

WINNING ON DURABILITY

Endurica User SPOTLIGHT

Geely Auto Group, an automotive OEM based in Hangzhou, China, was founded in 1997. Geely employs more than 50,000 people; operates 12 plants and five global R&D centers. Geely is the first Chinese automotive manufacturer to sell more than 10 million units globally. The group manages several leading brands including Geely Auto, Lynk & Co., Zeek, Volvo, and Lotus. Geely Auto Group is also the global strategic partner to Malaysian national automaker PROTON. The firm has been a Fortune 500 company since 2011.



GEELY



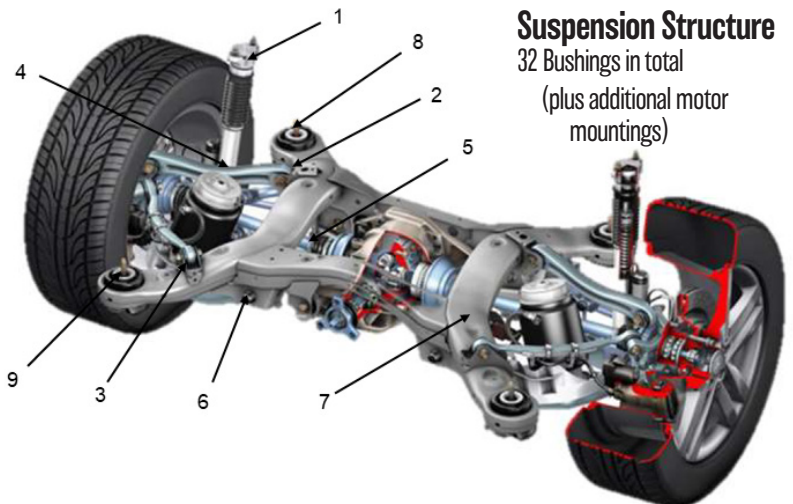
Testing and validating rubber parts is a long and expensive process. Endurica's simulations help us shorten the design phase and our bushings and other elastomeric components achieve the requirements when full vehicle validation is done. Endurica helps us meet our durability requirements.

— Wenzheng Cheng
Senior Expert on Durability
Geely Automotive

Endurica Value Add for Geely:

- Shorten product development cycles
- Cost reduction and lightweighting
- Increase quality, speed to market
- Product development risk reduction

1. On the shock absorber
2. Upper control arm - front
3. Upper control arm - rear
4. Under the shock absorber
5. Lower control arm - front
6. Lower control arm - rear
7. Stabilizer bar
8. Subframe - Front
9. Subframe-rear

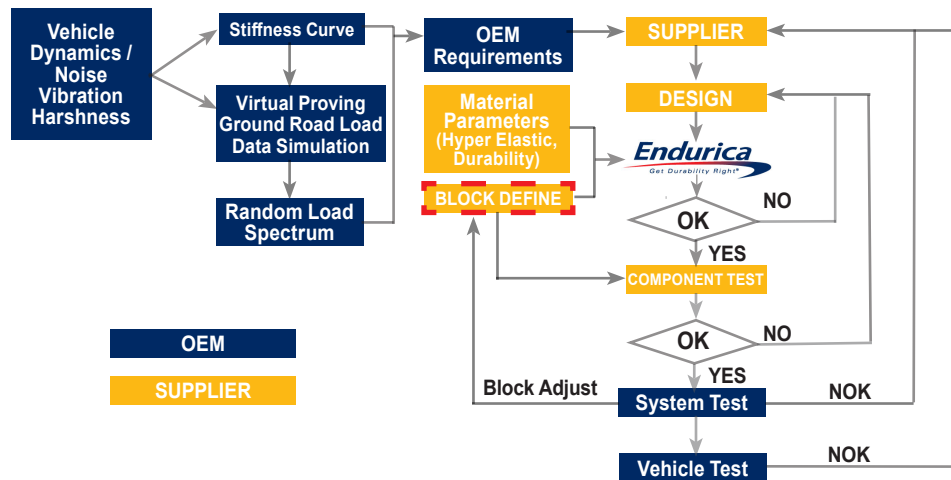


Suspension Structure
32 Bushings in total
(plus additional motor mountings)

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CLIENT DURABILITY REQUIREMENT

Geely uses Endurica's software in their passenger car development and shares their work with their suppliers. The bushings are in many locations: above/below the shock absorbers, with control arms, stabilizers, frame elements and motor mountings. As the OEM, Geely is responsible for providing technical requirements. Each bushing supplier is responsible for achieving design and durability goals. The process below illustrates where Endurica assists Geely from the component level to the full vehicle.

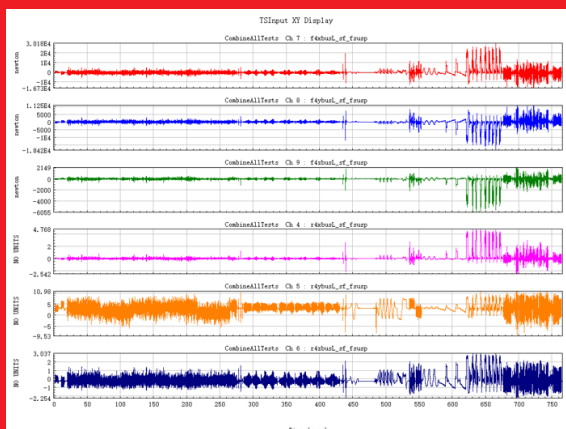
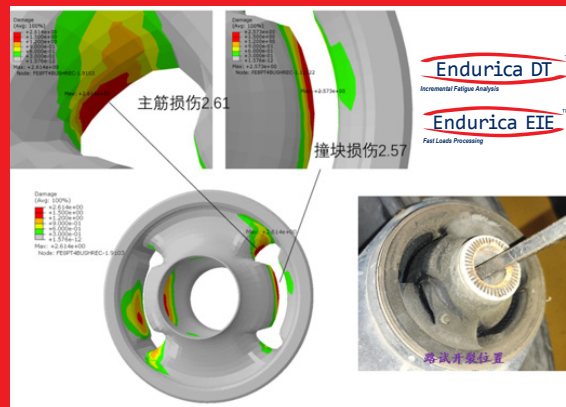


There are 32 bushings in our passenger cars. For the Geely Galaxy M9 project, Endurica enabled us to test many loading and temperature variations in dynamic, static, linear and torsional requirements. The simulations helped our entire rubber supply chain to meet our short R&D timelines.

— Zhiyuan Zhang
Senior Expert on Durability
Geely Automotive

SOLUTION APPROACH

Geely's design validation uses Endurica EIE™ and Endurica DT™ solvers to process the road loads and block cycle data. Their engineering process makes use of Endurica's ability to compute pseudo-damage equivalence, to preserve load features and phase relationships, to optimize structural cracking problems, stiffness, and bushing angle. Endurica workflows enable Geely and their rubber component suppliers to anticipate failure mode and stiffness loss under real-world conditions.



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