

# SUPERIOR NOISE DAMPING MATERIAL SOLVES NVH ISSUES TO CREATE QUIETER EVS



It may come as a surprise that EV and HEV consumers are voicing the need for quieter vehicles. After all, electric engines are nearly silent. Engine noise is not the issue, however. It is all of the other noise and vibration that was formerly masked by the sound of an internal combustion engine. These noises have now become apparent.

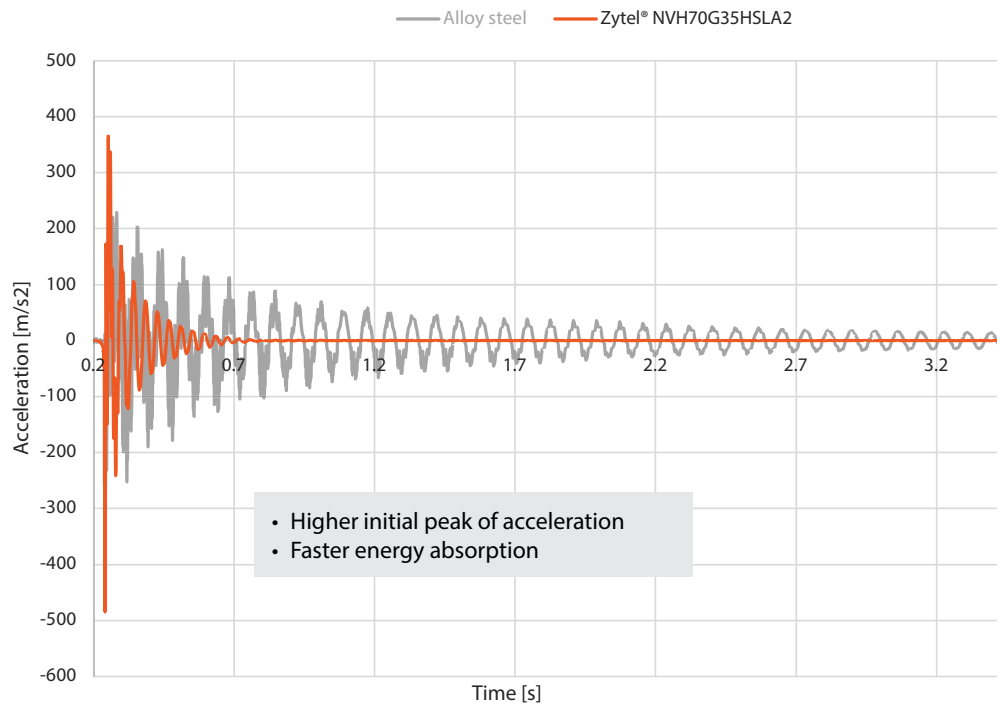
There are other contributors to noise. For example, continuous efforts to achieve light-weighting for improved fuel efficiency are driving metal replacement in various powertrain applications. But redesigning parts with plastic often results in NVH issues due to differences in part mass and material stiffness.

In addition, there are now noise emission laws in place to regulate vehicle passer-by noise to 68dBA by 2024.

Zytel® NVH74G35HSLX BK146LM can help designers meet these NVH challenges. This material is a 35% glass-reinforced PA66 that provides excellent damping performance at elevated temperatures. Higher noise transmission loss compared to conventional 35% glass-filled PA66 offers a quieter driving experience. The product can be used in applications requiring high damping performance at elevated temperatures ranging from air ducts and resonators to sealed engine covers. Additional applications include e-motor, compressor, and sensor housings where damping is needed.

Zytel® NVH74G35HSLX BK416LM can provide valuable benefits, including:

- Superior NVH performance in the temperature range of automotive applications
- Less noise vs. metal
- Weight reduction (30 to 50%) compared to metal parts
- Cost reduction and design integration are possible by eliminating aluminum and insulation



Source: Celanese

Zytel® NVH74G35HSLX BK146LM vs. alloy steel shows a higher initial peak of acceleration and faster energy absorption.

## DESIGN AND TESTING SUPPORT

Our innovation centers and application development teams engage with customers from the design stage through material development, CAE, NVH testing, and processing stages. We are committed to providing total solutions and creating value for our customers. Combining advanced materials science and NVH testing capabilities enables us to develop material solutions that address critical customer concerns, including:

- High noise and vibration damping performance
- Light weighting
- Dimensional stability
- Complex shapes with integrated functions

## THE CHEMISTRY INSIDE INNOVATION™

The foundation of everything we do centers around what our customers need. It's not just about the solutions we innovate, but also how we work with our customers. Through our worldwide network of innovation and technical centers, our leading researchers work in close collaboration with customers, from concept to commercialization, using a wide range of processing techniques, prototyping technologies, and testing expertise.

For more information about Zytel® NVH74G35HSLX, contact your Engineered Materials representative.

celanese.com

This publication was printed based on Celanese's present state of knowledge, and Celanese undertakes no obligation to update it. Because conditions of product use are outside Celanese's control, Celanese makes no warranties, express or implied, and assumes no liability in connection with any use of this information. Nothing herein is intended as a license to operate under or a recommendation to infringe any patents.

Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates.

Copyright © 2023 Celanese or its affiliates. All rights reserved.



Form No. 001-20866-HMC0123