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FIRST INJECTION MOLDED THERMOPLASTIC (PC/PBT) ENERGY ABSORBER NAMED 2018 SPE® AUTOMOTIVE INNOVATION AWARDS “HALL OF FAME” WINNER

Troy, (DETROIT) MICH.– The first injection molded thermoplastic (PC/PBT) rear energy absorber for a vehicle bumper system, used on the 2003 Honda Element compact crossover SUV from Honda Motor Company, has been named the 2018 Automotive Innovation Awards Hall of Fame winner by the Automotive Division of the Society of Plastics Engineers (SPE®). This will be celebrated by honoring the technology and the companies and people originally involved in developing this application during SPE’s 48th annual Automotive Innovation Awards Competition & Gala on November 7, 2018. The energy absorber, made with XENOY™ Polycarbonate/Polybutylene Terephthalate (PC/PBT) resin from SABIC (then known as GE Plastics), replaced expanded polypropylene (EPP) foam energy absorbers in less package space at lower cost with better damageability performance.

To be considered for a Hall of Fame Award, an automotive plastic or composite component must have been in continuous service in some form for at least 15 years and broadly adopted in the automotive industry. This application certainly qualifies as over 80 million pounds of XENOY™ (PC/PBT) injection molded energy absorbers have been validated and launched on multiple vehicles, in both front and rear bumper system applications, leading to numerous innovations improving crash safety worldwide.
Energy absorber technology with XENOY™ resin set the precedent for many other industry-first applications. The use of XENOY™ (PC/PBT) resin was first recognized in the industry in 2004, when Ford Motor Company won the SPE® Hall of Fame Award for the bumper on the 1984 Escort developed by Ford Milan (Visteon). The material was recognized again in 2005 when Suzuki Motor Corporation won an SPE Automotive Innovation Award in the safety category for the first pedestrian protection energy absorber on the 2005 Swift. Tekagi Seiko was the system and tooling supplier and material processor. In 2013, it was recognized for an SPE Automotive Innovation Award in the chassis category, as the first global one-piece front bumper energy absorber on the 2013 Fusion and Mondeo sedans produced by Ford Motor Company. Magna Exteriors & Interiors was the tier supplier/processor.

The energy absorption technology has also been recognized as a finalist, two times, in the 2011 SPE Automotive Innovation Awards. Those finalists included use of XENOY™ resin on: the first lower leg protector/undertray with protection-safety functionality on the 2011 C-MAX from Ford Motor Company (Faurecia: system supplier and material processor), and the injection molded pedestrian-safety upper load path/fascia reinforcement on the 2011 Range Rover Evoque compact utility vehicle. Also in that year, the technology was recognized on another innovative nomination – crash boxes for truck cabin occupant protection on the 2011 India 7T LCV commercial truck produced by Volvo-Eicher Commercial Vehicle Pvt. Ltd. (Machino Plastics Ltd: system supplier and material processor).

Injection molded (XENOY™) energy absorber technology offers improved styling freedom and functional integration as 15 mm less packaging space is required, compared to EPP foam used previously, as the resin energy absorber efficiency enables smaller offsets (approximately 20% - 30% reduction at equal load) resulting in a 20% weight savings. The Honda Element rear energy absorber with XENOY™ resin demonstrated the best performance results in 2003 Insurance Institute for Highway Safety (IIHS) testing. It demonstrated the lowest rear bumper repair costs (over 50% lower costs in most applications and the highest bumper rating in 5 MPH crash test results of large luxury cars and small and midsize SUVs. Improved consistency over temperature ranges is also achieved (impact consistency from -30 degrees centigrade to 60 degrees centigrade). In addition, better low-speed performance is gained with lower rail loads (approximately 20% -30% reduction at equal intrusion), lower intrusion, and lower peak loads resulting in less damage to the beam and improved driver and passenger safety.
On Wednesday, November 7, 2018, representatives from Honda R&D Americas, Net Shape (now part of Shape Corp.), Shape Corp., and SABIC will accept the award on behalf of the original team that worked to develop the first injection molded thermoplastic (PC/PBT) energy absorber for a vehicle bumper system on the 2003 Honda Element at the 48th-annual SPE Automotive Innovation Awards Gala, at the Burton Manor in Livonia, Michigan.

The SPE Automotive Innovation Awards is the oldest and largest competition of its kind in the world. Dozens of teams made up of OEMs, tier suppliers, and polymer producers submit nominations describing their part, system, or complete vehicle and why it merits the claim as the Year’s Most Innovative Use of Plastics. This annual event typically draws over 800 OEM engineers, automotive and plastics industry executives, and media. As is customary, funds raised from this event are used to support SPE educational efforts and technical seminars, which help educate and secure the role of plastics in the advancement of the automobile.

The mission of SPE is to promote scientific and engineering knowledge relating to plastics worldwide and to educate industry, academia, and the public about these advances. SPE’s Automotive Division is active in educating, promoting, recognizing, and communicating technical accomplishments in all phases of plastics and plastic-based composite developments in the global transportation industry. Topic areas include applications, materials, processing, equipment, tooling, design, and development. For more information about the SPE Automotive Innovation Awards Competition and Gala see www.speautomotive.com. For more information on the Society of Plastics Engineers, see www.4spe.org.

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