

## Insulating Glass Certification

### Why certify?

The Insulating Glass Certification Council (IGCC) is a third-party certification program that assures that the insulating glass units meet established standards of quality and product performance.

Certification of insulating glass (IG) units has the following benefits:

- Certification mark identifies quality and performance to an accepted industry standard
- Architectural community recognition
- Sales and marketing advantage
- Certification is required for certain market sectors (Energy Star and soon to be NFRC)
- Third-party certification levels the playing field so competitors can not exaggerate claims

The following link takes you to the IGCC certified products directory which lists all certified products in this program.

<http://www.igcc.org/forms/Certified%20Products%20Directory.pdf>

### What is IGCC?

The Insulating Glass Certification Council (IGCC) was founded in 1977 in response to the growing demand from insulating glass unit manufacturers, consumers, specifiers, and others who were concerned with upgrading the quality and performance of IG products purchased for use in commercial and residential construction nationwide.

This concerned group recognized the need for a sound product testing and performance certification program, with equal representation of business community interests and the public interest, managed by a highly professional and efficient, independent third-party administrator. To safeguard against undue industry influence and the agreement of the public representatives on the IGCC Board of Governors is required for the adoption of all IGCC Board actions. Expert third-party administration is provided by a professional certification program management firm.

Council participants convinced that certification assures a high level of quality, developed guidelines for the IGCC certification program to implement the existing ASTM Specification E774 and/or ASTM E2190 as a valid technical base for sealed insulating glass units. The IGCC certification program is predicated on the concept of independent and impartial administration of periodic accelerated laboratory testing and unannounced plant inspections to assure continuing quality product performance.

### What is IGMA?

IGMA was incorporated as a not-for profit organization in the state of Illinois on October 2, 2000 as a result of a merger between the Insulating Glass Manufacturers Association of Canada (IGMAC) and the Sealed Insulating Glass Manufacturers Association (SIGMA).

IGMA is an ISO 9000 registered organization that offers product certification for insulating glass units, education to the industry, and develops technical publications and guidelines for the manufacture of insulating glass units and engages in leading edge research to advance new technologies in the manufacture of insulating glass units.

Their membership is comprised of certified Insulating Glass Manufacturers, their suppliers and associates plus window manufacturers, representatives from the architectural community, energy efficiency lobbies, code officials, and other parties interested in the design and long-term performance of insulating glass units.

The IGMA Certification Program is administered by the Insulating Glass Certification Council (IGCC).

IGMA was one of the leaders in merging ASTM E 773/E774 (also known as CBA) with the CGSB (Canadian General Standards Board) 12.8 standard to successfully complete a new document across the U.S. and Canada (ASTM E 2188, E 2189, E 2190); one that expands the global marketplace for insulating glass units and provides a single cohesive and consistent updated certification program for manufacturers to test their products. This new test specification has been published as ASTM E 2190 Standard Specification for Insulating Glass Unit Performance & Evaluation. IGMA is on a mission to rid the specification community of non-certified and un-tested insulating glass units, and the first accomplishment in that direction was the release of the IGMA Certification Program for the ASTM E 2190 standard.

## Field Correlation Study

In 1980, SIGMA and HUD (Housing and Urban Development) funded a 25-year field study to determine the correlation of field failures to ASTM E 774 Class C, vs. Class CB, vs. Class CBA with the CBA class representing the most stringent level of testing. ASTM E 773 and E 774 were predecessor standards to the new harmonized standards identified as ASTM E 2188, E 2189 and E 2190. This study was completed in December 2005 with the final report covering the 25 year period published in December 2006. The findings were then used to develop the IGMA document TR-4000-08 "25-Year Field correlation Study." Summary of this document follows:

The study included 140 buildings in 40 cities containing a total of 40,000 certified IG units of which 2/3 were field-glazed commercial units and 1/3 were residential window units. Of this total sample, the field failure rates of 2,400 IG units in 140 buildings in 14 cities were actually studied. The 25-Year field correlation study actually encompasses two separate studies. The original study was started in 1980 and included sampling from 140 buildings in 40 cities containing 40,000 certified insulating glass units with representative constructions. Locations of the units were supplied by 28 manufacturers with multiple plant locations. 2,400 units were selected of which 2,100 were accessible at 10 years; 1,952 at 15 years and 1,714 at the 25 year mark.

The second study started in 1990 included newer technologies and a larger sample size of which over 10,000 units were accessible at the 15 year mark. The second study only looked at CBA units from 102 buildings representing 52 manufacturing plants.

The failure rate observed from the 1990 study representing units at the 15-year mark (1.0%) corresponded to the failure rates of the original 1980 study at the 15-year mark (1.2%) providing further validation of the findings of the first study.

25 Year Field Correlation Study Summary Survey Failures Rates at December 2005					
	1980 Study				1990 Study
	25 Years		15 Years		
	C+CB	CBA	C-CB	CBA	CBA
Failure Rate	14.0%	3.6%	5.9%	1.2%	1.0%
# of Units	917	797	786	760	10,944

The results of this study were provided to the ASTM E06 task group that worked on the harmonization of the ASTM E 773 / E 774 (CBA) and the CGSB 12.8 (Canadian General Standards Board) standards with the recommendation to eliminate the lower levels of testing (i.e., Class C and Class CB). This recommendation was adopted and the new standard was published in April 2002, (ASTM E 2188, E 2189 and E 2190).

The predecessor standard, ASTM E 774 was withdrawn by ASTM in February 2006, so it is no longer considered part of the documentation for the current standard. One specific recommendation from the study was that ASTM certified units should be glazed with systems that keep water ingress at a minimum and weep water that gets in the glazing system away from the edge sealant. The results of the survey also formed the basis for recommending to the U.S. Department of Energy the requirement to include insulating glass certification as a requirement for Energy Star Windows to address long term durability and energy performance.

## References:

- Insulating Glass Manufacturers Alliance (IGMA). IGMA TR-4000-08 "25-Year Field correlation Study."
- Insulating Glass Manufacturers Alliance (IGMA). Website: <http://www.igmaonline.org>
- Insulating Glass Certification Council (IGCC). Website: <http://www.igcc.org/>
- McGraw-Hill Construction - Continuing Education Center web article, "The Power of Certified & Tested Insulating Glass Units"; June 2006 [http://mcgraw-new.buildingmedia.com/article\\_print.php?L=42&C=301&P=2](http://mcgraw-new.buildingmedia.com/article_print.php?L=42&C=301&P=2)