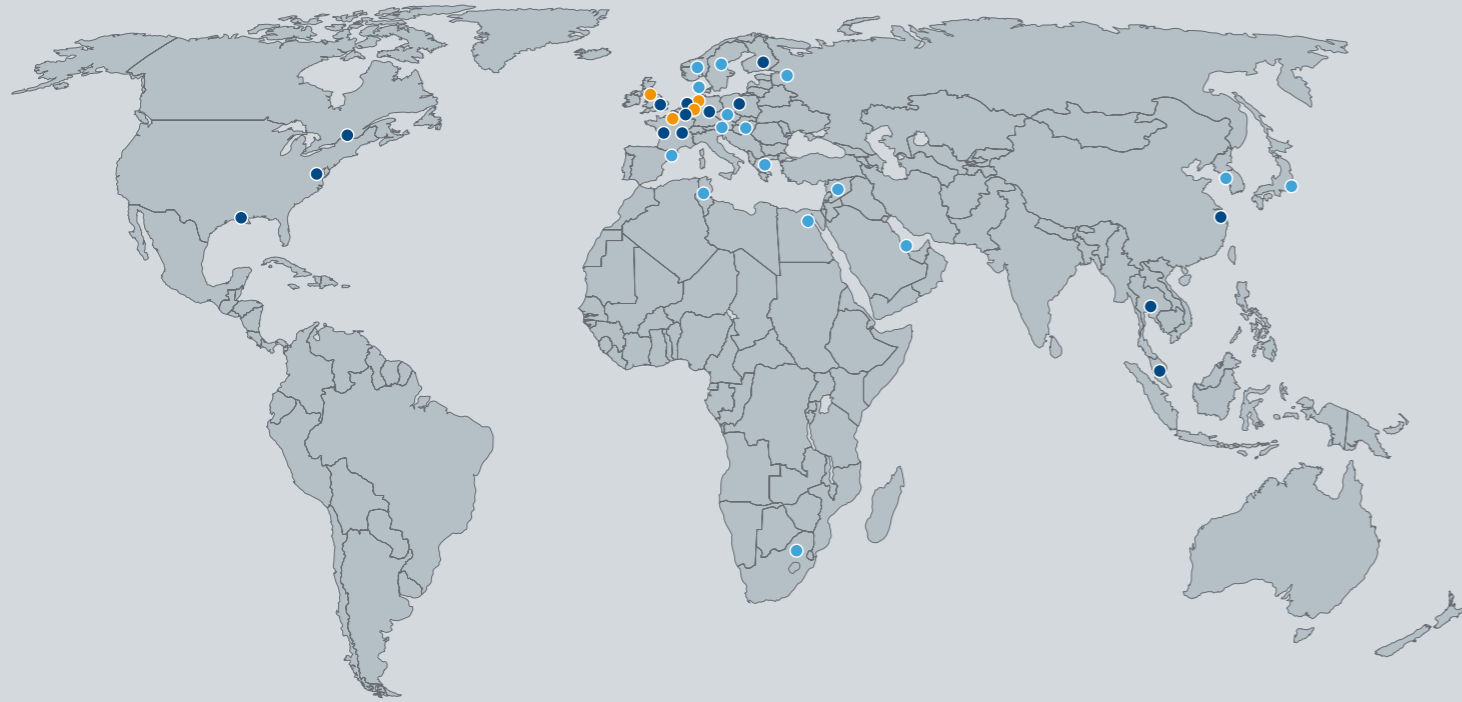


- Operations & Sales
- Sales
- Polem



## Corrosion Resistant Solutions for worldwide industries



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# About Plasticon

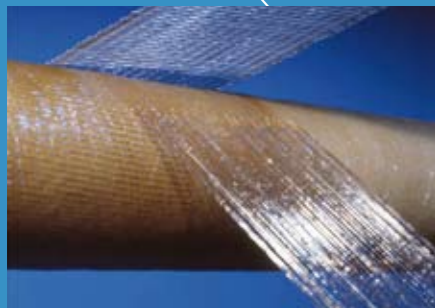
Plasticon is a full-service turnkey solution provider in the field of corrosion resistant fibreglass reinforced plastic (FRP) tanks, piping and apparatus. With over 55 years of experience in the field, Plasticon is well positioned to meet your needs.

Plasticon 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 FRP.

Plasticon 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 has a

consolidated geographical presence, with a multi-lingual staff of 85 engineers 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 aims to reach an optimum end-result with solutions that reduce operational costs for its customers. Composite structures by Plasticon 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's expertise, results in an extensive range of integrated solutions.

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



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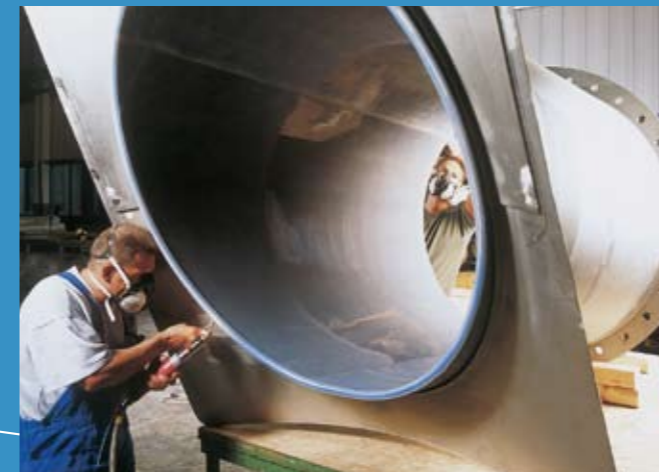
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### Industries served

- Power Generation
- (Petro) Chemical Processing
- Water & Wastewater
- Waste Incineration
- Food & Agriculture
- Metals & Mining
- Technology & Electronics
- Pulp & Paper

### Equipment

- Storage Solutions
- Piping Systems
- Silo's
- Pressure vessels
- Scrubbers & Filters
- Process Equipment
- Stack and ducts
- Liners
- Field erected tanks
- Specialty Products

### Services

- Design & Engineering
- Field fabrication & Installation
- Repair & Maintenance

Designing components for the handling, storage and processing of corrosive or abrasive liquids and gases is a challenge best handled by composite specialists. Engineers must consider resin formulation, glass and synthetic material selection, corrosion barriers and other features unique to composites. They must design the corrosion resistant liner, and structural wall, both of which have unique chemical and structural design parameters.

Engineers at Plasticon Composites analyze each new project and review system performance specifications as they select the material and construction methods necessary.

**Material Choices & Construction methods**

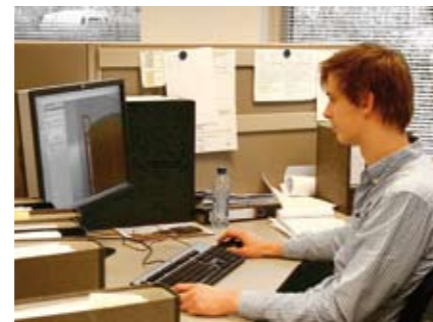
The low maintenance requirements of today's composite systems make fiberglass reinforced plastics the material of choice for most industrial applications. The primary materials and construction methods used by Plasticon Composites include:

- Fiberglass Reinforced Plastic (FRP)
- Dual Laminate Construction using Thermoplastic Liners (PVC, PE, PP)
- Dual Laminate Construction using Fluor-polymer Liners (PVDF, E-CTFE, FEP, MFA, PFA)

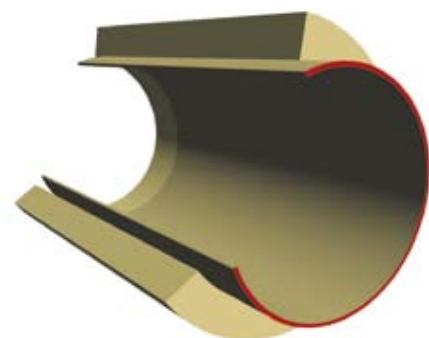
**Specialist FRP Solutions**

The advantages of RFP material are:

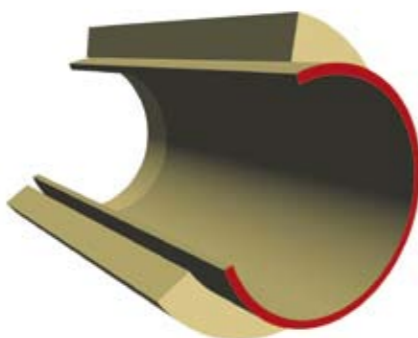
- High Chemical Resistance
- Long durability
- Low specific gravity (1.8 g/cm3)
- Low price
- Delivery time
- FRP replaces expensive alloys like Hastelloy, Super Duplex, Ni etc.



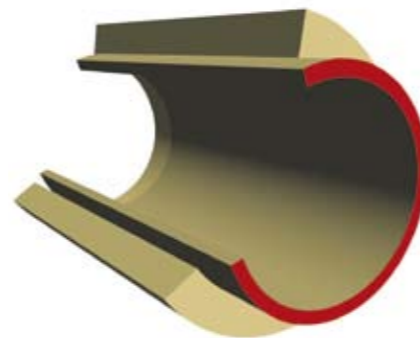
**GRP with gelcoat liner**  
for watery liquids and low aggressive chemicals



**GRP with chemical barrier**  
for aggressive chemicals



**GRP with thermoplastic/fluoropolymer liner**  
for extremely aggressive chemicals, chlorinated hydrocarbons, etc.



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**Specialists in dual laminate technology**

In 1952, Plasticon Composites introduced Dual Laminate technology to the chemical industry. Dual Laminate construction combines the superior chemical resistance of thermoplastics with the mechanical strength of FRP.

The liner is thermoformed and welded after which the FRP is chemically or mechanically bonded to form a high performance dual laminate finished product. The added cost of this type of construction is justified by greater service life, lower maintenance costs and higher process productivity.

Plasticon Composites has recently improved the production process for special applications in order to achieve an adhesion between liner and FRP of more than 7 N/mm2.

Today, many of our customers specify Dual Laminate products for operating conditions requiring high chemical resistance and strength.

A selection of our Thermoplastic and Fluoropolymer liners:

- PE (max. 60°C)
- PVC (max. 60-70°C)
- C-PVC (max. 85°C)
- PP (max. 90°C)
- PVDF (max. 100°C)
- E-CTFE (max. 110°C)
- FEP (max. 140°C)
- MFA (max. 160°C)
- PFA (max. 180°C)
- Modified PTFE, e.g. TFM (max. 200°C)



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# Storage Solutions



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Plasticon Composites provides a wide range of storage solutions in FRP and dual laminate materials, for severe 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



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## Process Equipment

For chemical recovery and pollution control, Plasticon offers process vessels such as scrubbers, biofilters, and biogas reactors together with a wide range of 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 that range from  $-40^{\circ}\text{C}$  up to  $250^{\circ}\text{C}$ .

### Products

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



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# Piping Systems



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## FRP piping systems

For over 50 years Plasticon has enjoyed a worldwide reputation in glass fibre reinforced pipes and fittings with its Kialite® brand piping systems. In 1969 Plasticon first offered FRP piping systems for the chemical and process industry. Today, piping systems are available in a variety of standard diameters ranging from 25 to 1200 mm. Plasticon offers pipes and fittings to meet all national and international standards depending on the area and application. Combining the strength of FRP 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



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## Dual laminate piping systems

Plasticon also manufactures and installs PVC lined FRP pipes for aggressive products such as chlorine gas, hydrochloric acid, sodium hypochlorite and caustic soda. Throughout the last 50 years, Plasticon combined various thermoplastic or fluoropolymer liners (PVC, C-PVC, PP, PE, PVDF, E-CTFE, FEP, PFA, MFA) with glass fibre reinforced polyester resins to provide customers with dual laminate piping systems for extremely hot and corrosive environments.





## Specialty Products

### Fluor Film Lined Products

Plasticon is recognized as a leading supplier in the field of fluor-polymer lining for a variety of applications in the pharmaceutical, chemical, semi-conductor, power generation, waste incineration, biotechnology and processing industries. Our extensive range of specialty products are characterized by an outstanding chemical resistance, compatibility to both high and low temperatures, high pressure ratings and good corrosion resistance.

Fluor-polymer 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.

### Chemical process equipment:

- Storage and process tanks
- Acid recovery evaporators
- Chemical process columns
- Special apparatus (absorbers, strippers, cyclones, etc.)

### Flue Gas Desulphuration:

- Heat exchanger housings
- Ducts
- Quench

### 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

### Solid thermoplastic products

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



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# Full Service Provider

Plasticon has the capability to design, manufacture, install and service FRP and duallaminate products for your specific needs. With an experienced, multi-lingual staff of almost 100 engineers and technical support specialists assist customers in the early planning and design stages. The end result is a better-engineered system that reduces life cycle cost.

### Field fabrication & installation

Field fabrication and installation can be highly cost-effective and efficient. When several large components must be assembled on location, field fabrication and installation often overcomes size and difficult access problems.

### On-site production

With the use of a field winding machine, Plasticon is available to manufacture tanks, vessels and piping up to 20 metres in diameter. On-site manufacturing can minimise transportation costs and can be effectively coordinated with other on-site contractors.

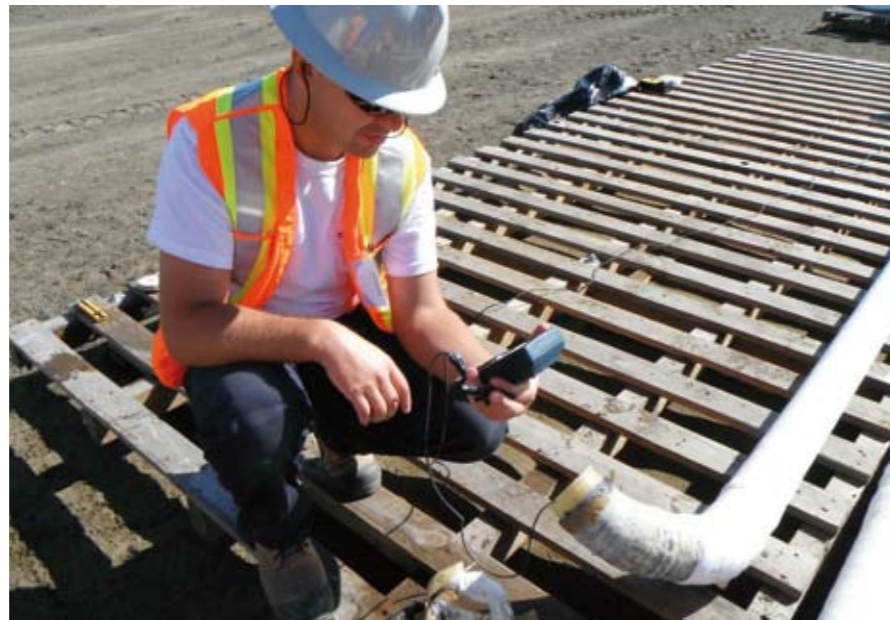
### Maintenance Services

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

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



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### Continuous training

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

#### - Certified Laminators and Thermoplastic Welders

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

### Industry Technical Associations

Plasticon Europe maintains active participation in many technical associations throughout Europe to stay abreast of changing technologies and pending regulations.



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