

# COMPOSITES 2010

THE COMPOSITES EXHIBITION AND CONVENTION

FEBRUARY 9-11, 2010  
MANDALAY BAY, LAS VEGAS



## 2010 ACE and Pinnacle Award Winners

### Awards for Composites Excellence (ACE)

sponsored by: AOC and Composites One

<p><b>WINNER</b> <b><i>Infinite Possibility</i></b> Hybrid Composite Beam by Harbor Technologies LLC</p>	<p><b>WINNER</b> <b><i>Process Innovation</i></b> One-Way Flap Valve Using MIR Technology by Composites Solutions Pty Ltd.</p>	<p><b>WINNER</b> <b><i>Best of Show</i></b> California Bay House by William Kreysler &amp; Associates</p>
<p><b>WINNER</b> <b><i>Superior Quality (in an Open Molded Part)</i></b> Composite Swimming Pool with Renewal/Recyclable Content Resin System by Alaglas Pools</p>	<p><b>WINNER</b> <b><i>Most Creative Application</i></b> Bridge-in-a-Backpack by AEWC Advanced Structures &amp; Composites Center</p>	<p><b>WINNER</b> <b><i>Technical Innovation for Corrosion Application</i></b> sponsored by: Ashland, Inc. FRP Pilot Carbon Capture – Scrubber &amp; Ductwork, AEP Mountaineer Station by Ershigs, Inc.</p>
<p><b>WINNER</b> <b><i>Innovation in Green Composites</i></b> <b><i>Technology sponsored by: Ashland, Inc.</i></b> BRP Green Wall by Bedford Reinforced Plastics</p>		

### Pinnacle Award Winners

sponsored by: Reichhold

<p><b>WINNER</b> <b><i>Best of Show</i></b> Robal Glass by Monroe Industries</p>	<p><b>WINNER</b> <b><i>Commercial/Specialty Installation</i></b> ISIS Luxury Bath by International Marble Industries, Inc.</p>	<p><b>WINNER</b> <b><i>Residential Category</i></b> Robal Glass by Monroe Industries</p>
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## Awards for Composites Excellence (ACE)



### **Best of Show - California Bay House by William Kreysler & Associates, Inc.**

This two-story residential house is a monocoque structure consisting of nine prefabricated panels. Recyclable foam molds were CNC milled from 3-D data derived by laser scanning the architect's 3-D model. Finite Element Analysis engineering was used to satisfy building code requirements for wind and seismic loads. The building consists of 1/8" thick fire retardant FRP sandwich panels with 2" balsa core. Since the home was built in a high fire hazard area, local codes were upgraded to require a class A roof. The exterior skin therefore was required to pass the ASTM E 108-4 & UBC 15-2 standard test method.



### **Infinite Possibility - Hybrid Composite Beam by Harbor Technologies, LLC**

The "Hybrid-Composite Beam" (HCB), is a new structural member developed for use in bridges and other structures, that is comprised of three main sub-components: a shell, compression reinforcement and tension reinforcement. The shell consists of a fiber-reinforced polymer box beam. The compression reinforcement consists of concrete pumped into a profiled conduit (generally an arch) within the beam shell. The tension reinforcement consists of carbon, glass or steel fibers anchored at the ends of the compression reinforcement. The HCB combines the strength and stiffness of concrete and steel with the lightweight and corrosion advantages of composite materials.



### **Innovation in Green Composites Technology (sponsored by Ashland, Inc.) - BRP Green Wall by Bedford Reinforced Plastics**

BRP Green Wall is a double walled Hybrid Composite Panel that can be used to replace the conventional dry wall system. The size of BRP Green Wall prototype is 4' x 6' with a overall thickness of 1.75" between top and bottom hybrid composite face sheets connected by webs at a distance of 6 inches. The distance between the face sheets allows approximately 1.5" air space in the middle of the panel. This panel is made of 25% flax fabric, 25% E-glass rovings and 50% recycled resin and consumes 40% less embodied energy than GFRP composite.



### **Most Creative Application - Bridge-in-a-Backpack by AEW Advanced Structures & Composites Center**

The Bridge-in-a-Backpack, a hybrid composite-concrete bridge combining the advantages of advanced composite materials and concrete, provides a more cost effective, greener, longer lasting, and faster to erect bridge technology. This lightweight, corrosion-resistant system for short- to medium-span bridge construction uses FRP composite arch tubes that act as a stay-in-place form, structural reinforcement, and environmental protection for concrete fill. The lightweight arches (&lt; 150 lbs each) can be placed quickly by hand labor. Currently, two arch bridges have been constructed and at least five more will be erected during 2010.



### **Process Innovation - One Way Flap Valve Using MIR Technology by Composites Solutions Pty Ltd.**

The product and the tooling were manufactured using a new micro-fiber-infused resin system developed by MIRteq in Australia and is having its global launch at COMPOSITES 2010 by Composites One. The product is a complete, composite, one-way gate valve system with pipe and head wall flanges produced using a very simple injection molding system with no gel coat. The proprietary treated micro-fibers at a 20% glass-to-resin ratio produces very good properties and saves approximately 80% labor.



### **Technical Innovation for Corrosion Application**

#### **FRP Pilot Carbon Capture - Scrubber & Ductwork, AEP Mountaineer Station by Ershigs, Inc.**

Ershigs Inc., in support of Alstom Power Inc., completed the structural design and fabrication of one 10' diameter x ~ 77' tall FRP scrubbing vessel and ~1,300 linear feet of 48" - 60" diameter FRP ductwork comprising the integral portion of the world's first project to capture and store carbon dioxide (CO<sub>2</sub>) from an existing coal-fired power plant. The vessel and ductwork were fabricated via filament winding, with numerous fittings and internal components fabricated via contact molding. In all, the project required more than 200,000 lbs. of FRP laminate and 9,400 manhours to complete.



### **Superior Quality (In an Open Molded Part) - Composite Swimming Pool with Renewable/Recyclable Content Resin System by Alaglas Pools**

This is the first swimming pool to be manufactured using new green resin technology for producing more environmental friendly composites. The resin makes Alaglas a better environmental steward & enhances the pool's appeal to customers looking to make greener lifestyle decisions. The resin from this pool is 28% derived from biologically renewable resources and/or recycled materials. Mechanical properties of the green resin are equal to or better than those of a traditional pool construction resin. The same manufacturing process techniques and equipment were used to seamlessly incorporate the new green resin into Alagla's material system for exceptional structural integrity. Alaglas pools are engineered with a level of durability high enough to offer a 50-year structural warranty.

## Pinnacle Awards



### **Best of Show - Robal Glass by Monroe Industries**

Robal Glass is a recycled glass product cast with a bio-based resin. This application uses Ashland's Envirez bio-based resin. Glass in this piece comes from the Mohawk Valley in upstate New York directly from a glass crushing plant.



### **Commercial/Specialty Installation - ISIS Luxury Bath by International Marble Industries, Inc.**

International Marble Industries (IMI) Designer Luxury Baths offer an ageless range of stunning baths for luxury bathroom hospitality interiors. Our ISIS Luxury Bath is manufactured with MasterCast™ engineered composites that offer the authenticity of stone to make them hard wearing yet lighter and warmer to the touch than stone. The hidden built-in overflow system and waste presents a minimalistic look to fit into any style of bathroom. The natural elegance of the bath enables you to relax in complete comfort and wellness.



### **Residential Category - Robal Glass by Monroe Industries**

Robal Glass is a recycled glass product cast with a bio-based resin. This application uses Ashland's Envirez bio-based resin. Glass in this piece comes from the Mohawk Valley in upstate New York directly from a glass crushing plant.