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TECHFLASH



Smart Steel Technology [Graphene Rich Primer License]

The Smart Steel Technology developed by Fraunhofer IPA is an intelligent anti-corrosion technology for coating surfaces that combines corrosion monitoring with corrosion protection. The core of the technology is based on a graphene rich primer consisting of a combination of a first and a second functional filler component and the binder matrix polymer. Researchers at Fraunhofer IPA have addressed the following questions:

- What are the alternatives to zinc-based anticorrosive?
- How can corrosion protection be improved? How can it be detected at an early stage or even avoided altogether?

The answer is Smart Steel, a Fraunhofer IPA patented technology which not only ensures dependable, zinc-free corrosion protection, but also enables steel surfaces to be continuously monitored.

The first filler component is carbon flakes, which give the coating the most important feature of any protective coating its hydrophobicity, i.e. a reduced ability to absorb and retain water. At the same time, the carbon flakes make the surface electrically conductive to a certain degree. The second functional component is carbon nanotubes. These make the surface even more electrically conductive, which has several advantages.

Corrosion Protection in 3 Phases: The technology is based on three phases. The first phase enhances the "passive" anticorrosive effect through polarization. In the second phase, the extended use of the technology enables the corrosion risk to be continuously monitored as a result of the adapted polarization. The third phase of the Smart Steel technology is the high-end application of corrosion protection in the form of early corrosion detection, i.e. "active" corrosion protection through 'predictive maintenance'.



In a nutshell, through the unique combination of the two functional carbon-based fillers, the Smart Steel Technology allows the corrosion protection system to be adjusted in line with environmental conditions and customer demands as far as corrosion protection and monitoring are concerned and can easily be extended by an active polarization concept if needed.

Smart Steel Technology based on graphene rich primer enables:

- state-of-the-art corrosion protection (water and oxygen barrier)
- corrosion protection using polarization.
- online corrosion monitoring

Ecologically safe and zinc-free sensor data transfer data analysis Graphene rich prime switch to control arization

The Smart Steel Technology can be automated in that the polarization is directly regulated by the online monitoring unit. The concept can be also used for a general sensor coating laver.

>>CLICK HERE<< to receive more info on this TechFlash.

Kindly get in touch with us if you are interested in this technology or require further information. Thanks and Regards,

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