COPOLY Technologies

PERFORMANCE WITH IMPACT ™

Temax Damping Technology

What is a Viscoelastic Damper?

A ***viscoelastic damper*** is a damper that is created using a **viscoelastic material**; a material that exhibits both ***viscous*** and ***elastic*** characteristics when undergoing deformation. ***Viscoelastic dampers act* like a spring/damper system**, and in certain cases approximate the performance of a hydraulic damper. These characteristics are derived only from the polymer molecular structure of the material itself and a molecular orientation process we call ***shape engineering***.

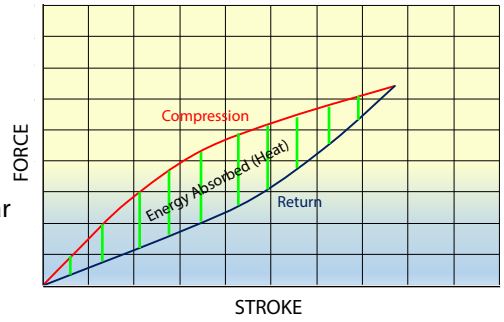

FIGURE 1

What is a Viscoelastic Material?

Viscous materials, like honey, resist shear flow and strain linearly with time when a stress is applied. Elastic materials strain when stretched and quickly (linearly) return to their original state once the stress is removed. Viscoelastic materials have elements of both of these properties and, as such, ***exhibit time-dependent strain***. *This time dependent strain is what allows our dampers to be the perfect solution for energy absorption (heat).* **The hysteresis in the performance curves is energy absorbed (heat). SEE FIGURE 1.**

What is Shape Engineering?

Shape engineering is proprietary process of shaping a viscoelastic material to a specific shape to orient the molecular structure in such a way to achieve specific performance in force vs travel performance and hysteresis. **Copoly Technologies has developed an extensive design database which allows us to tailor a damper to specific design requirements. SEE FIGURE 2.**

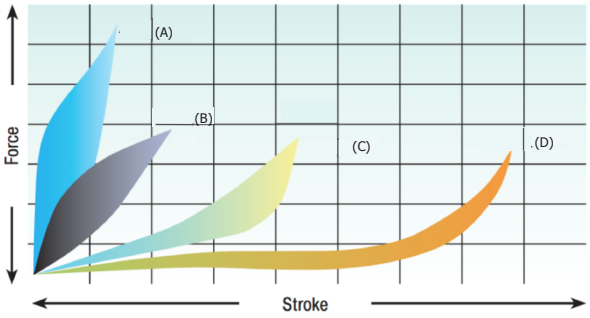

FIGURE 2

What Does This Mean?

- ***Solid State Design***-achieve spring/damper performance without the springs or the damper!

- ***Zero Maintenance***-no springs or dampers means no hydraulic fluid to leak, no seals to replace etc. Our solid state dampers have only two failure modes; excessive heat(>350F) and extensive physical damage. See our Survivability YouTube video: https://www.youtube.com/watch?v=Thp10XxBtVc

- ***Lightweight***- Copoly Technologies dampers absorb energy in less weight and space than hydraulic, urethanes, or rubbers.

- ***Small Space Claim***-Because Copoly Technologies dampers absorb more energy in a smaller space this allows for a minimal impact on component packaging.

- ***Durability***-Our proprietary molecular orientation process greatly enhances the strength and durability to 10 times rubber and 20 times urethane. BASED RATED FULL CAPACITY CYCLES.

- ***Adjustable Preload***-Allows the operator to adjust the force at which damping occurs. **SEE FIGURE 3.**

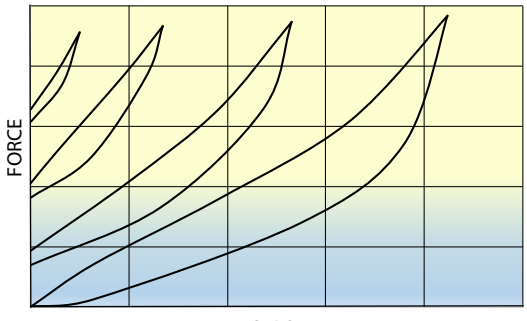

FIGURE 3

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