

HORIZON SINGLE-SHOT VACUUM INFUSION RECORD-BREAKER

HORIZON YACHTS HAS ONCE AGAIN surpassed the world record for a single-shot hull infusion. The yard's specialised composites corporation, Atech Composites, recently completed the infusion of a 140-foot (42.7-metre) motor yacht hull and stiffeners in a single shot, using the vacuum infusion technology and proprietary 3D resin flow.

The infusion of the 140-foot (42.6-metre) hull breaks the yard's prior world record of infusion of a 136-foot (36.5-metre) hull set in 2005. At the turn of the century, when most shipyards were using the traditional hand-lamination method to produce composite hulls, Horizon established Atech Composites to focus on increasing the strength, integrity and durability of its hull structures.

In 2000, Horizon's Atech facility began using the patented SCRIMP (Seemann Composites Resin Infusion Molding Process) vacuum infusion technology to manufacture one-piece hulls and became the first shipyard in Asia to utilise the procedure.

In 2004, Horizon developed an improved resin infusion technology, which transforms the resin from its original 2D flow on surfaces to



3D flow. The process of 3D flow allows the resin to climb up and down internal stiffeners, enabling the construction of larger structures than previously possible. The new infusion technology facilitates the flow of the resin in all directions – instead of a planar direction only – and allows for the stiffeners to be integrated with the yacht during the infusion process, which leads to the yacht being both lighter and stronger.

This 3D infusion technology was behind the 2005 world record, when it infused the hull and stiffeners of a 136-foot (36.5-metre) hull in one shot. The hull became the multiple-award-winning Horizon P130, *Miss Rose*. Then, this year, using further improved technology, Horizon surpassed its own record.

The infusion process facilitates the flow of resin into fibre interstices and core material grooves through pressure variation. As the size and type of moulds have evolved, so too has the need for better control on the resin flow, which has put Horizon's infusion techniques to the test. Continuous testing over the last two decades has allowed Horizon to address any challenge encountered and to now be able to infuse any type of mould completely. This improved technology ensures consistency throughout all structural components, creates hulls that are as light and as strong as possible, and reduces the emission of Volatile Organic Compounds (VOCs) by nearly 80 per cent.

Horizon believes that the Chinese proverb, "Learning is like rowing upstream; to not advance is to fall behind," is applicable to the yachting industry. To learn and progress are imperative and progress is imperative as a luxury yacht builder, especially in the production of safe, high quality hulls. Innovation is and always has been the core value that enables Horizon's sustainable development. Continuous investment in research and development, technology, and equipment throughout the years has allowed Horizon to not only build high-quality, reliable yachts for owners, but to remain an innovative industry leader and a pioneer for yacht manufacturing technology.

The construction of the 140-foot fully-infused hull was in full swing at the time of publication, with an extensive series of tests under strict quality control guidelines planned.

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