ASE6002

Team 3

Portable Electric Kettle

# Model Assumptions

## Environment

* Ambient air temperature: 20 degrees C
* Ambient fluid temperature: 20 degrees C

## Overall Packaging

* System outer diameter shall not exceed 3.5 inches in diameter, including material thicknesses
* System shape shall be cylindrical with radiused corners
* System shall weigh less than or equal to 20lbs when dry

## Fluid Vessel

* Bottom Inner radius (BIR) of the vessel shall be equal to 1.5 times the total material thickness (TMT)
* Vessel is assumed to have a vented, uninsulated lid

## Insulation

## Heating Element

Heating element is assumed to be circular

The heating element diameter cannot exceed the total system diameter minus the bottom inner radius of the vessel times 2

# Definitions

* Total Material Thickness (TMT): the sum of the vessel inner wall thickness, the insulation and the outer wall thickness

# Diagrams

Diagram of vessel wall composition