

Service Tips from the Pros



Care of Vinyl Graphics

History: Vinyl graphics emerged in the marketplace in the late 50s in the form of wood graining on the side of automobiles. Early vinyl graphics were viewed as a low-cost / short-life product and used as an option to painted striping. Fortunately,



manufacturers have steadily improved the quality and service life of vinyl materials and the performance of today's products are far superior to the early vinyl material... and the applications continue to grow.

Vinyl graphics are separated into two major classifications due to the materials used and the methods used to manufacture...i.e., calendared vinyl and cast vinyl. The primary ingredient of a vinyl film is PVC resin...i.e., plastic. The physical properties of a vinyl can be adjusted / altered with use of various plasticizers, stabilizers, and lubricants, depending on the application and the life expectancy targeted for the vinyl.

Calendared Vinyl: This vinyl is referred to as an "extruded vinyl" and commonly called "4-mil vinyl." The increased film thickness and resulting rigidity of the film make this product easily recognizable.

A calendared vinyl is produced by introducing the raw materials into a mixer and blending it with the necessary pigments to ensure color consistency. The end product is then heated and introduced into an extruding machine where it is rolled out into a large continuous film sheet. Perhaps a stretch, but the process can be compared to rolling out pie dough with a rolling pin... and similar to dough, the material will retain some "memory" - i.e., the film has a tendency to shrink back as it ages. This can result in premature adhesion-related issues such as bridging on irregular surfaces, edge lifting, and cracking.

In summary, a calendared vinyl is considered an intermediate product due to the lesser

costs of the raw materials and the process necessary to produce it. The long-term durability of a calendared vinyl is typically three to six years, but this is very dependent on timely preventative care and limiting exposure to the elements.

Cast Vinyl: Cast vinyl is commonly referred to as "high-performance vinyl" or "2-mil vinyl." The raw materials used to manufacture a cast vinyl parallels a calendared vinyl, but the process of creating the vinyl film is where they differ. With a cast vinyl, the liquid vinyl is applied / poured onto a casting paper. As the paper travels through an oven, the solvents used to make the product a liquid evaporate leaving a dry and extremely stable vinyl film. Cast vinyl is manufactured at a snail pace with lesser square footage realized when compared to producing a calendared vinyl.

In summary, a cast vinyl is considered a "premium product" and the costs reflect this. The long-term durability of a cast vinyl is typically seven to nine years, but this can be extended with proper / timely care and limiting exposure to the elements.

The suppliers of graphics to the RV industry offer both calendared and cast graphics, so it is a conscious decision to choose the better product. Although it's an opportunity to take costs out of a product, Winnebago Industries® chooses to use cast vinyl because it is clearly the best choice for an exterior graphic / "decal" on an RV.

Ready-to-install vinyl graphics have four major components including:

1. **Liner** - This is a backing typically made from a heavy paper with a silicone-release coating. This prevents the adhesive on the vinyl from contact with any foreign matter.
2. **Adhesive** - High-performance acrylic adhesive is the most widely used today. The manufacturers of self-adhesive vinyl films typically coat 1 mil of adhesive onto the vinyl film during the manufacturing process.

3. **Vinyl Film** - The color of pigmented vinyl graphics are determined by the vinyl film. The vinyl is coated onto a casting liner at 1.5-mil thickness. Due to characteristics of each color, the elongation and memory will vary. Silver, for example, has a high metallic content, making it brittle compared to white, a nonmetallic color.

4. **Premask** - This provides two functions. The first, protecting the vinyl film during application. The second is providing a carrier for the vinyl film from the liner to the application surface without stretching or damage.

Care of Exterior Graphics - Vinyl film is a petroleum-based product and it must be cared for accordingly. Compared to the fiberglass exterior of a coach or a full-body paint job, the vinyl film is a fairly soft material...and it is porous as well. Simply, air and water molecules can pass through with ease.

1. Avoid washing the vehicle in direct sunlight or in extreme ambient temperatures - it is easy to shock plastic which can cause micro cracking.
2. Consider using a microfiber wash mitt when cleaning vinyl graphics. High-pressure washing is risky, so keep the wand several feet away and perpendicular to the surface. Avoid use of brushes - they will scratch vinyl graphics.
3. Use automotive detergents and rinse with plenty of clean water. Water-spotting is an etching process that can occur to the best paint surfaces and can certainly etch into the finish of a vinyl film, too.
4. Avoid cleaners, polishes, and wax containing high concentrations of solvents. Solvent-based products penetrate and affect the plasticizers. This can destabilize the vinyl film causing it to shrink and become brittle. Solvents can also affect the bonding of the vinyl and the adhesive layer, too.

Consider use of a quality "synthetic polymer" wax. These "new waxes" may contain some polishes / abrasives to help clean a surface, but the synthetic polymers / properties provide long-term protection from the elements and most importantly, will not attack gel-coated fiberglass, paint jobs...or the vinyl graphics. A good wax will have a high SPF rating which will add to the UV protection properties that are engineered into all the exterior finishes including the vinyl film. Purchase the best product you can find.