



NGA GLASS CONFERENCE™
CHICAGO — JULY 18-20, 2022

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

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

Promote: Elevate the image of glass as a safe, healthy, sustainable and inspiring building product, and advance the industry as a viable, thriving and exciting career path.

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

Grow: Build NGA's membership to increase influence, impact and results.



Wi-Fi

Network: Renaissance_CONFERENCE

Password: GCC-IYOG2022

Sponsored by



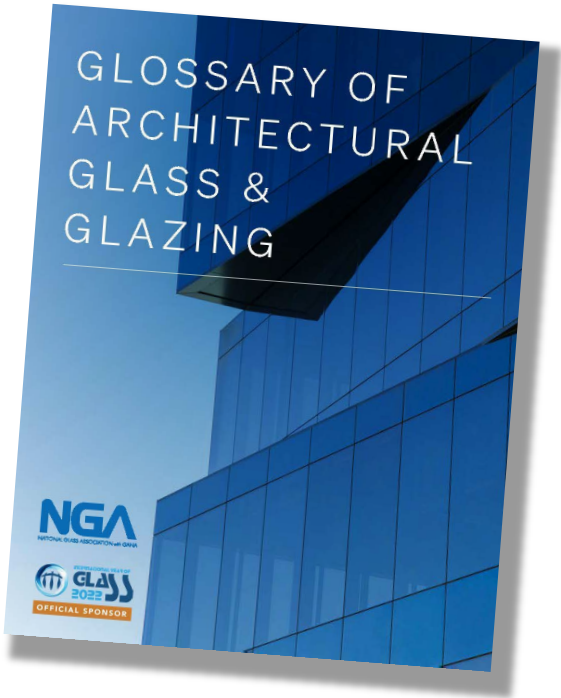
Table of Contents

- Sponsor Recognition 4
- Pre-Registration List..... 5
- Schedule of Events 7
- Leadership Roster 8
- Consultant & Staff Roster 9
- Anti-Trust Policy & Member Conflict of Interest Statement 10
- Organization Chart..... 12
- NGA Publications List..... 14
- Task Group Activities Summary 16
- Advocacy Committee Agenda & Minutes..... 19
- Fabricating Committee Agenda & Minutes 21
- Forming Committee Agenda & Minutes..... 30
- What We Do..... 32
- Acronyms Quick Reference Sheet.....34

**Includes 1,800 terms – from A to Z
and everything in between!**

Purchase yours today at
glass.org/store.

NGA members: download a copy for FREE!



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



Technology Sponsor

--



Meal & Presentation Sponsor

--



Facility Tour Sponsors

--



Conference Program Sponsor

--



Beverage Station Sponsors

--



Tour Testing Sample Sponsors

Happy Hour Sponsors

--



Boost Sponsor

ATTENDEES

3M
Jennifer Daly

ACE Glass Central AR
Courtney Little #

American Glass & Mirror
Guy Selkinske #

Armoured One
Tino Amodei +

AROW Global Corp.
Jon Johnson

Billco Manufacturing
Tracy Rogers

Burkle North America, Inc.
Kyle Lindersmith

Cardinal Glass
DJ Weil

Cardinal IG
Michelle Phan

Consolidated Glass Corp.
Brad Bartley
Shane Merryman

CR Laurence/US Aluminum
Roman Aguiniga
Roman Jimenez

Diagraphics Inc.
Mark Green

Dow*

Eastman Chemical Co. *
Julia Schimmelpenningh > +
Megan Szlosek

FeneTech Inc
Ron Crowl #

FHC Frameless Hardware Co. *
Paul Daniels

ATTENDEES

Gardner Glass Products
Lucas Brooks
Randall Parsons
Seth Rhoades

GGI
John Bush

Glass and Mirror Craft
Steve Gizicki

Glass Coatings & Concepts *
Matt Hanna
Tim McGee
Randy Reynolds

Glasswerks *

Goldray Industries Ltd. *
Michael Saroka >

Guardian Glass LLC *
Darijo Babic #
Dave Evans >
Jon Griggs ^
Hal Savakus

H.B. Fuller Company
Brian White

Hale Glass
Brian Hale #

Hardware and Glass Group, Ltd.
Robert Shepherd

ICD High Performance Coatings
Casey Anderson
Jeff Nicholson

Intertek
Jose Colon
Travis Hoover

Kawneer Company
Ivan Zuniga

Klein & Hoffman
Architects|Engineers
Terry McDonnell

ATTENDEES

Koonse Glass Co.
Silas Koonse #

Kuraray America, Inc. *
Vaughn Schauss >

Larson Engineering
Rachel Schulz
Cassandra Sharpe

Mappi America *
Nancy Mammaro

McGrory Glass
Bobby Chestnut ^
Jim Gulnick

Momentive Performance
Materials
Kyle Blais

Montana Sash & Door
Rick Locke #

Morse Architectural
Andrew Chatfield

Northwestern Glass Fab
Eric Fortin

Oldcastle BuildingEnvelope
Jason Fisher
Melissa Szotkowski
Rick Wright >

Pilkington|NSG*
Kayla Natividad

Schilling Inc.
Jerry Heider
Nicholas Karpa
Doug Schilling #

Simpson Gumpertz & Heger Inc.
Peter Babaian

Smart Rental, LLC
John Hensley

Strategic Materials
Robert Christian

ATTENDEES

SWM International
Tom Niziolek

Technical Glass Products
Devin Bowman

Technoform
Helen Sanders > +

Tristar Glass, Inc. *
Rob Carlson
Tim Kelley #

Trulite Glass and Aluminum
Solutions, LLC
Jeffery Haberer >

Vacuum Glass LLC
David Cooper

Viracon
Aaron Thompson ^

Vitro Architectural Glass *
Paul Bush ^
Steve Marino

Vitrum Glass Group *
Tara Brummet

W.A. Wilson & Sons, Inc.
Tim Moore

Walker Glass Company Ltd. *
Marc Deschamps

WINCO Window Company
Lothar Erkens
Jake Madery

CONSULTANTS

Birch Point Consulting
Tom Culp

Roetzel & Andress
Nick Resetar
Thom Zaremba

INDUSTRY ORGANIZATIONS

Fenestration and Glazing Industry
Alliance (FGIA)
Amy Roberts
Janice Yglesias

Messe Dusseldorf North America
Eva Rowe

SGCC/IGCC/AMS
John Kent

PRESS

Glass Magazine
Katy Devlin +

Key Media & Research (KMR)
Debra Levy
Ellen Rogers

* Sponsors
+ Speakers
Board Members
^ Committee Chairs/Vice Chairs
> Technical Liaisons

NGA Glass Conference: Chicago 2022 Schedule of Events

Monday, July 18, 2022

Meeting Room

10:00 am – 5:00 pm	Registration	Northbrook Foyer
12:00 pm – 1:00 pm	Welcome Lunch & Presentation , <i>sponsored by Dow</i>	Winnetka
1:00 pm – 4:30 pm	Fabricating Committee <i>Tempering Fire-Rated Glazing Mirror Installing</i>	Northbrook
5:00 pm – 6:00 pm	Happy Hour , <i>sponsored by LiteSentry/SoftSolution and Walker Glass Co., Ltd.</i>	Northbrook Foyer

Tuesday, July 19, 2022

7:30 am – 1:00 pm	Registration	Northbrook Foyer
7:45 am – 8:45 am	Breakfast & Presentation <i>Industry Trends + Top 50 Glaziers & Fabricators Highlights</i>	Winnetka
9:00 am – 12:00 pm	Fabricating Committee, cont. <i>Industry Collaboration Updates Energy Insulating</i>	Northbrook
12:00 pm – 1:00 pm	Lunch & Presentation	Winnetka
1:00 pm – 5:30 pm	<i>Backstop Explained</i> Facility Tours , <i>sponsored by Eastman Chemical Co. and Guardian Glass with support from FHC Frameless Hardware Company and Glasswerks</i> <i>Transportation will leave hotel lobby promptly at 1:15 pm</i>	
6:00 pm – 7:30 pm	“Taste of Chicago” Beer Sampling & Reception	Greenery Room

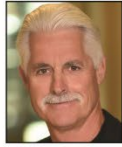
Wednesday, July 20, 2022

7:30 am – 4:00 pm	Registration	Northbrook Foyer
7:45 am – 8:45 am	Breakfast & Presentation <i>Technical & Codes Update</i>	Winnetka
9:00 am – 10:30 am	Advocacy Committee Meeting	Northbrook
10:45 am – 11:45 am	Forming Committee Meeting	Northbrook
12:00 pm – 1:00 pm	Lunch & Presentation <i>The Glazing Industry’s Impact on Active Shooter Standards</i>	Winnetka
1:00 pm – 4:00 pm	Fabricating Committee Meeting, cont. <i>Protective Glazing Laminating Decorative</i>	Northbrook

NGA Board of Directors



Guy Selinske
American Glass & Mirror
Chair



Brian Hale
Hale Glass Inc.
Chair-Elect



Doug Schilling
Schilling Inc.
Treasurer



Cathie Saroka
Goldray Glass
Immediate Past Chair



Darijo Babic
Guardian Glass



Denise Baker
Spring Glass & Mirror



Ron Crowl
FeneTech Inc.



Tim Kelley
TriStar Glass Inc.



Silas Koonse
Koonse Glass Company



Courtney Little
Ace Glass



Rick Locke
Montana Sash & Door



Jodi Martinez
AllStar Glass Co. Inc.



Jim Stathopoulos
Ajay Glass Co.



Nicole Harris
NGA President & CEO

Advocacy Committee



Paul Bush
Chair
Vitro Architectural Glass

Fabricating Committee



Aaron Thompson
Chair
Viracon



Bobby Chestnut
Vice Chair
McGrory Glass

Forming Committee



Jon Griggs
Chair
Guardian Glass



David Duly
Vice Chair
Pilkington | NSG

Installing Committee



Matt Kamper
Chair
Woodbridge Glass



Joey Aragon
Vice Chair
Aragon Construction

Fabricating Committee Technical Liaisons



Dave Evans
Guardian Glass
Mirror Technical Liaison



Kevin Norcross
Vetrotech Saint-Gobain
Fire-Rated Glazing Technical Liaison



Jeff Haberer
Trulite Glass & Aluminum Solutions
Insulating Technical Liaison



Helen Sanders
Technoform
Energy Technical Liaison



Michael Saroka
Goldray Glass
Decorative Technical Liaison



Vaughn Schauss
Kuraray America
Protective Glazing Technical Liaison



Julia Schimmelpennigh
Eastman Chemical Co.
Laminating Technical Liaison



Rick Wright
Oldcastle BuildingEnvelope
Tempering Technical Liaison

NGA Staff & Consultants in Attendance



Alan Hoover
Senior Manager,
Instructional
Design



Andrew Haring
Vice President,
Business
Development



Jenni Chase
Senior Director,
Education



Karen Wegert
Associate Director,
Advocacy & Technical
Services



Katy Devlin
Editor-in-Chief



Michele Nosko
Senior Director,
Association
Operations



Nick Resetar
Codes
Consultant



Nicole Harris
President &
CEO



Sara Neiswanger
Senior Manager,
Industry
Engagement



Thom Zaremba
Codes
Consultant



Tom Culp
Codes
Consultant



Urmilla Sowell
Advocacy &
Technical Services
Director



Wendy Rochelle
Meeting Planner



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.

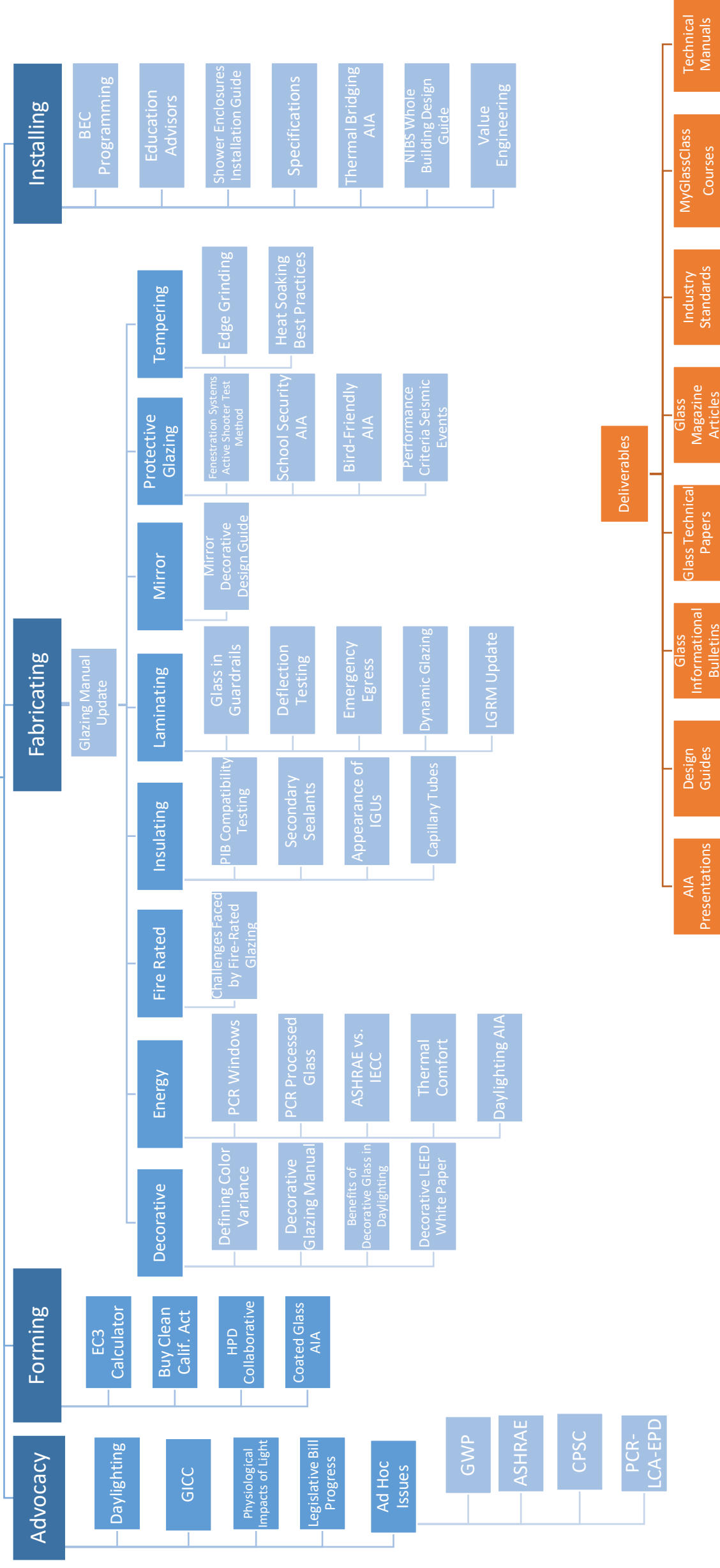
Using the NGA Conflicts of Interest Disclosure Form provided by NGA staff, I will disclose potential conflicts to the Chair of the Board (or in the case of the Chair, to the Treasurer) and/or to the members of any committees, divisions or task forces of NGA as designated by the Board annually and as 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

2022
International
Year of Glass



LEGEND

- Committee
- Committee Liaisons
- Task Groups

LAS VEGAS

OCTOBER 18-20, 2022

GLASSBUILDAMERICA.COM

SEE EVERYTHING

PEOPLE

PRODUCTS

INNOVATION



GLASSBUILD AMERICA IS THE LARGEST ANNUAL TRADE SHOW FOR THE COMMERCIAL AND RESIDENTIAL GLASS, WINDOW AND DOOR INDUSTRIES IN THE ENTIRE WESTERN HEMISPHERE. EXPERIENCE FULL-SCALE PRODUCT INNOVATION ON DISPLAY UNLIKE ANY OTHER EXPO CAN DELIVER.

THE ONLY WAY TO SEE EVERYTHING, IS TO BE THERE.

GlassBuild is Back in Vegas! Produced by the National Glass Association (NGA), GlassBuild America is where buyers and sellers representing the entire glass and fenestration industry supply chain come together. Join your colleagues, customers, prospects and competitors for unmatched educational sessions, new product demonstrations, networking, the annual Glazing Executives Forum, and the return and relaunch of the GlassBuild Theater.

If you don't go to GlassBuild, your competitors will thank you.



REGISTER NOW

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

Co-located with the World Millwork Alliance (WMA)

WMA WORLD MILLWORK ALLIANCE®

Follow
#GlassBuild
 f t v in

PUBLICATIONS LIST

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](#)
[Employee Safety Guide](#)
[Engineering Standards 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](#)
 DG02-21 [Frameless Shower Enclosures](#)
 DG03-22 [Thermal Bridging Considerations at Interface Conditions](#)

Glass Technical Papers

FB01-00 (2020) [Proper Procedures for Cleaning Architectural Glass Products](#)
 FB02-02 (2018) [Heat-Treated Glass Surfaces Are Different](#)
 FB03-03 (2018) [Construction Site Protection and Maintenance of Architectural Glass](#)
 FB04-03 (2021) [Design Considerations for Laminated Glazing Applications](#)
 FB05-04 (2017) [Emergency Egress Through Laminated Glazing Materials](#)
 FB06-05 (2019) [Proper Procedures for Cleaning Flat Glass Mirrors](#)
 FB07-05 (2019) [Point Supported Glazing](#)
 FB09-06 (2018) [Suggested Procedures for Dealing with Broken Glass](#)
 FB10-06 (2018) [Skylights and Sloped Glazing are Not Walking Surfaces](#)
 FB11-06 (2020) [Marking and Labeling of Architectural Laminated Glass](#)
 FB12-07 (2018) [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 (2017) [Bullet Resistant Glazing](#)
 FB17-08 (2019) [Glossary of Terms for Color and Appearance](#)
 FB18-08 (2013) [Methods for Measuring 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](#)
 FB22-09 (2019) [Proper Procedures for Fabrication of Flat Glass Mirrors](#)
 FB23-09 (2019) [Approximate Weight of Interlayer used in Laminated Architectural Flat Glass](#)
 FB24-09 (2019) [Hurricane Product Substitution](#)
 FB25-09 (2017) [Performance Criteria for Glazing Subjected to Seismic Events](#)
 FB26-10 (2017) [Detention Facility Glazing](#)
 FB27-11 (2015) [Guidelines for the Appearance of Insulating Glass Unit Edges in Commercial Applications](#)
 FB28-11 (2022) [Assessing the Compatibility of Glazing Materials and Components](#)
 FB29-11 [Fire-Rated Glazing Changes in 2012 International Building Code](#)
 FB30-11 (2019) [Proper Procedures for Receiving, Storage and Transportation of Flat Glass Mirrors](#)
 FB31-11 (2017) [LEED White Paper - Mirror](#)
 FB32-11 (2018) [Dynamic Glazing for High Performance Buildings](#)
 FB33-11 (2017) [Use of Laminated Glass in Glass Railing Systems](#)
 FB34-12 (2018) [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
FB42-14 (2019)	Decorative Glass Strength Properties
FB43-14 (2020)	Security Glazing
FB44-14 (2019)	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	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	Heat Soaking Testing
FB57-18	One Optical Number Does Not Fit All
FB58-18	Understanding Reflective Distortion in Mirror Installations
FB59-18	Heat-treated Laminated Glass Exposed Edges
FB60-18	Understanding Reflected Solar Energy of Glazing Systems in Buildings
FB61-19	Tornado Resistant Glazing
FB62-19	Mitigating Thermal Stress Breakage 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
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 (2017)	LEED® Recycled Content for Glass
FM04-12(2019)	Daylighting
FM05-12(2018)	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	Bid Considerations for Contract Glazing Proposals
IN03-12	Key Elements of Fenestration System Shop Drawings
IN04-14 (2020)	Safety Guidelines for Deglazing Structural Silicone
IN05-17	Overview of Building Information Modeling (BIM) for Glass and Glazing Systems
TB1601-95(14)	Guidelines for Capillary Tubes
TB1250-19	PIB Primary Sealant

TASK GROUP ACTIVITIES SUMMARY

ADVOCACY COMMITTEE

One-Pagers

- Currently available: [High-Performance Glazing Promotes Building Resiliency](#); [School Security: Windows Respond First](#); [Registered Apprenticeship Programs](#); [Saving Birds with Effective Glazing Solutions](#); [Flat Glass Global Warming Potential](#)

Legislative Bill Progress

- Review the legislative bills that have infrastructure monies allocated that could apply to the glazing industry
 - NGA's Advocacy Committee engaged with DOE's request for submittals on recommendations for better energy savings for the country by encouraging better glazing and wider adoption of the current building codes in more jurisdictions.

Physiological Impacts of Light on Human Health & the Implications of Glazing

- This task group is for staying informed about the latest research concerning light and human health and the implications of glazing.
 - Group met in May. Will meet again in September for another update.

FORMING COMMITTEE

Buy Clean California Act (formerly AB262)

- New GWP limit for flat glass set January 1, 2022
 - 1430 kg CO2 eq
 - Equal to the industry average
- Awarding authorities began to gauge GWP compliance of eligible materials with the required Environmental Product Declaration (EPD) on July 1, 2022.

Coated Glass AIA Presentation

- Task group is updating the current AIA presentation

Embodied Carbon in Construction Calculator (EC3 Calculator)

- Tool for benchmarking sustainability data
 - NGA and several member companies are working with Building Transparency to develop the glass category for this tool.

Health Product Declaration (HPD) Collaborative

- HPD Collaborative understands clarification is needed and would like to develop better way to determine how glass should be reported on HPD. What discussions do NGA members need to engage in such as: standardized set of ingredients? Standardized finished product constituent analysis?
 - Initial call to be scheduled

FABRICATING COMMITTEE

At ballot/going to ballot in August

Energy

- Alignment in US Energy Conservation Codes ASHRAE 90.1 and IECC

Insulating

- Compatibility Testing of Insulating Glass Primary Sealant with Respect to Glazing Materials

Protective Glazing

- Bullet Resistant Glazing
- Detention Facility Glazing

Tempering

- Methods of Measuring Optical Distortion in Heat-Treated Flat Architectural Glass

Ongoing

- Glazing Manual Update

Decorative

- Decorative Glazing Manual
- Defining an Industry Acceptable Color Variance for Decorative Glass
- LEED White Paper - Decorative

Energy

- AIA Presentation: Daylighting
- PCR for Windows: joint with FGIA/WDMA
- PCR for Processed Glass: joint with FGIA
- Thermal Comfort

Insulating

- Guidelines for the Appearance of Insulating Glass Unit Edges in Commercial Applications at the Time of Installation
- Secondary Sealants

Laminating

- Dynamic Glazing for High Performance Buildings
- Laminated Glazing Reference Manual Update
- Laminated Glass Constructions for Deflection Testing
- Use of Glass in Guardrails

Mirror

- Mirror Decorative Design Guide

Protective Glazing

- AIA Presentation: Bird-Friendly

- AIA Presentation: School Security
- Performance Criteria for Glazing Subjected to Seismic Events

Tempering

- Best Practices for Heat Soaking
- Evaluating Post-Finishing for Heat-Treated Glass Edges

Fire-Rated Glazing

- Challenges Faced by Fire-Rated Glazing

Call for Volunteers

Decorative

- Benefits of Decorative Glass in Daylighting Applications

Insulating

- Guidelines for Use of Capillary Tubes

Laminating

- Emergency Egress Through Laminated Glazing Materials

INSTALLING COMMITTEE

Ongoing

- Frameless Shower Enclosures Installation Guide
- NIBS Whole Building Design Guide
- Specifications
- Value Engineering

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

SAVE the DATE

Glazing Executives Forum
Oct 18, 2022 | Las Vegas Convention Center

GlassBuild America
Oct 18-20, 2022 | Las Vegas Convention Center

NGA Glass Conference: Miramar Beach
Jan 24-26, 2023 | Hotel Effie Sandestin

BEC Conference 25th Anniversary
Mar 5-7, 2023 | Caesars Palace, Las Vegas

GlassBuild America
Oct 31-Nov 2, 2023 | Georgia World Congress Center



ADVOCACY COMMITTEE AGENDA

July 20, 2022 | 9:00 am – 10:30 am
Room: Northbrook Ballroom

Chair: Paul Bush

Vitro Architectural Glass
pbush@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.*

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. Attendee Introductions
3. Review of Anti-Trust Statement and Conflict of Interest Policies
4. Appointment of Recording Secretary
5. Minutes of the Previous Meeting
6. Old Business
 - a. Discussion Recap: Physiological Impacts of Light on Human Health & the Implications of Glazing
 - b. Legislative Bill Tracking / Build Back Better Program Update
 - c. Advocacy Day discussions
 - i. Potential initiatives
 - ii. New one-pagers
 - iii. Legislator outreach
 - iv. Future fly-ins
 - d. The EPA and architectural glass recycling
 - e. School safety legislation
7. New Business
8. Next Events:
 - Glazing Executives Forum | Oct 18, 2022 | Las Vegas Convention Center
 - GlassBuild America | Oct 18-20, 2022 | Las Vegas Convention Center
 - NGA Glass Conference: Miramar Beach (Destin) | Jan 24-26, 2023 | Hotel Effie Sandestin
 - BEC Conference | Mar 5-7, 2023 | Caesars Palace, Las Vegas
9. Adjournment

**NGA is an approved AIA Provider and, thanks to the involvement of its volunteer members, has nine (9) approved presentations as part of its resource library. Members may use these presentations as a resource when reaching out to architects and other interested parties. An individual must simply become an approved presenter of these presentations of their choice and the materials to conduct a presentation from start to finish will be provided to you. Upon completion of a presentation, simply return the sign-in sheet to sara@glass.org. Credit will be recorded with AIA and certificates will be provided, if requested. [Click here](#) to download the AIA speaker agreement.*

TASK GROUP ROOM: WILMETTE
8:00 am – 4:00 pm
Monday - Wednesday

 **PASSWORD: GCC-IYOG2022**

Advocacy Committee Meeting

January 25, 2022

Call to Order

The meeting was called to order by Paul Bush, Vitro Architectural Glass, at 3:30 pm PT.

Administrative Activities

Introductions were made.

Sara Neiswanger, NGA Senior Manager Industry Engagement acted as Recording Secretary.

Anti-Trust Statement

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.

Minutes from Previous Meeting

The minutes from Dec 9, 2021 were reviewed and approved as provided.

Business Items

Discussion Recap of Physiological Impacts of Light on Human Health & the Implications of Glazing

- A task group will be established to discuss next steps on how to engage the glazing industry in this discussion
- Task Group: Maure Creager, Jon Griggs, Helen Sanders, Vaughn Schauss, Kayla Natividad, Melissa Sztokowski, Adam Mitchell, Jen Daly, Julie Schimmelpenningh, Jose Colon, Tom Culp, Nick Resetar

Legislative Bill Progress + Build Back Better Program

- Review the legislative bills that have infrastructure monies allocated that could apply to the glazing industry
- Task Group: Vaughn Schauss, Marc Deschamps, Greg Scherber (Vitro), Kayla Natividad, Julie Schimmelpenningh

One-Pagers

- A review of the Advocacy one-pagers was made.

International Year of Glass Advocacy Day

- April 4-5 in Washington D.C.
- Potential topics: school security, glass-focused myths, highlight top 10 benefits, bird-friendly, daylighting, sustainability/recyclability, energy efficiency
- Make a positive connection for glass to legislators with a leave-behind infographics
- Discuss how to engage with Canadian members of parliament
- Engage with the DOE and EPA
- Development of a buy-local message
- Task Group: Adam Mitchell, Stanley Yee, Mike Saroka, Julie Schimmelpenningh, Kayla Natividad, Vaughn Schauss, Rob Carlson, Helen Sanders, Jeff Haberer, Kyle Sword, Gady Ginzburg, Eric Fortin, Jose Colon, Paul Bush, Rick Wright, Mike Hammond, Nick Resetar

Triple Glazing and Embodied Carbon

- Tom Culp published an educational article that is available on glass.org/triple-glazing-and-embodied-energy-yes-juice-worth-squeeze.

With no other business, the meeting was adjourned at 3:57 pm PT.

Chair: Aaron Thompson, Viracon
athompson@viracon.com

Vice Chair: Bobby Chestnut, McGrory Glass
bchestnut@mcgrory.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 Aaron Thompson, Viracon*
2. Attendee Introductions
3. Review of Anti-Trust Statement and Conflict of Interest Policies
4. Appointment of Recording Secretary
5. Minutes of the Previous Meeting – January 2022
6. Committee Business
 - a. Glazing Manual Update
 - b. NGA Glossary of Architectural Glass & Glazing
 - c. New NGA Glass Fabricator Education

Tempering - Rick Wright, OldcastleBE

- a. ASTM C14 Update – *Rick Wright, OldcastleBE*
- b. Methods for Measuring Distortion GTP update – *Chuck Wencil, Viracon*
- c. Best Practices for Heat Soaking GTP update - *Karen Wegert, NGA*
- d. New Technology for Glass Stress (Alternate to Center Punch test method) - *DJ Weil, Cardinal*
- e. Ceramic Enamel Update – *Tim McGee, GCC*
- f. Iridescence GTP – *republished!*
- g. Guidelines for the Production of Heat-Treated Architectural Flat Glass GTP – *republished!*
- h. Presentation: Post Fabrication Edge Grinding of Laminated Glass – *Urmilla Sowell, NGA*
- i. Other Business

Fire-Rated Glazing – Kevin Norcross, Vetrotech Saint-Gobain

- a. Challenges Faced by Fire-Rated Glazing GTP – *Karen Wegert, NGA*
- b. Additional ideas:
 - i. Butt-Glazed Systems
 - ii. Fire + Windstorm | Fire + Security | Fire + Decorative
 - iii. Limitations in design of deluge sprinkler systems and building code implications
- c. Other Business

Mirror – Dave Evans, Guardian Glass

- a. Mirror Design Guide
- b. Other Business

Installing Committee Update – Matt Kamper and Joey Aragon

- a. Specifications task group
- b. Frameless Shower Enclosures Installation task group
- c. Value Engineering

Adjourn until Tuesday, July 19 at 9:00 am CT

TASK GROUP ROOM : WILMETTE
8:00 am – 4:00 pm
Monday - Wednesday



Tuesday, July 19
Breakfast | 7:45-8:45 am | Winnetka Ballroom
Presentation: Industry Trends & Top 50 Glazier Highlights

Fabricating Committee Meeting | 9:00 am – 12:00 pm | Northbrook Ballroom

1. Call to Order - Chair Aaron Thompson, Viracon
2. Review of Anti-Trust Statement and Conflict of Interest Policies | Appointment of Recording Secretary
3. Committee Business, continued

Industry Collaboration Updates – Karen Wegert, NGA

- a. Insulating Glass Certification Council/Safety Glazing Certification Council – John Kent, AMS
- b. ANSI Z97.1 – John Kent, AMS
- c. Fenestration Glazing Industry Alliance – Amy Roberts, FGIA
- d. National Fenestration Ratings Council – Tom Culp, Birch Point Consulting/NGA Energy Consultant
- e. American Subcontractors Association – Michele Nosko, NGA
- f. National Center for Construction Education and Research (NCCER) – Michele Nosko, NGA
- g. International Window Cleaners Association – Karen Wegert, NGA
 - a. Guide to Architectural Glass for Professional Window Cleaners
- h. National Institute of Building Sciences - Karen Wegert, NGA

Energy - Helen Sanders, Technoform

- a. EPDs and ASHRAE 189.1 GWP task group activity – Tom Culp, Birch Point Consulting
- b. PCR updates – Urmilla Sowell, NGA
- c. Daylighting AIA Presentation - draft review
- d. Thermal Bridging Considerations at Interface Conditions AIA Presentation – seeking volunteers
- e. Health and Wellness Benefits webpage resources review – <https://www.glass.org/daylighting>
- f. Building Envelope Commissioning GTP – *republished!*
- g. Building Energy Performance GTP – *republished!*
- h. Other Business

Insulating - Jeff Haberer, Trulite

- a. Compatibility Testing... Related to the Performance of PIB in IGUs (with FGIA) – Rob Carlson, Trulite
- b. Guidelines for Use of Capillary Tubes... (with FGIA) – Urmilla Sowell, NGA
- c. Large Glass (with FGIA) – Urmilla Sowell, NGA
- d. Secondary Sealants in IGUs GTP update – Urmilla Sowell, NGA
- e. Bent IGUs GTP update – Karen Wegert, NGA
- f. Guidelines for the Appearance of IGU Edges update – Aaron Thompson, Viracon
- g. Performance Improvements in Insulating Glass Units GTP update – *republished!*
- h. Describing Architectural Glass Constructions GTP Update – *republished!*
- i. ASTM Frost Point Testing update for new technologies discussion
- j. Other Business

Adjourn Fabricating Committee until Wednesday, July 20 at 1:00 pm CT

TASK GROUP ROOM : WILMETTE
8:00 am – 4:00 pm
Monday - Wednesday



PASSWORD: GCC-IYOG2022

Lunch | 12:00-1:00 pm CT | Winnetka Ballroom
Presentation: Backstops Explained

Wednesday, July 20

Lunch | 12:00-12:45 pm | Winnetka Ballroom
Presentation: The Glazing Industry's Impact on Active Shooter Standard

Fabricating Committee Meeting | 1:00 pm – 4:00 pm | Northbrook Ballroom

1. Call to Order - Chair Aaron Thompson, Viracon
2. Review of Anti-Trust Statement and Conflict of Interest Policies | Appointment of Recording Secretary
3. Committee Business, continued

Protective Glazing – Vaughn Schauss, Kuraray

- a. ICC Ad Hoc Building Safety and Security Update – Thom Zaremba, Roetzel & Andress
- b. School Security AIA presentation
- c. Proper Procedures for Cleaning Architectural Glass Products GTP – add protective glazing – Vaughn Schauss, Kuraray
- d. Bird Friendly AIA presentation
- e. Other Business

Laminating – Julia Schimmelpenninck, Eastman

- a. Laminated Deflection Tables
- b. Emergency Egress Through Laminated Glazing Materials GTP
- c. Use of Laminated Glass in Glass Railing Systems GTP
- d. Laminated Glazing Reference Manual
- e. Other Business

Decorative – Mike Saroka, Goldray Glass

- a. Decorative Glazing Manual – target publication in 2023
- b. Benefits of Decorative Glass in Daylighting Applications GTP – seeking volunteers
- c. Defining an Industry Acceptable Color Variance GTP
- d. LEED White Paper – Decorative update
- e. Types of Decorative Glass GTP – *published!*
- f. Designing with Decorative Glass – Cast and Heat-Formed AIA Presentation – *published!*
- g. Assessing the Compatibility of Glazing Materials and Components GTP – *republished!*
- h. Assessing the Weatherability & Durability of Decorative Glass GTP update – *republished!*
- i. Guidelines and Best Practices on how to Manage Color Variance of Decorative Glazing GTP – *republished!*
- j. Other Business

4. New Business
5. Next Events: Glazing Executives Forum | Oct 18, 2022 | Las Vegas Convention Center
GlassBuild America | Oct 18-20, 2022 | Las Vegas Convention Center
NGA Glass Conference: Miramar Beach (Destin) | Jan 24-26, 2023 | Hotel Effie Sandestin
BEC Conference | Mar 5-7, 2023 | Caesars Palace, Las Vegas
6. Adjournment

*NGA is an approved AIA Provider and, thanks to the involvement of its volunteer members, has nine (9) approved presentations as part of its resource library. Members may use these presentations as a resource when reaching out to architects and other interested parties. An individual must simply become an approved presenter of these presentations of their choice and the materials to conduct a presentation from start to finish will be provided to you. Upon completion of a presentation, simply return the sign-in sheet to sara@glass.org. Credit will be recorded with AIA and certificates will be provided, if requested. [Click here](#) to download the AIA speaker agreement.

Fabricating Committee Meeting

January 24, 2022

Call to Order

The meeting was called to order by Aaron Thompson, Viracon, at 1:45 pm PT.

Administrative Activities

Introductions were made.

Sara Neiswanger, NGA Senior Manager Industry Engagement acted as Recording Secretary.

Anti-Trust Statement

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.

Minutes of January 14, 2020

A motion was made by Stanley Yee and seconded by Kayla Natividad to approve the minutes from 2020 Glass NGA Conference. Motion carried.

Business Items

Committee Business

- The Glazing Manual 50th anniversary edition is undergoing review in order to be republished at the end of 2022. Interested volunteers should contact ajohnson@glass.org
- A new NGA Glossary of Architectural Glass & Glazing has been developed and will be available for download on glass.org. This resource consolidates glossaries from across NGA and other industry resources to standardize terms and definitions.
- A list of newly-published resources were reviewed, describing the purpose of each.
- A call for volunteers was made to join a task group to update the Laminated Glazing Reference Manual

Tempering – Rick Wright, Oldcastle BuildingEnvelope – Chair

- ASTM C14 Update
 - o 2021 New ASTM Standards
 - C1908-21 Standard Test Method for Pummel Adhesion Testing of Two-ply Laminated Architectural Glass.
 - C1914-21 Standard Test Method for Bake and Boil Testing of Laminated Glass
 - o 2021 Revisions
 - C1464-21 Standard Specification for Bent Glass
 - C1376-21a Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass
 - o Requiring Review for Ballot
 - C1349-2017 Standard Specification for Architectural Flat Glass Clad Polycarbonate
 - o Active Work Items
 - New Test Method for Center-Punch Fragmentation of Fully Tempered Glass
 - New Test Method for Glazing Materials Using a Binomial Choice Protocol for Transparent Fly-through Bird Collision Deterrence
- Methods for Measuring Distortion GTP
 - o Undergoing an update; reviewing recent ballot comments
- Iridescence GTP
 - o Completed five-year update and will go to ballot in February

- Ceramic Enamel Update
 - o ASTM E1300
The E06.52 sub-committee expects to release a revised E1300 for printing sometime after the end of June. It may include revisions related to the use of ceramic frits, but that depends on getting the proposed changes to ballot in the next few weeks.
 - o Ceramic frit related revision work is associated with WK65259
Will address use of ceramic frits on monolithic glass and on lites as part of an IG unit.
Work is based on data collected by breaking many large, fritted and heat-strengthened glass panels.
Data analysis indicates that for many common aspect ratios the standard NFL charts still apply.
Data analysis also indicates that for less common aspect ratios (e.g. 4.0 or 5.0) some strength reduction occurs that is outside of the standard NFL charts used in E1300.
- Edge Grinding test method
 - o The test plan will determine if surface polishing and/or edge grinding following tempering reduces the glass strength.
 - o Bill Lingnell will provide a proposal for test procedure calculations based on input from the membership
 - o Task Group: Agnora, Viracon, Paragon Tempering expressed interest.
- NEW Resource: Best Practice for Heat Soaking – to be written in ASTM format
 - o Task Group: Matt Kamper, Jon Griggs, Rob Carlson, Steve Marino, Adam Mitchell
 - o Consider a FAQ format as an alternative to a GTP
- All Tempering GTPs available were reviewed.

Mirror – Dave Evans, Guardian Glass – Chair

- Mirror Design Guide
 - o The current Mirror GTPs addressing storage, handling, fabrication, installing, cleaning, and types will be combined into one document to create a new Design Guide. These include:
 - Cleaning, installation, fabrication, receiving and storage, reusability and recyclability and sustainability (through LEED credits)
 - Task Group: Marc Deschamps, Kayla Natividad, Dave Evans
- Inquiry on mirror technology as they're utilized in solar panels; however, no new developments or use is known at this time.

Decorative – Mike Saroka, Goldray Glass - Chair

- Decorative Glazing Manual
- Defining an Industry Acceptable Color Variance
- Designing with Decorative glass – Cast and Heat-Formed AIA Presentation
- Assessing the Compatibility of Glazing Materials and Components GTP
- Assessing the Weatherability & Durability of Decorative Glass GTP
- Benefits of Decorative Glass in Daylighting Applications GTP
- Guidelines and Best Practices on How to Manage Color Variance of Decorative Glazing GTP
- LEED White Paper – Decorative update

NEW Initiative: C162 task group within C14– what do we call ceramic enamel? Defining terminology for coatings and frits as technology evolves and to identify clarity and consistency. Do we handle within NGA or within ASTM?

Task group: Casey Anderson, Tim McGee, Mike Saroka

Presentation: Aquarium of the Pacific Case Study

Meeting Adjourned until Tues, January 25 at 9:45 am PT

Installing Committee Update – Steve Dean and Matt Kamper

- Specifications task group is coordinating with MasterSpec to update Division 08 section.
 - o Task Group, add: Chuck Knickerbocker
- Frameless Shower Enclosures Installation task group has begun work to build upon the recently-published Design Guide

Fire-Rate Glazing – Kevin Norcross, Vetrotech Saint Gobain

- Fire-rated glazing volunteers have reviewed the Glazing Manual to update text in anticipation of the 2022 republication of the manual.
- Fire-rated Multi-chamber Glass GTP
 - o Potential for new GTP to specifically discuss fire rated multi-chambered glass with intumescent layers; however, it was deemed to be product/company specific and thus, not pursued.
- Challenges Faced by Fire-Rated Glazing GTP
 - o The task group is reviewing the GTP, after which time it will be sent to ballot
- A list of existing fire-rated resources available within NGA were reviewed

Protective Glazing – Vaughn Schauss, Kuraray

- Presentation: Active Shooter test standard – Julie Schimmelpenningh, Eastman
 - o Anticipate a final standard to be available by the end of the second quarter 2022
- ICC Ad Hoc Building Safety & Security Committee
 - o Applies to all occupancies considered high risk
 - o Report for public review and comment should be available by the end of March 2022.
- Best Practices for Bird Friendly Glazing Design Guide
 - o This design guide has been referenced within GSA P100 Facilities Standards for the Public Buildings Service, updated October 2021.
 - o Task Group will compare the existing GTP to ensure it's not overly redundant and serves an independent purpose
- AIA presentations on Bird-Friendly glazing and on School Security will soon be under development
 - o Task Group, add: Marc Deschamps
- A list of existing protective glazing resources available within NGA were reviewed
- NEW Task Group: Proper Cleaning Procedures for Protective Glazing Products
 - o Consider adding specialized information into larger, existing FB-01-00 Proper Procedures for Cleaning Architectural Glass Products GTP
 - o Vaughn Schauss, Karen Wegert, Jen Daly
- NEW Task Group: Document Review (all existing resources updated with new Active Shooter standard?)
 - o Vaughn Schauss, Julie Schimmelpenningh, Thom Zaremba

Meeting Adjourned until Wed, January 26 at 9:30 am PT

Industry Collaboration Updates

- American Subcontractors Association (ASA)
 - o NGA-ASA Alliance includes:
 - Access to contractors and other resource documents
 - Add NGA's glazier voice to ASA's legislative initiatives
- NGA Glazier Apprentice curriculum
 - o NCCER relationship was explained
- International Window Cleaning Association
 - o Two jointly-published GTPs
 - o Their guide to architectural glass for professional window cleaners references the Glazing Manual and several NGA GTPs

- NEW Task Group: review select NGA resources for *differences in indentation and wear behaviors between the two sides of thermally tempered soda lime float glass*
 - Jon Griggs, Rick Wright, Aaron Thompson
- NIBS Whole Building Design Guide is under review with an eye on adding NGA
 - NEW Task Group: Stanley Yee, Matt Kamper, Chuck Knickerbocker
- ANSI Z97.1
 - Beginning next balloting cycle for the standard
 - Aiming to hold an in-person meeting in third quarter 2022
- CAN/CGSB
 - Margaret Webb remaining chair of the standard committee
- Safety Glazing Certification Council (SGCC)
 - Effective July 1, 2022, in order to be SGCC certified for tempered glass with a metalized coating that is applied to annealed glass prior to tempering, test results for the MC glass must be provided to SGCC.
 - Next meeting: 2022 Fall Certification Committee Meeting – Oct 6-7 in Tampa, FL
- Insulating Glass Certification Council (IGCC)
 - Next Meeting: May 3-4, 2022 will be held in Tampa, FL
- RAC Provisional Certification
 - Test IG units to determine if defects are present in 14 days or less
 - Draft test standard in process to be utilized by ASTM
- NACC (North American Contractor Certification)
 - 47 certified contractors; 14 new contractors in 2021
 - Included in MasterSpec, which encourages the program to be specified often
- Fenestration & Glazing Industry Alliance (FGIA)
 - Glass Products Council
 - IGMA TB-1200, Guidelines for Insulating Glass Dimensional Tolerances
 - IGMA TM-3000, North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Units
 - IGMA TM-3200, Design Considerations for IG Unit Cavity Pressure Compensation
 - IGMA TM-1300, Design Considerations for Multiple-Cavity Insulating Glass Units
 - Joint Glass Strength Design Work Group – with AVFQ/FENBC/FEN-CA/FGIA
 - Research Committee
 - GPC/IGCC Advanced Fenestration Testing – RAC
 - ASTM E2190, Insulating Glass Unit Performance and Evaluation
 - Gas Content Measurement Validation
 - Spark Emission and Laser Absorption Spectroscopy
 - Marketing & Education
 - IG Fabricator Workshop (in November in person and as a new video series)
 - Preventing IG Failures video series
 - Do's and Don'ts of Glass Safety

Laminating – Julia Schimmelpenninck, Eastman - Chair

- Presentation: Updates in Standards for Laminated Glass
- Laminated Glass Deflection Tables
 - Content as it was previously published in the Engineering Standards Manual will be enhanced to reflect laminated glass deflection calculations for interior wall partitions
 - PVB interlayer at room temperature
 - The content will eventually be added to the Heavy Glass Door Design Guide and potentially the Laminated Glazing Reference Manual
 - ACTION: a PCF will be created to formalize the activity and reflect specifics of the testing, including heights (taken from the Engineering Standards Manual), room temperature PVB interlayer, edge connections, etc.
 - ACTION: an initial draft of the calculations will be reviewed at NGA Glass Conference: Chicago.
 - Original Task Group from 2020: Bill Lingnell, Julia Schimmelpenninck, Melissa Sztokowski, Vaughn Schauss, John Bush, Ron Gerhardt, Jeff Haberer, Rob Carlson, Jeffrey Kirk

- NGA/FGIA laminating pre-qualification task group
 - o A joint activity co-chaired by Greg McKenna (AAMA), Robert Grommesh (IGMA) and Aaron Thompson (NGA). Original goal was to develop best practices for fabricators for laminated glass products to pass hurricane testing; however, upon discussion it was determined it wasn't needed based on other resources and standards in place.
 - o **A motion was made by Jeff Haberer and seconded by Vaughn Schauss to disband this task group with a contingency that FGIA also votes to disband. Motion carried.**
- Emergency Egress Through Laminated Glazing Materials GTP is up for five-year review
 - o NEW Task Group: Vaughn Schauss, Melissa Szotkowski, Rob Carlson
- Use of Laminated Glass in Glass Railing Systems GTP
 - o Was tabled, awaiting update of the referenced ASTM standard.
 - o NEW Task Group: Melissa Szotkowski, Paul Bush, Randy Reynolds, Rob Carlson, Andrew Chatfield, Stanley Yee, Ron Wooten, Julia Schimmelpenningh (Chair)
- A list of existing laminating resources available within NGA were reviewed
- Laminated Glazing Reference Manual Review
 - o Task Group: Michael Saroka, Aaron Thompson, Julia Schimmelpenningh, Vaughn Schauss

Energy – Helen Sanders, Technoform

- NEW Thermal Bridging Considerations at Interface Conditions Design Guide was reviewed
 - o It was recommended this design guide be formatted into an AIA presentation
 - o What other tools are needed to help educate the architects and designers
 - o This topic will be added to the Specifications task group for discussion
- PCR-LCA-EPD Update
 - o Review and revise the public comments
 - o PCR for Windows expired in August 2021 and was not approved for extension; a joint activity with FGIA/WDMA
 - While the PCR did not see much use, discussion confirmed the importance of retaining it; some existing EPDs are based on it and it will maintain the organization's leadership in the administration of it.
 - Urmilla will contact ULE to determine if they no longer want to be the operator and consider identifying a new operator
- Health and Wellness Benefits resources webpage – glass.org/daylighting
 - o An open invitation was made to submit articles, papers, etc. for the task group to review for inclusion on the website
- Alignment in US Energy Conservation Codes ASHRAE 90.1 and IECC
 - o New GTP highlights the increase in stringency requirements for ASHRAE 90.1-2019 and IECC 2021.
- Thermal Comfort
 - o NEW Task Group: Kayla Natividad, Helen Sanders, Ivan Zuniga, Tom Culp
- Dynamic Glazing for High Performance Buildings GTP and AIA presentation
 - o The GTP is up for five-year review, which will be used to create a new AIA presentation
 - o NEW Task Group: Maure Creager, Kayla Natividad
- A list of existing energy-related resources available within NGA were reviewed

Insulating – Jeff Haberer, Trulite

- Presentation: New IGU Technologies for Carbon Reduction and Zero Net Energy –
- Vacuum Insulating Glazing GTP – published!
- Bent IGUs GTP – potential new work item
 - o Tim Moore will be contacted to chair; past interested members will be contacted to re-confirm participation; add Steve Marino
- Secondary Sealants in IGUs GTP
 - o A draft was written several years prior and there is interest in completing and publishing it
 - o Task Group: Stanley Yee

- Compatibility Testing of Insulating Glass Primary Sealant with Respect to Glazing Materials (with FGIA) - document has been balloted at both organization and negative comments are currently being addressed
- GTPs being updated
 - o Guidelines for Appearance of IGU Edges – next meeting in February
 - o Performance Improvements in IGUs: Cavity Gap and Insulating Gases – will be balloted in February
 - o Describing Architectural Glass Construction – will be balloted in February
- A list of existing insulating glazing-related resources available within NGA were reviewed

New Business

New Technology for Glass Stress / Alternative for Center Punch Test

- A question was posed on the awareness of alternatives to center punch testing or is there newer technology available.
- Equipment manufacturers will be contacted to gather data on available methods
 - o Kingston Eck, Jeff Haberer, Rob Carlson, Rick Wright, Jon Griggs, Nancy Mammaro

With no other business, the meeting was adjourned at 3:15 pm PT.

NGA GLASS CONFERENCE™ CHICAGO

JULY 18-20, 2022

FORMING COMMITTEE AGENDA

July 20, 2022 | 10:45 am – 11:45 am
Room: Northbrook Ballroom

Chair: Jon Griggs, Guardian Glass
jgriggs@guardian.com

Vice Chair: David Duly, Pilkington | NSG
david.duly@nsg.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 Jon Griggs, Guardian Glass, LLC
2. Attendee Introductions
3. Review of Anti-Trust Statement and Conflict of Interest Policies
4. Appointment of Recording Secretary
5. Old Business
 - a. Buy Clean California Act update– Urmilla Sowell, NGA
 - i. Updated BCCA FAQs – Karen Wegert, NGA
 - b. Health Product Declarations – Kayla Natividad, Pilkington | NSG
 - c. Coated Glass AIA presentation update – Steve Marino, Vitro Architectural
6. Presentation: EC3 Calculator update – Urmilla Sowell, NGA
7. New Business
8. Next Events: Glazing Executives Forum | Oct 18, 2022 | Las Vegas Convention Center
GlassBuild America | Oct 18-20, 2022 | Las Vegas Convention Center
NGA Glass Conference: Miramar Beach (Destin) | Jan 24-26, 2023 | Hotel Effie Sandestin
BEC Conference | Mar 5-7, 2023 | Caesars Palace, Las Vegas
9. Adjournment

**NGA is an approved AIA Provider and, thanks to the involvement of its volunteer members, has nine (9) approved presentations as part of its resource library. Members may use these presentations as a resource when reaching out to architects and other interested parties. An individual must simply become an approved presenter of these presentations of their choice and the materials to conduct a presentation from start to finish will be provided to you. Upon completion of a presentation, simply return the sign-in sheet to sara@qglass.org. Credit will be recorded with AIA and certificates will be provided, if requested. [Click here](#) to download the AIA speaker agreement.*

TASK GROUP ROOM : WILMETTE
8:00 am – 4:00 pm
Monday - Wednesday



Forming Committee Meeting January 25, 2022

Call to Order

The meeting was called to order by Jon Griggs, Guardian Glass, at 2:20 pm PT.

Administrative Activities

Introductions were made.

Sara Neiswanger, NGA Senior Manager Industry Engagement acted as Recording Secretary.

Anti-Trust Statement

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.

Business Items

Buy Clean CA Act Update

- New GWP limit for flat glass was set January 1, 2022
 - o 1430 kg CO₂ eq
 - o Equal to the industry average
- Awarding authorities will begin to gauge GWP compliance of eligible materials with the requirement EPD on July 1, 2022
- NGA resources

EC3 Calculator

- *Working to develop the glass categories for this tool, specifically, flat glass, processed glass and fire-rated glazing*
- Task Group: Kevin, Kremena, TGP, SaftiFirst

Health Product Declaration

- Background on what a health product declaration provides was reviewed – a method to report and disclose information about product and associated health information
- They are used in LEED v4/v4.1; Living Building Challenge; WELL
- An HPD includes a summary; content in descending order of quantity; VOC emissions, accessories for installation and similar
- HPD Collaborative understands clarification is needed and would like to develop better way to determine how glass should be reported on HPD. What discussions do NGA members need to engage in such as: standardized set of ingredients? Standardized finished product constituent analysis?
- Task Group: Mike Saroka, Marc Deschamps, Maure Creager, Kayla Natividad

With no other business, the meeting was adjourned at 3:30 pm PT.

2022 | What We Do



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's membership department 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

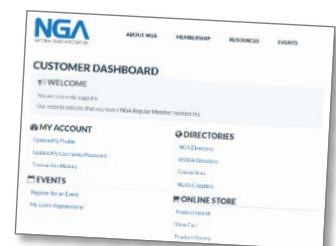
- Over 90 Glass Technical Papers & Glass Information Bulletins – *available at no cost to members* [BROWSE TITLES](#)
- Technical manuals written by industry experts – *NGA members save up to 50%* [BROWSE TITLES](#)
 - **NEW!** Glossary of Architectural Glass & Glazing
 - Commercial Fenestration Systems 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
 - GANA Glazing Manual
 - And more!
- **NEW!** Design Guides fulfilling 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](#)
- **PRICE REDUCED!** Concepts for Analyzing Glass Tempering Problems Video Series and Learning Package [BROWSE](#)
- 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%* [SEE RESOURCES](#)
 - An Owner's Guide to Exit Planning & Succession
 - Employee Safety Guide
 - All About Glass and Metal: A Guide for Architects & Specifiers – 6-part series
 - Guide to Decorative Glass
- 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](#)

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!



MyGlassClass.com – NGA members save 50% on all courses [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. Courses include:

Intro to Glass and Glazing

- History of Glass
- The Float Glass Manufacturing Process
- Intro to Glazing Practices
- Glass and Wall Systems 101
- Architectural Metals 101
- Basics of Storefront and Entrances
- Basics of Curtainwall
- Sealant Basics
- Basics of Insulating Glass Units

Safety

- PPE for Working with Flat Glass
- Safe Glass Handling 101
- Best Practices for Removing Broken Glass

Glass & Metal Fabrication

- How to Cut Glass, Part I
- How to Cut Glass, Part II

- Metal Tools of the Trade
- Metal Fabrication Tools & Techniques
- Glass Fabrication Tools & Techniques
- Custom Mirror Design and Installation
- Shower Enclosure Design and Installation

System Fabrication, Assembly & Installation

- Storefront Metal Fabrication Techniques
- Stick Curtain Wall Fabrication Techniques
- Storefront Installation
- Curtainwall Installation
- Commercial Entrance Installation

Codes & Estimating

- Reading Plans & Blueprints
- Intro to Estimating

OSHA

- OSHA 10 and OSHA 30
- UL safety courses (29 courses)

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](#)

GlassBuild America: The Glass, Window & Door Expo
October 18 - 20, 2022 | Las Vegas [REGISTER](#)

NGA Glass Conference: Miramar Beach **January 24 – 26, 2023** | Miramar Beach, Florida

Glazing Executives Forum
October 18, 2022 | Las Vegas [REGISTER](#)

Building Envelope Contractors (BEC) Conference
March 5 – 7, 2023 | Caesars Palace, Las Vegas

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.



2022 is the International Year of Glass!

2022 has been designated as the International Year of Glass (IYOG) by the United Nations General Assembly. NGA has supported the worldwide effort since the campaign’s inception and is leading the efforts for architectural glass activities and promotion in the U.S. Learn more at [glass.org/IYOG](#).

Quick Reference Sheet

Associations and Organizations

- AN – Annealed
- 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
- CGA – Canadian Glass Association
- CSI – Construction Specification Institute
- CPSC – Consumer Product Safety Commission
- EWC/ASE – Efficient Windows Collaborative/Alliance to Save Energy
- FGIA – Fenestration & Glazing Industry Alliance
- GANA – Glass Association of North America (*legacy association*)
- GBA – GlassBuild America
- GEF – Glazing Executives Forum
- 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
- IWCA – International Window Cleaners Association
- IGCC – Insulating Glass Certification Council
- ICC – International Code Council
- ISO – International Standards Organization
- ITA – Italian Trade Agency
- 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
- EPD – Environmental Product Declarations
- ESM – Engineering Standards Manual
- FRGC – Fire Rated Glazing Council
- FM – Forming Committee
- FT – Fully Tempered
- GIB – Glass Informational Bulletin
- GTP – Glass Technical Paper
- HGDDG – Heavy Glass Door Design Guide
- 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

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

SOLUTIONS AT YOUR FINGERTIPS

CONCEPTS FOR ANALYZING GLASS TEMPERING PROBLEMS WITH STANLEY W. JOEHLIN

This unique video series and companion education tools offer diagrams, detailed photographs, tempering demonstrations and real-world case studies to serve as a guide to both fundamental concepts and troubleshooting tactics. Content topics include:

- Strength & Failures of Glass
- Ideal Tempering Cycle
- Tempered & Heat-Strengthened Glass Break Patterns
- Entrance Zone Furnace Breakage
- Break Pattern Problems
- Warp & Distortion Problems
- Estimating the Effects of Chemistry & Coatings
- Introduction to Iridescence
- Optical Distortion
- Field Problems

VIDEO
SERIES &
EDUCATION
KIT



\$695 NGA MEMBERS
\$1,595 NON-MEMBERS

PACKAGE INCLUDES

- One video series (3-DVD Set)
- One Textbook
- Ten workbooks
- One answer key

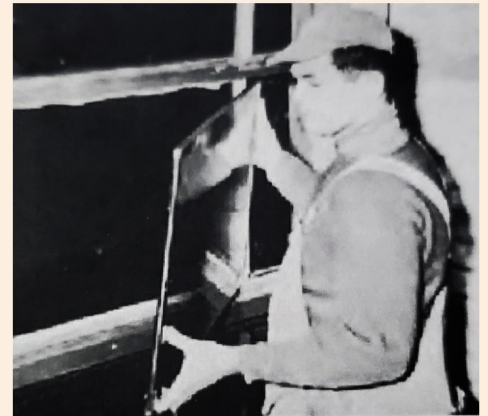
ORDER TODAY:
GLASS.ORG/STORE

NGA
NATIONAL GLASS ASSOCIATION with GANA

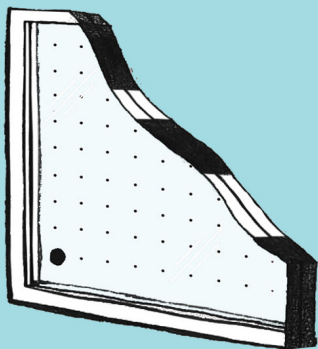
Pilkington **Spacia™** the vacuum insulating glass solution!

Bring the buildings of the past to the present with Pilkington Spacia™

The World's First Commercially available vacuum insulating glazing!



Archibald Place (left) was able to maintain its existing building appearance while upgrading its monolithic glass to modern IGU performance.



Pilkington Spacia™

There are many benefits to using a VIG. The thin profile, high-performance product allows for potential to:

- Reduce embodied carbon impacts from additional materials by allowing reuse of existing window sash
- Improve buildings operational carbon and energy use by upgrading from monolithic to IGU performance
- Mitigate outside noise by improving acoustic performance



Scan for more on historical restoration glass solutions