



Girls on Film - high speed with lightweight construction

To provide Girls on Film with the best mechanical properties at the lightest weight from an IPN structural foam core, Premier Composite Technologies (PCT) chose Diab's Divinycell HM for the construction of the boat.

Premier Composite Technologies (PCT)

Premier Composite Technologies (PCT) is a leading global supplier and manufacturer of advanced composite components for the architectural design, transportation and boatbuilding markets. When PCT was given the task to design a racer for the FAST40+ race, focus was on light weight with the best mechanical properties. PCT has been working with Diab for over a decade and knew that their foam cores could deliver.

FAST40+ race

This racing class was engineered by Rob Grenhalgh to allow light displacement 40-foot yachts to compete regularly in a close and competitive class. Boats must have a hull length of 12-12.6 m, a max draft of 3 meters, a displacement length ratio of less than 90 and speed ratio of greater than 0.125. This translates into either a GP 42, Carkeek 40 mkt 2, Kerr 40+ and a few other designs.

Girls on Film

Commissioned by Peter Morton, Girls on Film had high requirements. The yacht is a Mark 3 version of the proven Carkeek 40 design from 2012 and benefits from numerous small modifications. Girls on Film was the winner of four of the five Fast40+ class events in 2016

and took the overall season title. To be that fast, it has to be light.

Design

Wherever it made sense, the boat builders used *Divinycell HM80*, thermoformed on-site together with epoxy carbon prepreg to minimize weight. The material allows for flexibility of design while bringing the best mechanical properties with the lightest weight from an IPN structural foam core.

Divinycell HM80 from Diab

Diab provided *HM80* products and support with the thermoforming process which PCT conducted in house. Offering outstanding toughness and strength, *Divinycell HM* is a high performance structural core designed for extremely demanding applications such as fast marine hulls. It combines very high shear strength with an outstanding shear elongation. As a result, *Divinycell HM* is an extremely tough product, capable of absorbing high dynamic impacts and slamming loads.

Divinycell HM's elongation exceeds the requirements of ISO 12215, GL and ABS rules to allow for reduced safety factors in structural calculations, providing a lighter, yet strong structure. Its high compressive properties provide excellent resistance to denting and skin wrinkling of thin skins.