyl Thermoplastic
RHM Hot Melt Butyl Thermoelastic
PUR Two Component Polyurethane

CODE GAS
AR Argon
KR Krypton
CO CO = Carbon Dioxide (CO2)
BL Blend (Specify %s and Composition)

CODE DESICCANT
MS Molecular Sieve
SG Silica Gel
BL Blended MS & SG
DM Desiccated matrix (integral to spacer)
OT Other (specify)

CODE SPACER - GENERIC
AA Aluminum (Anodized)
AM Aluminum (Mill Finished)
AO Aluminum (Painted, Aludized, Powder, etc.)
DS Butyl composite spacer
DL Butyl polycarbonate spacer
IX Polymer plastic spacer
INS U-channel (Stainless Steel) spacer
INT U-channel (Tin plated steel) spacer
FSM Foam Spacer Metalized multi-layer vapour
FSS Foam Spacer Solid aluminum multi-layer
FSP Foam Spacer Plastic/Polymer foam back of spacer - no metal based multi-layer vapour
PPA Polymer Plastic Aluminum
PHSS Plastic Hybrid Stainless Steel
PPSS Polymer Plastic Stainless Steel
SG Steel (Galvanized)
SM Steel (Mill Finished)
SS Stainless Steel
SO Steel Other (Painted etc.)
SZ Nickel/Zinc Plated Steel
TBA Thermally broken anodized aluminum
TBC Thermally broken Chrome
TBS Thermally Broken Steel
TBT Thermally Broken Tin
Butyl sealant spacer (Aluminum or Stainless
TS Steel)
TX Polycarbonate spacer
TP Thermoplastic spacer

Program Testing Fees
(contact the IGMA approved testing facility of your choice to obtain a fee schedule)

Element Materials Technology Canada Inc. (formerly Exova)
2395 Speakman Drive
Mississauga, ON L7J 2L8
(905) 822-4111 (ext. 585)
Contact: Greg Murawsky

CAN-BEST
38 Reagan Road, Unit 4
Brampton, ON L7A 1C6
(905) 840-2014
Contact: Michael Barrerra
STANDARD LICENSE AGREEMENT FOR CERTIFICATION UNDER THE IGMAC® CERTIFICATION PROGRAM

(as revised effective 06/19/2018, and constituting the successor effective agreement, pursuant to the terms herein, for all preceding fully-executed IGMAC® Certification Program license agreements)

This Agreement, made this ____________________ day of ____________________, 20__, by and between Administrative Management Systems, Inc. (AMS), a New York corporation (hereinafter called “CERTIFICATION BODY” or “LICENSOR”) and Insulating Glass Manufacturers Alliance (IGMA®), (hereinafter “PROGRAM SPONSOR” or “LICENSOR”), and (legal entity) ____________________________________________, having its principal office at ____________________________, (hereinafter called “LICENSEE”), hereby provides as follows:

WITNESSETH:

1. WHEREAS, AMS is the Certification Body and Licensee and IGMA is the Program Sponsor and Licensee for the certification program noted below and as designated in the attached addendum(s) and hereinafter referred to as the Certification Program for certification of sealed insulating glass units by manufacturers product which will provide for (1) the validation of a manufacturer’s certification of such products by means of independent laboratory testing and evaluation to the requirements of applicable Specification(s), Test Method(s), Standards, and under the further terms and conditions of the Certification Program set forth in this Agreement and the Program’s Guidelines (including, but not limited to IGMA® Certification Program Manual, Certified Products Directory, and other agreements identified in the Addendum), 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 “Certification Program” as used herein refers to the 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 Certification Body 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; Certification Body and Program Sponsor do not endorse, warrant, or guarantee products validated or certified under the Certification Program, and

4. WHEREAS, Certification Body and Program Sponsor are willing to accept participation in said Certification Program by all manufacturers of insulating glass units produced and/or sold in Canada under the terms set forth herein; and

5. WHEREAS, IGMA® is the uncontested sole owner of the designated program mark and label and has licensed Certification Body, pursuant to a Service Agreement, to use said mark in connection with the Certification Program, including sublicensing said marks to qualified Licensees for use on their certified product; and

6. WHEREAS, the Certification Body 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 meet the applicable requirements of the Certification Program; and

7. WHEREAS, the Program Guidelines shall be adhered to by the Certification Body, Program Sponsor and the Licensee; and

8. WHEREAS, the Program Sponsor and Certification Body shall conduct all aspects of the program in accordance with standards and accreditation requirements that may be identified by the Certification Program, this Agreement, and the Program Guidelines; and

9. 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 employee.

A.2) Shall allow the Certification Body’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, assembly or shipment of product(s) certified hereunder, including pertinent inventory and production areas, and related quality control records, and to witness the manufacture of samples which are to be tested for compliance with the requirements, including investigations of complaints. 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 Mark(s)/Labels thereon. 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 tests will be made on each product to be certified and that said tests will be made at the laboratory selected by the Licensee from the approved list and in accordance with Program Guidelines. Program Sponsor 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 Program Sponsor 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 Program Sponsor:
   a) Only at the time and place of manufacture; and
   b) Only to product(s) of Licensee's own manufacture, which have been so approved by the Program Sponsor.

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

A.5) Shall not affix hereafter the Certification Program registered mark, or Licensee's Certification Mark/Label registered with Program Sponsor, 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.6) Shall upon a finding by the Program Sponsor or Certification Body that a certified product of Licensee has been changed, have thirty (30) days in which to submit a request for waiver of re-certification or submit a sample of the changed product for retest at Licensee's expense, if so directed. 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 Program Sponsor'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 heretofore 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 Program Sponsor's representatives during the periodic visits of said representatives to Licensee's facilities, or when otherwise requested by the Program Sponsor or Certification Body. Licensee shall also fulfill the certification requirements, including implementing appropriate changes when they are communicated by the Program Sponsor or Certification Body; if the certification applies to ongoing production, the certified product continues to fulfill the product requirements in accordance with Program Guidelines.

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 products which the Certification Body has approved and granted a certification number or mark/label, the Licensee must use the following concepts as guidelines: AMS is the Certification Body or certifier, IGMA® is the Certification Program Sponsor. Licensee (Manufacturer) certifies that the product is the same as the product which has been tested. Program Sponsor validates the test results through Audits according to the certification Program Guidelines.

A.11) Shall abide by the decision of the Certification Body 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 Certification Body shall be the sole judge of conformance or non-conformance with the Specifications applicable to the Certification Program, for purposes of Certification Body's validation of Licensee's certification of such a product under this Program. Where questions involving interpretation, appeals or complaints arise the applicable Program Guidelines shall be followed.

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

A.13) Shall pay the participation fees shown in the Schedule of Fees, current version, unless 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 Program Sponsor.

A.14) Agrees that the Program Sponsor and Certification Body may, at their 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 Program Sponsor or Certification Body 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) The Licensee shall not reference its product certification in a manner as to bring the Certification Body 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 Certification Body 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 be solely responsible to its customers and end-users for any product produced or service rendered by Licensee and all warranties express or implied, with respect thereto. Licensee shall refrain from using Licensee's name or Trademarks except as expressly authorized in writing by Licensee and shall not, in any event, represent that Licensee endorses or warrants Licensee's products or services. Licensee hereby waives all rights or subrogation against Licensee.

A.20) Shall notify Program Sponsor and Certification Body with undue delay, 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 Program Sponsor or Certification Body 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.

PROGRAM SPONSOR:

B.1) Shall prepare and publish, a Certified Products Directory (hard copy and/or electronic) containing a listing of the certified product(s) 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 Certification Body and Program Sponsor. This directory shall include the Licensee's assigned certification number, name, location and product certification status.

B.2) Shall provide and maintain a list of approved laboratories qualified to perform tests required hereunder and to authorize tests
here with specified. Said list of approved laboratories is to be
developed by the IGMA® Certification Committee.
B.3) Shall prepare and maintain a program manual including
certification guidelines, interpretations, label requirements, and
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.4) 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 affect any
program approvals or accreditation, as required by law, or in
communication with legal counsel.
B.5) Shall only list products that meet Program Guidelines and shall
only 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.6) Shall administer 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.
B.7) Does hereby license Licensee to use the program mark and label
IGMA® on Licensee’s registered Certification Program marks/labels
which are permitted by Program Sponsor to be affixed to the Product
complying with the pertinent requirements of the Certification
Program.

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 Program Sponsor 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 Program Sponsor shall be resolved by the
IGMA® Certification and Education Committee.
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 Certification Body, 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 Certification Body 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, Certification Body’s
certification or Program Sponsor’s Certification Program or
registered Certification Mark/Labels as used earlier in the
Certification Program.
C.6) Program Sponsor, 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 termination of this Agreement.
C.7) The interpretation of this Agreement and the parties’ performance
thereunder shall be governed by the laws of the State of Illinois. Any
dispute, claim or controversy arising out of or relating to this License
Agreement or the breach, termination, enforcement, interpretation or
validity thereof, including the determination of the scope or
applicability of this agreement to arbitrate, shall be exclusively and
finally resolved by binding arbitration in accordance with the Rules of
the American Arbitration Association and under the laws of the State
of Illinois conducted without delay in the City of Chicago, Illinois,
before a single arbitrator skilled in the business, legal, and technical
aspects of the issues to be arbitrated. Judgment upon the award
rendered by the arbitrator may be entered in any court having
jurisdiction thereof. This clause shall not preclude parties from seeking
provisional remedies in aid of arbitration from a court of appropriate
jurisdiction. All costs and expenses associated with the arbitration
shall be borne by the Licensee.
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 review by the
Certification & Education Committee, the Certification Body 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 Certification Body 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) Licensee shall indemnify and hold Certification Body 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 Certification
Body and Program Sponsor by reason of this Agreement and services
performed hereunder.
C.11) No party to this agreement shall make use of any other party’s
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.
C.12) The Licensee shall pay to Program Sponsor and Certification
Body, reasonable attorney’s fees, including attorney’s fees for services
in appellate proceedings, occasioned by reason of Licensee’s breach of
any of the terms of this agreement, whether suit is commenced or not.
C.13) Certification Body shall hold all test results 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 affect any program approvals or accreditation, as required by law,
or in communication with legal counsel.
C.14) Certification Body shall have the authority and responsibility for
authorizing, maintaining, withholding, withdrawing, suspending,
reducing, terminating or denying the right of any licensee to designate
a product as certified under the Certification Program and to affix
Certification Labels thereto, based upon review of results of tests,
audits of the product and such other requirements as described by the
Program Guidelines; and

THIS LICENSE AGREEMENT may not be transferred, assigned, or
otherwise disposed of to any other company, individual, or successor.
By mutual agreement of Licensee, Certification Body, and Program Sponsor, THIS AGREEMENT supersedes and replaces the predecessor IGMAC® License Agreement, in the form executed between the parties, if Program Sponsor and Licensee have executed any such predecessor IGMAC® 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 license agreement to the earlier IGMAC® License Agreement), with the 60-day notice of cancellation period for the predecessor agreement hereby waived by Licensee.

**LICENSEE:** Company ________________________________
Street Address ________________________________
City, Province, Postal Code: ________________________________
Telephone Number ________________________________
Signed By ________________________________ Title ________________________________
(Corporate Officer or Authorized Employee)
E-Mail Address: ________________________________ Date ________________________________

**CERTIFICATION BODY/LICENSEOR:** Administrative Management Systems, Inc. (AMS)
Signed By ________________________________ Title ________________________________
Date ________________________________

**PROGRAM SPONSOR/LICENSEOR:** Insulating Glass Manufacturers Alliance (IGMA®)
Signed By ________________________________ Title ________________________________
Date ________________________________

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

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

IGMA
1769 St. Laurent Blvd, Suite 104
Ottawa, ON K1G 5X7
Telephone: (613) 233-1510 E-mail: enquiries@igmasonline.org
**CA-30 Addendum**

Where referenced in the CA-30 License Agreement, “Certification Program” refers to the IGMAC® Certification Program.

Program Sponsor and Administrator: Insulating Glass Manufacturers Alliance - IGMA®

Program Certification Body: Administrative Management Systems, Inc. – AMS

Program Guidelines:

- IGMAC® Certified Products Directory
- IGMAC® Certification Program Manual
- IGMA® Bylaws

Relevant and Application Agreements:

- CA-09 IGMAC® Service Agreement
- IGMA® Administrator Agreement
- AD-72 IGMAC Database Module Agreement
1.0 INTRODUCTION

The Insulating Glass Manufacturers Alliance (IGMA) administers a voluntary certification program for sealed insulating glass units that comply with the requirements of the CGSB 12.8 standard and the IGMA Gas Concentration Certification Program. The complete requirements of the Program are contained in the document titled “IGMAC Certification Program” (current edition identified on document).

On behalf of IGMA, the auditor conducts two types of audits: Facility Audits and Compliance Audits. A Facility Audit is conducted primarily to document the construction of samples required for testing under the Program (ie. prior to certification, and within the required re-certification cycle thereafter).

The required re-certification cycle for this program is every two years to qualify the program for listing with the National Fenestration Rating Council (NFRC) program.

After certification has been granted by IGMA, Compliance Audits are conducted to verify that construction of certified IG units has not changed, and that other specific requirements of the Program are being met.

2.0 GENERAL INSTRUCTIONS FOR AUDITORS

2.1 Audits shall only be conducted upon specific direction from the individual designated as the IGMAC Certification Program Administrator, who will advise the appropriate Auditor’s field office for coordination with their field officers. IGMA shall provide a completed audit form with the necessary manufacturer and product code information. Any specific instructions as to which kind of audit is required for each participating facility involved will also be noted. (In special circumstances, the program application form may be provided in lieu of the audit form).

2.2 In the event that a facility audit report has been issued, the Auditor is to contact the manufacturer in advance to schedule a mutually agreed upon date and time. Compliance audits are unannounced.

2.3 The auditor shall always carry a current copy of the IGMAC Certification Program document.

2.4 Upon arrival at the manufacturing location, the auditor shall identify her/himself and ask for the specified contact person or alternate representative shown on the audit form and advise that he/she is present to conduct an audit in accordance with the IGMAC Certification Program. The facility audit is scheduled in advance with the manufacturer. Compliance audits are unannounced.

2.5 The auditor shall ensure that (s)he is accompanied at all times by a representative of the manufacturer during the audit. No suppliers are permitted in the plant facility during a facility audit.

2.6 The audit form shall be completed in ballpoint pen and in a clear and complete manner.

2.7 It is the role of the auditor to record the required and requested information. The auditor has no authority to make decisions on certification of product or actions to be taken by the manufacturer to comply with the requirements of the Program. The auditor may provide
information to the manufacturer regarding program requirements based on, and with reference to the Program document. The manufacturer shall be referred to the IGMAC Administrator for any decision or direction.

2.8 During a facility audit, it is the responsibility of the manufacturer to have sufficient quantities of 4 mm glass to complete fabrication. The auditor shall verify the glass thickness and air space gap for program compliance.

3.0 FACILITY AUDITS

3.1 General
Facility audits involve witnessing the manufacture of small 350 x 500 mm (14” x 20”) insulating glass units for forwarding to the test laboratory for testing, verifying the maintenance and documentation of required quality assurance checks, and recording the required and requested (by IGMA) information.

Units fabricated and submitted by the manufacturer for certification testing must reflect the manufacturer’s actual production unit configuration in all respects.

3.1.2 During any facility audit, only employees of the firm being audited shall be present with the auditor.

3.1.3 Upon signing the completed audit report, the manufacturer/licensee is testifying that at no time during the 24-hour period preceding the fabrication of test specimens was an employee or representative of any insulating glass component supplier, whether currently supply product(s) to the manufacturer/licensee or not, working on, making modifications and/or improvements to or providing maintenance on the product line and/or equipment from which units submitted for testing are fabricated.

3.2 Procedure
3.2.1 Upon notification from IGMA, an auditor will be assigned for the facility audit, and be provided with the audit form.

3.2.2 The assigned auditor will contact the manufacturer and agree upon an audit date. To avoid excessive travel costs, the facility audit will be scheduled with routine inspections in the area, if possible.

3.2.3 The auditor shall witness the manufacture of the 20 ~ 24 (minimum / maximum) actual test units required for testing, and shall verify that:

a) the test units are being manufactured in accordance with the following applicable portions of CAN/CGSB 12.8: “One set of specimens comprising at least 20 insulating glass units, with outside dimensions 350 x 500 mm (±5mm) and hermetically sealed cavities of at least 12mm for double-glazed units and 6mm each for triple-glazed units. If the units are to be tested for argon gas concentration, then all 20 units must be filled with argon gas and sealed as per the normal procedure. All argon gas measurements are conducted by Spark Emission Spectrography (SES). One lite of a double-glazed unit must be an optically transparent sheet or float glass with or without a coating to facilitate dew point measurements. For triple-glazed test specimens, the Low-e coating must be on the center lite in order to facilitate non-destructive gas testing. 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 specimens shall be fully representative of manufacturer’s standard production units with regard to design and construction including 4 test samples with cavity materials such as but not limited to grills, muntins, films, decorative inserts, blinds etc. It is recommended that the
manufacturer obtain a copy of the CGSB 12.8 standard to ensure all requirements of the standard are met.

b) if a manufacturer is gas filling IG units, the corresponding test units must be constructed for gas filling and units are required to be gas filled for the determination of initial and final gas concentration levels under the standard test method for determining argon gas concentration and be manufactured with Low E coating. Gas testing is non-destructive using the SES methodology. The ten units tested for gas content are the 4 weather-cycled units plus 6 of the high humidity units. Initial and after gas content testing will be conducted on the same samples. Units fabricated with cavity materials are NOT tested for high, humidity, weather cycling or gas content.

c) Internal components may include but are not limited to blinds, films, decorative glass inserts, grills and muntins. When testing muntins or grills, test samples shall be fabricated dividing the sample into nine equal areas (3 by 3).

It is recognized that a given company may utilize numerous Internal Components (IC) in production units and it is not practical to regularly test all IC variations. The following shall serve as a guide the manufacturer and auditor in selection of the IC to be tested:
- Favor shall be given to testing worst case IC
- Favor shall be given to testing highest volume production IC
- Consideration shall be given to testing IC on a rotational basis

The following direction is also provided:
Muntins or Grills - When testing muntins or grills, test samples shall include all components of the muntin or grill system (i.e. holes, clips, brackets) and shall be fabricated dividing the sample into nine equal areas (3 by 3).

For multiple cavity test samples, muntins or grills should be included in all cavities if actual production units have muntins or grills in all cavities. Multiple cavity test samples shall include the same number and placement of Low e coatings as production units. Units with cavity materials will be tested only for volatile fog.

d) If the optional initial seal test is requested or not, auditor shall so note on audit form in space provided.

3.2.4 The construction details related to gas filling, and the gas type used in production, shall be recorded on the audit form (if applicable).

3.2.5 The auditor shall note on the audit form, under Auditor notes, if the manufacturer is currently using "low E" glass in production. Test samples prepared for argon gas concentration testing must be manufactured with Low-E coating if the manufacturer's actual production units are manufactured with Low-E coating. Special fabrication regarding the Low E coating is required for triple and quad glazed units. Manufacturers are to contact the IGMA approved test facility of their choice for instructions. Special instructions are available from the IGMA office regarding fabrication of quad glazed units.

3.2.6 The auditor shall record the product codes on the audit form for each of the actual components being used in the assembly. (S)he shall carefully review the product codes with the manufacturer's contact person, and shall make appropriate notation on the audit form if there is any discrepancy between the components being used and the component codes shown on the form by IGMA.

Note: From time to time new developments in components, that were not considered in the development of current component codes, can cause uncertainty in the appropriate code
to record. If there is any uncertainty as to the appropriate code to use, for this or any other reason, the auditor shall make appropriate notation on the audit form and include the trade name if available, appending additional information as necessary so as to ensure clarity. The manufacturer's representative is to endorse note as recorded on form.

3.2.7 The auditor shall place the non-removable identification label on an outside glass surface of each of the 20 or 24 IG test units, locating the label in a corner rather than toward the center of the glass. The auditor shall initial and date each identification label.

3.2.8 The auditor shall review the status of the manufacturer's Q.C. records program, recording the status of each record on the audit form. Auditors are to refer to Appendix F: In-Plant Quality Control Requirements and Appendix G: Quality Control Forms.

3.2.9 The auditor shall sign and date the completed audit form and shall have the manufacturer's representative also sign in the space provided and initial the "Permanent Mark" section of the form reserved for the identifying certification mark. If this area is blank, the auditor is to provide the manufacturer's certification mark. The auditor shall leave a copy of the completed audit form with the manufacturer who must include a copy with the shipment of test units to the test laboratory.

The auditor shall return the original copy of the audit report form to the serving regional audit office. The inspector should make an additional copy for his/her records. The serving office will submit the original of the completed audit form to IGMA.

3.2.10 Following the facility audit and prior to departure from the manufacturing facility, the auditor shall inform the manufacturer that they have 90 days from that date forward to have sample units shipped to an IGMA approved test facility for testing in order to remain in compliance with the Certification Program. For identification and lot traceability, a copy of the auditor's facility audit report is to be included with the test samples shipped to IGMA approved test facility. The IGMA approved test facility will advise IGMA upon receipt of the test units for recording and administrative purposes. A list of IGMA approved test facilities is included on the Audit Report form.

3.2.11 The auditor shall inform the manufacturer that all test samples shall be forwarded directly to the IGMA approved test facility within the allotted time period. The auditor will inform the manufacturer that 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.

4.0 COMPLIANCE AUDITS

4.1 General

4.1.1 Compliance audits are unannounced. Their purpose is to provide IGMA with the information required to determine whether the manufacturer is continuing to produce IG units with the same components and materials to those for which IGMA has granted certification, to verify the maintenance and documentation of quality assurance checks required by the program, to verify that certified units are being properly identified/marked, and to record the required and requested (by IGMA) information.

4.2 Procedure

4.2.1 Upon notification from IGMA, an auditor will be assigned for the compliance audit, and be provided with the audit form.

4.2.2 The assigned auditor will NOT contact the manufacturer in advance of the audit except that in exceptional cases, and only with the approval of the IGMAC Certification Program Administrator, the following is permitted:
If the manufacturer is located in a particularly remote area, or is known to produce IG units only on a periodic basis, the manufacturer may be contacted to determine what periods during a broad time frame of approximately one month or more, access for auditing will be possible. In such circumstances care shall be taken to preserve the unannounced nature of the audit.

4.2.3 To avoid excessive travel costs, the audit will be scheduled with routine inspections in the area, if possible.

4.2.4 The auditor shall inspect components as prepared for production, a sample certified unit(s) in production (if in production), and a sample on hand, in stock, or awaiting shipment. (S)he shall carefully review the product codes with the manufacturer's contact person, and shall verify the product codes on the audit form for each of the actual components being used. (S)he shall make appropriate notation on the audit form if there is any discrepancy between the components being used and the component codes shown on the form prepared by IGMA. The auditor shall also check carefully for any non-certified products being manufactured at each location (that is, products that would be coded differently than on the audit form(s) provided for the location) and highlight his/her observations in the comments area of the audit form. The auditor will also include notation in the report of any additional components that may be in stock (eg. sealants) and/or units at the location that may be in production or completed.

4.2.5 The auditor shall note on the audit form, the permanent mark and whether the manufacturer is currently using "low E" glass, or is gas filling, in production. Product lines that do not participate in the Gas Component Certification program will be identified on the audit report as AIR irrespective of whether the manufacturer gas fills or not. Only product lines that have successfully met the requirements of the Gas Content Certification program are to be identified on the form as IGMAC certified (designated as GCIA)

**Note:** The auditor shall advise the manufacturer that, if they are gas filling, they are required to test accordingly for Gas Content Certification by their next regularly scheduled re-certification date. If a manufacturer chooses to make up samples for testing during the current audit, it is permitted to conduct the audit as a facility audit - completing the audit form accordingly.

4.2.6 If applicable, the auditor shall verify the construction details related to gas filling, and the gas type used in production, as shown on the audit form and shall note any discrepancy on the form.

4.2.7 The auditor shall review the status of the manufacturer’s Q.C. records program, recording the status of each record on the audit form.

4.2.8 If no certified product in production is available for inspection, the auditor is to be given access to the manufacturer’s packaging and shipping areas of the plant so as to inspect general stock of components which has been prepared for both certified and/or non-certified production as the case may be.

4.2.9 The auditor shall sign and date the completed audit form and shall have the manufacturer’s representative also sign in the place provided and initial the “Permanent Mark” section of the form. The auditor shall leave a copy of the completed audit form with the manufacturer. The Auditor shall return the original copy of the audit form to the serving regional audit office. The Auditor should make an additional copy for his/her records. The serving office will submit the original of the completed audit form to IGMA.
Shipping Box
for insulating glass units

scale 1:4

Notes:

In order to maintain a reasonable weight (maximum 90 lb or 40 kg) of the box and contents and to afford maximum protection to the units during shipping the following guidelines have been developed:

1. Use #8 - 2" wood screws (Robertson head) for assembly of the box.

2. The handle (item 7) is centered as shown.

3. When soft or sticky sealants are used (e.g. hot melt) apply silicone release paper along inside surfaces of items 2 and 4 (where unit edges will touch).

4. (a) A maximum of 7 - 1/2" sealed double glazing units in one box
   (b) A maximum of 5 - 1/4" or 1/2" sealed triple units in one box.

5. Units are packaged resting on their longest edge, side by side and separated by a sheet of 1/16" corrugated cardboard (or equivalent); any excess space should be filled with additional sheets of the packing material.

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
<th>Dimensions</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>11 1/2&quot; by 24&quot;</td>
<td>1/4&quot; plywood</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>16&quot; by 24&quot;</td>
<td>1/4&quot; plywood</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>10&quot; by 22 1/2&quot;</td>
<td>1&quot; extruded polystyrene</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>8&quot; by 14&quot;</td>
<td>1&quot; extruded polystyrene</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>14&quot; by 22 1/2&quot;</td>
<td>1&quot; extruded polystyrene</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>5&quot; long</td>
<td>2&quot; by 4&quot; spuce</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>4&quot; by 11 1/2&quot;</td>
<td>1/4&quot; plywood</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>6&quot; long</td>
<td>1/4&quot; plywood</td>
</tr>
</tbody>
</table>
A. INTRODUCTION

A.1 The purpose of this outline is to set forth the minimum requirements for in-plant quality control which participants in the IGMAC Insulating Glass Certification Program are expected to perform in order to maintain certification.

A.2 The minimum requirements consist of process control techniques and record keeping functions which will assure the manufacturer that his product is a reasonable facsimile of the samples tested and approved for certification.

A.3 The most advantageous approach for this quality control program is to have it performed by an individual not directly concerned with actual production who will report directly to management. Recognizing that with some manufacturers this is not possible, it will be acceptable to designate production personnel to perform the quality control function with supervision by management. In either case, any discrepancy in materials or workmanship should be reported to management immediately upon determination.

A.4 IGMA recommends that each manufacturer evaluate his own operation and determine quality control checks to satisfy his own requirements for producing satisfactory Certified Products.

B. ORGANIZATION

B.1 The manufacturer shall designate a person who is to be responsible for the quality control function in each manufacturing facility including recording the required information.

B.2 If the responsibilities of the quality control designate are confined wholly or substantially to the quality control function, he/she should report to management independently from any person responsible for production.

B.3 If the quality control designate is also responsible for some aspects of production, there must be adequate arrangement for this person to bring quality control problems to the attention of management at a level which is responsible for quality as well as production.

B.4 Management should provide supervision to ascertain that the quality control designate is performing his function.

C. PROCEDURES

C.1 The quality control designate shall provide a list of acceptable components which may be used in making the Certified Product. This list should include a statement that no changes to the approved list are acceptable.

C.2 Purchase orders may stipulate that the supplier will state on either the invoice or shipping document that the component is within mutually accepted tolerance and is of the same generic composition as the material received when the test samples were made. Any greater deviation shall be reported to the manufacturer.

C.2.1 The type of statement which would be acceptable would be "the material supplied in this shipment is the same as the material designated batch # and is within the
mutually acceptable tolerances for this material.” Any similar statement presenting the same type of assurance would also be acceptable.

C.3 Representative samples of component materials shall be checked regularly in accordance with the following minimum requirements

C3.1 SEALANTS:
1. The sealant shall be checked to assure that the appropriate type is being used as stipulated on the list of acceptable components. See C.1.
2. The accelerator, when required, shall be checked to determine that the corresponding batch number is being used as required for the base material.
3. Whenever a drum of two-part sealant is changed, the approximate amount of remaining base and accelerator material shall be noted and recorded. If both containers are not properly empty, the mix ratio may not be correct and adjustment to the mixing machine may be necessary.
4. When hot melt sealants are used, the temperature of the hot melt material as delivered from the gun shall be recorded.
5. When two part sealant systems are used, the mixed sealant shall be examined in accordance with the supplier's recommendation. Any striations in the mixed sealant shall be recorded and corrective action should be instituted to obtain uniform mixing.
6. When organic spacer is being used, each new drum of material should be checked for adhesion in accordance with the supplier's recommendations.
7. When any drum of sealant, base material, accelerator or organic spacer has an abnormal appearance upon opening or does not pass the supplier's recommended tests for adhesion, the abnormality shall be recorded. The drum shall not be used and the occurrence reported immediately to the supplier. Management and the supplier shall determine if the drum is acceptable or should be rejected and shall instruct the quality control designate of the action to be taken.
8. Forms Q.C. - 1 (a), (b), (c) and (d) are sample quality control forms which may be used.
9. Minimum requirements for testing frequency are shown on these forms.

C3.2 DESICCANT:

Desiccant quantity for certification will now be based on an ACPF number = Adsorption Capacity per Perimeter Foot. While your IGMAC Auditor will assist you in establishing this number, which will be documented in your certification paperwork, we encourage you to establish a procedure to monitor this value.

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

**Weight of Desiccant (g)** = the desiccant shall actually be weighed from a test unit (for foam spacer and like product weigh a 5.66 ft spacer).

**Adsorption Capacity (wt%)** = This shall be obtained from the desiccant supplier, from either a specification sheet or certificate of analysis.

**Perimeter (feet)** = For all 14 x 20 inch test specimens the perimeter is 5.66 feet (use 5.66 feet for consistency even though actual length may be somewhat less due to offset for sealant depth).

In preparation the manufacturer will need:

1) Desiccant supplier’s specification showing the minimum equilibrium water adsorption capacity (wt. %) specification at 50% R.H. and 25° C. and
2) An appropriate scale to weigh desiccant and/or spacer. Below are suggestions for
adequate scales:

- Denver Instrument MAXX Top loading Balance Model MXX-412; Capacity 412 grams; Readability 0.01 grams; price: <$500
- OHAUS Scout Top loading Balance Model SP402; Capacity 400 grams; Readability 0.01 grams; price: < $500

When testing tempered safety glass, the scale used to weigh tempered glass particles may likely work.

1. The desiccant shall be checked to assure that the appropriate desiccant is being used as stipulated on the list of acceptable components.

2. The desiccant shall be checked for activity in accordance with the supplier’s recommended method and charts. The temperature rise shall be recorded on the quality control form.

3. When organic spacer is being used the supplier’s recommended test for desiccant activity must be performed at least once per week and whenever a new drum is opened.

4. Form Q.C. -2a & b and Q.C. -1(d) are sample quality control forms which may be used.

5. Minimum requirements for testing are shown on these forms.

C.3.3. SPACER
1. The spacer in use shall be checked to assure that the appropriate spacer type and finish is being used as stipulated on the list of acceptable components. See C.1.

2. The connector, if used, shall be checked to determine that the appropriate type is used as stipulated on the list of acceptable components.

3. The spacer and connector shall be checked for the presence of oil by a visual and sensory perceptive technique. The presence of oil on either component shall be noted in the quality control report and appropriate corrective action taken.

4. The width of the spacer shall be measured and compared with the supplier’s stated tolerances. Out of tolerance spacer should be recorded and reported to the supplier.

5. The fit of the connector to the spacer shall be observed for tightness and measured for increased width, ridges, etc. on the glass bearing surfaces.

6. Form Q.C. -3 is a sample quality control form, which may be used.

7. See Q.C. -3 for minimum frequency of test.

C.3.4 GLASS (no documentation required)
1. The glass shall be checked after cutting to size for:
   a) correct size and thickness as per Standard
   b) surface and metal defects
   c) accuracy of size
   d) condition of cut edges

Any light which deviates from the Standard or the mutually accepted tolerances on defects shall be set aside and recorded.
2. The glass shall be visually checked after washing for cleanliness and again for condition of the cut edges. Any lite which is not clean shall be rewashed. Any lite with weak edges shall be set aside and recorded.

3. Form Q.C.-4 is a sample quality control form which may be used.

D. GAS FILLING

D.1 Each day representative samples shall be inspected for gas fill concentration (See form QC-5, Gas Filling Inspection. Included in the information to be recorded are the following:

a) Date
b) The number of units to be inspected per period (i.e. Shift, day, week etc.)
c) The number of units rejected per period
d) Initials of the individual responsible for this section of the quality assurance system
e) IGMAC Certification Identification
f) Product configuration (connector, spacer, desiccant, sealant(s))
g) Procedure for determination of gas fill concentration (gas chromatograph, oxygen analyzer, GasGlass, other)
h) Current and previous instrument calibration dates

D.2 Quality Assurance Requirements

a) The insulating glass (IG) manufacturer will construct representative samples of each product line to be verified. These representative samples will be nominal 355 mm x 505 mm (14” X 20”) and be fully representative of the manufacturer’s production.

b) The IG manufacturer will construct two separate representative samples and fill these samples to 90% (for certification samples) and the manufacturer’s specified field production requirements (e.g. 70%, 80%). These samples will be used to verify that the measurement device is reading accurately. For manufacturers who have developed an in-house verification system for gas filling of production units, measurements will be taken on the control samples at the beginning and end of each shift.

c) For manufacturers who have developed an in-house verification system for gas filling of production units, each day the IG manufacturer will select representative samples from each of the gas-filled production units and verify that the gas fill is to the manufacturer’s specifications. This procedure will be added to the “Final Inspection” criteria and the number of samples to be selected is as specified in Section E.2 under Section E, Finished Product Inspection.

d) At a minimum, the IG manufacturer shall follow the instrument’s manufacturer’s recommendations for routine maintenance and at a minimum the instrument shall be verified for accurate measurement as specified by the instrument’s manufacturer’s recommendations or their authorized representative or when the IG manufacturer’s control samples do not measure accurately. Manufacturers are required to maintain quality control records on equipment routine maintenance.

D.3 Quality Control Form: The following information is required for each insulating glass unit tested:

a) Length
b) Width
c) Position of spacer
d) Glass thickness
e) Airspace
f) Glass Edges
g) Primary and secondary sealant
h) Glass coatings
i) Percentage gas fill required and achieved

D.4 Form Q.C.-5 is a sample quality control form that may be used.
E. CALIBRATION

E.1 Effective October 2009, a calibration log must be maintained for measuring and testing equipment. Actual calibration records for each instrument will be maintained as proof of the information recorded on the Calibration Log.

E.2 Measuring and testing equipment to be recorded in the Calibration Log are any equipment or device that requires or undergoes regular maintenance by the equipment or device supplier. Examples of this are gas filling equipment, automated machinery, and maintenance on glass washers.

E.3 Form QC-7, Calibration Log is a sample quality control form that may be used.

F. TRAINING RECORDS

F.1 Effective October 2009, a training log for plant personnel must be maintained to record specific training.

F.2 Type of training to be recorded includes equipment specific training, manufacturing processes, quality processes and record keeping, health & safety and other training relevant to the employee’s position within the company.

F.3 Form QC-8, Employee Training Log is a sample quality control form that may be used.

G. NON CONFORMING AND FINISHED PRODUCT INSPECTION

G.1 Each day representative samples shall be inspected for workmanship for at least the following characteristics:
   a) overall unit size and thickness
   b) alignment of glass lites
   c) cleanliness of airspace
   d) sealant bond to glass and to itself at corners
   e) sealant minimum vapor transmission path
   f) spacer position (sight line) relative to the unit edge

G.2 The recommended number of finished units to be inspected shall be randomly selected as determined from the following:

<table>
<thead>
<tr>
<th>Production</th>
<th>Inspection sample quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 25</td>
<td>3</td>
</tr>
<tr>
<td>26 - 100</td>
<td>4</td>
</tr>
<tr>
<td>101 - 500</td>
<td>5</td>
</tr>
<tr>
<td>501 - 100</td>
<td>7</td>
</tr>
<tr>
<td>over 1000</td>
<td>10</td>
</tr>
</tbody>
</table>

G.3 The inspected insulating glass units with rejectable defects shall be set aside for repair or replacement and recorded and an additional sample shall be selected for inspection.

G.4 Actions for non-conforming products should be recorded. Examples of actions are use as is (if appropriate for intended use, recycled, replacement and destruction).

G.5 Form Q.C. -6 is a sample quality control form which may be used.
**H. INSPECTION RECORDS**

**H.1** The quality control designate shall keep on file: records, forms, log books, etc. of all regular inspections of components and finished products.

**H.2** The records shall be kept for a period of not less than two years.

**H.3** The records shall be made available to the auditor during his audit to verify compliance with the Certification Program requirements.

**I. QUALITY CONTROL FORMS**

**I.1** The quality control forms attached are samples only and manufacturers are encouraged to design their own which will suit their particular components and product design.

**I.2** The forms may be in book or card format or sheets for filing in manila folders or three ring binders.

**I.3** As a minimum, forms shall be used for the following records:
- QC-1a Primary sealant
- QC-1b Two part sealant
- QC-1c Hot melt sealant
- QC-1d Organic spacer adhesion and desiccant activity
- QC-2 Desiccant
- QC-3 Spacer (and control if used)
- QC-4 Glass (cut sizes)
- QC-5 Gas Filling
- QC-6 Non-Conforming and Finished Product Inspection
- QC-7 Calibration Log
- QC-8 Employee Training Log
Sample

**QC Inspection Form QC -1(a)**

<table>
<thead>
<tr>
<th>Primary Sealant</th>
<th>Type</th>
<th>Supplier</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>Batch #</th>
<th>Application Temperature</th>
<th>Bond to Spacer</th>
<th>Bead size average</th>
<th>Initial</th>
</tr>
</thead>
</table>

**Inspection Frequency:** Twice daily and when new batch used in production
**Sample QC Inspection Form QC -1(b)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Base Batch #</th>
<th>Acc. Batch #</th>
<th>Mix</th>
<th>Stick Life</th>
<th>Adhesion</th>
<th>Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spacer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Glass</td>
<td></td>
</tr>
</tbody>
</table>

**Two-Part Sealant**

Type __________________________ Supplier __________________________

**Inspection Frequency:** Twice daily and when new container used in production
**Sample QC Inspection Form QC -1(c)**

**Hot Melt Sealant**

<table>
<thead>
<tr>
<th>Date</th>
<th>Batch #</th>
<th>Temperature Setting</th>
<th>Applied Temperature</th>
<th>Appearance</th>
<th>Adhesion</th>
<th>Initial</th>
</tr>
</thead>
</table>

**Inspection Frequency:** Twice daily and when new container used in production
### QC Inspection Form QC - 1(d)

**Organic Spacer**: Adhesion and desiccant activity

<table>
<thead>
<tr>
<th>Supplier</th>
<th>_________________</th>
</tr>
</thead>
</table>

**Type**

<table>
<thead>
<tr>
<th>Date</th>
<th>Batch #</th>
<th>a) Adhesion Test</th>
<th>b) Desiccant Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pass</td>
<td>Fail</td>
</tr>
</tbody>
</table>

**Inspection Frequency**:

- a) when new drum is opened
- b) once per week and every time new drum is opened
Sample
QC Inspection Form QC – 2a

<table>
<thead>
<tr>
<th>Desiccant</th>
<th>Type</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Batch #</th>
<th>Water Temperature</th>
<th>Temperature Rise</th>
<th>Temperature Difference</th>
<th>Sample From</th>
<th>Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inspection Frequency:** Once per week and every time production ceases for more than 24 hours
## QC Inspection Form QC – 2b

### ACPF Calculation

<table>
<thead>
<tr>
<th>Date</th>
<th>Batch #</th>
<th>Weight of Desiccant Product or Organic Spacer (g)</th>
<th>Adsorption Capacity (wt%)</th>
<th>Perimeter Feet</th>
<th>ACPF (grams/ ft.) = ( \frac{\text{Weight of Desiccant Product (g)} \times \text{Adsorption Capacity (wt %)}}{\text{Perimeter (Feet)}} \times 100 )</th>
<th>Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inspection Frequency:** Once per week and every time production ceases for more than 24 hours.
Sample
QC Inspection Form QC - 3

<table>
<thead>
<tr>
<th>Spacer and Connector</th>
<th>Type</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Lot #</th>
<th>Type #</th>
<th>Surface Condition</th>
<th>Average Width Spacer</th>
<th>Corner Key (connector) fit</th>
<th>Assembled Width</th>
<th>Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inspection Frequency**: Upon receipt of new material
Sample
QC Inspection Form QC - 4

Glass (cut sizes) record rejects only

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Type</th>
<th>Width</th>
<th>Height</th>
<th>Surface</th>
<th>Squareness</th>
<th>Edges</th>
<th>Reject</th>
</tr>
</thead>
</table>

Date ____________________
Initial __________________

**Inspection Frequency:** 2% or 5 lites per shift, whichever is higher
### Gas Filling Inspection

**Sample QC Inspection Form QC - 5**

- **Date**: ____________
- **Inspection Quantity**: ____________
- **# Rejected**: ____________
- **Initials**: ____________

**IGMAC Certification I.D.**: ____________

**Product Configuration**: Connector Code: _____ Spacer Code: _____ Desiccant Code: _____ Primary / Secondary Sealant: _____

**Procedure for the Determination of Gas Fill Concentration** (i.e., Gas Chromatograph, Oxygen Analyzer, GasGlass, Other)

- **Instrument Calibration Date**: ____________
- **Previous Instrument Calibration Date**: ____________

<table>
<thead>
<tr>
<th>Ordered Size</th>
<th>Length</th>
<th>Width</th>
<th>Spacer Position</th>
<th>Thickness</th>
<th>Airspace</th>
<th>Glass Edges</th>
<th>Primary Sealant</th>
<th>Secondary Sealant</th>
<th>Glass Coating</th>
<th>Desired % Fill</th>
<th>Actual % Fill</th>
<th>Disposition</th>
</tr>
</thead>
</table>

**Inspection Frequency**: Per Appendix 1, Article E (2)
Non Conforming and Finished Product Inspection

Sample QC Inspection Form QC - 6

Record details of defects only and action taken

<table>
<thead>
<tr>
<th>Ordered Size</th>
<th>Length</th>
<th>Width</th>
<th>Spacer Position</th>
<th>Thickness</th>
<th>Alignment</th>
<th>Cavity</th>
<th>Glass Edges</th>
<th>Primary Sealant</th>
<th>Secondary Sealant</th>
<th>Minimum MVT Path</th>
<th>IGMAC I.D.</th>
<th>Action and Disposition of Non Conforming Product</th>
</tr>
</thead>
</table>

**Inspection Frequency:** Per Appendix 1, Article E (2)

Date ________________
Production Quantity ____________
Inspection Quantity ____________
# Rejected ________________
Initials ________________
## Calibration Log for Measuring & Testing Devices

<table>
<thead>
<tr>
<th>Date of Calibration</th>
<th>Description of Measuring &amp; Testing Device</th>
<th>Device ID</th>
<th>Calibration Standard or Procedure</th>
<th>Certificate or Report Number</th>
<th>Date to be Recalibrated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Employee Training Log

Employee Name: ________________________________
Department: ___ Position: ________________________

<table>
<thead>
<tr>
<th>Date of Training</th>
<th>Area for Training Focus</th>
<th>Training Objectives</th>
<th>Type of Training (online, classroom etc.)</th>
<th>Verification Method of Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing Processes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality Processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health &amp; Safety:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CODE</td>
<td>CONNECTORS (CON)</td>
<td>CODE</td>
<td>SEALANT</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------</td>
<td>------</td>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>MC-1</td>
<td>Single Connector (Single Key or Screw)</td>
<td>PIB</td>
<td>Polyisobutylene</td>
<td></td>
</tr>
<tr>
<td>MC-4</td>
<td>4 Corner Mechanical Connector</td>
<td>PS</td>
<td>Two Component Polyisulfide</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>CC = Continuous Welded</td>
<td>SI</td>
<td>One Component Silicone</td>
<td></td>
</tr>
<tr>
<td>LC</td>
<td>LC = Linear Connection</td>
<td>S2</td>
<td>Two Component Silicone</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>Not Applicable</td>
<td>HM</td>
<td>Hot Melt Butyl Thermoplastic</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>RHM</td>
<td>Hot Melt Butyl Thermoset</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PUR</td>
<td>Two Component Polyurethane</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CODE</th>
<th>SPACER - GENERIC</th>
<th>CODE</th>
<th>GAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Aluminum (Anodized)</td>
<td>AR</td>
<td>Argon</td>
</tr>
<tr>
<td>AM</td>
<td>Aluminum (Mill Finished)</td>
<td>KR</td>
<td>Krypton</td>
</tr>
<tr>
<td>AO</td>
<td>Aluminum (Painted, Aludized, Powder, etc.)</td>
<td>CO</td>
<td>CO = Carbon Dioxide (CO2)</td>
</tr>
<tr>
<td>DS</td>
<td>Butyl composite spacer</td>
<td>BL</td>
<td>Blend (Specify %s and Composition)</td>
</tr>
<tr>
<td>DL</td>
<td>Butyl polycarbonate spacer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IX</td>
<td>Polymer plastic spacer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INS</td>
<td>U-channel (Stainless Steel) spacer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INT</td>
<td>U-channel (Tin plated steel) spacer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSM</td>
<td>Foam Spacer Metalized multi-layer vapour barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSS</td>
<td>Foam Spacer Solid aluminum multi-layer vapour barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSP</td>
<td>Foam Spacer Plastic/Polymer foam back of spacer - no metal based multi-layer vapour barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPA</td>
<td>Polymer Plastic Aluminum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHSS</td>
<td>Plastic Hybrid Stainless Steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPSS</td>
<td>Polymer Plastic Stainless Steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SG</td>
<td>Steel (Galvanized)</td>
<td>MS</td>
<td>Molecular Sieve</td>
</tr>
<tr>
<td>SM</td>
<td>Steel (Mill Finished)</td>
<td>SG</td>
<td>Silica Gel</td>
</tr>
<tr>
<td>SS</td>
<td>Stainless Steel</td>
<td>BL</td>
<td>Blended MS &amp; SG</td>
</tr>
<tr>
<td>SO</td>
<td>Steel Other (Painted etc.)</td>
<td>DM</td>
<td>Desiccated matrix (integral to spacer)</td>
</tr>
<tr>
<td>SZ</td>
<td>Nickel/Zinc Plated Steel</td>
<td>OT</td>
<td>Other (specify)</td>
</tr>
<tr>
<td>TBA</td>
<td>Thermally broken anodized aluminum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBC</td>
<td>Thermally broken Chrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBS</td>
<td>Thermally Broken Steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBT</td>
<td>Thermally Broken Tin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TS</td>
<td>Butyl sealant spacer (Aluminum or Stainless Steel)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TX</td>
<td>Polycarbonate spacer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TP</td>
<td>Thermoplastic spacer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Program Testing Fees**

(Contact the IGMA approved testing facility of your choice to obtain a fee schedule)

**Element Materials Technology Canada**

2395 Speakman Drive  
Mississauga, ON L7J 2L8  
(905) 822-4111 (ext. 585)  
Contact: Greg Murawsky

**CAN-BEST**

38 Regan Road, Unit 4  
Brampton, ON L7A 1C6  
(905) 840-2014  
Contact: Michael Barerra
REQUEST FOR WAIVER OF RETEST

This form of waiver procedure is only intended for use in cases of changes or product design, components or process as referenced in B.2(a) as follows,

B.2(a) 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 (See G.4).
   ii) the location of the facility as listed on the licensing agreement is changed.
   iii) the manufacturing process is changed.

B.2(b) Minor changes of product design or process which are deemed not to affect test results may be exempted from retesting.

Please return in advance of change to:
Insulating Glass Manufacturers Alliance
1769 St. Laurent Blvd, Suite 104, Ottawa, ON, K1G 5X7
Tel: 613-233-1510 Fax: 613-482-9436 E-mail: mwebb@igmaonline.org

Manufacturer: ____________________________
Location: ________________________________
IGMAC Product #: _________________________
Product Codes: Connector: ______ Desiccant: ______ Sealant: ___ Spacer: ___
Gas Fill: ________________________________

Requested by: ____________________________
Signature: ________________________________
Date: ________________________________

The nature of the change is as follows:

a) Component type: ________________________________
b) Address: ________________________________
c) Low E: ________________________________
d) Ownership: ________________________________
e) Method of production: ________________________________

Where is IGMAC Certification information stored? __________________
Where are the quality control records stored? __________________
Who completes these records? __________________

PLEASE INCLUDE COPY(IES) OF THE LATEST TEST RESULTS WITH THE AUDIT FORM
Please outline resulting changes to the following production details:

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
</table>
| **GLASS** | Wash system
Water source
Cleaning agents
Cutting Method |
| **Spacer** | Type
Cutting system
Cleaning
Test for adhesion |
| **Connector** | Material
Assembly method |
| **Desiccant** | Type
Blend ratio
Storage
Test method
Amount of fill
Fill method |
| **Sealant** | Type
Storage
Test for adhesion
Application method
Minimum depth for unit design |
| **Gas Fill Method** | |
| **Low E** | Type (sputtered, pyrolitic)
Edge Deletion
Glass Supplier
Product Name |
| **Air Space Additions** | Low E
Suspended coated film
Grills
Blinds
Tape |
| **Additional Details** | |
CERTIFICATION PROGRAM FEES
(Effective: January 1, 2016)

Certification Audit Fee Schedule (U.S. and Canada) (plus GST/HST)
For a fee quotation for other countries, please contact the IGMA office at 613-233-1510, x103

<table>
<thead>
<tr>
<th>New Program Participants Only:</th>
<th>Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application administrative fee (non-members, one-time fee)</td>
<td>$500</td>
</tr>
<tr>
<td>Initial registration audit fee (prototype) – non-member rate</td>
<td>$790</td>
</tr>
<tr>
<td>Initial registration audit fee (prototype) – member rate</td>
<td>$590</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Program Participants</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single audit fee for re-fabrication of test specimens (prototype and existing product lines) – non-member rate</td>
<td>$790</td>
</tr>
<tr>
<td>Single audit fee for re-fabrication of test specimens (prototype and existing product lines) – member rate</td>
<td>$590</td>
</tr>
<tr>
<td>Annual participation fee – non-member rate (one product line)</td>
<td>$1580</td>
</tr>
<tr>
<td>Annual participation fee – member rate (one product line)</td>
<td>$1180</td>
</tr>
<tr>
<td>Additional product line (each)</td>
<td>$500</td>
</tr>
</tbody>
</table>

**Program testing fees:** please contact the IGMA approved testing facility of your choice to obtain a fee schedule

<table>
<thead>
<tr>
<th>Element Materials Technology Canada Inc.</th>
<th>CAN-BEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>2395 Speakman Drive</td>
<td>38 Regan Road, Unit 4</td>
</tr>
<tr>
<td>Mississauga, ON</td>
<td>Brampton, ON</td>
</tr>
<tr>
<td>L7J 2L8</td>
<td>L7A 1C6</td>
</tr>
<tr>
<td>905-822-4111 ext. 585</td>
<td>905-840-2014</td>
</tr>
<tr>
<td>Contact: Greg Murawsy</td>
<td>Contact: Michael Barerra</td>
</tr>
</tbody>
</table>

Fees and invoicing:

1. Annual certification fees for existing participants shall be invoiced on or about January 1st of each calendar year.

2. Annual certification fees are due will be due no later than January 31st of the same year in order to remain in good standing in the IGMAC Certification Program.

3. Those who have not paid by January 31st will be in violation of the IGMAC Certification Program License Agreement and may result in suspension and/or removal from the IGMAC Certification Program as well as removal from the IGMAC Certified Products Directory.

4. Any additional audits require throughout the year will be invoiced and payment must be received in advance of the audit application being processed.

5. Testing fees for participation in the IGMAC Certification Program are invoiced through the approved IGMA Testing Laboratory.
APPLICANT INFORMATION

MEMBERSHIP APPLICATION FORM

Primary contact:
Company:
Mailing address:
City: State/Prov: Zip/Postal Code:
Phone: Fax:
Email: Website:

MEMBERSHIP CATEGORY

☐ Manufacturer ☐ Supplier ☐ Primary Manufacturer ☐ Auditing & Testing ☐ Associate

IG Manufacturer / Fenestration Manufacturer: entities actively engaged in the manufacture and sales of insulating glass units (for a period of at least six months) or fenestration products that use IG. Production means the total square footage of production IG units for all plant locations or the total of IG used.
Supplier: entities who are not manufacturers of IG units but are engaged in an industry allied to the sealed insulating glass industry, including but not limited to the suppliers of principal components, equipment, services and materials used in the manufacture of IG units.
Primary Glass Manufacturer: entities that manufacture and supply primary glass to outside companies in the sealed insulating glass industry.
Auditing and Testing: entities that actively engage in the auditing and testing of fenestration products.
Associate: entities that do not qualify under the Manufacturer or Supplier category but provide or supply services to the end users of sealed insulating glass units (ie. architects) or who share interests in common with the industry (ie. shipping companies, software developers).
Additional location: this fee applies to members with multiple locations.
Additional contact: this fee applies to additional contacts other than the primary contact.

Manufacturer Members
[annual production all plants, square footage]
USD $

- ☐ 0 to 750,000 $1,430
- ☐ 750,000 to 1,500,000 $2,245
- ☐ 1,500,000 to 3,000,000 $2,960
- ☐ + 3,000,000 $5,200
- ☐ Primary Glass Manufacturer $9,700

Supplier Members
[annual sales all locations to the industry]
USD $

- ☐ 0 to $1,499,999 $2,550
- ☐ $1,500,000 to $2,499,999 $3,465
- ☐ $2,500,000 to $9,999,999 $4,185
- ☐ $10,000,000 to $24,999,999 $4,795
- ☐ over $25,000,000 $5,405
- ☐ Corporate $8,060

Research & Development fund - all manufacturer and supplier members will be invoiced $200 in support of IGMA’s research activities.

☐ Associate Member $615
- ☐ Auditing & Testing Labs $2,245
- ☐ Additional location fee for IG Testing Facilities $250

NOTE: All membership fees are payable in USD.

Membership fees will be invoiced in January of each year.

A check in the amount of $________ USD accompanies this application.

Company’s primary business activity is:

Other business activities company engages in are:

All IG manufacturer members must certify a minimum of one product line (non-research) and all manufacturers’ facilities to the applicable quality performance standards for insulating glass units.

Company is currently a participant in the following insulating glass certification program:

Company’s present business has been established for ________ years.

Please send mailings to the following individuals (please include their email addresses):

By signing below, Company verifies, represents and warrants that (i) it will abide by IGMA’s bylaws, policies and rules; and (ii) the information provided on this Application is true, correct and complete. Company further understands that any false statements made in this Application may jeopardize Company’s membership in IGMA and/or participation in the IGMA or IGMAC certification programs.

Authorized Signature Title Date (D/M/Y)

F005 Version 20 January 2018
For Further Information on the IGMAC Certification Program for the CGSB 12.8 Standard or on IGMA Technical Developments
Contact:

1769 St. Laurent Blvd, Suite 104
Ottawa, ON. Canada. K1G 5X7
Telephone: 613-233-1510 / Fax: 613-482-9436
www.igmaonline.org