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Contact: Rich Odato
rich@odatomarketing.com
941.780.3452

LAYERS OF OPPORTUNITY

**Sign Makers Combine King ColorCore® With
Other Materials for High-Impact Signs**

NORTH PORT, Fla., May 10, 2005—King ColorCore® sheets with multi-colored layers have been making quite a stir in the signage industry—especially when combined with other materials. Innovative sign fabricators are using many materials, including solid King ColorBoard®, polymer lettering, epoxies and full-color printed materials under clear acrylic protective covers.

King Plastic Corporation sales manager Lou Stegner offers some tips for plastics distributors that want to help their customers explore new signage opportunities with layered plastics and other materials.

First, he says, project planning is critical, especially installation, weight support and longevity, as



King ColorCore® combined with vinyl graphics and acrylic for a handsome and durable golf sign fabricated by CAM Components. Photo courtesy King Plastic Corporation (www.kingplastic.com).

environmentally stabilized King ColorCore lasts longer than many other materials used in the sign industry. Signs should be anchored every 16-18" if using 3/4" sheet. Aluminum architectural channels provide good support. It's important to plan for expansion and contraction, as King ColorCore typically changes at a rate of 6×10^{-5} in./degree F, changing approximately 1/32" for every foot of length or width over a 40-degree temperature range. Note that different colors may expand and contract at different rates due to their thermal absorption differences.

Fabricators can work with King ColorCore using standard woodworking tools. Carbide router bits with 2-4 flutes are recommended. With a 1/2" diameter router bit, feed rates of 12-16 feet per minute are normal. Rates must be slower for material that is 1/2" thick or thicker. Larger bits have higher tip speeds and RPM adjustments may be necessary. Cuts are made with a circular saw at 1275 RPM using a 50-70-tooth carbine blade. Expect a similar feed rate. Edges may be finished with a router and, if desired, a fine sandpaper. Use standard fasteners with oversized holes. Drill pilot holes first, followed by the oversized hole to allow for expansion and contraction. Make plugs with a wood plug cutter for a finished look.

When creating the sign, the use of adhesives is not recommended, as they don't adhere well to King ColorCore. Welding rods made from the same polymer have been used with some success. For raised lettering, some sign fabricators create polymer letters which are screwed in to the sign, then covered with another polymer letter.

When using printed images, it is best to use a long-lasting material and printing process. Attach an adhesive-friendly substrate with screws, then attach the



printed material with adhesive, covering the holes. Use a clear polymer cover for a finished look and extra protection.

Epoxy inlays offer additional options for sign makers. Flame treat the King ColorCore and drill a series of holes to allow the epoxy to penetrate the material for extra holding power.

Jim Shaffer, of long-time King customer CAM Components Company, says he uses three techniques to create letters in multi-layered signs: engraving, routing and carving. Engraving allows for only one width and is perfect for small letters. Routing is an X- and Y-axis-only process, while carving uses X, Y and Z to produce even more attractive signs with square-cornered letters. Shaffer says the nature of carving requires the precise tolerances of King ColorCore, as a difference of 10-15 thousandths in cap thickness can cause significant changes in letters.

CAM's most dramatic signs often involve printed materials in conjunction with King ColorCore. The image is printed in color on high-quality vinyl, then attached to its acrylic cover using front-side adhesive. The part is then pressed into a routed hole and secured in place using hook-and-loop tape. A suction cup may be used to easily remove the graphic for updates and revisions.

Shaffer avoids visible holes in his finished signs by using aluminum U-shaped brackets with 1/2" screws. For signs 4' x 5' or larger, he uses aluminum channels on the top and bottom at a minimum.

CNC-routed King ColorCore sheet signs are attractive, durable and graffiti-resistant. Combined with other materials, they provide nearly limitless options



to help sign companies create signs that communicate effectively. The signs are perfect for any outdoor installation, including golf courses, marinas and parks. They also provide new options for creative indoor signage.

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Founded in 1968, King Plastic Corporation is a leading manufacturer of quality polymer sheets, slabs and massive shapes—including several products pioneered by the company. Its polymers are sold worldwide through a network of leading plastics distributors to customers who fabricate products for the marine industry (King StarBoard® brand), signage, food service, neutron shielding, construction, industrial and other applications. The company headquarters is a state-of-the-art, 150,000 square-foot manufacturing facility at 1100 N. Toledo Blade Blvd. in North Port, Florida. Visit www.kingplastic.com for more information.