

A large industrial stainless steel soup cooler is the central focus of the image. The cooler has a large, circular lid that is open, revealing the interior. The cooler is situated in a kitchen or food service area, with other stainless steel equipment visible in the background. The floor is made of reddish-brown tiles, and there are several white buckets and a yellow caution sign on the floor. The text "SouperCooler" is overlaid in a large, blue, serif font across the center of the image.

# SouperCooler

Blue A

# Cooling Timeline



Cook soup in steam cooker 180°



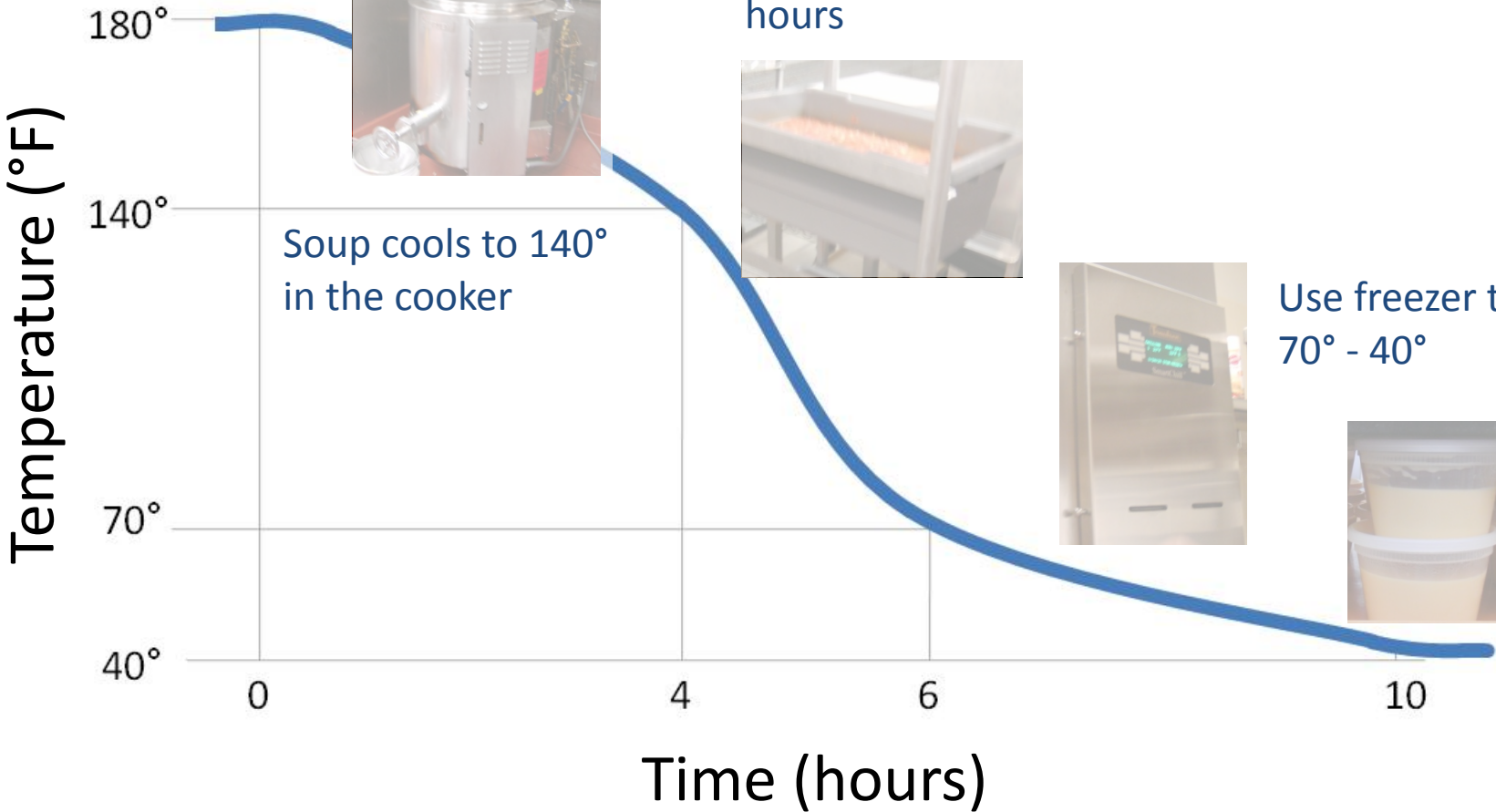
Soup must cool from 140° to 70° in two hours



Soup cools to 140° in the cooker



Use freezer to cool 70° - 40°



# Product Contract

Product description:

Heat exchanger to  
cool soup

Customer:

Community  
Servings

Market:

Medium scale  
kitchens



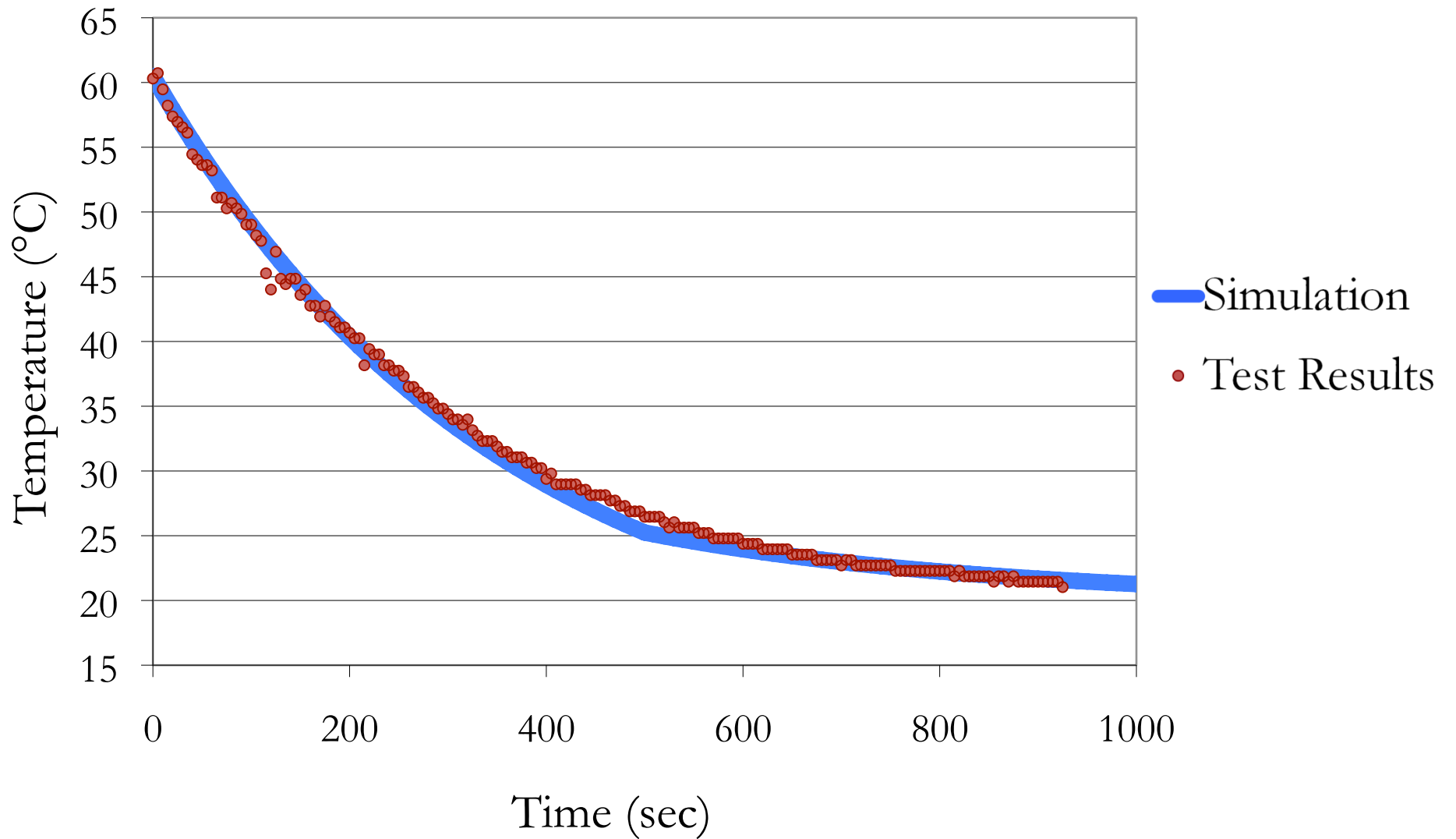
# Product Contract

Customer Need	Product Attributes	Units	Engineering Specifications
Cooling capability	Able to cool 60 gallons of soup from 140°F to 70°F	Hours	< 2
Easily lifted by 1 person	Weight	Lbs	< 50
Flexibility	Adaptable to multiple pot shapes and sizes	Binary	Yes
Cleanable	Wash inside and out	Binary	Yes
Food Safe	Follows FDA regulations	Binary	Yes
Inexpensive	Consumer price	\$	< 5,000
Uniform cooling	Max temp – min temp	°F	< 10
Cheap operating cost	Water cost + electricity cost	\$/run	< 5
Easy to use	Time to set up	Minutes	< 5
Does not cause overflow	Displacement Volume	Gallons	<10

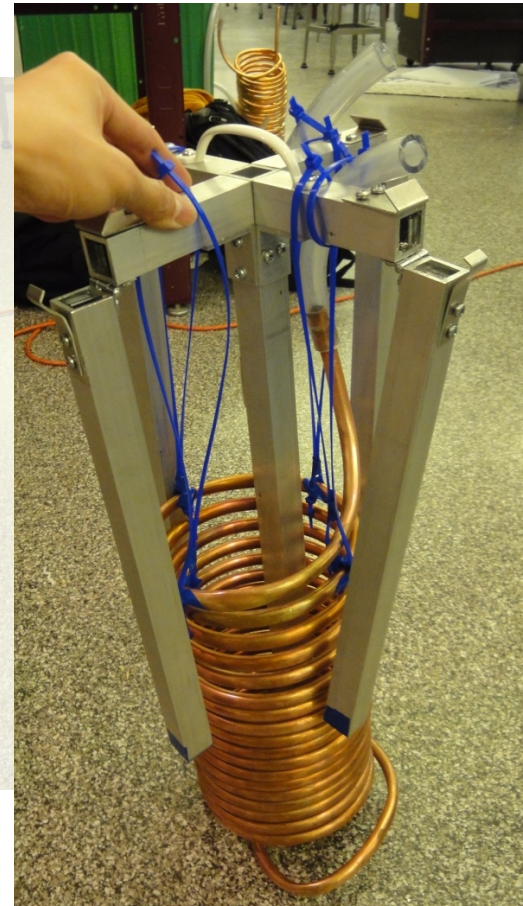
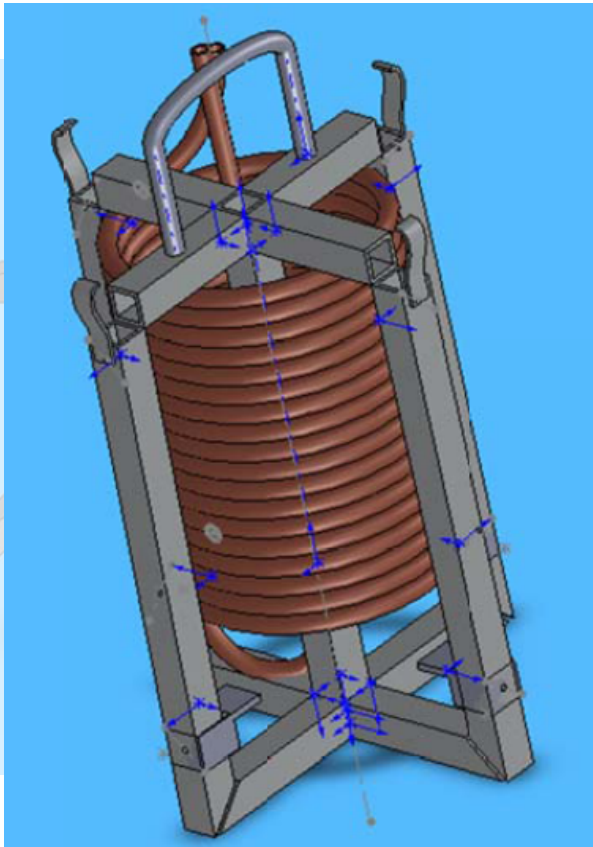
# Risk 1: Cooling Capability



# Simulation vs. Test Results



# Risk 2: Usability



# Outstanding Risks

Risk	Possible Next Steps
Energy Usage	Closed loop
Uniform Temperature	Stirring mechanism
Pre Cooling	Cyro-gel

