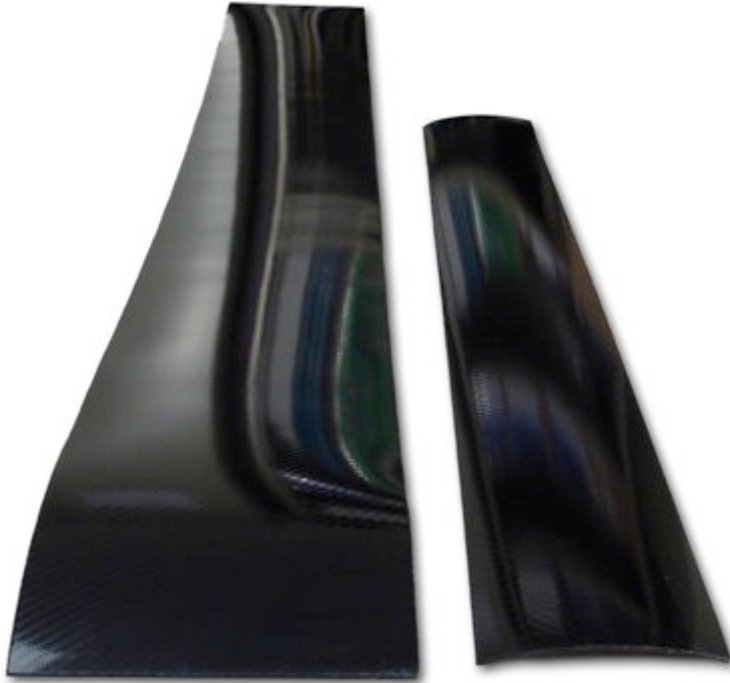




international plastics design competition



Shape Memory Wing Caps



Molder: CRG Industries, LLC

Moldmaker: CRG Industries, LLC

Material Supplier: CRG Industries, LLC

Designer: CRG Industries, LLC

OEM: CRG Industries, LLC

Supporting Documentation:

[Wing caps flier](#)

[Wing caps web site](#)

Product Description

Shape memory wing caps are a high-tech, cost-effective, reliable solution to protect expensive racing equipment. The material is a composite made of shape memory polymer and fabric



international plastics design competition



reinforcement, with a high-strength adhesive backing. These wing caps provide tough protection against abrasive elements such as rocks and dirt under racing conditions. Sprint, micro and midget racers can tailor these shape memory wing caps to fit any auto wing configuration. These wing caps offer the look of carbon fiber (black or silver), strong, self-adhesive backing (no rivets), and a high-performance, heat-moldable composite material. The wing caps can be customized to any size or shape in a matter of minutes. Rigid at normal operating temperatures, the wing caps become flexible and moldable when heated with a heat gun or other heat source. Within seconds after being adhered, the wing caps harden again into a strong, lightweight protective barrier that holds the shape of the wing's leading edge. Racing teams can custom-fit their wings with protection that stays put even under the most severe racing conditions. The wing cap is water, weather, UV and vibration resistant and helps maintain the wing's aerodynamic shape.

Why is the product innovative?

This product is innovative because of its shape-changing properties. Most ready-to-use race car wings are formed into a static shape that does not always exactly fit the curvature of a Sprint race car wing. Shape memory wing caps are customizable because of the shape-changing property of the thermoset resin built into the composite. The wing caps are fully cured and ready to use. The industrial strength peel-and-stick adhesive makes the wing caps easy to use and fit onto the car without any messy plastic work, gluing, or hand lay-up. The user just needs to heat the wing cap up to about 190 degrees Fahrenheit with a heat gun, peel off the paper backing, and adhere the material while it remains warm and moldable. The material can be heated multiple times while the wing cap is being applied. When the material is applied and cools, it becomes rigid in the new, custom shape, ready to protect the wing's leading edge from abrasion and damage from flying debris while racing. The wing caps are also removable later on by prying them off with a putty knife, at which time they can be replaced.