Hexcel Case Study: DIAM 24 Sailing Trimaran

Masts for the DIAM 24 one-design trimarans built with HexPly® M79 prepreg
For the past 3 years, the DIAM 24 has been the boat of choice for the Tour de France à la Voile, a one-design regatta with a forty-year history, that started as a racing-cruising event, then an offshore port-to-port race, and is now an inshore coastal event.

The DIAM 24, designed by VPLP and built by ADH Inotec in South Brittany, France, is a one-design trimaran which offers competitors a configuration that is easy to set up and launch. More than 90 boats have been built to date, sailing and racing on many waterways around the world, in France, Switzerland, UK, Bahamas, New Zealand and the USA.
Hexcel materials, supplied by Gazechim Composites Distribution, have been used for the DIAM 24 mast construction from the outset. With a carbon, epoxy single-skin laminate, the masts are constructed from HexPly® M79 prepreg, which offers a flexible cure cycle so production times can be optimized to the builder’s specific needs. A unidirectional fiber is used to achieve weight and stiffness targets, with a twill fabric achieving a good surface finish and impact resistance.

The mast is cured in female tools, in two sections to facilitate transportation on a trailer.

“The HexPly® M79 prepreg system enables us to optimize our production efficiencies and still achieve the mechanical performance required for such a critical part,” says M. Vianney Ancellin, CEO of ADH Inotec. “We are assured of consistently high quality materials from Hexcel, and we appreciate the reliable and flexible supply and service we receive from Composites Distribution.”

About HexPly® M79

HexPly® M79 is an epoxy-based resin matrix, designed for prepreg applications which require a cure temperature below 100°C, and can be used in combination with a number of unidirectional fibers and multiaxial fabrics. It is specifically suited to the manufacture of thick laminate sections, and due to reduced exotherm, the time-consuming dwell period is eliminated. HexPly® M79 offers significant flexibility in terms of cure cycles, allowing manufacturers to optimize their processes and costs. It was developed to be price competitive compared with other manufacturing techniques, thereby providing customers with a real option for the highest quality technology in a cost-effective package.
Hexcel Product Family

HexTow® Carbon Fiber
HexForce® Reinforcements
HiTape® Advanced Reinforcements
HexPly® Prepregs
HexFlow® Resins
Modipur® Polyurethane
Redux® & HexBond™ Adhesives
HexWeb® Honeycomb Core
HexWeb® Engineered Core
HexTool® Tooling Material
HexMC® Molding Composite
Polyspeed® Laminates and Pultruded Profiles
HiMax™ Multiaxial Reinforcements

For more information
Hexcel is a leading worldwide supplier of composite materials to aerospace and industrial markets. Our comprehensive range includes:

- HexTow® carbon fibers
- HexForce® reinforcements
- HiMax™ multiaxial reinforcements
- HexPly® prepregs
- HexFlow® RTM resins
- Redux® & HexBond™ adhesives
- HexTool® tooling materials
- HexWeb® honeycombs
- Acousti-Cap® sound attenuating honeycomb
- Engineered core
- Engineered products
- Polyspeed® laminates

For quotes, orders and product information call our sales office in Austria +43 7229 772-0. For other worldwide sales office telephone numbers and a full address list, please go to:

http://www.hexcel.com/contact/salesoffice

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