

Chemical Process Industry

Applications and equipment for the Chemical Process Industry



About Plasticon Composites

Plasticon Composites is a full-service turnkey solution provider in the field of corrosion resistant glassfibre reinforced plastic (GRP) tanks, piping and apparatus. Founded in 1950 Plasticon Composites is well positioned to meet your needs.

Plasticon Composites is the world's largest manufacturer of specially engineered, corrosion resistant, fibreglass reinforced plastics and dual laminate products providing integrated solutions for the handling, storage and processing of critical fluids and gases for the chemical, water & wastewater, power generation and other process industries. Dual laminate constructions consist either of thermoplastic or fluoropolymer liners reinforced with GRP.

Plasticon Composites is an international specialist in design, manufacturing, installation and service solutions for the processing, storage and transport of highly critical corrosive fluids and gasses. The products are constructed from high quality composite materials. Plasticon Composites has a consolidated geographical presence, with a multi-lingual staff and an active research and development programme. Our technical support team of specialists assists customers in the early planning and design stages of projects. Plasticon Composites aims to reach an optimum end-result with solutions that reduce operational costs for its customers. Composite structures by Plasticon Composites come in a wide variety of materials, sizes, shapes and forms, depending on process specifications. The versatility of working with today's composites, combined with the Plasticon Composites expertise, results in an extensive range of integrated solutions.

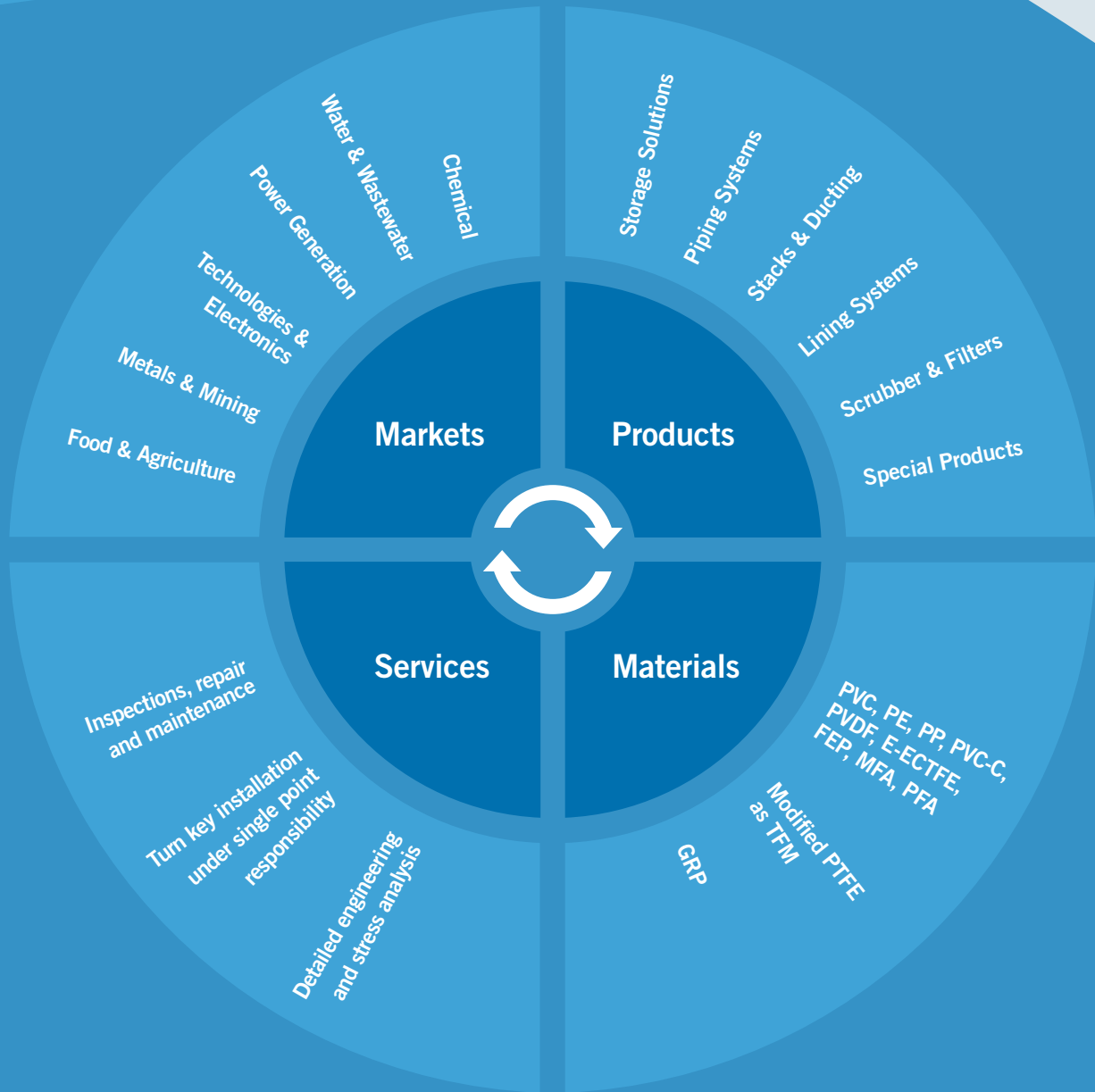
Plasticon Composites, leader in anti-corrosion applications and composite solutions



Transport of big diameter GRP cylinders to Germany in 1963



Transport of horizontal PVC/GRP tanks for a chemical plant in the Netherlands in 1959



GRP covers, tanks and ducts in a waste incineration plant



Transport of process vessels all over the World



Lifting of a cylinder of $D = 10$ metres
from the mobile winding factory

Field Fabrication & Installation

Plasticon Composites can produce on site when the transport of our products is not possible due to size and transport methods. The climate at the site is not an issue, Plasticon Composites already has experience working at temperatures from -40°C to $+50^{\circ}\text{C}$.



Large diameter parts to be assembled on site

Plasticon Composites has designed highly sophisticated winding machines and a mobile plant especially for the manufacture of Fibreglass stacks, ducts, apparatus and vessels on site. Depending on the diameter Plasticon Composites uses its vertical winding machine for diameters up to 20 metres and its horizontal winding machine for diameters up to 16 metres. The mechanical properties of the laminate produced with the on-site winding equipment are exactly the same as the properties of the laminate in the different production facilities.



Highly sophisticated winding machine developed by Plasticon Composites

Storage Solutions

Plasticon Composites provides a wide range of storage solutions in GRP and dual laminate materials, for extreme and moderate service applications. Our in-house specialists are able to help you create or expand your storage capacity requirements in accordance with current design code standards and health & safety regulations.

Storage products:

- Chemical tanks
- Ultra-Pure Water tanks
- Water and Wastewater tanks
- Food Storage tanks
- Salt Saturator tanks
- Brewery tanks
- Fuel Storage tanks
- Mixing tanks and reactors
- Silos
- Insulated tanks
- CE pressure vessels
- Transportation tanks
- Double wall storage tanks

Plasticon Composites' tanks and silos can be equipped with numerous accessories such as leak detection equipment, vent scrubbers, immersion heaters, ladders, railings, walkways, pumps, valves, level indicators, load cells, dust filters, etc.



The storage of raw materials for the pharmaceutical industry



Storage of waste water at 90 °C (3 x 120 m³, D = 3500 mm)

Storage of hydrochloric acid
(D = 9800 mm, 1000 m³) at a steel plant



GRP ducting up to D = 2500 mm
P = 2.5 bar at a copper plant



Process Equipment

For chemical recovery and pollution control, Plasticon Composites offers process vessels such as scrubbers, bio filters, biogas reactors and many related accessories. These vessels handle the full range of dynamic and hydrostatic loads for chemical environments in industries such as wastewater treatment, power generation and chemical processing. Supplemental system components including internal and external piping, distribution systems and ducting can be fabricated in virtually any shape or configuration.

Many of the Plasticon Composites products manufactured today are designed to withstand temperatures ranging from -40°C to 250°C.

Products:

- FGD Scrubbers
- Deodorization Scrubbers
- Bio Filters
- Biogas Reactors
- Stacks and Liners
- GRP Covers
- Duct Systems
- Settlers
- Separators
- Headers



Two GRP scrubber to filter odors



Two GRP reactors with PED approval
(P = 8 barg, T = 80°C)



Two catholyte PP, GRP headers for the chlorine industry

Piping Systems

GRP Piping Systems

Since 1969 Plasticon Composites has enjoyed a worldwide reputation in glassfibre reinforced pipes and fittings with its Kialite® brand and Plastilon® brand (bell & spigot bonding system) piping systems. Today, piping systems are available in a variety of standard diameters ranging from 25 to 1200 mm. Plasticon Composites offers pipe and fittings to meet all national and international standards depending on the area and application. Combining the strength of GRP and the chemical compatibility of plastics provides customers with a superior alternative to costly metal alloys and rubber-lined steel.

Applications:

- Industrial cooling water
- Chemical processing
- Flue gas desulphurisation
- Food processing
- Ship building
- Fire fighting installations
- Water purification
- Sewage treatment



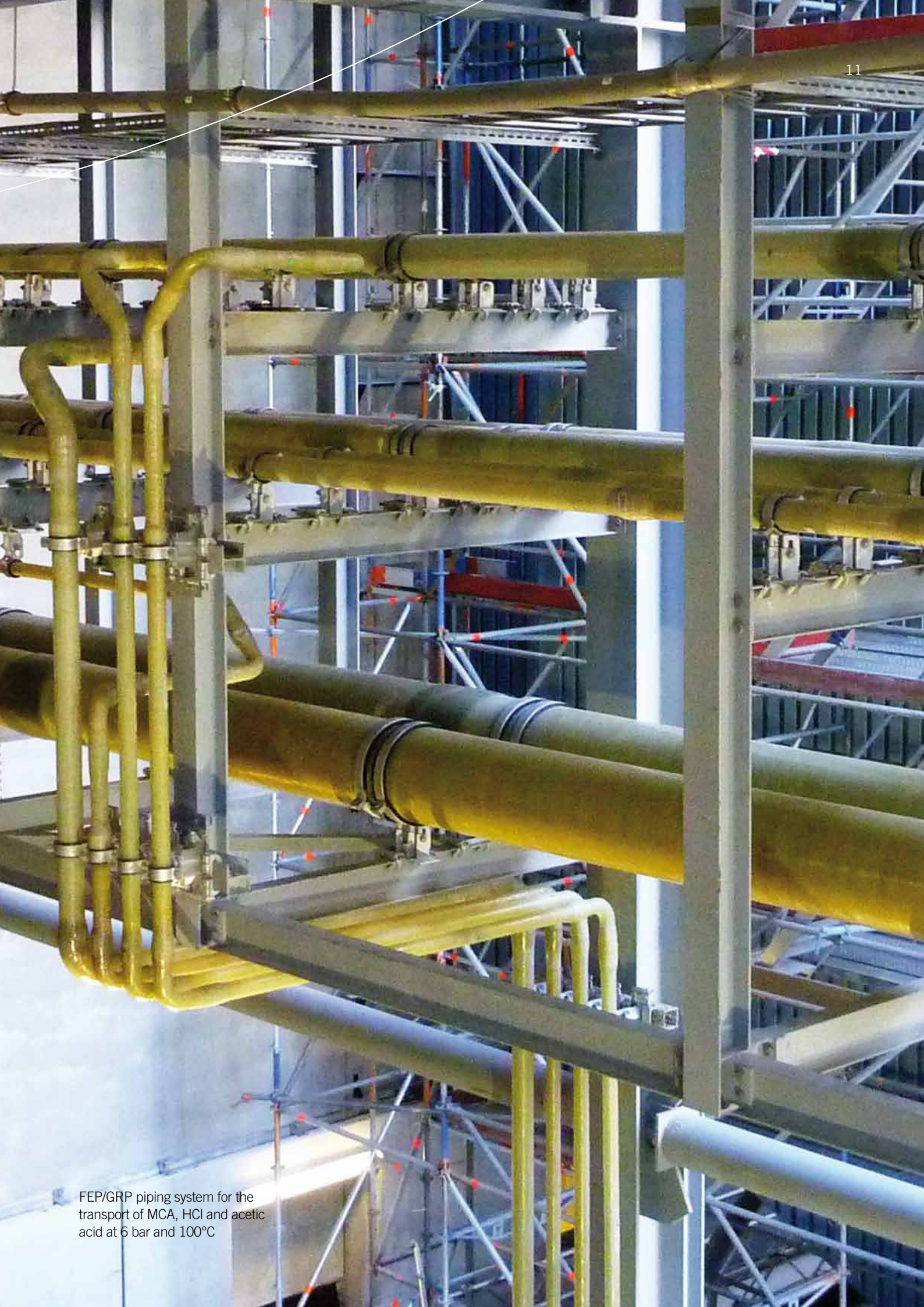
GRP piping, part of a chemical processing plant

Dual Laminate Piping Systems

In addition, Plasticon Composites manufactures and installs PVC lined GRP pipes for aggressive products such as chlorine gas, hydrochloric acid, sodium hypochlorite and caustic soda. Various thermoplastic and fluoropolymer liners were combined by Plasticon Composites (PVC, C-PVC, PP, PE, PVDF, E-CTFE, FEP, PFA, MFA) with glassfibre reinforced polyester resins to provide customers with dual laminate piping systems for extremely hot and corrosive environments.



GRP piping, installed by our installation people



FEP/GRP piping system for the transport of MCA, HCl and acetic acid at 6 bar and 100°C



Double wall fix point lining (PFA) of a stainless steel column (D = 2000 mm)

Lining Systems

Plasticon Composites is recognized as a leading supplier in the field of fluoropolymer linings for a variety of applications in the pharmaceutical, chemical, semi-conductor, power generation, waste incineration, biotechnology and processing industries. Our lining products are characterized by outstanding chemical resistance, compatibility to both high and low temperatures, high pressure ratings and corrosion resistance. Fluoropolymer liners such as PVDF, E-CTFE, FEP, MFA, PFA and modified PTFE (e.g. TFM) can be employed as dual laminate, sheet lining, loose lining and fix point lining.

Our well organized manufacturing processes qualify Plasticon Composites to become a well-known supplier for high purity linings of ISO containers for the semiconductor industry. In these containers ultra pure chemicals are transported which are used for photolithographic etching processes for silicon based microchip or solar cell productions.

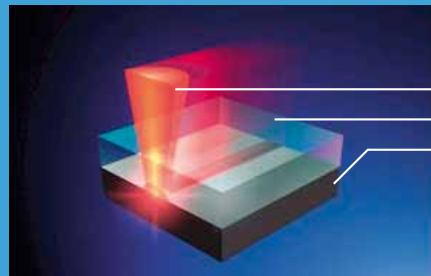
Solid thermoplastic products
Plasticon Composites is a certified manufacturer of solid thermoplastic constructions (PE, PP, PVC, C-PVC or PVDF), focusing on special solutions for customer-related developments such as: pipe bundles for wet electro filters, lamellar separators for water cleaning, covers for special apparatus.

Our production strength of thermoforming thermoplastic materials enables us to reduce the number of weld seams to a minimum. This has led to us becoming a high quality supplier for the chemical industry.

High purity equipment for the semi-conductor industry:

- Apparatus for the production of ultra-pure chemicals
- Ultra-pure chemical storage, day, slurry and mixing tanks
- Sheet linings of ISO containers
- Ultra-pure water storage tanks

Newly developed fix point lining, **Plastite®** welded by high energy light



- High energy light
- Transparant polymer
- Absorbing polymer

Principle of double wall fix point lining with a constant monitoring system for maximum safety



- Inner PFA Liner
- Plastite Fixpoint
- Plastite Weld
- Hot gas weld
- Spacer net
- Glued PFA Liner
- Carbon Steel

Full Service Provider

Plasticon Composites has the capability to design, manufacture, install and service GRP and dual laminate products for your specific needs. An experienced, multi-lingual staff consisting of our team of engineers and technical support specialists assist customers in the early planning and design stages. The end result is an engineered system that reduces life cycle cost.



Assembly of a GRP separator for a chemical plant

Maintenance services

Plasticon Composites recommends periodic upgrades and maintenance for the optimum performance of composite systems in extreme environments. To minimise downtime and avoid unplanned interruptions, Plasticon Composites offers the following maintenance services:

- Inspections
- Refurbishments
- Preventive Maintenance
- Facility Upgrades
- Repairs



Hydrostatic test of a vessel with PED approval



GRP covers for a waste water treatment plant

Continuous training

Plasticon Composites realises that an investment in training is critical to the company's long-term leadership position in the field of engineered composite systems.

Two areas of focus for the company include:

- In-House Training

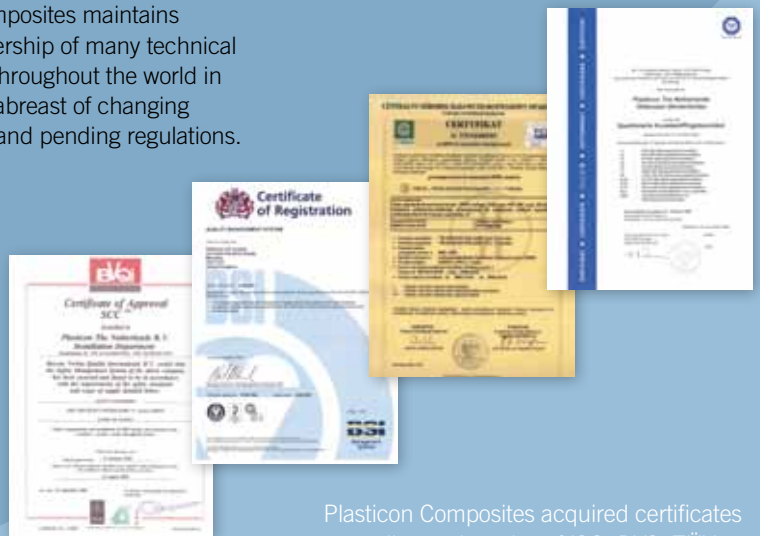
Plasticon Composites acknowledges that many of the best ideas are generated by our employees. Product training sessions are a part of day-to-day business and best practices and are encouraged so that Plasticon Composites can offer customers the very best service and product.

- Certified Laminators and Thermoplastic Welders

Plasticon Composites exceeds industry requirements for certified GRP laminators and thermoplastic welders through its in-house training programme. This is in addition to the annual testing and inspections performed by well-known organisations such as KIWA and DVS.

Industry Technical Associations

Plasticon Composites maintains active membership of many technical associations throughout the world in order to stay abreast of changing technologies and pending regulations.

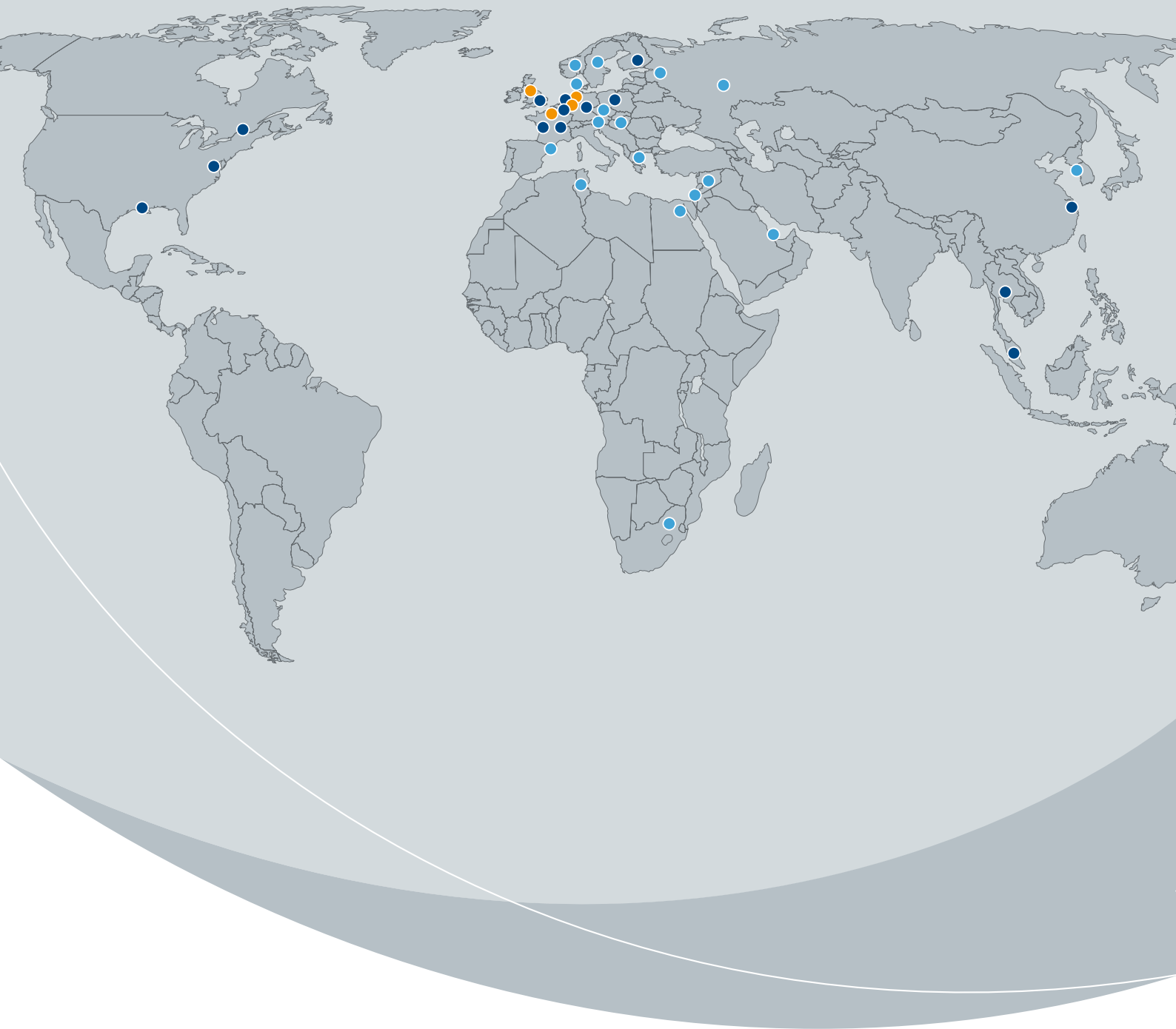


Plasticon Composites acquired certificates according to the rules of ISO, DVS, TÜV, KIWA, Veritas and IFBT

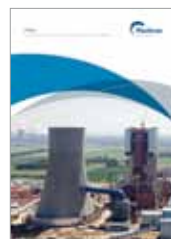


The lamination of a GRP pipe for chlorine gas by our well experienced installation personnel

- Operations & Sales
- Sales
- Polem, bulk storage



General



Power



Piping Systems



Chemical