



R Tape Business Development Manager, **Jim Hingst** has more than 35 years of experience in the Graphics Arts market. His career includes a range of activities including product development, estimating, production planning, vinyl application, sales and marketing. Hingst has contributed more than 150 articles to many of the leading publications in the sign industry and is the author of the book "Vinyl Sign Techniques."

Applying graphics to a flat, smooth, painted wall is easy. Still, problems can and do occur. Rarely are these graphics failures the result of application technique. Instead, improper surface preparation and poor material choices account for most problems. If you follow the few simple rules in this article, your applications should be trouble-free.

Always Conduct a Site Survey

Before jumping headlong into a project, thoroughly inspect the job site so you know what you are getting into. That way, if additional work is required, you have covered your costs. In conducting a survey, don't forget to bring a tape measure, digital camera and notepad.

When inspecting walls in an older establishment, look for wall damage and take note of the cleanliness of the walls.

Holes, nail pops, peeling paint, cracks and imperfections in the taping of drywall along seams and in corners must be repaired, primed and painted. Unrepaired wall damage, such as gouges and nail pops will likely become visible after the graphics are applied, especially if a gloss overlaminate is used.

Walls stained from cigarette and cigar smoke or coated with grease from cooking require thorough cleaning. Walls painted with a matte finish latex paint must be cleaned and repainted with a semi-gloss or



Ritrama's Ultimate Wall Action print media allows you to print to the edge. No border is needed to prevent edge peel, and there is no need to leave a border when printing. It is a 5-mil semi-rigid film that features an ultra-low peel microsphere removable adhesive for short-term applications.

gloss paint. When surveying a commercial jobsite, such as a restaurant or convenience store, also look for walls that back up to cooling systems, water pipes and overhead windows. These areas are prone to condensation, which can contribute to edge lifting and adhesion failure.

In addition to photographing any problem areas, also take pictures of any obstructions, that you will have to deal with in the application, such as windows, cooler cases, display cases and shelving units. If the walls are currently decorated with wall graphics, and the graphics are failing, photograph these failures. These pictures can come in handy when you make your sales presentation.

Graphics applied to newly constructed and painted walls can have problems too. Before priming and painting, the drywall mud must be thoroughly dry. Any trapped moisture in the drywall can result in paint problems, such as peeling, cracking and

blistering. And when the paint doesn't stick, neither will the wall graphics.

Painting Recommendations

After drywall is sanded, wipe the wall down with a lint-free rag, dampened with 50 percent Isopropyl Alcohol and 50 percent water. Painting over a dusty wall can prevent the primer from bonding well to the wall surface.

New drywall *must* be primed before painting. *There are no exceptions to this rule.* Primers are essential for good paint adhesion, especially if you are painting with a latex paint. When selecting your primer and paint, make sure that both are compatible. The general rule of thumb is that you can use either a latex or oil-based primer with a latex paint, but you must always use an oil-based primer with an oil-based paint.

Many painters prefer oil/alkyd primers because they penetrate the drywall surface



Wall graphic inside Citizen's Bank Park stadium, home of the Philadelphia Phillies. (Image courtesy of Color Reflections, Philadelphia)

Wrapping walls takes a certain amount of patient preparation, but the results can be very impactful.

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better, providing better anchorage of the paint. Oil/alkyd primers also form a moisture barrier, which helps prevent moisture from getting behind the applied vinyl, degrading the adhesive and causing the graphics to peel. The disadvantages of oil/alkyd primers are that they take longer to dry and that they emit Volatile Organic Compounds. VOCs in oil-based paints are said to create 9 percent of the air pollution that forms smog.

By comparison, latex primers and paints are very low in VOCs. For either indoor or outdoor work, whether you are priming drywall, bare wood or masonry walls, Prep & Prime Gripper water-based primer sealer #3210 from ICI Paints is a good choice. It not only dries fast and bonds to “tough-to-stick-to” surfaces, but it also covers stains well. Right out of the can, without thinning, this primer provides good coverage in one pass.

After drying for 72 hours, apply two coats of either a satin, semi-gloss or gloss paint. *Matte finish paints are not recommended*, because the matting agents used in the paint can prevent good vinyl adhesion. To reduce any stippling effect in the paint, use a paint roller with a 3/8” nap. Avoid any heavily tinted paints, which require longer drying times to leach or outgas.

After painting, wait at least five days before applying wall graphics. The amount of time it takes the paint to outgas and fully cure depends on many factors, such as ambient temperature and humidity. If the paint is not fully cured, don't be surprised if bubbles form underneath the vinyl.

Surface Preparation

Even newly painted drywall must be wiped down before vinyl application. Dust and other contaminants collect quickly on a wall and can prevent good adhesion of the graphics panels. In cleaning, wipe the surface down with a rag dampened with 50 percent isopropyl alcohol and 50 percent water. After wiping down the wall, wait a half an hour for the wall to dry thoroughly before applying graphics.

Older walls contaminated with years of dirt, smoke and grease must be washed with trisodium phosphate (TSP). TSP is a very caustic cleaner. Before using, carefully read the directions and the safety precautions and wear safety glasses and rubber gloves.

Typically, about 1/4 cup of TSP is mixed



Inside the football training facility at Temple University. (Image courtesy of The Profile Image, Souderton, Pa.)

into a gallon of very warm water. Using a sponge, apply the cleaner to the wall surface. Drench a sponge in clean water, wringing it out until it is just damp. Wipe the dirt and grime from the wall. Finish the job, rinsing with a wet sponge.

Material Selection

There are a variety of choices for decorating smooth, painted drywall. Heavier calendered vinyl with a removable adhesive is generally easier to install and thicker films such as these can hide imperfections on the wall surface.

Printed graphics should be protected with an overlamine. The extra layer of film not only protects the printed image, but it also makes the graphic more rigid, so it is easier to handle during installation. When it comes time for new graphics, the extra thickness also aids removal.

In selecting the surface finish of the overlamine, take into consideration the lighting conditions in the room. Painted drywall will always have slight imperfections that can show up if you use a glossy overlamine. In many well-lit retail environments, the best choice is a satin or matte finish, which will mute any reflections from overhead lighting.

Printing Considerations

Before going into a production run, you should test and evaluate any vinyl film,

overlamine and application tape that you plan to use. To prevent any adverse ink/vinyl reactions, you should limit your ink density below 250% to 275%. Also avoid printing a bleed (printing edge-to-edge), if you can.

After printing the panels, match the sheets. It is much better to catch any printing mistakes in the shop than out on the job site. Check for any color shift and make sure that the points of alignment match up.

Allow the printed panels to fully cure before laminating and installing the graphics. If printed panels are rolled, roll them loosely to allow solvents to fully outgas during the drying period.

To prevent scratching of the graphics during application and aid the installation of the printed panels, use a low-tack application tape, such as RTape 4000. If you are applying plotter-cut letters to wall surfaces, you will need a higher tack application tape, such as RTape 4078RLA. This new tape will transfer difficult-to-transfer films utilizing release liners with a tight release. After the graphics are applied, the application tape releases easily from applied graphics without pulling the graphics off of the wall surface.

Installation Tips

Now comes the easy part—the installation of the graphics. The first step in any graphics

application is to lay out the job. Unroll all of the panels and tape the graphics in place to make sure that all of the panels needed are there and that everything fits.

To ensure that you keep all of the panels level, stretch a level line to which you can align the top of the graphics sheets. Never apply graphics over a snapped chalk line because the chalk dust can contaminate the adhesive.

Never, under any circumstances, should you use an application fluid to apply wall graphics—dry application only.

To aid application, remove about eight inches of the release liner from the top of the graphics panel. Crease the liner with your thumb, exposing the adhesive of the vinyl. After tacking the panel in place, start your squeegee stroke in the center of the graphic and move it horizontally from side to side. As you are performing the application, remove the release liner as needed, exposing the adhesive of the vinyl graphics.

After applying the graphics, remove the application paper, pulling the tape at a 180-degree angle against itself. Then, re-squeegee the entire marking—especially the edges—to ensure good adhesion.

After completing the application, the last steps are to inspect your work, pick up your mess and look for new graphics opportunities, such as window graphics or vehicle wraps.

