The desired goal was to develop a soap bottle dispenser that would reduce the amount of remnant soap that is typically left at the bottom of traditional soap dispensers. The remnant soap is inaccessible by the soap dispenser in an upright position. The only way to make use of it is for the user to unscrew the dispenser unit from the top and pour it out manually or hold the soap bottle in unusual positions.

The benchmark was the Soft Soap® dispenser and we set out to establish important performance requirements. We looked at requirements such as the amount of total volume in the soap bottle dispenser, the amount of volume per discharge, the spring stiffness for the dispenser, the average product life cycle, and the most important to our design the amount of remnant soap left at the bottom. Our testing revealed that the typical volume of discharge was roughly 2.5 ml and the average remnant soap was 17.5 ml out of a 221 ml soap bottle. The spring stiffness was found to be 2.2 N/mm and the average product life cycle was 27 days.

A mold made of clay was prepared for the manufacturing of the bottle design prototype. Due to complications the prototype could not be produced as originally intended, but the shape of the mold sufficiently demonstrates the intended design.

We were able to meet our design requirements and the final design was able to outperform the benchmark. Our design was able to greatly reduce the amount of remnant soap at the bottom of the soap dispenser bottle while still maintaining or outperforming the benchmark in every other performance requirement. In addition, our design could potentially be extended to other liquid holding bottle dispensers such as shampoo bottles, etc.