

NGA GLASS CONFERENCE™ MILWAUKEE

AUGUST 6-8, 2024



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.





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Year of Glass Edition

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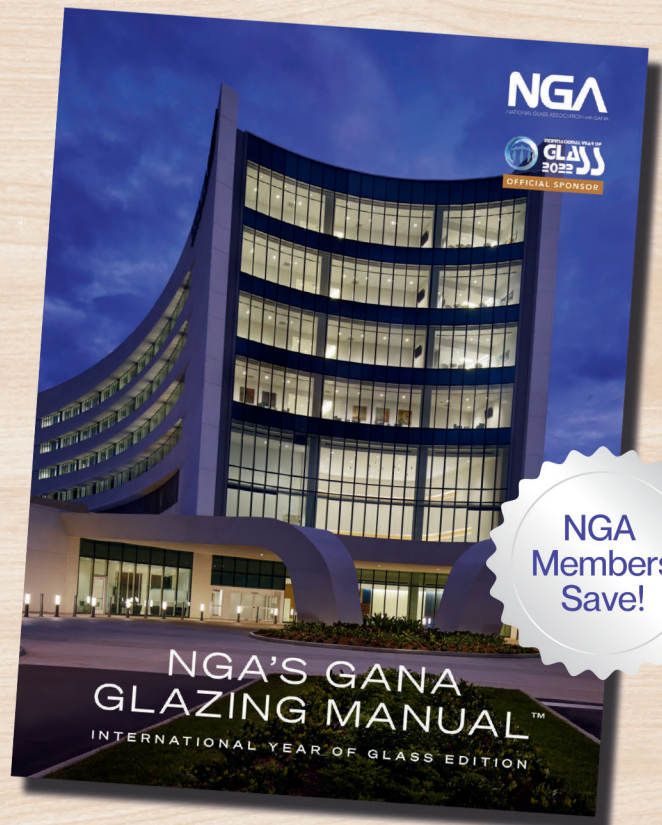


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SAVE THE DATE. MAKE A DIFFERENCE.

Save the date to join NGA in our nation’s capital at **NGA Glass & Glazing Advocacy Days** on May 13-14, 2025*

Help educate congressional representatives about the fundamental role of glass where people live, play, learn, work and heal.

**Dates tentative pending final 2025 Congressional calendar.*



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!



NGA Glass Conference: Milwaukee
The Trade Milwaukee, Autograph Collection | Founders Ballroom

Schedule at a Glance

All times listed are Central Time Zone

Monday, August 5, 2024

3:00 pm – 5:00 pm	Registration Open	Location Founders Ballroom Foyer
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Tuesday, August 6, 2024

7:00 am – 4:00 pm	Registration Open	Location Founders Ballroom Foyer
8:00 am – 9:00 am	Networking Breakfast	Solomon's
9:15 am – 9:45 am	Orientation, Attendee Introductions	Founders Ballroom
9:45 am – 10:45 am	Milwaukee High-Performance Building Innovations	Founders Ballroom
10:45 am – 12:15 pm	Panel Discussion: Vacuum Insulating Glazing <i>Sponsored by NSG Pilkington</i>	Founders Ballroom
12:15 pm – 1:15 pm	Networking Lunch	Solomon's
1:15 pm – 2:00 pm	Presentation: How NGA Members will Benefit from the EPA Grant	Founders Ballroom
2:00 pm – 2:30 pm	Recyclability & Sustainability Discussion <i>Sponsored by Dow</i>	Founders Ballroom
2:45 pm – 3:30 pm	Energy Codes & Standards Update	Founders Ballroom
3:30 pm – 4:30 pm	Panel Discussion: Preventing Glazing Surprises	Founders Ballroom
6:00 pm – 8:00 pm	Reception & Awards <i>Sponsored by Kuraray</i>	Milwaukee Art Museum 700 N. Art Museum Drive Baumgartner Galleria

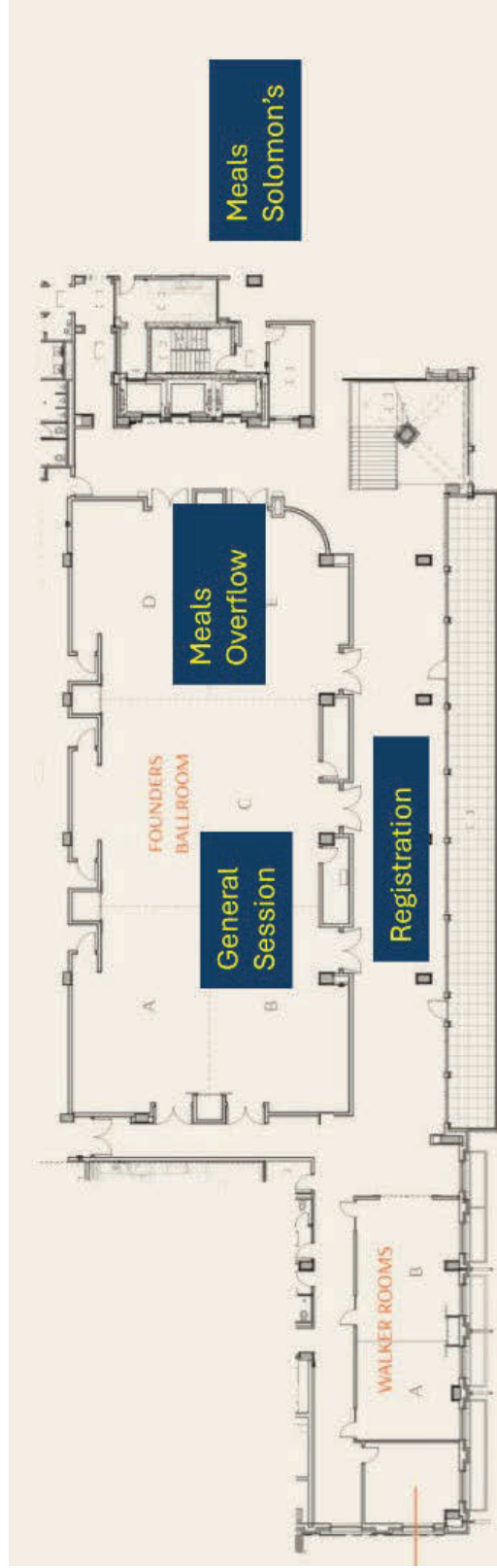
Wednesday, August 7, 2024

7:30 am – 4:00 pm	Registration Open	Location Founders Ballroom Foyer
8:00 am – 9:00 am	Networking Breakfast	Solomon's
9:15 am – 10:15 am	NGA Fabricating Committee <i>Tempering Presentation: On-Line, Non-Contact Stress Measurement in Heat-Treated Glass</i>	Founders Ballroom
10:30 am – 12:00 pm	NGA Advocacy Committee	Founders Ballroom
12:00 pm – 1:00 pm	Networking Lunch	Solomon's
1:15 pm – 1:45 pm	Fire and Structural Codes & Standards Update	Founders Ballroom
1:45 pm – 2:15 pm	Interactive Session: Laminating Nomenclature	Founders Ballroom
2:30 pm – 4:00 pm	NGA Fabricating Committee <i>Laminating Protective Glazing Decorative</i>	Founders Ballroom

Thursday, August 8, 2024

7:30 am – 4:00 pm	Registration Open	Location Founders Ballroom Foyer
8:00 am – 9:00 am	Networking Breakfast	Solomon's
9:15 am – 10:15 am	Presentation: Building Net Zero Schools	Founders Ballroom
10:30 am – 12:00 pm	NGA Forming Committee	Founders Ballroom
12:00 pm – 1:00 pm	Networking Lunch	Solomon's
1:15 pm – 2:15 pm	Industry Collaboration Updates ANSI SGCC IGCC AGMT FGIA IWFA	Founders Ballroom
2:30 pm – 4:00 pm	NGA Fabricating Committee <i>Insulating NGA Installing Committee Update New Business</i>	Founders Ballroom

The Trade Hotel | Milwaukee, WI | 2nd Floor



Schedule NGA Glass Conference: Milwaukee

General Session: Founders Ballroom | Meals: Solomon's

Monday, August 5, 2024

3:00 pm – 5:00 pm **Registration Open**

Tuesday, August 6, 2024

7:00 am **Registration Desk Open**

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

9:15 am – 9:45 am **Orientation**

Interactive Session with overview of conference program, NGA committee structure and resources. Meet your peers- all conference attendees will introduce themselves. This session will outline what to expect at NGA Glass Conference and how to get involved.

9:45 am – 10:45 am **Milwaukee High-Performance Building Innovations**

Take a closer look at several stand-out high-performance projects right in the NGA Glass Conference host city of Milwaukee. This session includes case studies of the restoration of the Birdcage at the Milwaukee County War Memorial, featuring VIG; the high-performance curtain wall façade of the Northwestern Mutual Tower; and two mass timber projects, the Ascent and the Edison. Presented by Steve Panaro of Thornton Tomasetti, Kyle Sword of NSG Pilkington, and Nick Yule of Viracon, with Moderator Katy Devlin of NGA.

10:45 am – 12:15 pm **Panel Discussion: Vacuum Insulating Glazing**

Sponsored by NSG Pilkington

A panel of industry experts will discuss the current state of the market for Vacuum Insulating Glazing (VIG), review the VIG products available, the relevant standards and specifications, building code implications, and ongoing research & testing. Presented by Jon Griggs of Guardian Glass, Kayla Natividad of NSG Pilkington, Steve Marino, of Vitro, Dave Cooper of Vacuum Glass, NGA Energy Codes Consultant Tom Culp of Birch Point Consulting, and Robert Tenent of NREL with Moderator Urmilla Sowell of NGA.

12:15 pm – 1:15 pm **Networking Lunch**

1:15 pm – 2:00 pm **Presentation: How the NGA Members Will Benefit from the EPA Grant**

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 more details about the four focus points of the grant, what it means for NGA member companies and other industry stakeholders and how to get involved. Presented by Urmilla Sowell of NGA and NGA Energy Codes Consultant Tom Culp of Birch Point Consulting.

2:00 pm – 2:30 pm **Recyclability & Sustainability Discussion**

Sponsored by Dow

Is recycling architectural glass good for the industry? Why aren't we all doing it? Can the risks be managed, and can it be done economically? NGA's Recycling and Sustainability task group will discuss resources, share case studies, and begin to formulate our "Advocacy Ask" to legislators to keep architectural glass out of landfills and into viable recycled products. Glass recyclers will share statistics for architectural glass being recycled and where the recycled glass is going. The discussion will include how the EPA grant could help reach industry goals for recycling. Introduction by Brent Dull of Dow, presented by Georgia Scalfano of NGA, Task Group Chair Kyle Sword of NSG Pilkington, and Jeremiah Watson of Infinite Recycled Technologies.

Schedule NGA Glass Conference: Milwaukee

General Session: Founders Ballroom | Meals: Solomon's

- 2:30 pm – 2:45 pm **Afternoon break**
- 2:45 pm – 3:30 pm **Energy Codes & Standards Update**
Get the latest updates on building codes and standards impacting your business. Learn how to influence the direction of energy codes, green codes, and standards. Presented by Tom Culp, Birch Point Consulting, NGA Energy Codes Consultant.
- 3:30 pm – 4:30 pm **Panel Discussion: Preventing Glazing Surprises**
Fabrication Missteps to Avoid: Experienced industry technical leaders and NGA Fabricating Liaisons share lessons learned from fabrication missteps and how these experiences can lead to changes in standards for better quality. Presented by Julia Schimmelpenninckh of Eastman, Robert Carlson of TriStar, Vaughn Schauss of Kuraray, Chuck Wencil of Viracon and Joe Erb of Quanex with Moderator Urmilla Sowell of NGA.
- 4:30 – 6:00 pm **Free time** to enjoy Milwaukee and travel to the off-site reception
The evening reception will be held at the Milwaukee Art Museum, which is 1.5 miles from The Trade Hotel. Approximately 35 minutes walking or 6 minutes by car.
- 6:00 pm – 8:00 pm **Reception & Awards** - Milwaukee Art Museum
700 N. Art Museum Drive, Baumgartner Galleria
Sponsored by Kuraray

Wednesday, August 7, 2024

- 7:30 am **Registration Open**
- 8:00 am – 9:00 am **Networking Breakfast**
- 9:15 am – 10:15 am **NGA Fabricating Committee**
Fabricating Committee General Business
Tempering Presentation: On-Line, Non-Contact Stress Measurement in Heat-Treated Glass
Learn how new technology for nondestructive glass testing could save time and money and improve your heat-treated glass quality control program for tempered or heat-strengthened glass. Presented by Antti Aronen of Glaston.
- 10:30 am – 12:00 pm **NGA Advocacy Committee**
- 12:00 pm – 1:00 pm **Networking Lunch**
- 1:15 pm – 1:45 pm **Fire and Structural Codes & Standards Update**
Get the latest updates on building codes and standards impacting your business. Learn how to influence the direction of structural and fire codes as well as glass and glazing industry standards. Presented by Thom Zaremba, Roetzel & Andress, NGA Fire and Structural Codes Consultant; Nick Resetar, Roetzel & Andress, NGA Fire and Structural Codes Consultant.
- 1:45 pm – 2:15 pm **Interactive Session: Laminating Nomenclature**
Recent changes to the Safety Glazing Certification Council laminated glass certification requirements have

Schedule NGA Glass Conference: Milwaukee

General Session: Founders Ballroom | Meals: Solomon's

led to an evolution in the nomenclature and shorthand used for describing and specifying laminated glass units (including a shift to the metric system). Challenge your peers in a game to get familiar with the new system.

2:30 pm – 4:00 pm **NGA Fabricating Committee**
Laminating
Protective Glazing
Decorative

Thursday, August 8, 2024

7:30 am **Registration Open**

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

9:15 am – 10:15 am **Presentation: Building Net Zero Schools**
Len Sciarra of FARR Architects will share types of fenestration and window orientation to achieve net-zero, how to balance sustainability with life safety and material transparency.

10:30 am – 12:00 pm **NGA Forming Committee**

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

1:15 pm – 2:15 pm **Industry Collaboration Updates**
ANSI | SGCC | IGCC | AGMT presented by Terry Schaefer
FGIA presented by Amy Becker
IWFA presented by Darrell Smith

2:30 pm – 4:00 pm **NGA Fabricating Committee**
Insulating
NGA Installing Committee Update
New Business



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.

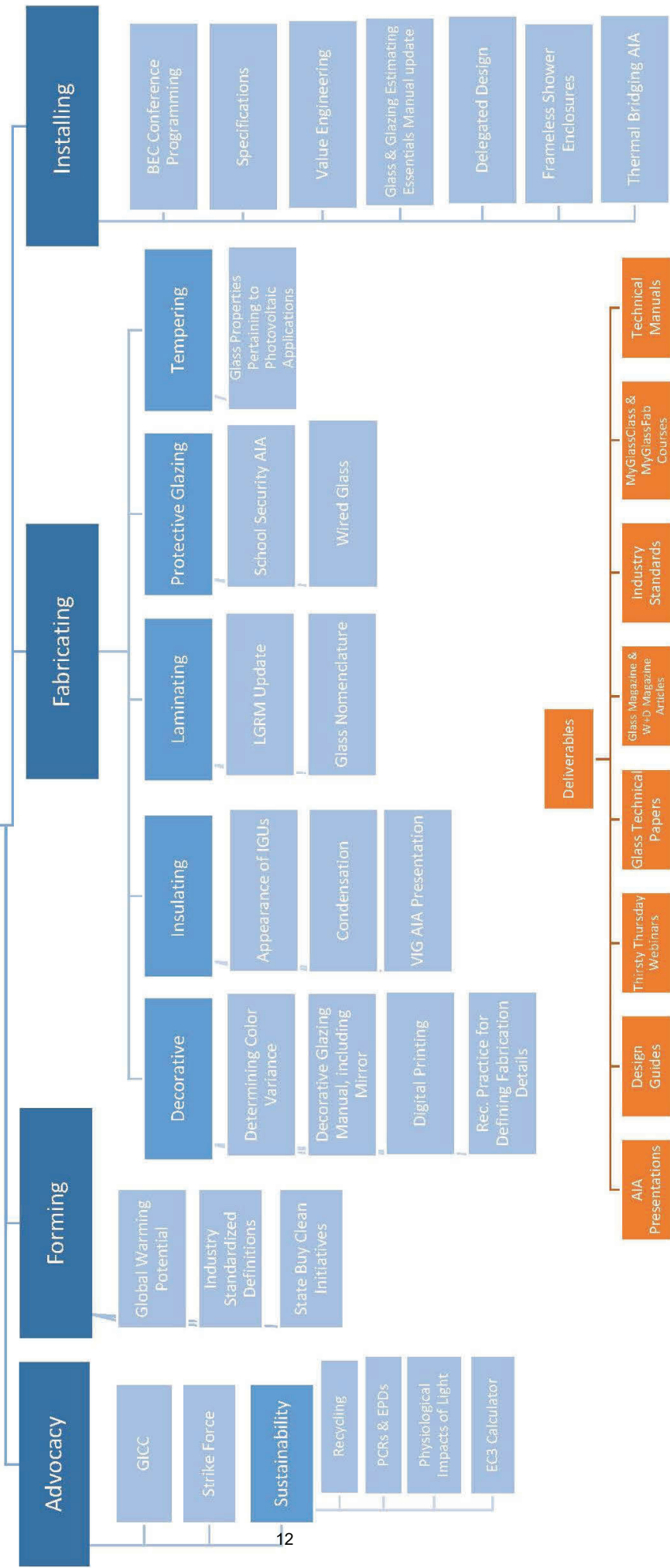
Disclosure of interests:

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

LEGEND

- Committee
- Committee Liaisons
- Active Task Groups



Committee Voting Protocol Parameters

	Advocacy	GICC (Regulatory)	Fabricating	Forming (Flat Glass Mfrs ONLY)	Installing
Members may select activity status as indicated.	Voting				
Member companies are required to ACTIVELY return ballots on time	Corresponding - no vote, but information is distributed to them for selected committees				
Operating Protocol	No	Yes	No	Yes	No
Voting/Baloting 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/Baloting 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%)
Votes to be cast as one of the indicated choices.	Approve				
Negative votes must have comments. Comments must contain the following information to be considered:	Approve with Comment				
<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. 	Negative with Comment				
	Abstain				

Acting Chair: Jon Griggs

Guardian Glass

Chair: Paul Bush

Vitro Architectural Glass / pbush@vitro.com

NGA Antitrust Policy

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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- February 6, 2024
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*
 - ii. Tax credit 48C update – *Tom Culp, Birch Point Consulting*
6. Sustainability Subcommittee – *Kayla Natividad, NSG | Pilkington*
 - a. Embodied Carbon in Construction Calculator (EC3 Calculator)- *Georgia Scalfano, NGA*
 - b. Product Category Rules (PCR), Environmental Product Declarations (EPD) [updates](#) – *Urmilla Sowell, NGA*
 - i. Flat Glass PCR - Valid thru Sept 30, 2025
 - ii. Flat Glass EPD - Valid until Dec 20, 2024
 - iii. Processed Glass PCR - Valid until June 30, 2024
 - iv. Fenestration PCR - Valid until 2027
7. New Business
 - a. Planning for 2025 Glass & Glazing Advocacy Days
 - i. Initiatives for 2025 event
 1. [Window Recyclability: Circular Economy](#)
8. Adjournment

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.



ADVOCACY COMMITTEE MINUTES

NGA Glass Conference: Isle of Palms | Charleston
Feb. 6, 2024 | 10:00 am – 12:00 pm
Room: Osprey Ballroom 1-4

Chair: Paul Bush

Vitro Architectural Glass / pbush@vitro.com

NGA Antitrust Policy

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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*
 - a. Called to order at 10:06 am ET
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- July 25, 2023
 - a. Approved unanimously
5. Presentation – U.S. Department of Energy (DOE) Collaboration and Update – Mark LaFrance
 - a. DOE will announce an opportunity for the glass industry in mid-February: [Building Envelope Innovation Prize: Secondary Glazing Systems](#)
6. Presentation - EPA's Low Embodied Carbon Construction Materials Program - Bill LaRoy, EPA
7. Old Business
 - a. 2024 NGA Glass & Glazing Advocacy Days event
 - i. Initiatives for 2024 event – updating one-pagers with specific “asks” for legislators
 1. [Bird-Friendly Glazing in Building Construction](#)
 2. [High-Performance Glazing Promotes Building Resiliency](#)
 3. [School Security: Windows Respond First](#)
 4. [Registered Apprenticeship Programs](#)
 - ii. Presentation- How to Advocate on Capitol Hill- *Laurie Purpuro, K&L Gates*
 1. Infrastructure Investment and Jobs Act
 - a. Industrial Emission Decarbonization Projects
 - b. Carbon Capture
 - c. Hydrogen
 2. Inflation Reduction Act
 - a. Advanced Industrial Facilities Deployment Program (closed now)
 - b. Electrochromic Glass Investment Tax Credit
 - c. Extends Energy Efficient Home Improvement Credit (Previously the Nonbusiness Energy Property Credit)
 - d. Building Codes Technical Assistance for State and Local Governments
 - i. Funding allocated to adopt latest bldg energy codes for residential and commercial
 - ii. Funding allocated for meeting 2021 IECC zero energy provisions
 3. 48C Tax Credit
 - a. Can be used for industrial decarbonization

4. 179D Energy Efficient Commercial Buildings Tax Deduction
5. Community Benefits Agreement
 - a. Contract between community and developer
 - b. Included as part of grant applications now
6. Next Energy Tax Bill? Ideally, 2025
7. NGA Federal Policy Priorities
 - a. Bird Safe Glass (HR 3781 Federal Bird Safe Building Act)
 - b. School Security (HR 2491: Securing Aid for Every School Act)
 - c. Workforce Development (HR 6655: A Stronger Workforce for America Act)
 - d. Energy Efficiency (IIJA, IRA, next energy bill? Unclear when/if this will happen)
- b. [Window Recyclability: Circular Economy](#)
8. New Business
 - a. Librarian search terms and results- *Nick Resetar, Roetzel & Andress, NGA Code Consultant*
 - i. Weekly legislation term search through Westlaw; sifting through summary bills to find anything that may influence the industry.
 - ii. This is just a tool. If members see things happening, let NGA know.
9. Adjournment
 - a. Adjourned at 11:50 am ET

Next Events:

BEC Conference | Mar 3-5, 2024 | Nashville, TN
Glass Processing Automation Days (GPAD) | Mar 5-6, 2024 | Nashville, TN
NGA Advocacy Days | May 14-15, 2024 | Washington, DC
NGA Glass Conference: Milwaukee | Aug 6-8, 2024 | Milwaukee, WI
GlassBuild America | Sept 30- Oct 2, 2024 | Dallas, TX

NGA Glass & Glazing Advocacy Days FAQs

Q: I thought I'd be meeting with my own Senators and Representatives—why weren't any of my meetings scheduled with them?

A: Congressional meetings are determined first and foremost in relation to NGA's policy priorities. Meetings are scheduled with your District or State legislators especially when our legislative consultants determine your legislator has a direct impact on one or more of our priorities.

Q: I would like to meet with Senators or Representatives, why were most of my Congressional meetings with staffers?

A: Meeting with a staffer does not mean the legislator doesn't care about the meeting or the issue. It simply means the he or she is not available due to the high demand on their time. Congressional aides are more available and very knowledgeable, and most importantly, have the trust of the legislator. A meeting with a staffer or aide can be as effective as a meeting with the legislator.

Q: I was surprised to be assigned to a large group for these meetings, I thought I'd be going to meetings on my own.

A: Legislative offices generally are more favorable to scheduling meetings when they get to meet with a group instead of just one or two individuals. We are aware that the group sizes for 2024 NGA Glass & Glazing Advocacy Days were larger than previous years and that created some challenges. We will aim to keep the group sizes a little smaller in future years.

Q: NGA's issues don't relate directly to my company, can't I just talk about my own company's needs during these meetings?

A: NGA's Glass & Glazing Advocacy Days is our industry's opportunity to talk about the priority issues that NGA and our legislative consultants feel will have the most impact on the entire glass industry and are directly related to current legislation. By taking part in Glass & Glazing Advocacy Days you are lending your voice to help NGA advance these priority issues. We need every Glass & Glazing Advocacy Days participant to stay focused on these priority issues to get our points across during these brief meetings. We recommend that you get in touch with your Senator or Representative by email or at their home office to discuss how they can help with issues directly related to your company.

NGA Glass & Glazing Advocacy Days FAQs

Q: We have more than one location and I'd like to meet with offices representing our other locations too.

A: Beginning with future Glass & Glazing Advocacy Days, we will include more fields on the RSVP form to capture those additional locations' addresses from you and let our consultants know you are also available for meetings with those state/district representatives.

Q: I didn't feel fully prepared on the issues and meeting schedules. Can we have more prep time?

A: We hear you and agree that participants should get more prep time. We will dedicate more time on Day 1 of the event to go over the priority issues and the one pagers. We will give groups more time to meet with each other on Day 1 to decide on roles and speaking points, and we will work with groups to discuss probable scenarios and what to do when things don't go well, and have dedicated time for Q&A.

Q: I want to read the full bills that we are asking Congress to support.

A: Reference NGA's one-pagers in advance (always posted on glass.org/advocacy/initiatives/priority-issues) and see the current bills for which we are seeking support. Then go to Congress.gov and put the bill number (starting with H.R. or S.) in the search bar at the top and hit enter. Click on the corresponding search result to see an overview of the bill's progress. Click on the "Text" tab toward the bottom of the page to read the full bill.

Q: Day 2 was a lot of work! Can our appointments start on Day 1 so we can spread them out?

A: The traditional Capitol Hill "fly in" model does make for a long and busy single day! It is incredibly difficult to schedule just one day of appointments; scheduling appointments on an additional day would not be ideal.

Q: Shouldn't we be leaving a small token or gift at these meetings so that they remember NGA and our meetings? Maybe some NGA stickers or buttons?

A: There are very complicated rules surrounding federal legislators and their staff accepting even small gifts or tokens of appreciation and it is not encouraged in general. We do not want to run afoul of any of these rules or be seen negatively by the legislators' offices as trying to "buy favors." As such, NGA does not want Glass & Glazing Advocacy Days participants handing out anything other than the provided NGA one-pager documents and business cards.

Q: What did we accomplish? Did we get any bills passed?

A: Good things often take time and lobbying Congress is no exception. While there is often no immediate "win" directly attributed from these meetings, they are not for nothing. It takes time and persistence to raise awareness of our industry and its unique needs, to build our reputation, and to identify champions in Congress who can help further our reach. Laying that foundation now by educating them on our issues and asking for their support on our priorities, greatly increases our chances for getting positive votes in the future when bills important to our industry make their way to the House and Senate floor.

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 – February 6-8, 2024
5. Committee Business – *Aaron Thompson, Viracon*
 - a. Ballot Participation
 - b. New coding system on updated and republished GTPs
 - c. Redline version of re-ballotted documents
 - d. NGA Initiatives
 - i. [Recruitment toolkit](#)

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*
- 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*
- c. 2024 Systematic Reviews (5-year updates)
 - 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. New Business- 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*
2. Committee Business, continued
 - a. 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 Schimmelpenninck, 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 Schimmelpenninck, Eastman*

- b. 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*

Laminating – Julia Schimmelpenningh, Eastman

- a. ASTM C1172 Review – Standard Specification for Laminated Architectural Flat Glass
 - i. Discussion of global quality standards
- b. Task Groups
 - i. *Dynamic Glazing for High Performance Buildings GTP – ballot comments resolved; updated document republished in March 2024*
 - ii. Glass Nomenclature
 - iii. Laminated Glazing Reference Manual
- 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 Fabricating ballot in July*
 - 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

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

- a. Decorative Glazing Manual update- *Karen Wegert, NGA*
- b. Task groups
 - i. Determining an Acceptable Color Variance
 - ii. Introduction to Digital Print- *Gin Benner, Agnora, Task Group Chair*
 - iii. Recommended Practice for Defining Fabrication Details- *Mike Saroka, Goldray Glass, Task Group Chair- call for volunteers*
- 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*
 - ii. *School Security AIA presentation update - Julie Schimmelpenningh, Eastman Chemical Company- Task Group Chair*
 - iii. *School Security Design Guide*
- b. Bird-Friendly Glazing– *Marc Deschamps, Walker Glass- Task Group Chair*
 - i. *Bird Friendly AIA presentation – passed ballot*
 - ii. *Standardizing NGA Bird Friendly Glazing Design Guide to promote uniform implementation*

- iii. Bird-Friendly legislation database- *Georgia Scalfano, NGA*
- c. Fire-Rated Glazing
 - i. Wired Glass in Fire-Rated Safety Glazing Applications GTP – call for volunteers to review draft
- d. 2024 Systematic Reviews (5-year updates)
 - i. *Coastal Glazing and the Turtle Codes*- at Fabricating ballot in July
- e. New Business- Protective Glazing
 - i. ASHRAE 189.1 – adding bird-friendly requirements – *Tom Culp, Birch Point Consulting*
 - ii. Protective glazing- *Urmilla Sowell, NGA*

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*
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
- c. Task Groups
 - i. *Guidelines for the Appearance of IGUs*
 - ii. Condensation- *Kayla Natividad, NSG | Pilkington*- call for volunteers
 - iii. VIG AIA presentation – initial call to be scheduled
- d. New Business- Insulating

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

- a. Specifications, updating Masterspec in collaboration with Deltek
- b. Value Engineering task group – *Rob Carlson, Tristar Glass*- Task Group Chair
 - i. How to overcome challenges in implementing high-performance glazing products
- 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.
- d. Glass & Glazing Estimating Essentials Manual update- *Chuck Knickerbocker, TGP* – Task Group Chair
- e. Frameless Shower Enclosures Resources – *Danny Donahue, FHC* – Task Group Chair
- f. Thermal Bridging AIA Presentation – *Stanley Yee, Dow* – Task Group Chair – at final ballot

3. NGA Fabricating Committee New Business
 - a. New NGA Event in Spring 2026

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



FABRICATING COMMITTEE MINUTES

NGA Glass Conference: Isle of Palms | Charleston
 Feb 06, 2024 | 1:15 pm – 3:15 pm
 Feb 07, 2024 | 9:30 am – 10:45 am
 Feb 08, 2024 | 11:00 am – 12:15 pm
 Room: Osprey Ballroom 1-4

Chair: Aaron Thompson, Viracon
 athompson@viracon.com

Vice Chair: Bobby Chestnut, McGrory Glass
 bchestnut@mcgrory.com

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Agenda Items

1. Call to Order - *Chair Aaron Thompson, Viracon*
 - a. Called to order at 1:32 pm ET
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 – July 25-27, 2023
 - a. Motion to approve: Kayla Natividad; Seconded: Rob Carlson; approved unanimously
5. Committee Business – *Aaron Thompson, Viracon*
 - a. Updated Structure of NGA Fabricating Committee Liaisons – *Karen Wegert, NGA*
 - i. Effective March 15, 2024: Mirror will now be under Decorative, Fire-Rated will now be under Protective Glazing; Energy moved to new Sustainability sub-committee under Advocacy
 - b. Spanish translation of GTPs related to cleaning installed glass- *Georgia Scalfano, NGA*
 - i. FB01-00 (2023) [Proper Procedures for Cleaning Architectural Glass Products](#)
 - ii. FB02-02 (2023) [Heat-Treated Glass Surfaces are Different](#)
 - iii. FB03-03 (2023) [Construction Site Protection and Maintenance of Architectural Glass](#)
 1. Postcards in [English](#) and [Spanish](#) also available for How to Clean Architectural Glass and Construction Site Protection
 - a. Now available to download in the store at a 5x7 size
 - c. Ballot Participation
 - i. Vote early, vote on all ballots
 - d. ANSI impactor discussion – *Michelle Phan, Cardinal*
 - i. Still seeking input
 - e. NGA Initiatives
 - i. MyGlassFab™- *Jenni Chase, NGA*
 1. Training is free of charge right now for all industry, not just NGA members. May be a cost once we get past fundamentals.
 2. NGA members to send contact information of training person at their company to Jenni Chase. Webinar will be held for these training personnel.
 3. Opportunity to volunteer to help make more courses. Contact Jenni Chase
 - ii. Glass Processing Automation Days (GPAD)- *Rob Carlson, TriStar Glass*

- Installing Committee Update – *Matt Kamper, Woodbridge Glass - Chair and Joey Aragon, Aragon Construction, Vice-Chair*
- a. Specifications, updating Masterspec in collaboration with Deltek
 - i. 5 specs under peer review; 3 coming up for task group work
 - b. Value Engineering task group – *Rob Carlson, Tristar Glass- Task Group Chair*
 - i. How to overcome challenges in implementing high-performance glazing products

1. Phase 1 is to survey glaziers and fabricators to determine what was getting value engineered out. Find out the best way to approach architects.
2. Volunteers: Brad Carpenter, SGH; Bill LaRoy, EPA
- 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.
 1. Volunteers: Melissa Sotkowski
- d. Glass & Glazing Estimating Essentials Manual update- Chuck Knickerbocker, TGP – Task Group Chair
 - i. Once update is finished, MyGlassClass will be updated to reflect changes
- e. Thermal Bridging AIA Presentation – *Stanley Yee, Dow – Task Group Chair – at ballot*
 - i. At Installing ballot, short of quorum.
- f. New and Updated Technical Resources
 - i. *New!* [Frameless Shower Enclosures Design and Installation Manual](#)
 - ii. *Updated!* IN03-12 (2023) [Key Elements of Fenestration System Shop Drawings](#) GTP

Energy - Helen Sanders, Technoform

- a. EPA Grant Funding- *Tom Culp, NGA Energy Code Consultant, Birch Point Consulting*
 - i. Grant application for \$2.1 million over 5 years was submitted
 - ii. Split up into 4 subprojects:
 1. Primary Flat Glass LCI Data Aggregation
 2. EPD Generator Tool for Processed Glass
 3. EPD Development Assistance for Glass Fabricators
 4. End-of-Life LCA data collection on architectural glass recycling
 - iii. Award announcements “anticipated” by May 1. EPA can award all or part of a proposal and also request changes.
- b. Embodied Carbon in Construction Calculator (EC3 Calculator)- *Georgia Scalfano, NGA*
 - i. Building Transparency still working on calculators, currently in testing. 10 active PCRs in EC3 database and 34 total EPDs.
- c. Product Category Rules (PCR) and Environmental Product Declarations (EPD) [updates](#)
 - i. Flat Glass PCR – valid through 9/30/2025
 - ii. Flat Glass EPD – valid through 12/20/2024
 - iii. Processed Glass PCR - expiration date extended to March 2024. NGA will take lead, FGIA will collaborate
 - iv. Fenestration PCR - published - no longer Windows PCR, expanded to Fenestration
- d. New and Updated Technical Resources
 - i. *New!* Benefits of Daylighting in Building Design AIA Presentation
- e. 2024 Systematic Reviews (5-year updates) – *will go to ballot*
 - i. FB63-19 Products for Energy Applications
 - ii. FB39-14 (2019) Glass Properties Pertaining to Photovoltaic Applications

Protective Glazing – Vaughn Schauss, Kuraray

- a. Bird-Friendly Glazing– *Marc Deschamps, Walker Glass- Task Group Chair*
 - i. Bird Friendly AIA presentation – at ballot
 - ii. Standardizing NGA Guide to promote uniform implementation
 1. Interest in taking NGA’s Design Guide and making it into an ASTM standard
 - a. ASTM already has a proposed test method but doesn’t determine how effective and bird-friendly the product is. NGA’s could give an alternative path and assign a threat factor.
 - b. ASTM – Negative persuasive that it should include reflective testing as well. Chair/co-chair are writing revision to include tunnel test for fly-through and reflective conditions.
 - iii. Bird-Friendly legislation
 1. CSA460 – bird friendly design up for reaffirmation.

Fabricating committee adjourned at 3:25 pm ET

Wednesday, February 7, 2024

Networking Breakfast | 8:30-9:30 am | Indigo Rooftop

Fabricating Committee Meeting | 9:30 am – 10:45 am | Osprey Ballroom 1-4

1. Call to Order - *Chair Aaron Thompson, Viracon*
 - a. Called to order at 9:35 am ET
2. Committee Business, continued

Protective Glazing – Vaughn Schauss, Kuraray

 - a. School Security Glazing
 - iv. School Security ICC Building Code Proposals
 1. Proposal will not include any specified level of protection.
 2. Ultimate goal is to make sure there is a proposal to get adopted by the codes. We want to make sure there is a provision in that code that tests to ASTM F3561 Standard Test Method for Forced-Entry-Resistance of Fenestration Systems After Simulated Active Shooter Attack.
 - v. FB71-21 School Security GTP- reviewing ballot comments
 1. Move original table to Security Glazing GTP and Protective Glazing Manual
 2. For School Security GTP, focus on ASTM F3561 Standard Test Method for Forced-Entry-Resistance of Fenestration Systems After Simulated Active Shooter Attack
 - vi. School Security AIA presentation update* - *Julie Schimmelpenningh, Eastman Chemical Company-Task Group Chair*
 1. Group will meet again soon; use photos to discuss challenges and potential risks and threats
 - vii. School Security Design Guide
 1. Future project to start once GTP and AIA presentation are complete
 - b. New and Updated Technical Resources
 - viii. *Updated!* FB25-09 (2024) Performance Criteria for Glazing Subjected to Seismic Events
 - ix. *Updated!* FB12-07 (2023) Blast Resistant Glazing
 - x. *Updated!* FB34-12 (2023) Screening Out Ultraviolet Radiation with Laminated Glass
 - xi. *Updated!* FB01-00 (2023) Proper Procedures for Cleaning Architectural Glass Products (protective glazing added)
 - c. 2024 Systematic Reviews (5-year updates) – *will go to ballot*
 - xii. FB36-12 (2019) Coastal Glazing and the Turtle Codes
 - d. New Business
 - a. Update of Protective Glazing Manual
 - i. Volunteers: Aaron Thompson, Rob Carlson, Mike Saroka, Julie Schimmelpenningh, Tom Culp, Jeff Haberer, Michelle Phan, Gin Benner, Rick Wright, Melissa Sotkowski, Bobby Chestnut, Vaughn Schauss
 - b. New ASTM standard available: F3279 Standard Test Method for Ballistic-Resistant Security Glazing Materials
 - c. Official statement from NGA - “Laminated glass consists of glass and interlayers. That interlayer can be known as film, folio, etc. (include all other terms).” Look at ISO document.
 - i. Include quote in School Security GTP
 - ii. Add volunteers: Jen Daly, Rob Carlson, Julia Schimmelpenningh, Vaughn Schauss

Insulating - Jeff Haberer, Trulite

- a. ASTM Update
 - i. IG Durability standards
 1. Up for revision this year:
 - a. E2188 Standard Test Method for Insulating Glass Unit Performance
 - b. E2189 Standard Test Method for Testing Resistance to Fogging in Insulating Glass Units
 - c. E2190 Standard Specification for Insulating Glass Unit Performance and Evaluation
 2. RAC draft – resolving negatives for next ballot
 - ii. Gas Filling standards – no current activities

- iii. VIG Standards – durability standard, glass strength standards
- iv. Desiccant and TPS issues – draft being reviewed for ASTM ballot, expect new ASTM standard at end of year
- b. Condensation- *Kayla Natividad, NSG | Pilkington*
 - i. New task group: Jeff Haberer and Kayla Natividad to create PCF– possible Thirsty Thursday presentation, GTP(s), AIA presentation
- c. Task Group updates
 - i. TB 1601-95(14) Guidelines for Use of Capillary Tubes (with FGIA) – *at ballot*
 - ii. FB27-11 (2015) Guidelines for the Appearance of IGU Edges – *at ballot*
 - iii. VIG AIA presentation – initial call to be scheduled
- d. New and Updated Technical Resources
 - i. *New!* FB75-23 Compatibility Testing of Insulating Glass PIB Primary Sealant with Respect to Glazing Materials (joint with FGIA)
 - ii. *Updated!* FB60-18 (2023) Understanding Reflected Solar Energy of Glazing Systems in Buildings

Tempering - Rick Wright, Oldcastle BuildingEnvelope

- a. ASTM C14 Update; C1048, C1369 – *Rick Wright, Oldcastle BuildingEnvelope*
 - i. C1349-2017 Specification for Architectural Flat Glass Clad Polycarbonate
 - a) recently approved – C1349-2017 (2024)
 - ii. C1048-2018 Specification for Heat-Strengthened and Fully Tempered Flat Glass
 - a) task group meetings in progress
 - iii. C1503-2018 Specification for Silvered Flat Glass Mirror
 - a) recently revised and approved – C1503-2024
 - iv. C1172-2019 Specification for Laminated Architectural Flat Glass
 - a) last balloted with two unresolved negatives
 - v. C1279-2013 (2019) Test Methods for Non-Destructive Photoelastic Measurement of Edge and Surface Stresses in Annealed, Heat-Strengthened, and Fully Tempered Flat Glass
 - a) recently revised and approved – C1279-2023
- b. Task Group Updates
 - i. FB57-18 One Optical Number Does Not Fit All GTP – *Chuck Wencl, Viracon*
 - a) Discussion to be had with negative voter
- c. Evaluating Post-Finishing for Heat-Treated Glass Edges – *Bill Lingnell*
 - i. Next step is to determine funding to start testing
- d. New and Updated Technical Resources
 - i. *Updated!* FB03-03 (2023) [Construction Site Protection and Maintenance of Architectural Glass](#)
 - ii. *Updated!* FB18-08 (2023) [Methods of Measuring Optical Distortion in Heat-Treated Flat Architectural Glass](#)
 - iii. *Updated!* FB02-02 (2023) [Heat-Treated Glass Surfaces are Different](#)
 - iv. *Updated!* FB56-18 (2024) [Heat Soak Testing of Tempered Glass for Architectural Glass Applications](#)
- e. 2024 Systematic Reviews (5-year updates) – *will go to ballot*
 - i. FB45-14 (2019) Recommended Applications for Heat-Treated Architectural Glass
 - ii. FB62-19 Mitigating Thermal Stress Breakage in Heat-Treated Spandrel Glass
- f. New Business
 - i. Heat Soak – support an ASTM standard to have a heat soak standard similar to ISO
 - a) Volunteers: Rob Carlson, Mike Saroka, Kayla Natividad, Chuck Wencl, Steve Marino, Michelle Phan, Rick Wright, Jon Griggs, Gin Benner, DJ Weil, Hal Savakus

Fabricating Committee Adjourned at 11:21 am ET

Thursday, February 8, 2024

Fabricating Committee Meeting | 11:00 am – 12:15 pm | Osprey Ballroom 1-4

1. Call to Order - *Chair Aaron Thompson, Viracon*
 - a. Called to order at 10:50 am ET
2. Committee Business, continued

Recycling/Sustainability –

- a. Task Group Update- *Georgia Scalfano, NGA*
 - i. GTP being drafted, World of Glass map update with recycling facilities
- b. Presentation- Glass for Europe Update – *Bertrand Cazes, Glass for Europe*

Decorative – Mike Saroka, Goldray Glass

- a. Task Group Updates
 - i. Decorative Glazing Manual
 1. Content almost complete
 - ii. [Determining an Industry Acceptable Color Variance](#) GTP – task group to review ballot comments
 1. Meeting to be scheduled in March to review ballot comments
 - iii. [Introduction to Digital Print](#) GTP – *Task Group Chair Gin Benner, Agnora*
 1. Meeting to be scheduled in March to continue task group work
- b. New and Updated Technical Resources
 - i. *Updated!* FB53-17 (2024) [Benefits of Decorative Glass in Daylighting Applications](#)
- c. 2024 Systematic Reviews (5-year updates)- *will go to ballot*
 - i. FB44-14 (2019) Assessing the Durability of Decorative Glass
 - ii. FB42-14 (2019) Assessment of Decorative Glass Strength Properties
- d. Other Business
 - i. New ASTM group on backpainted glass - WK88134. Volunteers to email Mike Saroka.
 - ii. Potential task group for ERP software; standardization for naming conventions, terminology. Start conversation at GPAD.

Mirror – Dave Evans, Guardian Glass

- a. ASTM C1503 update
 - i. Timeline of Mirror Standards
- b. Task Group Updates
 - i. Mirror Reference Manual – hold for systematic review of relevant GTPs
- c. New and Updated Technical Resources
 - i. *Updated!* FB58-18 (2023) [Understanding Reflective Distortion in Mirror Installations](#)
- d. 2024 Systematic Reviews (5-year updates)
 - i. FB06-05 (2019) Proper Procedures for Cleaning Flat Glass Mirrors
 - ii. FB22-09 (2019) Proper Procedures for Fabrication of Flat Glass Mirrors
 - iii. FB30-11 (2019) Proper Procedures for Receiving, Storage and Transportation of Flat Glass Mirrors
 - iv. FB31-11 (2019) LEED White Paper: Mirror
- e. Other Business
 - i. When balloting, send out red-line version or summary of changes

Fire-Rated Glazing – Kremena Doytcheva, Vetrotech Saint-Gobain

- a. Update on Building Code Proposals - *Thom Zaremba, Roetzel & Andress, NGA Fire and Structural Code Consultant*
- b. Task Group Updates
 - i. Wired Glass in Fire-Rated Safety Glazing Applications GTP – initial call to be scheduled
 1. GTP drafted; group to meet to review
- c. New and Updated Technical Resources
 - i. *New!* FB76-23 Fire-Rated Glazing 101

d. Other Business

Laminating – Julia Schimmelpennigh, Eastman

- a. Updated nomenclature for laminated glass
 - i. Initial call to be scheduled in March
- b. ASTM C1172 Review – Standard Specification for Laminated Architectural Flat Glass
 - i. Two negatives are being worked through.
- c. Task Group Updates
 - i. Laminated Glazing Reference Manual update
 - 1. Task group reviewing current edition
 - ii. FB32-11 (2018) Dynamic Glazing for High Performance Buildings – *at ballot*
- d. New and Updated Technical Resources
 - i. *Updated!* FB09-06 (2023) Suggested Procedures for Dealing with Broken Glass
 - ii. *Updated!* FB33-11 (2023) Glass Use in Guardrails
 - iii. *Updated!* FB05-04 (2023) Emergency Egress through Laminated Glazing Materials
- e. 2024 Systematic Reviews (5-year updates)- *will go to ballot*
 - i. FB07-05 (2019) Point Supported Glazing
 - ii. FB24-09 (2019) Hurricane Product Substitution
 - iii. FB37-12 (2019) Laminated Glass Use in Furniture
 - iv. FB61-19 Tornado Resistant Glazing
 - v. FB23-09 (2019) Approximate Weight of Interlayer Used in Laminated Architectural Flat Glass
 - vi. FB41-14 (2019) Design Considerations for Use of Sealants/Adhesives with Coated Glass
- f. New Business

3. NGA Fabricating Committee New Business

- a. Documents lengthy names and numbering system
 - i. Shorten titles where possible
 - ii. Use new coding system on updated and republished GTPs starting immediately

4. Next Events:

[BEC Conference](#) | Mar 3-5, 2024 | Nashville, TN
[Glass Processing Automation Days \(GPAD\)](#) | Mar 5-6, 2024 | Nashville, TN
 NGA Glass & Glazing Advocacy Days | May 14-15, 2024 | Washington, D.C.
 NGA Glass Conference: Milwaukee | Aug 6–8, 2024 | Milwaukee, WI
 GlassBuild America | Sept 30-Oct 2, 2024 | Dallas, TX

5. Adjournment

- a. **Adjourned at 12:23 pm ET**



11 AIA-accredited Presentations

- Benefits of Daylighting in Building Design
- Benefits of Laminated Glass in Design
- 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
- Understanding Applications for Heat-Treated Glass
- Value-Added Performance of Coated Glass
- Thermal Bridging Considerations – *Coming Soon!*



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FORMING COMMITTEE AGENDA

Aug. 6, 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

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Agenda Items

1. Call to Order – *Chair Kayla Natividad, Pilkington | NSG*
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 – February 6, 2024

5. Old Business
 - a. The Value-Added Performance of Coated Glass AIA presentation update- *task group Chair Steve Marino, Vitro*
 - b. State Buy Clean initiatives- *Georgia Scalfano, NGA*
 - c. GSA IRA Update – *Tom Culp, Birch Point Consulting, NGA Energy Codes Consultant*
 - d. Flat Glass Industry Standardized Definitions
 - e. Anti-Microbial Coatings for Architectural Glass GTP
 - i. Task group to review ballot comments

6. New Business
 - a. US DOE Decarbonization- *Georgia Scalfano, NGA*
 - b. Flat Glass Sustainability Drivers

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



FORMING COMMITTEE MINUTES

NGA Glass Conference: Isle of Palms | Charleston
 Feb. 6, 2024 | 4:30 pm – 5:30 pm
 Room: Osprey Ballroom 1-4

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 4:52pm ET
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 – July 25, 2023
 - a. Motion to accept: Steve Marino, Seconded: Jon Griggs; approved unanimously
5. Meeting Business
 - i. Federal Buy Clean, IRA funding
 1. GSA IRA limits for low embodied carbon glass – top 20%, top 40%, and better than avg limit
 2. Compliance documentation- Product-specific EPD and EnergySTAR score
 - b. State Buy Clean initiatives- *Georgia Scalfano, NGA*
 - i. Buy Clean map to be distributed to committee members
 - ii. Potential of granting access to the Buy Clean spreadsheet to members only
 - iii. New member benefit could also be offering guidance on language
 - c. Task Group Updates
 - i. Coated Glass AIA presentation – *Steve Marino, Vitro – Task Group Chair* - at final ballot
 1. Comments incorporated, at final ballot
 - ii. Anti-Microbial Coatings for Architectural Glass GTP
 1. Many comments to address. Initial call to be scheduled.
 - iii. Definitions
 1. Low-e, solar control, jumbo, low iron, thin glass
 2. Important to start looking into defining terms for industry standardization
 - iv. Physiological Impacts task group update- *Karen Wegert, NGA*
 1. Perhaps not only a glass problem but a human problem (children spending frequent time outdoors have improved eye health). Considerations for glass design in daycares, schools, homes, etc. but eye health is not completely dependent on glass design. Group will meet again with Lisa Heschong and Richard Lange when new research results are available.
 - d. New and Updated Technical Resources
 - i. *Updated!* FM03-10 (2023) [LEED® Recycled Content for Glass](#)
 - ii. *Updated!* FM05-12 (2023) [Physical and Mechanical Properties of Typical Soda Lime Float Glass](#)
 - iii. *Updated!* FM02-07 (2024) [Flat Glass Industry Standards](#)
 - e. 2024 Systematic Reviews (5-year updates)
 - i. FM04-12 (2019) Daylighting GTP
 - f. GSA IRA Update – *Tom Culp, Birch Point Consulting, NGA Energy Codes Consultant*

- g. ASTM C1036 *Standard Specification for Flat Glass* Update – *Urmilla Sowell, NGA*
 - i. Scope has been revised to include more compositions and add clarity. Table 4 updated.
- 6. New Business
 - a. US DOE Funding Opportunity to Decarbonize Energy- and Emissions-Intensive Industries

Next Events:

BEC Conference | Mar 3-5, 2024 | Nashville, TN
Glass Processing Automation Days (GPAD) | Mar 5-6, 2024 | Nashville, TN
NGA Advocacy Days | May 14-15, 2024 | Washington, DC
NGA Glass Conference: Milwaukee | Aug 6-8, 2024 | Milwaukee, WI
GlassBuild America | September 2024 | Dallas, TX

- 7. Adjournment
 - a. Adjourned at 5:37 pm ET



ATTENDEES

ACE Glass Central AR
Courtney Little

Administrative Management Systems, Inc.
Terry Schaefer +

Ajay Glass Co.
Jim Stathopoulos

AllStar Glass Company
Jodi Martinez
Arielle Reed

Birch Point Consulting
Tom Culp +

Burkle North America, Inc.
Kyle Lindersmith

C.R. Laurence Company, Inc./ U.S. Aluminum
Mark Suehiro

Cardinal Glass Industries
Carey Wallace

Dow *
Brent Dull

Eastman | Saflex *
Julia Schimmelpenningh +
Jeff Skaza

Element30, Inc.
Jim Harris “
Marcie Harris
Laura Stuart

FARR Associates Architecture & Urban Design
Len Sciarra +

Fenestration and Glazing Industry Alliance
Amy Becker +

FeneTech, a Cyncly Company
Ron Crowl
Tammy Crowl “

Foster Structural Solutions LLC
Michael Foster

G&K Engineering
Gustave Schmoll
Jacklyn Schmoll “

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Joe Green

Glass Coatings and Concepts LLC*
Matt Hanna
Randy Reynolds
Stephanie Reynolds “
Sean Weir

Glass Magazine
Katy Devlin +
Norah Dick

Glaston America, Inc.
Jeff Tyl
Antti Aronen +
Jeff Giles

Guardian Glass LLC
Jon Griggs +
Hal Savakus

ICD High Performance Coatings
Casey Coats
Austin Seely

Infinite Recycled Technologies
Jeremiah Watson +
Nick Henderson

International Window Film Association
Darrell Smith +
Lisa Winckler

Kawneer Co., Inc.
Chris Schultz

Klein Dickert
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Koonse Glass Co.
Silas Koonse

Kuraray America, Inc. *
Vaughn Schauss +

Larson Engineering, Inc.
Rachel Schulz
Kelvin Veloso

LiteSentry-SoftSolution-Strainoptics
David Cousins

Mappi America, Inc.
Nancy Mammaro

Montana Sash & Door
Rick Locke

National Renewable Energy Laboratory
Robert Tenent +

Novum Structures, LLC
Thomas Ehlert

NSG | Pilkington North America, Inc. *
Shannon Jurca
Kayla Natividad +
Kyle Sword +

Oldcastle BuildingEnvelope
Melissa Szotkowski
Rick Wright

Q-railing USA
Syndi Sim

Quality Glass and Mirror Service
Gabe Barkley
Jason Hoover
David Paulmeyer

Quanex Building Products
Joe Erb +
Jacob Jorgenson

Ren Bartoe Consulting Services LLC
Ren Bartoe
Roberta Bartoe “

Resource Recovery LLC
Austin Beaupré

Roetzel & Andress
Nick Resetar +
Thomas Zarembo +

SAFTI FIRST Fire Rated Glazing Solutions
Tim Nass
Diana San Diego

Salem Fabrication Technologies Group Inc
Ashley Price
Natalie Price “

Schilling Inc.
Douglas Schilling

Simpson Gumpertz and Heger
Anne Bern “
Del Bern

Strategic Materials Inc.
Joe Meierhoff

S.W. Joehlin
Sharon Joehlin “
Stan Joehlin

T. Fin Building Solutions
Tim Finley

TBP Converting, Inc.
Christine Jeffers “
Michael Jeffers
Aaron Strodthoff

Technical Glass Products
Devin Bowman

Techni-Glass LLC
Jon Johnson
Ruth Johnson “

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James Wright

Thornton Tomasetti
Steve Panaro +

Tristar Glass, Inc.
Robert Carlson +
Tim Kelley

Trulite
DJ Weil

TrueNorth Collective
Jeffrey Zeman

USGlass Magazine
Joshua Huff

Vacuum Glass LLC
David Cooper +
Norah Cooper “

Vibrantz Technologies
Bob Korlewitz

Viracon
Aaron Thompson
Chuck Wencl +
Jerrie Rose Wencl “
Thomas Wojtowicz
Nick Yule +
Doug Zirngible

Vitro Architectural Glass
Michael Hammond
Steve Marino +

Walker Glass Co., Ltd.
Bobby Chestnut
Marc Deschamps

Wiss Janney Elstner Associates Inc
Tony Cinnamon

Wojan Window and Door Corporation
Thomas Holewinski

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“ Spouse/Partner

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Aurora, OH



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Spokane Valley, WA



Syndi Sim

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Anderson Aluminum Corp.
Columbus, OH



Nicole Harris

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NGA Advocacy Committee



Paul Bush
Chair
Vitro Architectural
Glass

NGA Fabricating Committee



Aaron Thompson
Chair
Viracon



Bobby Chestnut
Vice Chair
Walker Glass

NGA Forming Committee



Kayla Natividad
Chair
Pilkington | NSG



Steven Marino
Vice Chair
Vitro Architectural
Glass

NGA Installing Committee



Joey Aragon
Chair
Aragon Construction

Fabricating Committee Technical Liaisons



Julia Schimmelpenningh
Laminating
Eastman



Rick Wright
Tempering
Oldcastle BuildingEnvelope



Vaughn Schauss
Protective Glazing
Kuraray



Michael Saroka
Decorative
Goldray Glass



Robert Carlson
Insulating
Tristar Glass

NGA Staff and Consultants in Attendance



Tom Culp
Energy Codes
Consultant



Katy Devlin
Content Director
Glass Magazine
Editor-in-Chief



Norah Dick
Senior Editor



Nicole Harris
President & CEO



Alan Hoover
Instructional
Designer



Michele Nosko
Vice President,
Association
Operations



Nick Resetar
Fire & Structural
Codes Consultant



Wendy Rochelle
Meeting Planner



Georgia Scalfano
Advocacy & Technical
Services Sustainability
Manager



Urmilla Sowell
Vice President,
Advocacy &
Technical Services



Karen Wegert
Director, Advocacy
& Technical
Services



Thom Zaremba
Fire & Structural
Codes Consultant

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

Legislative Bill Progress

- September 25, 2023: Response to RFI for Creating a List of Eligible Decarbonizing Building
- May 1, 2023: Response to DOE request for information regarding Challenges and Opportunities of Increasing Materials Circularity.
- April 25, 2023: Comment to DOE on Technical Assistance for Latest and Zero Building Energy Code Adoption
- Feb. 9, 2023: Comment to GSA Inflation Reduction Act Low Embodied Carbon Material Standards

Ongoing task group work

- Sustainability and Recycling of Architectural Glass

FORMING COMMITTEE

Ongoing task group work

- Flat Glass Industry Standardized Definitions

INSTALLING COMMITTEE

At ballot

- AIA Presentation: Thermal Bridging Considerations at Interface Conditions

Ongoing task group work

- Delegated Design vs. Design Build vs. Design Assist
- Deltek Specifications
- Frameless Shower Enclosures Resources
- Glass and Glazing Estimating Essentials Manual update
- Value Engineering

FABRICATING COMMITTEE

At ballot

Decorative

- Determining an Acceptable Color Variance for Decorative Glass

Insulating

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

Protective Glazing

- School Security Glazing
- Coastal Glazing and the Turtle Codes

Laminating

- Glass Use in Furniture

Ongoing task group work

Decorative

- Decorative Glazing Manual
- Introduction to Digital Printing
- Recommended Practice for Defining Fabrication Details

Insulating

- Condensation

Laminating

- Laminated Glazing Reference Manual update
- Glass Nomenclature

Protective Glazing

- AIA Presentation: Security Glazing for Schools
- Standardizing NGA Bird-Friendly Design Guide to Promote Uniform Implementation

Tempering

- Glass Properties Pertaining to Photovoltaic Applications

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

Manuals, Guides and Books

- 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

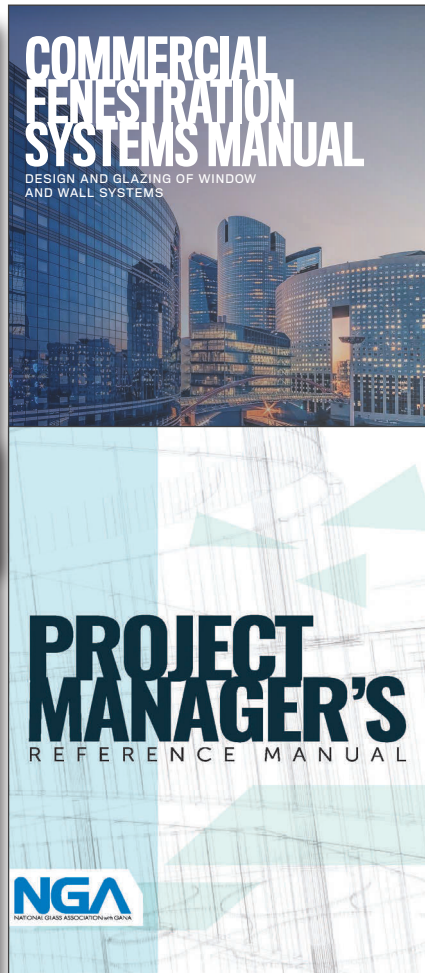
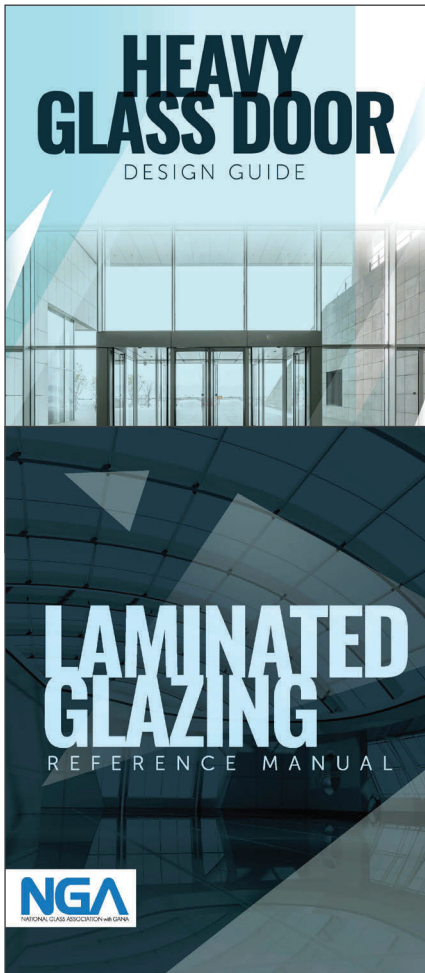
Design Guides

- 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
- FB17-08 (2019) Glossary of Terms for Color and Appearance
- 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
- FB33-11 (2023) Glass Use in Guardrails
- FB34-12 (2023) Screening Out UV Radiation with Laminated Glass
- FB35-12 (2020) Bird-Friendly Glass Design Strategies

FB36-12 (2019)	Coastal Glazing and the Turtle Codes
FB37-12 (2019)	Laminated 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
FB71-21	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
FM01-08 (2020)	Approximate Weight of Architectural Flat Glass
FM02-07 (2017)	Flat Glass Industry Standards
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
IN01-06 (2020)	The Top 10 Items Commonly Missing from Fenestration System Shop Drawings
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



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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 Technical & Advocacy Director 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 – *NGA members save up to 50%* [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%*
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 - 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]

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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](#)

NGA Glass Conference: Milwaukee
Aug. 6 - 8, 2024 | The Trade, Milwaukee, WI

GlassBuild America: The Glass, Window & Door Expo
Sept. 30 - Oct. 2, 2024 | Dallas, TX

NGA Glass Conference: Carlsbad
Feb. 3 - 6, 2025 | The Westin Resort, Carlsbad, CA

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

NGA's Glass & Glazing Advocacy Days
Spring 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](#)

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New locations for GlassBuild America in 2024 and 2025!

September 30 – October 2, 2024 | **Dallas, Texas**

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

BLUEPRINT

FOR

COLLABORATION

A DAY INSIDE THE GLASS AND
FENESTRATION INDUSTRY FOR
THE DESIGN COMMUNITY
AT GLASSBUILD MAINSTAGE

09.30.2024

10AM-5PM

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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



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