



INTERPLASTIC CORPORATION  
Thermoset Resins Division

# MARINE CASE HISTORY

## From Wings to Water

As a young man, We-no-nah Canoe's founder, Mike Cichanowski's love of canoe racing lead him to start making his own canoes and searching for materials to create lighter, faster canoes that would be easier to race over long distances. His first models were built with wood strips, but over time he experimented with fiberglass construction. He looked for a tough resin that would work with Kevlar® fabric, which he had started using in the late '70s. Using Kevlar allowed him to remove a lot of weight from his canoes but building a thin and durable hull wasn't easy using traditional



laminated construction methods. His goal was to build a racing canoe under 35 pounds. Dave Thill was one of three associates with engineering expertise who joined the firm and led the search for the right resin and manufacturing techniques to achieve this aggressive objective.

"The aerospace industry introduced vacuum bagging and its primary benefit is a very high glass-to-resin ratio," said Thill. "However, getting the materials to work for us in-house was difficult.

Interplastic Corporation brought in their CoREZYN® 8300 vinyl ester resin and worked closely with us to develop a custom formula that would support a very thin laminate. We kept engineering the process until we got it to work successfully." Vacuum bagging enabled We-no-nah to become, by far, the largest builder of high-end canoes, a position they retain today. Over the years, materials have become more available on the open market and more cost effective, allowing We-no-nah Canoe to finesse their designs to a level of sophistication and value that many uneducated consumers might not recognize.

Today, two of We-no-nah's three canoe lines and all of their US-manufactured Current Designs kayaks are constructed with CoREZYN vinyl ester resin and by vacuum bagging. "We make a wide range of boats, with varying degrees of complexity and pricing. Even what is considered a 'low end' boat for us, is still a pretty amazing product," according to We-no-nah advertising manager, Rob Linden.



*Founder  
Mike Cichanowski*

## The Ultra-Light Technique

The canoe hull is first constructed with a prescribed number of vinyl ester resin-soaked Kevlar or graphite layers and with spot reinforcing. A PVC foam core with ribs is layered with more Kevlar and then the whole composite is vacuum bagged. This sandwich construction is only 3/8" thick at the ribs and 1/32" thick along the sides. "It's the Kevlar that makes it light (graphite would make it even lighter) but the vinyl ester's critical strength-to-weight ratio gives us unshakable confidence in the soundness of this design," says Thill. As a testament to this canoe's durability, Thill says since he joined We-no-nah in 1975, he has still seen original canoes come back for occasional repairs or to claim bragging rights.

## Flex Core Construction

This hull has a foam core bottom and no side ribs and there are more layers of laminate on the bottom. The laminate is made with CoREZYN vinyl ester resin and Kevlar, graphite or Tuf-Weave®, a We-no-nah patented fabric made of polyester and E-glass interweave. All Flex Core canoes have a gel-coated exterior.

"This is a more durable canoe than the Ultra-Light," explains We-no-nah's marketing manager, Tom Watson. "It's also eight to ten pounds heavier due to the extra laminations and the gel coat."

As a comparison, an Ultra-Light 17' Spirit canoe weighs 43 pounds. The same boat made with Flex Core weighs 56 pounds - 65 pounds if it's



made with Tuf-Weave. "It's not well suited to long portages and paddles. It's better suited to shallow, river canoeing because the hull is more durable and forgiving."

## Nimble Kayaks

All Current Designs kayaks manufactured in the United States are made with CoREZYN vinyl ester resins in their laminate and they are vacuum bagged. "Weight is a critical factor for maneuverability and skillful boat handling. The same materials and manufacturing techniques used in our canoes provide this, plus the durability required for coastal waterways," says Linden.

"Current Designs is a very quality-conscious, sophisticated brand," explains Linden. Although We-no-nah owns Current Designs, they operate as separate companies to best serve their marketplaces.



Some Current Designs kayaks are still manufactured in Victoria, British Columbia, where the company was founded.

To learn more about their amazing watercrafts, visit We-no-nah's web site [www.wenonah.com](http://www.wenonah.com).

CoREZYN vinyl ester resins, with their epoxy backbone, present an uncommon combination of incredible strength, durability and corrosion resistance. In marine applications, they are the resin of choice for composite hulls and decks. To learn more about these resins, visit [www.ResinNavigator.org](http://www.ResinNavigator.org).

Interplastic Corporation is a specialty chemical company with its headquarters in St. Paul, Minnesota. It is focused on the production and distribution of unsaturated polyester resins, vinyl ester resins and gel coats for the composites and cast polymer industries.

