

# WEST SYSTEM AND PRO-SET EPOXIES IN ACTION

Leading boat builders from around the world use WEST SYSTEM® and PRO-SET® epoxy systems to improve the strength, durability and cost-effectiveness of their bonding. In the table below, we show who's using our products and how:

Bonding application	Boat builders	Product range
Teak deck bonding	Sunseeker, Princess	PRO-SET epoxy
Strip plank bonding	Enavigo Yachts, Spirit Yachts, Timba	WEST SYSTEM epoxy
Interior joinery	Enavigo Yachts, Spirit Yachts	WEST SYSTEM epoxy
Carbon spar bonding	Hall Spars	PRO-SET epoxy
Bulkhead bonding/tabbing	Hartley Boats	PRO-SET epoxy
Hull to deck joints	Hartley Boats	PRO-SET epoxy
Bonding diagonal veneers	Farlie Yachts	WEST SYSTEM epoxy
Secondary bonding	Oracle Team USA, Art of Kinetik	PRO-SET epoxy WEST SYSTEM epoxy



For more information about our WEST SYSTEM® and PRO-SET® epoxies and how they help boat builders increase the strength and durability of their bonding, contact us today.

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## CASE STUDY: SUNSEEKER INTERNATIONAL CREATES EXQUISITE TEAK DECKS FOR CUSTOMERS WITH PRO-SET® ADHESIVE

Sunseeker International uses PRO-SET ADV-170 Adhesive in conjunction with vacuum bagging techniques to bond prefabricated teak decks onto its yachts.

By taking this approach, the company has reduced workloads, with no need to screw or weigh down decks for the duration of the curing period. In addition, Sunseeker International can achieve an exquisite finish

with PRO-SET epoxy and vacuum bagging, helping to delight customers and avoid after-sales issues such as deck 'pooling'.

Based on a highly successful trial implementation of vacuum bagging, Sunseeker International is now using PRO-SET adhesives and vacuum bagging for all its lines and will use the technique to produce around 200 boats a year.

Application Brochure  
**BONDING**

**WEST  
SYSTEM®**

**PRO-SET®**

## CREATING LASTING BONDS WITH WEST SYSTEM AND PRO-SET EPOXIES

How to build stronger and more durable boats with WEST SYSTEM® and PRO-SET® epoxies



ORACLE TEAM USA Photo: ZUMA Press, Inc. / Alamy







# THE BEST IN BONDING

Photo: Art of Kinetik

Since the earliest days of boat building, craftsmen have been bonding pieces of wood together to create watertight vessels. Over the years, technological advances and new chemical formulations have revolutionised the bonding process, enabling fabricators to build wooden and composite boats that are stiffer, lighter, stronger and longer lasting.

The challenge for boat builders today is to choose a bonding solution that meets their needs in terms of strength, durability, flexibility and cost effectiveness. However, with an overwhelming array of adhesives available – from polyvinyl acetates (PVA) and polyurethanes to contact cements and polyester resins – selecting the right one can be a minefield.

## Epoxy – the smart choice for bonding

In the 1960s, the Gougeon Brothers – boating fanatics from Bay City, Michigan – experimented with epoxy for their boat building projects. Their work sparked a revolution in the world of wooden boat building based on the ability to create bonds that are stronger than wood itself.

Further research showed that epoxy was also able to create extremely strong, durable bonds between wood, fibreglass and metal. This makes epoxy a uniquely versatile bonding solution suitable for a wide range of bonding applications, from teak deck and strip plank bonding, to interior joinery, carbon spar bonding and bulkhead bonding.

## Leading the bonding revolution: WEST SYSTEM and PRO-SET epoxies

To help boat builders achieve the best results across a wide range of bonding applications, Gougeon Brothers, (GBI) developed the WEST SYSTEM® and PRO-SET® epoxy ranges. West System International (WSI) now manufactures these products under license, in partnership with GBI.

Since the 1970s, WEST SYSTEM and PRO-SET epoxies have led the industry in terms of bonding strength, fatigue resistance and moisture resistance. The product ranges have been extensively tested, both in the lab and in live trials with high-performance boats, demonstrating their superior bonding performance time and time again.

WEST SYSTEM and PRO-SET epoxies are the clear market leaders in sales worldwide. Leading boat builders that use our products for bonding, sheathing and other key construction processes include Sunseeker, Princess, Enavigo Yachts, Spirit Yachts and more.



In the 1960s, the Gougeon brothers began building boats professionally and experimented with practical, low-cost and versatile methods of construction.

## THE BENEFITS OF WEST SYSTEM AND PRO-SET EPOXIES

WEST SYSTEM and PRO-SET epoxies provide unique benefits that help boat builders overcome a range of common adhesive challenges. They can be used to bond rough, uneven surfaces, reducing the time needed to prepare surfaces in the workshop. In addition, minimal clamping pressure is required and curing time is relatively slow, making complex bonding operations easier.

Perhaps most importantly, WEST SYSTEM and PRO-SET epoxies create bonds that do not degrade over time, as is the case with other adhesives. As a result, bonds are more durable and require far less after-sales servicing and fewer repairs – delivering major long-term cost benefits for both boat builders and owners.

Additional benefits of WEST SYSTEM and PRO-SET epoxies for boat builders include:

- **Versatility and cost effectiveness**  
WEST SYSTEM and PRO-SET

epoxies are suitable for a wide range of bonding applications, from teak deck to carbon spars and bulkheads. This simplifies construction projects and lowers the costs associated with buying and storing multiple bonding products.

- **First choice for repair projects**  
WEST SYSTEM and PRO-SET epoxies cure with very little shrinkage during the curing process – which makes our epoxies ideal for gap filling and other repairs.

- **Strength to support structural bonds**  
WEST SYSTEM and PRO-SET epoxies create bonds that are as strong or stronger than the construction materials themselves, making our products an excellent choice for structural bonds and curved laminations where other solutions such as polyurethanes may fail.



Photo: Spirit Yachts

## TECHNICAL SOLUTION OVERVIEW

### BONDING WITH PRO-SET ADHESIVES

PRO-SET epoxy systems are used for building high-performance, lightweight composite components and boats that can withstand the harshest marine environments. The range includes specialist assembly and adhesive epoxies for creating strong durable bonds between composite structures and dissimilar materials.

#### Products in focus:

PRO-SET adhesive epoxies are pre-thickened, two-part epoxy adhesives used for secondary bonding of laminated composites, as well as steel, aluminium, cast iron, concrete, stone, and most woods. The PRO-SET adhesive range includes products suitable for both general purpose and composite bonding, as well as for heavily loaded applications.

#### General purpose bonding with PRO-SET ADV-170 Adhesive

One key bonding product in the PRO-SET epoxy range is PRO-SET ADV-170 adhesive. This is an extremely

## PRO-SET.

versatile epoxy for general purpose bonding, particularly popular for bonding teak decking. The resin and hardener components are thixotropic pastes and the adhesive is available in a range of pack sizes to suit the scale of your project and your budgetary requirements.

**Composite bonding with PRO-SET ADV-175 Resin**  
For composite bonding, many leading boat builders choose PRO-SET ADV-175 epoxy resin. This can be used with ADV-273 fast, ADV-275 medium or ADV-277 slow hardener, making it suitable for most composite bonding applications.

**Bonding for heavily loaded applications with PRO-SET ADV-176/ADV-276 epoxy**  
PRO-SET ADV-176/ADV-276 Toughened Adhesive delivers exceptional toughness and superior peel strength for heavily loaded applications. It also provides strong, durable bonds between 'difficult-to-bond' substrates such as pre-impregnated fibres, sheet moulding compounds, metals and most plastics.

### BONDING WITH WEST SYSTEM EPOXY

The performance of WEST SYSTEM epoxy is matched by the breadth of the complete product line. It includes an epoxide resin, a full suite of epoxide hardeners and epoxy-related products, such as fillers and additives, as well as the application tools needed to use the products for multiple bonding applications.

#### WEST SYSTEM epoxy in focus:

All bonding solutions start with the WEST SYSTEM 105 Epoxy Resin. The next step is to combine one of the WEST SYSTEM hardeners with the 105 Epoxy Resin, thoroughly mixing the two components together before adding the chosen filler to increase the mixed viscosity to their specific bonding requirements. Full information on using WEST SYSTEM epoxy for bonding applications is published on the WSI website at <http://www.westsysteminternational.com/en/west-system/identify-the-west-system-that-best-suits-your-needs.html>

Starting out with the WEST SYSTEM 105 Epoxy Resin, together with the chosen WEST SYSTEM Hardener, boat builders can add a filler or additive to thicken or alter the basic resin/hardener mixture for specific bonding or filling applications. As a rule, it is better to use higher-density fillers when bonding high-density materials such as hardwoods or metals. Examples are the WEST SYSTEM 403 to 406 range of fillers.

## WEST SYSTEM.

**WEST SYSTEM speciality epoxies:**  
To complement our main epoxy resins and hardeners, we also offer three speciality epoxies.

- **G/flex Epoxies**  
An easy-to-use, toughened epoxy designed to make structural bonds that absorb the stresses of extraordinary expansion, contraction, shock, and vibration. Excellent for bonding dissimilar materials.
- **G/5 Five Minute Epoxy**  
An easy-to-use, fast curing epoxy for general bonding. Great for making jigs and fixtures quickly and to hold parts in position while standard epoxy bonds cure.
- **Six10 Thickened Epoxy Adhesive**  
Point-and-shoot convenience of a high strength epoxy adhesive in a self-metering coaxial cartridge.

