



FAMU-FSU
College of
Engineering

Virtual Design Review 1

Team 509 - Corning



Team Introductions



Anthony Arroyo
*Manufacturing
Engineer*



Austin Cramer
*Control Systems
Engineer*



Khanh Nguyen
Material Specialist



William Shuman
Testing Specialist



Nathan Thompson
Design Engineer

Sponsor and Advisor



Project Sponsor
Dr. McConomy, Ph.D.
Professor



Project Sponsor
Jeffery Roche
Project Manager



Project Sponsor
Trent Brush
*Additive Manufacturing
Engineer*



Project Sponsor
Justin Barber
*Additive Manufacturing
Engineer*

Objective

The objective of this project is to mitigate debris on the mylar sheet during the justification process.

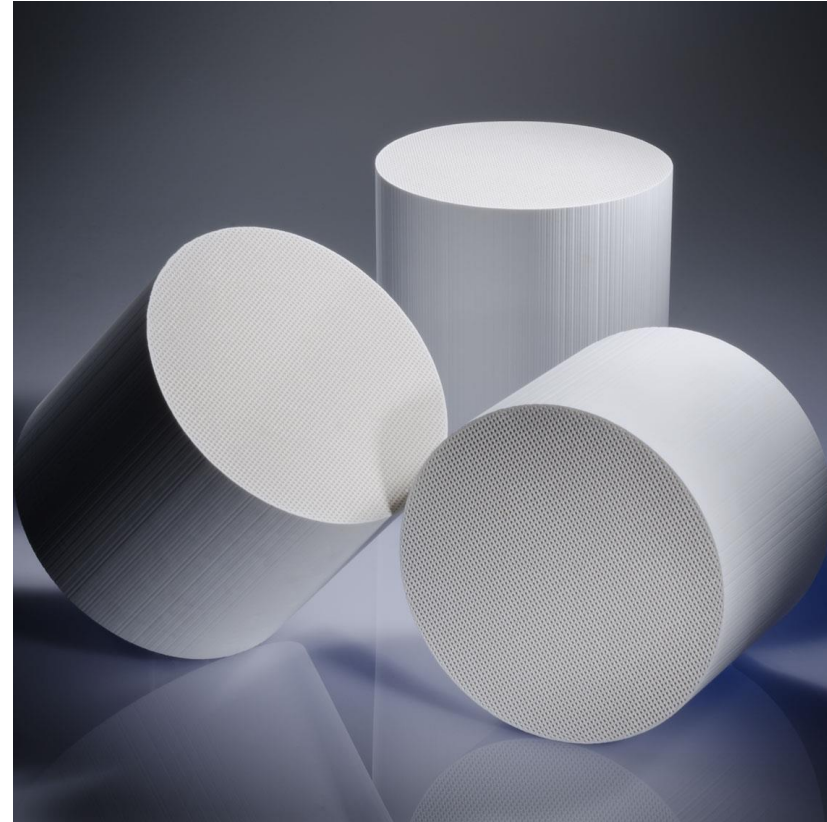
Background



- Manufacturer and marketer of ceramics, glass, and fiberoptics
- Manufacture diesel particulate filters, DPFs.
- Corning, NY

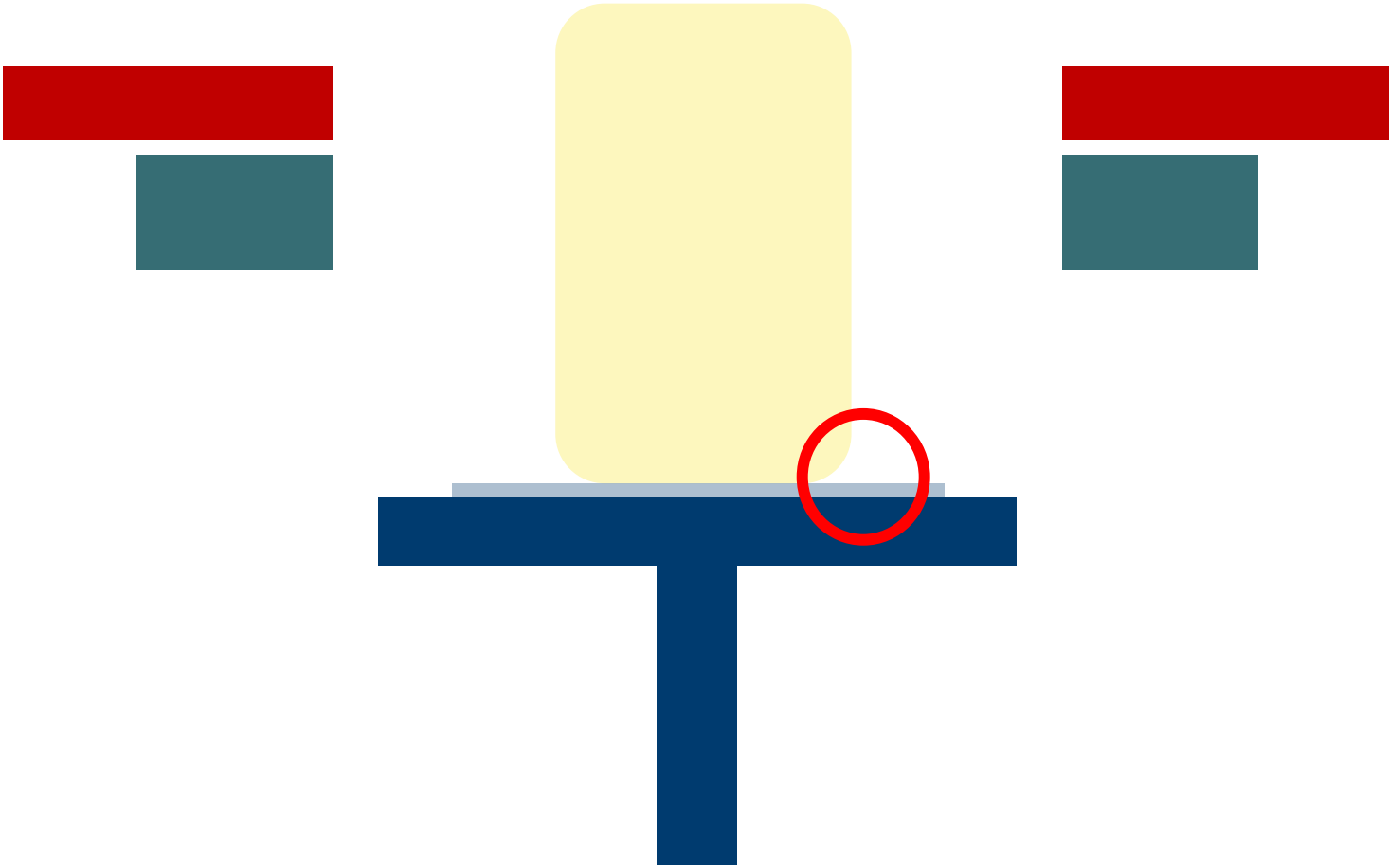
Background

- DPFs are used to filter diesel exhaust gasses.
- Made of an extruded cellular ceramic material.
- Cement is pumped in on both sides.



Project Summary





Key goals

Prevent Damage



Stay within budget



Reduce Waste



Market

Primary:

Corning's Factory and Manufacturing Process



Secondary:

Similar DPF Processing Companies

Tertiary:

Heavy Equipment Maintenance Companies

Assumptions

- Assume the robotic programming will remain constant throughout the project
- Solution needs to allow the robot to effectively handle parts
- Manufacturing process remains the same

Stakeholders

Primary:



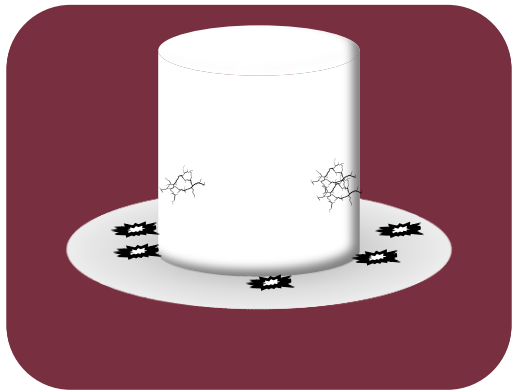
Secondary:



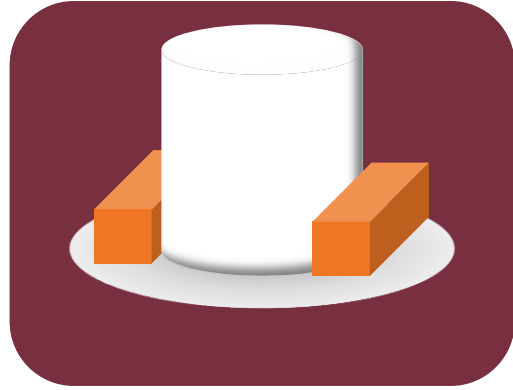
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Customer Needs



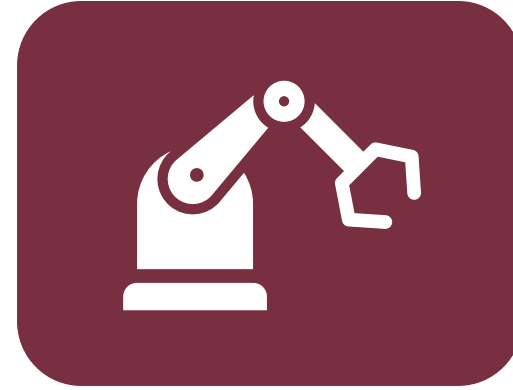
Prevent Debris



Seals to Tooling



Handles with Care



Automated

Functional Decomposition

Support

- Increase longevity
- Lower maintenance
- Implement automation

Safety

- Reduce workers entering
- Ergonomic design
- Ergonomic installation

Compatibility

- Integrate with tooling
- Work with current utilities
- Easy installation
- Stabilize

Prevention

- Prevent debris on mylar
- DPF prevent further damage
- Prevent downtime

Future Work



Thank You

Anthony Arroyo | Austin Cramer | Khanh Nguyen | William Shuman | Nathan Thompson



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Khanh Nguyen

FAMU-FSU College of Engineering

Project Summary

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Khanh Nguyen

FAMU-FSU College of Engineering

Key goals

- Prevent Damage**
- Stay within budget**
- Reduce Waste**

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Anthony Arroyo

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Customer Needs

- Prevent Debris**
- Seals to Tooling**
- Handles with Care**
- Automated**

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Functional Decomposition

- Support**
 - Increase longevity
 - Lower maintenance
 - Implement automation
- Safety**
 - Reduce workers entering
 - Ergonomic design
 - Ergonomic installation
- Compatibility**
 - Integrate with tooling
 - Work with current utilities
 - Easy installation
 - Stabilize
- Prevention**
 - Prevent debris on mylar
 - DPF prevent further damage
 - Prevent downtime

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