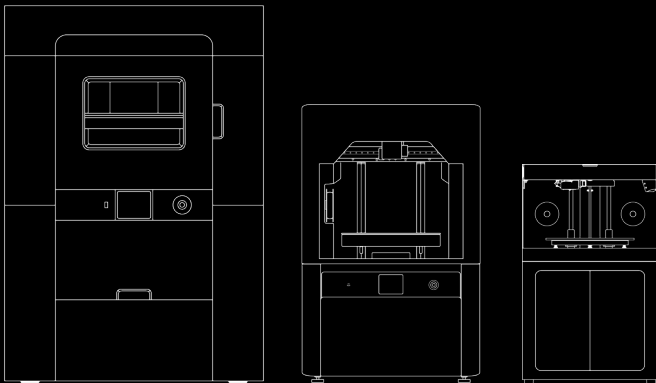


Custom Safeguards

Food and Beverage/Packaging Industry
Additive Manufacturing Application Spotlight



Industry: Food & Bev / Packaging
Application: Custom Safeguards
Technology: FX20™, FX10™, X7™
Materials: Onyx®

Custom Safeguard

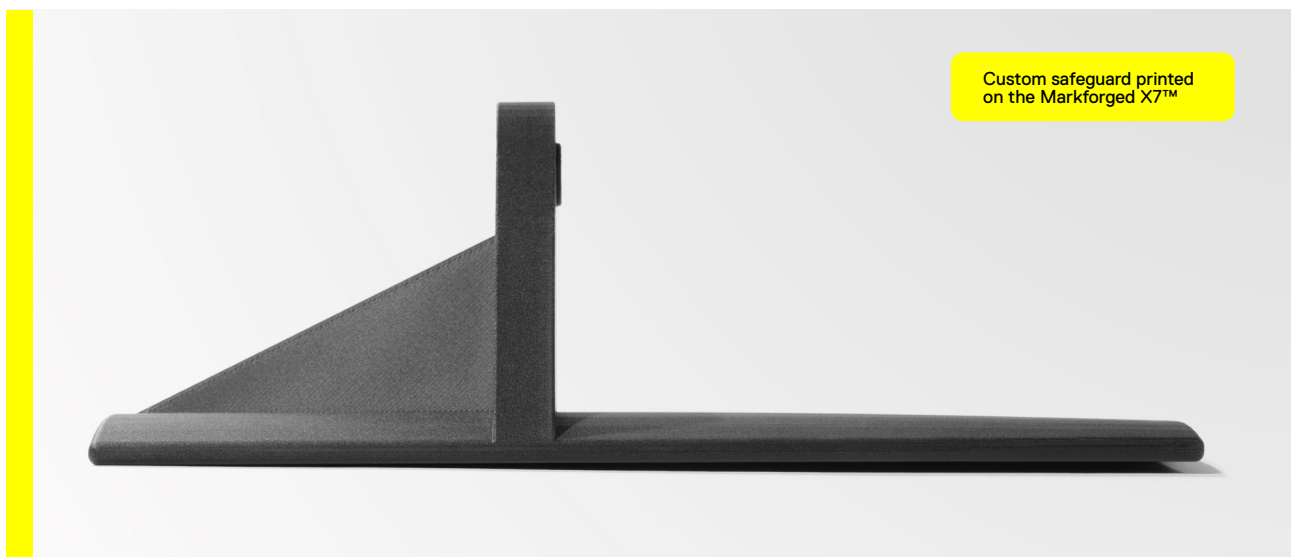
On the factory floor, safety always comes first. Within Food & Beverage, aligning the safety protocols in a multi-vendor environment that mixes older and newer machines can be a challenge. Sometimes, there are safety concerns that are not clear until the line is built and ready to operate. It is critical to address these hazards as quickly as possible, which results in production delays while waiting for specialty parts or local machine shops. Manufacturing teams can reduce these delays by creating custom safeguards on-site with Markforged additive manufacturing equipment, deployed near the point-of-need.

The ability to modify these custom parts quickly to meet needs, and with a range of mounting configurations, means that solutions can be delivered in hours not days, resolving hazards and getting the line moving. This approach also makes it possible to empower all workers on the factory floor to share suggestions for safety measures, boosting safety awareness and participation. And over time, the team collects their additive manufacturing safeguard successes into their digital warehouse. These parts make it easy to align all of their lines to the same safety protocols.

The process of creating additive manufactured safety parts:

- Determine the nature of the safety parts required, the attachment points required, and additional custom parts requirements.
- Modify existing designs / create new geometry in CAD.
- Produce strong, reliable custom safety components on-demand using industry-grade composite Onyx®.
- For added strength, include Continuous Fiber Reinforcement (CFR) to achieve metal-strength parts.
- Iterate and optimize part performance using the Simulation feature in the Digital Forge™.
- Where needed, evolve design for secondary objectives such as service access for maintenance teams, and poka-yoke elements to ensure the parts are always installed as intended.

“Build a digital warehouse of successful parts designs – for fast deployment when needed without physical storage.”



Design Process

The safety team identified a pinch hazard on an adhesive bundler spindle that lacked an off-the-shelf safeguard component in the specific position needed to incorporate it into the packaging line. The Engineering & Design Team modified a fixed guard design in order to create a precisely sized custom additive manufactured part that could be attached via existing mounting points on the bundler machine. They were able to iterate and optimize part performance using Simulation while still permitting access behind the guard for machine servicing without removing the guard.



“Production teams can erase these delays by tackling custom safeguard requirements on-site with Markforged additive manufacturing equipment deployed near the point-of-need.”

ROI Highlights

1. Produce needed safeguards in hours, not days.
2. Build a digital warehouse of successful parts designs — for fast deployment when needed without physical storage requirements.
3. Empower more participation in safety programs.

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