

Marine Fabricator

IFAI PUBLICATION

WHITE PAPER

How to choose the right marine fabric

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Letter from Sunbrella®

Dear Valued Craftsman,

Sunbrella Marine is proud to partner with *Marine Fabricator* in creating *How to Choose the Right Marine Fabric*, a guide that can empower you to create custom covers, tops, and cushions that not only appeal to your mariners' individual aesthetic tastes, but also keep their boats comfortable and well protected.

For more than 60 years, Sunbrella has served as the premier provider of durable and beautiful performance fabrics, designed to enhance the shade and marine structures you build. Sunbrella remains committed to helping you succeed by designing high-quality fabrics, providing a dedicated care team and industry-leading warranty, investing in mutual growth, and building a brand your customers prefer and trust above all others.

We've created this whitepaper to be a resource that can help you work with your customers to create the boats of their dreams, by equipping you with the tools to make fabric recommendations more quickly and efficiently. *How to Choose the Right Marine Fabric* includes overviews and insights on fabric options for various marine applications, questions to ask to help triage customer priorities—including price points, climate and project performance expectations, and guidance on how to give fabric recommendations that meet your clients' wants and needs.

We understand how every project—and every customer—is different. This guide can help you discover those differences and how they affect your fabric choices. Our goal is two-fold: 1) to help you save time, so you can get back to creating—the part of your job you love the most; and 2) to help you choose fabrics that ensure optimal results and customer satisfaction.

Let's get started!

Marine fabrics 101

How to help your clients make smart material choices

As a marine fabricator, you are the person your clients turn to for trusted advice and recommendations on materials that will provide the best possible performance for their boat components.

Making smart choices for your customers can be challenging, since it requires an intimate knowledge of all the fabrics available and their ability to withstand specific environmental conditions. It requires a clear understanding of how marine fabrics on the market are likely to stand up against sun, sand, wind, surf, marine life, passenger wear and tear, chemical cleaning products and continual exposure to salt- or freshwater.

Your clients' projects may call for a material to be ultra-durable; colorfast; water resistant or repellent; easy to clean; functional at all temperatures; UV protected; fire retardant; and resistant to a number of stressors including abrasion, bacteria and fungus. It may need to be stretchable or stretch resistant to accommodate the curves and angles on a given boat. It might need to work in conjunction with special finishes, backings or weights. And, in a perfect world, it will be resistant to all kinds of stains, repelling everything from pet urine to blood, paint, grease, ink, clothing dye, makeup, sunscreen and a range of messy foods and beverages. Of course, it should also feel comfortable to the touch.

On top of that, your clients will expect the colors, patterns and designs of their boating components to suit their specific tastes and preferences—all within a specified budget. They may also be

environmentally sensitive and insist on materials that have been recycled or otherwise responsibly sourced.

Because the current market includes so many new boating enthusiasts, the likelihood is greater than ever that you'll need to explain fabric pros and cons to clients—and to help them realize they may not be able to get everything they want in one fabric.

Expect new boaters to have lots of new questions

It's news to no one in the boating industry that the pandemic and the need for social distancing led more people to boating as a means of recreation, entertainment and stress relief. The research firm Arizton released an industry report in July 2021 entitled "Recreational Boating Market—Global Outlook and Forecast 2021-2026," which predicts that the global recreational boating market will grow by 11% each year between 2020 and 2026 to reach a whopping \$63.5 billion. And a June 2021 report from the National Marine Manufacturers Association shows retail sales of new powerboats were up 32% compared to the previous June.

"COVID gave us a 10-to-14-year cycle in the marine industry over the course of six months," explains Bill McDaniel, marine market manager at Sunbrella®. "Dealers went from not being able to give away a boat ... to not being able to keep up with demand."

Even more significant to fabricators, he notes, is that more than 40% of the boats sold in 2021 were purchased by



The trend toward social distancing has introduced new enthusiasts to the joy of boating. Sail cover: Sunbrella Smoke Sailcloth.

first-time boat owners. And many of them are embracing boating with little to no knowledge of how to outfit or update their vessels with materials that will perform well given their preferences, lifestyles and plans.

Fortunately, the marine fabrics industry has developed a full spectrum of technology-enhanced fabrics designed to meet almost any challenge a client can throw your way. And once you fully understand fabric differences, you can confidently recommend the right material for any given project.

More fabrics for more applications

The marine industry has largely moved away from trying to develop one material that's suitable for every application. Instead, it's offering a range of highly specialized materials that provide unique benefits.

Your job as a fabricator is often to create a comprehensive design plan for clients that takes maximum advantage of those benefits without sacrificing other

important elements. "All marine fabrics have a compromise," explains Mike Erickson, CEO and owner of Canvas Designers Inc., based in Florida and Costa Rica. As one of the largest custom fabrication shops in the country, Erickson's 50-employee firm fits and engineers products for vessels with an average size of 50 feet.

"Nothing is the answer to everything," says Erickson. "You can't have a fabric that's breathable and waterproof, or one that's chafe resistant and lasts forever in the sun. That's why there are so many different fabrics. And since every job has a new set of directions, good communication—and having all the info you need to make a custom product—is critical."

To help you consider your options, understand all the pros and cons, and make informed fabric recommendations for your clients, this white paper will provide guidance on the following topics:

- > Types of marine textiles and their top performance qualities
- > Textile considerations for typical marine fabricator projects
- > Textile considerations for different climates
- > Textile considerations for different client lifestyles
- > Client budget and fabric considerations
- > Common fabrication challenges with different textile choices
- > What to seek in an effective product warranty

Knowledge is a powerful resource, and each section of this white paper is filled with information to help you improve your bottom line, develop successful projects and exceed your clients' expectations.

Clients rely on fabricators to explain the advantages of various fabric choices. Fabrics left to right: Sunbrella® Horizon Capriccio Dune, Adaptation Stone, Horizon Textil Cadet Grey, Sunbrella Midori Stone, Horizon Capriccio Flax.



01

Lucky 7: A rundown of the most popular marine fabrics

Knowing your options in terms of marine materials is your first step in recommending the right fabrics for your clients. Learning more about the various types of fabrics on the market may also help you dispel some common myths about different brands and textiles.

01

Lucky 7: A rundown of the most popular marine fabrics

There's a lot of misinformation out there," says Bill McDaniel, marine market manager at Sunbrella®. "That's why, as suppliers, we stay engaged with the fabricators who are customer-facing, spend a lot of time seeing what the trends are, go to boat shows and listen to customers. It's a communal effort between those of us who supply fabrics and the fabricator community to educate clients on products, best practices and things they can do to help eliminate problems."

Synthetics offer durability

Generally speaking, you can expect synthetic fabrics such as polyester, acrylic, nylon and polyolefin to be significantly more durable than natural fabrics because they're engineered to break down at a slower pace. Scientists are also continually modifying and improving synthetic textiles to offer better stretchability, waterproofing, stain resistance, and UV and UVB resistance in harsh marine conditions. With that in mind, here are some of the most common fabrics employed, along with their key characteristics:

Polyester

This popular marine fabric is used in a variety of applications. It is an excellent choice for large pontoon covers and is often used in bimini tops.

Pros: Polyester's popularity is partially due to the ability to produce a fabric in a lighter weight for larger applications. It is known for its initial strength, cleanability and dimensional stability. When treated with an engineered coating, polyester can be rendered waterproof. It also has excellent abrasion resistance, and when using solution-dyed fiber to construct the fabric, it has strong color retention.

Cautions: The trade-off is that polyester tends to lose its initial strength rapidly with constant exposure to UV rays within marine environments, and much of the breakdown happens in the first year of

exposure to the elements. The fast breakdown happens because polyester, as a polymer class, is less efficient at exhausting the heat energy generated by UV exposure unlike acrylic, which is efficient at exhausting that energy along the fiber axis.

Solution-dyed acrylic

Engineered from a polymer called polyacrylonitrile, this popular material is mixed with dye before the fibers solidify to provide better color saturation. That helps it maintain its rich color and its strength through heavy wear, regular cleaning, exposure to natural light and exposure to the elements. In comparison, other fabrics are colored with surface finishes that can wear away with use.

Pros: Compared to polypropylene, olefin or polyester, acrylic is extra-resistant to UV degradation. It's also soft, resistant to wrinkling or shrinking, moisture wicking, quick drying, easy to clean, breathable, and resistant to mildew, insects, soil, oil and chemicals. In fact, it can be cleaned with diluted chlorine bleach to remove germs and tough stains—without compromising the color.

Since it can be made in lighter weights and has a natural look and feel that mimics cotton, acrylic tends to be a popular choice for boat covers, sails and upholstery.



Especially popular now among Sunbrella's solution-dyed acrylics are striped patterns ranging from bold cabana picks to skinnier pinstripes. The classic Sunbrella Beaufort Stripe is available in a variety of color ways.

McDaniel notes that the solution-dyed acrylic used for Sunbrella® products retains 80% to 85% of its strength—even after 10-plus years of use. “Even without any additives, it’s the most UV-stable fabric on the market today,” he says. “And with different additives, it’s almost like a super-fiber that retains color and strength for long periods of time.”

Cautions: Considered one of the higher-end marine fabrics, solution-dyed acrylic may require treatment with specialized chemicals every few years to maintain its water-resistance.

Laminated vinyl

This heavy-duty vinyl is made by using extreme heat and pressure to bond together and seal two or more vinyl substrates with stabilizing bonding agents. That creates a product that’s supple and pliable but tough and relatively impervious to rips and tears.

Pros: Laminated vinyl is especially popular for awnings and boat covers because of its ability to repel water and resist molds and stains over long periods of time, its hardness under extreme conditions, and the fact that it’s easy to clean.

Cautions: It’s not as stain resistant as coated vinyl, it’s less breathable than other

fabric choices, and it may not be available in as wide a range of colors and patterns.

Coated vinyl

Coated vinyl is one of the most cost-effective marine fabric options and offers good “bang for the buck” in terms of durability.

Pros: Products that fall under the coated vinyl category may be made of polyvinyl chloride (PVC) or polyurethane (PU). PVC is considered stronger, more affordable, more resilient and easier to tailor, but PU is cooler to the touch when it comes to seating, and it can be made to more closely resemble real leather.

Coated vinyls are typically woven and then surface-coated with one or more layers of plasticizer to make them stronger, less absorbent and more resistant to abrasion, mold, mildew, bacteria, insects, chemicals, moisture, oils and UV rays. Color is applied both in the weaving and in the surface coating.

Cautions: Coated vinyl is less breathable, less durable over time and more apt to absorb stains than acrylics. It may require strong chemicals to clean. Although it’s stronger, more durable and more waterproof than laminated vinyl, it’s sometimes perceived to have an unattractive, plastic-like sheen.

Knits

Fabricators often turn to knitted synthetic fabrics for upholstery and other projects that call for stretchiness, softness and abrasion-resistance.

Pros: Knits are typically supple enough to help covers fit perfectly around the curves and angles of boats in areas where woven fabrics might be unwieldy, and as such they’re sometimes used as unidirectional reinforcement layers for fabrics such as polyester.

These days, knits are available in a wide range of patterns and textures, including 3D effects. “I go to boat shows

Add comfort to upholstery in cozy spaces like this salon room by choosing soft knitted synthetics in soothing colors. Curtains: Sunbrella Midori Indigo; Pillows: Sunbrella Canvas True Blue, Canvas Regatta, Canvas Glacier; Cushions: Sunbrella Blend Indigo; Striped pillow on deck: Sunbrella Gateway Indigo.



and still run into people who are just shocked at the variety of knitted upholstery fabrics available,” notes McDaniel. “The number of patterns and colors and styles has really grown.”

Cautions: Knitted fabrics have a softer feel but can be less durable in the long run. They also have a tendency to “grow” over time. A knit is constructed by interconnected loops that can stretch and give with sustained pressure. A woven is inherently more stable.

Leather

To some customers, there’s just no replacement for the luxury look and soft, supple hand of real leather upholstery.

Pros: In some cases, natural hide can be stronger and more durable than vinyl and other synthetics, with better resistance to cracking, splitting and fading. It’s also breathable, meaning it can be less sticky and uncomfortable on hot days. Leather is versatile enough to reflect a number of color and design choices: It can be perforated, embossed, printed, pearlized or antiqued. And it only becomes softer and more comfortable with use.

Cautions: Leather can be much more expensive than other marine fabrics. It’s less

able to withstand prolonged exposure to sun, rain, or wear and tear by pets or children. And it can be much harder to maintain, with special cleaning products and conditioners often needed for maintenance. Repairs can also be challenging because as leather fades over time, the color and grain can be very hard to match later on.

Faux leather

Faux leathers are often made of polyester sealed with silicone.

Pros: These fabrics can mimic the feel, texture and look of leather while offering added durability, mold, mildew and bacteria resistance, colorfastness, flame resistance and UV protection. Sometimes referred to as Naugahyde®, faux leathers are available in a wide range of colors, textures and finishes and can be constructed with non-stretchy, two-way and four-way directional backings.

Faux leathers have become quite popular, and many fabricators appreciate their high-touch comfort.

“We use very little real leather, since the faux leathers in this industry have become so nice and soft and supple,” says Mike Erickson, CEO and owner of Canvas Designers Inc., which is based in Florida and Costa Rica.

Cautions: Even high-quality faux leathers will eventually show wear, are not puncture proof and will not develop the same luster or patina of real leather.

With so many high-performance materials on the market, you should be able to identify varieties that will help keep your clients’ vessels clean, attractive, fun and functional far into the future.

“There’s no one fabric out there that’s going to have everything needed in every single possible scenario,” emphasizes McDaniel. “But fabricators have tricks and techniques they’ve learned over the years, and they can recommend the products out there that will meet most challenges.”

High-performance fabrics like Sunbrella® Cocoa Sailcloth are considered the standard cover cloth in the boating industry because of their fantastic color options, high resistance to fading and long lifespan.



02

Which fabrics fit which projects?

For any given fabrication project, your top criteria for choosing the most effective materials will be their intended use. Understanding exactly how the final product will be used is essential to making smart recommendations for clients.

02

Which fabrics fit which projects?

When selecting appropriate fabrics, you will need answers to the following questions:

- What environmental stresses will the project undergo after installation and how often?
- How well will the fabric perform in its role over time, given its top attributes and its disadvantages?
- How flexible must the fabric be to fit its intended shape and size, and can it be patterned, cut and sewn with relative ease?
- How easily can it be manipulated to accommodate the necessary fasteners and other hardware?

When you help clients select the best-performing fabrics for their specific needs, you help ensure customer satisfaction, establish credibility and help build repeat business. To that end, here are factors to consider when approaching fabric choices for common marine projects:

Exterior upholstery

For cockpit seating, captain's chairs, gunnel pads, tower cushions, sun pads, leaning posts and other kinds of marine upholstery projects that are out in the open, you'll need to pay close attention to the durability and weather-resistance of your fabric.

Depending on the conditions and climate most prevalent in your client's boating environment, your choice will need to be waterproof, UV protected, stain resistant, easy to clean, abrasion resistant and flame resistant while also coordinating with the design and color of the rest of the boat.

Solution-dyed acrylic can be an optimal choice, given its comfortable, soft feel and its strong resistance to everything from UV degradation to moisture, mildew, dirt, wrinkling, shrinking and fading. Even better, it comes in a wide range of colors and patterns so your clients can be completely creative in choosing the designs

that best suit their tastes. Solution-dyed acrylic fabrics offer excellent fade resistance and colorfastness, which helps them retain their brightness over time.

Interior upholstery

Seating and bedding that's somewhat sheltered from weather conditions need not be quite as waterproof and UV resistant as exterior upholstery projects. That said, all fabrics are bound to be exposed to harsher conditions on a boat than they are on land.

Since interior cabin spaces are often used as places to shelter quickly during inclement weather, you and your clients will want to consider how often humans and pets will sit on the cushions or bedding after coming in from wet conditions. Moisture, mold and mildew can easily take hold in such settings, leading to stains and musty odors at best or unhealthy conditions at worst. You'll also want abrasion resistance to handle all that interaction, plus stain resistance and cleanability to guard against food and beverage spills. Of course, comfort is also key.

"You want more than a water-repellent finish—you want to be able to sit on it without it being stiff," says Bill McDaniel, marine market manager at Sunbrella®. "It should be nice and supple."



Solution-dyed acrylics help ward off mold and mildew that can otherwise accrue in enclosed seating areas. Cushions: Sunbrella Sailcloth Seagull; Pillows: Sunbrella Canvas Black, Canvas White.

Depending on the client's budget, you might address all those challenges with a superpowered ***solution-dyed acrylic*** or a ***coated vinyl***, fabrics known for their low absorbency and excellent abrasion resistance. Other viable options include a ***breathable woven fabric in olefin or polyester, an authentic leather or a high-quality (and more cleanable) faux leather***.

Biminis

Because these collapsible and removable cockpit covers are directly and continually exposed to sun, wind and weather, they demand intense UV protection, durability, ease of cleaning and resistance against water, mold and mildew.

McDaniel recommends seeking out a fabric that's heavy, sturdy, durable, water repellent and strong enough to support the underlying bimini structure. ***A waterproofed woven acrylic or vinyl/polyester composite*** should help divert water runoff to the sides. Make sure it's soft and pliable enough to enable easy handling and low-stretch enough to provide the required stability.

Note that a light color will let through more light and help minimize the visual effects of fading, while a dark color will block more sun and provide more shade.

According to Kirk Fitzsimmons, Sunbrella®'s director of industrial sales, UV

protection is now a top concern among clients, given current health recommendations by the American Cancer Society, which advise everyone to limit their exposure to the sun, particularly in the spring and summer when UV rays are strongest.

"The need for shade is ever-present," says Fitzsimmons. "It's more important now than ever."

Clients may be interested to learn that The Skin Cancer Foundation recommends certain Sunbrella® fabrics in shading products as part of a complete sun protection regimen, including regular use of sunscreen, to aid in preventing sun-induced skin damage.

Canvas and cockpit covers

The ability to deflect water is among the top concerns for any well-fitting cover to protect a boat from the elements, so you'll definitely want to choose either a water-repellent or a water-resistant fabric option. Each comes with a set of pros and cons.

Water-repellent options such as coated vinyl obviously ward off water more completely, but they must be vented properly so moist air won't get trapped underneath and encourage the growth of mold and mildew. If clients will be storing their boats for any length of time with a water-repellent cover, you'll want to guide them on properly venting the cover to avoid issues with fungus.

Water-resistant options such as acrylics won't repel water as efficiently but tend to be breathable enough to help ward off fungal growth.

The second most important factor in a boat covering is the stretch built into the fabric. Though you may require a certain level of flexibility to fit covers snugly over curves and angles, you need to ensure the fabric won't stretch or sag too much after continual use. Poorly fitted covers can collect water and debris, increasing the chance of rot, fungus and bacteria.

Bimini tops call for fabrics that are easy to handle yet resistant to all kinds of weather such as this Sunbrella SeaMark Black Linen.



“All marine fabrics have a compromise. You can't have a fabric that's breathable and waterproof, or one that's chafe resistant and lasts forever in the sun. That's why there are so many different fabrics.”

—Mike Erickson
Canvas Designers Inc.

Solution-dyed polyester, such as Sunbrella® Sur Last, works well for a variety of cover applications to protect the interior of the boat from UV, rain, dirt and other natural environmental conditions.



Other desirable qualities in a boat cover include chafe resistance, UV protection, durability and longevity. Your choice should be lightweight enough to enable easy installation and removal, yet strong and supple enough to support the snaps and other fastenings needed to secure the cover to the boat.

Tension shades and sunflys

Because the primary purpose for these semipermanent covers is to offer relief from the sun's heat and UV radiation, understanding the type of shade your clients want on their boats will help guide your fabric decisions.

Darker-colored, tightly woven fabrics will absorb and block out almost all light and UV radiation, while light-colored and/or open-weave varieties will create an airier feel but may allow too much brightness or glare.

Besides weave and color, other factors to consider in a sunfly fabric include flame resistance, stain resistance, cleanability and resistance to water, mold, mildew, abrasion and fading. Since sunflys are typically supported by minimal framework, the material must also be lightweight enough to remain stable while resisting stretching and sagging over time. Your best options may be a *coated acrylic or a vinyl-coated, high-tenacity polyester*.

Sail covers

Whether you're tasked with creating a traditional throated sail cover, a rectangular sail cover or a sail pack, you'll want to select fabric that can be manipulated enough to accommodate hardware additions while creating a snug, customized fit for the sail itself. The material should also be water repellent, able to ward off mold, mildew, abrasion and fading, easy to clean and lightweight enough to enable easy installation and removal. *Solution-dyed acrylic* may have all the characteristics you need, especially since it can be made to closely resemble crisp cotton canvas.

Mooring covers

Since these are designed to fully protect your client's boat, the fabric must offer full protection from rain, dirt, UV rays and other natural environmental conditions. At the same time, it must be breathable enough to allow air to escape so the boat isn't inadvertently subject to mold, mildew or vapor buildup. Seek out a material such as *polyester, vinyl or acrylic* that's pliable enough to support the rope, hardware, padding and other reinforcement that will keep the cover tightly fitted, ensuring protection for the windshield, motor and other vulnerable elements.

Engine covers

To create effective protection for your client's motor, pick a material that provides both strong water resistance and breathability. The fabric should be pliable enough to fit closely around the motor and protect it from environmental elements without being cumbersome. If the boat is gas-powered, consider a *vinyl or other antistatic material* that reduces the chance of sparks and ignited vapors.

Electronics covers

The fitting that protects your client's dashboard from the elements should be durable, water and UV resistant, and able to efficiently guard expensive controls from contaminants like dirt, debris and insects. Choose a *vinyl, polyester or acrylic material* that can be molded closely to allow for a snug fit.

Wall paneling

When your clients seek recommendations for a fabric that can protect the walls of their boat cabins, consider recommending a *flame-resistant, foam-backed vinyl*. Key characteristics should include water resistance, stain resistance, cleanability, durability and of course, aesthetic appeal.

03

Your client's climate: How environmental factors affect fabrics

When planning your clients' fabrication projects, detailed information about where and when they will most often be boating is key to choosing fabrics and finishes that will perform well in key environmental conditions.

03

Your client's climate: How environmental factors affect fabrics

Here are some things to consider when seeking textiles that will stand up well to various challenges:

Saltwater

Saltwater corrodes metal 10 times faster than freshwater. It also corrodes fabrics over time, turning them brittle, increasing the risk of rips and tears, and sometimes leaves crusty deposits behind. That's why it's important to incorporate specially treated synthetic fabrics into areas that will be continually exposed. Your best choices may be **polyester**, which is slow to corrode in saltwater, **or a coated or laminated vinyl** that automatically repels harsh salts and enables easy cleaning to deter mineral deposits.

Freshwater

Much less harsh than saltwater, freshwater can nevertheless cause mold, mildew and corrosion if it overstays its welcome on your marine textiles. Be sure your fabric of choice for freshwater applications is **water repellent or at least water resistant** to ward off the growth of fungus, bacteria, rot and/or nasty odors.

Temperature changes

Maybe your clients spend time on their boat in intense heat all summer and store the boat in an unheated pole barn during frigid winters. Perhaps they divide their sailing time between tropical southern destinations and cooler northern waterways.

When surrounding temperatures will vary to that extent, a vessel may need textiles that can keep their integrity year-round, regardless of fluctuating temperatures. Acting as safeguards against cold temps are fabrics such as **marine vinyls that have been assigned low cold crack ratings** by their manufacturers. Such materials have been tested under frigid conditions to determine at what point they'll start to split from the stress.

Bill McDaniel, marine market manager at Sunbrella®, notes that it's not unusual for today's marine fabrics to carry cold crack ratings of -20 degrees F.

Heavy rain

Unfortunately, no fabric is entirely waterproof. But the top layers of fabrics designated "water resistant" or "water repellent" have been treated with coatings that create surface tension, encouraging exterior moisture to bead up and roll off instead of penetrating deeper into underlying layers.

For a vessel expected to be exposed to heavy rain, a **vinyl-coated polyester water-repellent fabric** that's been treated against mold, mildew, colorfastness and fading may be an optimal choice.

Heavy sun/UV rays

In the same way that sun can damage skin, direct, prolonged sunlight can break down molecule chains in both natural and synthetic fabrics, fading the colors and eroding the fibers themselves. Fortunately, extra UV protection is now incorporated into many marine textiles to help them remain strong, flexible and colorfast over time.

To optimize sun resistance in a fabricated product, you'll likely want to choose **synthetic or semisynthetic**



While no fabric is waterproof, many on the market offer the water resistance necessary for the rigors of boating, such as this Sunbrella SeaMark Black Linen, which features a waterproof backing.



Solution-dyed acrylics are comfortable yet durable when covering bow cushions that are continually exposed to the elements. Striped pillow: Sunbrella® Gateway Indigo; Cushion: Sunbrella Canvas Abyss.

fibers over natural fibers, which allow more sunlight to pass through. You might also prioritize low-stretch fabrics that won't create gaps for sunlight as they pull apart. Among effective UV-protective solutions are **woven, solution-dyed acrylics** that are infused with dye during the manufacturing process, providing more colorfastness than fibers that are simply surface-dyed. Other options include materials that are laminated or coated to help counter the sun's rays.

You may also wish to choose light-colored fabrics for products that will be exposed to continual sun, as dark or bright colors such as red, black and navy blue absorb more UV rays than whites and pastels. Conveniently, many fabrics now come with an Ultraviolet Protection Factor (UPF) rating to help you gauge their effectiveness.

Mike Erickson, CEO and owner of Canvas Designers Inc., based in Florida and Costa Rica, points to solution-dyed acrylics as his top choice for addressing the sun protection critical to his boating clients. In his opinion, few other marine materials provide the same level of protection. "The degradation of UV south of

the Mason-Dixon line eliminates half the product options on the market," he says. "A fabric that lasts five years in Florida will last two to three in Costa Rica, since it's another 1,000 miles closer to the equator."

Another consideration when choosing UV-resistant fabrics is how well they will protect the skin of boat passengers. Note that several Sunbrella® fabrics have been extensively tested to meet Skin Cancer Foundation standards for UPF, in terms of the amount of ultraviolet light passing through the fabric.

Hot seats

Boat seats continually exposed to sunlight can become uncomfortably hot when not protected by the right kind of fabric, causing discomfort (or even pain) to boating passengers. Products like marine vinyl that are engineered to seal out air and moisture can sometimes backfire by failing to dissipate the heat of the sun. Instead, consider a more breathable fabric for the center and arms of the seating components, and use durable, abrasion-resistant vinyl for the bands and piping. Breathable, **solution-dyed acrylic fabric** is an effective option that can be easily cleaned to ward off stains.

High traffic

Depending on how your client's boat will be used, certain areas are bound to come under extra stress due to the traffic patterns of crew members, passengers, children and/or pets.

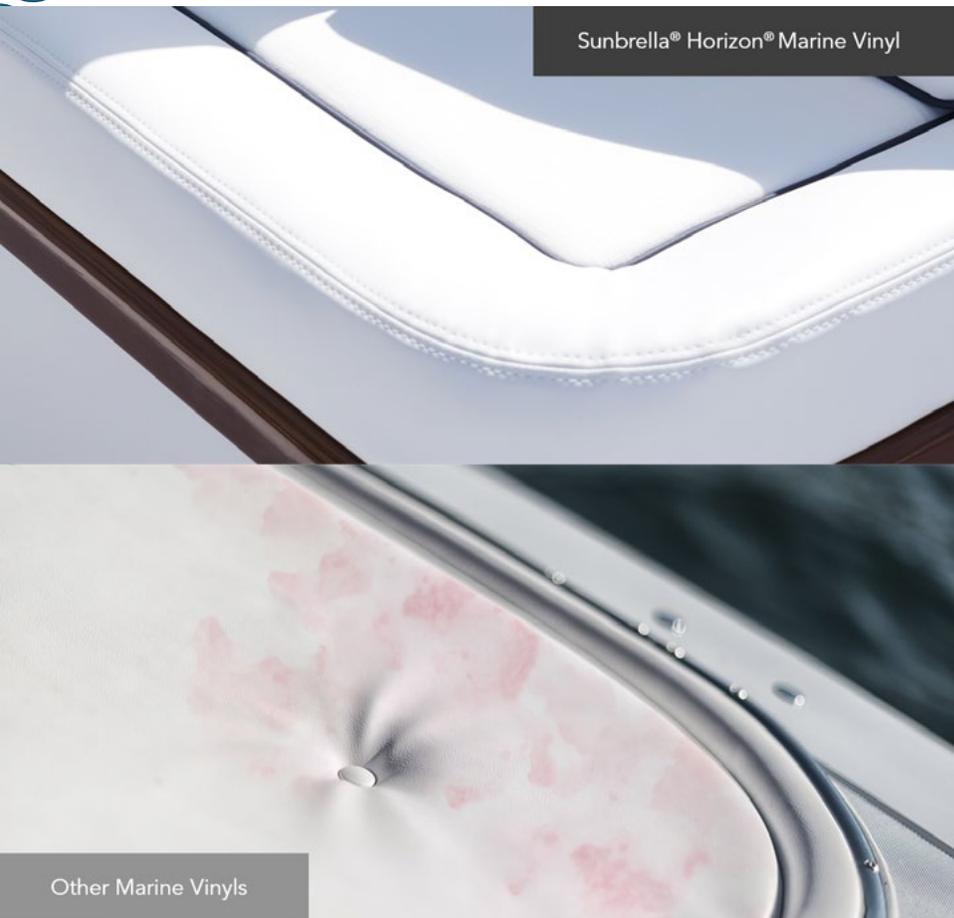
For areas subject to extra wear and tear, consider a heavy-duty fabric such as **faux leather made of high-gauge vinyl** or a **composite that melds vinyl and polyester**. The best versions are abrasion-resistant and designed to resist temperature changes, fading, mold/mildew and moisture. Further, they often incorporate excellent stretch and recovery properties, so they won't sag or puddle after extended use.

“Acrylics last a long time UV-wise, but they don’t chafe well,” says Erickson. “Polyester will make you a boat cover that’s lightweight, with a high initial strength. It may degrade fairly rapidly on the curve for UV, but it will be breathable and have chafe resistance.”

High winds

The key to minimizing wear and tear on marine textiles that are continually exposed to high winds is to choose varieties that allow for airflow. While logic might dictate that tighter, more water-repellent fabrics offer better protection against wind, the opposite is true. When it comes to boat covers and awnings, you’ll want a material that will guard against the elements while facilitating enough airflow to prevent the

Key improvements in nonwoven vinyl seafing materials have helped address the industry-wide issue of microbial pinking. Sunbrella® Horizon marine vinyl (top) has the best protection against microbial pink staining.



trapping of moisture and the formation of mold and mildew underneath.

Consider a durable fabric such as **solution-dyed acrylic** that repels water and resists stretching and fraying but is loosely woven enough to offer some breathability.

Mold and mildew

These pervasive fungi are common in marine settings, and unfortunately, they can lead to ugly fabric discoloration, unpleasant odors or even health complications. They’re usually caused by incoming water or other moisture that gets trapped in some way, perhaps under an unvented boat cover or in the darker corners of a boat cabin.

Fortunately, mold and mildew can often be alleviated by well-designed structures combined with engineered marine fabrics such as **acrylic, PVC or faux leather** that are designed to be both breathable and antimicrobial. If your client is particularly concerned about mold and mildew growth, you might recommend a fabric that’s been infused with a bacteria-fighting surface layer.

Microbial pinking

This pervasive industry problem creates annoying and nearly impossible-to-remove stains (usually pink or red, but sometimes purple, brown, blue, orange or yellow) on vinyl marine cushions. Most common in hot, humid climates, the chemical phenomenon occurs when the bacteria *streptovorticillium reticulum* infiltrates a cushion between the foam and vinyl fabric, feeds on plasticizers within the vinyl and uses surrounding moisture to grow and expand.

Pinking is usually impossible to remove once it starts, since the stain starts at the bottom of the vinyl and wicks through the middle to the top. It’s especially common in the southeastern U.S. and can occur across a range of coated, laminated, rubberized and water-repellent vinyls.

What can be done to combat the problem? **Choosing an anti-pinking**

Clients are advised to choose fabric warranties that protect against microbial pinking, especially when their boats are subject to hot, wet conditions. Boat Seating (top photo): Sunbrella Horizon Textil Toast and Capriccio White. Bottom: Dog owners may need marine fabrics that can withstand repeated cleaning with bleach-based products.

material is key, and covers or other products should incorporate proper ventilation to protect the vessel's fabric elements from the "greenhouse effect" that can occur with unrelieved heat and moisture.

Industry regulations now prevent fabric companies from using arsenic in their products to help kill the offending microbes, so engineers have developed

nonwoven vinyl seating materials that can ward off the pinking process while still offering water resistance and durability. In essence, liquid finishers are applied to the surfaces to provide bacteria-fighting layers and block the migration of additives that can serve as food for the microbes. Conveniently, these topcoats, finishes and lacquers usually also protect against other stressors such as UV exposure, abrasion and oxidation.

Finally, you should look for the best possible product warranty against microbial pinking. Sunbrella® offers an industry-leading warranty for its **Horizon® solution-dyed acrylic**, offering up to \$40 USD in labor costs per linear yard in addition to replacement of the fabric in question.

Kirk Fitzsimmons, Sunbrella's director of industrial sales, calls the engineering of Horizon and its strong protection against pinking "a game changer for the seating side of the industry. It was a long, arduous development process," he says. "But we came up with proprietary technology that delivers performance in light of the new industry regulations."

Pets and kids

These days, fabricators have access to multiple fabrics that stand up well to the extra wear, dirt and stains that are inevitable on boats frequently occupied by children and furry friends. **Solution-dyed acrylics**, for example, can be cleaned with germ-killing bleach without eroding or losing their vibrancy. Bill McDaniel, marine market manager at Sunbrella, suggests fabricators look for fabrics that can be wiped thoroughly with cleaning solutions instead of just blotted.

As you consider fabric options for your projects, think of your client's specific environmental challenges as a puzzle to solve as you identify the materials that will stand up best under those conditions.



04

How your clients' lifestyle affects textile considerations

When coming up with practical, durable and beautiful solutions for your clients' boating needs, their boating lifestyles should play a major part in your recommendations. Not only must you learn something about your clients' aesthetic tastes, but you must also understand how they plan to use their boat in the normal course of a year.

04

How your clients' lifestyle affects textile considerations

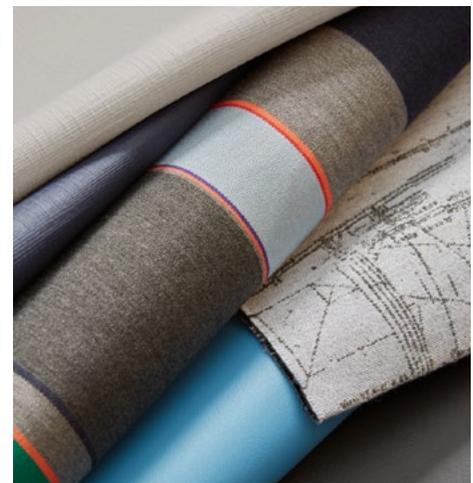
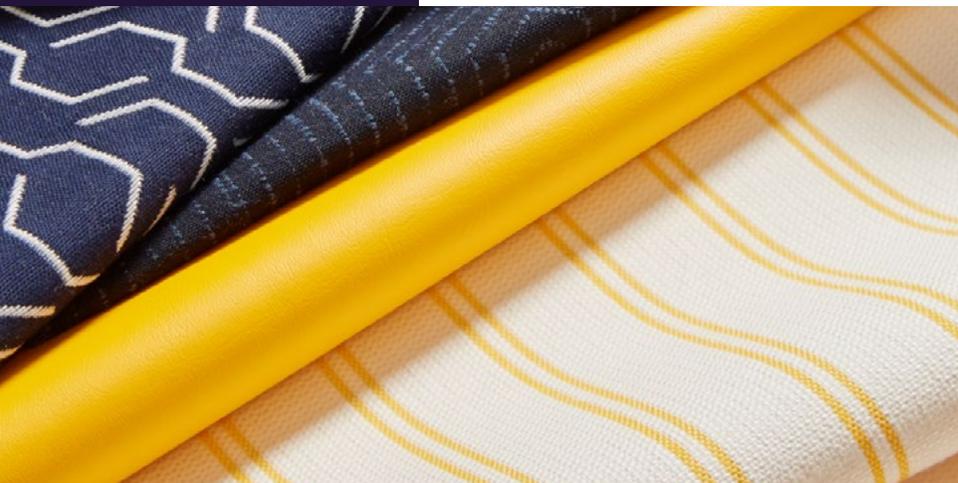
Initially, an effective design consultation with your clients may feel like an intense game of “20 Questions.” But the more you can learn about their plans, motivations and tastes, the better equipped you will be to design products that exceed their expectations in terms of beauty and functionality.

Once you have a broad overview, you can coordinate product offerings to create uniform designs spanning everything from mooring covers to interior upholstery projects.

Here are detailed questions to consider asking your clients prior to embarking on the design process:

Aesthetic considerations

- > Are you aiming for a classic, traditional look or do you want your boating components to stand out from what everyone else is doing?
- > Do you have a particular style in mind? Do you want your pieces to align with any defined style, such as a style that's used in your home or automobile?
- > What are your thoughts regarding which colors to use? What are some of your favorite color palettes?
- > Are you trying to coordinate fabric hues with other elements on your boat, and if so, which elements? Carpet? Woodwork? Fiberglass?
- > Do you prefer solids or patterns? If patterns, do you favor smaller- or larger-scale designs? What kinds most appeal to you? Geometrics? Abstracts? Florals? Retro?
- > Do you like matte finishes or a finish with some sheen?
- > Do you prefer contrasting thread or same-color thread?
- > What kind of texture do you envision for these pieces?
- > To what extent do these pieces need to be pleasing to the touch?
- > What hardware colors and styles do you prefer, and how will those complement your other design choices?
- > How important are the aesthetics of your new fabricated pieces compared to other characteristics such as longevity, strength and cleanability?
- > Can you show me examples of existing boat features (or other kinds of furnishings) that align with your tastes and preferences?



Your clients' personalities may call for classic nautical colors, neutrals, sea colors or attention-getting hues that make their boats stand out. Left: Sunbrella® Adaptation Indigo, Enriched Indigo, Horizon Capriccio Doubloon, Jibe Sunshine (stripe). Right: Sunbrella Horizon Textil Cloud, Horizon Textil Navy, Expand Prep, Point of Sail Blue Sky, Horizon Capriccio Sky, Horizon Capriccio Gray.

Design trends affecting marine fabric choices

Some of your clients will have very specific ideas about the colors, prints, textures and other design elements they want applied to their fabrication projects. Others will want to know what other boaters are choosing and will turn to you for advice on the latest trends.

To help you with such questions, we've compiled a list of common trends observed by industry specialists Mike Erickson, CEO and owner of Canvas Designers Inc., based in Florida and Costa Rica; Anne Bushell, design manager at Sunbrella®; and Bill McDaniel, marine market manager at Sunbrella.

Whites with neutrals. "The most traditional color direction is white paired with warm neutrals, ranging from a soft eggshell or ecru to deeper beiges and taupes," Bushell says, noting that the palettes pair well with chrome or wood accents.

Bright exterior accent colors. Bushell notes that red and black accents can give a boat a sportier/speedier aesthetic. "Colorful boat exteriors lend themselves to a cleaner and more modern textile color palette with crisp whites, light and dark greys, or sometimes deeper shades of red," she adds.

Blues. Bushell points to white and rich navy blue as a classic combo for boat exteriors, advising that it pairs well with fabrics in white, Admiral blues and Kelly greens. "Another exterior color is a playful robin's egg blue with a classic retro vibe," she notes, advising that the color works best with white and light neutral fabrics.

Greys. Erickson says greys and silvers have been popular with his customers, largely replacing the tans that were popular a few years back.

Brightly colored accent stitching. "We just finished a project in which we did an accent in fluorescent orange, then turned around and another guy wanted fluorescent lime," reports Erickson. "That came from the auto industry."

A preference for curved lines. Erickson notes that improvements to CAD technology and 3D imaging over the past couple decades have enabled increasingly complex curves in upholstery and other marine textiles. "Back in the day when I first began there were a lot of very square, straight edges," he notes. "Today's cushions and covers are more rounded because of the European influence."

Diamond-tufted upholstery. As the name implies, this refers to the diamond-pattern effect achieved when buttons or stitches are installed at intervals to create luxurious-looking tufts. The look is often accentuated with pleated folds or seamed panels. "It started in automotive and moved to marine, driven by high-end automotive interiors," notes Erickson.

Lots of lighter-hued wood. "It depends largely on the kind of craft, but there's typically a lot more wood and we're starting to see a lightening of wood choices," reports McDaniel. "That allows for more splashes of color, since you can add pop without [further] darkening the space."

More concern about sun exposure. McDaniel notes that Americans are following Australians' lead in becoming much more conscious about sun exposure as it relates to skin cancer. "Shade has become a big thing," he says. "People want more of the sunflays that aren't really designed to stop rain but keep the sun from coming through and breathe enough to keep air flowing through."

More concern about sustainability. Consumers across the board are demanding products that are sustainable and free of potentially toxic finishes and ingredients. In an IBM study released in 2021, 55% of consumers worldwide called sustainability very or extremely important to them when choosing a brand, which is 22% higher than when consumers were surveyed pre-COVID. Six in 10 people interviewed said they're willing to change their purchasing behavior to help reduce negative impacts on the environment.

Lifestyle considerations

- > Tell me about how you will be using your boat. How frequently will you be taking it on the water? Who will most often come aboard? Will passengers primarily be adults, children, pets or all of the above?
- > What activities will most often be involved? Traveling? Fishing? Water sports? Swimming? Snorkeling or scuba diving? Family gatherings? Entertaining clients?
- > Will anyone be living on board? How frequently will you have overnight passengers?
- > How tall are you and your most frequent passengers?
- > How often will you and your passengers be eating and drinking on this boat?
- > What kind of climate will this boat experience most frequently?
- > Will this boat be used most often in freshwater or saltwater?
- > How do you plan to store this boat in the off-season? What will the storage amenities or facilities be like?
- > Over time, what do you expect to cause the most wear and tear on this boat?
- > How long do you expect your new products to last before they require replacement?
- > How important is it that I choose sustainable options while designing your boating elements?
- > Are you the only one making the design decisions or should I factor in someone else's opinions?

Walking your clients through their hopes and dreams for their vessels will clarify their expectations and help you avoid missteps or misunderstandings as you move forward with the design process.

05

Meeting your clients' budget expectations

Establishing your clients' budget expectations early in the design process will save both you and your clients a great deal of frustration and wasted time. Moving forward with a firm budget number will help you understand whether you can recommend upper-tier pricing in your designs or whether you should seek out more affordable options.

05

Meeting your clients' budget expectations

In some cases, you may be asked to come up with several different designs at several different price points, which may be daunting depending on your familiarity with multiple materials and their costs.

Generally speaking, you can expect your boating clients to fall within one of three basic categories as you consider costs and try to draw up plans that align with their wants and needs:

- > The free-spending client who's willing to invest in top-grade or designer materials. Such customers may let you unleash your creativity as you help them choose from among the most luxurious products on the market.
- > The moderate client who has a budget but may be flexible about paying for higher-cost options, depending on their beauty and functionality. Finding the best "bang for the buck" for such customers can be a fun challenge as long as they know their priorities and understand that certain higher-end options may not be within reach.
- > The careful client who has a finite amount of money to spend and as such is limited to certain more basic product options.

Bill McDaniel, marine market manager at Sunbrella®, says a knowledgeable fabricator should be able to identify less-expensive options for almost any boating need, although many will not recommend products that fall below a certain level of quality.

"You can choose a less-expensive fiber like polyester, use a different foam, or instead of stainless steel use a good aluminum-based framework," he says. "However, most fabricators are going to say, 'This is the way I build, so I can stand behind it and be comfortable with the products I use.'"

Navigating client budget discussions

Discussing budget expectations with clients can be tricky, and it's often hard to get them to commit to a firm number. Here are a few suggestions for making the conversation easier and more productive:

- > Be prepared to explain how different price points offer different trade-offs by describing the factors that distinguish fabrics in terms of finishes, features, design, maintenance, warranties, etc.
- > Point out product compromises when possible, doing your best to offer value-priced product alternatives for those who don't wish to pay for top-of-the-line options. Remain clear on how the different choices will make their final products different.



Communicating with clients is key before and during production to help eliminate surprises upon delivery.

“Most fabricators are going to say, ‘This is the way I build, so I can stand behind it and be comfortable with the products I use.’”

—Bill McDaniel
Sunbrella®

- > Show clients samples of different products to help them understand what they are and are not paying for. As you narrow your offerings to a few key textiles that fall within your clients' budget, consider introducing a dramatic fabric as a focal point in the design. This allows you to make a strong statement using very little material. Check with your supplier about minimum quantity requirements, yardage availability and lead times.
- > Maintain all client choices and changes in writing to minimize misunderstandings. Recording the brand names and model numbers for everything they select may allow them to conduct their own product research so they know exactly what they're getting for their money.
- > Optimize spreadsheets to calculate the material costs for each project, the fabrication steps necessary and the time required for each step.
- > Be clear with clients that once fabrication is underway, changing their minds about style and fabric choices will add extra costs to their projects.
- > Be aware that clients at any price level who are spending their hard-earned money can come across as demanding and particular. Do your best to treat everyone with the same respect and attention to detail, regardless of which spending category they fall into.
- > Consider declining the contract if you sense from the start that a client has unrealistic expectations about the price of product(s). The continual arguing that could ensue may not be worth the money.

Part of your skill set as a fabricator should be explaining to clients exactly what they'll be getting for their money. Having those sometimes-difficult discussions early in the process should eliminate misunderstandings and set the stage for happier, more satisfied customers.



The Sunbrella marine portfolio includes a curated range of styles, patterns and textures for easy coordination with boat colors and with existing fabric on the boat including marine vinyl, upholstery and accessories.

06

Common fabrication challenges with different textile choices

As you contemplate the best possible fabric choices for your clients' boating projects, you should prioritize price, quality and the expected performance of the material in its intended role(s). You should also keep in mind the difficulty or ease of the construction process.

06

Common fabrication challenges with different textile choices

As an experienced professional, you're well aware that certain fabrics are harder to work with than others, and some may require a level of skill and/or technology you just don't have available. Further, some vessels will be more challenging than others to outfit due to multiple obstacles, curves and angles that must be navigated.

The bottom line is that you're going to want a material that will let you complete the project easily and efficiently, without risk of damage, delays or other manufacturing issues that could reduce your profit margin. And that may have a major impact on which fabric you recommend.

"It's an art form," says Bill McDaniel, marine market manager at Sunbrella®, of the fitting and fabrication process. "With sailboats, there are always lines and leads and winches and things you have to work around. You have to factor in how you enter and exit the boat, where the grab rail should go, what you're trying to cover.... These are all typical issues a fabricator commonly deals with.

"Fabrics with an inordinate amount of stretch are difficult to work with, and those that don't have any stretch at all can be even worse," McDaniel says. "Oftentimes, a customer has also chosen an intricate pattern or something that's very directional in pattern, and getting the stripes right without botching that up takes time."

Mike Erickson, CEO and owner of Florida- and Costa Rica-based Canvas Designers Inc., agrees that choosing appropriate fabrics is a critical part of a successful project. "Really lightweight, flimsy materials can create real problems, but so can really stiff ones if you're trying to make a flat-plane product," he says.

"The more unbalanced the stretch is, the harder it is to make these rounded, complex products. Having balanced, equal stretch helps tremendously."

With all that in mind, you'll want to think about the difficulty or ease of the construction process as you recommend materials. If a fabric introduces too many complications, you might think about replacing it with another option.

The following questions may help you narrow down options as you make choices about which materials are best for specific projects:

- > How complicated is the pattern? Note that patterns with large repeats could be harder to match, may require additional yardage to finish and may increase the project cost. Pay close attention to the horizontal and vertical measurement for design repeats provided on the fabric specification data sheet; it may be as small as 1 inch horizontally by 2 inches vertically.
- > What unusual shapes will you be dealing with? Unfortunately, oddly configured elements can greatly affect the time, expertise and cost needed to complete a project. For instance, an



Sunbrella Horizon marine vinyl coordinates with all Sunbrella marine upholstery to cover a wide variety of options and marine applications.

Before recommending a challenging-to-work-with fabric, make sure you have the tools needed to make the project viable. Bottom: Solids are inherently easier to work with than patterns, but the chosen fabric must also be stretchy enough to suit the final product. Fabrics: Sunbrella® Cloud, Silica Gravel, Storm, Midnight.

L-shaped sofa can easily require up to 14 yards of material. Fitted mattress covers and cabin quilts made for cabin bedding can present other challenges since the framing can be obtrusive and the mattresses are often curved rather than rectangular. Further, many master cabin beds are 60 inches wide, which can be problematic when the material of choice is sold in 54-inch widths.

- > How workable is the fabric itself? Materials that are exceptionally stiff, thick or stretchy can be very tricky to manipulate if you try to apply them to the wrong kinds of projects. Authentic

leather is notoriously difficult to bend and shape, cheaper polyesters sometimes don't stand up well to construction, and certain knits can be hard to arrange without accidentally stretching them too far.

- > Could fabric connections be a problem? Your client may choose different kinds of fabrics for boating elements that intersect, but sewing becomes more inherently complex when you must connect a loose weave to a tightly woven material, bind a stretchy material to one that's nonwoven or effectively connect vinyl to leather. The process may require switching stitches and/or using more fabric than originally anticipated.
- > Could there be other sewing challenges? Consider how your sewing machines may need adjustment or upgrades to work effectively with the fabric you're considering. What needle sizes, tension settings and thread types will be required to complete the project? Do you have all those tools on hand, or can you acquire them with minimal effort, at a reasonable cost, in a reasonable amount of time?
- > Can your fabric suppliers provide recommendations for working with the fabric that's been chosen? Many offer specification sheets with helpful information about best practices for using their materials. For example, you may gain valuable instruction about working with stretch fabrics, special finishes and/or backings, or get insightful advice about how using specific threads could help you avoid delamination, deterioration or separation.

Bottom line: Don't settle on a fabric for your project without envisioning how production will take place—and whether it might create additional challenges for you and your shop.



07

What kind of warranty do you need?

There are occasions when despite everyone's best efforts and the overall excellent quality of the marine fabrics on the market today, a project you fabricate falls short of a customer's performance expectations. And that's why you'll want to choose a fabric manufacturer that backs up its products with the best possible warranties.

07

What kind of warranty do you need?

These days, the most effective warranties cover the costs of malfunctioning marine fabric for several years after it's been installed, while also reimbursing fabricators for a portion of the labor costs. That means you won't have to absorb 100% of your labor expenses if unhappy customers make a claim against the products you've fabricated.

A desire to protect its partner fabricators is one reason Glen Raven Inc. initiated its industry-leading warranty for Sunbrella® Horizon® solution-dyed acrylic. The agreement offers customers up to \$40 USD in labor costs per linear yard, in addition to replacement of the fabric in question. It's also one of the reasons the company has the most comprehensive warranty for fabrics used for tops and covers.

When choosing fabric vendors, "It comes down to trust, performance, reliability and a proven track record," says Bill McDaniel, marine market manager

at Sunbrella. "Sunbrella doesn't have a lot of real issues happen, but we all know there will be disgruntled customers. When that happens, there's a real level of support and commitment. Sunbrella's warranties are very straightforward, with no fine print or sliding scales.

"If you hear people constantly complaining about a company, you might want to really research it and find out what the problem is."

We hope this guide has provided valuable information about the factors to consider when recommending marine materials to your clients. Staying well-informed about the advantages and drawbacks of each kind of fabric will help you build credibility with customers, reinforce your reputation, and earn you repeat business as you make suggestions that will meet your clients' specific needs and challenges.



Fabric vendors with integrity will stand behind their products with solid warranties that protect you and your clients. Fabric: Sunbrella Heather Beige Sailcloth.