

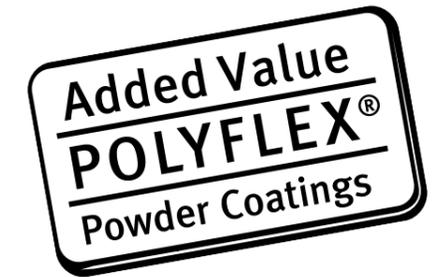
KABE powder coating

A powder coating that makes vehicles disappear at night!

For KARL BUBENHOFER AG, a family-owned company, manufacturing special products to meet individual customers' requirements is nothing new. However, developing a military-grade powder coating with a camouflage function presented particular challenges for the Swiss experts.



KARL BUBENHOFER AG



Picture: General Dynamics European Land Systems-Mowag

The Duro is a robust military vehicle developed in Switzerland which has been deployed by the armed forces of a number of different countries for many years. A comprehensive overhaul programme for the more than 2000 vehicles belonging to the Swiss army began in 2019. One new development is the troop transport body with an integral rollover protection system. The chromium steel body, including the interior fittings, doors and canvas cover, is manufactured and assembled by the Swiss company VERWO AG in Reichenburg. "As a system supplier, we are the perfect partner to develop and produce a solution of this kind. During the process of building the body, we rely on our extensive expertise in manufacturing complex, high-tech industrial products that are ready for use," says Bruno Vogelsang, managing director and owner of VERWO.

In consultation with Kistler Stahlbau/Spritzwerk AG, VERWO's long-term supplier of surface treatment services, VERWO proposed to General Dynamics European Land Systems-Mowag that the small steel components and flat aluminium components should be powder-coated, both for cost reasons and because powder is tougher than paint in challenging military environments. The vehicle manufacturer was convinced by the arguments put forward by VERWO and Kistler and gave the go-ahead to powder-coat specific components. The only problem that had to be resolved was the lack of a powder coating with the required camouflage properties and a high level of weather resistance in the specific colour required. A new powder coating had to be developed within a period of only six months before the start of production.

KABE's development expertise provides the solution

KARL BUBENHOFER AG, a family-owned company from Gossau, has a reputation for responding quickly and flexibly to customers' special requirements and for doing the impossible when it comes to powder coatings. Developing a military-grade powder coating was a job that the company was happy to take on. However, it presented the developers with a number of challenges. The powder needed very good adhesion and long-term resistance to corrosion while also being highly resistant to light and weather. In addition, it had to match the painted metal and plastic components exactly in terms of colour, gloss level and fading. Finally, an NIR-reflective surface in accordance with RAL-F9 specifications was required. This allows the vehicle to disappear in the dark, so that it cannot be seen by the enemy.

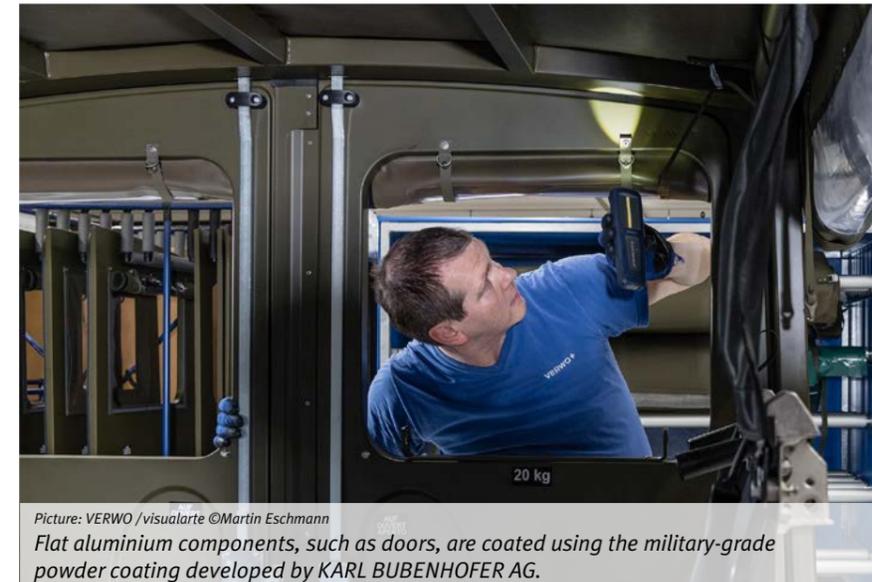
"The various different specifications are very carefully defined in the standards. If only one parameter is incorrect, the painted component will not be accepted. We had to bring all the criteria together and develop a completely new powder coating system with a primer and a top coat and submit it to our customer VERWO for approval in a very short time," explains Christoph Schumacher, head of development at KARL BUBENHOFER AG.

On the basis of its proven POLYFLEX® powder coating system, KABE developed a highly weather-resistant NIR-reflective military powder coating: POLYFLEX® PAC-140-SD Army. In the special "yellow olive" shade for the Swiss army, it provides excellent resistance to



Picture: VERWO /visualarte ©Martin Eschmann

The troop transport bodies for the Duro are manufactured and assembled by VERWO AG in Reichenburg.



Picture: VERWO /visualarte ©Martin Eschmann

Flat aluminium components, such as doors, are coated using the military-grade powder coating developed by KARL BUBENHOFER AG.

light and weather, good flow properties and very good covering power. Relying on his extensive experience of coating components for military vehicles, Reto Kistler from Kistler Stahlbau/Spritzwerk AG successfully completed the initial tests with the first batches of powder. The colour match between the painted and powder coated components was perfect and the powder coating system, consisting of the POLYFLEX® EP-20 Korroflex NT-GU primer and the top coat, could be processed as easily as a standard product.

Special product with further potential

The development of this very special powder coating system was a pioneering project for KARL BUBENHOFER AG. As a result of the company's comprehensive experience of highly weather-resistant powder coatings and its ability to create almost

any colour, it has been able to develop the perfect solution for military use. The developers pooled their existing knowledge in new ways and made highly accurate measurements to ensure that all the parameters were correct. These were continued during the production process to provide ongoing quality assurance.

Because of its close cooperation with VERWO and Kistler Stahlbau/Spritzwerk AG, KARL BUBENHOFER AG was able to develop a new product for the army to the level of production readiness in only a short time. The specialists from Gossau have once again demonstrated their considerable development skills and outstanding flexibility. In this case they have even managed to create a powder coating that makes vehicles disappear at night!



Picture: General Dynamics European Land Systems-Mowag

The coating on the Duro has to withstand tough conditions when the vehicle is in operation.

Contact details

Schweiz	Deutschland	VERWO AG	Kistler Stahlbau/Spritzwerk AG
Tel. +41 71 387 43 73	Tel. +49 (0) 7255 99 161	Vogtswisstrasse 1	Schandelstrasse 1
pulver@kabe-farben.ch	info@kabe-pulverlack.de	8864 Reichenburg	8864 Reichenburg
Karl Bubenhofer AG	KABE Pulverlack Deutschland GmbH	Tel. +41 55 415 84 84	Tel. +41 55 444 10 67
9201 Gossau	D-76676 Graben-Neudorf	Fax +41 55 415 84 00	
		info@verwo.com	
Juli 2019		www.verwo.com	