The Right Way to do a Wet Application

Using an application fluid can aid the application of a vinyl films that have an aggressive adhesive system. The application fluid helps float the graphic onto the surface to prevent pre-adhesion (the vinyl sticking before you want it to). Nevertheless, for most vinyl installations, you should not apply the graphics wet, especially if you can do a dry application.

That golden rule of decal application was true thirty two years ago, when I started in the fleet graphics business. And it still holds true today. While there are some exceptions to this rule, here are some instances when the rule should never be broken:

Never wet apply fleet graphics over rivets. Application fluid collects underneath rivet heads, creating a residue that later seeps out and causes vinyl to tent and eventually crack. Fluid under trailer-panel seams can also cause edge lifting.

Never wet apply reflective or metalized films onto unpainted metal. Application fluid acts as an electrolyte or conductor between the metallization layer of the film and the metal substrate. Electrical particles (ions) flow from the metalized layer to the substrate. During an electrical reaction, one becomes the donor metal, while the other becomes the acceptor metal. As the aluminum in the metallization layer of film loses ions, it corrodes and blackens.

Never perform a wet application when using an air-egress vinyl. These repositionable vinyl films have micro tunnels embossed in their adhesives. These tunnels will trap application fluid that will most likely result in adhesion failure. Air-egress vinyl films are easy to reposition. There is no reason to use an application fluid when installing these films.

Did I mention that there are a few exceptions to the “always apply dry rule”? Application to an acrylic sign face is one exception to the rule. In fact, I will go so far as to say that you should never apply vinyl to an acrylic sign face dry. Here, an application fluid is required because the vinyl's adhesive wants to grab onto the plastic surface.

Now that you know when not to perform a wet application, below is a step-by-step procedure for doing it the right way:

1. Clean the substrate by wiping it with a rag saturated with solvent. Then dry the surface with a lint-free paper towel before the solvent dries.
2. If the graphics release with difficulty from the release liner, rub the back of the liner against a sharp edge of your work bench. This step helps break the bond between the graphic and the release liner.

3. Peel the liner from the back of the graphics, rather than trying to pick the graphics off of the liner.

4. Lightly mist the substrate with application fluid. Use the least amount of fluid to accomplish the application process.

5. Usually spraying the adhesive side of the graphics with application fluid is unnecessary, unless applying large panels. Spraying cut vinyl letters with fluid can also cause the lettering to loosen up on the application tape or cause the lettering to fall off.
6. When squeegeeing the graphics, use good pressure to force all of the fluid from under the vinyl film. Start in the center of the graphic and squeegee outward to force out the fluid from underneath the graphics. Remember, you're applying a pressure-sensitive film. It's called "pressure-sensitive" for a reason, so apply some pressure.

7. If the application tape releases with difficulty from the graphics, spray the tape with fluid allowing about 30 seconds for the fluid to soak in.

8. In removing the application tape, peel the tape $180^\circ$ against itself. After removing the application tape, mop up the residue with a paper towel.
9. After removing the application tape, resqueegee the entire graphic with a squeegee covered with a low-friction sleeve. The low-friction sleeve protects bare vinyl from scratches caused by a hard squeegee. This step is essential in preventing edge lifting.

10. Complete the job by post heating the entire graphic with an electric heat gun. Post heating ensures good adhesion and will cause surfaces scratches on the vinyl to disappear.

Tip: In performing wet applications, some application tape adhesive systems can leave a milky residue on the surface of the applied graphics. In most cases, you can clean off this residue from the vinyl film with Rapidtape’s RapidPrep cleaner.

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For detailed information on graphics application, refer to Jim’s book, Vinyl Sign Techniques. It is available at Signs Plus Banners.