REAL WORLD VINYL

By Rob Ivers

Rob Ivers owns Rob Ivers Inc. (Raymore, MO), a vehicle graphics and installation company. He's installed vinyl since 1978 and taught vinyl-graphics installation since 1993. For more information, visit www.robivers.com

Natural Selection

Practical tips to help you select the right vinyl

Using the right vinyl is crucial for many, if not all, graphic jobs. The number of vinyl manufacturers, coupled with their wide product arrays, can make choosing the right media seem daunting. It reminds me of walking into Baskin-Robbins and choosing from 31 flavors. I'm sure they're all terrific, but there's a reason they have so many flavors- every palate is different. And if you're like most people, one flavor tastes better than others on a given day.

The same principle of choice applies to vinyl. There are many excellent graphic films, but most are better suited for some jobs than others. The bad news is, the first time you select a product, you'll need to do some homework. But, once you've found the right product for a particular job, you'll be prepared for the next one. And, the information you need is readily accessible.

Vinyl-graphics professionals now enjoy many vinyl choices that fit a burgeoning application variety. However, such choices carry responsibilities. Graphics providers must research manufacturers' website, technical bulletins and other product-related literature to verify appropriate product selections for particular project types. Digital printing's tandem improvement enables such crisp graphics as these glass graphics that promoted the 2007 Final Four in Minneapolis.

Key resources

Vinyl manufacturers provide valuable product information on their websites. Many employ search tools that allow selections from a series of dropdowns that guide you to a list of recommended products. Product blurbs generally link to bulletins that contain more detailed information.

Most product bulletins include benefits, applications and uses, recommendations (including application temperatures), limitations, characteristics and warranties. Instructional bulletins explain processes rather than products.

My goal is to provide some general advice and practical wisdom. If you're interested in digging deeper, I suggest purchasing Jim Hingst's *Vinyl Sign Techniques* (available through ST Media Group's book division at http://bookstore.stmediagroup.com). Jim devotes 10 chapters to all different types of vinyl, laminates and even application tapes.

Could you imagine a worse calling card for the Economy Sign Co.? Using vinyl that's not suitable for a particular job will only result in an angry customer and zero chance of repeat business or referrals.

Factors to consider

I use several guidelines to determine which product(s) will provide the best performance for a given job. Factors to consider include environmental exposure, life expectancy, and the application surface's properties and characteristics. Secondary factors may include ease of application, removability, appearance and even color choices. Notice I didn't mention cost.

Cost factors into my pricing equation, not my product-selection process. I recommend what I know will work best. A client may refuse to pay for the product best suited for a job's requirements. I'll save that topic for a separate column.

Some jobs require specialty films

designed for specific applications. If a project calls for night visibility, a reflective vinyl is the obvious choice. For backlit signs, translucent offers the best choice. Several manufacturers offer specialty films designed for use on concrete, brick and other rough, textured surfaces. Some have products designed specifically for floors or walls. Perforated and transparent films fulfill window-graphic applications.

More common cast and calendared films are used for a broad range of less specific projects. The general rule of thumb dictates cast for outdoor usage, long-term durability, flexible substrates, vehicles and compound curves. Calendered films are commonly used indoors on flat substrates, or for short-term, temporary expectations. These are general, informative rules, but they certainly don't cover every situation.

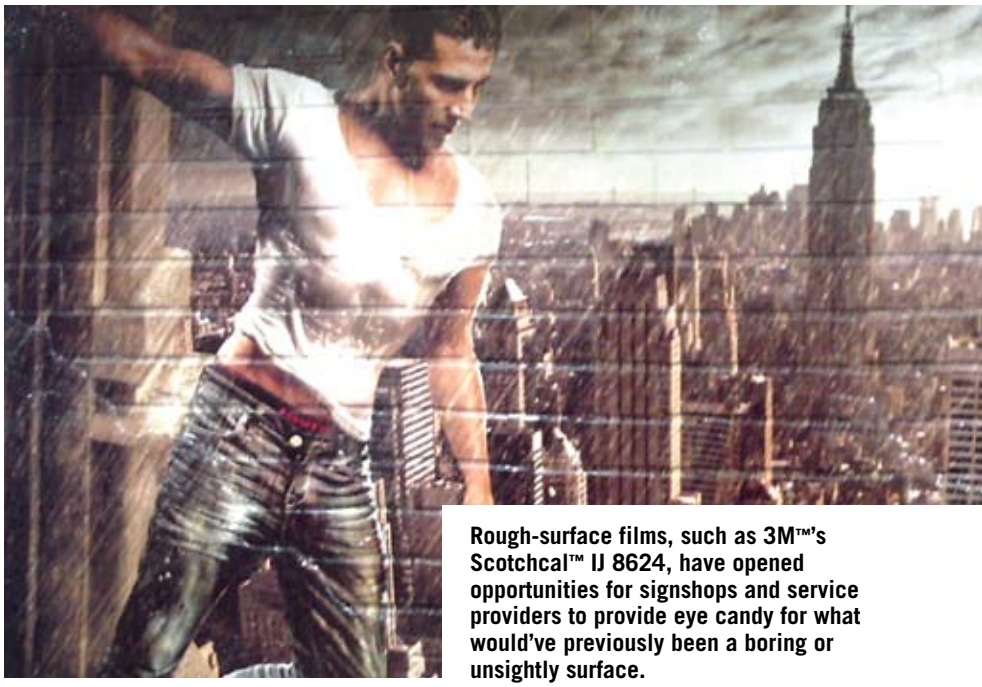
Brand awareness

In most cases, more than one manufacturer sells the type of vinyl appropriate for a given job. Brand considerations include reputation, warranty, cost, and availability. Most manufacturers offer multiple cast, calendered and reflective materials, among others. Often, they also provide different adhesive options; permanent, removable, repositionable, and air egress. Here, your homework begins.

I could take sides and publicly declare my favorites, but that's not going to happen. I'm not being rude, or even chicken. So many worthy products today fulfill a seemingly infinite variety of applications. No single film, or even a single manufacturer's product line, will satisfy every situation I encounter. Keep an open mind. New products are being introduced frequently, and existing products may be modified, perhaps without notice. The best product for a job today may not be tomorrow.

Don't discount a company's entire product line just because you don't like a single media. That drives me crazy! It's like someone saying, "I don't like signs." The company probably makes 50, if not 100, vinyl products. Which doesn't work for you, and why? It's certainly fair to give the manufacturer your feedback.

I try to be knowledgeable about as many different films, and their properties, as possible. It helps if I'm familiar with the aggressiveness of a media's initial bond, its ultimate bond strength, conformability, and removability. I don't print graphics, but if you do, you need to consider a film's printing properties and limitations.



Rough-surface films, such as 3M™'s Scotchcal™ IJ 8624, have opened opportunities for signshops and service providers to provide eye candy for what would've previously been a boring or unsightly surface.

Cast or calendered

In today's market the two main categories of vinyl films being produced are cast and calendered. Cast vinyls are also referred to as 2-mil (a mil is defined as 0.001 in. thick) or high-performance vinyl. Calendered films are also called economy or intermediate.

Calendered vinyls typically measure 4 mils thick. This thickness refers to the film without the adhesive. Manufacturers produce calendered vinyl without solvents. The chemical components are heated and kneaded to mix them thoroughly. This mixture is then formed into a "rope" and passed through sets of heated, calendering rolls. Each set of rolls runs faster than the last, squeezes and stretches the vinyl into a film of desired thickness. At the end of the operation, the film is then ready for adhesive coating.

Imparting residual stress into vinyl material is inherent with calendaring, because the film is continually being stretched and squeezed until it's cooled at an ultimate thickness of 3 to 4 mils. This generally causes more shrinkage of markings than cast-film applications. Calendered films prove useful for graphics and POP on flat or mildly compounded, curved surfaces. Because of their thickness, calendered vinyl films are typically stronger than cast films. During removal, this allows them to be physically pulled off a substrate.

Calendered vinyls aren't intended, in my opinion, for outdoor use, except for limited applications as a one-day sign or a banner that may be left up for a month or two. Cast vinyl will shrink less than 1% during the course of its life (five to seven years) in outdoor situations. Calendered vinyls used outdoors and exposed to UV rays can shrink as much as ¼ in. from their original edge within the first year. When this occurs, the film releases from the adhesive and curls away from the surface.

Cast vinyl is generally coated out of a liquid mixture called an organosol. The vinyl components are mixed with solvents to create a coatable liquid. The material is spread or "cast" on a moving "web." The solvents are dried off in an oven and the remaining solids are fused together by heat. It can now

be adhesive coated and stripped from the web to form the finished marking film.

This casting process allows more freedom in selecting components to achieve a more flexible and long term durable product with a wide range or properties. Cast vinyl films are generally thinner than calendered products and typically measure 1 to 3 mils thick. Because of this, they conform to curved surfaces, such as corrugated and riveted trailer sides. Because they possess no residual stress, cast films, when properly formulated, tend to possess very low shrinkage. Cast films are also suitable for jobs that require resistance to severe weather and handling conditions. Cast films tend to require special measure for removal, and are, therefore, more vandal-resistant.

Premium cast vinyls generally carry five- to seven-year guarantees against fade resistance. Some of their components include UV inhibitors. Applications on vertical surfaces, such as vehicle sides, tend to reach the maximum lifespan. On horizontal surfaces, like the hoods or roofs, they'll likely last five years, maybe even less.

Cast vinyls feature memory, which can help you or hurt. It can best be compared to a rubber band. When you stretch and release a rubber band, it returns to its original shape. The same is true with cast vinyl. When stretched it wants to return to its original shape. The memory becomes activated by temperature changes that cause expansion and contraction.

Cast vinyls are made to go over corrugations and rivets without any problems when applied in a relaxed manner. Due to the memory feature, vinyl lifting will occur if the vinyl is stretched during the application process.

Here's an oversimplified example. The customer needs basic, truck-door lettering. The job entails one color, computer-cut vinyl and uses of 8 sq. ft. of vinyl and mask. The least expensive calendared vinyl I could find, a 15-in.-wide, 50-yd. roll, costs $0.24/sq. ft. The most expensive cast roll of identical size costs $0.81/sq. ft.

Does that mean you have to sell the job for three-plus times more? Of course not. On average, material costs only account for 5 to 10% of a job's overall production cost. Given other identical costs, the cast-vinyl job costs me $5.52 more to produce. If you could sell the calendered job for $125, could you sell cast for $130.52 and give your customer the best possible solution? The peace of mind alone is worth it to me. ■

For related articles about this topic, visit www.signweb.com/vinyl.