Multi Axis DBD Plasma (Corona) Treatment of Bollards

Dyne Technology, the UK and Ireland’s Number One supplier of Plasma Treatment equipment has vast experience throughout a multitude of industries. With experience spanning over 45 years, it’s unsurprising that the Dyne Technology team have solved a multitude of adhesion problems.

Surface Treatment is widespread throughout manufacturing and engineering and is often plays an important part in manufacturing a variety of large two and three-dimensional plastic items; Examples of these include 2D flat sheets and 3D components including bollards and signage prior to coating or fixing of label adhesives.

Our customer approached Dyne Technology after having trouble achieving good adhesion of the labels due to the “non-stick” nature of the polyethylene (or similar materials) made bollards. It was vital to ensure good adhesion of the safety critical reflective labels and ensure the bond was strong enough to withstand being exposed to the elements.

Following a series of tests undertaken by Dyne Technology engineers, it became clear that the surface needed to be “activated” to achieve the high level of adhesion required. After in-depth discussions with our customer to better understand their manufacturing process and important pre-requisite requirements, the most appropriate solution was determined to be a Multi Axis DBD Plasma (also known as Corona Treatment) unit.
Plasma Treating

The SpotTEC unit is cost effective solution to the problem of improving both the surface energy and wettability of solid materials. A multi axis treatment system, utilising SpotTEC technology, was determined the most appropriate method of implementing surface treatment into the customer’s production unit.

The system is constructed from extruded aluminium and stainless steel and has a specially designed machine bed to accommodate the product to be processed. The unit is operated via a touch screen Human Machine Interface (HMI) and is easy to operate for control and programming purposes. Through the HMI the operator can view the current machine status, axis positions, total product count, machine status and current cycle stage; The HMI also allows the machines axes to be moved in manual mode and all aspects can be tested prior to operation.

The Surface Treatment Process

The bollard is manually positioned on the location bed and the start button is pressed. The unit then automatically moves the SpotTEC Corona Treatment head accurately and repeatedly over the surface to be treated to ensure consistent results.

The machine’s axis and drive units are safely enclosed behind a safety screen with light guard to the access area to allow for quick and safe access to the load/unload area. The simple design of the unit allows the user to set the optimum treatment level for the corona treatment nozzle/s giving the customer true flexibility.

If you’d like to find out more about how Plasma can improve adhesion to "non-stick" plastics, why not give the Dyne Technology engineers a call on +44(0) 1543 411 460 or email info@dynetechnology.co.uk.