



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



### Certification Notes

(CN IG 0310)

#### **Certification of Multiple Air Space Units**

##### **1. References:**

##### G. 15 Multiple Air Spaces

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

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

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

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

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

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

Certification Notes (CN IG0310)

Page 1 of 2

Initial Publish Date: 03/01/2010

Approval Date: 05/07/2014

Revision Date: 9/05/2014

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

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

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

**6. Quad Units with Interior Glass Lites:**

Glass: 4 – 4mm glass lites

Airspace: Each airspace is 6 mm.

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

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

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

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

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

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