Janesville Acoustics
Solution Provider

Implementing Innovative Ideas

Success Stories of Benchmarking & Proposals
Implementing Innovative Ideas

• Current Design: Metal storage bin located on interior floor of vehicle (used to store beverages)

• Customer Issue: Metal storage bin was getting hot from engine heat. As a result the heat was causing the contents (ice) to melt and allow water to splash out of the bin and into the vehicle interior.

SOLUTION:
Janesville Acoustics designed a molded fiber liner that shields the metal storage bin from the engine, thus eliminating the excess heat and melting ice/water issue.

VALUE PROPOSITION:
• Enhanced thermal properties – provides additional 80° F protection
• 100% recyclable product
• Dual layer fiber design provides significant acoustical enhancement
• Structural design allows for easy installation
Customer Issue: Our customer had a vehicle in the field which received poor ratings from car buyers, as well as data from a respectable 3rd party source, on their initial quality survey data for interior cabin noise levels. At stake for our customer was market share and ultimately damage to their brand.

**SOLUTION:**
Taking vehicles provided by the customer, Janesville Acoustics was able to tear the vehicle down to better understand the current composition and acoustical treatment. Then using alternative and new materials, we were able to retro-fit these vehicles, performing acoustical tests to validate the improved performance prior to returning them to the customer for their confirmation vehicle level testing. These changes, which included approximately 12 parts, were then introduced into mass production within 6 months of the confirmation testing.

**VALUE PROPOSITION:**
- Improved vehicle level acoustics
- New standard for acoustical treatment for OEM vehicles
- Increased market penetration for Janesville
- Fast to market
- Low investment for implementation
- 100% recyclable product
Customer Issue: Our OEM customer had the desire to improve the management of noise coming into the interior cabin of their small car platform. This noise came predominantly from the heating and ventilation system and incrementally from the engine compartment.

**SOLUTION:**
Janesville Acoustics designed and developed an acoustical close out panel for the underside of the instrument panel for this vehicle. The part is manufactured using a resonated felt to facilitate sound management and was designed to provide parts integration when compared to the current close out panel system (injection molded plastic, a blow molded HVAC duct and an acoustical felt pad).

**VALUE PROPOSITION:**
- Improved acoustical performance in the interior cabin
- Reduction of parts
- Mass/weight reduction
- Reduction in tooling costs
- Sustainability
- 100% recyclable product
- One piece molded structural design provides reduced part complexity and allows for easy installation
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Customer Issue: An OEM had a goal to improve the appearance and acoustical performance of the trunk system for their top selling vehicle over the current design and construction.

SOLUTION:
Leveraging our knowledge of fibers and fiber processing, Janesville Acoustics was able to develop and design a new material, Profile T® (patent pending), that provided a superior appearance, was more rigid and integrated acoustical features into the base product at a price point consistent with the OEM’s cost goal. This material, product and project were delivered in a world class timeframe of 5 months (material development, validation, tool build, product validation and launch) with a launch that was invisible to the OEM.

VALUE PROPOSITION:
- Improved acoustical performance of the trunk (road noise)
- One piece molded structural design provides reduced part complexity and allows for easy installation
- Enhanced appearance
- Fast to market
- Improved rigidity
- Mass/weight reduction
- Recyclable product
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- Original Design: A traditional injection molded plastic close out panel is designed with associated glued on die cut sound absorbers, separate air ducts and added lighting.

**IMPROVED DESIGN SOLUTION:**
Janesville Acoustics designed an alternative one piece molded, dual layer fiber IP close out panel with integrated air ducts and LED lighting.

**VALUE PROPOSITION:**
- 40% weight savings over traditional panel design
- Up to a 25% cost savings over traditional panel design
- 100% recyclable product
- Dual layer fiber design provides significant acoustical enhancement
- One piece molded structural design provides reduced part complexity and allows for easy installation
- Fiber design provides additional safety advantage over rigid plastic panel
- Received prestigious Automotive News PACE Award for innovative part design
- Design provides decorative appearance and is matched to specific color requirements

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Customer Issue: An OEM had an issue with the seat track design in their vehicle. The ends of the seat track channel were exposed causing a safety issue (consumers were injuring themselves on the metal track). A redesign of the track channel was not a feasible option, so they needed an immediate solution to eliminate the safety issue. This was a visible area in the vehicle so the solution had specific design requirements that had to be considered and incorporated.

SOLUTION:
Janesville Acoustics designed a decorative molded part that covers the exposed end of the seat track channel, thus eliminating the track safety issue. The part consists of molded fiber with a decorative color matched carpet top layer. Janesville Acoustics worked directly with the OEM’s seat manufacturer to design the part to meet all required seat specifications.

VALUE PROPOSITION:
• One piece molded structural design allows for easy installation
• Structural design provides solution to a safety issue
• 100% recyclable
• Design provides decorative appearance and is matched to specific color requirements
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Original Design: Current design was separate die cut insulators attached to the back of the floor carpet. Due to the low material thickness of the current design, the part would sag over time and form ridges as it conformed to the sheet metal below (giving the part/carpet a washboard effect).

SOLUTION:
Janesville Acoustics provided a flat molded insulator with increased density that could withstand weight requirements while providing acoustical and structural benefits.

VALUE PROPOSITION:
- Increased thickness and rigidity eliminated washboard effect
- 100% recyclable
- Molded structural design allows for easy installation and fit
- Denser material design provides improved acoustical performance
Customer Issue: An OEM had released a vehicle with a new fuel efficient engine. The engine, however, was considerably nosier, therefore a barrier/absorber was needed in the engine area to shield the inner cabin from the noise level.

**SOLUTION:**
Janesville Acoustics designed a high temperature material, Profile E®, that could be molded to exact shape specifications and span across the entire engine compartment area to effectively reduce/eliminate the added engine noise and provide improved acoustics to the vehicle.

**VALUE PROPOSITION:**
- One piece molded structural design allows for easy installation
- 100% recyclable
- Design provides significant improvement in acoustics
Current material and method: Cavities exist in the sheet metal structure of vehicle bodies. These cavities create noise and air paths through which sound can travel and even be amplified. Typical treatment consists of fiberglass batts or ground foam sealed into a plastic bag to create a sound absorptive insulator.

Issues:
1) Sound absorption hindered as it travels through the plastic bag
2) Material settles to one end of the bag resulting in uneven coverage
3) Movement of the plastic bag could be heard within the vehicle
4) Limited options in plastic bag size and shapes

IMPROVED DESIGN SOLUTION:
Janesville Acoustics provided an alternative 100% polyester material insulator that offers various benefits over the current fiberglass/bag option.

VALUE PROPOSITION:
• 100% recyclable product
• Fiber design provides 20% acoustical enhancement
• 20% cost savings over current design (no additional plastic bag needed)
• One piece fiber design provides reduced part complexity
• Fiber insulator can be custom designed to meet specific fit, thickness and shape requirements
• Fiber material will not lose its shape or settle vs. the shape restriction and movement of the current fiberglass option