



FOR IMMEDIATE RELEASE: (10/23/08)

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SPE[®] TO HONOR FORD MOTOR COMPANY WITH VEHICLE ENGINEERING TEAM AWARD AT INNOVATION AWARDS GALA

TROY, (DETROIT) MICH. – The Automotive Division of the Society of Plastics Engineers (SPE[®]) International today announced that it will honor Ford Motor Company with its **Vehicle Engineering Team Award** for the automaker's significant use of innovative plastics content on the new Flex™ cross-over utility vehicle (CUV). The honor, which will be bestowed at the 38th-annual **SPE Automotive Innovation Awards Gala**, November 20, 2008, at Burton Manor in Livonia, Mich., will be accepted by Ford's Vice-President of Engineering, Paul Mascarenas, who oversees all engineering standards for car, truck, SUV, and cross-over utility vehicles for the company's Ford, Lincoln, and Mercury brands. The **Vehicle Engineering Team Award** recognizes the technical achievements of teams comprised of automotive designers and engineers, tier integrators, materials suppliers, toolmakers, and others whose work – in research, design, engineering, and/or manufacturing – has led to significant integration of polymeric materials on a notable vehicle.

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*SPE Vehicle Engineering Team Award to go to Ford Motor Co.
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The Ford Flex CUV features a number of innovative plastics applications, many of them industry-firsts, such as:

- **Capless Refueling System with Mis-Fuel Inhibitor (MFI)** –North America’s first plastic capless refueling system with a mis-fuel inhibitor features an injection-molded, ultrasonically welded unit molded of high-temperature polyphthalamide (PPA), which is also conductive to bleed off static charge. Laser etching is used to mark operator instructions as well as serial numbers permanently. The unit, which combines vacuum relief with fuel sealing, features an ergonomic and “intuitive” design that eliminates previous challenges of unscrewing gas caps, the risk of losing or improperly reinstalling the cap, or not installing the cap at all. It also makes refueling faster and easier and prevents consumers from accidentally using the wrong fuel type, since it senses fuel-nozzle size. The capless refueling system also reduces comparative hydrocarbon emissions and meets LEV-II requirements for evaporative emissions.
- **Satin-Chrome Decklid Appliqué** – This appearance-enhancing decorative part is the largest satin-chromed appliqué in production – 30-50% larger than appliqués used previously – and is the first time chrome-colored plastic has been used to make a flat part of this size. The injection-molded acrylonitrile butadiene styrene (ABS) appliqué saves 1 lb/0.5 kg of mass, \$15 USD of piece cost, plus tooling investment vs. previous steel and aluminum systems and is used to differentiate the Limited Edition from base models, generating added revenue. A unique attachment strategy was employed to handle the variation in thermal expansion between the chromed outer surface and substrate. The satin-chrome plated appliqué is available with or without a hidden, integrated backup camera to increase rearward visibility.
- **Injection-Molded Crushable Armrest with Decorative Grab Handle** – This injection-molded ABS substrate with vinyl skin and urethane foam-in-place design provides consumers with the 360-degree grab surface on the inner door panel they prefer while providing the durable, crafted bright-accent appearance favored by design studios – all while avoiding a costly, multi-piece build-up of the armrest. The system has been specially designed to meet safety crush loads and durability requirements without compromising aesthetics.
- **Integrated Refrigerator / Rear-Floor Console** – An industry first, this unit combines a rear-floor console with a compressor-driven refrigerator (whose cooling-time performance is up to 30% faster than a traditional home appliance). The molded-in-color refrigerator compartment assists with moisture management as well as cleanability, and a unique integral vent design supports thermal-management requirements while only drawing 4.5 amps of power and with low noise output. Recycled, injection-molded glass-filled polypropylene (PP) is used to reduce cost, mass, and assembly.
- **Integrated Floor Shifter / Front Console with a Recycled SMA Structure** – This modular floor console and shifter assembly uses an all plastic (recycled, injection-molded SMA) structure to support a floor-based shifter and eliminate use of metal bracketry previously used to secure the shifter to the vehicle floor pan. The integrated system simplifies online assembly and improves package space, thus improving stowage and craftsmanship. It also reduces cost (\$7 USD plus assembly labor) and weight (5 lb/2.3 kg) vs. earlier designs.

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- **Integrated Roof Shade / Auxiliary AC Duct / Headliner Reinforcement** – This integrated headliner system arrives at the assembly plant already carrying an auxiliary air-conditioning duct, headliner stiffener, headliner attachment base, moon-roof opening stiffening rings, and dual sun-shade carrier, reducing online assembly operations and costs, lowering part count from 22 to 15, lightening the headliner by 1 lb/0.5 kg, and allowing for a larger daylight opening and better airflow management and distribution. By integrating the duct and shade system using high-heat ABS and a high-strength hot-melt adhesive with nitrogen-assist spray, the installation process can be better controlled to meet required tolerances, saving \$10-15 USD piece cost / vehicle and significant tooling investment.
- **Rear-Footwell Ambient Lighting** – An entirely new feature, footwell ambient lighting provides interior vehicle illumination of rear footwells along with front and rear cup holder and rear heating/ventilation/air-conditioning (HVAC) controls. Injection-molded, light-diffusing acrylic materials provide ambient lighting with uniformity of blended colors (from red/green/blue (RGB) light-emitting diode (LED) light sources) and cross-car distribution of light without “hot spots.” The design approach also reduces costs and reduces vehicle power consumption while increasing usable life of interior lighting.
- **Long-Glass Polypropylene Overhead Console** – This is a unique use of injection-molded long-glass fiber-PP materials in an above-the-beltline, Class A interior part with light texturing and in light colors. A special UV-protection package helps stabilize the colorant. The A-surface side of the mold is heated more than the B-surface side to ensure a resin-rich surface and avoid glass read-through for excellent aesthetics. The resulting improved craftsmanship and appearance come at a slight cost reduction as well.
- **Integrally Molded Energy Absorption Features** – The patent-pending injection-molded, high-impact PP door-trim substrate’s design features integrally molded, energy-absorbing rib structures that replace pelvic safety-foam bolsters, improving occupant protection during side-impact events while reducing piece price, tooling costs, and assembly costs. The vehicle’s 5-Star side-impact performance is due in part to the design of this innovative door-trim substrate.
- **Expanded-Polypropylene Head Restraint Core** – This patent-pending safety application is the first time expanded-polypropylene (EPP) foam head-restraint insert that has been used to meet FMVSS-202a static requirements in a headrest. Local depressions in the core are used to reduce permanent set during FMVSS-202 “backset” and “height” retention testing. A unique snap-fit design is formed without the need for slides or lifters in the low-cost, steam-chest tooling, providing a secure fit to the head-restraint rod and ease of assembly. The application provides significant piece-price and tooling avoidance savings vs. injection- or blow-molded plastic cores.
- **Acrylic Appliqués with SecureCode™ Invisible Keypad** – This industry-first application combines a high-gloss, molded-in-black-color B-pillar appliqué (traditionally done in painted metal) with a nearly invisible, semi-transparent keyless entry system (with light bars instead of numbers) that is button-activated by an approaching driver, yet helps maintain the vehicle’s signature “floating roof” design. Dual-shot injection molding, highly polished precision tooling, and a custom-grade of acrylic are used to provide the mirror-like finish of the part, which offers excellent dent, ding, and scratch resistance while improving craftsmanship and aesthetics. This execution saves significant weight and investment over the traditional solution.

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Speaking about the award, Paul Mascarenas, vice-president, Engineering said, "We are delighted that Ford Motor Company has been recognized in this way by this Society of Plastics Engineers award. The whole team worked tirelessly to bring innovative thinking to the Flex project and this honor for the entire engineering team is recognition of the hard work that has gone in to the Flex."

With its signature side grooves, all-black glass area, and distinctive multi-panel Vista Roof™ design, the Ford Flex CUV is like no other vehicle on the road. It offers spacious seating for up to seven passengers and a host of class-leading technologies, such as an integrated refrigerator between the second-row seats; the advanced, in-car SYNC system co-developed by Ford and Microsoft that voice-activates Bluetooth-enabled mobile phones and MP3 players; the EasyFuel™ capless fuel filler; ambient lighting, and a reverse camera system. SIRIUS® Travel Link™ is also available as part of the vehicle's voice-activated navigation system. It provides users with a suite of data services, including continuously updated fuel price information for more than 120,000 gas stations. The Flex CUV ranks among the best in its class for fuel economy, delivering an impressive 24 mpg/10 km/liter on the highway. Pricing for the vehicle starts at \$28,895 USD, including destination charges.

Ford Motor Company, a global automotive-industry leader based in Dearborn, Mich., manufactures or distributes automobiles across six continents. With about 229,000 employees and about 90 plants worldwide, the company's core and affiliated automotive brands include Ford, Lincoln, Mercury, Volvo, and Mazda. The company provides financial services through Ford Motor Credit Company. For more information regarding Ford's products, please visit the company's website at www.ford.com.

This year's **SPE Automotive Innovation Awards** gala will be held at Burton Manor (www.Burtonmanor.net) in Livonia, Mich. Paul Mascarenas and key members of the Ford Flex team will join other executive award recipients this year to be introduced to media during a short press conference at 4:00 p.m. that will then segue into the VIP Cocktail Reception, generously sponsored by Ticona. During the reception, Executive Award winners will be fêted by peers, media, and major sponsors. At 5:30 p.m. the main exhibit area will open for general admission and guests can review this year's **Automotive Innovation Awards** part nominations, as well as enjoy the specialty and antique vehicles that are always a highlight of the show. Dinner will begin at 6:30 p.m. and the program itself begins at 7:00 p.m. For those who wish to extend merrymaking and networking activities, the ever-popular *Afterglow* – also sponsored by Ticona – will run from 9:00-11:00 p.m.

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The mission of SPE International 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 for 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 ***Automotive Innovation Awards Competition and Gala*** or to download nomination forms and rules, visit the SPE Automotive Division's website at www.speautomotive.com/inno.htm , or contact the group at +1.248.244.8993, or write SPE Automotive Division, 1800 Crooks Road, Suite A, Troy, MI 48084, USA.

For more information on the Society of Plastics Engineers International or other SPE events, visit the SPE website at www.4spe.org, or call +1.203.775.0471.

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TROY, (DETROIT) MICH. – At the 38th-annual ***SPE Automotive Innovation Awards Gala***, November 20, 2008, SPE's Automotive Division will honor Ford Motor Co. with its ***Vehicle Engineering Team Award*** for the automaker's significant use of innovative plastics content on the new Flex[®] cross-over utility vehicle (CUV). The ***Vehicle Engineering Team Award*** recognizes the technical achievements of teams comprised of automotive designers and engineers, tier integrators, materials suppliers, toolmakers, and others whose work – in research, design, engineering, and/or manufacturing – has led to significant integration of polymeric materials on a notable vehicle.

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TROY, (DETROIT) MICH. – The exterior of the new Flex™ cross-over utility vehicle (CUV) features a number of innovative new plastics applications, which helped Ford Motor Co. qualify for the SPE® Automotive Division's **Vehicle Engineering Team Award**. For example, the vehicle features North America's first capless refueling system with mis-fuel inhibitor, the auto industry's largest satin-chrome decklid appliqué, and the use of 10 high-gloss, molded-in-color appliqué that help create the vehicle's "floating roof" look. The driver's side B-pillar appliqué incorporates Ford's new SecureCode™ invisible keypad, which provides next-generation keyless entry to the vehicle in a nearly invisible format. The award will be given on November 20 at the 38th-annual SPE Automotive Innovation Awards Gala.

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TROY, (DETROIT) MICH. – Among the innovative plastics applications featured on the new Flex™ cross-over utility vehicle (CUV) that helped Ford Motor Co. qualify for the SPE® Automotive Division's **Vehicle Engineering Team Award** this year was the automaker's development of an integrated roof shade / auxiliary AC duct / headliner reinforcement system and the use of long-glass polypropylene in a high-temperature, lightly textured, A-surface overhead console.

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TROY, (DETROIT) MICH. – The interior of the new Flex™ cross-over utility vehicle (CUV) features a number of innovative new plastics applications, including safety features such as patent-pending integrally molded energy absorption ribs in the vehicle's door panel substrates; the use of EPP foam for head-restraint cores in seat head rests; injection-molded, crushable armrests with decorative grab handles; and customer-convenience features such as industry's first rear footwell ambient lighting; the first integrated refrigerator / rear-floor console; and an integrated floor shifter / front console using a recycled SMA structure. The high number of innovative applications on this vehicle led SPE® Automotive Division to honor Ford Motor Co. with its **Vehicle Engineering Team Award**, which will be presented on November 20 at the 38th-annual SPE Automotive Innovation Awards Gala.

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