

## **ELECTROPHORETIC PAINT**

Initially designed for the Automotive Industry, to give a superior corrosion protection compared to other finished, Electrophoretic Paint is now of significant importance to other industries, where corrosion resistance has been a major problem.

The word 'Paint' may project the idea of brushes, spray guns, tears, runs etc... all associated with conventional painting methods. However, Electrophoretic Paint is a process that deposits paint by electro deposition.

After suitable preparation & pretreatment (see below) the articles are immersed in a paint solution, a current applied and the paint is deposited at the cathode i.e. the work piece.

During deposition, the paint thickness will reach a point where it insulates against any further deposition. At this point, the low current density areas, for example, bores, recesses and internal areas, are then coated.

After deposition is completed, the articles are rinsed to remove any surplus material. These rinses are called Ultra Filtrate Rinses. They are designed to return the rinsed off paint to the paint tank, thereby minimizing drag out losses.

After a final demineralised water rinse, the components are stoved at typically 180°C, for a minimum time of 20 minutes at METAL temperature.

The resultant coating has excellent corrosion resistance properties. It also has the feature of being uniform in thickness both externally and internally. It has remarkable resistance to 'creep' corrosion.

Disadvantages are

- 1) to strip off is extremely difficult.
- 2) Masking – this can be achieved, but it is expensive.
- 3) Articles must be jigged to be free draining.

The fundamental requirement for any finish is a suitable substrate which has been correctly cleaned and pretreated. This is particularly true for Electrophoretic Paint. Our plants have integral pretreatment systems that will clean the component and deposit a lightweight Tri-cationic Phosphate before the Electrophoretic Paint. This gives an excellent bond between the paint and steel and significantly increases the corrosion resistant of the process. However, we do ask that components be presented to us in a rust free condition. Any form of aggressive cleaning or de-rusting is detrimental to the process. The process is lead free and fully compliant to ELV legislation.

The process is sold as a "primer coat" mainly due to the fact that it is epoxy based. However many companies use it as a finished coat. It is available in two grades; standard to specification TWB 7900/PT and TWB 8100/ZAM or high build to specification TWB 8100/HB