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Wattway photovoltaic road paving slabs certified compliant

Wattway est une innovation française, fruit de plusieurs années de R&D menées conjointement par Colas, un leader mondial des infrastructures de transport, et les laboratoires du CEA-Liten, au sein de l'ITE INES.2S. Premier revêtement photovoltaïque circulaire au monde, il permet de produire de l'électricité renouvelable en s'installant sur des chaussées existantes. La version actuelle de la dalle Wattway vient d'être certifiée selon les normes IEC en vigueur dans le secteur du photovoltaïque, comme tout panneau solaire standard, un résultat enthousiasmant et une première mondiale pour un module circulaire.

Published on 14 March 2024

A few years ago, some people thought that developing a photovoltaic module suitable for vehicular traffic was a very bold idea. It took a great deal of perseverance and skill on the part of Colas and CEA-Liten to figure out how to design and develop specific photovoltaic modules resistant to traffic and weather, and how to lay them directly on the asphalt. But the results are there, with over a hundred sites around the world (Europe, Japan, USA...).

Certified to international photovoltaic standards

The latest version of the product, almost twice the size of previous versions, incorporates the latest innovations in terms of materials within the module itself and resin on the front face. Having successfully passed a series of pre-qualification tests, Colas wanted to test its solar slabs to the certification standards IEC 61215, "Crystalline silicon photovoltaic (PV) modules for terrestrial application - Design qualification and approval", and IEC 61730, "Qualification for safe operation of photovoltaic modules", just like a conventional photovoltaic panel.

As these standards are designed to test the long-term performance and design of standard modules, the success of the Wattway module, which uses very different materials and architecture from a conventional module, is an ambitious challenge.

The results of the IEC 61215 and 61730 tests were unreservedly compliant, both in terms of performance stability and module safety. The electrical insulation resistances assessed at the end of each test branch remained well above the required level. Successful completion of all tests confirmed the design and the success of the industrial transfer.

Proof of the performance of Wattway modules

These certifications show that the reliability of Wattway modules is similar to that of photovoltaic panels on the market. This is a key step in the development of the Wattway Plus offer for the production of renewable electricity for on-site self-consumption. Colas and CEA-Liten are pursuing their partnership in order to offer an increasingly high-performance and innovative circulatory photovoltaic pavement.



Credit: Oscar Timmers for Wattway

Since 2019, this project is being carried out within the ITE INES.2S, of which Colas is a founding member. INES.2S is an Energy Transition Institute driven by the CEA, bringing together manufacturers, the INES PFE training platform, the Savoie Mont-Blanc University and the CEA. The ITE INES.2S is supported by the French government under the France 2030 program (ANR-10-IEED-0014-01).

