

PRESS RELEASE

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DIAB SELECTS SABIC'S NEW LNP™ COLORCOMP™ COMPOUND TO ENHANCE FOAMS FOR THE CORE OF WIND TURBINE BLADES

Diab Group, a world leader in sandwich composite solutions, chose SABIC's new LNP™ COLORCOMP™ compound using nano technology to reduce weight and improve mechanical properties of sandwich structures with polyethylene terephthalate (PET) foams, which are used as the core material of wind turbine blades. The Swedish converter selected the breakthrough SABIC compound over standard nucleators for production of its Divinycell PY PET foam core series. By reducing the foam's cell size by a factor of up to two, while maintaining the same density and decreasing the cell size dispersity, LNP COLORCOMP compound helps enable the final part to be lighter and more efficient in use. These improvements to the core foam material can help designers create new, longer blades that address increasingly stringent standards for precision, weight and consistent quality, and contribute to greater overall energy generation.

“Even though PET foam is relatively new to the wind turbine core materials market, as a thermoplastic it offers many advantages and is a good candidate for broader use in turbine blades,” said Magdalena Sandström, CTO Diab Group. “We are focused on optimizing the performance of our PET foams to drive industry adoption of a more sustainable solution. SABIC's new LNP COLORCOMP compound, a material that provides increased control over cell nucleation and growth, is helping us achieve this goal. By

leveraging this unique technology, we are developing innovative products that enable the implementation of larger and more-powerful blades.”⁹⁹

“Our collaboration with Diab has opened exciting new opportunities to advance wind energy through higher-performing core materials that enable innovative composite designs,”⁹⁹ said Luc Govaerts, director, Formulation & Application Development for SABIC’s Specialties Business. “Our novel compound based on nano technology, together with our formulation and material science expertise, help Diab to innovate, and will give wind turbine manufacturers access to core composite products that are strong, light and recyclable. Working with our customers, SABIC continues to do all we can to promote sustainability efforts across the spectrum, including supporting broader use of renewable energy sources.”⁹⁹

Addressing Wind Energy Challenges

The market for wind power is expected to grow at a CAGR of approximately 7.9 percent between 2020 and 2025, according to [Mordor Intelligence](#). To support this growth, wind turbine blade designs have increased in size and efficiency to boost energy generating capacity. In Europe, the average length of onshore wind turbine blades is 50 meters (164 feet). In the United States, blades also average 50 meters, but their length is increasing, with some blades measuring up to 80 meters (262 feet). Larger blades demand new designs and improved core materials.

Another challenge is extending the useful lifespan of wind turbines to amortize their capital cost.

Thermoplastic materials, such as Diab⁹'s PET foam, deliver strength, stiffness, durability and design freedom that can help increase blade life.

Also, thermoplastics can help improve the sustainability of wind turbine blades. There are growing concerns about how to recycle these massive, complex parts, most of which are currently landfilled. Using thermoplastic PET foams make turbine blades easier to recycle. PET foam solutions offer stable supply, cost-effectiveness, and consistent material properties.

Improving Foaming Processes

SABIC⁹'s novel LNP COLORCOMP compound features a formulation that typically provides improved nucleation and helps to enhance the efficiency of the foaming process for a wide range of foam densities.

By significantly decreasing foam cell size compared to standard nucleating agents such as talc and ensuring uniform cell size distribution, the SABIC product typically helps to reduce resin uptake by the foam during composite manufacture. Less resin contributes to a lighter-weight blade.

Another potential advantage of decreased cell size is the elimination of secondary foam processes or surface treatments that are used to close foam cells and decrease resin absorption. Further, smaller cell size and narrower size distribution can potentially deliver improvements in shear strength/strain properties that are not possible with conventional technologies or lower-density foams.

Beyond wind turbine blade core materials made with PET foams, SABIC's new LNP COLORCOMP compound typically offers the opportunity to enhance foams used in other applications, such as marine, building & construction and packaging components. SABIC's LNP COLORCOMP compound is available globally.

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NOTES TO EDITORS

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- SABIC should be written in every instance in all uppercase.

ABOUT SABIC

SABIC is a global diversified chemicals company, headquartered in Riyadh, Saudi Arabia. SABIC manufactures on a global scale in the Americas, Europe, Middle East and Asia Pacific, making distinctly different kinds of products: chemicals, commodity and high performance plastics, agri-nutrients and metals.

SABIC supports its customers by identifying and developing opportunities in key end-use applications such as construction, medical devices, packaging, agri-nutrients, electrical and electronics, transportation and clean energy. Production in 2019 was 72.6 million metric tons.

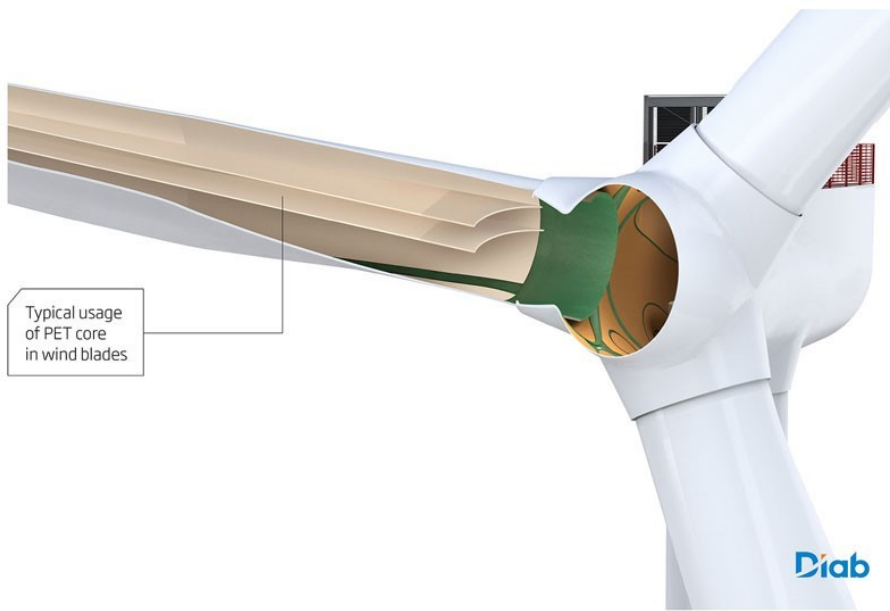
SABIC has more than 33,000 employees worldwide and operates in around 50 countries. Fostering innovation and a spirit of ingenuity, SABIC has 12,540 global patent filings, and has significant research resources with innovation hubs in five key geographies – USA, Europe, Middle East, South Asia and North Asia.

ABOUT DIAB

Diab is a world leader in sandwich composite solutions that make customers' products stronger, lighter and smarter. Diab provides a range of core materials, cost-effective kits, finishing options and in-depth knowledge on composites. Diab has been at the leading edge of composite core material development for 70 years, supplying a wide range of markets including marine, wind energy, transport, aerospace and industry.

Today Diab is one of the world's largest manufacturers of structural core materials with a turnover of approx. SEK 1,9 billion and 1,300 co-workers. Diab has 6 strategically located manufacturing sites and 14 sales companies around the world to support its global customer base. The company's philosophy is to be a partner with its customers, providing them with high quality materials and a wide range of support services that include process development, structural design and training. Diab is owned by Ratos AB and is a participant of UN Global Compact.

PHOTOS AND CAPTIONS



Diab's Divinycell PY PET foam core series featuring SABIC's new LNP™ COLORCOMP™ compound can help designers create new, longer blades addressing stringent standards for precision, weight and consistent quality. (Photo courtesy of Diab)



Thermoplastic materials, such as Divinycell PY PET foam featuring LNP™ COLORCOMP™ compound can help extend the useful lifespan of wind turbines to amortize their capital cost by delivering strength, stiffness, durability and design freedom. (Photo courtesy of Diab)



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