

## PROTOTYPE RELIABILITY STUDY

### CHALLENGE

- To find a solutions for problems in the manufacturing phase.
- Reduction of mass
- Not having a standard testing protocol

### PARTNER



The company is located at Stratford, Ontario and manufactures, patio furniture from recycled plastic.

### TEAM

- Renan Lucena, Project Engineer, C.R. Plastic products.
- Radhika Dhawan, Quality Assurance, CR Plastics Products
- Dr. Florent Lefevre Schlick, Faculty Supervisor, McMaster University
- Manjot Singh, M. Eng Manufacturing
- Suraj Raajan, M. Eng Manufacturing
- Muhammad Raneez, M. Eng Manufacturing

### MILESTONES & OUTCOME

- Regions of stress concentration in both the products were identified
- Shape optimization analysis was able to reduce weight of products
- Implementing the suitable suggestion to analyze further defect occurrence.

### VALUE

The reliability of their products will be increased using our current solutions without major changes to their current production line.

### NEXT STEPS

- Perform one physical product testing that can be compared to validate FEA simulation
- Implementing the suitable suggestion to analyze further defect occurrence.

### STUDENT REFLECTION

- Understanding how every solution needs to be framed based on the guidelines set by the community partner
- How to overcome new challenges

