

# APC Article Reprints

## IT TAKES TWO

### AS SEEN IN :

**COATINGS —Effective tank coatings require not only the appropriate formulation but also high quality standards in application. A cooperation between APC and Hüni ensures that both elements combine.**

Nestled in the famous town of Friedrichshafen on the shores of Lake Constance in southern Germany is a company that delivers exceptional value for the chemical transport industry. Although the town is well known for Ferdinand von Zeppelin's famous dirigible factory built at the end of the 19th century, and airships are still seen flying in the city today, it is Hüni GmbH + Co KG, which is headquartered here, that is making the news today in the transport industry.

*Martin Kilroe (left) and Peter Hüni.*

Hüni is on the technology edge when it comes to providing highly chemically resistant inner coatings for tank containers, intermediate bulk containers (IBCs), bulk storage tanks and other equipment. The company has been in business since 1859 and has been providing chemical protective coatings and services for almost 50 years.

In 2004 the company started a relationship with Advanced Polymer Coatings, based in Avon, Ohio, and APC's unique ChemLine® 784 coating. Peter Hüni, company president, explains: "Our company was looking to complete our portfolio of high performance coatings with a product that could withstand a wide array of hazardous chemicals. When we realised the excellent chemical resistance benefits that ChemLine offered, we thought it would be an ideal solution for many of our customers in the chemical transport sector who need this protection."

### Getting together

Martin Kilroe, global tank container manager for Advanced Polymer Coatings, explains that ChemLine 784 coatings are formulated with high performance organic and inorganic polymers that cure to create a densely cross-linked and nearly impermeable barrier. "The coating is 92 per cent solids with extremely low volatile organic compounds (VOCs)," he says. "APC offers two different coatings - ChemLine 784-32 for low temperature applications and ChemLine 784-31 for high temperature needs. To date, more than 5,000 chemicals and products had been successfully tested including a wide range of acids, alkalis, and solvents, including organics," he continues. "Temperature resistance ranges from -50°C to 200°C, depending on the chemical being carried."

Through this opportune arrangement for both companies, Hüni added new ChemLine coatings to its lineup, while APC started a relationship with a specialist in the application of its coating system. Kilroe says, "While ChemLine 784 offers fantastic technology, the key to success lies in ensuring proper surface preparation, application and curing. When these steps are accomplished, the result is a ChemLine 784 coating with a smooth, semi-gloss finish that provides unprecedented chemical resistance, even at elevated temperatures."

Every quality coating manufacturer needs quality application partners, so through this relationship the two companies have naturally grown together serving various chemical markets. Hüni offers a full array of services for coating tank containers, process reactors, scrubber columns and industrial apparatus. When

ChemLine 784 coatings are used with Hüni's specialised equipment and experienced application personnel, the results are optimal.

Hüni has prepared and coated a wide range of substrates, including stainless steel, Hastelloy, titanium, aluminium and carbon steel. Strict quality standards are followed to prepare a clean surface for the eventual coating. Discussions revolve around the selection of the abrasive type, size and geometry to deliver high cleanliness and the necessary profile.

### **How it's done**

Hüni begins the process through an anti-corrosive blasting in accordance with SA 3 (DIN EN ISO 12944-4). The next step is the application of the two-coat ChemLine 784 system, first as a red base, followed by a grey top coat in order to provide distinction between coats during application. Finishes can be provided as anti-static or anti-slip.

After application of the ChemLine 784 coating, the important heat curing operation takes place. Hüni uses indirect firing of insulated and uninsulated tanks in order to heat-cure effectively. Bifurcated fans, connected to the tanks by flexi-ducting, work in conjunction with the diffusers to ensure overall uniformity of the substrate temperature. Diffusers are fitted to burner inlet jets for effective heat distribution. For temperature measurement, thermocouples are strategically placed in the tank, transmitting temperature readings to a central recording desk. Sophisticated chart recorders plot the temperature data being returned from each thermocouple. A graphical representation of the recorded data is produced to prove the time/temperature correlation in line with quoted specifications.

Hüni closely monitors quality throughout the application process and prepares data dossiers for customers requiring evidence of compliance. These include recording of curing temperatures and times, visual inspection of the tank container, layer thickness measurements (approximately 400 measuring points per tank container in the final test), certification according to DIN EN ISO 9001/2008, spark test with high voltage in accordance with DIN 55670–A, testing and recording of the electrical conductivity and work certificates.

Peter Hüni states that his company's clients, including many of Europe's major tank container operators, manufacturers and leasing companies, now specify ChemLine 784 as the tank lining of choice for all types of aggressive chemical cargos, clean petroleum products, edible oils and other cargos.

*Hüni facility in Friedrichshafen, Germany.*

*Tank being prepped for ChemLine® coating application.*