Overview

The problem that SCA Americas has presented the team with was to create a casing for wet wipes to be used on an all-female boat racing team that meets all of the desired criteria. Several of the points of interest were; one-handed use, self-closing, waterproof, single-wipe dispensing, and safety. The team was able to satisfy these criteria and create a workable prototype.

Objectives

To create a casing for wet wipes for a boat racing team that is waterproof, able to be used with one hand, self-closing, safe, and single-wipe dispensing.

Approach

- Customer needs were generated through initial communication with SCA Americas
- Several initial concepts were generated and the best was selected using a decision matrix. Continuous improvements were made until the final design was created
- Two sponsor visits were made to pick up the prototypes and to carry out testing
- A patent search was performed which helped the team to generate ideas
- Finite element analysis was used on Solidworks to evaluate the potential failure points on the design due to stress
- Two prototypes were created (alpha and beta) using 3D printing
- CAD models were made and manipulated to create the prototypes
- Testing was performed on the ergonomics and the sealability of the casing
- The model was validated by assembling the prototype and studying the results

Outcomes

- With the use of this product, the crew members can now practice good daily hygiene and use the wet wipes with ease
- The team created a workable prototype that satisfied all of SCA Americas' criteria:
  - The model allows for one handed use by utilizing a foot pedal mechanism
  - The model is waterproof, as seen by the sealability testing
  - The model is self-closing; when the foot pedal is released, the lid closes
  - The model is safe due to the lack of sharp corners and pinch points