

# POWERTRAIN

## NVH SOLUTIONS



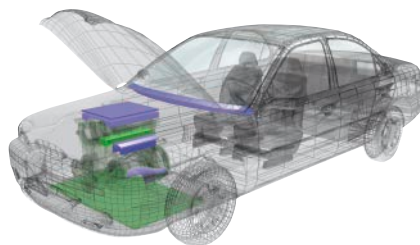
### Powertrain NVH Solutions Improve Interior Sound Quality

Dow Automotive is a global provider of NVH solutions for body-in-white, interior and powertrain applications. Our material science and characterization expertise, combined with design engineering, processing knowledge and program management, enable us to provide OEM and tier customers with solutions that meet or exceed vehicle performance targets at lower weight and cost.

Dow Automotive's Powertrain NVH solutions improve interior sound quality and minimize powertrain noise by effectively treating high-ranking noise sources, or by providing engine compartment treatments. Our powertrain acoustic solutions can also help quickly resolve NVH problems, as well as reduce development time and costs.

Designed for use in powertrain and under-the-hood applications, Dow Automotive's NVH solutions include a variety of barrier and/or absorbing material options. Barrier materials include heat-stabilized thermoplastic olefins or thermoplastic vulcanizates which can be specified at various densities. Absorbing material options include molded or extruded polyurethane foam, melt-blown acoustic fibers, or a unique closed-cell olefin foam produced by Dow Automotive.

With the expanding use of plastic components in powertrain applications, it is becoming more challenging to control radiated shell noise. Dow Automotive delivers the solutions and acoustic expertise to help quickly resolve NVH problems. In many cases, we can provide a requested prototype part within one week.



#### *Applications*

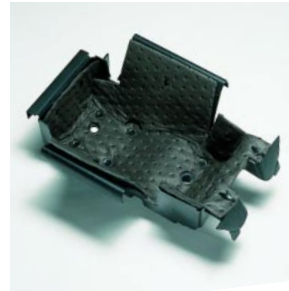
Powertrain and under-the-hood covers and sound barriers  
Air intake manifold NVH covers  
Engine valley NVH absorbers and dampers  
Engine-side cowl top insulators  
Engine covers  
Cam covers  
Transmission covers  
Engine closeout panel sound deadeners  
Interior dash insulators  
Fuel rail covers  
Throttle body covers

#### *Product advantages*

- ▶ Powertrain NVH solutions effectively treat high-ranking noise sources, or problems in engine compartments, to minimize powertrain noise and improve interior sound quality
- ▶ NVH solutions lower interior sound pressure levels and improve articulation index and overall interior sound quality
- ▶ Dow Automotive can minimize development time and costs required to meet NVH targets by providing effective NVH treatments
- ▶ Dow Automotive can quickly resolve NVH problems

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## NVH SOLUTIONS



*Dow Automotive engine covers and plenum wraps are OEM-approved and specified.*

### *Performance benefits\**

- ▶ Powertrain solutions typically reduce engine compartment sound pressure levels by 2 to 4 dB (average across engine rpm range & frequency range)
- ▶ Interior sound pressure levels typically can be reduced by 1 to 4 dB (driver's right ear average—results vary depending upon targeted frequency or rpm range)
- ▶ Powertrain solutions typically show improved articulation index measurements (driver's right ear average)

\*Based on Dow Automotive case study evaluation of air intake manifold plenum wrap.

### *Full-service support from a single-source supplier*

In addition to the largest selection of material solutions, Dow Automotive offers the following services to support powertrain acoustical treatments:

- ▶ Complete product design capabilities
- ▶ Fit, function and acoustic optimization
- ▶ Program management and program engineering

- ▶ Tool/manufacturing process development
- ▶ Math modeling of solid part geometry utilizing SDRC IdeaSS, Catia, Unigraphics, PDGS and AutoCAD
- ▶ Complete CAE capabilities include NVH, structural, thermal growth, impact and acoustical modeling
- ▶ Comet Acoustics (BEA) and AutoSEA (SEA)
- ▶ Acoustic testing capabilities include material characterization, complete NVH measurements and state-of-the-art test equipment
- ▶ Manufacturing and assembly capabilities delivered through Sound Alliance joint venture with Cascade Engineering

Contact your customer service representative, or visit [dowautomotive.com](http://dowautomotive.com) for more information. For technical information select "Downloads" on home page and "Technical Data Sheets" on the next page.

*We listen. We deliver.*



***Dow Automotive***

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