



REAL WORLD VINYL

By Rob Ivers

Rob Ivers owns Rob Ivers Inc. (Raymore, MO), a vinyl-graphics training company. He's taught vinyl-graphics installation since 1993.

Clean as a Whistle

A spotless surface yields a better vinyl application.

As any old-timer can tell you, a good whistle made from a reed or piece of wood emits a clear tone. But, it can be easily damaged. Small debris particles or a few drops of moisture will change the sound of a handmade instrument. To hit the intended notes, a whistle must be absolutely clean. The same principle applies to surfaces that receive vinyl.

Prep time

I reviewed instructional bulletins that addressed surface preparation from several vinyl manufacturers. Here are some excerpts:

- "It is always important to clean surfaces just prior to any installation." (Arlon Technical Information Publication #1)
- "Surface preparation is a critical step towards successful vinyl graphic installations. Unfortunately, it is also a step easily overlooked and often misunderstood." (MACTac



Arizona Color Promotions (Phoenix) created this incendiary vehicle graphic. However, "lash out rationally" seems as contradictory as "jumbo shrimp" or "virtually spotless." It's similarly nonsensical to spend thousands on a state-of-the-art printer and premium material while compromising your job with poor prep work. This month, Rob delves into the best materials and techniques to ready your vehicle or sign for vinyl application.

Technical Assistance Bulletin TA2032)

- "Proper substrate cleaning and preparation prior to decal applica-

tion is critical to the success of the decal. Failure to adhere to these requirements can cause adhesion loss and therefore reduce the durability and performance level of the decal. All substrate surfaces should be considered contaminated and must be cleaned prior to pressure-sensitive material applications. Be sure all edges, corners, crevices, and hard to reach areas are cleaned as well, these are difficult and often overlooked areas." (Avery Instructional Bulletin #1.10)

- "Films can be applied to most substrates that are clean. All substrates must be considered contaminated and must be cleaned prior to application of film or sheeting, with the last cleaning step being done immediately before application. A freshly cleaned or painted substrate can quickly collect dust." (3M Instruction Bulletin 5.1)



Rob prefers Xylol to prep substrates for vinyl because it's the strongest solvent commonly used for such applications. Other options include V&M Naptha, a medium-strength solvent, and PrepSol, a weaker solution that he uses for repainted vehicles whose coatings aren't strong enough for Xylol. A 70%, isopropyl-alcohol solution provides an ideal final rinse. Rob suggests using a bucket, to soak one rag with a solution, to dampen the surface before wiping it with a separate, dry cloth.

Apparently, vinyl manufacturers think cleaning is extremely important to the success of vinyl-graphic

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Though the amount of solvent saturating the rag and ambient humidity will create variations, an installer usually only has three minutes to wipe away impurities. Therefore, the cleaning solution should be applied to small areas before it's wiped away.



To access tight crevices, such as window indentations or gas tanks, Rob wraps his wet rag around a squeegee before wiping away impurities with a similarly placed dry rag.

installations. One bulletin also stated, "It is the responsibility of the applicator to ensure the surface is clean and oil free, and properly tested and prepared for graphic and film application." Clearly, the surface-cleaning buck stops with the installer. With that in mind, we'll take a detailed look at cleaning.

Defining the problem

I looked up the definition of cleaning. *Webster's* offered: "To make clean, to rid of dirt, impurities, or extraneous matter." I always ask my customers to wash their vehicles before bringing them to me to install graphics; some do. Regardless, the vehicles are never clean per *Webster's* definition. If washing and cleaning were synonymous, I'd never have told my kids to wash behind their ears again.

I also looked up "contaminate": "to soil, stain, corrupt, or to make unfit for use by the introduction of unwholesome or undesirable elements." Sounds repulsive; no wonder manufacturers want us to clean the surface before we apply their vinyl.

Contaminants come in two varieties – organic and petrochemical. Organic matter includes dirt, grime, bug spatters, bird droppings, tree sap and spilled food. Wax, road tar and grease provide examples of

petroleum-based contaminants. Most contaminants are easy to spot, but some are practically invisible. Therefore, all surfaces should be considered contaminated and cleaned properly.

The right solution

Proper cleaning is twofold. First, identify the contaminants and use cleaning solutions that dissolve all contaminants. Detergent and water should remove aforementioned organic contaminants.

Soap and detergent are often used as interchangeable terms, but they're actually different. Detergents work better because they don't create soap scum, which is difficult to remove. Vinyl manufacturers recommend one ounce of synthetic detergent per gallon of lukewarm water.

Avoid products that contain oils, creams, lotions or waxes that could inhibit, rather than promote, adhesion. Some window cleaners contain waxes, and some chemicals used in automated vehicle-washing equipment may interfere with adhesion.

Use petroleum distillate-based solvents to remove wax, tar, grease and oil, etc.

The list of approved solvents may vary slightly between manufacturers, but all agree on three – Xylol, V&M Naptha and PrepSol. The strength of the respective compounds is their primary difference. These petrol-

based compounds are diluted with oils, not with water. I prefer Xylol because it's the strongest and doesn't leave an oily residue. Naptha is a medium-strength solvent; I haven't used it very often.

Contrastingly, PrepSol is the weakest because of its integral, diluting oils; it leaves behind a residue. Most installers don't like it because it takes extra work to remove. I've never had problems using Xylol on vehicles with OEM paint, but it's been too strong for some repainted vehicles I've decorated.

In these cases, I use PrepSol to remove the tar and grease and allow extra time to remove the oily remains. I do this with lots of isopropyl 70% rubbing alcohol, also known as IPA, and I change my drying rag frequently to avoid spreading an oily film.

IPA, which comprises 70% isopropanol and 30% water, provides a great final rinse because it removes any residues left behind by other cleaners. *Don't* use denatured alcohol, which is ethanol that's been altered and rendered undrinkable by one of approximately 200 recipes, which often include such harmful compounds as methyl ethyl ketone and jet fuel.

The right technique

Second, remove the cleaning solu-

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There's no such thing as a surface that's too clean before vinyl applications. In their technical bulletins, vinyl manufacturers clearly state the responsibility for an oil- and impurity-free, pre-application surface lies with the installer. Protect your bottom line by cleaning your surface thoroughly before every job.

tion and dissolved contaminants before they evaporate. With the right cleaning solutions, the contaminants are either dissolved or suspended in the solution. If you let the solution evaporate, the contaminants are dispersed more evenly across the surface, which contaminates the entire surface instead of cleaning it.

Proper vehicle and large-surface cleaning requires two rags and a bucket. Soak one in the solution and then scrub the surface to loosen and dissolve contaminants. The second



rag dries and removes the solution and contaminants before the mixture evaporates. Using one towel to clean and dry simply moves contaminants around the surface. Temperature and humidity affect the time window, but you typically have two to three minutes before the solution evaporates.

Small sign substrates, such as aluminum sign blanks, acrylic, magnetic sheeting or other rigid media, may be cleaned differently. Many contain a removable, protective cover. They'll still need to be cleaned, but usually aren't very dirty. Spraying the surface with a bottle that contains IPA to wet the

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surface, and drying with paper towels, will usually suffice.

But, any vehicle or large surface requires a bucket with your solution and separate wet and dry rags. Some jobs require three cleaning rounds -- detergent and water first, then a solvent and, finally, IPA. Others only need IPA. Make your decision based on present contaminants.

I have photos of a van I decorated recently. It wasn't a full wrap, but it received almost complete vinyl coverage. The customer washed his new vehicle thoroughly before he dropped it off, which took care of the dirt and grime. As with all vehicles, I used Xylol first. I didn't see any tar or grease, but I knew wax had been applied. Next, I used IPA as my final rinse.

For a standard cleaning, I fill the bucket with the appropriate solution and immerse my wet rag in the solution and wring out the excess. I clean and scrub the area with the wet rag first before drying with the other hand. I continually fold my drying rag to ensure I'm always using a clean, dry part. I clean every crack and crevice that will be covered by vinyl.

I open the doors and the gas-tank lid and clean everywhere vinyl would be applied. I use a special technique for such difficult areas as tight cracks around the license plate and indentations around the windows. I wrap one squeegee with my wet rag and another squeegee with the dry rag. This allows me to clean areas I couldn't otherwise reach.

Proper, efficient cleaning requires extensive attention to detail. It may not be the most glamorous part of the job, but successful vinyl-graphic professionals understand that removing contaminants, which can trigger poor adhesion and edge lifting, translate into more successful, profitable jobs. ■

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