

Mercedes-AMG GT4 race cars now equipped with high-performance natural fibre composite bumpers

- Sustainable lightweighting specialist Bcomp working with HWA, engineering specialist in the fields of automobile racing and high-performance cars, and development partner of Mercedes-AMG, to provide sustainable bodywork solutions for Mercedes-AMG GT4 racing car programme
- Natural fibre composite front bumpers to be phased in during 2021, replacing carbon fibre
- Sustainable bumpers meet all performance requirements and improve safety
- Bcomp's sustainable bodywork solutions enable an 85% CO₂ reduction cradle-to-gate vs. carbon fibre parts and offer the option of thermal energy recovery at end-of-life

Fribourg, Switzerland... Swiss sustainable lightweighting company, Bcomp, is now supplying its high-performance natural fibre technologies to HWA AG – development partner of Mercedes-AMG – for the new front bumpers on Mercedes-AMG GT4 race cars. Set to be phased in over the coming weeks, Bcomp's bodywork solutions will provide a sustainable alternative to the GT4's existing carbon fibre panels, offering equivalent mechanical performance in stiffness and weight and improving safety.

The new bumper uses Bcomp's innovative **ampliTex™** and **powerRibs™** technologies, which harness the natural advantages of flax fibre. The powerRibs™ reinforcement grid uses the high specific bending stiffness of flax to build up height very efficiently, boosting the flexural stiffness of thin-walled shell elements significantly. The new bumpers are also safer in the event of a crash or collision and decrease the risk of punctures significantly. Unlike the sharp fracturing and splintering of carbon fibre, ampliTex™ technical fabrics are far more ductile in an impact, whereas the powerRibs™ confine the damage zone, minimising debris and the risks to drivers, marshals, and spectators.

A full sustainability analysis concluded that the new bumper offered a total material emission reduction of 90% when compared to the carbon fibre part as well as an 85% reduction of CO₂ emissions from cradle-to-gate, considering all production steps from raw material to final part. Not only do Bcomp's materials reduce the part's carbon cost, but they also introduce the option of thermal energy recovery. Since the new bumper is full natural fibre, it can be used for thermal energy recovery, turning approximately 80% of the energy stored in the part into renewable energy, resulting in a process without hazardous carbon waste or parts that need to go into landfill.

Reverse engineered from HWA's original, the natural fibre bumper's design has been collaboratively optimised over the past 12 months. To ensure that the bumper met all racing regulations and requirements, the HWA team performed extensive mechanical testing and validation. On the HWA testbench, the stiffness of the complete frontend of the Mercedes-AMG GT4 was measured, simulating the aerodynamic drag and front diffuser downforce. The tests were conducted with a carbon fibre bumper as benchmark and afterwards with the new natural fibre bumper, validating that the newly designed part performs on the same high-performance level.

Furthermore, part of the project was to validate the HWA inhouse paint processes with ampliTex™ and powerRibs™, optimising the A-surface quality of the part up to a level that meets the quality standards

of HWA and Mercedes-AMG motorsport. Production of the old carbon fibre bumpers has now ceased, and all customer teams will receive the new Bcomp version with their next orders.

Bcomp's award-winning technologies are already used in 16 racing series around the world, but their applications are not restricted to motorsport. From automotive interior panels and bodywork to luxury yachting and the European Space Agency's latest natural fibre satellite panels, Bcomp's technologies are relied upon wherever weight, stiffness and sustainability are important. With the GT4 cars closely based on their road-going counterparts, these racing projects open up opportunities for future high-performance road applications.

Christian Fischer, CEO and Co-Founder of Bcomp, commented: *"We are incredibly excited to see HWA and the Mercedes-AMG GT4 race car programme embracing sustainable, natural fibre bodywork. With equivalent stiffness and weight, increased safety and an 85% reduction in carbon emissions, it is a fantastic improvement that we reached together.*

Development coincided with the height of the pandemic, and it was challenging at times. In fact, our first bumper build, design fitting, optimisations and revisions were all achieved during the pandemic – a testimony to the hard work and persistence of all involved. It has been a pleasure to work with the talented HWA team and we very much look forward to investigating further applications in race and high-performance road cars."

Anne Mink, Manager Technical Development, HWA AG, commented: *"The topic of sustainability plays a major role in our company. Several awards for our efforts in the area of environmental protection are proof of this. Part of our sustainability concept is to evaluate and optimise the product life cycle with regard to environmental aspects as early as in the product development stage. Furthermore, it is our aspiration to constantly adapt our long-standing engineering know-how to current environmental requirements in order to be able to offer our customers sustainable products at the highest technological level. In Bcomp, we have got a development partner with extensive experience in sustainable materials. The result of our cooperation shows that technologically equivalent components can be created from alternative materials."*

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Note to editors:

About Bcomp

Bcomp is a Swiss cleantech company and ESG-enabler that develops and sells sustainable lightweighting solutions. Its proprietary natural fibre-based technologies reduce environmental impact in a wide range of high-performance applications, from automotive interiors to the highest levels of motorsports, from luxury yachting to sports, infrastructure, aerospace and even space. The Bcomp team offers its customers cutting-edge engineering support from idea to final part, out of its Fribourg headquarter.

About HWA AG

HWA AG is an independent, 360° engineering specialist in the fields of automobile racing and high-performance cars. Formed in 1998 by Hans Werner Aufrecht, the company is based in Affalterbach (Germany) and employs roughly 300 highly qualified members of staff. HWA AG offers all its products and services under the motto ENGINEERING SPEED: The company's objective is to develop the best possible, high-quality solutions, in order to get its partners and customers to their destination quicker.

The portfolio of services ranges from designing all vehicle components to assembling complete cars, together with the relevant logistics, after-sales and support services.

About HWA RACELAB

HWA RACELAB is HWA AG's operations team in motorsport. It brings together experienced specialists in high-quality race engineering and the associated services, in pursuit of success on the motorsport scene. HWA RACELAB entered Formula E as a new team in the 2018/19 season, adding a future-oriented string to HWA's wealth of racetrack expertise. HWA RACELAB has also been competing in the FIA Formula 3 Championship since 2019 and in the FIA Formula 2 Championship since 2020. With eleven Drivers' titles and over 180 race wins as a works team for Mercedes-AMG in the DTM, the company is one of the most successful players in international motorsport. HWA RACELAB also draws on the company's other core areas of expertise, such as the development, assembly and running of GT cars for customer racing, as well as the assembly of Formula 3 race engines.

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