

# Sonex Valueline Baffles Tone Down Noise Levels in Car Horn Factory

You'd think noise would be just part of getting the work done at places such as construction sites, tooling plants - and car horn factories. But at FIAMM Technologies, Cadillac, MI, a factory that makes more than 60,000 truck, car and boat horns each month, noise has been toned down as part of the factory's drive toward product quality, worker safety and ISO 14000 certification. Instead of feeling like they're caught in the middle of a busy intersection all day, workers now walk comfortably around the floor, free of a mandatory requirement to wear earplugs during their shifts.

The sound of all those horns used to reverberate throughout the plant, requiring employees to wear earplugs to meet OSHA safety standards. But process quality is as important as product quality at FIAMM, whose goal is to provide the world's best car horn with minimal environmental impact -- including noise. A system of wall panels and ceiling baffles from illbruck, inc., especially designed for easy installation in the large FIAMM plant, absorbs noise and controls reverberation, reducing the overall sound level in the factory.

## Sound-absorbing system reduces reverberation

"With 600,000 square feet of production area made of concrete walls and floors as well as high metal ceilings, we had a reverberation problem," said Brenen Fuller, a technologist at FIAMM. "Although the horns are tested in sealed test cabinets, we hear them during the production process. That noise, combined with typical manufacturing sounds such as welders, compressors and conveyors, reverberated off all the hard parallel surfaces."

The horns can be as loud as 115 decibels at frequencies of up to 500 hertz, a significant interruption to employee communication and concentration, not to mention their long-term hearing ability. The reverberation levels had to be reduced so employees wouldn't have to

wear earplugs to meet OSHA standards (less than 90 decibels averaged over 8 hours). FIAMM contacted Richard Conroy, an acoustics consultant with Memtech, Inc. who conducted sound level tests throughout the plant. Conroy recommended SONEX Valueline Panels and Baffles from illbruck, inc. to absorb overall reverberation, and because the panels are Class 1 fire-rated for low flammability and flame spread, a major criteria for FIAMM. Made from willtec, illbruck's proprietary foam, SONEX Valueline panels are fiber-free and coated with Hypalon to resist dust and oils. The 2 by 4-foot white panels, which add to the clean, crisp look of the production area, were installed on the walls about 20 feet up from the floor and hung in rows from the ceiling.



## "Clothesline" method saves time, money

Concerned about interrupting production time to install the baffles over the work area, FIAMM asked illbruck engineers to develop a time and labor-saving installation system. The U-shaped production area made it inconvenient to move a scissor lift around the floor. illbruck engineers based their idea on the age-old clothesline hanging method, which allowed baffles to be installed over the production area from one side of the room. Each baffle is outfitted with two corkscrew hangers, which are clipped to a cable suspended across the width of the production area. After the first baffle is slipped over the cable, workers can easily push the rest of the baffles across the row without having to move the scissor lift. Spacers inserted

between the baffles provide clearance for ductwork, lights or other fixtures.

The new system cut installation time in half, while the baffles reduced overall sound in the plant by 12 decibels. "The baffles certainly helped to quiet the area," said Fuller. "It has allowed us to identify other noise areas we want to address so we can continue to provide a comfortable and productive work environment."

As a result of the sound-absorbing installation, FIAMM Technologies workers can make quality warning systems at levels and frequencies that sound loud and clear without the feeling that they're in heavy traffic.