

# Autonomous Concrete Curing Machine



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## Introduction

### Problem Statement

Designing and implementing an Autonomous Concrete Curing Machine to optimize the curing process, enhance concrete quality, reduce the labor costs and water consumption, and improve construction efficiency while addressing the challenges of precision control and resource conservation in the construction industry.

### Constraints

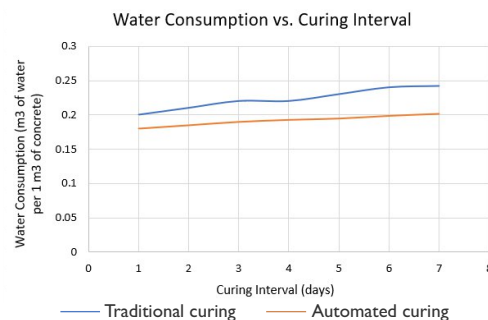
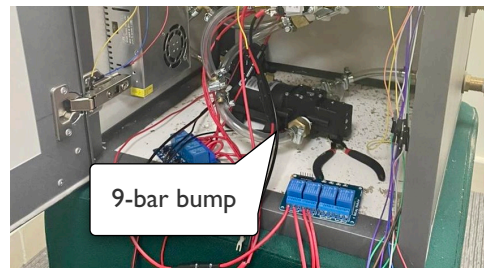
- The loading rate should be less than the evaporation rate
- The machine cost should be less than the labor cost.

### Specifications

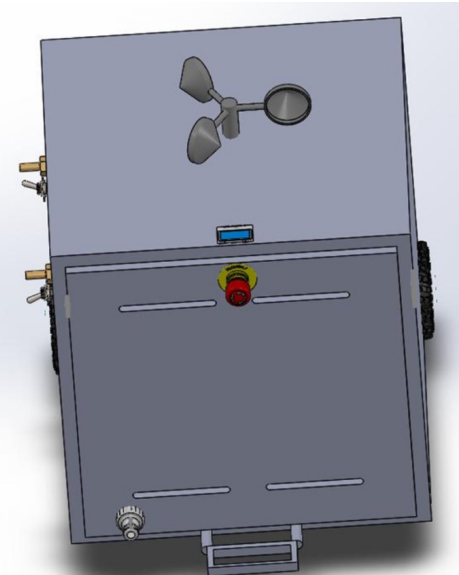
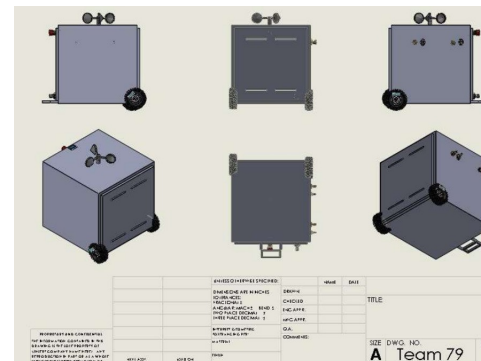
- Short set-up Time.
- Moderate Pressure-Spraying.
- Light weight.
- Low water Consumption.

## Validation

### Proof that specifications were met



## Prototype



## Conclusion

### Results

- Omitting the need for labor.
- Maintaining the need moisture level of the concrete at all time.
- Enhancing the strength of the concrete structure.
- Reducing the water consumption.

### Future Enhancements

- Increase the number of concrete slabs covered by one machine.
- Expand the usage of the machine to other structural types of concrete.
- Make it self-moving.