

GLASS

MAGAZINE®

THE GLASS AND GLAZING AUTHORITY • MARCH 2022

GLASSMAGAZINE.COM

TOP GLASS FABRICATORS

REBOUNDED SALES,
BIGGER GLASS, AUTOMATED
MANUFACTURING



BEC/GPAD AT
GRAND HYATT
NASHVILLE

GUIDE TO
FRAMELESS
SHOWERS

TRIPLE GLAZING
AND EMBODIED
ENERGY

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NGA
NATIONAL GLASS ASSOCIATION OF AMERICA

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GRAND
HYATT

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FABRICATING DURING T

TOP

WHILE

DEALING

SUPPLY

CHAIN

FIGHTING

A

ON

MANY

FABRICATORS

EVERY

Pictured: The factory floor of D3 Glass's facility in Ft. Myers, Florida. Bill Daubmann, president and founder, says the company faced a hiring shortage in 2021.



THE PANDEMIC,

WITH

SNARLS, IS

GLASS

BATTLE

FRONTS,

DAY.

LEADING FABRICATOR SALES REBOUND, BUT SUPPLY CHAIN CONDITIONS REMAIN ROCKY

Glass fabricators are staying the course, all while dealing with persistent, uncertain market conditions and production challenges.

Results from this year's Top Glass Fabricators survey reveal more clearly than ever that fabricating during the pandemic, while dealing with supply chain snarls, is fighting a battle on many fronts, every day. "From supply chain issues to maintaining a healthy company morale, we are making real-time decisions to do what is best for our people and the bottom line," says Curtis McClamrock, chief revenue officer, creative/marketing director, HMI.

Reporting companies' massive rebound in sales—63 percent reported higher sales in 2021, compared to a very small 26 percent in 2020—is heartening. But it also coincides with an industry doing more with less, possibly more so than ever before as almost all companies report dealing with shortages of people and supplies.

Another symptom of the pandemic has been industry consolidation, the most high-profile being the closing of Consolidated Glass Holdings, and the acquisition of its member companies by other fabricators and glass industry businesses. The company officially declared bankruptcy in August 2021.

Despite the upsets, many companies see reasons for optimism, at least in continued market demand. "2020 was impacted more, due to shutdowns, closures and project delays," says Adam Shearer, president, Imagic Glass. "Last year had less of these issues. We anticipate that 2022 will continue to show growth."

The Top Glass Fabricators industry ranking can be found on pages 42-44, and includes leading fabricators who supply the North American market. Market data about fabricator sales and regional growth can be found on pages 46-47. Learn about automation and capital investment trends on pages 48-49. Find information about leading fabricators' product mix and development plans on pages 50-51, and get a breakdown of major industry challenges on page 52.

THE LIST

→ The leading fabricators showcased on this list are ranked by sales category, and then alphabetically within each category. Eligible companies are those that fabricate tempered, insulating, laminated and/or decorative glass, as well as specialty glasses. Gross sales ranking

is based on companies' contributed 2021 sales information.

Some companies did not contribute sales and updated company information—in that case, information reflects data from the 2021 report.

It is only with the cooperation of the

industry that Glass Magazine can compile an accurate report. If you feel your company belongs on the list, contact Norah Dick, associate editor of Glass Magazine, at ndick@glass.org. See all Glass Magazine industry rankings at glass.org.

Glass type

T - Tempered Glass | I - Insulating Glass | L - Laminated Glass | D - Decorative Glass | J - Jumbo | M - Metal

| Company | Plants | Total employees | T | I | L | D | J | M | Company | Plants | Total employees | T | I | L | D | J | M |
|--|--------|-----------------|---|---|---|---|---|---|--|--------|-----------------|---|---|---|---|---|---|
| Over \$1 billion | | | | | | | | | Tvitec System Glass | 7 | 600 | • | • | • | • | • | |
| Oldcastle BuildingEnvelope | 84 | 6,500 | • | • | • | • | • | • | <small>tvitecglass.com</small> | | | | | | | | |
| <small>obe.com</small> | | | | | | | | | <small>Cubillos del Sil, León, Spain</small> | | | | | | | | |
| <small>Dallas</small> | | | | | | | | | Viracon | 1 | 1,900 | • | • | • | • | • | |
| | | | | | | | | | <small>viracon.com</small> | | | | | | | | |
| | | | | | | | | | <small>Owatonna, MN</small> | | | | | | | | |
| \$300-700 million | | | | | | | | | Vitrum Glass Group | 2 | 500 | • | • | • | • | • | |
| Press Glass Holding SA | 14 | 4,900 | • | • | • | • | • | • | <small>vitrum.ca</small> | | | | | | | | |
| <small>pressglass.com</small> | | | | | | | | | <small>Langley, British Columbia, Canada</small> | | | | | | | | |
| <small>Konopiska, Poland</small> | | | | | | | | | | | | | | | | | |
| Tecnoglass Inc. | 6 | 7,500+ | • | • | • | • | • | • | \$50-100 million | | | | | | | | |
| <small>tecnoglass.com</small> | | | | | | | | | Aldora Glass | 6 | 500 | • | • | • | • | • | • |
| <small>Barranquilla, Atlántico, Colombia</small> | | | | | | | | | <small>aldoraglass.com</small> | | | | | | | | |
| | | | | | | | | | <small>Coral Springs, FL</small> | | | | | | | | |
| Trulite Glass & Aluminum Solutions | 32 | 2,200+ | • | • | • | • | • | • | Basco Shower Door | 4 | 450 | • | | • | • | | |
| <small>trulite.com</small> | | | | | | | | | <small>bascoshowerdoor.com</small> | | | | | | | | |
| <small>Peachtree City, GA</small> | | | | | | | | | <small>Mason, OH</small> | | | | | | | | |
| \$100-300 million | | | | | | | | | General Glass International GGI | 1 | 250 | • | • | | • | • | |
| American Insulated Glass | 7 | 600+ | • | • | • | • | • | • | <small>generalglass.com</small> | | | | | | | | |
| <small>aiglass.com</small> | | | | | | | | | <small>Secaucus, NJ</small> | | | | | | | | |
| <small>Atlanta</small> | | | | | | | | | Glassfab Tempering Services | 4 | 270 | • | • | • | • | • | • |
| Hartung Glass Industries* | 10 | 800+ | • | • | • | • | • | • | <small>glassfabusa.com</small> | | | | | | | | |
| <small>hartung-glass.com</small> | | | | | | | | | <small>Tracy, CA</small> | | | | | | | | |
| <small>Tukwila, WA</small> | | | | | | | | | Glasswerks* | 7 | 575 | • | • | • | • | • | • |
| HMI | 3 | 600 | • | | | • | • | | <small>glasswerks.com</small> | | | | | | | | |
| <small>hmiglass.com</small> | | | | | | | | | <small>Southgate, CA</small> | | | | | | | | |
| <small>Louisville, KY</small> | | | | | | | | | Grupo Tecnovidrio | 5 | 900 | • | • | • | • | • | • |
| Prelco Inc. | 6 | 675 | • | • | • | • | • | | <small>grupotecnovidrio.com</small> | | | | | | | | |
| <small>prelco.ca</small> | | | | | | | | | <small>Ciudad de México</small> | | | | | | | | |
| <small>Riviere-du-Loup, Quebec, Canada</small> | | | | | | | | | | | | | | | | | |

Glass type

T - Tempered Glass I - Insulating Glass L - Laminated Glass D - Decorative Glass J - Jumbo M - Metal

| Company | Plants | Total employees | T | I | L | D | J | M |
|---|--------|-----------------|---|---|---|---|---|---|
| Interpane interpane.com Lauenfoerde, Germany | 2 | 600 | • | • | • | • | • | • |
| Tristar Glass Inc. tristarglass.com Catoosa, OK | 3 | 220 | • | • | • | • | • | • |
| \$30-50 million | | | | | | | | |
| Custom Glass Products customglassproductswi.com Weston, WI | 3 | 170 | • | • | • | | | |
| Garibaldi Glass garibaldiglass.com Burnaby, British Columbia, Canada | 1 | 245 | • | • | • | • | • | • |
| Glass and Metal Craft glassandmetalcraft.com Wixom, MI | 2 | 140 | • | • | • | • | • | • |
| Glaz-Tech Industries Inc. glaztech.com Tucson, AZ | 8 | 275 | • | • | • | | | |
| Insulite Glass Co. insuliteglass.com Olathe, KS | 2 | 180 | • | • | • | • | • | • |
| \$10-30 million | | | | | | | | |
| AGNORA agnora.com Collingwood, Ontario, Canada | 1 | 76 | • | • | • | • | • | • |
| Consolidated Glass Corp. cgcglass.com New Castle, PA | 1 | 65 | • | | | | • | |
| Cristacurva cristacurva.com Houston | 2 | 350 | • | • | • | • | • | • |
| Echols Glass & Mirror Inc. echolsglass.com Buford, GA | 1 | 68 | • | • | | | • | |
| FGD Glass Solutions fgdglass.com Suwanee, GA | 1 | 40 | | | • | • | • | |
| Flat Glass Distributors flatglassdistributors.com Jacksonville, FL | 1 | 75 | • | • | | | • | |
| Glas-Pro Glas-Pro.com Santa Fe Springs, California | 1 | 100 | • | • | • | • | • | • |

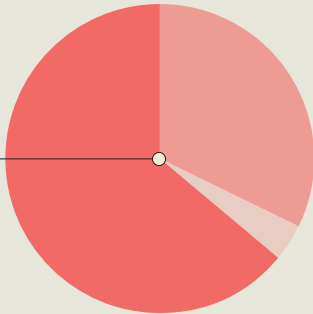
| Company | Plants | Total employees | T | I | L | D | J | M |
|---|--------|-----------------|---|---|---|---|---|---|
| Glenny Glass glennyglass.com Cincinnati, OH | 2 | 107 | • | • | • | • | | |
| Goldray Glass goldrayglass.com Calgary, Alberta, Canada | 1 | 90 | • | | • | • | | |
| InKan Ltd. inkan.ca Brampton, Ontario, Canada | 2 | 60 | • | | • | • | • | • |
| Kensington Glass Arts kensingtonglass.com Jjamsville, MD | 2 | 65 | • | | • | | | |
| MY Shower Door myshowerdoor.com Ft. Myers, FL | 1 | 110 | • | | • | | • | |
| Precision Glass Bending e-bentglass.com Greenwood, AR | 1 | 75 | • | • | • | • | | |
| Solar Seal & Solar Seal Architectural ssarch.glass Norwich, CT | 2 | 85+ | • | • | • | • | • | • |
| Southern Wholesale Glass Americus, GA | 1 | 75 | | • | | | | • |
| Splendor Glass Industries splendorshowerdoor.com Holland, OH | 1 | 86 | • | | • | • | | |
| Under \$10 million | | | | | | | | |
| Adriatic Glass & Mirrors Ltd. adriaticglass.com Concord, Ontario, Canada | 1 | 50 | • | | • | • | | |
| D3 Glass d3glass.com Ft. Myers, FL | 1 | 32 | • | | • | | • | |
| Dundy Glass & Mirror Corp. dundyglass.com Springfield Gardens, NY | 2 | 25 | • | • | • | | • | |
| Imagic Glass Inc. imagicglass.com Toronto | 1 | 25+ | • | | • | • | • | • |
| Over the Mountain Glass otmglass.com Birmingham, AL | 2 | 50 | • | • | | | • | |
| Tempco Glass tempcoglass.com Flushing, NY | 1 | 60 | • | • | | | • | |

REBOUNDDING SALES

How did sales levels compare to the previous year?

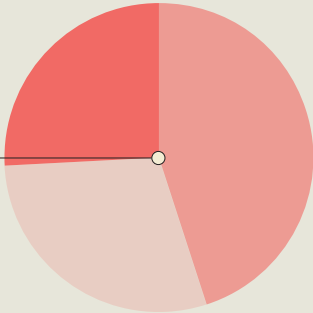
2019

Higher 64% ●
Same 32% ●
Lower 4% ●



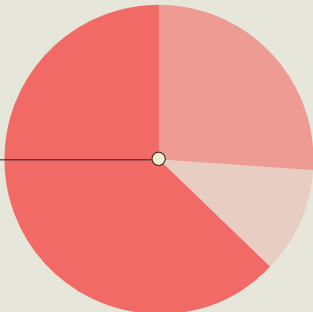
2020

Higher 26% ●
Same 45% ●
Lower 29% ●



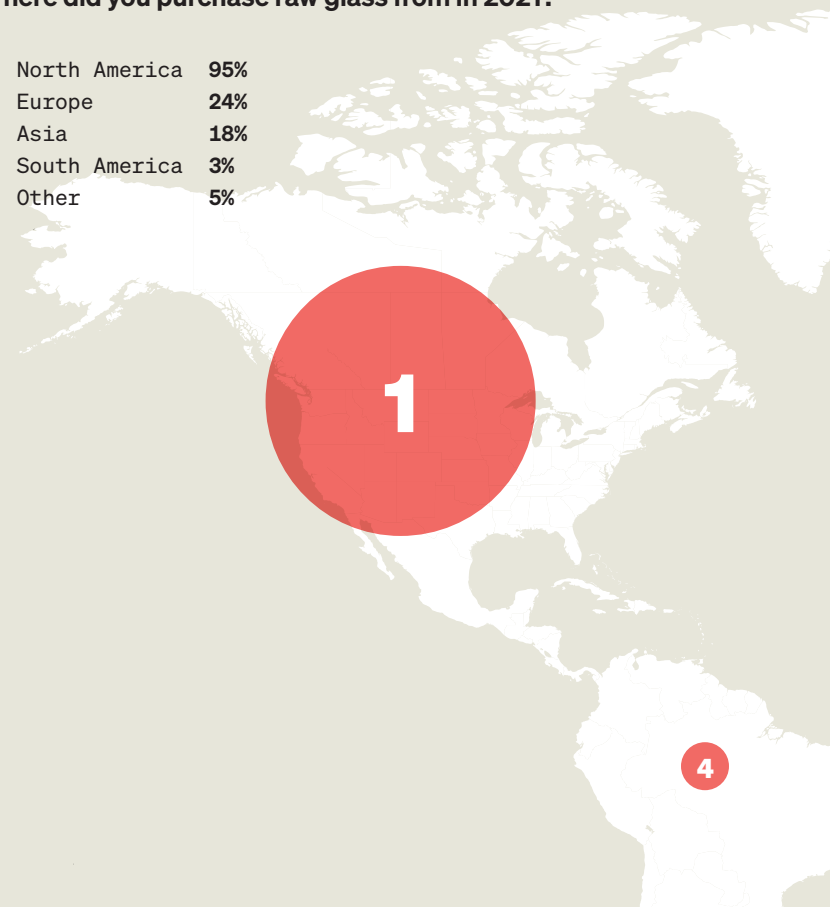
2021

Higher 63% ●
Same 26% ●
Lower 11% ●



Where did you purchase raw glass from in 2021?

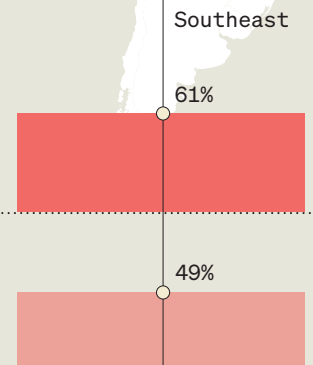
- 1. North America 95%
- 2. Europe 24%
- 3. Asia 18%
- 4. South America 3%
- 5. Other 5%



What geographic regions in North America are strongest?

2021

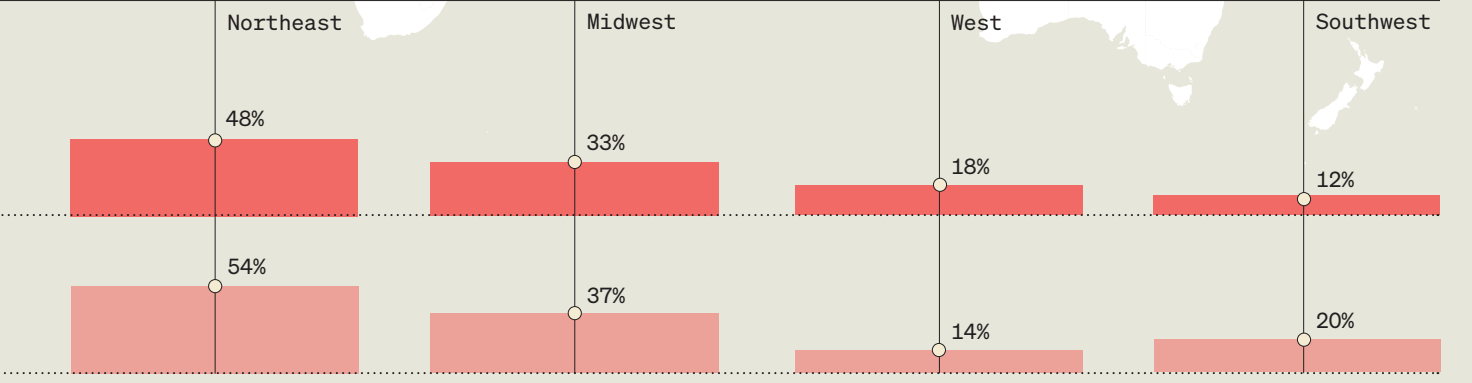
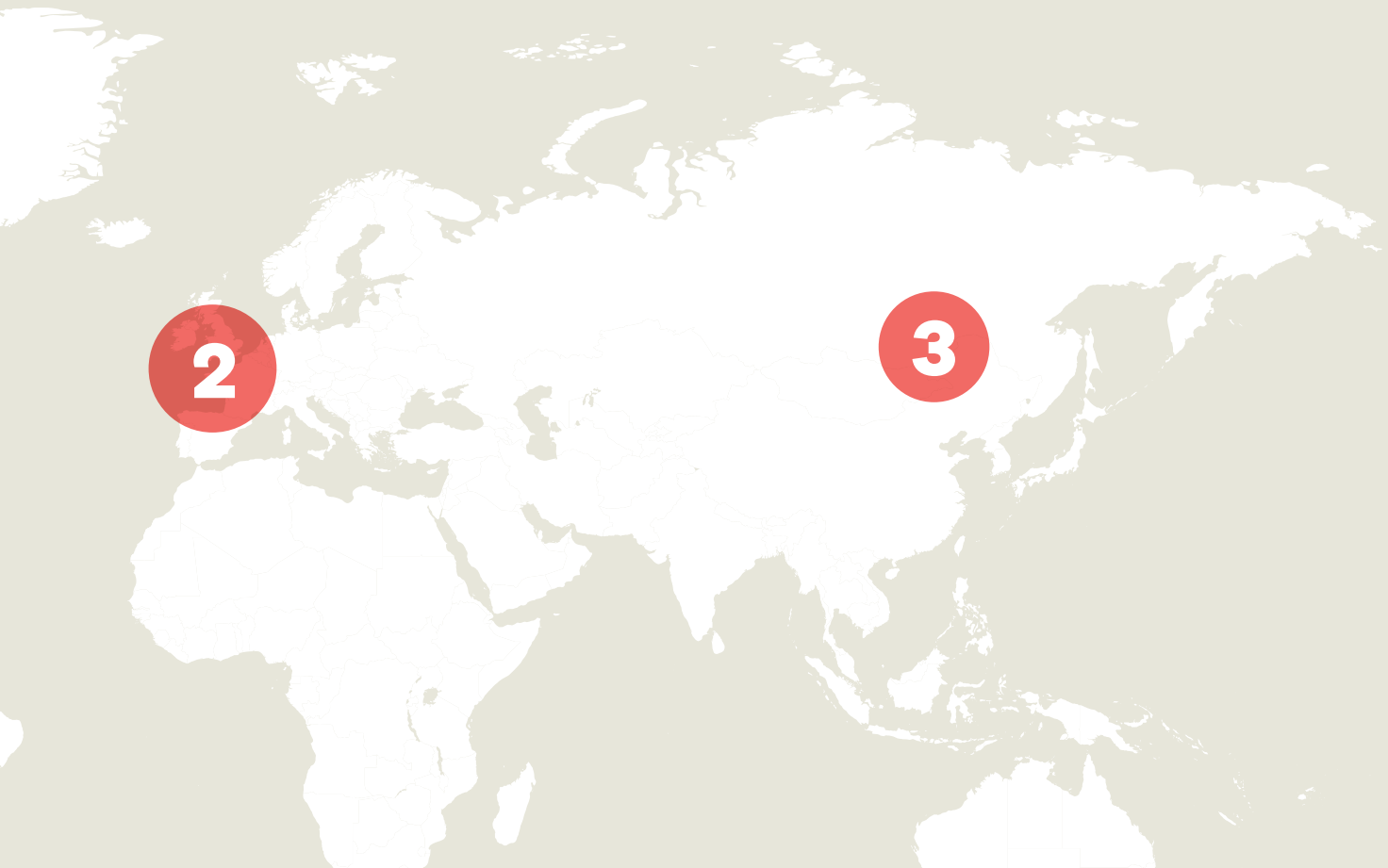
2022 projection



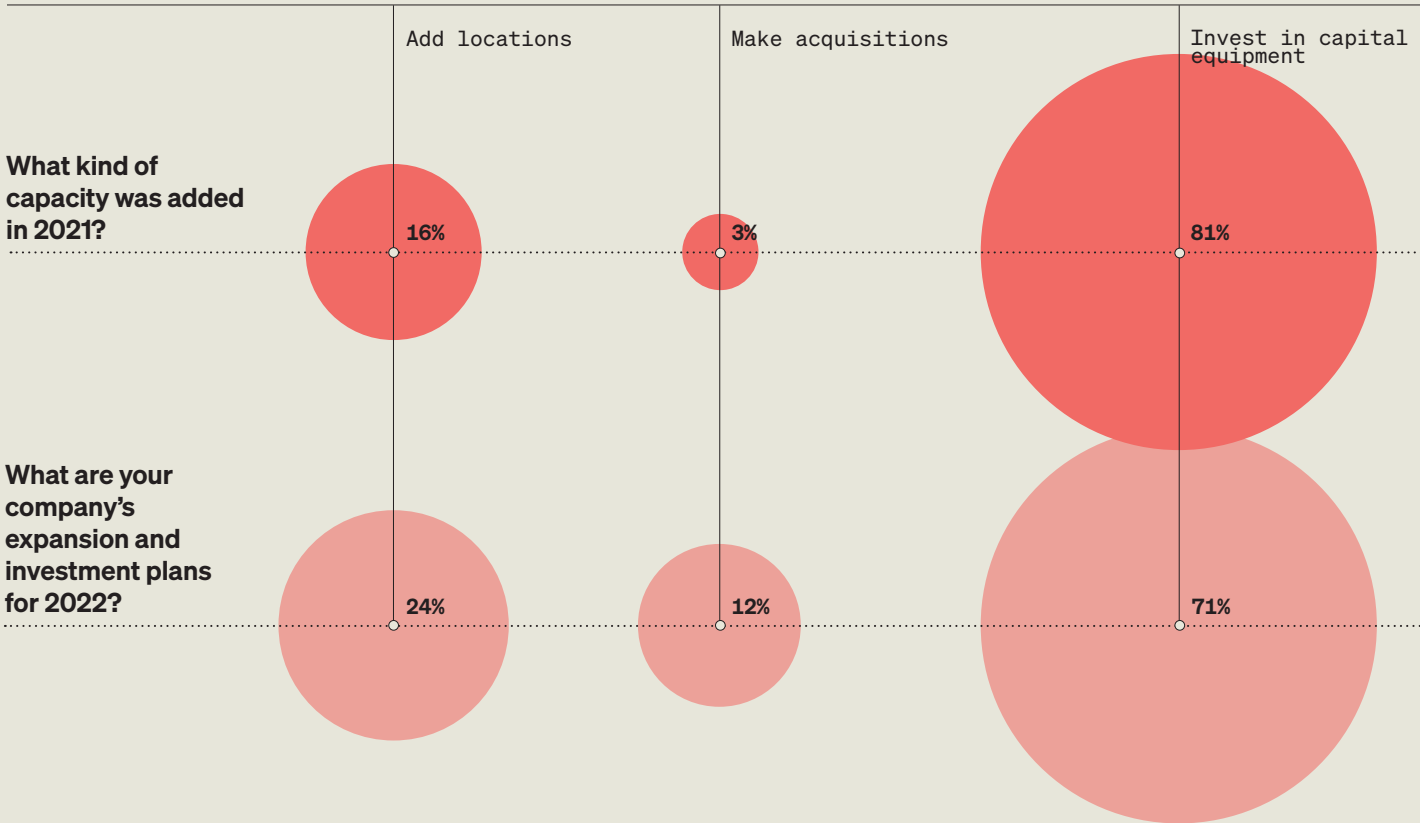
→ Gross sales data for 2021, supplied by reporting Top Glass Fabricators, reflect patterns more similar to 2019's posting. This is unsurprising, given that 2020 required many companies to fully shut down, at least for a period. Sixty-three percent of companies reported higher sales in 2021, compared to 26 percent in 2020. Perhaps more importantly, only 11 percent of companies reported lower sales this

year, compared to 29 percent last year. Getting glass remains a challenge for many fabricators. Based on reporting, fabricators are buying glass from roughly the same places as last year, with 95 percent getting raw glass from North America. Compared to last year's results, fabricators appear to be sourcing glass less from abroad, most likely due to supply chain and logistics issues.

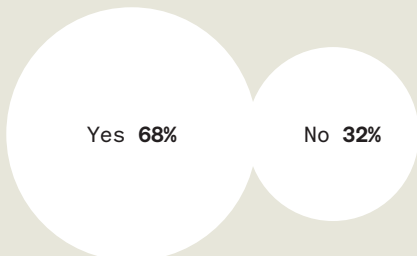
Looking at regional markets, last year's prediction that the Southeast would see the most growth came true, according to survey respondents, as 61 percent said the region had been the strongest in 2021. Looking forward, fabricators identified building growth shifting back to the Northeast, though the Southeast looks to remain strong, according to fabricator predictions.



CREATING CAPACITY



In 2021, did you automate any part of your manufacturing process?



In 2022, do you plan to automate any part of your manufacturing process?



→ A majority, 68 percent, of responding fabricators said they automated some part of their manufacturing in 2021. A majority also say they will automate processes in 2022, and a significant majority, 79 percent, say that they are using more software for plant optimization.

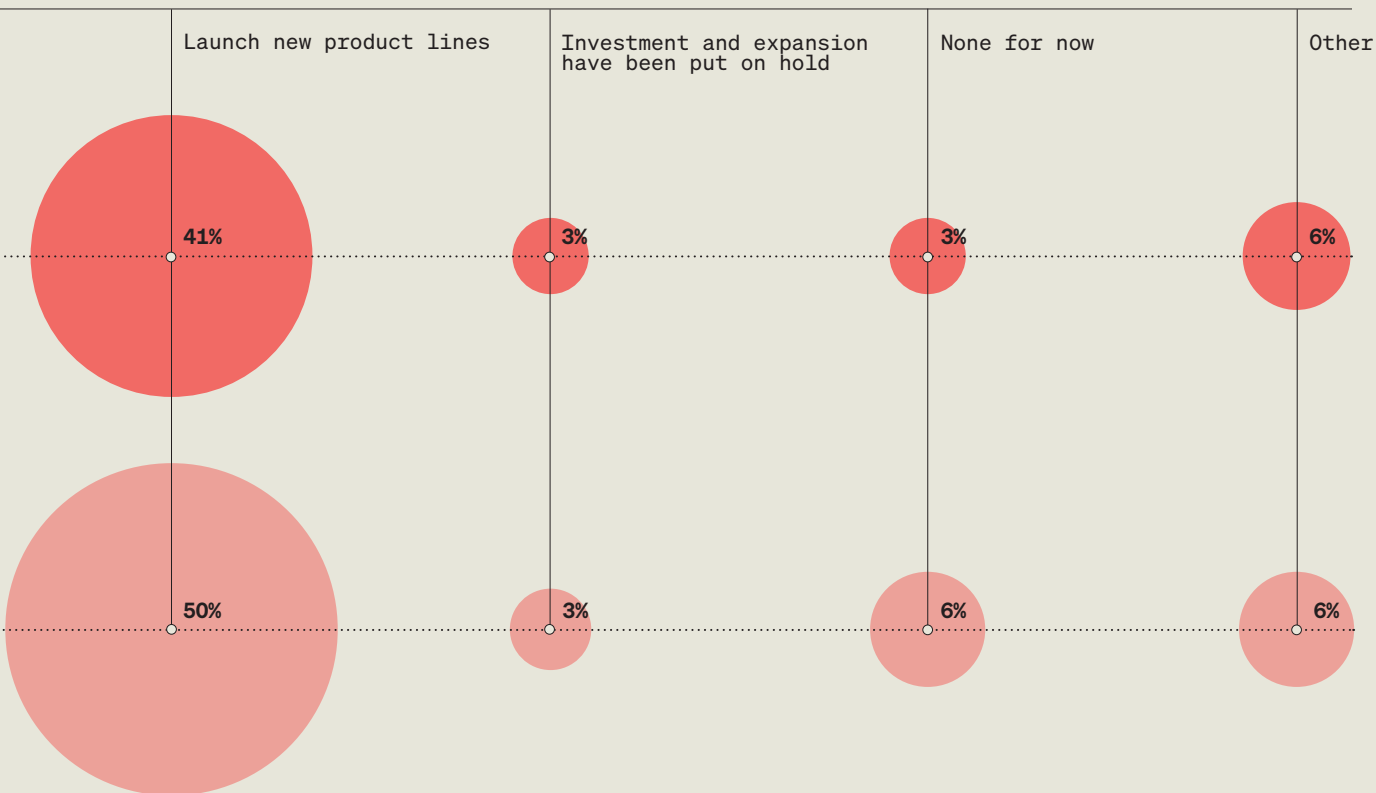
Fabricator testimonials suggest that the main driver for automation is the sustained labor shortage, combined with a return to more normal production volumes. “Given the anticipation of future staffing shortages we will continue

to look to automation to assist with keeping up with demand,” says Doug Betti, director of operations, Viracon.

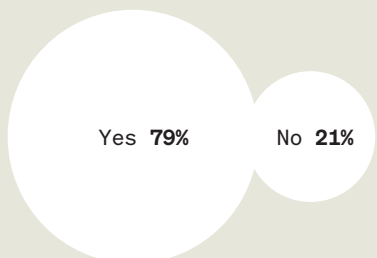
Leading fabricators seem to have used this year to invest in their business, as 89 percent report adding production capacity in 2021, compared to 68 percent the previous year. In terms of what they added, fabricators did what they said they would in last year’s report, and invested in capital equipment. Investing in equipment remains the top priority again for 2022.

Glenny Glass is one example of

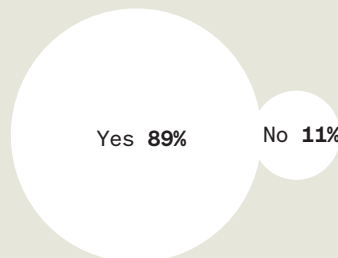
a company that added a range of equipment to their floor. “Glenny is automating any manufacturing process possible,” says Braxton Smith, president. “We recently added auto logo-ing, auto seaming at the furnace infeeds, installed a vertical CNC milling, drilling and profile edging machine. We are looking at in-line QC inspection scanners to detect quality defects early in the fabrication process, which will reduce internal rejects.”



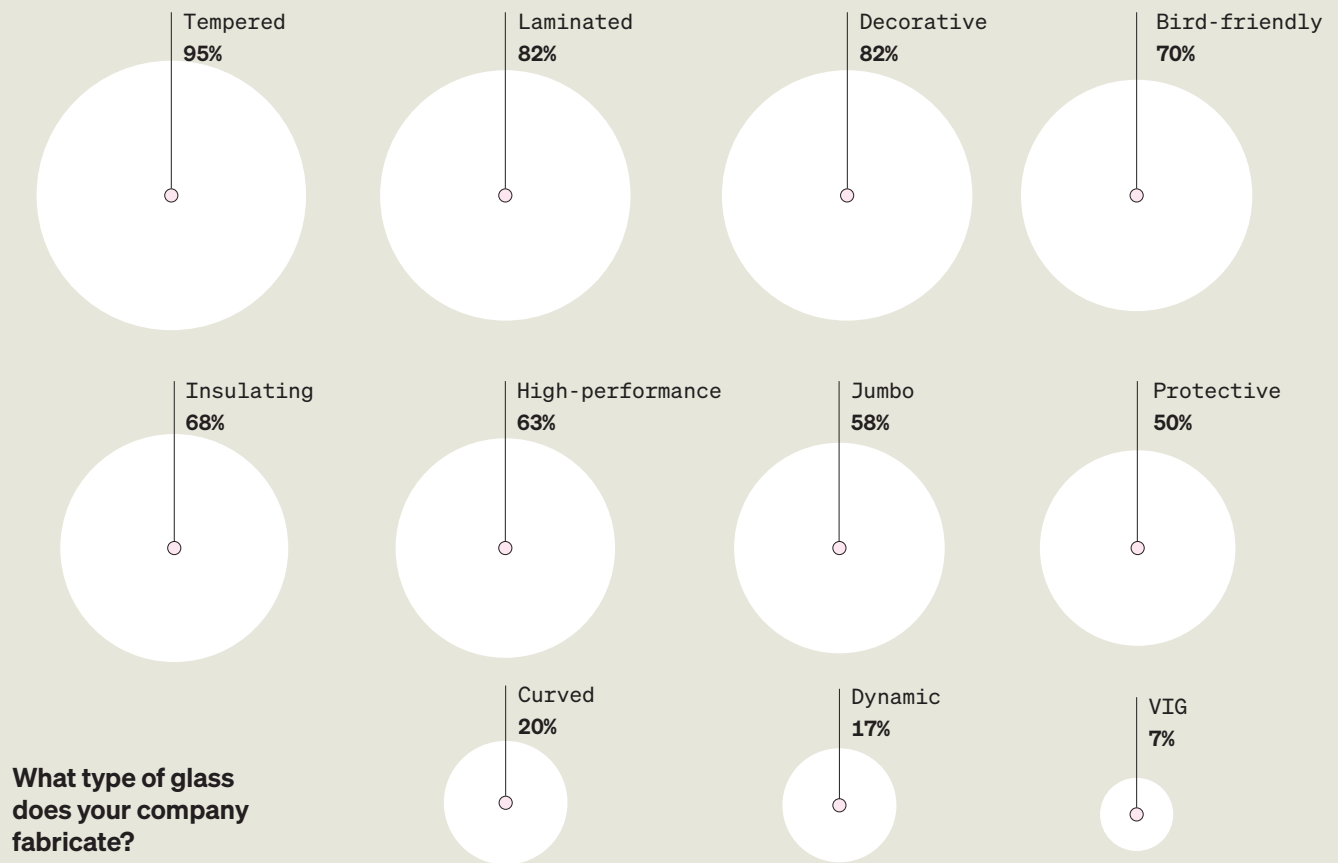
Are you using more software for plant optimization?



Did your company add production capacity in 2021?



EXPANDING GLASS



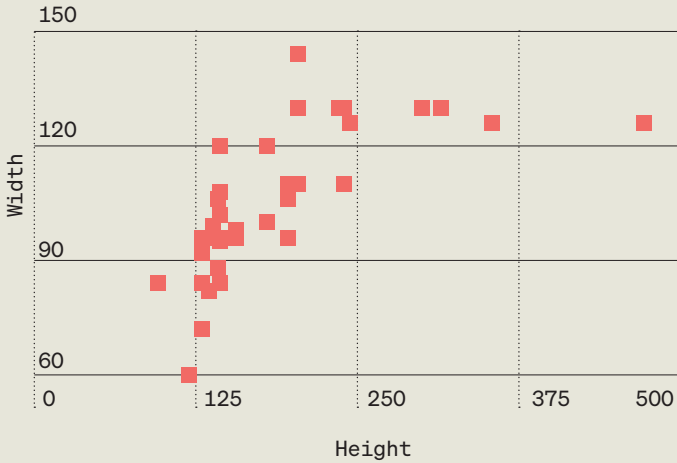
→ Companies continue to innovate products; about 41 percent said they launched new lines in 2021, practically the same number as in 2020.

Jumbo will continue to lead the way in terms of specialty glass, as 71 percent of fabricators noted it as a strong trend in 2021, up from only 45 percent in 2020.

Fifty-eight percent of companies say they fabricate jumbo glass, compared to 64 percent last year. The discrepancy may be due to the fact that jumbo does not yet have a standard size. When asked to choose a size range they thought to be “jumbo,” half of respondents said glass that is more than 130 inches wide.

The bird-friendly glass market also continues to expand. Seventy percent of fabricators say they made this specialty glass in 2021, compared to only 42 percent last year, and 59 percent noted it as a major design trend for 2021. Moreover, more fabricators report fabricating bird-friendly glass than even insulating glass.

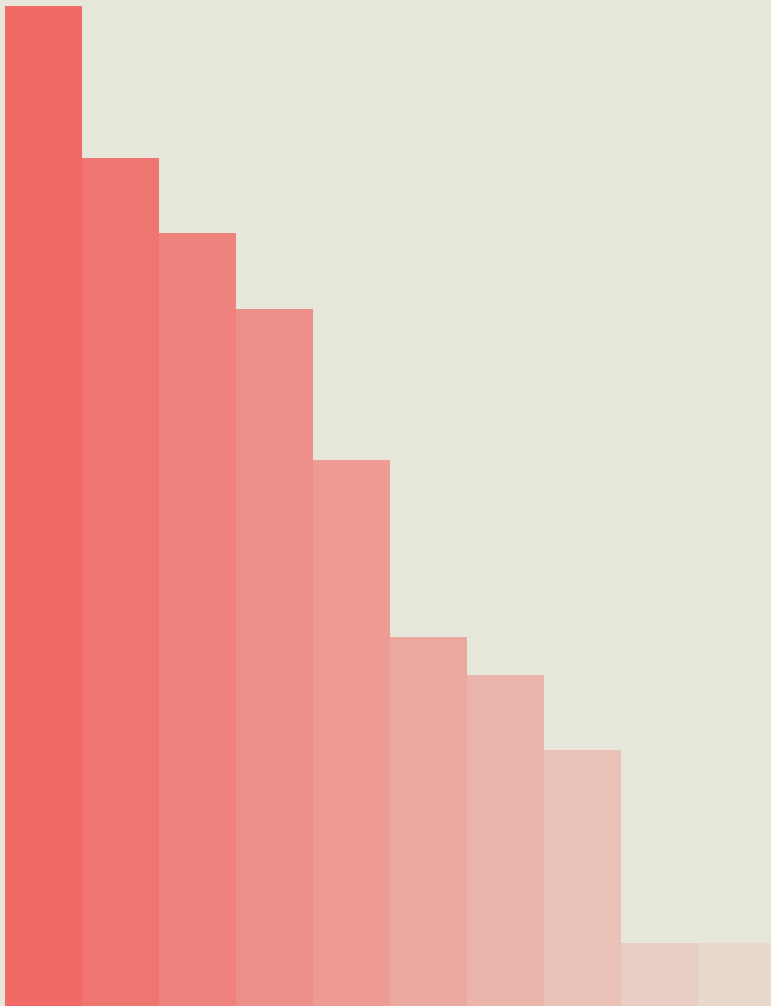
What is the maximum size glass you are able to fabricate? (in inches)



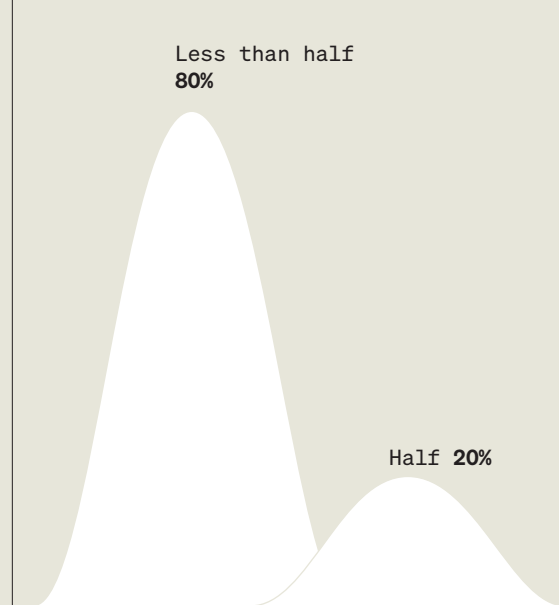
What size range do you consider to be jumbo glass? (width in inches)



What design trends have you noticed in the last year?



What percentage of your business is retrofit?



- 71% More jumbo glass
- 59% Bird-friendly
- 53% Energy-efficient glass
- 47% Security glass/impact systems
- 35% Decorative glass
- 21% Division 10 interiors
- 18% Dynamic glass (switchable)
- 12% Anti-viral/anti-bacterial coatings
- 3% Transparent PV
- 3% Laminated glass

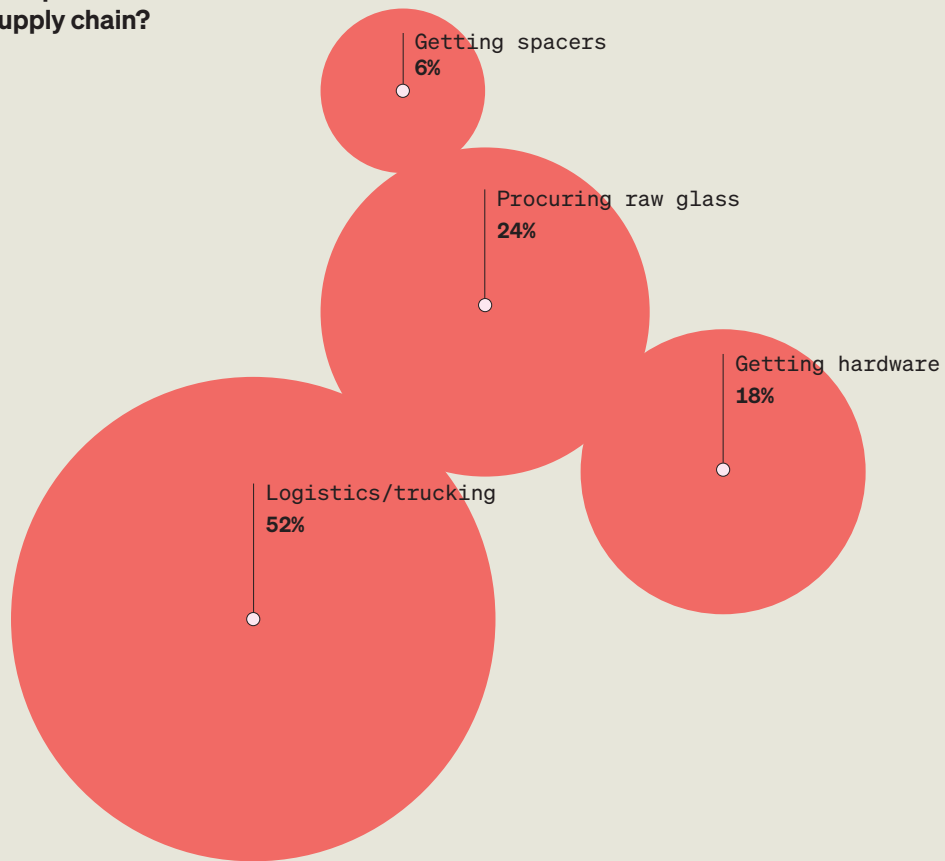
FINDING TRANSPORTATION

→ Regrettably, fabricators continue to face an array of challenges, especially as supply chain issues become increasingly complex. Respondents identified logistics and transportation as the biggest hurdle in 2021, forcing fabricators to improvise. “In-bound trucking has been limited causing [Glaz-Tech Industries] to invest in OTR freight hauling trucks and trailers to bring in glass from manufacturers,” says Alex Miramontez, vice president and chief financial officer for Glaz-Tech.

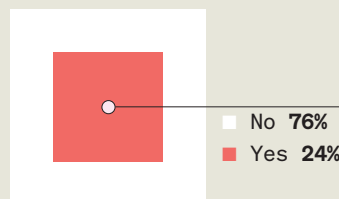
While getting raw glass remains a challenge, as Ryan Walker, branch manager for Southern Wholesale Glass, points out, delays on any component involved in production all disrupt processes and lead times. “All areas of the supply chain are equally impactful,” he says. “It doesn’t matter if we can get glass, but not spacers and vice versa. Things that people don’t consider have been difficult to get, but they are necessary for the process—cork or synthetic tabs, or the labels that we put on our glass, for example.”

Companies continue to struggle to find labor, based on respondents’ testimonials. Some fabricators report raising wages, or paying overtime, to keep up with demand with a still-small labor pool. “We’ve had to increase pay to keep pace with the local fast food and big box stores on even basic labor, as well as the government incentives that are being paid out,” says Andrew Russo, vice president sales and engineering services, Glass and Metal Craft.

What is your biggest pain point in terms of supply chain?



Did you add shifts during 2021?



Did you reduce shifts during 2021?

