

NGA GLASS CONFERENCE™ CARLSBAD

FEBRUARY 3-6, 2025



Meeting Book

NGA Core Purpose

NGA is the authority and resource for its members and the industry to grow successful businesses and to champion the benefits of glazing and glass building products.

NGA Vision Statement

We envision a future in which glass is the material of choice to enhance spaces where people live, play, learn, work and heal.

NGA Goals

Advocate: Be a strong advocate to promote and defend the glass industry.

Educate: Drive excellence, safety and results through education and training.

Workforce Development: Advance the industry as a viable, thriving and exciting career path.

Promote: Elevate the image of glass as a safe, healthy, sustainable and inspiring building product.





WI-FI

Network
Westin Conference

Password
GlassCon25

ORDER TODAY!

**NGA'S GANA
GLAZING MANUAL**
Year of Glass Edition

glass.org/store

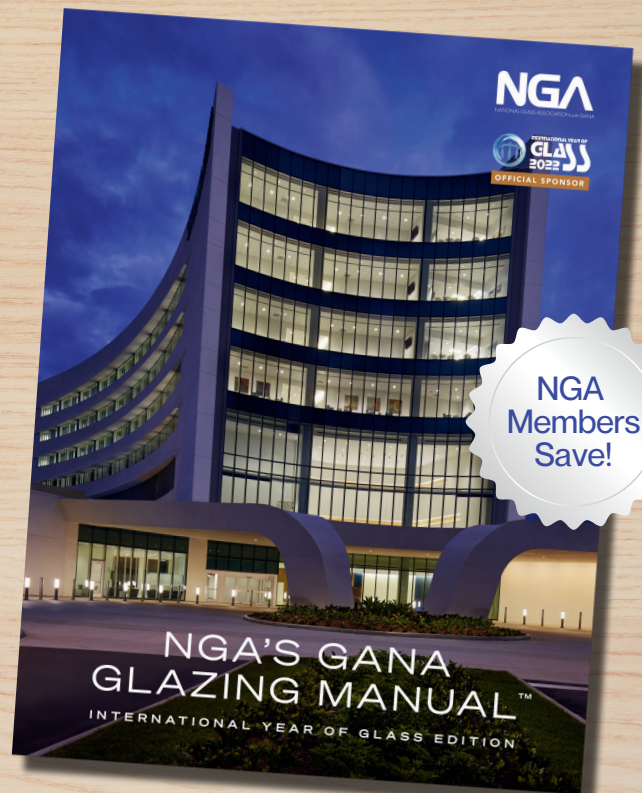


Table of Contents

| | |
|---|----|
| Sponsor Recognition | 4 |
| Schedule at a Glance | 5 |
| Full Schedule of Events..... | 7 |
| Anti-Trust Policy & Member Conflict of Interest Statement | 10 |
| NGA Committee Structure..... | 12 |
| NGA Advocacy Committee Agenda & Minutes | 14 |
| NGA Fabricating Committee Agenda & Minutes | 17 |
| NGA Forming Committee Agenda & Minutes | 26 |
| Pre-Registration List..... | 29 |
| NGA Leadership, Consultant & Staff Rosters | 33 |
| Task Group Activities Summary | 35 |
| NGA Publications List..... | 37 |
| What We Do. | 40 |
| Acronyms Quick Reference Sheet..... | 42 |

Upcoming Events

Building Envelope Contractors (BEC) Conference
March 2-4, 2025 | Horseshoe/Paris Hotel | Las Vegas, NV

Glass & Glazing Advocacy Days
Multiple Dates in 2025 | Washington, DC

NGA Glass Conference: Ann Arbor
Sept 29-Oct 2, 2025 | Ann Arbor Marriott | Ypsilanti, MI

GlassBuild America 2025
November 4-6, 2025 | Orlando, FL | glassbuildamerica.com



Scan the QR code to
access glass.org
for the latest NGA event
details, resources & more!



By registering, participating, attending, or speaking at the NGA Glass Conference, I agree that neither I nor my company/employer will transmit information or materials received at the NGA Glass Conference to other companies for their commercial use or to other associations with competing interests to NGA.

THANK YOU TO OUR SPONSORS!

GOLD SPONSORS



SILVER SPONSORS



NGA Glass Conference: Carlsbad

Westin Carlsbad Resort | Sunset Ballroom

Schedule at a Glance

All times listed are Pacific Time Zone.

All conference participants and guests are invited & encouraged to participate in all sessions and meals.

Monday, February 3, 2025

| | | Location |
|--------------------|---|---------------------------|
| 7:30 am – 12:00 pm | Optional Golf Scramble (Advanced registration and fee required) | The Crossings at Carlsbad |
| 10:30 am – 6:00 pm | Registration Desk Open | |
| 11:30 am – 5:30 pm | EPA Grant Workshop (Optional workshop for NGA member companies interested in participating in the EPA grant projects) | Sunset Ballroom |
| 6:30 pm – 7:30 pm | Welcome Reception | Sunset Terrace |

Tuesday, February 4, 2025

| | | |
|---------------------|---|----------------------------------|
| 7:30 am – 4:00 pm | Registration Desk Open | |
| 8:00 am – 9:00 am | Networking Breakfast | Sunset Terrace |
| 9:00 am – 9:30 am | Orientation & Introductions | Sunset Ballroom |
| 9:30 am – 10:15 am | Presentation: Change on the Horizon: Market Factors to Watch in 2025 | Sunset Ballroom |
| 10:30 am – 12:00 pm | Presentation: Market Trends & New Initiatives | Sunset Ballroom |
| 12:00 pm – 1:00 pm | Networking Lunch | Sunset Terrace |
| 1:00 pm – 2:00 pm | Presentation: Glazing Performance Requirements in U.S. Federal Policy, Accredited for 1.0 AIA LU | Sunset Ballroom |
| 2:00 pm – 3:00 pm | Presentation: Advocacy in 2025 | Sunset Ballroom |
| 3:00 pm – 4:30 pm | Presentation: Energy, Structural & Fire Building Codes & Standards Update | Sunset Ballroom |
| 4:30 pm – 5:00 pm | Presentation: Spacer and Sealant Technology | Sunset Ballroom |
| 6:00 pm – 8:00 pm | Volunteer Celebration Dinner | Grand Ballroom B/Ocean Blue Lawn |

Wednesday, February 5, 2025

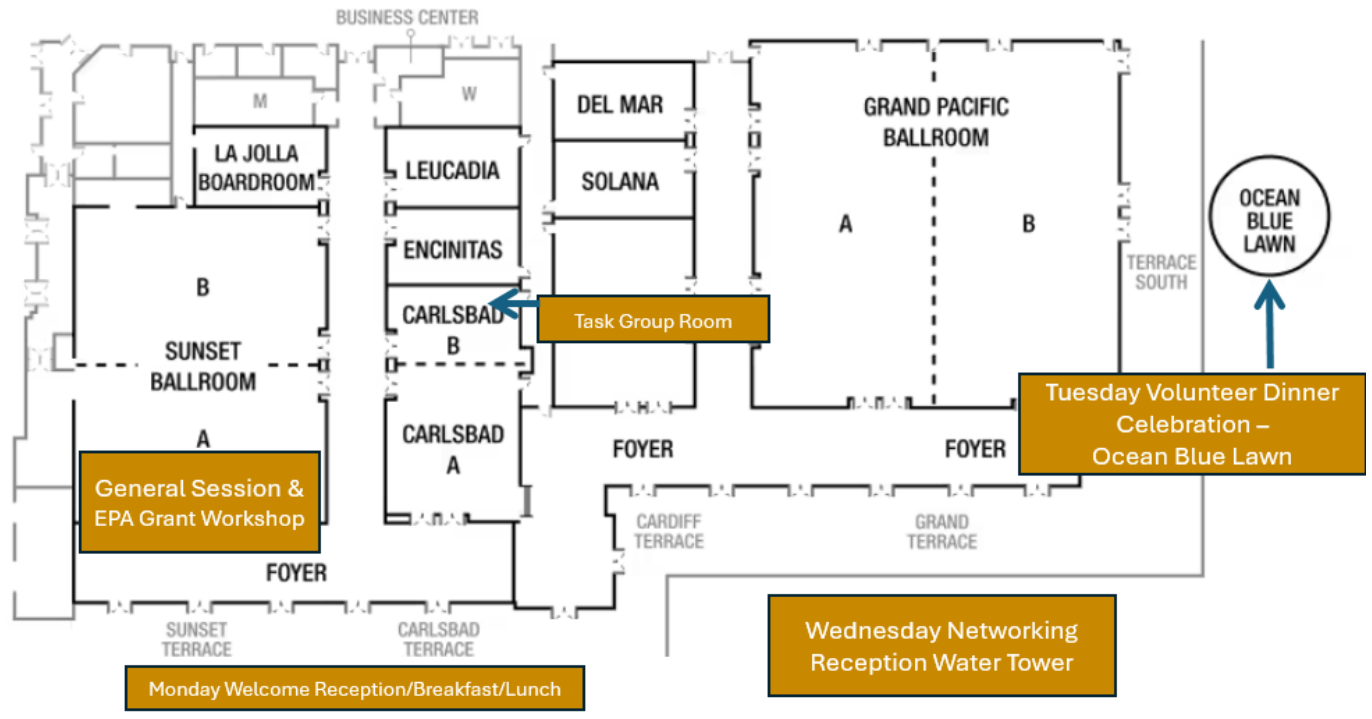
| | | |
|---------------------|--|------------------------|
| 7:00 am – 8:00 am | 10th Annual NGA Fun Run/Walk | Meet at Sunset Terrace |
| 8:30 am | Registration Desk Open | |
| 8:30 am – 9:30 am | Networking Breakfast | Sunset Terrace |
| 9:30 am – 11:00 am | NGA Advocacy Committee & Sustainability Sub-Committee | Sunset Ballroom |
| 11:00 am – 12:00 pm | Presentation: Industry Collaboration | Sunset Ballroom |
| 12:00 pm – 1:00 pm | Networking Lunch | Sunset Terrace |
| 1:00 pm – 2:00 pm | NGA Forming Committee | Sunset Ballroom |
| 2:00 pm – 5:00 pm | Workshop: School Security | Sunset Ballroom |
| 5:00 pm – 6:00 pm | Networking Reception | Water Tower |

Thursday, February 6, 2025

| | | |
|--------------------|--|-----------------|
| 8:00 am | Registration Open | |
| 8:00 am – 9:00 am | Networking Breakfast | Sunset Terrace |
| 9:00 am – 12:00 pm | NGA Fabricating Committee | Sunset Ballroom |
| 12:00 pm – 1:00 pm | Networking Lunch; Conference Conclusion | Sunset Terrace |



The Westin Conference Center



Schedule- NGA Glass Conference: Carlsbad

Westin Carlsbad Resort | General Session: *Sunset Ballroom* | Meals: *Sunset Terrace*

All conference participants and guests are invited & encouraged to participate in all sessions and meals.

Monday, February 3, 2025

10:30am – 6:00pm **Registration Desk Open**

7:30 am – 12:00 pm **Optional Golf Scramble- *The Crossings at Carlsbad***
(Advanced registration and fee required)

11:30 am – 5:30 pm **EPA Grant Workshop- *Sunset Ballroom***
(Optional workshop for NGA member companies interested in participating in the EPA grant projects)

NGA was selected for a \$2.1 Million EPA Grant to help advance sustainability initiatives including the availability and quality of Environmental Product Declarations (EPDs) for architectural glass. Learn details about the four focus points of the grant, what it means for NGA member companies and how to participate.

1. **Primary Flat Glass LCI Data Aggregation.** Provide support to improve granularity of primary flat glass LCI data, as well as PCR update. Who benefits: Manufacturers; Fabricators use the results.
2. **EPD Generator Tool for Processed Glass.** Develop robust generator tool capable of producing both LCA data reports and full 3rd-party reviewed EPDs for processed glass products in conformance with ISO standards. Who benefits: NGA Member Companies involved in Glass Processing and Fabricating of glass including heat-treated, tempered, insulating, laminated, coated, cut, etched, drilled, polished, edged, etc.
3. **EPD Development Assistance for Glass Fabricators.** Provide technical, educational, and financial assistance to glass fabricator members for EPD development. Who benefits: NGA Member Companies involved in Glass Processing and Fabricating of glass including heat-treated, tempered, insulating, laminated, coated, cut, etched, drilled, polished, edged, etc.
4. **End-of-life LCA data collection on architectural glass recycling.** To improve the understanding about glass end-of-life and quality of LCA part D data, quantify glass recovery rates and track end-use outcomes for recycled glass on 1-3 deconstruction projects. Who benefits: Glass Recyclers, entire industry.

Workshop facilitators: Urmilla Sowell of NGA, NGA EPA Grant Consultant Tom Culp of Birch Point Consulting and Bill LeRoy of the U.S. EPA.

6:30 pm – 7:30 pm **Welcome Reception- *Sunset Terrace***

Tuesday, February 4, 2025

7:30 am **Registration Desk Open**

8:00 am – 9:00 am **Networking Breakfast**

9:00 am – 9:30 am **Orientation & Introductions**

This interactive session provides an overview of the conference program, NGA committee structure and resources. Meet your peers- all conference attendees will introduce themselves. This session, facilitated by Karen Wegert, NGA director of technical services, will outline what to expect at NGA Glass Conference and how to get involved.

9:30 am – 10:15 am **Presentation: Change on the Horizon: Market Factors to Watch in 2025**

The United States started a new administration, and the domestic market is still feeling the effects of post-COVID inflation. What are the headwinds facing glass and glazing firms in 2025? How might proposed tariffs affect the industry? Will companies need to brace for a return to rising inflation? And how are global supply chains performing? This session, presented by Katy Devlin, NGA vice president of content & programming, offers key industry metrics to watch that will help companies navigate an uncertain environment.

Schedule- NGA Glass Conference: Carlsbad

Westin Carlsbad Resort | General Session: *Sunset Ballroom* | Meals: *Sunset Terrace*

All conference participants and guests are invited & encouraged to participate in all sessions and meals.

10:30 am – 12:00 pm **Presentation: Market Trends & New Initiatives**

In the ever-changing political and environmental landscape, how can we ensure glass and glazing products are accurately represented in energy efficiency programs, and the appropriate funding is allocated for window upgrades? Industry experts in sustainability discuss the current state of the market for high performance glazing, the relevant standards and specifications, building energy code implications, and ongoing research & testing. Presented by Helen Sanders of Technoform, NGA Energy Codes Consultant Tom Culp of Birch Point Consulting and NGA Vice President of Advocacy & Technical Services Urmilla Sowell.

12:00 pm – 1:00 pm **Networking Lunch**

1:00 pm – 2:00 pm **Presentation: Glazing Performance Requirements in U.S. Federal Policy**

The Federal Government manages a nationwide real estate portfolio of several hundred million square feet, overseeing over \$100 billion in products and services via federal contracts across dozens of agencies. Hear how one agency in particular has taken an industry leading stance to establish building design, construction standards and performance requirements. Learn about these requirements as they relate to glass and glazing first-hand from government expert Lance Davis, FAIA, LEED Fellow.

Learning Objectives for 1.0 AIA LU:

- Examine sustainability through federal legislation, executive orders and federal policy
- Discuss glass and glazing specifically as they relate to federal standards and sustainability policy
- Explore the future direction of sustainability in U.S. federal policy
- Interpret P100 *Facilities Standards for the Public Buildings Service*, updated in 2024 and how it's applied to design and construction projects

2:00 pm – 3:00 pm **Presentation: Advocacy in 2025**

What does an all-Republican sweep of the US Presidency, House and Senate mean for the glass and glazing industry? How will the proposed tariffs impact us? Laurie Purpuro, Government Affairs Counselor for K&L Gates, NGA's lobbying firm, will discuss these issues. Find out what NGA member participants can expect at NGA Glass & Glazing Advocacy Days in Spring 2025, and how we can frame our priority issues to be most effective when talking with legislators.

3:00 pm – 4:30 pm **Energy, Structural & Fire Building Codes & Standards Update**

Get the latest updates on building codes and standards impacting your business. Learn how to influence the direction of the model building codes, green codes, and standards. Presented by Urmilla Sowell, NGA Vice President of Advocacy & Technical Services, Tom Culp of Birch Point Consulting, NGA Energy Codes Consultant; Thom Zarembo and Nick Resetar of Roetzel & Andress, NGA Fire and Structural Codes Consultants.

4:30 pm – 5:00 pm **Presentation: Spacer and Sealant Technology**

A deep dive into insulating glazing spacer and sealant systems.

6:00 pm – 8:00 pm **Volunteer Celebration Dinner – *Grand Ballroom/Ocean Blue Lawn***

Schedule- NGA Glass Conference: Carlsbad

Westin Carlsbad Resort | General Session: *Sunset Ballroom* | Meals: *Sunset Terrace*

All conference participants and guests are invited & encouraged to participate in all sessions and meals.

Wednesday, February 5, 2025

7:00 am – 8:00 am **10th Annual NGA Fun Run/Walk-** Meet at Sunset Terrace

8:30 am **Registration Desk Open**

8:30 am – 9:30 am **Networking Breakfast**

9:30 am – 11:00 am **NGA Advocacy Committee & Sustainability Sub-Committee**

11:00 am – 12:00 pm **Presentation: Industry Collaboration**

Certification program updates for safety glazing (Safety Glazing Certification Council (SGCC)), insulating glazing (Insulating Glass Certification Council (IGCC)) and Architectural Glass & Metal Technician (AGMT) Certification will be presented by Terry Schaefer and Kristin Best of Administrative Management Systems, Inc. (AMS). Amy Becker of Fenestration Glazing Industry Alliance (FGIA) will present an update on FGIA activities.

12:00 pm – 1:00 pm **Networking Lunch**

1:00 pm – 2:00 pm **NGA Forming Committee**

2:00 pm – 5:00 pm **Workshop: School Security**

The School Security Workshop will focus on fenestration assemblies for school building security. Workshop facilitators will cover:

Testing to ASTM F3561 *Standard Test Method for Forced-Entry Resistance of Fenestration Systems After Simulated Active Shooter Attack*, including details of the standard, what types of fenestration products meet the various levels, and practical testing considerations based on existing test results.

- Comparison with other security standards; Why test to F3561?
- Incorporating ASTM F3561 into the building project
- How these products also serve other applications- forced entry, safety/security + fire; security + hurricane, etc.

School security in State and Federal legislation

- Utah Bill; Refining the NGA building security one-pager
- The role of surface-applied film in school security

School security building code proposal; coordination with other industry groups

5:00 pm – 6:00 pm **Networking Reception – *Water Tower***

Thursday, February 6, 2025

8:00 am **Registration Open**

8:00 am – 9:00 am **Networking Breakfast**

9:00 am – 12:00 pm **NGA Fabricating Committee**

Insulating, Tempering, Laminating, Decorative, Protective Glazing, NGA Installing Committee update

12:00 pm – 1:00 pm **Networking Lunch; Conference Conclusion**



ARTICLE XV
ANTI-TRUST COMPLIANCE

SECTION 1. POLICY

It is the undeviating policy of the Association to comply strictly with the letter and spirit of all federal, state and applicable international trade regulations and antitrust laws. Any activities of the Association or Association-related actions of its staff, members, officers, directors or chapter officials which violate these regulations and laws are detrimental to the interests of the Association and are unequivocally contrary to Association policy.

SECTION 2. IMPLEMENTATION

Implementation of the antitrust compliance policy of the Association shall include, but shall not be limited to, the following:

2.1 Association membership, directors and committee/alliance/division meetings shall be conducted pursuant to agendas distributed in advance to attendees; discussions shall be limited to agenda items; there shall be no substantive discussions of Association matters other than at membership, directors and committee/alliance/division meetings; minutes shall be distributed to attendees promptly.

2.2 All Association activities or discussions shall be avoided which might be construed as tending to: (1) raise, lower, or stabilize prices; (2) regulate production; (3) allocate markets; (4) encourage boycotts; (5) foster unfair trade practices; (6) assist monopolization; or in any way violate federal, state or applicable international trade regulations and antitrust laws.

2.3 No individual other than the Chair of the Board and Chief Executive Officer--whether staff, member, officer, director or committee/alliance/division official--is authorized to communicate on behalf of the Association to any person or firm outside the Association except with the explicit, unequivocal approval of the Chair of the Board or President. No such individual may bind or commit the Association to any offer, contract, policy, program, position or decision without that approval. And no such individual may hold out himself or herself, or willingly appear to do so, as representing the Association without that approval.

2.4 NGA legal counsel shall attend all NGA Board and membership meetings, either in person or via teleconference. Attendance of counsel at other meetings shall be at the discretion of the NGA Chair of the Board.

2.5 Association staff, members, officers, directors or committee/alliance/division officials who participate in conduct which the Board of Directors, by a two-thirds (2/3) majority vote, determines to be contrary to the Association anti-trust compliance policy shall be subject to disciplinary measures up to, and including, termination.



NATIONAL GLASS ASSOCIATION

CONFLICTS OF INTEREST POLICY

This Conflicts of Interest Policy applies to all National Glass Association (NGA) staff, members, officers, directors, chapter officials, and all members of a committee, division or task force of NGA as designated by the Board of Directors (“interested persons”).

As an interested person, I recognize that I owe duties of care and loyalty to NGA. One aspect of fulfilling those duties is to avoid conflicts of interest in which my allegiance might be split between my position with NGA and some other personal, professional, or volunteer position or responsibility. To help avoid conflicts, I will disclose other situations or areas in which it might even appear that I have interests conflicting with those of NGA. I invite any further review by the NGA of any aspects of these situations or areas which might be considered appropriate.

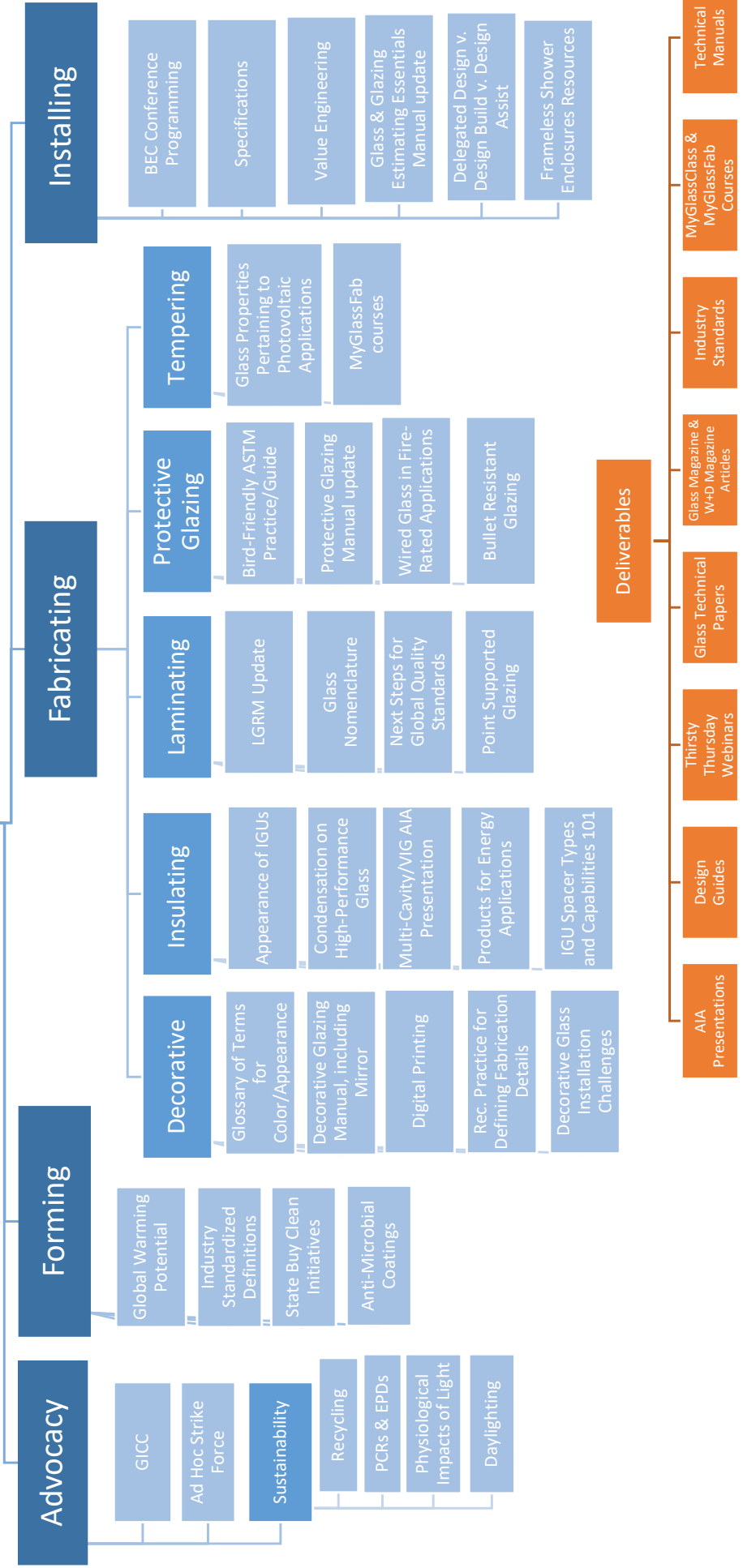
Using the NGA Conflicts of Interest Disclosure Form provided by NGA staff, I will disclose potential conflicts to the Chair of the Board (or in the case of the Chair, to the Treasurer) and/or to the members of any committees, divisions or task forces of NGA as designated by the Board annually and as they arise. For each interest disclosed, the Chair (or Treasurer) will determine whether to: (a) take no action; (b) assure full disclosure to the Board of Directors and/or the relevant committee, division, or task force; (c) ask for recusal from participation in related discussions or decisions; or (d) ask for voluntary resignation from the Board, or, potentially, removal in accordance with NGA’s removal procedures or voluntary resignation from the relevant committee, division or task force. NGA’s CEO will also monitor proposed and ongoing transactions for potential conflicts of interest.

Disclosure of interests:

Personal, professional, or volunteer positions or responsibilities, including those of mine and/or my family members, that might give rise to conflicts (examples include serving in a position of leadership for another association in the glass or residential window and door industry, or performing work for the NGA or another association in the glass or residential window and door industry).



National Glass Association Board of Directors



Committee Voting Protocol Parameters

| | Advocacy | GICC (Regulatory) | Fabricating | Forming (Flat Glass Mfrs ONLY) | Installing |
|--|---|---|-----------------------|--------------------------------|-----------------------|
| Members may select activity status as indicated. | Voting Corresponding - no vote, but information is distributed to them for selected committees | | | | |
| Member companies are required to ACTIVELY return ballots on time | Yes | | | | |
| Operating Protocol | No | Yes | No | Yes | No |
| Voting/Balotting Each company shall have a primary and alternate voting member assigned | Yes | Yes | Yes | Yes | Yes |
| Number of votes per member company | ONE vote per company | ONE vote per company | ONE vote per company | ONE vote per company | ONE vote per company |
| Fee assessments | No | Yes | No | Yes | No |
| Voting/Balotting Period (duration) – Voting closes at 5 pm eastern time on closing day | 21 business days | | | | |
| Number of consecutively missed ballots per committee allowed after which loss of voting privileges on that committee will be in effect for three months | 3 | N/A | 3 | 3 | 3 |
| <ul style="list-style-type: none"> Repealed vote to be treated as corresponding member and get all notices and information from committee. Request for vote to be returned to a member will be addressed by Committee Chair with approval by BOD and must be submitted in writing. A new voting member must be named. | | | | | |
| Voting Reminders (NGA to set up system to inform of ballot close) - only sent to those remiss | At 14 business days prior to closing of ballot At 7 business day prior to closing of ballot | | | | |
| Minimum ballot response rate (of the voting members) for ballot validity. | 66% | 51% or 75% - See GICC Operating Protocol | 66% | 66% | 66% |
| Threshold for approval of all committee ballots. Abstentions are removed from count for simple majority | simple majority (51%) | | simple majority (51%) | simple majority (51%) | simple majority (51%) |
| <p>Votes to be cast as one of the indicated choices.</p> <p>Negative votes must have comments. Comments must contain the following information to be considered:</p> <ul style="list-style-type: none"> Title of document being commented on Direct and clear reference of material being rejected (paragraph, line, table number, figure number etc.) Reason for rejection Suggested language or changes required to resolve negative. All properly submitted Negative comments from voting members must be considered. Other Negative comments (non-voting, submitted without suggested language for improvement, submitted without clear reference of material being rejected, etc.) may be taken up as new business or found non-persuasive at the discretion of the Chair. | <p>Approve</p> <p>Approve with Comment</p> <p>Negative with Comment</p> <p>Abstain</p> | | | | |

Chair: Paul Bush, Vitro Architectural Glass

NGA Antitrust Policy

It is the undeviating policy of the Association to comply strictly with the letter and spirit of all federal, state and applicable international trade regulations and antitrust laws. Any activities of the Association or Association-related actions of its staff, members, officers, directors or chapter officials which violate these regulations and laws are detrimental to the interests of the Association and are unequivocally contrary to Association policy. *Please refer to NGA Bylaws for SECTION 2. IMPLEMENTATION of the antitrust compliance policy of the Association.*

Committee Mission Statement

The NGA Advocacy Committee advocates on behalf of the glass and glazing industry to:

- Support the Glazing Industry Code Committee
- Educate stakeholders and consumers on the benefits of glass in the built environment
- Promote and protect the interests of the glass and glazing industry.

Agenda Items

1. Call to Order –*Chair Paul Bush, Vitro Architectural Glass*
2. Review of [Anti-Trust Statement](#) and [Conflict of Interest](#) Policies
3. Appointment of Recording Secretary – *Georgia Scalfano/Amber Johnson, NGA*
4. Minutes of the Previous Meeting- August 7, 2024 NGA Glass Conference: Milwaukee
5. Old Business
 - a. [Recap](#) & [Follow-up](#) of 2024 NGA Glass & Glazing Advocacy Days event
 - i. Tax credit 48 update – *Tom Culp, Birch Point Consulting, NGA Energy Code Consultant*
 - b. Legislative Bill Tracking (Ad hoc strike force team) – *Urmilla Sowell, NGA*
 - i. Utah School Security bill
 - c. Librarian legislative search – *Nick Resetar, Roetzel & Andress, NGA Code Consultant*
6. Sustainability Subcommittee – *Kayla Natividad, Pilkington North America*
 - a. Product Category Rules (PCR), Environmental Product Declarations (EPD) [updates](#) – *Urmilla Sowell, NGA*
 - b. Task Group - Sustainability & Recycling – *Kyle Sword, Pilkington North America – Task Group Chair*
 - i. Glass Technical Paper (GTP) FB40-14 *Recyclability of Architectural Glass* update- at final ballot
 - ii. New GTP AD01-25 *Overcoming Challenges of Circularity and Architectural Glass Recycling*- at re-ballot
 - iii. World of Glass Map recycling data
 - c. Systematic Reviews (5-year updates)
 - i. FM04-12 (2019) *Daylighting*- to be combined with FB53-17 (2024) *Benefits of Decorative Glass in Daylighting* to become new GTP AD02-25 *Benefits of Glass in Daylighting Applications* – will go to ballot
7. New Business
 - a. Planning for 2025 Glass & Glazing Advocacy Days - Priority Topics for 2025 event – updating one-pagers with specific “asks” for legislators
 - i. [High-Performance Windows Can Help Save the World \(tax credit\)](#)
 - ii. [School Security: Windows and Doors Respond First](#)
 - iii. [Training and Upskilling Workers to Meet Labor Demand](#)
 - iv. Other topics only if a bill is introduced
 - b. [Tips](#) for communication with legislators
8. Adjournment

Next Events:

NGA Advocacy Days | Multiple Dates in 2025 | Washington, D.C.
NGA Glass Conference: Ann Arbor | Sept. 29-Oct. 2, 2025 | Ann Arbor, MI



ADVOCACY COMMITTEE MINUTES

Aug. 7, 2024 | 10:30 am – 12:00 pm
The Trade, Milwaukee: Founders Ballroom

Acting Chair: Jon Griggs

Guardian Glass

Chair: Paul Bush

Vitro Architectural Glass

NGA Antitrust Policy

It is the undeviating policy of the Association to comply strictly with the letter and spirit of all federal, state and applicable international trade regulations and antitrust laws. Any activities of the Association or Association-related actions of its staff, members, officers, directors or chapter officials which violate these regulations and laws are detrimental to the interests of the Association and are unequivocally contrary to Association policy. *Please refer to NGA Bylaws for SECTION 2. IMPLEMENTATION of the antitrust compliance policy of the Association.*

Committee Mission Statement

The NGA Advocacy Committee advocates on behalf of the glass and glazing industry to:

- Support the Glazing Industry Code Committee
- Educate stakeholders and consumers on the benefits of glass in the built environment
- Promote and protect the interests of the glass and glazing industry.

Agenda Items

1. Call to Order – *Acting Chair Jon Griggs, Guardian Glass*
 - a. Called to order at 10:37 am CT
2. Review of [Anti-Trust Statement](#) and [Conflict of Interest](#) Policies
 - a. Reviewed
3. Appointment of Recording Secretary – *Georgia Scalfano/Amber Johnson, NGA*
4. [Minutes](#) of the Previous Meeting- February 6, 2024
 - a. Motion to accept: Courtney Little; Seconded: Kayla Natividad; Approved unanimously
5. Old Business
 - a. [Recap](#) & Next Steps of 2024 NGA Glass & Glazing Advocacy Days event
 - i. [High-Performance Windows Can Help Save the World](#)
 - ii. [School Security: Windows and Doors Respond First](#)
 - iii. [Saving Birds with Effective Glass Solutions](#)
 - iv. [Training and Upskilling Workers to Meet Labor Demand](#)
 - v. [Tips](#) for communication with legislators
 - b. Ad hoc strike force team – Urmilla Sowell, NGA
 - i. GSA P100 update – *Georgia Scalfano, NGA*
 1. Updated every 3 years; major updates from 2024:
 - a. Thermal Performance Requirements; Daylighting and Views; Security and Safety; Sustainability and Green Building Standards; Inclusion of ICC/MBI Standards; Stricter Requirements for Fenestration Air Leakage
 - b. Continued reference to NGA's Bird Friendly Design Guide
 - ii. Section 48 Tax Credit update – *Tom Culp, Birch Point Consulting*
 1. Credit for electrochromic glass (not other dynamic glazing) was added as part of IRA. Short timeframe – current date is Jan. 2025
 2. NGA submitted comment to Treasury on implementation
 - a. Interpret language to include other dynamic glazing technologies defined by ASHRAE 90.1 and IECC – Answer: no
 - b. Clarify the tax credit applies to not just the glass but the entire system (framing, controls, installation labor) – Answer: yes
 3. May be opportunities to expand and extend tax credit in the coming year
 - a. Sen. Markey and Sen. Wicker introduced Dynamic Glass 2.0 Act
 - i. Extends date to Jan. 1, 2033 but does not change anything else
 - b. Other broader legislation affecting sections 48 and 48E will be considered next year

6. Sustainability Subcommittee – *Kayla Natividad, NSG | Pilkington*
 - a. Embodied Carbon in Construction Calculator (EC3 Calculator)- *Georgia Scalfano, NGA*
 - i. New categories developed
 - ii. Currently 10 active PCRs in EC3 database
 - iii. Part of NGA’s funding from EPA is to develop a new EPD generator
 - b. Product Category Rules (PCR), Environmental Product Declarations (EPD) [updates](#) – *Urmilla Sowell, NGA*
 - i. Flat Glass PCR - Valid thru Sept 30, 2025
 1. Published by NSF describing requirements for LCAs and EPD of flat glass
 - ii. Flat Glass EPD - Valid until Dec 20, 2024
 1. NGA flat glass member companies published an industry average EPD for flat glass produced in the US in Dec. 2019.
 - a. Average GWP is 1,430 kg CO2 eq
 - iii. Processed Glass PCR - Valid until June 30, 2024
 1. UL will start working with industry stakeholders to update
 2. EPA grant funds will be used to update
 - iv. Fenestration PCR - Valid until 2027
 1. Updated draft PCR reviewed by LCA expert panel
 2. NSF Fenestration PCR published Jan. 2024
7. New Business
 - a. Planning for 2025 Glass & Glazing Advocacy Days
 - i. Tentatively scheduled for May 13-14, 2025, pending the congressional calendar
 - ii. Initiatives for 2025 event
 1. [Window Recyclability: Circular Economy](#)
 - a. Need to define a clear “ask” and tie to an existing bill before we bring to the event
8. Adjournment
 - a. Adjourned at 11:45 am CT

Next Events: [GlassBuild America](#) | Sept 30-Oct 2, 2024 | Dallas, TX
 NGA Installing Committee meeting at Glazing Executives Forum | Sept 30 | Dallas
[NGA Glass Conference: Carlsbad](#) | Feb 3-6, 2025 | Carlsbad, CA
[BEC Conference](#) | Mar 2-4, 2025 | Las Vegas, NV
 NGA Advocacy Days | Spring 2025 | Washington, D.C.

Chair: Aaron Thompson, Viracon
athompson@viracon.com

Vice Chair: Bobby Chestnut, Walker Glass
bchestnut@walkerglass.com

NGA Antitrust Policy

It is the undeviating policy of the Association to comply strictly with the letter and spirit of all federal, state and applicable international trade regulations and antitrust laws. Any activities of the Association or Association-related actions of its staff, members, officers, directors or chapter officials which violate these regulations and laws are detrimental to the interests of the Association and are unequivocally contrary to Association policy. *Please refer to NGA Bylaws for SECTION 2. IMPLEMENTATION of the antitrust compliance policy of the Association.*

1. Call to Order - *Chair Aaron Thompson, Viracon*
2. Review of Anti-Trust Statement and Conflict of Interest Policies
3. Appointment of Recording Secretary – *Georgia Scalfano/Amber Johnson, NGA*
4. Minutes of the Previous Meeting – August 7-8, 2024 NGA Glass Conference: Milwaukee
5. Committee Business – *Aaron Thompson, Viracon*
 - a. Ballot Participation
 - b. Redline version of re-ballotted documents- implemented with Appearance of IGUs and Glass Properties Pertaining to Photovoltaic Applications
 - c. ASTM C14 Update- Standards being revised and/or balloted
 - i. *C1036 Standard Specification for Flat Glass - Jeff Moore, Corning*
 - ii. *C1048 Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass – Rick Wright*
 - iii. *C1172 Standard Specification for Laminated Architectural Flat Glass- Julia Schimmelpenningh, Eastman/Saflex*
 - iv. *C1349 Standard Specification for Architectural Flat Glass Clad Polycarbonate - Urmilla Sowell, NGA*
 - v. *C1422 Standard Specification for Chemically Strengthened Flat Glass – Arun Varshneya, Saxon Glass Technologies*
 - vi. *C1503 Standard Specification for Silvered Flat Glass Mirror – Martin Boulay, Walker Glass*
 - vii. *C1900 Practice for Weathering and Evaluation of Laminated Glass- Julia Schimmelpenningh, Eastman/Saflex*
 - d. ASTM C14 New activities/work items status
 - i. *WK47853 New Standard Bird Tunnel Testing of Transparent Glazing Materials in Perpendicular “Fly-through” Configuration – Stefan Knust, City of NY, and Kevin Ramus, KR Glass Consulting*
 - ii. *WK72641 New Standard Center-Punch Fragmentation of Fully Tempered Glass – Urmilla Sowell, NGA*
 - iii. *WK 88132 New Standard Specification for Decorative Enamels on Flat Glass – Michael Saroka, Goldray Glass*

Insulating – Robert Carlson, TriStar

- a. [Statement](#) on Argon and gas filled IGUs- added to glass.org/advocacy
- b. Best Practices for IGUs at Elevation
 - i. Existing industry references: NGA/FGIA TB-1601-95(14) Guidelines for Capillary Tubes; [FGIA TM-3200-21 IG Cavity Pressure Compensation](#)
- c. Task Groups
 - i. FB27-11 (2015) *Considerations for the Appearance of IGUs* – at final ballot
 - ii. Condensation on High-Performance Glass - *Kayla Natividad, Pilkington North America - Task Group Chair*
 - iii. VIG AIA presentation – will be combined with existing Multi-Cavity AIA presentation
- d. 2025 Systematic Reviews (5-year updates)
 - i. FB66-20 *Introduction to Vacuum Insulating Glazing* – to be combined with FB72-21 *Introduction to Hybrid VIG Fabrication*
 - ii. FB63-19 *Products for Energy Applications* – *Aaron Thompson, Viracon - Task Group Chair*
 1. Call for volunteers to review ballot comments
- e. New Business- Insulating

- i. New GTP- Spacer Types and Capabilities 101 – *Michael Speicher, H.B. Fuller Company - Task group Chair*

Tempering

- a. Task Groups
 - i. FB39-14 *Glass Properties Pertaining to Photovoltaic Applications - Steve Marino, Vitro, Task Group Chair* -Task group resolved ballot comments- out for re-ballot
- b. Systematic Reviews (5-year updates)
 - i. FB65-20 *Glass for Personal Protective Barriers*- need feedback on relevance of the document
 - ii. FB13-07 *Importance of Fabrication Prior to Heat-Treatment*- hold for ASTM C1048 update
 - iii. FB45-14 *Recommended Applications for Heat-Treated Architectural Glass*- hold for ASTM C1048 update
 - iv. FM02-09 *Protecting Glass Against Weld Splatter*- to be combined with FB03-03 *Construction Site Protection and Maintenance of Architectural Glass*
- a. New Business- Tempering
 - i. New MyGlassFab courses- *Jenni Chase, NGA*
 - 1. Call for volunteers

Laminating – *Julia Schimmelpenninck, Eastman | Saflex*

- a. Task Groups
 - i. Glass Nomenclature – Schema 1 -*Michael Saroka, Goldray Glass, Task Group Chair*- at re-ballot
 - ii. Laminated Glazing Reference Manual, *Julia Schimmelpenninck, Eastman | Saflex, Task Group Chair*- hold for above
 - iii. FB07-05 *Point Supported Glazing* – call for volunteers to review ballot comments
 - iv. Next Steps for Global Quality Standards- *Jon Griggs, Guardian Glass LLC, Task Group Chair*- call for volunteers
- b. 2025 Systematic Reviews (5-year updates)
 - i. FB14-07 *Glass Floors and Stairs* – will go to ballot
 - ii. FB48-15 *Effects of Moisture, Solvents and Other Substances on Laminated Glazing Edges* – will go to ballot
 - iii. FB59-18 *Heat-Treated Laminated Glass Exposed Edges* – hold for ASTM C1048 update
 - iv. IN04-14 *Safety Guidelines for Deglazing Structural Silicone (Installing Committee GTP)*- to be combined with FB09-06 *Suggested Procedures for Dealing with Broken Glass*
- c. New Business- Laminating
 - i. Laminating educational video from 2007- potential to update/revise

Decorative – *Michael Saroka, Goldray Glass*

- a. Decorative Glazing Manual update
- b. Task groups
 - i. FB77-24 *Determining an Acceptable Color Variance for Decorative Glass* – *published!*
 - ii. Introduction to Digital Print- *Gin Benner, Agnora Inc., Task Group Chair*
 - iii. Recommended Practice for Defining Fabrication Details- *Michael Saroka, Goldray Glass, Task Group Chair*- call for volunteers
- b. 2025 Systematic Reviews (5-year updates)
 - i. FB41-14 *Design Considerations for Use of Sealants/Adhesives with Coated Glass* – will go to re-ballot
 - ii. FB19-08 *Guidelines for Handling and Cleaning Decorative Glass*- included in Decorative Glazing Manual; also keep as separate resource to be shared with building owners and installers
 - iii. FB67-20 *Guidelines on How to View Decorative Glazing Products in Interior and Exterior Applications*- included in Decorative Glazing Manual; hold balloting for updates to ASTM C1048 and WK88132.

- iv. FB68-20 *Guidelines for Measuring Color of Decorative Glazing Materials in the Field*- included in Decorative Glazing Manual; consider editing for consistency of definitions/terms used and consistency with Determining an Acceptable Color Variance concerning the CMC Delta E Calculation.
- v. FB70-20 *Best Practices for Installed Painted Decorative Glass*- included in Decorative Glazing Manual
- c. New Business- Decorative
 - i. New Task Group: Decorative Glazing Installation Challenges- joint with NGA Installing Committee- call for volunteers
 - ii. Glossary of Terms for Color and Appearance – former GTP; included in Decorative Glazing Manual and NGA Glossary – call for volunteers to update definitions

Protective Glazing – Vaughn Schauss, Kuraray America

- a. School Security Glazing
 - i. Security Glazing for Schools AIA presentation - *Julie Schimmelpenninck, Eastman/Saflex - Task Group Chair* – complete!
- b. Bird-Friendly Glazing– *Marc Deschamps, Walker Glass- Task Group Chair*
 - i. ASHRAE 189.1 – adding bird-friendly requirements – *Tom Culp, Birch Point Consulting, NGA Energy Code Consultant*
 - ii. ASTM Practice/Guide to promote uniform implementation of NGA *Bird Friendly Glazing Design Guide*
 - 1. Update of NGA *Bird Friendly Glazing Design Guide*
 - iii. Bird-Friendly legislation database- *Georgia Scalfano, NGA*
- c. Fire-Rated Glazing
 - i. Wired Glass in Fire-Rated Safety Glazing Applications GTP- review ballot comments
- d. New task group to add to current Bullet Resistant Glazing GTP on how to clean and maintain bullet resistant glass
- e. Protective Glazing Manual Update- call for volunteers
- f. Systematic Reviews (5-year updates)
 - i. FB43-14 *Security Glazing* – to be combined with other related GTPs and add to Protective Glazing Manual
- g. New Business- Protective Glazing

NGA Installing Committee Update – Chair Joey Aragon, Aragon Construction

- a. Value Engineering – *Rob Carlson, Tristar Glass- Task Group Chair*
 - i. How to overcome challenges in implementing high-performance glazing products
- b. Delegated Design vs Design Build vs Design Assist- *Matt Kamper, Woodbridge Glass – Task Group Chair*
- c. Glass & Glazing Estimating Essentials Manual update- *Chuck Knickerbocker, Technical Glass Products (Allegion) – Task Group Chair*
- d. Frameless Shower Enclosures Resources – *Danny Donahue, FHC The Glazing Supply Company – Task Group Chair*

6. NGA Fabricating Committee New Business

- a. New NGA Event for Fabricators in Spring 2026

7. Adjournment

Next Events: [BEC Conference](#) | Mar 2-4, 2025 | Las Vegas, NV
 NGA Advocacy Days | Multiple Dates in 2025 | Washington, D.C.
 GlassBuild America | Nov. 4-6, 2025 | Orlando, FL



FABRICATING COMMITTEE MINUTES

Aug 07, 2024 | 9:15 am – 10:15 am; 2:30 pm – 4:00 pm

Aug 08, 2024 | 2:30 pm – 4:00 pm

The Trade, Milwaukee: Founders Ballroom

Chair: Aaron Thompson, Viracon
athompson@viracon.com

Vice Chair: Bobby Chestnut, Walker Glass
bchestnut@walkerglass.com

NGA Antitrust Policy

It is the undeviating policy of the Association to comply strictly with the letter and spirit of all federal, state and applicable international trade regulations and antitrust laws. Any activities of the Association or Association-related actions of its staff, members, officers, directors or chapter officials which violate these regulations and laws are detrimental to the interests of the Association and are unequivocally contrary to Association policy. *Please refer to NGA Bylaws for SECTION 2. IMPLEMENTATION of the antitrust compliance policy of the Association.*

1. Call to Order - *Chair Aaron Thompson, Viracon*
 - a. Called to order at 9:17 am CT
2. Review of [Anti-Trust Statement](#) and [Conflict of Interest](#) Policies
 - a. Reviewed
3. Appointment of Recording Secretary – *Georgia Scalfano/Amber Johnson, NGA*
4. [Minutes](#) of the Previous Meeting – February 6-8, 2024
 - a. Motion to approve: Kayla Natividad; Seconded: Julia Schimmelpenningh; approved unanimously
5. Committee Business – *Aaron Thompson, Viracon*
 - a. Ballot Participation
 - i. One voting member per company
 - ii. Voting privileges will be lost if three consecutive ballots are missed
 - iii. If a negative vote is submitted, a suggested fix must be provided
 - b. New coding system on updated and republished GTPs
 - i. New coding system has been implemented
 - c. Redline version of re-ballotted documents
 - i. Will be testing this method in upcoming ballots
 - d. NGA Initiatives
 - i. [Recruitment toolkit](#)
 1. Resource developed for glaziers; free to download

Tempering - Rick Wright, Oldcastle BuildingEnvelope

- a. *Presentation- On-line, non-contact stress measurement in heat-treated glass*
 - i. *Speaker: Antti Aronen, Glaston Process Development Manager, Tempering*

Adjourn until 2:30 pm

Fabricating Committee Meeting | Wednesday, Aug 7, 2024 | 2:30 pm – 4:00 pm

1. Call to Order - *Chair Aaron Thompson, Viracon*
 - a. Called to order at 2:33pm CT
2. Committee Business, continued

Tempering – Rick Wright, Oldcastle BuildingEnvelope

 - b. Task Groups
 - i. [One Optical Number Does Not Fit All](#) GTP – *Chuck Wencl, Viracon, Task Group Chair* – ballot comments resolved; updated document republished in June 2024
 - ii. [Glass Properties Pertaining to Photovoltaic Applications](#) GTP- *Steve Marino, Vitro, Task Group Chair* - Call for volunteers to join task group to resolve ballot comments
 - a) Volunteers: Aaron Thompson, Rick Wright, Randy Reynolds, Mike Hammond, Shannon Jurca
 - c. 2024 Systematic Reviews (5-year updates)



FABRICATING COMMITTEE MINUTES

Aug 07, 2024 | 9:15 am – 10:15 am; 2:30 pm – 4:00 pm

Aug 08, 2024 | 2:30 pm – 4:00 pm

The Trade, Milwaukee: Founders Ballroom

- i. *Mitigating Thermal Stress Breakage in Heat-Treated Spandrel Glass*- Republished in June 2024
- ii. *Recommended Applications for Heat-Treated Architectural Glass*- will go to ballot
- d. ASTM C14 Update- Standards being revised and/or balloted – *Rick Wright, Oldcastle BuildingEnvelope*
 - i. *C1036 Standard Specification for Flat Glass* - *Jeff Moore, Corning*
 - ii. *C1048 Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass* – *Rick Wright, Oldcastle BuildingEnvelope*
 - iii. *C1172 Standard Specification for Laminated Architectural Flat Glass*, *Julia Schimmelpenningh, Eastman*
 - iv. *C1349 Standard Specification for Architectural Flat Glass Clad Polycarbonate* - *Urmilla Sowell, NGA*
 - v. *C1422 Standard Specification for Chemically Strengthened Flat Glass* – *Arun Varshneya, Saxon Glass Technologies*
 - vi. *C1503 Standard Specification for Silvered Flat Glass Mirror* – *Martin Boulay, Walker Glass*
 - vii. *C1900 Practice for Weathering and Evaluation of Laminated Glass*, *Julia Schimmelpenningh, Eastman*
- e. ASTM C14 New activities/work items status
 - i. *WK47853 New Standard Bird Tunnel Testing of Transparent Glazing Materials in Perpendicular “Fly-through” Configuration* – *Stefan Knust, City of NY, and Kevin Ramus, KR Glass Consulting*
 - ii. *WK72641 New Standard Center-Punch Fragmentation of Fully Tempered Glass* – *Urmilla Sowell, NGA*
 - a) *Volunteers: Rick Wright, Rob Carlson, Julia Schimmelpenningh, DJ Weil*
 - iii. *WK 88132 New Standard Specification for Decorative Enamels on Flat Glass* – *Michael Saroka, Goldray*

Laminating – Julia Schimmelpenningh, Eastman

- a. ASTM C1172 Review – Standard Specification for Laminated Architectural Flat Glass
 - i. C14 – Glass
 - ii. E06 – Buildings
 - iii. F12 - Security
 - iv. Discussion of global quality standards
 - 1. Laminated Glass Quality Parameter Review – comparison of three standards: ASTM C1172-24, EN ISO 12543-5, and AS/NZS 4667
 - a. Create task group to determine next steps for global quality standards
 - i. Volunteers: Jon Griggs (chair), Vaughn Schauss, Rob Carlson, Joe Green, Rick Wright, Melissa Szotkowski, DJ Weil, Jan Johnson, Tom Wojtowicz, Tom Donovan, Julia Schimmelpenningh
- b. Task Groups
 - i. *Dynamic Glazing for High Performance Buildings GTP* – ballot comments resolved; updated document republished in March 2024
 - ii. [Glass Nomenclature](#)
 - 1. Task group work, being drafted
 - iii. [Laminated Glazing Reference Manual](#)
 - 1. Has been on pause for above Nomenclature group. Will start back up soon.
- c. 2024 Systematic Reviews (5-year updates)
 - i. *Hurricane Product Substitution*- Republished in February 2024
 - ii. *Tornado Resistant Glazing*- Republished in July 2024
 - iii. *Laminated Glass Use in Furniture*- at Final ballot in August
 - iv. *Point Supported Glazing* - will go to ballot
 - v. *Approximate Weight of Interlayer Used in Laminated Architectural Flat Glass* - will go to ballot
 - vi. *Design Considerations for Use of Sealants/Adhesives with Coated Glass* - will go to ballot
- d. New Business- Laminating



FABRICATING COMMITTEE MINUTES

Aug 07, 2024 | 9:15 am – 10:15 am; 2:30 pm – 4:00 pm

Aug 08, 2024 | 2:30 pm – 4:00 pm

The Trade, Milwaukee: Founders Ballroom

Decorative – Mike Saroka, Goldray Glass; Acting Liaison Matt Hanna, Glass Coatings & Concepts

- a. Decorative Glazing Manual update- *Karen Wegert, NGA*
 - i. Content drafted, in editor's hands, call for photos
- b. Task groups
 - i. [Determining an Acceptable Color Variance](#)
 1. Group is reviewing ballot comments
 - ii. [Introduction to Digital Print](#)- *Gin Benner, Agnora, Task Group Chair*
 1. Task group work, being drafted
 - iii. [Recommended Practice for Defining Fabrication Details](#)- *Mike Saroka, Goldray Glass, Task Group Chair*- call for volunteers
 1. Volunteers: *Rob Carlson, Randy Reynolds, Matt Hanna*
- c. 2024 Systematic Reviews (5-year updates)
 - i. Assessing the Durability of Decorative Glass- Republished in July 2024
 - ii. Assessment of Decorative Glass Strength Properties- Republished in June 2024
 - iii. Proper Procedures for Fabrication of Flat Glass Mirrors- Republished in April 2024
 - iv. Proper Procedures for Cleaning Flat Glass Mirrors- Republished in February 2024
 - v. Proper Procedures for Receiving, Storage and Transportation of Flat Glass Mirrors- Republished in February 2024
- d. New Business- Decorative

Protective Glazing – Vaughn Schauss, Kuraray

- a. School Security Glazing
 - i. FB71-21 [School Security GTP](#)- at final ballot
 1. Now published!
 - ii. [School Security AIA presentation](#) update - *Julie Schimmelpenninck, Eastman Chemical Company- Task Group Chair*
 1. Task group work, being drafted
 - iii. School Security Design Guide
 1. Tabled
- b. Bird-Friendly Glazing– *Marc Deschamps, Walker Glass- Task Group Chair*
 - i. [Bird Friendly AIA presentation](#) – passed ballot
 1. Complete and ready for use. Contact Sara Neiswanger to become a presenter.
 - ii. Standardizing [NGA Bird Friendly Glazing Design Guide](#) to promote uniform implementation
 1. Volunteers: *Marc Deschamps (chair), Kayla Natividad, Rick Wright, Jon Griggs, Steve Marino, Bobby Chestnut, Matt Hanna, Randy Reynolds, Tom Donovan, Nick Yule, Joe Green, DJ Weil, Jon Johnson*
 - iii. Bird-Friendly legislation database- *Georgia Scalfano, NGA*
 1. New member resource available soon on [glass.org](#)
- c. Fire-Rated Glazing
 - i. [Wired Glass in Fire-Rated Safety Glazing Applications](#) GTP – call for volunteers to review draft
 1. Volunteers: *Tim Nass, Rick Wright, Marc Deschamps*
- d. 2024 Systematic Reviews (5-year updates)
 - i. *Coastal Glazing and the Turtle Codes*- at Final ballot in August
- e. New Business- Protective Glazing
 - i. ASHRAE 189.1 – adding bird-friendly requirements – *Tom Culp, Birch Point Consulting*



FABRICATING COMMITTEE MINUTES

Aug 07, 2024 | 9:15 am – 10:15 am; 2:30 pm – 4:00 pm

Aug 08, 2024 | 2:30 pm – 4:00 pm

The Trade, Milwaukee: Founders Ballroom

1. Add Tom Culp and Nick Resetar to Bird-Friendly task group to draft language to include in ASHRAE 189.1
- ii. Protective glazing- *Urmilla Sowell, NGA*
 1. New task group to create new document or add to current Bullet Resistant Glazing GTP on how to clean and maintain bullet resistant glass
 - a. Volunteers: Vaughn Schauss, Julia Schimmelpenningh, Aaron Thompson, Tom Donovan, DJ Weil, Bobby Chestnut, James Wright

Adjourned at 3:56 pm CT

Adjourn until Thursday, August 8 at 2:30 pm

Fabricating Committee Meeting | Thursday, August 8, 2024 | 2:30 pm – 4:00 pm

1. Call to Order - *Chair Aaron Thompson, Viracon*
 - a. Called to order at 2:22 pm CT
2. Committee Business, continued

Insulating – Rob Carlson, TriStar

- a. *Guidelines for Use of Capillary Tubes*, joint with FGIA – published in May 2024
- b. [Statement](#) on Argon and gas filled IGUs
 - i. Statement has been drafted by consultant and will be reviewed by legal team. Final language will be published in a GTP as well as a standalone statement from NGA.
- c. Task Groups
 - i. [Guidelines for the Appearance of IGUs](#)
 1. Task group is reviewing ballot comments
 - ii. [Condensation](#)- *Kayla Natividad, NSG | Pilkington- call for volunteers*
 1. PCF has been created, initial call to be scheduled
 - a. Volunteers: Melissa Sotkowski, Steve Marino, Jon Griggs, DJ Weil, Joe Erb, Rick Wright
 - iii. VIG AIA presentation – initial call to be scheduled
 1. Task group to take current information on VIG and compile into presentation
 - a. Volunteers: Jon Griggs, Shelby Froehling, Steve Marino, Tom Donovan, previous VIG task group members
- d. New Business- Insulating
 - i. Best Practices for IGUs at Elevation
 1. Will review current FGIA document on the same topic

NGA Installing Committee Update –*Joey Aragon, Aragon Construction, Chair*

- a. Specifications, updating Masterspec in collaboration with Deltek
 - i. Security Glazing, Mirror, Decorative, Fire-Rated and General Glazing specs complete. Curtainwall and storefront up next.
- b. Value Engineering [task group](#) – *Rob Carlson, Tristar Glass- Task Group Chair*
 - i. How to overcome challenges in implementing high-performance glazing products
 1. Survey sent out at BEC. Results will be distributed to task group and call will be scheduled to discuss next steps.
- c. [Delegated Design vs Design Build vs Design Assist](#)- Matt Kamper, Woodbridge Glass – Task Group Chair
 - i. What does a design build contract entail? Produce a benchmark paper.



FABRICATING COMMITTEE MINUTES

Aug 07, 2024 | 9:15 am – 10:15 am; 2:30 pm – 4:00 pm

Aug 08, 2024 | 2:30 pm – 4:00 pm

The Trade, Milwaukee: Founders Ballroom

1. Task group work, GTP being drafted
 - d. Glass & Glazing Estimating Essentials Manual update- *Chuck Knickerbocker, TGP – Task Group Chair*
 - i. Lesson 10 is currently being updated. Call will be scheduled to review.
 - e. [Frameless Shower Enclosures Resources](#) – *Danny Donahue, FHC – Task Group Chair*
 - i. Consumer One-Pager – Visual Diagram is complete
 - ii. Next steps: Group will meet in person at GEF in Sept. 2024
 - f. [Thermal Bridging AIA Presentation](#) – *Stanley Yee, Dow – Task Group Chair – at final ballot*
 - i. Passed ballot and will be ready for use soon
-
3. NGA Fabricating Committee New Business
 - a. New NGA Event in Spring 2026
 - i. Glass Conference will be moved from February to later in the Spring, and be combined with GPAD.
 - ii. Survey will be sent out after conference to get feedback.
-
- Next Events: [GlassBuild America](#) | Sept 30-Oct 2, 2024 | Dallas, TX
NGA Installing Committee meeting at Glazing Executives Forum | Sept 30 | Dallas
[NGA Glass Conference: Carlsbad](#) | Feb 3-6, 2025 | Carlsbad, CA
[BEC Conference](#) | Mar 2-4, 2025 | Las Vegas, NV
NGA Advocacy Days | Spring 2025 | Washington, D.C.
4. Adjournment
 - a. Adjourned at 3:25 pm CT



11 AIA-accredited Presentations

- Benefits of Daylighting in Building Design
- Benefits of Laminated Glass in Design
- Key Strategies of Bird-Friendly Glazing – *New!*
- Critical Reasons to Specify Insulating Glass
- Designing with Glass for Cast and Heat-Formed
- Designing with Glass for Privacy and Translucency
- Fire-Rated Glazing Today
- Glazing to Protect
- Reflected Solar Energy of Glazing Systems
- Security Glazing for Schools – *New!*
- Understanding Applications for Heat-Treated Glass
- Value-Added Performance of Coated Glass
- Thermal Bridging Considerations *at Interface Conditions* – *New!*



Glass and Glazing Design Academy

Brought to you by National Glass Association

Plus, MORE on-demand presentations, technical papers and articles relevant to architects!



NGA Members: become a presenter of our approved presentations. Email sara@glass.org to learn more!

Chair: Steve Marino, Vitro Architectural Glass

Vice Chair: Jon Griggs, Guardian Glass LLC

NGA Antitrust Policy

It is the undeviating policy of the Association to comply strictly with the letter and spirit of all federal, state and applicable international trade regulations and antitrust laws. Any activities of the Association or Association-related actions of its staff, members, officers, directors or chapter officials which violate these regulations and laws are detrimental to the interests of the Association and are unequivocally contrary to Association policy. *Please refer to NGA Bylaws for SECTION 2. IMPLEMENTATION of the antitrust compliance policy of the Association.*

Agenda Items

1. Call to Order – *Chair Steve Marino, Vitro Architectural Glass*
2. Review of [Anti-Trust Statement](#) and [Conflict of Interest](#) Policies
3. Appointment of Recording Secretary – *Georgia Scalfano & Amber Johnson, NGA*
4. [Minutes](#) of the Previous Meeting – August 8, 2024 NGA at Glass Conference: Milwaukee

5. Old Business
 - a. State Buy Clean initiatives- *Georgia Scalfano, NGA*
 - i. Legislative tracking spreadsheet; members-only resource available at [NGA Resource Hub on glass.org](#); Updates will be noted in the AT Eblast
 - b. Flat Glass Sustainability Drivers- definitions added to [glass.org/advocacy/](#)
 - c. Aluminum Extruders Council (AEC) & NGA embodied carbon study- *Tom Culp, Birch Point Consulting, NGA Energy Code Consultant*
 - d. Task Group: Flat Glass Industry Standardized Definitions
 - i. Currently working on standardizing definitions for these terms: low-e, solar control, jumbo glass, low iron and thin glass.
 - e. Task Group: [Anti-Microbial Coatings for Architectural Glass](#) GTP
 - i. Reviewing ballot comments
 - f. Systematic Reviews (5-year updates)
 - i. FM06-20 *General EPD Education* - on hold for EPA guidelines
 - ii. FM01-08 *Approximate Weight of Architectural Flat Glass* to be combined with FB23-09 *Approximate Weight of Interlayer Used in Laminated Architectural Flat Glass* (with additional thicknesses and corrected density)

6. New Business

7. Adjournment

Next Events:

[BEC Conference](#) | Mar 2-4, 2025 | Las Vegas, NV
NGA Advocacy Days | Multiple Dates in 2025 | Washington, D.C.
NGA Glass Conference: Ann Arbor | Sept. 29-Oct. 2, 2025 | Ann Arbor, MI
GlassBuild America | Nov. 4-6, 2025 | Orlando, FL



FORMING COMMITTEE MINUTES

Aug. 8, 2024 | 10:30 am – 12:00 pm
The Trade, Milwaukee: Founders Ballroom

Chair: Kayla Natividad, Pilkington | NSG
kayla.natividad@nsg.com

Vice Chair: Steve Marino, Vitro
smarino@vitro.com

NGA Antitrust Policy

It is the undeviating policy of the Association to comply strictly with the letter and spirit of all federal, state and applicable international trade regulations and antitrust laws. Any activities of the Association or Association-related actions of its staff, members, officers, directors or chapter officials which violate these regulations and laws are detrimental to the interests of the Association and are unequivocally contrary to Association policy. *Please refer to NGA Bylaws for SECTION 2. IMPLEMENTATION of the antitrust compliance policy of the Association.*

Agenda Items

1. Call to Order – *Chair Kayla Natividad, Pilkington | NSG*
 - a. Called to order at 10:44 am CT
2. Review of [Anti-Trust Statement](#) and [Conflict of Interest](#) Policies
 - a. Reviewed
3. Appointment of Recording Secretary – *Georgia Scalfano & Amber Johnson, NGA*
4. [Minutes](#) of the Previous Meeting – February 6, 2024
 - a. Motion to approve: Jon Griggs; Seconded: Steve Marino; Approved unanimously
5. Old Business
 - a. [The Value-Added Performance of Coated Glass](#) AIA presentation update- *task group Chair Steve Marino, Vitro*
 - i. Complete and ready for use. Contact Sara Neiswanger to become a presenter.
 - b. State Buy Clean initiatives- *Georgia Scalfano, NGA*
 - i. Legislative tracking spreadsheet; members-only resource available soon on glass.org
 - ii. Will add updates to AT e-blast
 - c. GSA IRA Update – *Tom Culp, Birch Point Consulting, NGA Energy Codes Consultant*
 - i. No major updates; GSA is working with EPA on low embodied carbon initiatives
 - d. Flat Glass Industry Standardized Definitions
 - i. Currently working on standardizing definitions for these terms: low-e, solar control, jumbo glass, low iron and thin glass.
 - e. [Anti-Microbial Coatings for Architectural Glass](#) GTP
 - i. Task group to review ballot comments; initial call to be scheduled
 1. Volunteers: DJ Weil, Rob Carlson, Shannon Jurca, Jon Griggs, Aaron Thompson, Rick Wright, Melissa Sotkowski, Randy Reynolds, Steve Marino
6. New Business
 - a. US DOE Decarbonization- *Georgia Scalfano, NGA*
 - i. Workshop was held in Pittsburgh, PA in May 2024
 - ii. Discussed energy efficiency, carbon footprint of the industry – container, architectural, fiberglass, etc.
 - iii. IEDO estimates that 60% of heavy industry emissions reductions by 2050 will come from technology that is not yet market ready
 - b. Flat Glass Sustainability Drivers
 - i. Embodied vs Operational Carbon
 - ii. Social cost of carbon
 - iii. Circularity
 1. Volunteers: Terry Schaefer for Recycling task group
 - iv. Global Warming Potential (GWP)
 - v. GWP vs CO2 Emissions

- vi. ESG, ESGCC
 - 1. Environmental, Social, Governance

Next Events: [GlassBuild America](#) | Sept 30-Oct 2, 2024 | Dallas, TX
NGA Installing Committee meeting at Glazing Executives Forum | Sept 30 | Dallas
[NGA Glass Conference: Carlsbad](#) | Feb 3-6, 2025 | Carlsbad, CA
[BEC Conference](#) | Mar 2-4, 2025 | Las Vegas, NV
NGA Advocacy Days | Spring 2025 | Washington, D.C.

- 7. Adjournment
 - a. Adjourned at 12:04 pm CT



3M

Jennifer Daly

Administrative Management Systems, Inc.

Kristin Best+

Terry Schaefer+

AGC INTERPANE Architectural Glass GmbH

Steve Dean

Alpen High Performance Products

Brad Begin

Argotec

Tom Niziolek

Armoured One

Daniel Luttrell

Ballistic Glass & Armor Solutions

Hunter Peyton

Blankenship Paint & Glass

Mike Blankenship

Burkle North America, Inc

Kyle Lindersmith

Cardinal Glass Industries*

Michelle Phan

Care GlassMart Limited

Jesca Ssemanda

Crimsafe North America

Michael Leigh

CRL

Mark Suehiro

DFI-Diamon-Fusion International*

Carl Christ

Rachel Herrick

Digne

Sophie Pennetier

E & L Civil Engineering

Edward Robison

Eastman | Saflex*

Julia Schimmelpenningh+

GE Silicones

Abel Macias

GGI

Amanda Trupiano^

Gus Trupiano

Spencer Raymond

Glass Coatings and Concepts LLC*

Matt Hanna

Randy Reynolds

Sean Weir

Glasswerks LA Inc.

Terry Del Rey

Glazing Concepts, Inc.

Timothy Lietaert

Goldray Glass

Michael Saroka

Guardian Glass LLC*

Jon Griggs

Hal Savakus

Hegla Corporation

Elmar Zeidler

Michael Zeidler

Lisa Heschong

HyGear BV

Abraham Mooney

Infinite Recycled Technologies*

Patrick Elmore

Stanley Yee

* Sponsors

+ Speakers

^ Spouse/Partner



INNOVCOAT Nanocoatings and Surface
Technologies Inc.
Hasan Celiker

Intertek
Jessica Hoover[^]
Travis Hoover

Kawneer Company, Inc.
James Butler
Thibault Denis

Kuraray America, Inc.*
Vaughn Schauss+

Larson Engineering, Inc.
Kelvin Veloso

Lisec America, Inc.
Robert Anderson
Hannes Guggenberger
Adryen Reyes

LiteSentry-SoftSolution-Strainoptics
David Cousins

MADICO
Jay Larkin

Mappi America, Inc.*
Giulio Dalla Costa
Nancy Mammaro

Marsh McLennan Agency
Kevin Carrasco

Mativ Holdings, Inc.
Dan LaPorte

Matodi
Steve White

Momentive Performance Materials
Kyle Blais

National Guard Products
Hal Kelton
Ted Wegert

Nupress Facades
David Ford

Oldcastle BuildingEnvelope
Regan Axtell
Matt Davis
Jason Fisher
Mark Le Munyon
Matt Manning
John Rovi
Cindy Sparrow

Painters & Allied Trades Labor Management
Corp Initiative
Britton Loftin
Travis Nevins

Pilkington North America, Inc.
Ashli Natividad [^]
Kayla Natividad

Resource Recovery LLC
Austin Beaupré

Roschmann Steel & Glass Constructions
Denise McMahon
Dirk Schulte

Safe Haven Defense US LLC
Steven Johnson

SAFTI FIRST Fire Rated Glazing Solutions
Josh Bascue
Catherine Masuda
Tim Nass
Sean Ross

Salem Fabrication Technologies Group Inc.
Dan Reinhart
Mike Willard



San Mateo Glass and Mirror
Dennis O'Malley

Schilling Inc.
Douglas Schilling

SCS Global Services
Vikas Ahuja

Simpson Gumpertz & Heger
Andrea La Greca

Technical Glass Products (Allegion)
Devin Bowman+

Technoform North America
Helen Sanders+

Thompson Innovative Glass, LLC
Tom Donovan
James Wright

Tremco Commercial Sealants &
Waterproofing
John Mayfield
Lorne Weigt

Tru Vue
Duke Montague

Tristar Glass, Inc.*
Robert Carlson
Tim Kelley

TrueNorth Collective
Jeffrey Zeman

Trulite Glass & Aluminum Solutions
Doug Penn+
DJ Weil

Tubelite
Greg Hall

UFP Packaging, LLC
Jason Godfrey
David Watson

Vacuum Glass LLC
Graig Young

Vesuvius USA
Aarn Rosen

Vibrantz Technologies
Gady Ginzburg
Nicholas Karpa
Peg Korlewitz^
Robert Korlewitz

Viprotron North America Inc.
Terry Gibney
Christine Schmidt^
Ric Schmidt

Viracon
Chris Olson
Aaron Thompson
Charles Wencil
Thomas Wojtowicz
Nick Yule

Vitro Architectural Glass
Paul Bush
Candy Hammond^
Michael Hammond
Jeanne Marino^
Steve Marino

Walker Glass Co., Ltd.
Bobby Chestnut
Marc Deschamps

Wiss Janney Elstner Associates Inc
Tony Cinnamon

YKK AP America, Inc.
Trevor Elliott

* Sponsors

+ Speakers

^ Spouse/Partner

NGA GLASS CONFERENCE™ CARLSBAD

FEBRUARY 3-6, 2025



PRE-REGISTRATION LIST
as of January 27, 2025

SPEAKERS

Lance Davis+

K&L Gates LLP

Laurie Purpuro+

US EPA

Bill Le Roy+

CONSULTANTS

Birch Point Consulting

Tom Culp

Roetzel & Andress

Nick Resetar

Thomas Zarembo

INDUSTRY ORGANIZATIONS

Aluminum Extruders Council

Lynn Brown

Fenestration and Glazing Industry Alliance

Amy Becker+

International Window Film Association

Lisa Winckler+

PRESS

Glass Magazine

Norah Dick

Katy Devlin+

USGlass Magazine

Joshua Huff

* Sponsors

+ Speakers

^ Spouse/Partner

NGA Board of Directors



Rick Locke

Chair
Montana Sash & Door
Bozeman, MT



Tim Kelley

Chair-elect
TriStar Glass Inc.
Catoosa, OK



Jim Stathopoulos

Treasurer
Ajay Glass Co.
Canandaigua, NY



Ron Crowl

Immediate Past-Chair
FeneTech, a Cyncly company
Aurora, OH



Silas Koonse

Koonse Glass Co. Inc.
Columbia, MO



Courtney Little

Ace Glass
Little Rock, AR



Jodi Martinez

AllStar Glass Co. Inc.
Spokane Valley, WA



Syndi Sim

Q-railing
Tustin, CA



Tara Brummet

Vitrum Industries Ltd.
Langley Township, BC, Canada



Taylor Anderson

Anderson Aluminum Corp.
Columbus, OH



Vipul Bhagat

Skyline Design
Chicago, IL



Mark Seeton

Vitro Architectural Glass
Pittsburgh, PA



Joey Aragon

Aragon Construction Inc.
Montclair, CA



Nicole Harris

Ex-Officio Officer
NGA President & CEO

NGA Committee Leadership

NGA Advocacy Committee



Paul Bush
Chair
Vitro Architectural
Glass



Kayla Natividad
Chair, Sustainability
Sub-Committee
Pilkington | NSG

NGA Fabricating Committee



Aaron Thompson
Chair
Viracon



Bobby Chestnut
Vice Chair
Walker Glass

NGA Forming Committee



Steven Marino
Chair
Vitro Architectural
Glass



Jon Griggs
Vice-Chair
Guardian Glass

NGA Installing Committee



Joey Aragon
Chair
Aragon Construction

Fabricating Committee Technical Liaisons



Julia Schimmelpenningh
Laminating
Eastman | Saflex



Robert Carlson
Insulating
Tristar Glass



Vaughn Schauss
Protective Glazing
Kuraray America



Michael Saroka
Decorative
Goldray Glass

NGA Staff and Consultants in Attendance



Jenni Chase
Vice President,
Workforce
Development



Tom Culp
Energy Codes
Consultant



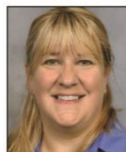
Katy Devlin
Vice President,
Content &
Programming



Nicole Harris
President & CEO



Tara Lukasik
Associate Director,
Content &
Programming



Michele Nosko
Chief Operating
Officer



Max Perilstein
Sole Source
Consulting



Nick Resetar
Fire & Structural
Codes Consultant



Wendy Rochelle
Director, Technical
Events Operations
Manager



Georgia Scalfano
Advocacy &
Technical Services
Sustainability Senior
Manager



Urmilla Sowell
Vice President,
Advocacy &
Technical Services



Karen Wegert
Director, Technical
Services



Thom Zaremba
Fire & Structural
Codes Consultant

COMMITTEE AND TASK GROUP ACTIVITIES SUMMARY

ADVOCACY COMMITTEE

One-Pagers

- High-Performance Windows Can Help Save the World
- School Security: Windows and Doors Respond First
- Saving Birds with Effective Glass Solutions
- Training and Upskilling Workers to Meet Labor Demand
- Window Recyclability: Circular Economy

Sustainability Sub-Committee

At ballot

- Recyclability of Architectural Glass Products
- Overcoming Challenges of Circularity and Architectural Glass Recycling
- Benefits of Glass in Daylighting Applications

Task group work

- World of Glass Map recycling data

FORMING COMMITTEE

Legislation Databases – *Members only resource available at [NGA Resource Hub on glass.org](https://www.glass.org)*

- State Buy Clean Legislation Database
- U.S. and Canadian Bird-Friendly Building Policies Database

Task group work

- Flat Glass Industry Standardized Definitions
- Anti-Microbial Coatings for Architectural Glass
- Approximate Weight of Architectural Flat Glass

INSTALLING COMMITTEE

Task group work

- Delegated Design vs. Design Build vs. Design Assist
- Glass and Glazing Estimating Essentials Manual update
- Interior Demountable Wall Systems
- Value Engineering

FABRICATING COMMITTEE

At ballot

Decorative

- Design Considerations for Use of Sealants/Adhesives with Coated Glass

Insulating

- Considerations for the Appearance of Insulating Glass Unit Edge at the Time of Fabrication

Laminating

- Glass Nomenclature – Schema 1
- Effects of Moisture, Solvents and Other Substances on Laminated Glazing Edges
- Glass Floors and Stairs

Tempering

- Glass Properties Pertaining to Photovoltaic Applications

Task group work

Decorative

- Decorative Glazing Manual
- Introduction to Digital Printing
- Recommended Practice for Defining Fabrication Details
- Glossary of Terms for Color and Appearance
- Decorative Glass Installation Challenges

Insulating

- Condensation on High-Performance Glass
- Multi-Cavity/VIG AIA Presentation
- Products for Energy Applications
- IGU Spacer Types and Capabilities 101

Laminating

- Laminated Glazing Reference Manual update
- Next Steps for Global Quality Standards
- Point Supported Glazing

Protective Glazing

- Best Practices for Bird-Friendly Glazing Design Guide update
- Bird-Friendly ASTM Practice/Guide
- Protective Glazing Manual update
- Wired Glass in Fire-Rated and Safety Glazing Applications
- Bullet Resistant Glazing

Tempering

- MyGlassFab courses

Members interested in joining any task group, please email Amber Johnson: ajohnson@glass.org

Manuals, Guides, Books and Other Resources

[All About Glass and Metal: A Guide for Architects & Specifiers](#)
[An Owner’s Guide to Exit & Succession Planning](#)
[Bob Maltby’s Glass Book](#)
[Commercial Fenestration Systems Manual](#)
[Engineering Standards Manual](#)
[Frameless Shower Enclosure Design and Installation Manual](#)
[Glass and Glazing Estimating Essentials](#)
[Glazing Manual](#)
[Glossary of Architectural Glass and Glazing](#)
[Guide to Architectural Glass](#)
[Guide to the Glass and Glazing Requirements of the Model Building Codes](#)
[Heavy Glass Door Design Manual](#)
[Laminated Glazing Reference Manual](#)
[Project Manager’s Reference Manual](#)
[Protective Glazing Manual](#)
[Sealant Manual](#)
[Cleaning Architectural Glass Postcards in *English and Spanish*](#)
[NGA Shower Door Information Flyer](#)

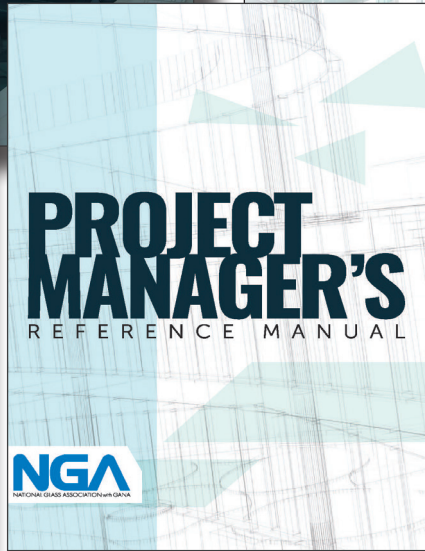
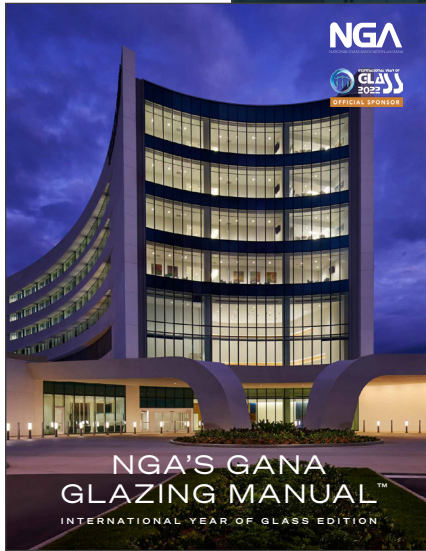
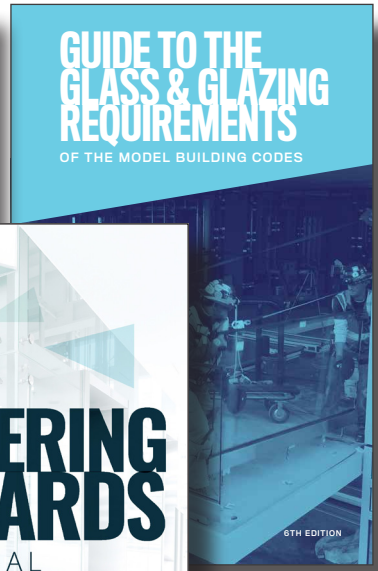
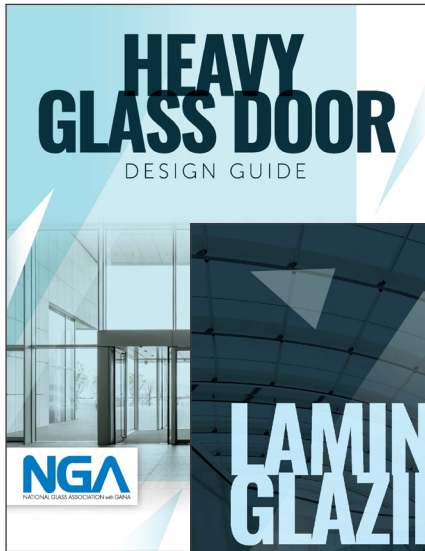
Design Guides

| | |
|---------|---|
| DG01-21 | Best Practices for Bird-Friendly Glazing Design |
| DG03-22 | Thermal Bridging Considerations at Interface Conditions |

Glass Technical Papers

| | |
|-----------------|---|
| FB01-00 (2023) | Proper Procedures for Cleaning Architectural Glass Products |
| FB02-02 (2023) | Heat-Treated Glass Surfaces Are Different |
| FB03-03 (2023) | Construction Site Protection and Maintenance of Architectural Glass |
| FB04-03 (2021) | Design Considerations for Laminated Glazing Applications |
| FB05-04 (2023) | Emergency Egress Through Laminated Glazing Materials |
| FB06-24 | Proper Procedures for Cleaning Flat Glass Mirrors |
| FB07-05 (2019) | Point Supported Glazing |
| FB09-06 (2023) | Suggested Procedures for Dealing with Broken Glass |
| FB10-06 (2023) | Skylights and Sloped Glazing are Not Walking Surfaces |
| FB11-06 (2022) | Marking and Labeling of Architectural Glass |
| FB12-07 (2023) | Blast Resistant Glazing |
| FB13-07 (2018) | The Importance of Fabrication Prior to Heat-Treatment |
| FB14-07 (2020) | Glass Floors and Stairs |
| FB15-07 (2022) | Describing Architectural Glass Constructions |
| FB16-07 (2022) | Bullet Resistant Glazing |
| FB18-08 (2023) | Methods of Measuring Optical Distortion |
| FB19-08 (2020) | Guidelines for Handling and Cleaning Decorative Glass |
| FB20-08 (2022) | Iridescence Patterns in Heat-Treated Architectural Glass |
| FB21-09 (2021) | Installation Techniques Designed to Prolong the Life of Flat Glass Mirrors |
| FB22-24 | Proper Procedures for Fabrication of Flat Glass Mirrors |
| FB23-09 (2019) | Approximate Weight of Interlayer used in Laminated Architectural Flat Glass |
| FB24-24 | Hurricane Product Substitution |
| FB25-09 (2024) | Performance Criteria for Glazing Subjected to Seismic Events |
| FB26-10 (2022) | Detention Facility Glazing |
| FB27-11 (2015) | Guidelines for the Appearance of IGU Edges in Commercial Applications |
| FB28-11 (2022) | Assessing the Compatibility of Glazing Materials and Components |
| FB30-11 (2024) | Proper Procedures for Receiving, Storage & Transportation of Flat Glass Mirrors |
| FB31-11 (2017) | LEED White Paper - Mirror |
| FB32-24 | Dynamic Glazing for High Performance Buildings |
| FB333-11 (2023) | Glass Use in Guardrails |
| FB34-12 (2023) | Screening Out UV Radiation with Laminated Glass |

| | |
|----------------|---|
| FB36-24 | Coastal Glazing and the Turtle Codes |
| FB37-24 | Glass Use in Furniture |
| FB38-14 (2021) | The Recyclability and Reusability of Glass Products |
| FB39-14 (2019) | Glass Properties Pertaining to Photovoltaic Applications |
| FB40-14 (2021) | Recyclability of Architectural Glass Products |
| FB41-14 (2019) | Design Consideration for Use of Sealants/Adhesives with Coated Glass |
| FB42-24 | Assessment of Decorative Glass Strength Properties |
| FB43-14 (2020) | Security Glazing |
| FB44-24 | Assessing the Durability of Decorative Glass |
| FB45-14 (2019) | Recommended Applications for Heat-Treated Architectural Glass |
| FB46-15 (2022) | Assessment of the Weatherability & Durability of Decorative Glass |
| FB47-15 (2021) | Considerations when Installing Interior-Mounted Back-Painted Glass |
| FB48-15 (2020) | Effects of Moisture, Solvents and Other Substances on Laminated Glazing Edges |
| FB49-17 (2022) | Performance Improvements of IGUs |
| FB50-17 (2022) | Building Energy Performance |
| FB51-17 (2022) | Building Envelope Commissioning |
| FB52-17 (2022) | Guidelines for the Production of Heat-Treated Architectural Flat Glass |
| FB53-17 (2024) | Benefits of Decorative Glass in Daylighting Applications |
| FB54-17 (2022) | Guidelines and Best Practices on how to Manage Color Variance of Decorative Glazing |
| FB55-17 | LEED White Paper - Decorative |
| FB56-18 (2024) | Heat Soak Testing of Tempered Glass For Architectural Glass Applications |
| FB57-24 | One Optical Number Does Not Fit All |
| FB58-18 (2023) | Understanding Reflective Distortion in Mirror Installations |
| FB59-18 | Heat-treated Laminated Glass Exposed Edges |
| FB60-18 (2023) | Understanding Reflected Solar Energy of Glazing Systems in Buildings |
| FB61-24 | Tornado Resistant Glazing |
| FB62-24 | Thermal Stress in Heat-Treated Spandrel Glass |
| FB63-19 | Products for Energy Applications |
| FB65-20 | Glass for Personal Protective Barriers |
| FB66-20 | Introduction to Vacuum Insulating Glazing |
| FB67-20 | Guidelines on How to View Decorative Glazing Products in Interior and Exterior Applications |
| FB68-20 | Guidelines for Measuring Color of Decorative Glazing Materials in the Field |
| FB70-20 | Best Practices for Installed Painted Decorative Glass |
| FB71-24 | School Security Glazing |
| FB72-21 | Introduction to Hybrid VIG Fabrication |
| FB73-22 | Types of Decorative Glass |
| FB74-22 | Alignment in US Energy Conservation Codes ASHRAE 90.1 and IECC |
| FB75-23 | Compatibility Testing of Insulating Glass PIB Primary Sealant with Respect to Glazing Materials |
| FB76-23 | Fire-Rated Glazing 101 |
| FB77-24 | Determining an Acceptable Color Variance for Decorative Glass |
| FM01-08 (2020) | Approximate Weight of Architectural Flat Glass |
| FM02-09 (2020) | Protecting Glass Against Weld Splatter |
| FM03-10 (2023) | LEED® Recycled Content for Glass |
| FM04-12(2019) | Daylighting |
| FM05-12(2023) | Physical and Mechanical Properties |
| FM06-20 | General EPD Education |
| FM07-21 | Flat Glass Environmental Transparency Documents |
| IN02-09 (2022) | Bid Considerations for Contract Glazing Proposals |
| IN03-12 (2023) | Key Elements of Fenestration System Shop Drawings |
| IN04-14 (2020) | Safety Guidelines for Deglazing Structural Silicone |
| IN05-17 (2022) | Overview of Building Information Modeling (BIM) for Glass and Glazing Systems |
| TB1601-24 | Guidelines for Use of Capillary Tubes |
| TB1250-19 | PIB Primary Sealant |



Downloadable manuals & design guides now FREE to NGA members!



Resources to meet your needs.

When it comes to glazing and glass building products, NGA is the authority and resource on all things technical. We offer in-depth manuals written and developed by industry experts for fabricators, glaziers and other industry professionals.

Order now at glass.org/store or scan this QR code to get started.



The following is a list of activities, resources, events and other products and services produced by the National Glass Association and available to our members. Contact NGA at 703.442.4890, ext. 127 or membership@glass.org for more information.

Advocacy & Representation

NGA represents and advocates for the industry’s interests at these bodies, collaborating whenever possible with other trade groups. NGA’s Vice President of Advocacy & Technical Services is Urmilla Sowell, usowell@glass.org. [LEARN MORE](#)

- ASTM
- ASHRAE
- ANSI Z97
- ICC
- IGCC
- GICC
- NGBS
- NIBS
- NFPA
- NFRC
- SGCC
- ISO

Technical & Business Resources

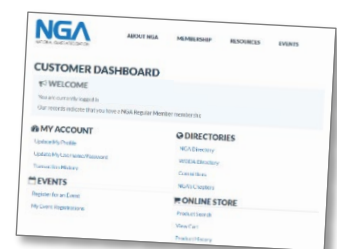
- Over 90 Glass Technical Papers & Glass Information Bulletins – *available at no cost!* [BROWSE TITLES](#)
- Technical manuals written by industry experts – **Downloadable manuals and design guides now free to members!** [BROWSE TITLES](#)
 - Frameless Shower Enclosure Design & Installation Manual
 - NGA’s GANA Glazing Manual (IYOG edition)
 - Glossary of Architectural Glass & Glazing
 - Commercial Fenestration Systems Manual
 - Guide to Glass & Glazing Requirements of the Model Building Code, 6th edition
 - Engineering Standards Manual
 - Laminated Glazing Reference Manual
 - Heavy Glass Door Design Guide
 - Project Manager's Reference Manual
 - Glass and Glazing Estimating Essentials
 - Guide to Architectural Glass
 - Protective Glazing Manual
 - GANA Sealant Manual
 - And more!
- Design Guides fulfill a targeted need for more in-depth guidance and recommendations related to design & installation best practices for the glazing & glass products industry – *NGA members save up to 50%* [BROWSE TITLES](#)
- Thirsty Thursday Webinars each month – *at no cost* [ACCESS THE ARCHIVES](#)
- Test Methods [BROWSE TITLES](#)
 - Standard Test Method for Ball Drop Impact of Laminated Architectural Flat Glass (ASTM F3007 – 2019)
 - Standard Specification for Ball Drop Impact Resistance of Laminated Architectural Flat Glass (ASTM F3006 – 2020)
 - Standard Test Method for Center-Punch Fragmentation of Fully Tempered Flat Glass
 - Standard Test Method for Laminated Glass Edges when in Contact with Sealants and Glazing Tapes
- Business help and industry guides – *NGA members save up to 50%*
 - An Owner’s Guide to Exit Planning & Succession [BROWSE](#)
 - Glass and Metals (Complete Series): A Guide for Architects and Specifiers [BROWSE](#)
 - Guide to Decorative Glass [BROWSE](#)
- Market Intelligence – *Researched by industry experts* [TAKE AN IN-DEPTH LOOK](#)
 - WorldofGlassMap.com
 - Annual ranking reports: Top 50 Glaziers, Top Glass Fabricators, Top Metal Companies

Members-Only Resources **EXCLUSIVE!**

On-demand webinars, the Codes & Standards Help Center, safety bulletins, resources from the American Subcontractors Association (ASA) and more – *Exclusive access through NGA membership* [START HERE](#) [login required]

How to Access the NGA Store via the online NGA Customer Dashboard

- Visit glass.org and click on MY DASHBOARD in the upper right corner.
- You will be prompted to log in with the credentials provided to you by NGA. If you need assistance, contact Josh Lowe at 703/442-4890, ext. 127 OR jlowe@glass.org.
- You can now explore the online NGA Store and more!



NEW! MyGlassFAB – NGA's new online training tool for fabricators – FREE to NGA members!

MyGlassFAB offers core training for production personnel to learn about job responsibilities, safety, products, and fabrication techniques. [MORE INFO](#)

MyGlassClass.com – Now FREE to NGA members! [SEE THE COURSE CATALOG](#)

¡Los cursos ahora están disponibles en español en MyGlassClass.com!

MyGlassClass.com provides world-class training, conveniently available online, to teach learners basic job skills and knowledge that will complement the on-the-job training their employers provide. Learning areas include:

- Intro to Glass and Glazing
- Safety
- Glass & Metal Fabrication
- System Fabrication, Assembly & Installation
- Codes & Estimating
- OSHA

NGA Glazier Apprentice Curriculum

Through MyGlassClass.com, NGA offers Glazier Apprentice Curriculum for organizations and companies that want to establish a glazier apprenticeship program approved by the U.S. Department of Labor (DOL). Students who complete the curriculum will earn a jointly endorsed NGA/NCCER credential indicating a journeyman-level minimum competency. [MORE INFO](#)

Upcoming Educational Conferences & Events – discounted NGA member pricing [VISIT GLASS.ORG FOR UPDATES](#)

Building Envelope Contractors (BEC) Conference
March 2-4, 2025 | Horseshoe/Paris Hotel, Las Vegas, NV

NGA Glass Conference: Ann Arbor
September 29-October 2, 2025 | Ann Arbor, MI

NGA's Glass & Glazing Advocacy Days
Multiple Dates in 2025 | Washington, DC

GlassBuild America: The Glass, Window & Door Expo
November 4-6, 2025 | Orlando, FL

Magazines & Newsletters – Keeping members and the industry informed [VISIT GLASS MAGAZINE ONLINE](#); [VISIT WINDOW+DOOR ONLINE](#)

- *Glass Magazine*, the glass and glazing authority – print, digital, and weekly news
- *Window + Door*, the information source for the fenestration industry - in print, digital, and weekly news
- NGA member newsletter monthly and NGA member Advocacy & Technical newsletter monthly

Member Recognition – Make an Impact [SEE ALL MEMBER BENEFITS](#)

- Use of NGA member logo for your website, emails, letterhead, etc. as the symbol of your company's commitment to industry best practices, safety and ethics.
- Member decal and certificate to designate your NGA member status.
- Online NGA [member directory](#)

**JOIN ONLINE AT
www.glass.org**



Join us for GlassBuild America in 2025 and 2026!

November 4-6, 2025 | **Orlando, Florida**

September 23-25, 2026 | **Las Vegas, Nevada**



Quick Reference Sheet

Associations and Organizations

- AGMT – Architectural Glass and Metal Technician
- AIA – American Institute of Architects
- ANSI Z97 Committee – American National Standards Institute
- ASCE – American Society of Civil Engineers
- ASHRAE – American Society of Heating, Refrigerating, and Air-Conditioning Engineers
- ASTM International – American Society of Testing and Materials
- BEC Conference – Building Envelope Contractors Conference
- BOMA – Building Owners and Managers Association
- CSI – Construction Specification Institute
- CPSC – Consumer Product Safety Commission
- EPA - Environmental Protection Agency
- EWC/ASE – Efficient Windows Collaborative/Alliance to Save Energy
- FGIA – Fenestration & Glazing Industry Alliance
- GANA – Glass Association of North America (*legacy association*)
- GICC – Glazing Industry Code Committee (within NGA)
- GISC – Glazing Industry Secretariat Committee (of ANSI Z97)
- GIMAV - Association of Italian manufacturers/suppliers of machinery, equipment and special products for glass processing
- GPAD – Glass Processing and Automation Days
- GSA – General Services Administration
- glasstec
- GPD – Glass Performance Days
- IGCC – Insulating Glass Certification Council
- ICC – International Code Council
- ISO – International Standards Organization
- ITA – Italian Trade Agency
- IWCA – International Window Cleaners Association
- IYOG – International Year of Glass
- NACC - North American Contractor Certification
- NFPA – National Fire Protection Association
- NFRC – National Fenestration Ratings Council
- NGA – National Glass Association
- NIBS – National Institute of Building Sciences
- PGC – Protective Glazing Committee
- SGCC – Safety Glazing Certification Council
- UL – Underwriters Laboratory
- WDMA – Window and Door Manufacturers Association

Other Abbreviations and Jargon

- AT – Advocacy & Technical activities
- FB – Fabricating Committee
- CFSM – Commercial Fenestration Systems Manual
- EC3 – Embodied Carbon Calculator
- EPD – Environmental Product Declarations
- ESM – Engineering Standards Manual
- FM – Forming Committee
- FT – Fully Tempered
- GIB – Glass Informational Bulletin
- GTP – Glass Technical Paper
- HPD – Health Product Declaration
- HT – Heat-Treated
- IGU – Insulating Glass Unit
- LCA – Life Cycle Analysis
- LGRM – Laminated Glazing Reference Manual
- MGC – MyGlassClass.com
- PCF – Project Creation Form
- PCR – Product Category Rules
- RF – Radio Frequency
- SME - Subject Matter Expert
- VIG – Vacuum Insulating Glazing

NGA Committee Meetings

- **Anyone can participate in discussions.**
- NGA voting members can make a motion and vote.
- Each company has one vote; not necessarily the same individual in all situations.

NGA Websites:

- glass.org
- glassmagazine.com
- myglassclass.com
- glassbuild.com
- windowanddoor.com

THANK YOU TO OUR SPONSORS!

GOLD SPONSORS



SILVER SPONSORS



GlassBuild 
A M E R I C A.
THE GLASS, WINDOW & DOOR EXPO

**SEE YOU IN
ORLANDO!**

NOVEMBER 4-6, 2025
ORANGE COUNTY CONVENTION CENTER
ORLANDO, FL

GLASSBUILDAMERICA.COM