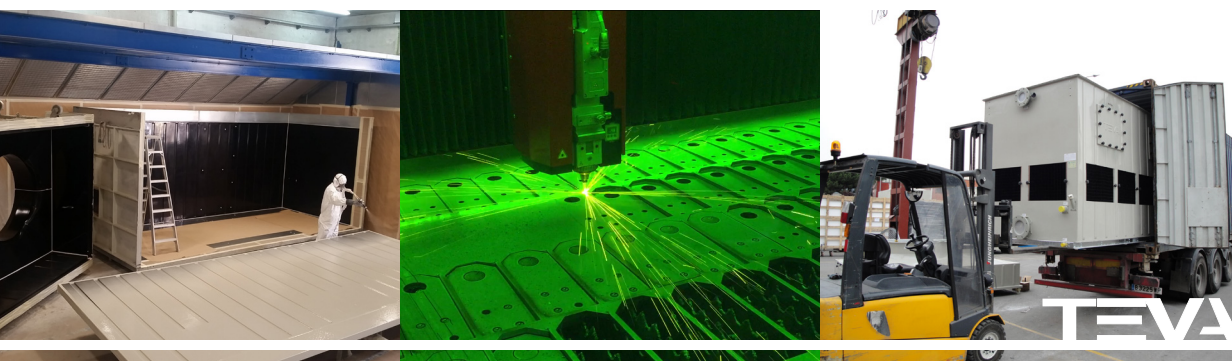


# Choose your serie in **POLYESTER**

**We create  
We manufacture  
We innovate**



TÉCNICAS EVAPORATIVAS, SL (Teva) is a prestigious leading company in the design and manufacture of equipment for the evaporative cooling of water, industrial liquids and refrigerant gases.

We have been offering cooling solutions to many sectors since 1970, and it is this extensive experience, together with our broad range of products and our vision based on listening to our customers, that allows us to provide each customer with solutions created exclusively for their needs.

Products manufactured by TEVA, using our own designs and technology, include open circuit towers, closed circuit towers, evaporative condensers, adiabatic dry coolers/condensers and regular dry coolers.

All of these are manufactured in metal or GRP versions and equipped with axial or centrifugal fans, which allows you to choose from the most extensive selection on the market when looking for the most appropriate solution for your needs in relation to: temperature, resistance to corrosion, water quality or shortage, energy efficiency, noise level, etc.

Our technical department is available to our customers, working continuously to improve the design, materials and production processes, and we also have a constantly growing sales network comprised of experienced professionals.



## OPEN CIRCUIT COOLING TOWERS

### **TVAE Series**

Capacity from  
792 to 6,668 nominal kW



### **TVAES Series**

Capacity from  
787 to 5,526 nominal kW



### **TVC Series**

Capacity from  
123 to 1,532 nominal kW



### **TPA Series**

Capacity of up to  
5,703 nominal kW per cell



### **TVAP Series**

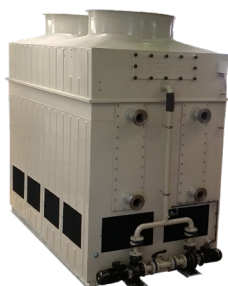
Capacity from  
82 to 4,925 nominal kW



## CLOSED COOLING TOWERS

### **RVA Series**

Capacity from  
35 to 3,077 nominal kW



### **RVC Series**

Capacity from  
35 to 1,037 nominal kW



## EVAPORATIVE CONDENSERS

### **CVA Series**

Capacity from  
125 to 6,000 nominal kW



### **CVC Series**

Capacity from  
125 to 2,090 nominal kW



AVAILABLE SERIES

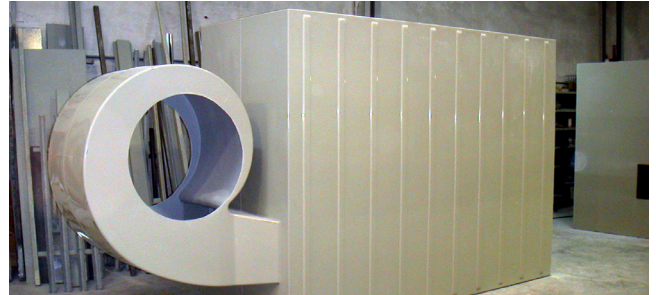


# Why choose polyester?

1

## Workability

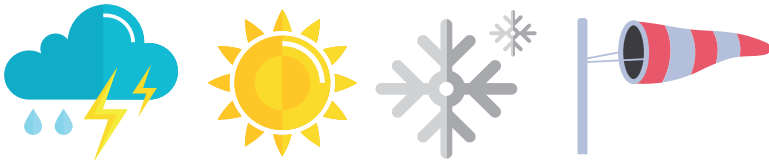
Stratified polyester allows us to obtain shapes that would be very hard to achieve with other materials, giving the components added value. The smoothness of the aerodynamic shapes achieved helps decrease the noise level and air load losses.



2

## Resistant to corrosion

Being resistant to the climate makes polyester the best possible material for equipment that must operate outdoors. Entirely resistant to corrosion, GRP cooling towers have the ability to withstand extreme climate conditions, meaning they are not affected by temperature differences, snow, UV rays or even acid rain. One of the best examples are the hulls of boats that are mainly manufactured from GRP and constantly have to deal with the weather, direct sunlight and the high salt levels present in seawater.



3

## Mechanical resistance

GRP has a high level of resistance to fatigue and a high yield point due to the very nature of the fibreglass it contains, which is why many industrial components are manufactured using this composite material, from the blades and the coating of the casings of wind turbines, to the rail sector where the fairings of high-speed trains are made out of GRP due to its resistance and workability.



4

## TOTALLY waterproof

The basins of TEVA's cooling towers and condensers are moulded as a single piece, with no flanges, fittings or bolted joints, therefore guaranteeing that it is totally waterproof and removing the risk of water leaks. It remains waterproof over time, as there is no risk of corrosion and it has no joint-sealing putty that could deteriorate. There are even metal tower manufacturers that, when faced with the deterioration of the metal panels and their coatings, offer the confusing and poor solution of "waterproofing" the equipment by lining their insides with polyester.



**5**

## Weight

Polyester casings are significantly lighter than those manufactured in steel - around a fourth. This can be very important, especially if the cooling tower is installed on a roof.

**6**

## Chemical resistance

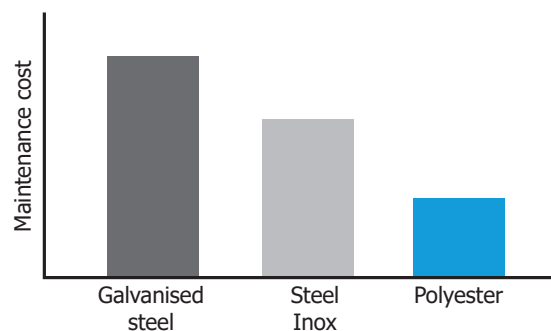
It is highly inert, which makes it resistant to corrosion by acid, salt and other substances; therefore, it can be used in locations where chemical substances are present without being affected.

This property, along with being totally waterproof, makes GRP the ideal material and it is very commonly used for storing highly corrosive, sulphuric and chloride products. It is also commonly used to make the containers that store the road salt used to keep roads free of ice.

**7**

## Maintenance cost

The reduction in maintenance costs and tasks is outstanding compared to cooling towers built using other materials. As they are resistant to any aggressions, you no longer have to worry about resealing, rust removal and repainting tasks. Polyester components do not have any coating or paint that we need to maintain. Instead, the colour is established along with application of the gel coat in the mould and at the end of the process it becomes an integral part of the moulded piece.

**8**

## Water quality diversity

GRP is resistant to all types of water, whether aggressive, osmosis water or seawater. It is also highly resistant to a wide range of PH levels, dissolved solids and high concentrations of chlorides and sulphates.





## Own manufacturing

### MODELS AND MOULDS

After first being designed by our technical department, the models that will be used to create the moulds are built manually by the modelling department (TEVA has a modeller on its staff). Different materials are used for this, including steel, wood, masking putty and several types of composite materials to achieve strength, rigidity and the most suitable aerodynamic and aesthetic shapes. Furthermore, the latest 3D printing technology was introduced some time ago to help create the models.

Once the models have been completed and are identical to the components that will be manufactured to assemble the machines, the mould to be used to create the GRP (glass-reinforced polyester) pieces is manufactured.

### PREPARATION AND WAXING

The contact moulding method is used to produce pieces of all shapes and sizes. After a polishing, a releasing or separating agent is applied to the chosen mould to allow the product to be cleanly removed from the mould once finished.



### GEL COAT APPLICATION

Before stratifying each piece, a coating of polyester is applied to the mould which, at the end of the process, will become an integral part of the component. It helps protect the structure against attacks from the environment such as UV rays. At the same time, it provides an outstanding and resistant surface finish that removes the need for any other finishes, such as paint or coatings that end up peeling. The product's useful life will depend heavily on the quality and properties of the gel-coat.

## MANUFACTURING STAGE



### SPRAYING/LAMINATION

Once this procedure has been completed and the gel-coat curing time has come to an end, the stratification is carried out. This operation consists of applying a series of successive layers of resins and fiberglass to the gel coat to obtain, after the process to remove any air, a compact and hardened structure which gives the component its structural properties.

The method used to apply the resin (spraying or lamination) and fiberglass (fiberglass mat or strands) will depend on the structural properties required for the part.



### REMOVING FROM THE MOULD

### CUTTING AND FINISH



It is important to appropriately reinforce those parts of the piece that will be subject to the greatest forces. To do this, metal or polyurethane reinforcements coated in the same resin and fibre are added, preventing contact with the water and ensuring it is fully incorporated into the piece to give it the necessary resistance.

### INTERNAL TOP COAT

Lastly, another type of resin (top coat) is applied to the inside of the component, obtaining an extraordinary finish with all the properties from the stratification of polyester.





## POLYESTER

## GALVANISED STEEL + PAINT

## STEEL INOX

Resistance to corrosion



Totally waterproof



Workability



Maintenance cost



Weight



Useful life



Chemical resistance



10  
years  
later



20  
years  
later

METAL **VS** POLYESTER







TEVA - Técnicas Evaporativas, S.L.  
Polígono Industrial Can Humet -  
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