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**SPE® AUTOMOTIVE NAMES WINNERS FOR 54<sup>th</sup> ANNUAL AUTOMOTIVE INNOVATION AWARDS PROGRAM**

TROY, (DETROIT), MICH. – The Automotive Division of the Society of Plastics Engineers (SPE®) today announced the winners for its 54<sup>th</sup> annual **Automotive Innovation Awards Program**, the oldest and largest recognition event (established in 1970) in the automotive and plastics industries. The announcement was made on the evening of November 5, 2025, during the 54<sup>th</sup> SPE Automotive Innovation Awards Gala held at Laurel Manor in Livonia, Michigan, USA.

The Body Exterior Category winner is also this year’s Grand Award winner. The Grand Award winner is selected from the winners of each of the ten categories by a panel of Blue Ribbon Judges who are industry experts. This year’s winners are:

**GRAND AWARD & BODY EXTERIOR CATEGORY WINNER:**

**Multi-Flex Mid-gate**

OEM Make & Model: 2024MY General Motors Co. Chevrolet Silverado & GMC Sierra EV

System Supplier:	Flex-N-Gate LLC
Material Processor:	Molded Fiber Glass (MFG) Companies
Material Supplier:	CSP
Resin:	834UV SMC
Tooling Supplier:	Flex-N-Gate LLC
Process:	Compression molding

GM reimagined the mid-gate with its Multi-Flex/Multi-Pro version, including a flipper door that accommodates the vehicle’s 60/40 split door. This enables access to the cab for through-bed cargo while keeping a rear-seat passenger or child seat in place. A weatherable 834UV SMC compression-molded gate replaces a steel structure with no loss in structural performance. Stowable bed space spans nearly 11 ft. with the end-gate load step up. A one-button smart latching structure makes it easy to switch between multiple configurations. Back glass can be stowed in the flipper door. During development, 3D printed parts and bucks validated sealing; production parts boast leak-free performance.

**CATEGORY WINNER: Aftermarket and Limited Edition/Specialty Vehicles  
E Trunk Cargo Sliding Tray**

Make & Model: 2025MY General Motors Co. Cadillac Escalade IQ & IQL

System Supplier:	Thermoflex Corp.
Material Processor:	Thermoflex Corp.
Material Supplier:	Advanced Composites Inc.
Resin:	ADX-5301 TPO
Tooling Supplier:	Comet Tool Company
Process:	Injection Molding

A first at GM, and first known industry-wide, the E Trunk slide-out cargo tray solves the reach problem in a 55-inch-deep front trunk. By bringing gear forward, the tray avoids extended reach and twisting that can strain users accessing the cargo area. Engineered to support 200 lb. at full extension, the tray also maintains a slim profile, preserving usable volume. An innovative attachment method between chrome-plated ABS and TPO eliminates four metal mechanical fasteners for a cleaner interface. Compared with a comparable metal assembly, the lightweight construction helps to cut mass while sustaining stiffness and scratch resistance.

**CATEGORY WINNER: Body Interior  
Power Sliding Console**

OEM Make & Model: 2025MY Ford Motor Co. Ford Expedition

System Supplier:	Summit Polymers, Inc.
Material Processors:	Summit Polymers, Inc. Brose North America, Inc.
Material Supplier:	Washington Penn & Celanese
Resin:	Pro-Touch 8665 PP/EPDM Celcon M90 POM
Tooling Supplier:	Commercial Tool & Die, Inc.
Process:	Injection Molding

Redesigned power sliding console mechanism and structure delivers best-in-class 32.4 L storage (open or closed). Executed in 35% glass- and talc-filled PP, it replaces cast magnesium with a POM bracket and PP upper retainer with integrated third rail that trims mass by 2 kg ( $\approx 20\%$  vs. direct competitors), cuts part count in half, and saves about \$20 per vehicle while maintaining rigidity. The console travels 200 mm, adds a locking feature to protect valuables, and places an intuitive power switch ahead of the armrest. Hidden storage sits beneath the cupholders/media tray, with 47% recycled resin used in the upper retainer/rail.

**CATEGORY WINNER: Chassis/Hardware**

**Integrated Seal Bumper Retainer**

OEM Make & Model: 2024MY Toyota Motor Corp. Toyota Crown Signia

System Supplier:	Nifco America Corp.
Material Processor	Nifco America Corp.
Material Supplier	Celanese
Resin:	Celcon M90 POM
Tooling Supplier:	Nifco America Corp.
Process:	Injection Molding

A patent-pending integrated seal bumper retainer replaces the add-on foam gasket with a molded “umbrella” around the grommets, delivering water sealing without foam or manual assembly. POM brings a balance of flexibility and stiffness, enabling compression and rebound while enhancing Nifco’s quarter-turn push-pin system that streamlines repairs. A dual-slide tool minimizes umbrella size and keeps the sealing surface free of parting lines, forming the required four contact points to maintain compression against the body. Translatable to other vehicles, program economics include ~15% cost savings, and the all-POM construction supports Toyota’s circular factory recycling goals.

**CATEGORY WINNER: Electric and Autonomous Vehicle Systems**

**Battery Pack Weld Splatter Shield**

OEM Make & Model: 2025MY General Motors Co. Corvette ZR1X & E-Ray

System Supplier:	Creative Foam Corporation
Material Processor:	Creative Foam Corporation
Material Supplier:	Klöckner Pentaplast of America, Inc.
Resin:	Pentaform TH-M280/14 PVC
Tooling Supplier:	Creative Foam Corporation
Process:	Thermoforming

Patented, industry-first integrated shield prevents molten weld spatter from damaging critical battery pack components, reducing isolation faults and scrap. Laser tab welding poses a high-stakes risk: molten spatter can reach the cell stack, damage isolation films, and create electrical faults. The solution is this thin-gauge PVC shield that nests beneath the ICB, blocks debris by melting around particles without pass-through, and drops into the existing module envelope. The 0.3 mm, inherently V-0 film also guides cell tabs during installation, improving decking quality and speed while reducing rework and scrap. Commodity packaging-grade PVC keeps cost low, and specialized knife-cut tooling delivers intricate geometry.

**CATEGORY WINNER: Materials**  
**Fluoropolymer for Engine Seals**

OEM Make & Model: 2025MY General Motors Co. Chevrolet Silverado & GMC Sierra

System Supplier:	Freudenberg-NOK Sealing Technologies
Material Processor:	Freudenberg-NOK Sealing Technologies
Material Supplier:	Syensqo
Resin:	Tecnoflon FKM Fluoroelastomer
Tooling Supplier:	Freudenberg-NOK Sealing Technologies
Process:	Injection molding

A patented polymerization route for FKM (vinylidene fluoride-based fluoroelastomer) enables PCV valve, PCV hose, and oil-gallery plug O-rings to meet rigorous constraints while eliminating the PFAS surfactants traditionally used in emulsion polymerization. Believed to be an industry first, the material holds performance at 175°C and -40°C, resists hot oil and blow-by gases, and achieves tear strength  $\geq 18$  kN/m to meet ASTM D624. Sealing stability includes compression set at 175°C for 72 hours at 15% compression and  $\geq 30\%$  retained force in compression stress relaxation. The material guards against O-ring degradation that could result in stalling, increased emissions, and engine fire.

**CATEGORY WINNER: Powertrain**  
**Thin Wall ETC Actuator Gears**

OEM Make & Model: 2025MY General Motors Co. Chevrolet Equinox & GMC Terrain

System Supplier:	Schaeffler AG
Material Processor:	Schaeffler AG
Material Supplier:	Envalior
Resin:	Stanyl PA46
Tooling Supplier:	IWIS Mobility Systems GmbH
Process:	Injection Molding

First known ultra-thin wall gear design for electronic throttle control delivers accurate pedal-to-throttle response with a mid-gear design that absorbs impact to eliminate tooth breakage. High-flow PA46 blended with PTFE and 50 to 60% glass fiber achieves maximum stiffness and minimum wear. Gears achieve precise geometry via post-mold heat treating for 30% higher stiffness and 20% increased wear resistance. Novel gate strategy enables ultra-thin sections, required fiber orientation, tight gear tooth tolerances and balanced fill to minimize warpage with controlled shrinkage. Ultra-thin wall gear design enables the electronic throttle control to have 30% weight reduction, 20% cost reduction and 20% space reduction vs. a 1.5mm thick standard wall gear design in an electronic throttle control.

**CATEGORY WINNER: Process/Assembly/Enabling Technologies**  
**Tail Lamp Piano Key Lens**

OEM Make & Model: 2025MY General Motors Co. Cadillac Escalade IQ

System Supplier:	Forvia SE
Material Processor:	Forvia SE
Material Supplier:	Covestro AG
Resin:	Makrolon AL 2647-357868 PC
Tooling Supplier:	Forvia SE
Process:	Injection molding (3K)

In a first-known application use in North America, the team used three-shot rotary molding with reverse ejection to create a signature lens with 17% more optical efficiency. Staying on the moving side for all shots, the lens is transferred to the stationary side for ejection. Six potential injection sequences for the multicolor / multigrade PC shots (red, clear, black) are optimized to prevent color bleeding. Sculptural sections (4 to 10 mm) are filled from thin to thick, while revised draft angles protect optical quality. Tooling manages >250 shutoffs, versus the typical 10 to 20. Part savings: 20% weight, 50% assembly.

**CATEGORY WINNER: Safety**  
**Integrated Dual Brightness Enhancement Film**

OEM Make & Model: 2025MY Ford Motor Co. Lincoln Navigator and Ford Expedition

System Supplier:	AUO Corporation
Material Processor:	3M Company
Material Supplier:	3M Company
Resin:	PET PC
Tooling Supplier:	3M Company
Process:	Film microreplication, lamination & converting

Designing a car-forward, pillar-to-pillar display created safety concerns due to windshield reflection. ALCF A5+ film from 3M integrates its Light Control and Dual Brightness Enhancement Films, other layers, and LCD panels to remove that reflection. In this first/largest application of the hybrid film, a 48-inch display is viewable over the steering wheel with a narrowed viewing angle. A PC louver layer tilts toward the driver eye box by about 3–5 degrees while another layer maintains display efficiency. Consolidation trims parts and assembly for about \$10/part cost savings. 3M uses roll-to-roll microreplication along with other processes to create the hybrid film.

**CATEGORY WINNER: Sustainability  
Hydrocarbon Modified Wood/PP Composites**

OEM Make & Model: 2025MY Hyundai Motor Company Kia EV5

System Supplier:	KAIS, LLC
Material Processor:	KAIS, LLC
Material Supplier:	MIKA Inc.
Resin:	MIKAIN MK-PCT5EF20 PP
Tooling Supplier:	KAIS, LLC
Process:	Injection molding

Creating a hydrocarbon-modified wood flour masterbatch (70%) is the innovation that allowed this team to achieve large parts at final loadings of 20–30% wood while maintaining flow and dimensional control. The solids-phase surface treatment they developed using hentriacontane - found in bees and plants - weakens hydrogen bonding in cellulose, improving dispersibility and allowing processing at 180 - 190°C to minimize odor. Pairing recycled ELV PP with wood lifts eco-materials content above 50 wt% and supports door center trim substrates that will be covered with fabric or leather. Parts achieve 30% cost savings compared to a 10% bio-PE / PP blend.

**CATEGORY WINNER: Hall of Fame Award - First Automotive Seat Belt**

The industry’s first application of a seat belt – a two-point front seat lap belt - used on the 1949 Nash Motors Airflyte and Ambassador vehicle models has been named the 2025 Hall of Fame Winner by the Automotive Division of the Society of Plastics Engineers (SPE®). This was the first OEM installation of seat belts, and since that time millions of vehicles have used Nylon and Polyester enabling improvements in mass production, automotive comfort and aesthetics, and most importantly – safety. Seat belts, a novel combination of metal and plastics, are now used worldwide on all automotive vehicles.

Representatives from Stellantis accepted the award at the event. Nash Motors was acquired by American Motors, who was acquired by Chrysler, which is now Stellantis. The stage was shared with representatives from Celanese as they have acquired the Nylon resin business from DuPont and Nylon is used in most seat belt applications globally today.

The National Highway Traffic Safety Administration (NHTSA), has reported that plastic/metal seat belts have saved over 15,000 lives year after year.

To be considered for a Hall of Fame (HOF) Award, an automotive plastic or composite component must have been in continuous service in some form for 15 years or more, made a significant and lasting contribution to the application of plastics in automotive vehicles, and broadly adopted and/or expanded upon in the automotive industry. Additional HOF award criteria includes that the nomination be: game changing; very successful worldwide; innovative in materials, process and application; and still being used. This application certainly qualifies as seat belts are now an industry standard globally.

### **CATEGORY WINNER: Lifetime Achievement Award – Robert Spiers III**

Robert Spiers III, professor emeritus and former chair of the Ferris State University Plastic Program, was named the 2025 Lifetime Achievement Award winner by the Automotive Division of the Society of Plastics Engineers (SPE®). Speir's academic program leadership, professorship, and personal guidance motivated a multitude of students to pursue successful careers in plastics engineering resulting in growing the industry today and into the future. Many leaders in the automotive plastics industry today were educated, encouraged and mentored by Spiers and are grateful for his inspiration.

Spiers' roles at Ferris State University Plastics Program included Assistant Professor, Associate Professor and Professor & Coordinator of Plastics, Rubber & CAD Programs. For almost 40 years, Spiers educated plastics professionals by teaching and mentoring 1500 graduates, inspiring 250 students to obtain Master of Science degrees, motivated 50 to obtain PhDs, led 75 legacy students (sons and daughters of Ferris State University Plastic Program graduates). Most of these graduates established successful careers in automotive industries.

A number of Spiers' graduates are in key leadership positions in the industry advancing automotive plastics today including:

- Scott Kushion, President – Asahi Kasei Plastics Mexico
- Kevin Chase, CEO at Chase Plastic Services, Inc.
- John Hobson, President, RPM Plastics
- Corey Childs, NA Director of Operations, Dana Incorporated
- Joe Fulsher, Co-Owner WAK Plastics Machinery
- Crystal Searle, Global Resin Commodity Manager, Molex
- Casey Camp, Engineering Group Manager – Exterior Lighting, General Motors Co.
- Lane Lindstrom, Sr. Mfg. Engineer, General Motors Co.
- Tom Miller, Sr. Account Manager, Celanese Engineered Materials
- Dan Fuller, Sr. Applications & Development Engineer, Celanese Engineered Materials, who nominated Spiers for this award
- Tom Van Pernis, Professor at Ferris State University Plastics and Rubber Program

Prior to his tenure at Ferris State University, Spiers worked in the plastics industry as Senior Application Development Engineer at Dow Chemical in Midland, Michigan, Principal Engineer at Baxter Travenol Labs in Round Lake, Illinois and Market Development Engineer at Kay Fries Chemical in Fairlawn, New Jersey.

Spiers formal education includes a Bachelor of Science degree, a Master of Science degree and an ABD (All But Dissertation Doctoral program status) in Plastics Engineering at University of Massachusetts at Lowell. He completed his research at Army Materials & Mechanics Research Center, Watertown, Massachusetts.

## CATEGORY WINNER: VEHICLE ENGINEERING TEAM AWARD (VETA):

### FORD EXPEDITION SUV

Designed for real life with smart tech, versatility, and an adventurous attitude, the 2025 Ford Expedition turns school runs and road trips into premium, connected experiences powered by plastics engineering. In light of their advances, Ford Motor Co. (Dearborn) and its suppliers for the all-new, full-size SUV clinched the **Vehicle Engineering Team Award (VETA)**.

Created in 2004, the VETA award periodically recognizes the polymer-enabled technical achievements of full, cross-functional teams – including designers, engineers, tier integrators, materials suppliers, toolmakers, and manufacturing partners. Their research, design, engineering, and production work is the catalyst that creates significant, vehicle-level integration of polymer materials.



#### The 2025 Ford Expedition SUV joins past VETA winners, including:

- 2004 MY Porsche Carrera GT Supercar
- 2009 MY Ford Flex CUV
- 2010 MY Ford Taurus Sedan
- 2011 MY Ford Explorer SUV
- 2011 MY Chrysler 200 & Dodge Avenger Sedans
- 2013 MY SRT Viper Supercar
- 2018 MY Chevrolet Traverse SUV
- 2020 MY Chevrolet Corvette Stingray
- 2021 MY Ford F-150 Pickup
- 2022 MY Cadillac Lyriq Electric SUV
- 2023 MY Chevrolet Corvette E-Ray

**SPE's Automotive Innovation Awards Program** 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. The annual event typically draws approximately 600 OEM engineers, automotive and plastics industry executives, and media. Funds raised from the event are used to support SPE educational programs including technical seminars and conferences, which help to educate and secure the role of plastics in the advancement of the automobile.

**Sponsors** of the 2025 SPE Automotive Innovation Awards Gala to date include: Celanese, BASF Corporation, American Chemistry Council – Plastics Division, Sabic, Covestro, Omya Specialty Materials, ElringKlinger Automotive Manufacturing, 3M Advanced Materials, and Nifco.

**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 Div., see <https://speautomotive.com/> . For more information on the Society of Plastics Engineers, see [www.4spe.org](http://www.4spe.org).

**For more info** on the SPE Automotive Innovation Awards, see <https://speautomotive.com/spe-automotive-div-innovation-awards-2023/>

**Attn: Editors:** Photos of the Winners, as well as a large collection of SPE Automotive Division digital photography, is available for download at:

<https://www.flickr.com/photos/speautomotive/albums/with/72157673717033072>

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# 2025 IAG Winners

High-resolution photos can be downloaded via Flickr: <https://flic.kr/s/aHBqjCzCMe>



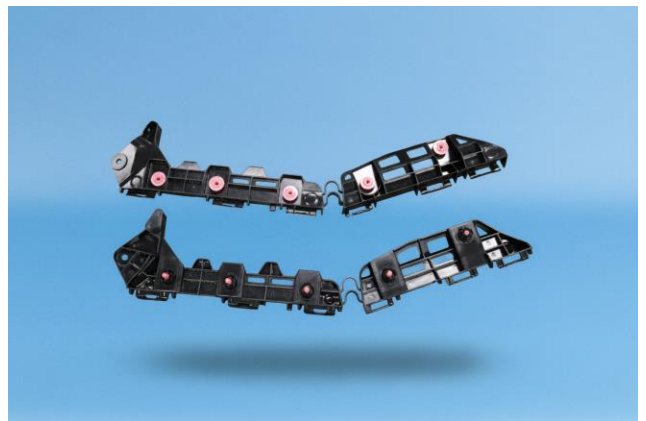
**Aftermarket and Limited Edition/Specialty Vehicles**  
E Trunk Cargo Sliding Tray



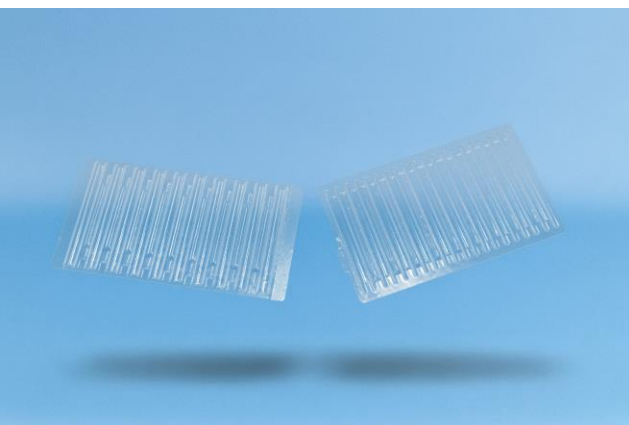
**Body Exterior**  
Multi Flex Midgate



**Body Interior**  
Power Sliding Console



**Chassis/Hardware**  
Integrated Seal Bumper Retainer



**Electric and Autonomous Vehicle Systems**  
Battery Pack Weld Splatter Shield



**Materials**  
Fluoropolymer for Engine Seals

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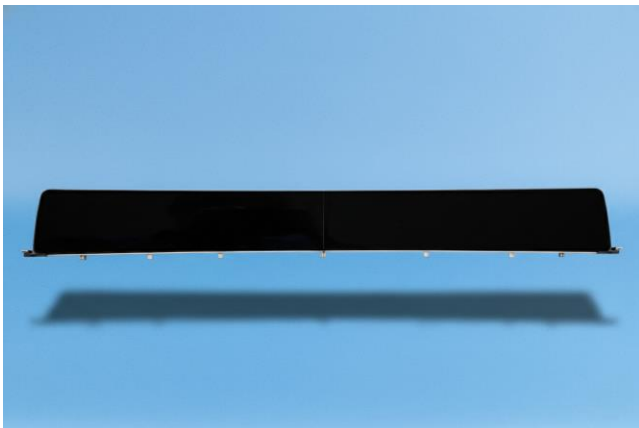
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**Powertrain**  
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**Tail Lamp Piano Keys Lens**



**Safety**  
**Integrated Dual Brightness Enhancement Film**



**Sustainability**  
**Hydrocarbon Modified Wood/PP Composites**

# 2025 IAG VETA Award Winner

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# 2025 IAG Hall of Fame Winner

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# 2025 IAG Lifetime Achievement Winner

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