GROWERTALKS

Features

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Time to Reglaze?

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Let's say you've got an old greenhouse (or two) that's still sturdy but needs new glazing. Choosing a new covering is about more than just appearances and longevity. Whether you're looking to replace polyethylene, polycarbonates or glass (or switch from one type to another), there are a lot of questions to ask.

We did some groundwork to get you started.

Structure questions

First things first: Look at the bones of your greenhouse. "Always make sure the structure below is strong enough to support any long term renovation," advises Bill Vietas at Rough Brothers, Cincinnati, Ohio. Check for deteriorating wood or for rust, especially on greenhouse posts and gutters.

While most glazings may seem "light" at first glance, they also tend to insulate better—allowing snow to pile up in cold climates and subjecting structures to heavier loads. Jeff Warschauer, vice president of Nexus Corp., Northglenn, Colorado, says, "You most definitely want to have your older structure evaluated by a licensed structural engineer to be sure that the structure can handle the load with the new coverings as well as the weight of the coverings and newer aluminum extrusions that are used to fasten down the rigid coverings."

Other equipment can factor in, too. Jeff says that since the original build, you may also have to factor in other added dead loads, such as single or multi-automatic basket systems, grow lights, watering booms and so on. Some greenhouses may also have old foundations that don't meet today's modern IBC building codes.

Matt Stuppy, president of Stuppy Inc., Kansas City, Missouri, also suggests enlisting the help of a professional greenhouse builder to repair and replace extrusions and framing that may have worn out over time. "This is where you can extend the life and productivity of the greenhouse for the next 20 years. Using a professional greenhouse builder will save you time and provide higher quality materials that are specific to horticulture. The local hardware store or construction supply house might have similar products, but they may not hold up in the high sunlight and humidity of a greenhouse environment," says Matt.

Scott S. Thompson, vice president of X.S. Smith, Washington, North Carolina, concludes, "The bottom line is: Do you like the existing house enough to invest the time and money to install the new covering (glass, rigid plastic or poly film) on the frame? Is the frame worthy to justify a new cover?"

Time to switch?

There have been many developments in greenhouse glazings in the last 30 years—increasing energy efficiency, light transmission, strength and durability. But each glazing also creates its own set of issues to consider.

For instance, Bill points out that, “If you are going from single glass to, let’s say, twin-wall polycarbonate, there will be more snow load than with glass as the snow will not melt as quickly.”

Jeff notes the same of a lot of the better-insulating coverings of today. Cranking up the heat to melt the snow may not work anymore, and thus a double- or triple-poly covering will also mean that your structure has to bear much heavier snowloads.

In researching the various options, The National Greenhouse Manufacturers Association (NGMA) recommends asking suppliers if there are any incompatibility issues between the glazing and materials with which it may come in contact. This includes anti-fogging agents, shading compounds and fabrics, washing compounds, repair tapes, pesticides and solvents, wood preservatives, sealants and caulking.

Light and heat

Ask your supplier how much energy (light) the glazing lets into the greenhouse, and how much energy (heat) will go out.

“Glass is certainly the best covering from a light standpoint,” says Scott, adding, “It is the most expensive as well from a reglazing standpoint.”

Glass will usually require twice the heat of that of a polycarbonate or double-inflated poly film. Scott says, “Our budgeting numbers for material costs for 8 mm triple-wall polycarbonate and/or acrylic panels are 10 times the cost of double-inflated poly film with only a slight reduction in light levels (3% or so). That’s huge money. When comparing glass to double poly, the materials costs are a bit more than the 8 mm plastic panel; however, the difference in light gains is substantial.”

The ballooning question

If you’re thinking about switching to a new glazing material, also ask yourself the hidden questions. Scott points out that a new growing environment may require the addition of environmental controls. You may also need to consider the following: Can you ventilate the area the same way? Can you heat it the same way? Should you consider the addition of a curtain system on the frame under the new covering?

“New construction materials and site work are costly and require permitting, as well as facility upgrades to meet updated codes and standards for the greenhouse application,” says Scott.

Ask yourself the tough question: Can you justify spending the additional money on an old framework? Or are there other areas inside the greenhouse that could better use that invested capital?

Glass

While glass is expensive, for certain growers, it's definitely the chosen glazing—thanks to it being such a high transmitter of light, and its longevity.

Of course, glass can break and thus you'll probably want tempered glass in order to keep those lethal shards from falling and impaling someone in the event of a disaster. Jeff says, "In some higher risk applications, such as garden centers, using glass may require the use of laminated glass, which is two pieces of glass with a liner in the middle. If the glass were to fail, the sheet would remain intact in the glazing extrusions." Laminated glass will cost about four times more than tempered class.

> UV: Right Side Where?
> Your polycarbonate covering will likely come with a protected UV treatment. If it's only on one side, it's imperative that you install the UV-treated side facing towards the sun exposure or your covering will yellow quickly. Some manufacturers now have "2-UV," treated on both sides—a perfect fit on open-roof vents due to the sun actually hitting the underside of the roof during certain times of the day.

Polycarbonate

Polycarbonate is perhaps the most popular of the corrugated and multi-wall rigid coverings. Among its pros: initial costs are less than glass and acrylics, it's easy to cut and drill through, it's relatively strong (resisting hail damage), and has a good fire rating.

"Polycarbonate is known for its impact strength," says Nick Koszegi, sales and marketing manager, noting that even if it gets damaged, it's hard to shatter, thus protecting the crop beneath it.

The downside of polycarbonates is that they do eventually yellow, though exactly when will depend on the product, your location and conditions. Jeff says, "Typically, today's modern polycarbonate will show signs of age and yellowing in 15 to 20 years."

Twin wall polycarbonates remain the most popular, according to Jeff, but triple-wall products add energy savings as well as clarity for seeing into or out of the structure. You'll have less energy savings with a single corrugated sheet, but it'll be easier and less expensive to install, as it doesn't require aluminum glazing bars/extrusions.

Nick points out that there are also lots of coating technologies now available, such as their Polycoolite, which blocks the UV rays and allows the blue and red rays needed by plants. Polymatte provides diffused light. Other companies offer similar coating technologies that provide UV blockage and/or light diffusion, including DynaGlas SolarSoft and ThermaGlas SLT.

Twin-wall acrylic

Jeff notes, "Acrylic gives you almost the light of glass and the energy savings of twin wall polycarbonates."

While the initial cost is higher than polycarbonates, some say the lifespan and extended years of quality light without yellowing win out. However, some acrylics can only be cut straight across and cannot be point fastened, making it more of a challenge in some reglazing situations. In addition, their fire ratings aren't as good as some of the polycarbonates.

Polyethylene

In many cases, a hoop house may be too narrow to accommodate bending polycarbonate sheets, and so polyethylene films remain a solid choice for many growers. "Double poly is a great insulator and, if your house was designed for it, is still a good covering choice," says Matt.

The bottom line is that you've just got to weigh your options. Scott says, "Our firm and customers have had wonderful success reglazing greenhouses—some that were more than 30 years old—with excellent results. Discuss these options with your staff, accountant, banker and your NGMA greenhouse professional before removing any existing cover."

Further information: Look at the NGMA website www.ngma.com/downloads.htm for more information on coverings, screening, shade and many other things to help you get the most out of your greenhouses. **GT**

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