

Say Plastics Delivers the Need for Speed

The Challenge

Stone Mountain Park is a popular family destination that offers seasonal snow attractions including Atlanta's only 400-foot tubing hill. A few years ago, the resort expanded their popular snow tubing attraction by introducing *The Double Tube* which allows two people to ride the hill on a single tube. Unfortunately, the Double Tube received lackluster reviews by park goers. "A less-than-thrilling rider experience," was the cold verdict. Full Spectrum, a company that specializes in multi-media installations, was responsible for sourcing a tube supplier that could produce a double snow tube pan, which is the part configured to the bottom of the tube that ensures optimal tube speed and performance under varying snow conditions. A new double snow tube pan configuration was proposed by the tube supplier, but it was costly and would extend the manufacturing schedule. In addition, the new configuration would lower the tube's speed and jeopardize tube durability.

The Approach

Full Spectrum and Stone Mountain reached out to SAY Plastics (McSherrystown, PA) in September at the recommendation of another supplier. SAY Plastics was tasked with developing a pan solution and delivering 170 pans in time for 2016/2017 tubing season. SAY Plastics determined they could thermoform the pan from an economical polyethylene material. Instead of sewing the pans onto the snow tubes, which was the assembly method for the single tubes, SAY Plastics designed a new assembly that utilized mechanical fasteners with pan head bolts. The SAY Tooling System allowed SAY Plastics to quickly set up the forming, trimming and assembly process which delivered significant cost savings.

SAY Plastics turned to CMT to provide an innovative material solution for their in-house tool construction. CMT recommended HYTAC® LPX syntactic foam material for the mold. The low thermal conductivity of syntactic foam allowed the polyethylene to stretch more consistently than if formed on other traditional mold materials such as wood, MDF, Renshape or aluminum. The result is a more stable and repeatable process to ensure uniform parts by reducing thin spots and warpage. Ambient air fans quickly and consistently cool the part to ensure cycle times are not extended.

CMT produced a solid cast mold block which both prevented delamination issues and allowed for no seams and less prep work than traditional composite board molds. The LPX formulation was specifically designed for heavy-gauge thermoformers with a crack-resistant agent allowing for larger castings. SAY Plastics could CNC-machine the finished mold and then construct a plywood and steel CNC trim fixture in-house



CNC-machined mold produced from a solid casting of HYTAC LPX syntactic foam. LPX is specifically formulated for heavy-gauge thermoforming applications.

The Results

In less than 8 weeks, SAY Plastics delivered the quote, design, tooling, thermoforming and assembly of the complete customer order. The new Double Tube pans were a success and the project management team at Full Spectrum says response to the tubes has been positive. “The tubes are working great and have quickly become a popular choice with riders.” Thanks to Double Tube’s popularity and performance, Full Spectrum and Snow Mountain have set their sights on a brand-new tubing experience featuring a snow ride vehicle similar to a straight-line canoe. SAY Plastics is currently working on a tray design for this much-anticipated attraction.



REASON #1: IMPROVE MATERIAL DISTRIBUTION

No one likes thin spots; everyone likes consistent and evenly distributed walls. Using the right plug material, geometry and processing techniques will ensure uniform wall thickness and a quality part.

