

Effective Protection for Vineyard Machines

The components of vineyard machines that are used to automate the grape harvest require the best possible corrosion protection, as they are exposed to weather conditions, tartaric acid from the grapes, and chemicals. To ensure this, one manufacturer of these machines relies on a proven system consisting of a primer and a low temperature powder coating as a corrosion protection coating.

Ero GmbH is Germany's largest manufacturer of machinery and equipment for use in vineyards. The machines they produce, such as self-driving grape harvesters, are exposed to the tartaric acid from the grapes and to other chemicals. Another challenge is sea transportation, Georg Ehlen, production manager at Ero, explains: "Our machines are also used in the USA, Australia, and South Africa. Reliable corrosion protection is essential while they are on board ship."

Coating shop integrated into the new factory

In 2014, the management team at Ero began planning to centralize the company's production and to build a new plant on a green field site. They opted for an electrostatic powder coating to improve the resistance of their products to corrosion, because the two-component liquid paint that had previously been used often provided inadequate protection against aggressive tartaric acid. In the past, Ero had outsourced its powder coating. As the company intended to continue using liquid paint for the majority of its components, it needed a single system supplier that could coordinate all the colors across both the systems.

It chose Karl Bubenhofer AG, who, together with Geholit+Wiemer as a system supplier, were able to provide advice on both powder coatings and paints. One challenge was the coordination of the different colors across the paints and the powder coatings. The company colors, which

include Ero red and grey as well as orange for the Binger product range, are not RAL shades. They were therefore reproduced, evaluated on sample panels, and subjected to the required corrosion testing.

Manual application in two coats

The range of parts at Ero is very varied in both shape and color, but it is limited to small batches of no more than 50 items. For this reason, the coating shop was set up for manual application.

The manufacturer of vineyard machines applies two coats to its components. The first is a primer (Polyflex EP-20-NT-GU Korroflex) with a thickness of 80 µm. After this has been cured and cooled, the com-

ponents are powder coated with a gloss top coat (Polyflex PES-166-NT) from Karl Bubenhofer. This low temperature powder coating is a very good solution for parts with wall thicknesses of between 1 mm and 10 mm. The powder coating has been specially developed for outdoor use and is very cost-effective and flexible in production. It also has a high level of mechanical and chemical resistance, which is a big advantage in the case of the tartaric acid. The parts are cured in two ovens at 190 to 200 °C for a maximum of 30 minutes. The curing period for each component was tested and defined in advance. "The carefully planned workflow and the central location of the coating shop in our new plant have resulted in a lean, ergonomic, and



The self-driving grape harvesters are exposed to tartaric acid from the grapes and to other chemicals and therefore require very good corrosion protection.

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The primer (left) and the top coat are applied manually in a walk-in booth



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The primer and powder coating are cured in two ovens at 190 to 200°C for a maximum of 30 minutes.

The colors required were accurately reproduced in the laboratory.

cost-effective production process,” production manager Ehlen explains. Looking back over the cooperation with Kabe Pulverlack Deutschland, the things that Ehlen values most are the high level of technical expertise, the consultancy that goes far beyond the coating process, and the straightforward service. As a newcomer to the field, Ero had a lot to learn about powder coating and was very pleased to have comprehensive support. The powder coating combined with the primer guarantees long-term corrosion protection for the products. Coordinated with the paints supplied by Geholit+Wiemer, the powder coatings provide Ero with a system that has complete color consistency, is highly resistant to corrosion, and protects the high investments that the manufacturer’s customers make in their vineyard machines. //

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