

303 Products High Tech Fabric Guard



This text taken from an article published on an automotive enthusiast forum on the internet. This is tech information in layman's terms about fabric protector products and their proper use.

Though 303 High Tech Fabric Guard™ for the past few years is mostly known for its use on outdoor fabrics, the following facts and principals apply to all textiles including carpeting and fabric upholstery. In this outline, "fabric" can mean carpeting, upholstery, garments, outdoor canvas, any textile, and real suede. So, to begin:

Commercially, the comparative performance of fabric protector products is measured on the following criteria:

- Soil Resistance (how well treated fabrics stay cleaner longer).
- Protection against both a) water based and b) oil based stains.
- Soil or stain "release" (how easily various types of stains and soiling are removed)
- Water repellency is of most importance on breathable outdoor fabrics (boat canvas, outdoor furniture, the awnings at Starbucks); but it is also a good way for an individual to judge if bonding and curing have occurred. On outdoor fabrics, decreased water repellency or a lack thereof is one's visual cue that it is time for routine maintenance: Retreating, which is ALWAYS preceded by a thorough cleaning.

Procedure:

Before "retreating" or "protecting" a fabric, the fabric first must be thoroughly cleaned. Fabric protector products bond most effectively to a perfectly clean fiber. Anything not removed from the fiber interferes with the bonding and performance of the fabric protector product. All dirt, body oils, sweat, lotions, oils of any type, residuals including un-removed soap or detergent residue....impede bonding and performance.

A clean appearance alone is NOT sufficient. And if washing with water alone were sufficient, we wouldn't need detergent when washing our underwear, would we? An appropriate cleaning agent must be used. After washing, the fabric must be THOROUGHLY rinsed. To remove all suspended soils and cleaning agent residues, of course. Detergents are not easily rinsed off. As a general rule, wash thoroughly once, rinse thoroughly twice. Fabrics that require dry cleaning: The dry cleaning process leaves no residue. No additional prep is required.

Machine Extractors:

If using a machine extractor, use only enough cleaning agent to do a good job. Go over the material to be treated at least twice, the last time with water only.

Heat/Quick Drying:

Generally speaking, the quicker you can get a fabric protector product to dry, the better bonding and performance you will achieve. To shorten dry time you should:

- Let the cleaned fabric dry before treating.
- Treat fabrics in warm weather. On a hot day in full sun is best (this is particularly important for outdoor fabrics).

The factors affecting dry time are:

- **Material density** – The more dense the fabric, the more fabric protector is required. It takes carpeting longer to dry out than silk. Obviously, over-application increases dry time.

- **Temperature**
 - **Humidity**
 - **Moving air**
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Solvent Carrier:

For a fabric protector product to work properly (fully cure) during application in the field, a solvent carrier must be used. (Aqueous formulations are used in the mill. Air-drying is not adequate to cure aqueous fluoropolymer products. For more information on this, see 303's website. Scroll down to: "Fluoropolymer Fabric Protector Products – Aqueous VS. Solvent Based".

http://www.303products.com/techinfo/fabricguard/application_guide_fabricguard.htm)

Odor:

303 High Tech Fabric Guard utilizes "Odorless Mineral Spirits (OMS)" as a carrier. OMS is an innocuous solvent (as solvents go) that, in spite of its name, has a noticeable "characteristic odor" (similar to paint thinner). Solvent carriers serve two purposes: a) "Wetter" than water, they do a better job of carrying the active polymer into a fabric and b) Solvents evaporate out in such a way as to cause full "curing" of the active agent...the fluoropolymer.

Fabric protector products' directions instruct the user to avoid breathing vapors until the fabric has "completely dried". With respect to 303 HTFG, when the treated fabric has "completely dried", there is no characteristic odor. And, again with respect to 303 HTFG, at this point...when the treated fabric has completely dried...all the warnings and cautions on the product label no longer apply.

Of course, some solvents take longer to dry than others. But in North America when comparing one fabric protector product against other "like-products", differences in dry times (solvent-wise) are not significant.

Two lighter coats are better than one heavy coat. This is correct, but this direction mostly is concerned with getting a good job on outdoor fabrics, not carpeting and upholstery. A consumer is more likely to get an even coating on the boat canvas or an automotive convertible top, for example, if they do two applications. Let the first coating dry to the touch before applying the second...on marine canvas, generally about an hour.

Appearance when wet: After spraying a fabric, it will commonly (but not always) have a darker appearance until it dries.

While drying:

Protect treated fabric from water until COMPLETELY dried and cured. Until then, the fluoropolymer is not completely bonded. This concern particularly comes into play on outdoor fabrics. Rain or even a heavy dew can wash off a fabric protector that has not completely dried.

After drying:

A quality fluoropolymer fabric protector product will leave the treated material looking and feeling exactly like the cleaned fabric prior to treating. And it will NOT affect **breathability***. Regarding not changing a fabric's appearance, there is an exception (isn't there always?). Some users (typically we North American males) figure "if a little is good, more is better" and sometimes DRAMATICALLY over-apply. A dramatic over-application can leave an inconsistent whitish blush on some colors, as if someone had dusted here and there with talcum powder. This is the normally invisible active polymer showing up. The correction: Re-clean the fabric, retreat.

Curing:

After drying, fluoropolymer fabric protector products take another few hours to fully cure. Again, on a hot day in full sun is best.

Testing:

There is no point to doing a water **repellency test**** on a fabric that is not properly prepped, treated, fully dried and cured. Standard laboratory test methods require a thorough washing and rinsing (new fabric, too) and

then drying treated fabrics in an oven prior to any testing (usually two or more hours at 115°F to 125°F).

Coverage:

Coverage on all solvent-based fluoropolymer products is approximately the same. Performance differences between products primarily have to do with product quality, not coverage. Of course, carpeting absorbs more product per square foot than marine canvas. Marine canvas takes more product per square foot than silk. The lighter the fabric the greater the coverage.

Resistance to oil based stains:

Oil repellency...resistance to oil based stains (aka "oil hold out") is considered the most important part of stain protection. Likewise, "release"...how easily oil based stains clean out of both indoor and outdoor fabrics is considered one of the most important performance measures of fabric protector products.. Why? Because in our modern society most soiling and stains are oil based. Think smog...jet, auto and boat exhaust, barbecue and restaurant smoke, factory pollution, skin oils/sweat, lotions, makeup, pizza, salad dressing, hamburger juice, French fries, ice cream. In the lab, higher-grade fluoropolymer fabric protector products have the highest "oil holdout" ratings.

Longevity:

One maximizes longevity with proper preparation and application of a quality fabric protector product. The main degradant to any fluoropolymer fabric protector finish is FRICTION. This is true with respect to both the original factory finish (on a marine canvas or fabric convertible top) and a retreatment finish. That friction is the main degradant to the fluoropolymer finish is easy to observe in the field.

The first place a Sunbrella® bimini "wets out" is the area that rests on the supporting aluminum tubing. Anyone who has been around boating for a time would have noted this. Run your new convertible (fabric top) through the automatic car wash a few times and the repellency is gone. Heavy use on one end cushion and arm of the couch in my home requires me to clean and retreat those areas about once a year, while the back of the couch still "beads" water after 5 years.

UV Screening:

Typically fabric protector products do not provide UV screening, but there are those out there that do. For more on this, individuals who have access to Consumer Reports should look up the June 1997 issue, the article beginning on page 19.

Hints on Convertible Tops: For proper care on outdoor fabrics, including fabric convertible tops, please visit this link at the 303 website. <http://www.303products.com/main.php?infopage=techfacts> Once there, click on and read the GREEN BROCHURE "What You Need To Know About Outdoor Fabrics". This brochure speaks of 303 High Tech Fabric Guard. But with knowledge and the proper use of any quality fluoropolymer fabric protector (ABSOLUTELY NOT SILICONE), one can keep their fabric convertible top in perfect condition, year after year.

Here are some additional hints on convertible tops:

Normal Washing:

When washing the vehicle, use a car soap or cleaner that does NOT leave a finish of any type. First, vacuum up any loose dirt, dust or debris that may not be visible (brush attachment). If you don't need to vacuum the top, or when you're done vacuuming, thoroughly rinse the topping with water. Then use a soft mitt in warm soapy water to gently loosen any smog/dirt/oil film that may have settled on the fabric, then rinse COMPLETELY. Do the rest of the car. After the top dries thoroughly, mist the topping with clear water (a Windex type bottle does good). If you have good beading**, fine, you're done. If any area doesn't bead, retreat. (You've already done proper prep). The key to keeping a fabric top looking new is keeping the fabric finish in good condition.

Over Spray:

When applying the fabric protector product, comply with all label directions, cautions and warnings. Keep a dry absorbent cloth close and a flat piece of cardboard in your off-hand. You can catch most, if not all, of the over spray with the cardboard. Use the cloth to wipe any over spray from adjacent surfaces before it dries. Over spray that isn't wiped away and allowed to dry can leave a white residue. If this happens, use a rag dampened

with mineral spirits to remove the residue, followed by rinsing with water. Of course, it is not considered good form to actually treat rubber or vinyl with solvents (petroleum distillates); but un-removed over spray typically evaporates far too fast to damage to these materials. Over spray will not damage paint either, though it can affect your wax job.

Cool weather:

As a general rule, do annual or seasonal retreating in warm weather. If you have to do a retreatment job in cool weather: After the material (a fabric convertible top, for example) is retreated and after the characteristic odor goes away, put the vehicle in the garage. Use a hair dryer to finish the drying/curing. Of course common sense comes into play here. Fabric convertible topping (solution dyed acrylic canvas) and most fabrics these days are synthetics. They can melt. So, if using a hair dryer, pass it back and forth over the fabric. Don't hold it in one place and don't touch the fabric with the dryer. Many fabric protector products are combustible or flammable or even highly flammable. So follow all the safety guidelines on the product labels and keep the treated item away from heat, sparks or open flame until the material has completely dried (until there is no more characteristic odor). Storage: Store fabric protector products at room temperature, not less than 55°F. And if it is below 55°F outside, wait for a better day. 70° F+...the hotter the better.

Silicone water repellents:

These products are not true fabric protectors. You can make your own silicone water repellent product with one part silicone oil and 9 parts mineral spirits. Fabrics treated with a silicone water repellent develop good water repellency, that's true. But silicone water repellents retain a tackiness that attracts dirt. Silicone-treated fabrics soil much more rapidly than untreated fabrics, have zero resistance to oil based stains, bond in oil based stains and make fabrics much more difficult to clean when finally soiled (than untreated). Manufacturers of outdoor fabrics, fabric convertible topping, carpeting and upholstery and breathable outdoor wet weather garments such as Gore-Tex® recommend against silicone water repellent products. Unfortunately, most fabric and leather "water repellent/fabric protector" products available to consumers contain silicone. For full information on silicone water repellent products go back to this link and scroll down to the related text and chart. http://www.303products.com/techinfo/fabricguard/application_guide_fabricguard.htm

Silicone Water Repellents - How to tell the difference if you are not sure:

One good guideline is price. If a "fabric protector" product has a Manufacturer's Suggested List Price of less than \$12.95 per 16 oz, there is a high likely-hood it is a silicone water repellent. To tell for sure, get two bathroom tissues, treat one with 303 High Tech Fabric Guard, treat the other with the product you're unsure of. Allow both to dry completely (speed it up with a hair dryer if in a hurry). After both are completely dried, dribble a few droplets of water on each. Both should bead water. Then put a drop of oil on each (animal, vegetable, mineral or petroleum oil). The fluoropolymer fabric protector (HTFG) treated tissue will "bead" the oil. On a tissue treated with a silicone water repellent, the oil immediately jets in and spreads.

*Breathability: Breathable water-repellent outdoor fabrics keep water out, but let water vapor through. Water-proof materials (plastic tarp or vinyl) are not breathable. They do not let water vapor through and, therefore, cause condensation and mildew on the bottom side. Condensation is one of several reasons why breathable water-repellent outdoor fabrics such as Sunbrella® are commonly used in marine and other outdoor environments.

**Water beading/testing: Radical water beading indicates the fabric finish is in excellent (like new) shape. "Radical" means the bead will curve under, like a basketball on concrete. With outdoor fabrics as time goes on, the woven fabric moves, friction occurs, the finish wears. You can see this in the beading...at some point the sides of the beads go straight down. If left alone, some time later the fabric will start to dampen instead of bead. Diminishing beading (or lack thereof) is your cue on when to retreat.

With respect to carpeting and upholstery, a quality fabric protector can do its primary job long after the water beading effect has been worn off. That is, preventing indelible stains. Here, cleaning and retreating is commonly done when the material becomes soiled.

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