

Keeping tank containers safe – from the inside

Family-owned HÜNI + CO is a specialised tanker coatings applicator. But it did not start that way, discovers James Graham

For more than 50 years, HÜNI + CO has supplied high-quality functional coatings in the field of anti-corrosion, non-stick and sliding coatings. It has also carved out a leading position in the ISO tank container coating market. This is far removed from the roots of the 160-year old company.

HÜNI + CO was created as a leather tanning factory in Friedrichshafen, on the shores of Lake Constance in southern Germany, by Hans Heinrich Hüni. It has remained a family business: Peter Hüni, the fifth generation, took control in 1986 and his daughter, Alexa, joined the board in January 2016.

Abandoning the leather business in the 1960s, the company entered the coating business. Alexa says: "HÜNI + CO is a highly specialised coating company, not a paint manufacturer. We source our materials from partner companies."

Coating business

In 2002, the company entered the tank container logistics sector, when it met Jean-Claude Filhol from Prorely, in Lyon, France. Filhol's grandfather had invented the highly chemical resistant coating material 'Isolemail', but the company had ceased operations. This allowed HÜNI + CO to acquire the exclusive global licence for the coating material, rebrand it 'Proco-EMAIL, black' and start lining ISO tank containers.

Alexa says: "This was the beginning of this niche business and we



Peter Hüni and his daughter, Alexa

have continuously developed it. Approximately five years later, we started to collaborate with Martin Kilroe and the well-known coating material 'ChemLine 784/32', for which we now hold the exclusive coating licence in Europe."

After application, careful and controlled heat curing takes place. In order to monitor the curing process, strategically placed thermocouples are placed in the tank. These transmit temperatures to a recorder. A graphical representation of the recorded data is then produced to verify that the time/temperature correlation meets quoted specifications. This curing process creates the semi-gloss finish from the ChemLine 784 coating, which offers high chemical resistance, even at elevated temperatures.

Following application of a red base coat, key areas within the tank container are stripe-coated before the

application of a top coat. High voltage spark testing is then undertaken in accordance with DIN 55670-A.

HÜNI + CO closely monitors quality throughout the process and data dossiers are created for customers requiring compliance evidence. This can include recording curing temperatures and times, visual inspection of the tank container, layer thickness measurements at approximately 100 measuring points per tank container in the final test, certification according to DIN EN ISO 9001/2008, spark testing with high voltage in accordance with DIN 55670-A, testing and recording of the electrical conductivity and work certificates.

A number of the company's clients, which include many of Europe's major tank container operators, manufacturers and leasing companies specify ChemLine as their preferred tank lining for equipment to handle aggressive chemicals, clean petroleum products, edible oils and other cargo.

The company, which employs around 50 staff, has a product range of six tank container coatings available: Proco-EMAIL, BLACK; PLASITE 3070; PROCO-L (F14E); PROCO-A (F17E); PROCO-E-CTFE (HALAR); CHEMLINE 784.

Proco-EMAIL is black and is suitable for use in chemical transport as it has high resistance against acids, chlorinated products and solvents. PLASITE 3070 is a lining suitable for solvents, acids, hot water and food

products. PROCO-L (F14E) is resistant to organic and inorganic acids, and is suitable for storage and transport tanks, tank containers and general chemical movements. PROCO-A (F17E) is resistant to most organic solvents. PROCO-E-CTFE (HALAR) has extreme resistance to most chemicals, acids, alkalis and organic solvents.

CHEMLINE 784 provides a smooth, semi-gloss finish that is easily cleaned and decontaminated. Its unique cross-linked density creates a material that provides strong resistance, even at elevated temperatures.

Since 2013, the company has increased its coating capacities for tank container customers with new facilities. Production and warehouse space of 1,000 m² is now available for three teams of coating engineers. Services include ten firing and sintering furnaces up to 500°C. Maximum dimensions for components to be coated are 3.10 x 3.10 x 10 metres. Units to be coated can weigh up to eight tonnes. Factory certification is available in accordance with DIN EN 14879-2 with approval by TÜV and other testing companies.

Export traffic

HÜNI + CO currently exports around 35% of its products, with its markets recently expanding into Asia. Alexa says: "Our main customers are located in Germany and we export to Switzerland, Austria, France, the UK and Benelux countries. Recently we gained a new customer from India."

According to IHS Markit, a world leader in critical information, analytics and solutions, the coatings industry is "one of the most heavily regulated in the world, so producers have been forced to adopt low-solvent and solvent-less technologies in the past 40 years, and will continue to do so."

The major change that has taken place in the coatings industry during the last 40 years has been the adoption of new coating technologies. These include waterborne coatings (thermosetting emulsions, colloidal dispersions and water-soluble),

high-solids coatings, two-component systems, powder coatings, and radiation-curable coatings.

Coatings are needed for three reasons: protection, decoration or special purpose. HÜNI + CO works in the 'special purpose' category as it creates high-performance coatings for industrial plants and equipment, and protection of marine tank containers and vessels.

The coatings industry is one of the larger consumers of solvents, which are mostly derived from petrochemical feedstocks and refinery operations. The coatings industry also uses a considerable quantity of non-petrochemical feedstocks, such as pigments and additives, which are not very dependent on crude oil and gas prices. The non-petrochemical portion of the feedstocks is approximately one-third, on a volume basis.

One new area of interest is nanotechnology, notes IHS Markit, with tens of thousands of patents issued already for the coatings industry.

Very small ceramic or metallic particles can be added to paint formulations to modify specific properties (for example, scratch, mar, wear, corrosion and UV resistance) in highly specialised applications. The average size of nanoparticles is 10–70 nanometres, consisting of less than 6.5 million atoms. At these sizes, the ratio of surface area to mass becomes significant, giving the particles unique properties.

HÜNI + CO is keeping a watch on market developments, adds Alexa. She says: "We cannot give a precise figure on the value for this niche market but what we do recognise is that there will be a growing demand for coated ISO tank containers worldwide."

"We are constantly expanding our capacities for lining ISO tank containers. This summer, for instance, we have hired a Tank Container Project Manager and new sprayers. We are also looking for further depots to collaborate with for tank container coating repairs, for example in the Middle East."

Alexa also says the company is collaborating with suppliers to increase its product offering in this market.

She says: "We are constantly seeking and developing new coating materials. We also work closely together with our customers in order to understand their specific needs and demands which then flow into our product development together with our suppliers."

German engineering

German engineering and manufacturing has a worldwide reputation for high standards and quality. Like thousands of German companies, HÜNI + CO maintains an apprenticeship scheme and has not 'off-shored' production, either to other parts of the European Union or to Asia.

Alexa says: "Sending our production out of Germany is not an option for us, but we have partner companies abroad that assist us with smaller coating repairs."

The company trains apprentices, she adds, for a wider social purpose. She says: "We do train and develop apprentices. We consider this part of our responsibility towards society and also as a very good source of well-educated future employees."

The payoff from working in such a specialist industry is that barriers to entry are high and competition is often from just a few companies.

Given its long experience in the specialist coating market, and its latest expansion into the ISO tank container market niche, it comes as no surprise that HÜNI + CO feels it has a pre-eminence in the market. This translates into few direct competitors, notes Alexa.

She says: "Within the field of tank container coating, we virtually do not have a national competitor. Of course, companies that supply other technologies for protecting ISO tank containers from aggressive media – like rubber linings – can be considered as competitors."