GALVANISED FINISH


Galvanised Vertical Bar Fencing

A coating that lasts up to 170 years.

The Galvanising Process

Applying the hot dip galvanising process to steelwork provides fabrications with a robust, durable and corrosion protective finish that under normal conditions will last for many years without maintenance of any sort. The process itself has a number of stages that are required to achieve the final finish. These are all by immersion and they may be summarised as follows (rinse stages omitted):

Degreasing

This may be carried out using either acid or alkaline based proprietory products and they may be heated or used at ambient temperatures. The target is to produce a surface, which is not contaminated with oil, or grease based products.

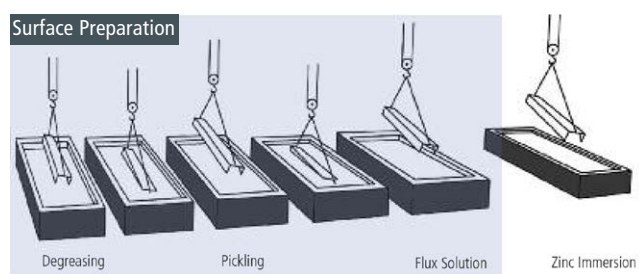
Pickling

This is carried out in dilute hydrochloric acid which dissolves rust and scale and produces a 'chemically clean' surface which will react with the molten zinc.

Zinc Immersion

A mixture of zinc chloride and ammonium chloride in solution is the standard fluxing agent of choice. This is normally used at between 50°C and 70°C, which helps the steelwork to dry after it is withdrawn. Drying is important as it helps prevent zinc splash and a separate drying stage is sometimes employed.

This 'final' stage utilises a special bath holding molten zinc at 450°C. The clean steel is immersed in the zinc and while it is



submerged it alloys with the iron in the steel to form zinc/iron alloy layers. These layers form the basis of the coating, which is then overlaid with free zinc, as it is withdrawn from the galvanising bath. The coating that is formed offers cathodic protection to the steel to which it is alloyed. As such, it will corrode preferentially to the steel extending its life by many years. Because tubular steel products are made from hollow sections that have internal air ways, the zinc will cover the materials inside and out and the thickness of the coating will depend on the thickness of the steel, typically the weight of the panel or gate will increase by 7.5% after galvanising.

The zinc covering will be formed in two layers, the first being a zinc alloy which is bonded to the surface of the steel and the second being a layer of pure zinc that cushions the alloy layer underneath.

The life of the galvanised product will depend on the amount of atmospheric pollution. Polyester powder coating may be applied after the galvanising and will increase the life of the product as the paint protects the galvanising, and the galvanising protects the steel underneath.