

CASE *Study*

Frommelt Safety barrier curtains improve safety and efficiency on Alcoa Automotive's conveyor lines



Four Guardian Barrier Curtains from Frommelt Safety Products help to minimize the time required for castings to enter the inspection room, maintaining the darkroom environment and improving plant efficiency.

At Alcoa Automotive's Michigan Casting Center, castings of engine blocks are manufactured and must be tested prior to shipment. A flour penetrant inspection (FPI) is required on every casting to ensure that it is free of hairline fractures. This inspection system presents many challenges, because a darkroom environment is necessary to effectively complete the inspection. This means that a light tight seal is required of the room. Compounding the challenges of this environment is the fact that castings are brought into the room via a conveyor system.

To maintain the productivity of the Alcoa facility, castings must enter the FPI room quickly, while minimizing the amount of light that enters the darkroom. If too much light enters the room, it can take up to 5 minutes for workers to become reacclimated to the darkness, significantly hindering productivity.

Jeff Foster, a designer on Alcoa's FPI line, was presented with the challenge to seal the conveyor opening, while still

providing the high-speed operation necessary to maintain productivity. Foster met with John Hogan of Applied Handling to examine his application, and Hogan soon realized the challenges that Foster faced.

Initially, standard overhead doors were specified for the conveyor openings due to their low price. However, it was quickly determined that the sectional doors would require a significant amount of mounting space, and they could not achieve the high-speed and high cycles required by the application.

Foster then examined high-speed rollup doors because they offered high-speed access and high-cycle ability, combined with a tight seal. While high-speed doors technically fit the application requirements, they ultimately proved to be cost prohibitive.

That's when Hogan introduced Foster to the innovative Guardian™ Barrier Curtain from Frommelt® Safety Products of Dubuque, Iowa. The Guardian is a simple, high-speed rollup curtain that provides an

exceptional seal on the conveyor openings. Plus, the Guardians could be automated to meet Alcoa's productivity requirements. Priced significantly less than a traditional high-speed door, the Guardian was ideal for the conveyor openings at Alcoa.

Foster chose to install Guardian systems on four of his conveyor openings, and has been pleased with their performance since their installation in February 2001. The Guardians open and close at 32" per second to allow the bins of castings to quickly enter the FPI area, while maintaining a light tight seal when they are closed. The tight seal is maintained by horizontal stabilizer bars in the curtain that maintain the seal under positive or negative pressure, while a unique soft bottom edge design conforms to the floor for a tight bottom seal. According to Foster, "Overall, our productivity has increased in this application."



The Guardian completely seals the conveyor opening, preventing light from entering the darkroom.

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