

## The product

The product ZincTape® consists of a high pureness zinc-tape (> 99,95% of the chemical mass of zinc) with a nominal thickness of 0,08 mm. This tape is supplied with a > 0.025 mm thick adhesive, which can resist continuous operating temperature of 80° C and which reacts under electro-conductive pressure. The adhesive layer is covered by a siliconised paper, which protects the band from getting damaged or polluted until the tape is applied.

The product is available in two forms:

- in shapes, based on the client's needs
- in rolls, whose width and length are shown in the table below

Width mm	10	15	20	25	30	35	40	50	70	80	90	100	150	200	300
Length mt	50														

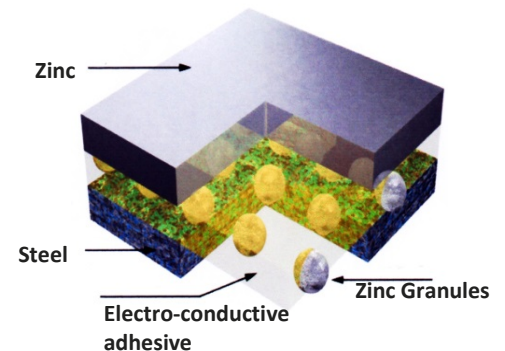


## Technical description

ZincTape® is designed to cover the surface of iron, steel, aluminium and light metals in order to protect them from corrosion. This is achieved by pressing it on the surface that needs to be protected from corrosion. This method is commonly known as "Laminar Zinc Coating"

The adhesive coat, which is applied only on one side of the zinc tape, consists of a matrix of adhesive and a percentage of zinc powder. Through the addition of zinc powder we have achieved the most important effect, which is making the adhesive itself electro conductive. This process allows the adhesive to create an electrical couple between the surface that needs to be protected and the zinc tape, so that the zinc can act as galvanic anode.

*The enlargement on the right shows the application of our zinc tape on a steel surface. It can be seen that the thickness of the adhesive layer always remains the same and that the zinc granules are dispersed evenly throughout the adhesive layer. These granules are necessary to enable the adhesive to be electro-conductive and to assure a continuous metallic contact between zinc and steel.*



As a consequence of the unique manufacturing process and the high pureness of the employed zinc, the band has an absolutely homogeneous and isotropic microstructure, which cannot be found in other protection systems. For this reason, any pitting or any form of local corrosive attacks are avoided. Therefore we can state that, owing to the following features:

- stopping any direct corrosion;
- active anticorrosive protection thanks to the electrical contact between the surface to be protected and the zinc layer, which, in the presence of an electrolyte, reacts as a sacrificial anode;
- presence of an adhesive layer, anchored on the surface to be protected, which is an additional defense against corrosion.

The coating with our zinc layer assures a cathodic protection of metallic surfaces for a time, that, in most cases, is equal or longer than the lifetime of the structure to be protected.

## Cathodic Protection

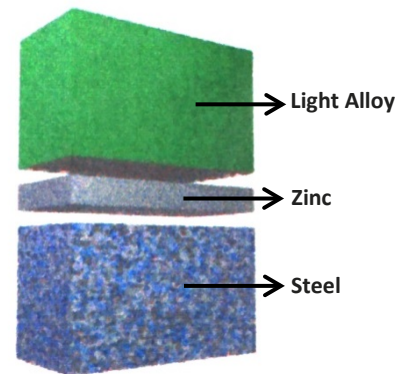
The picture on the right shows the difference between two iron bars held in a salt and water solution for one year. A 50 mm ZincTape coated one of the two bars on its central area. The role played by ZincTape as a sacrificial anode is of great importance: although its coating covers only one area of the structure, ZincTape protects the whole surface against corrosion. The zinc tape must be stuck to the nobler metal. Should there be doubts concerning the electrolytic potentials of the materials, it is advisable to cover both the surfaces with the zinc tape, so that any corrosion attack can be avoided.



## Coupling steel – Light Alloy

The point of contact between light alloys and iron materials can be subjected to corrosion.

When these two materials get in both electrical and electrolytic contact, a galvanic process begins. The electrolytic contact arises when a solution (usually rain-water) seeps between the two surfaces. This contact can even be caused by signs of dampness between the two surfaces or by a chemical non-homogeneity of one of the two surfaces because of the presence of oxides, dirt, etc. Since the electrochemical potentials of steel and iron materials are more electropositive than light alloys, they can cause corrosion. Therefore light alloys are the sacrificial anode. These problems can be avoided by means of insulating materials (generally made of plastic or gum), which can be put between the two surfaces, in order to break the electrical and electrolytic contact. But, since the insulating material does not stick well and since it wears out quickly, protection against corrosion is no longer guaranteed. Its damaging can even cause mechanical problems, so that the two surfaces are no longer connected in the right way. This will not happen when employing our zinc tape with electro-conductive adhesive. Through our zinc coating on the iron surface passive and active protections can be achieved:



- a **passive protection** due to the homogeneity and isotropy of the coating and to the adhesive, which sticks well avoiding infiltration;
- an **active protection** because the difference of potential between the two surfaces decreases. The potential of zinc is very similar to that of the light alloy and so the zinc tape is the sacrificial anode instead of the light alloy.

The zinc tape must be stuck to the nobler metal. Should there be doubts concerning the electrolytic potentials of the materials, it is advisable to cover both the surfaces with the zinc tape, so that any corrosion attack can be avoided.

## Application fields

- Lamp Post** Lamp posts are protected by ZincTape, on the base that is the critical part of the surface. The coating is usually carried out by qualified applicators or by the supplier of metallic poles.
- Automotive** Protection of window borders, chassis, roofs and other areas where water can seep through. For hinges and car doors or other particular hot spots ZincTape can offer special shapes based on the client's needs and made on purpose to avoid corrosion problems.
- Oil & Gas** Pipes and out-of-ground pipes. Sea platforms, harbour structures, wharves, piers and off-shore platforms Above-ground apparatus and components of refineries.



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