

EDITORIAL

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PPG – INNOVATIVE TECHNOLOGY FOR THE PROTECTION OF WIND TURBINES

PPG Protective & Marine Coatings (PPG) matches the commercial and protection demands of the growing wind energy sector with the unique PSX® product range.

The development of the wind energy industry continues to evolve at an ever-increasing rate, with this power source considered to be the most accessible and cost-effective route to meeting the important goals of reducing emissions from fossil fuels, and making modern society energy independent.

In today's rigorous financial global situation, improved performance combined with careful cost management are key drivers for all sections of the wind energy market. In order to reduce the kilowatt consumer price the turbine industry is under pressure to manage the build cost; increased production speed and fast turnaround are essential in meeting tight delivery schedules. Tower fabricators are therefore looking for coating systems with fewer coats, whilst possessing shorter overcoat and drying times to meet the requirement for cost reduction and delivery speed.¹

However, once the wind turbine is installed onsite, the local environment can be aggressive and unforgiving, quickly searching out areas of low dry-film thickness, poor surface preparation and inadequate durability of the applied coating systems. Access to allow regular inspection of the turbine tower, foundation and transition piece can be very difficult and the repair of any areas of premature breakdown is costly. This means that 'getting it right' at the new construction phase is essential to achieving proper protection of the asset and providing the long-term protection in service.²

PPG's protective coating systems for wind farms meet the specific requirements of both the fabricator and owner by providing unique, user-friendly coatings with proven long-term durability in service. This specialized coating range includes systems for all steel parts of the turbine, such as the foundations, transition piece, tower and gearbox. The patented PSX 700 polysiloxane is featured in the external coating system and offers a major improvement in durability and aesthetics for aggressive exposure conditions. This range is now further strengthened by a significant technological advance from PPG's Research & Development scientists namely, the launch of PSX 700SG. This innovative coating is the latest advance in the PSX line of polysiloxane coatings from PPG. It has a semi-gloss finish and is developed for application where the ultra-high solids content, long-term weatherability and enduring performance are required.



The robust chemical structure enables this unique polysiloxane coating to offer unsurpassed long-term retention of color and gloss characteristics by resisting the fading, chalking and general deterioration over time that is a common feature of more traditional finishes, such as epoxies and acrylic urethanes. Applied over a zinc-rich primer, the PSX 700SG system provides the ultimate balance of long-term protection, smart appearance and cost effectiveness. The applied system is maintenance free, making it the ideal choice for all wind farms and, in particular, for those turbines located at sites where both inspection and repair are not feasible.

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The more familiar three-coat protective coating systems offered by PPG for the protection of wind turbines meet the requirements of ISO 12944 for C3, C4 and C5 environments. However, PPG is now able to offer alternative two-coat systems that are also fully approved and meet the same exposure conditions. For example, for C5 external exposure there is a viable alternative of zinc-rich epoxy followed by the PSX 700 high-durability finish.

This two-coat system saves time and reduces the overall build cost. Furthermore, its fast-curing, fast-handling and excellent edge coverage qualities meet the needs of the fabricator for optimal production capacity and rapid steel throughput to meet tight delivery schedules. The ultra-high volume solids means easy application at new construction and, together with the low volatile organic content (VOC), ensures that even the most stringent environmental emissions regulations are easily met.

This pioneering technology is now the preferred choice for the protection of many industrial, military, and infrastructure applications worldwide. PSX 700 and PSX 700SG coatings are isocyanate free, resistant to transit/ installation damage and outperform traditional finishes. This system represents a major advance in the protection of steel structures in the most demanding conditions and environments, offering significant savings in lifetime operational costs.

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References:

1. Wind of Change. PCE January-March 2010. P. 30 – 33
2. High durability coating systems for the protection of offshore wind farms. Wind Energy Network. August/September 2011. P. 48.

PPG: BRINGING INNOVATION TO THE SURFACE.™

PPG Industries' vision is to continue to be the world's leading coatings and specialty products company. Through leadership in innovation, sustainability and color, PPG helps customers in industrial, transportation, consumer products, and construction markets and aftermarkets to enhance more surfaces in more ways than does any other company. Founded in 1883, PPG has global headquarters in Pittsburgh and operates in more than 60 countries around the world. Sales in 2010 were \$13.4 billion. PPG shares are traded on the New York Stock Exchange (symbol: PPG). For more information, visit www.ppg.com.

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