



Joint News Release

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BASF, L&L Products and Stellantis collaborate for lightweight success on the 2021 Jeep Grand Cherokee L

- **Composite tunnel reinforcement wins Altair Enlighten Award**
- **40% weight reduction compared to previous version**

WYANDOTTE, MI, August 5, 2021 – [BASF](#), [L&L Products](#) and [Stellantis](#) have been recognized for lightweighting success on the composite tunnel for the [2021 Jeep® Grand Cherokee L](#). The vehicle, which launched in May, just won the prestigious Altair Enlighten Award for achievements in vehicle weight savings.

While researching opportunities to reduce mass and improve durability without compromising safety performance, the transmission mounting system (TMS) was one area of focus. The composite tunnel reinforcement (CTR) is located on the underside of the vehicle and is part of the overall TMS. In the event a vehicle collides slightly with an opposing vehicle for example, the CTR transfers the energy load from the outer rail to the transmission mount crossmember, improving performance in the field and in the Insurance Institute for Highway Safety (IIHS) standards small offset rigid barrier test.

The use of Continuous Composite Systems™ (CCS) pultrusion technology along with polyurethane chemistry from BASF were key factors in the success of the CTR. CCS combines a fiber-reinforced pultruded composite carrier with highly engineered sealants

and adhesives in a two-dimensional profile. This is a continuous process used to create straight or curved composite profiles reinforced with continuous fibers and mats. The system is designed to provide strength, stiffness, and rigidity to a lightweight structure.

“CCS enabled L&L Products and Stellantis to realize a new design that reduces packaging along with mass and uses the surrounding environment on the vehicle to help transition loads to the CTR. We also made technology improvements to achieve an industry first in processing speeds as we doubled the typical profile pultrusion output,” said Hank Richardson, Product Engineering Manager, L&L Products.

This was also the first application for L&L Products using their CCS technology and BASF’s Elastocoat® 74850 polyurethane pultrusion system.

“Our Elastocoat polyurethane chemistry coupled with continuous glass fiber has a superior strength to weight ratio in comparison to ultra-high strength steel when used in these kinds of applications,” said Chris Korson, Chassis Market Segment Manager, Performance Materials, BASF Corporation. “We also developed a new computer simulation methodology using our proprietary CAE modeling software Ultrasim® to capture the behavior of the pultruded structures to accurately capture the additional load after failure that a composite provides.”

“We are always looking to improve on the design, function and efficiency of our vehicles,” said Brian Dwyer, Chassis Engineering Manager, Stellantis. “It’s not easy to find a weight reduction solution that improves overall performance but that’s exactly what we have done on the 2021 Jeep Grand Cherokee L composite tunnel.”

The state-of-the-art 2021 Jeep Grand Cherokee L is designed inside and out to deliver unmatched capability and composed driving dynamics. Its renowned 4x4 systems instill Grand Cherokee L with the Jeep brand’s legendary 4x4 capability. An all-new architecture and sculpted aerodynamic body style combine to improve vehicle performance, safety and reliability, while significantly reducing vehicle weight, noise, vibration and harshness. Designed to maximize overall passenger safety, comfort and

convenience, Grand Cherokee L packs a powerful punch with next-generation features and technologies that make it a standout in the full-size SUV segment.

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About BASF

BASF Corporation, headquartered in Florham Park, New Jersey, is the North American affiliate of BASF SE, Ludwigshafen, Germany. BASF has approximately 17,000 employees in North America and had sales of \$18.7 billion in 2020. For more information about BASF's North American operations, visit www.basf.com/us.

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 110,000 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 is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €59 billion in 2020. 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

About L&L Products

L&L Products is a technology-driven business-to-business company with unique expertise in static sealing, acoustics, bonding, vibration reduction, structural reinforcements, thermal insulation, and composite components for automotive, aerospace, commercial vehicle and other industrial applications. Today, L&L has over 1300 employees worldwide, 16 global locations, and 8 manufacturing facilities. For more information visit www.lproducts.com.

About Stellantis

Stellantis is one of the world's leading automakers and a mobility provider, guided by a clear vision: to offer freedom of movement with distinctive, affordable and reliable mobility solutions. In addition to the Group's rich heritage and broad geographic presence, its greatest strengths lie in its sustainable performance, depth of experience and the wide-ranging talents of employees working around the globe. Stellantis will leverage its broad and iconic brand portfolio, which was founded by visionaries who infused the marques with passion and a competitive spirit that speaks to employees and customers alike. Stellantis aspires to become the greatest, not the biggest while creating added value for all stakeholders as well as the communities in which it operates.