



VISCOELASTIC MATERIAL SOLUTIONS

Roush engineers and manufactures viscoelastic material based solutions for a wide variety of noise and vibration control applications. Roush's Viscoelastic Materials Laboratory is one of the core technologies supporting the development of these products. Extensive research and our proprietary database of over 3,000 viscoelastic materials provides invaluable support for Roush's ongoing NVH projects. With a suite of material measurement equipment and software, each material in our database has been tested to determine its loss factor (damping) and modulus (stiffness) versus both temperature and frequency.

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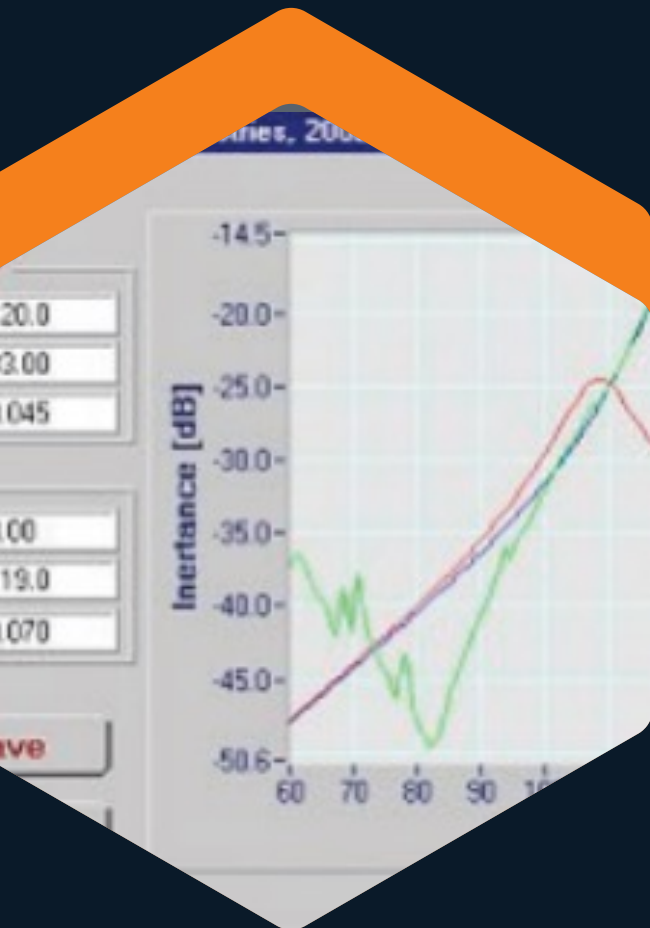
We're focused, we're efficient, and we're at our best when we're challenged to think outside the box — critical traits when our customers' success depends on how quickly we can take their visions from the sketchpad to the marketplace.

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



APPLICATIONS AND PRODUCTS:

- Isolation Systems
- Vibration Absorbers
- Damping Systems
 - Laminated Metal
 - Free Layer Treatments
 - Constrained Layer Treatments
 - Tuned Mass Dampers



SOLUTION DEVELOPMENT PROCESS:

- Model Generation
- Dynamic Simulation
 - Roush Analysis Tools
 - Linear and Nonlinear FEA
 - Modal Strain Energy
- Materials Search
- Product Design/Evaluation
- Experimental Evaluation
- Production Launch

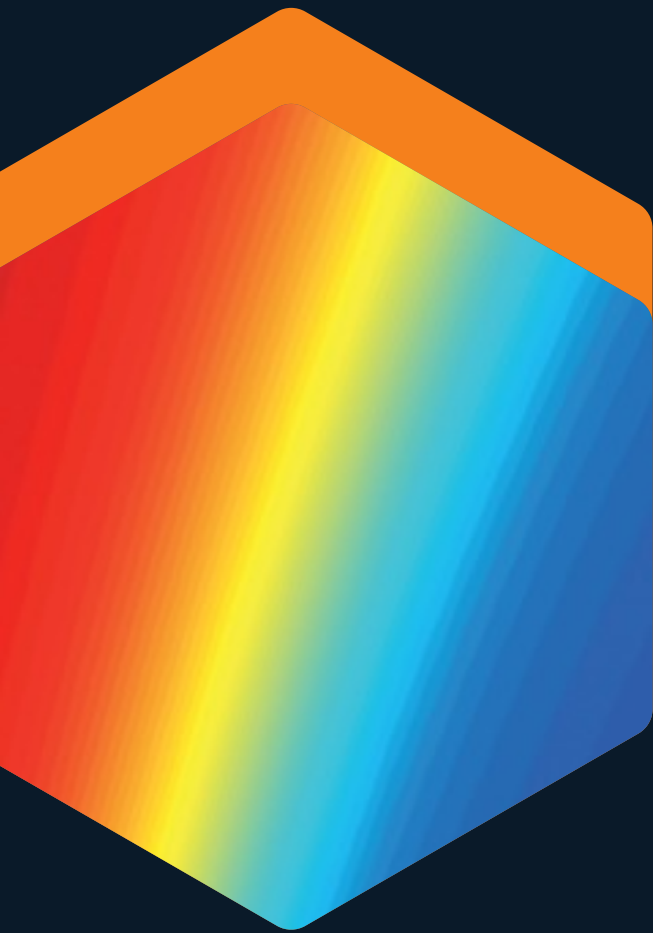
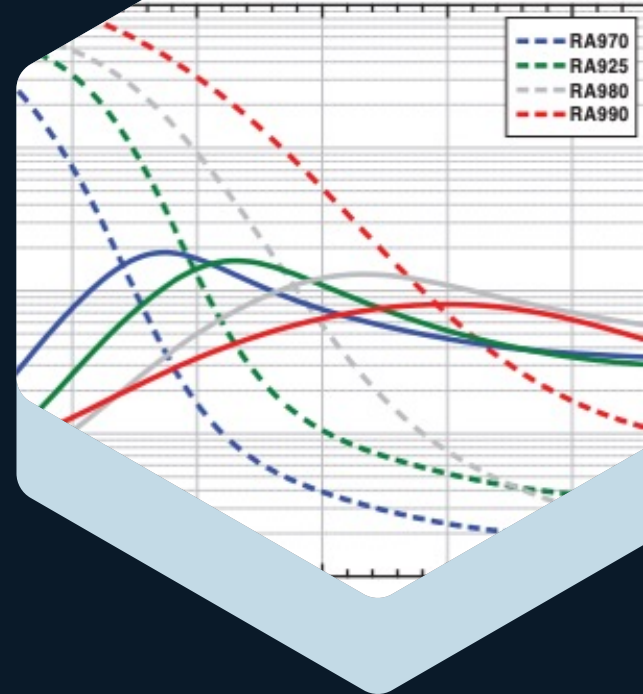
Roush provides viscoelastic material testing, recommendations for product applications, and manufactured damping and isolation products.

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VISCOELASTIC MATERIALS TESTING CAPABILITIES

Roush routinely provides viscoelastic material testing services for wide range of materials and customers. Stiffness and damping properties of materials can be determined under a variety of test conditions. This information is used for material selection and design for noise and vibration control products.



STATIC AND DYNAMIC MATERIAL CHARACTERIZATION:

- Complex Modulus (includes modulus and loss factor)
- Temperature and frequency dependence
- Static prestrain dependence
- Dynamic amplitude dependence

STANDARD TESTS:

- Vibrating beam tests (ASTM E-756)
- Oberst bar tests
- Impedance tests
- Load deflection tests
- Creep and relaxation tests
- Resonance tests
- Accelerated aging tests
- Peel and shear adhesion
- Fluid exposure

TYPES OF MATERIALS:

- Adhesive
- Rubber
- Plastic/Composite
- Foam
- Mastic
- Many others

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