



## Joint News Release

**BASF Media Contact:**

Susan Jackson  
(313) 268-6267  
[susan.jackson@basf.com](mailto:susan.jackson@basf.com)

**LLP Media Contact:**

Andrea Smith  
(248) 464-8065  
[andrea.smith@llproducts.com](mailto:andrea.smith@llproducts.com)

### **BASF and L&L Products collaborate on Battery Protection Solution for the 2022 Ford F-150 Lightning**

WYANDOTTE, MI and Romeo, MI, March 24, 2022 – [BASF](#) and [L&L Products](#) have developed a battery protection solution for the [2022 F-150<sup>®</sup> Lightning<sup>™</sup>](#). This vehicle is the first all-electric F-Series truck from Ford Motor Company and deliveries begin this spring.

The team reduced the size of the crossmember that is part of the battery system without compromising strength. The crossmember is a structural section designed to withstand high loads –keeping both the battery and occupant safe in the vehicle.

“We were able to use a solution featuring L&L’s Products’ Continuous Composites Systems<sup>™</sup> (CCS) and BASF’s Elastocoat<sup>®</sup> 74850 polyurethane [pultrusion system](#) that eliminated the need for extensive redesign of the crossmember while providing strength, stiffness and rigidity to a lightweight structure,” said Chris Korson, Chassis Market Segment Manager, Performance Materials, BASF Corporation.

CCS combines a fiber-reinforced pultruded composite carrier with highly engineered sealants and adhesives in a two-dimensional profile. This continuous process creates straight or curved composite profiles reinforced with continuous fibers and mats.

“This innovation also shares three firsts for CCS. One being the first developed closed section tubular CCS part, the second being the first CCS body-in-white application, and the third being the first use of CCS in an electric vehicle,” said Hank Richardson, Product Engineering Manager, L&L Products.

The crossmember was also the first application for BASF’s Elastocoat® 74850 polyurethane pultrusion system to be implemented prior to the E-Coat process. Additionally, a new computer simulation methodology was developed using BASF’s proprietary CAE modeling software [Ultrasim](#) to show the behavior of the pultruded structures and accurately capture the additional load after failure that a composite provides.

Elastocoat and Ultrasim are registered trademarks of BASF SE

Continuous Composite Systems (CCS) is a trademark of L&L Products

Lightning is a trademark of Ford Motor Company

F-150 is a registered trademark of Ford Motor Company

### **About BASF**

BASF Corporation, headquartered in Florham Park, New Jersey, is the North American affiliate of BASF SE, Ludwigshafen, Germany. BASF has more than 16,700 employees in North America and had sales of \$25.9 billion in 2021. For more information about BASF’s North American operations, visit [www.basf.com/us](http://www.basf.com/us).

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. Around 111,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €78.6 billion in 2021. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information at [www.basf.com](http://www.basf.com).

### **About L&L Products**

L&L Products is a technology-driven business-to-business company with unique expertise in static

sealing, acoustics, vibration reduction, structural reinforcements, and composite components for automotive, aerospace, commercial vehicle and other industrial applications. Today, L&L has reached 1300+ global employees, 16 global locations, and 8 manufacturing facilities. For more information visit [www.llproducts.com](http://www.llproducts.com).