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March 8, 2024

IMPORTANT SGCC CHANGES Upcoming Changes to the SGCC Laminated Certification Program

We are notifying all Licensees, Auditors, Participants, and Laboratories of the "Revised" <u>SD-210 Guidance for the SGCC Certification of Laminated Glass</u> document that will be implemented **July 1, 2024 (L24)**. This **approved Revised** guidance document includes the changes on how Laminated glass will be certified as of July 1st, 2024. A detailed overview of changes has been attached for review. Previous Memos can be found on the <u>SGCC website</u>.

Summary of Changes:

- One acronym will be used to certify all types of Laminated Glass:
 LSG (Laminated Safety Glass)
- · Obsoletion of Standard & Heavy category
- Changes to Initial and Ongoing testing (Glass make-up requirements)
- New abbreviated metric nomenclature for summation of overall thickness
- Updated Labeling requirements
- Interlayer, Coating, and/or Insert changes qualifying for automatic acceptance or requiring additional weathering and/or impact outlined.

Timeline for Implementation:

Certification Period	Plants
First Half 2024 (F24)	 SGCC to contact fabricators with existing Laminated Certifications to review the following: Detailed explanation of New Guidance & Requirements Current Vs. New Certification options based on individual plant needs. New SGCC numbers issued (Not Active Until July 1, 2024) Semi Annual billing for (L24) issued in April will reflect agreed upon changes.
Last Half 2024 (L24) & First Half of 2025 (F25)	New Certifications activated July 1, 2024 including updated listing & certificate views. Submissions of required initial constructions mandatory from July 1, 2024 moving forward.
Last Half 2025 (L25)	July 1, 2025 - Laminated Labeling Update Mandatory

Thank You, Kristin Best

Program Manager SGCC, IGCC/IGMA

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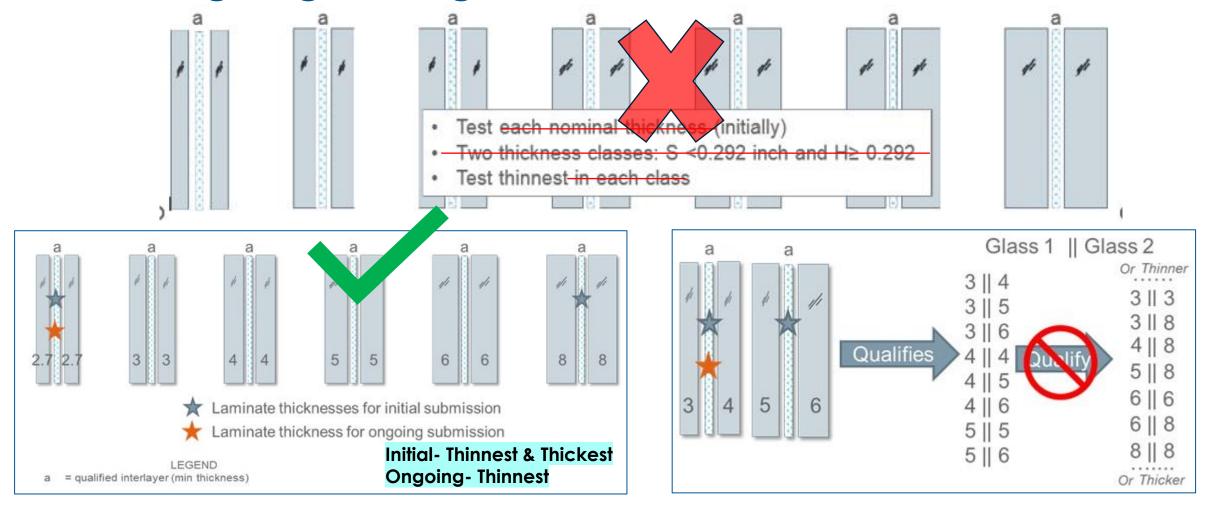
Intricacies, Interpretation, Inquiries & Incidents

What will Change for the Licensee?

- 1.) Initial (Prototype) Testing, NO Change to Ongoing (Routine) Testing
- 2.) Laminated Specialty Products (LSP) + Laminated Transparent Glass (LTG) ⇒ One acronym, (LSG) <u>Laminated Safety Glass</u>
- 3.) Condense Current Laminated Certification, assigning NEW SGCC Number(s)
 - 4.) Labeling Changes
 - 5.) <u>NEW</u> View for Acknowledgment Certificates & Products Directory Listings



Initial & Ongoing Testing



NO Change to Interlayer Requirements: Thinnest Required For Construction(s) Covered By That Certification



Initial Testing Current

Initial Testing NEW

- Currently Certify to LTG & LSP
- Glass thickness defined by ASTM C1036-Performed on each nominal thickness desired for certification

S = Standard 4 to 6mm < 0.292*- inch (5/16) (7.4 mm)

H = Heavy 8mmand $greater \ge 0.292 - inch (5/16) (7.4 mm)$

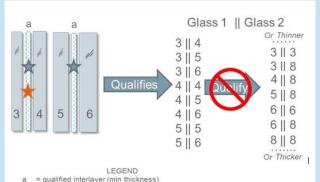
Nominal thickness (overall thickness) is defined as the thickness of the final product (glass + interlayer + glass). Nominal thickness for laminated glass has been expanded from the standard ASTM C1036 tolerance ranges to eliminate "gaps".

<u>mm</u>	Range (mm)	Traditional (in)	Range (in)	
3.0	2.92-3.78	1/8	0.115-0.148	
4.0	3.79-4.57	5/32	0.149-0.179	(0)
5.0	4.58-5.56	3/16	0.180-0.218	(S)tandard
6.0	5.57-7.41	1/4	0.219-0.291	
8.0	7.42-9.01	5/16	0.292-0.354	
10.0	9.02-11.91	3/8	0.355-0.468	/L IV
12.0	11.92-15.11	1/2	0.469-0.594	(H)eavy
16.0	15.12- and greater	5/8	0.595- and greater	

Testing of 5/8 covers all thicker laminates. This guideline is in recognition that 1) such products are typically used for applications which require strength characteristics beyond normal human impact safety glazing and 2) SGCC testing has historically shown consistent compliance of such products.

- Only certify one acronym; suggest LSG (Laminated Safety Glass) or LAG (Laminated Architectural Glass)
- Glass thickness defined by <u>ASTM C1036</u> 1.) thinnest nominal overall thickness constructed from two lites of the thinnest nominal glass thickness to be used in a laminated glass construction for which certification is desired 2.) thickest nominal overall thickness constructed from two lites of the thickest nominal glass thickness to be used in a laminated glass construction for which certification is desired.
- NO thickness classes (S) or (H)
- When two sets of laminated glass are tested, all nominal symmetrical and asymmetrical laminate thicknesses between and inclusive of the nominal thicknesses tested will be included in the certification, provided that:
- > The overall nominal laminate thickness is not below or above those configurations used to gain certification
- ➤ The nominal thickness of the individual glass lites are not less than the nominal thickness of the glass plies used in initial testing of the thinnest nominal laminate thickness or greater than the nominal thickness of the glass plies used in initial testing of the thickest nominal laminate

thickness unless units with 2 lites of 8 mm or greater have been used in the initial testing.



Ongoing Certification Current

- Ongoing certification of laminated glass shall utilize the following thickness classes:
 - S = Standard 4 to 6mm < 0.292*-inch (5/16) (7.4 mm)
 - H = Heavy 8mm and $greater \ge 0.292 inch (5/16) (7.4 mm)$

Nominal thickness (overall thickness) is defined as the thickness of the final product (glass + interlayer + glass). Nominal thickness for laminated glass has been expanded from the standard ASTM C1036 tolerance ranges to eliminate "gaps".

<u>mm</u>	Range (mm)	Traditional (in)	Range (in)
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4.0	3.79-4.57	5/32	0.149-0.179
5.0	4.58-5.56	3/16	0.180-0.218
6.0	5.57-7.41	1/4	0.219-0.291
8.0	7.42-9.01	5/16	0.292-0.354
10.0	9.02-11.91	3/8	0.355-0.468
12.0	11.92-15.11	1/2	0.469-0.594
16.0	15.12- and greater	5/8	0.595- and greater

Testing of 5/8 covers all thicker laminates. This guideline is in recognition that 1) such products are typically used for applications which require strength characteristics beyond normal human impact safety glazing and 2) SGCC testing has historically shown consistent compliance of such products.

- Ongoing testing shall be with the thinnest interlayer and the thinnest product certified in each thickness class (S and/or H) and generic interlayer category
- For "Inspector" selected samples, ongoing testing shall be with any thickness product in the certified thickness class (S and/or H) and generic interlayer category, at the discretion of the SGCC auditor.

Ongoing Certification NEW

- NO thickness classes (S) or (H)
- Ongoing certification testing shall be performed with the thinnest nominal laminate thickness certified from that set with the same glass Kind and the same thickness and type of interlayer used in the original certification.
- Regular audit sample selection procedures shall apply for laminated glass. For "Participant" selected samples, ongoing testing shall be with the thinnest interlayer and the thinnest product certified for each generic interlayer category.
- For "Auditor" selected samples, ongoing testing shall be with any thickness product of the same glass Kind and generic interlayer category, at the discretion of the SGCC auditor.

Initial Testing & Ongoing Certification (No Change to Current VS NEW Just Redefined)

- The interlayer in each of those sets shall be the thinnest for which certification is desired
- Shall be one of the interlayers listed on the SGCC Approved Interlayer list
- The glass Kind for each set must be the same based on the glass Kind for which certification is required. *It is felt that although SGCC currently uses A, and T, it is recommended to use "AN, HS, and FT" to remain consistent.
- Certification of a laminate with a nominal overall thickness of 16 mm or greater *(containing two lites of minimum 8 mm glass) will automatically qualify laminates constructed with thicker glass.
- A laminate meeting the higher impact class (Cat II or Class A) automatically qualifies to meet the requirements of the lower impact class (Cat I or Class B) without further testing. But not vice versa, i.e if you test/certify initially to Impact class B of ANSI, you will need to certify products from impact class A of ANSI separately.
- Certification with annealed (A) glass will cover heat-strengthened (HS), fully tempered (FT), and chemical strengthened (CS). Testing to HS will only cover HS and T. Testing to T will only cover T. Testing to CS will only cover CS.

Acceptable Modifications to Glass (Adopted 10.5.22)

Adopted 10.5.22 along with Definitions and Glass Kind Sections

Further defined and displayed:

- allowable changes in or on glass without the need for additional weathering or impact
- interlayer or insert changes which either qualify for automatic acceptance or require weathering and/or impact

➤ If an interlayer is not already accepted by SGCC, then weathering and impact must be done. (Appendix)

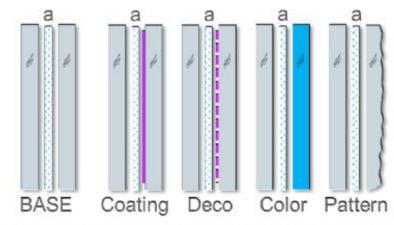
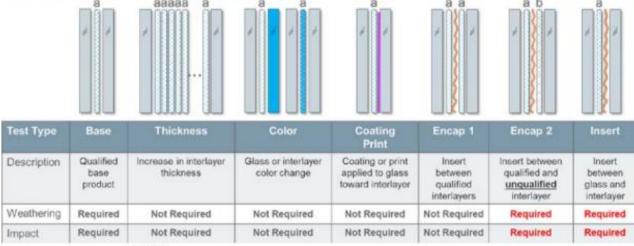


Figure 4: Allowable changes in or on glass without the need for additional weathering or additional impact.

A summary of the interlayer or insert changes which either qualify for automatic acceptance or require weathering and/or impact are visually outlined and detailed in Figure 5.



LEGEND

= qualified interlayer (min thickness)

b = unqualified interlayer

= coating or print (continuous or non-continuous)

= insert (continuous or non-continuous)

Figure 5: Changes to laminates with regard to interlayer contact to glazing or inserts

Nomenclature

Product configuration is displayed using metric glass thickness of each ply

"glass 1(mm) + glass 2 (mm), Interlayer thickness (mm) and SGCC interlayer designation"

Table 2: Examples of laminated glass abbreviated nomenclature.

Detailed Configuration	Summary Nomenclature
3 mm (1/8 inch) glass 0.76 mm (0.030 inch) PVB interlayer 3 mm (1/8 inch) glass	3,3-0.76b
6 mm (1/4 inch) glass 1.52 mm (0.060 inch) TPU interlayer 6 mm (1/4 inch) glass	6,6-1.52u
4 mm (5/32 inch) glass 1.52 mm (0.060 inch) IP interlayer 6 mm (1/4 inch) glass	4,6-1.52ip



Nominal Thickness Current

Nominal Thickness Proposed

- Overall thickness is displayed using (S) or (H) as well as mm and/or inches
- mm/inches designation represents a 'tolerance range' of the nominal thickness and does not indicate make-up of individual lites
- Glass kind and interlayer designation are listed within the product attributes
- No designated nomenclature to give quick summary of overall thickness

- Product configuration is displayed using metric glass thickness of each ply
- "glass 1(mm) + glass 2 (mm), Interlayer thickness (mm) and SGCC interlayer designation"

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6 mm (1/4 inch) glass 1.52 mm (0.060 inch) TPU interlayer 6 mm (1/4 inch) glass	6,6-1.52u
4 mm (5/32 inch) glass 1.52 mm (0.060 inch) IP interlayer 6 mm (1/4 inch) glass	4,6-1.52ip

Table 3: Typical Interlayer Nominal Thickness

Metric (mm)	Traditional (in)
0.38	0.015
0.51	0.020
0.64	0.025
0.76	0.030
0.89	0.035
1.14	0.045
1.27	0.050
1.52	0.060
<u>1.905</u>	<u>0.075</u>
<u>2.286</u>	<u>0.090</u>

How Is Nomenclature Established?

ASTM C-1036 Tolerances - Transparent Flat Glass

∄ C1036 − 16 TABLE 4 Dimensional Tolerances for Rectangular Shapes of Type 1—Transparent Flat Glass Nominal Designation Traditional Designation^B Designation 1.24 0.031 0.049 micro-0.05 0.07 0.084 0.071 2.0 2.0 3.0 0.134 3.40 0.115 3.0 4.19 0.149 0.165 2.0 3.0 0.199 0.219 0.244 8.43 0.292 0.332 0.355 0.469 0.531 12.0 5.7 $(\frac{7}{32})$

Conversion Chart – Guidance Doc.

Table 3: Typical Interlayer Nominal Thickness				
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0.38	0.015			
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1.27	0.050			
1.52	0.060			
1.905	0.075			
2.286	0.090			

SGCC #0000 (S) 6 LTG (b)(T) (.030) SGCC #9999 (H) 12 LTG (b)(T) (.030)

SGCC #0001

Min. Config. 3,3-0.76(b) Max Config. 6,6-0.76(b)

Three Separate Cert.
Numbers Condensed
Into Two

 SGCC #0003 Min. Config. 6,6-1.52(ip) Max Config. 6,6-1.52(ip)



Use of Existing Certified Laminated Reports

09.12.2023 –Motion was made to allow existing certified laminated product report to be utilized for reconfiguration under the new laminated certification guidelines...**Vote Unanimous**

Interlayer Manufacturer/Type Obtained from: Safety Glazing Certification Council Thickness Standard: SGCC (Safety Glazing Certification Council) Laboratory Manual

Laminated Glazing Composition Details

	THICKNESS MEAS			
SAMPLE TYPE	OVERALL	GLASS LITE 1	INTERLAYER ^B	GLASS LITE 2
Thermal	0.820	0.380	0.060	0.380
Impact	0.819	0.381	0.058	0.380
Type		Annealed	Interlayer	Annealed

A Measurement values obtained from the first test specimen of the thermal and impact test.

Overall glass thickness of Specimen No. 1

Top layer lite glass thickness 0.200"

Inner layer film thickness 0.060"

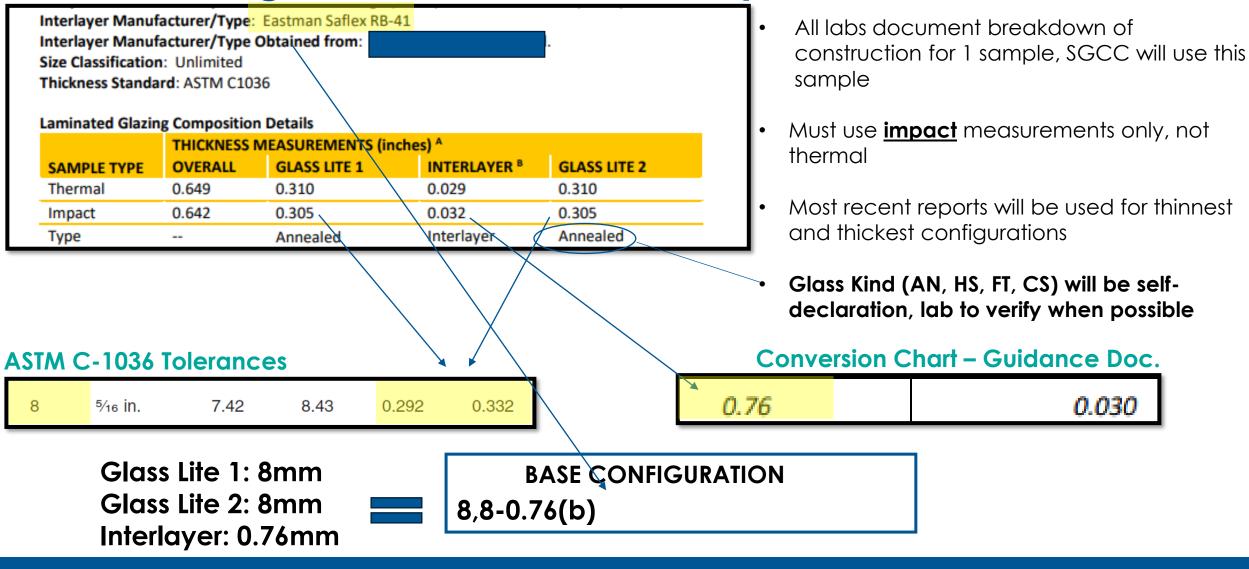
Bottom layer lite glass thickness 0.201"

Notes: All test specimens were destroyed by test or our personnel and



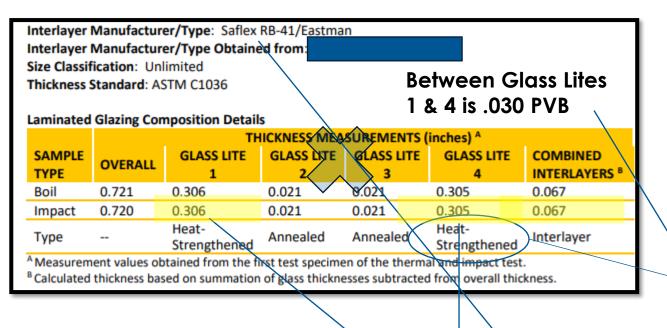
^B Calculated thickness based on summation of glass thicknesses subtracted from overall thickness.

Use of Existing Certified Laminated Reports Cont.





Use of Existing Certified Laminated Reports Cont.



How will my Laminated Specialty Certification transition to the new nomenclature?

- Currently have 7 LSP Certified
- Majority are configurations with <u>insert</u> <u>between accepted interlayers</u>
- Break down to base configuration, this is what will require testing moving forward
- Glass Kind (AN, HS, FT, CS) will be selfdeclaration, lab to verify when possible
 - **Conversion Chart Guidance Doc.**

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	0.76	0.030	

ASTM C-1036 Tolerances

8 5/16 in. 7.42 8.43 0.292 0.332

Glass Lite 1: 8mm

Glass Lite 2: 8mm

Interlayer: 0.76mm

BASE CONFIGURATION

8,8-0.76(b)



Labeling Requirements

Sample Labels: (Minimum Requirements)

ABC Glass – Plant 1 16 CFR 1201 I ANSI Z97.1-2015 SGCC AAAA 1/4UB ABC Glass –Plant 1 16 CPR 120 II ANSI Z97 1-20 5 SGCC BBBB SUA

ABC Glass – Plant 1 16 CFR 1201 II ANSI Z97.1-2015 SGCC CCCC HUA

 Thickness no longer required on Laminated label.

 1 Year Grace Period for Label Changes

Sample Labels: (Minimum Requirements)

Federal Code (CPSC) designation 16 CFR 1201 – Performance Category (I or II)

The words "American National Standard Z97.1-2015" or the characters "ANSI Z97.1-2015"

SGCC number—ANSI Z97 test size classification (U or L) – drop height class (A or B)

Example of Label:

16 CFR 1201 II ANSI Z97.1-2015 SGCC 0000 UA

Or American Nat

American National Standard Z97.1-2015

SGCC 0000 UA

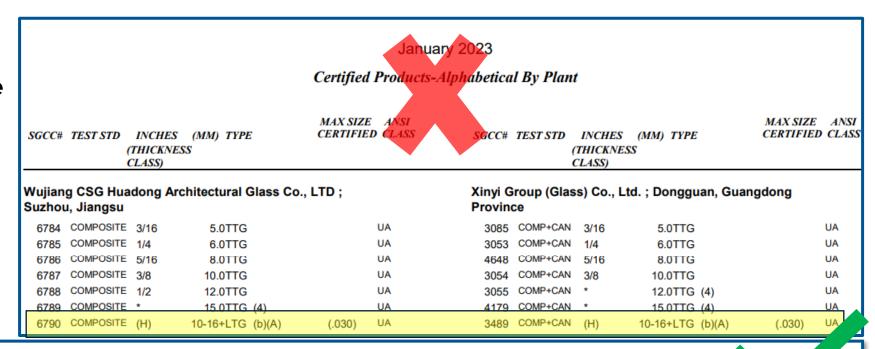


Certification Listing

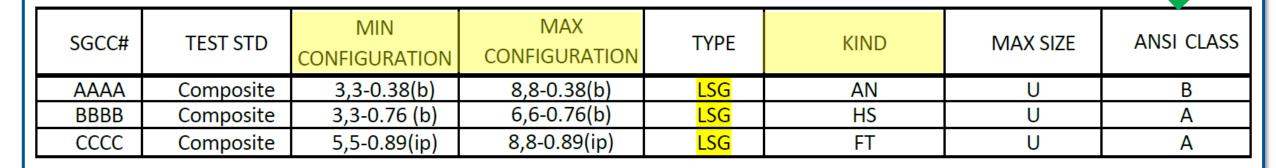
New Listing:

- ✓ Tempered & Lami. Separate
- ✓ Min. & Max Configuration
- ✓ Base Heat Treatment (Kind)
- ✓ One type: LSG (Laminated Safety Glass)





Sample Certified Products Directory (CPD) Listing





Certificates

ACKNOWLEDGEMENT OF CERTIFICATION

THIS IS TO ACKNOWLEDGE THAT AS OF THIS DATE

Plant Name

Location (City, State)

IS A CURRENT LICENSEE AND HAS MET ALL GUIDELINES AND REQUIREMENTS FOR THE SGCC® CERTIFICATION PROGRAM AND AS SUCH IS ELIGIBLE TO LABEL THE BELOW INDICATED PRODUCT(S) AS SGCC® CERTIFIED. REPRESENTATIVE SAMPLES OF THE BELOW PRODUCTS HAVE BEEN FOUND TO BE IN COMPLIANCE WITH ANSI Z97.1-2015 AS INDICATED AND CPSC 16 CFR 1201 STANDARDS, KNOWN AS COMPOSITE CERTIFICATION (COMP), OR BOTH STANDARDS WITH CAN/CGSB 12.1-2022 KNOWN AS COMP+CAN.

Laminated Safety Glass

SGCC#	Min. Conf. MM	Max Conf. MM	<u>Attributes</u>	Type Code	<u>Kind</u>	Max Size	ANSI Class	Test Std
0127	3,3-0.38	8,8-0.38	(b)	LSG	AN	U	A	COMP +CAN

Tempered Transparent Glass

SGCC#	<u>IN</u>	<u>MM</u>	Attributes	<u>Type</u> <u>Code</u>	Max Size	ANSI Class	Test Std
0127			(b)	LSG	U	A	COMP +CAN

Plant Certificate

- Ongoing proof of Certification, updated each testing cycle and when there is a change to Certification
- Laminated & Tempered will be separated
- Min. & Max. configuration in place of IN. & MM
- Glass Kind separated from attributes



Certificates Cont.



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Record of SGCC Compliance Testing

The information contained herein is viewed to be accurate by SGCC, a third party certification agency, as of the indicated date of issue.

1) Identification of the Product:	0123; Min. Conf. 3,3-0.38 Max Conf. 8,8-0.38 LSG U
2) Citation or Standard to Which the Product is Being Certified:	ANSI Z97.1-2015 CLASS A and CPSC 16 CFR 1201 II

CPSC Document

- Certificate to supplement additional information not on permanent label
- Summary nomenclature including min. & max. configuration to replace identification of product



Inquiries – Common to Laminated Certification

Q: Does SGCC certify bent laminated products?

A: Certification of clear laminated glass will cover patterned and bent laminates of the same thickness/make-up.

Q: What if I need to certify multiple types of interlayer?

A: Each generic code of interlayer is certified separately, however, if sent with the same interlayer type/brand/thickness, the certification can be condensed to one SGCC number per generic category.

Q: Can I interchange my interlayer brand if it is still within the same generic category?

A: Yes, as long as the interlayer is on the Accepted Interlayer List (SD-099) and you are not switching generic categories. A list of accepted interlayer brands per generic category are maintained by SGCC and as long as you are using an interlayer on the Accepted List (SD-099).

Q: What if I need to change the thickness of my interlayer?

A: You are covered automatically for the interlayer thickness certified to <u>and</u> thicker. If you wish to certify a thinner interlayer thickness, you will need to retest both your thinnest and thickest configurations using that. For ongoing testing, you may resume sending only the thinnest configuration per SGCC #, using the thinnest interlayer you certified.



Inquiries – As A Result Of New Guidelines

Q: What if I am certified for my thinnest and thickest constructions but a test report for a specific thickness is required by a laminated customer, code enforcer, or job specification?

A: Per CPSC, "Certificates of Compliance must be issued on the basis of a reasonable testing program", SGCC has defined this as testing the worst-case scenario. Per SGCC Certification, when two sets of laminated glass are tested, all nominal laminate thicknesses between and inclusive of that nominal thicknesses tested will be included in the Certification.

Q: What if I do not need to be certified for a thickness range?

A: A single set of laminates may be submitted for testing; this configuration would be documented as your thinnest and thickest constructions. If testing was conducted with glass lites 8 mm or greater, certification would cover the laminate construction as tested plus any laminate having glass thicker than what was tested, but not anything thinner.



In Summary:

- Separate designation of Laminated Specialty products will be obsoleted, only one acronym LSG (laminated Safety Glass) will exist.
- Summary of the interlayer or insert changes which either qualify for automatic acceptance or require weathering and/or impact testing is included on pages 6-7 of the DRAFT Guidance document attached to the email.
- Metric glass thickness will be used for product configuration with summary nomenclature. Example 16mm with .030 PVB = 8,8-.076(b)
- Standard and Heavy ranges will be obsoleted.
- Nominal thickness is no longer being used. Each lite, defined by ASTM C1036, will be documented.
- Participants should be mindful to use two lites of the thinnest nominal glass thickness to be used in a laminated glass construction for which certification is desired.
- For <u>initial testing</u>, if certification is desired for more than one overall thickness, they must test (impact and boil) the thinnest makeup with the thinnest interlayer and the thickest makeup with the thinnest interlayer (thickest make-up must contain two lites of minimum 8mm glass). If these pass, it covers all makeups in-between.
- This also covers any makeup with a thicker version of the same interlayer.
- For <u>ongoing testing</u>, they only need to test the thinnest makeup <u>as they do now</u>
- Laminated permanent labels will no longer require thickness or S/H (1-Year Grace Period for Label Changes, mandatory L25)
- Participants will be issued **NEW SGCC Numbers** as their certification will likely be condensed, the SGCC Board approved using current reports to make the transition, saving most from any additional testing. **NO action is needed at this time by participants, any participants requiring additional testing will be advised during their one-on-one consult.**

Implementation Steps & Schedule



- Thorough review of current certification
- **SGCC will contact fabricators** with existing Laminated Certification
- One on one discussion:
 - 1. Explain changes
 - 2. What new Cert, will look like
 - 3. Gather details regarding Licensees needs



- NEW SGCC numbers will be issued
- Cert. conversion will be reviewed
- New numbers and nomenclature entered in our system
- Existing certification status becomes "LXR", still active



- -July 1, 2024 new Cert. available via SGCC website.
- -New Plant Certificates available for download via CIP (Certification Information Portal)
- -One year grace period for Labeling changes, mandatory July 1, 2025 Last Half 2025 (L25)





Contact Us

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