

## Coca-Cola® OBM XT Arcade Display

Membrane Pressed Coke Display Stylish, Tough

### Defining Structural Requirements

Perhaps no other retail environment is more like a battleground than a supermarket, where survival more than style, dictates the form and finish of fixtures and displays. They must resist high impact from shopping carts, hand carts and floor waxers, abrasion from high turnover of heavy merchandise, grime and scuffs from kicking and handling, and harsh cleansers used by cleaning crews. In addition, they must keep looking new despite being subjected to high traffic over long hours, while accommodating the maximum amount of merchandise possible per square foot of precious floor space. But durable displays that look like military issue do little to draw consumers and drive sales, leaving all but the most resourceful designers to strike the compromise between form and function that has come to define a traditional supermarket interior.

But that was last century. New materials and the know-how to apply them in innovative ways have eliminated the need to sacrifice looks for longevity.

One bold project demonstrating this point is the new Coca-Cola® OBM XT Arcade display, an occasion-based marketing tool designed for cross merchandising Coca-Cola brands and snack food items. Produced by Masterack, a division of Leggett & Platt, the Arcade unit employs a radical design that utilizes a membrane-pressed support base—the component subject to the greatest amount of abuse—as the main design element.

"We had a long list of requirements for the base material," says Eric Sandler, project engineer for Masterack. "When filled to capacity, the front of the Arcade unit holds 80, 2-liter bottles. It was critical to ensure that the base could support such weight, and if bumped would withstand the resulting torque without cracking. In addition, the surface material needed to resist fire, retain its specified color, and endure harsh chemical cleansers."

"Most importantly, we needed a cost-effective, long-term solution," adds Steve Mobley, director of national accounts for Masterack. "Units will be out in the field for at least three years."

To find the right combination of production method and material, the team at Masterack turned to one of the company's vendors, Piedmont Woodworking, Rutledge, GA. Together the companies determined that membrane pressing using KYDEX® L\* thermoplastic sheet would meet all structural requirements and create an eye-catching canvas for brand identification and product marketing.



*Finished bases are inspected at manufacturer Masterack. Membrane pressed KYDEX® sheet conforms to all top and side surfaces of routed wood-core substrates allowing raised elements like the Coca-Cola® logo to be reproduced in detail. The integral color is a match to Coke Red.*

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*\*KYDEX® L has been replaced with KYDEX® XD. Please visit [www.kydex.com](http://www.kydex.com) to learn more.*

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**The Right  
Combination of  
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"It's an ideal use for membrane pressing and KYDEX® sheet," explains John Colby, general manager, Piedmont Woodworking. "Membrane pressing enables the thermoplastic sheet to conform to all top and side surfaces of routed wood-core substrates, preserving surface detail while maintaining uniform wall thickness."

The crescent-shaped base is fabricated of double 3/4-in MDF board, one of which is prelaminated with thermofused melamine (TFM) to protect what will become the underside of the base, from dirt and moisture intrusion. The MDF is CNC-routed to produce the compound curves of a crescent shape with a rounded edge profile. Holes are drilled to facilitate through-bolting of the fixture's wire frame. The CNC router also drills a series of locating holes corresponding to points projecting from the backsides of injection-molded Coca-Cola logos.

"Membrane pressing KYDEX® sheet enables us to relay raised elements like the Coke logo in extremely fine detail," explains Colby. "The material also provides a perfect color match to Coke Red."

Once the base is routed and the logos are properly positioned, the components are coated with adhesive and then heated along with the KYDEX® thermoplastic sheet. A vacuum draws the thermoplastic onto the part as a flexible bladder presses it onto all top and side surfaces of the substrate. No molds are required, which considerably reduces tooling costs.

Once formed the base measures 1.02m (3.350') wide by 0.656m (2.150') long, front to back. The wire frame is secured to the base with threaded steel rods and countersunk nuts.



*KYDEX® L meets all structural requirements to make the crescent-shaped base for Coke's OBM XT Arcade display.*

Load tests performed by Masterack proved the stability of the display. "We used 20-lb lead shot weight bags and loaded the fixture to 150 percent of full capacity," explains Sandler. "We then performed a variety of practical tests, including bumping the fixture with a cart and repositioning it. A static load test was used to pinpoint potential stress fractures and areas of structural fatigue. All of the tests were well within specified limits."

Spot tests proved the material to be highly resistant to harsh cleansers used to keep the display clean. The tests also confirmed the display's ability to withstand an abusive environment.

"KYDEX® L sheet is highly durable," explains Colby. "It's able to withstand the abuse of a supermarkets environment in sheet as thin as 0.71mm (0.028")." KYDEX® L sheet exhibits Notched Izod Impact Resistance of 801 J/m (15 ft-lbs/in) at 23°C (73°F), tensile strength of 42 N/mm<sup>2</sup> (6100 psi), and Rockwell hardness of 94 (R scale). Since the color of KYDEX® sheet is integral, gouges and scratches are inconspicuous.

"There are approximately 1600 Arcade units in supermarkets throughout the US and Canada and we are continuing to manufacture units through 2004," says Mobley. "The units were introduced in December 2002, and we have not had any damage reported."

Masterack continues to blend membrane pressing and thermoplastic sheet into its projects. "Anytime a design requires an element that is both structural and decorative we'll specify membrane-pressed KYDEX® sheet," says Sandler. "It provides the look of vacuum forming but with lower tooling costs and a very quick turnaround, and the material is very durable."

**Material and  
Process Pass the  
Test**

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