

RAIL GRINDING - DUST CONTAINMENT



From left to right: Evan Osmera, Paul Louvar, Blake Myers, and Leo Jimenez



TEAM 15

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PROJECT SUMMARY:

Rail grinding is a process by which railroad tracks are maintained to extend rail life. Loram's proprietary self-powered on-track machine, with up to 120 powered grindstones, runs on damaged, worn tracks, removing the damage and returning the rail to its desired shape. This process produces sparks and dust that is hazardous to the train crew and the environment. The current containment system on a train car consists of a vacuum to collect dust and silicone-fiberglass blankets to guide the dust towards the collection system. Even with these blankets, a significant amount of dust still escapes into the environment. The goal of this project is to improve the blanket design to reduce dust emission.

DESIGN GOAL:

To reduce the amount of dust that escapes into the environment in the most efficient way possible. The design should also be easy to manufacture, improve or equal the durability of the current containment system, and be easily compatible with current rail grinding machines.

DESIGN CONSTRAINTS:

- Easily compatible with LORAM's current design
- Durable under extreme heat and cold
- Must not increase the frequency of replacing blankets
- Cost effective and easy to manufacture



Grind Buggy Prototype (1/4 Scale)



Full Grind Buggy (Current Design)