

ROUSH®

VEHICLE SOUND PACKAGE DEVELOPMENT

Roush's experienced technical experts tune the acoustical insulation products in vehicles to enhance sound quality, while minimizing cost and weight. By employing systematic diagnostic test methodologies along with specialized instruments, software and facilities, the Roush team assesses the acoustical insulation requirements of vehicles in quantifiable terms. This, along with analytical modeling, enables Roush to prescribe insulation products that are custom-tailored to achieve the vehicle acoustical targets. Roush then validates the effectiveness of desired sound package components by fabricating, installing and testing these components.

www.roush.com

We're focused, we're efficient, and we're at our best when we're challenged to think outside the box — critical traits when our customers' success depends on how quickly we can take their visions from the sketchpad to the marketplace.

For more information, please [click here](#).



ACOUSTICAL INSULATOR DEVELOPMENT:

- Test material and insulator performance
- Model material and insulator performance
- Tune material and insulator characteristics to enhance performance
- Design insulators which yield optimal performance and comply with packaging requirements



VEHICLE INSULATORS INVESTIGATED:

- Hood insulators
- Headliners
- Engine side dash insulators
- Carpet insulators and floor mats
- Interior dash insulators
- Mastics/damping systems
- Interior wheelhouse insulators
- Exterior wheelhouse insulators
- Package tray insulators
- Door insulators
- Body static and dynamic seals
- Upper and side cowls
- Hush panels
- Trunk trim and insulation
- Fender-to-cowl insulators
- Door trim and insulation
- Rear quarter panels and insulators
- Pillar trim and insulators
- Tunnel insulators
- Heat shields and under body insulators

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Roush is adept at balancing the airborne attenuation of each insulator in the vehicle sound package to achieve the acoustical targets you seek. Our close association with a wide variety of acoustical insulator suppliers allows Roush to apply the latest technologies in developing and designing optimized vehicle sound packages. In addition, our long history with damping products enables Roush to strategically locate damping on body panels to attenuate structurally excited low frequency acoustical phenomena.

VEHICLE SOUND PACKAGE TEST AND ANALYSIS TOOLS

- On-road studies
- Wind tunnel studies
- Chassis rolls in a hemi-anechoic chamber
- Aachen head HMS III data acquisition system
- Sound quality analysis with ArtimiS software
- Reciprocity
- In-cab reverberant decay
- SEAM and AutoSEA analytical modeling
- SAE J-1400 sound transmission loss
- Large reverberant chamber ASTM C-423
- APAMAT II machine
- Alpha cabin
- Sound intensity
- Laser vibrometry
- Damping
- Impedance tube
- Vehicle air leakage
- Boundary element analysis (BEA)
- Finite element analysis (FEA)
- Nearfield acoustical holography (NAH)

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