GENERAL FORMULATIONS

TECHNICAL TIP
# VINYL APPLICATION

Pressure sensitive graphics are an effective way to deliver messages for point of purchase (POP) graphics, directional signage, safety warnings, decorations, advertising, and for many other applications. Correct installation and application of the graphic onto the specific substrates is critical in assuring the graphic will remain functional over its intended life. Below are the application procedures for general purpose graphics.

## APPLICATION TEMPERATURE:

- Dry Application: 40º F or above
- Wet Application: 60º F or above

## SURFACE PREPARATION:

- The application surface should be clean and free of any dirt, dust, grease, oil, wax, or foreign matter. Use a product such as Rapid Prep to clean many of these compounds.
- No abrasive cleaners should be used and only approved chemicals should be considered depending up the surface (glass, drywall, brick, metal, etc.)
- After a thorough cleaning, the surface should be wiped down with a clean free cloth and water and then wiped down one final time with Isopropyl Alcohol (50/50).

## SURFACE TYPES:

- Glass
  - Clean the glass surface thoroughly with a non-ammonia based cleaner (Windex and other products have additives and may leave residue). They also have “surfactants” that can cause a bond failure between the substrate and the adhesive. This cleaning should be followed by a final wiping with isopropyl alcohol (IPA/Rubbing alcohol 50/50).
  - Dry the surface with a dry, lint-free towel or cloth.
  - The flashing of the IPA may cool the surface quickly and cause possible condensation. Allow the surface to dwell for 10 minutes before applying the graphic.

**NOTE: For wet application** - If the window is too cold (below recommended application temperature) then the adhesive will not bond or “flow” onto the glass and not adhere properly. Refer to cold weather application procedure in the technical tips section at General Formulations website, www.GeneralFormulations.com.

- Painted Drywall
  - Clean first with soap and water or Trisodium Phosphate (TSP). Finish with IPA/Rubbing alcohol 50/50).
- Metal and Painted Metal
  - Some metal and painted metal surfaces may require you to use solvents to properly prep the surface. Consult manufacturer specifications for approved chemicals.
- Sign Grade Wood/MDO
  - Wood surfaces should be sign grade and buffed with solvent saturated (such as IPA or Mineral Spirits) steel wool.
  - Wipe clean and allow the surface to dry for at least 8 hours (outgas).
  - Hardwood surfaces should be clean, primed and painted prior to decal application and have had two weeks of dwell time to cure and dry properly.

- Plastic & Synthetic LSE (low surface energy) Surfaces
  - All plastic surfaces should be carefully tested for adhesive compatibility. Cleaning fluids will vary because of the wide variety of plastic types. Consult the manufacturer's specifications for their recommendations.

## DRY APPLICATION METHODS:

- Dry application is the preferred method of installing any vinyl graphics. Anytime you use fluid in between a substrate and adhesive, you are introducing a new factor into your installation.

## WET APPLICATION METHODS:

- Wet application methods can be used in the following situations:
  - Opaque or white vinyl
  - Clear vinyl with a Solvent adhesive

**NOTE:** Water containing application fluids used with water based adhesives will cause the adhesive to become milky or hazy. This is caused by water reacting temporarily with the adhesive. It will take time before the adhesive becomes clear again. This is dependent upon the climate conditions such as temperature and humidity. Clearing usually takes place between 24-48 hours under normal ambient conditions.

## TYPES OF SOLUTIONS:

- Soap & Water mixture: Although an accepted practice, you should take caution when using dishwashing soap. It may be economical, but dish soap has detergents and are not designed to be used with vinyl media. There may be soap surfactants that will interfere with adhesion and too many soapy bubbles can be difficult to squeegee out of an applied decal as well.
- Application Fluids (preferred method)
  - Application fluids can be very useful when you have an aggressive adhesive.
  - Marabu Action Tac – Works as a cleaner and application fluid. Works on all vinyl grades.
  - Marabu Window Juice – Surface must be clean before use. Can be used to apply the graphic as well as remove the transfer tape (spraying it after application to moisten)
  - Marabu Splash – Surface must be clean before use. Mix with water.
  - Rapid Tac – Cleans the surfaces as well as allowing the film to "float" until it is properly positioned.
  - Rapid Tac II – Works great for glass applications and colder applications 20° F to 140° F. Works with economy calendered, intermediate calendered, high performance calendered, metallic, reflective, polyester, Mylar and other specialty films)
  - Sure Glide – Has an adhesive activator which helps set adhesive and speed drying time when applying on metal and other hard surfaces.

The key is not to use too much application fluid. Less is more. The more fluid you use, the more fluid you will have to squeegee out, which can be labor intensive and hard to do. Fluid removal will ensure maximum bond.

## WHEN NOT TO USE A WET APPLICATION METHOD:

- Fleet graphics over rivets: Fluid will collect under rivet heads, which will create a residue that could later migrate out and cause the vinyl to bubble and eventually crack.
- Metalized or Reflective films: The application fluid can act as a conductor between the metalized layer of the film and the metal substrate. The reaction can cause corrosion and blackening.

- Air-Egress vinyl: These films have channels embedded into their adhesives. These tunnels will with trap application fluid and thus interfere with overall bond. Air-Egress vinyl is designed to be very easy to position and therefore application fluid is not necessary.

## WET APPLICATION PROCESS:

**Option 1 (paper application tape on the graphic)**

- Prepare the application surface as described above.
- Remove the release liner from the graphic. If the graphic is large, place it face down on a flat surface to remove it.
- Mist the substrate and the adhesive side of the graphic.
- “Float” the graphic into position on the substrate.
- Squeegee out the application fluid from the center out, make sure to remove all fluid pockets and bubbles.
- When completely free of bubbles, soak the paper application tape with application fluid or water. This should saturate the paper application tape to the point where it will come away from the graphic easily.

**Option 2 (no application tape on the graphic)**

- Prepare the application surface as described above.
- Mark the desired decal position you will want the graphic.
- Use a spray bottle to mist/wet the application surface with the approved application fluid.
- Remove the release liner from the graphic. If the graphic is large, place it face down on a flat surface to remove it.
- Position the graphic onto the moistened substrate. You may wish to lightly mist the face of the graphic to get better “glide”. Be sure not to use an old squeegee or one with any flaws, as these will scratch the surface. A squeegee designed for wet application is preferred, such as the brand WetEdge Squeegee which has a Teflon covering on it.
- Squeegee out all of the fluid and bubbles until you can see no more come out from the edges of the applied graphic.

## POST APPLICATION DWELL

- Most pressure sensitive adhesives require 24-48 hours to develop complete adhesion to application surface Clean and dry the application surface.
- To provide maximum decal durability, edge sealing is recommended.
- The edge sealant is normally composed of an overprint clear ink or varnish with a similar chemical formulation to that of the ink used to print the decal.

Application is critical to long term function of a pressure sensitive graphic. Taking short cuts or sloping on a graphic will result in premature failure. These procedures and recommendations will result in properly applied graphics that will deliver their message over the normal life of the graphic. If you have additional questions concerning graphic application, please contact your General Formulations Customer Service Representative at (800) 253-3664.