Goodbye Flame Treatment, Hello High Performance Plasma

Dyne Technology, the UK and Ireland’s leading Plasma Treatment technology supplier has worked closely with market leading thermoplastic hose and tube manufacturer, Copely Developments, to upgrade their surface activation process.

Problems of adhesion were not uncommon for Copely Developments when manufacturing their extruded hoses, tubes and profiles for many applications from pneumatics, air brakes, fire detection systems to garden hoses. Surface activation prior to printing is critical as without it, the inkjet print simply rubbed off. Copely Developments Ltd. contacted Dyne Technology when seeking to replace their old inefficient flame treatment system.

The engineering team at Copely explored alternatives to Flame Treatment because of the unreliable performance it delivered and the lack of control it gave them over their process. The lack of consistent results presented huge issues as safety critical markings are printed onto the fire detection tubes which require a strong bond to ensure high print resiliency.

As well poor print adhesion the high running cost of Flame Treatment was another important deciding factor for Copely Developments. The flame treatment system needed frequent gas bottle replacement. The use of a naked flame in Copely’s thermoplastic extrusion facility presented a significant health and safety concern, this is often reflected in the higher cost of buildings insurance to manufacturers using this process.

Why Plasma Treatment?

The hose is produced on two separate extrusion lines with speeds ranging from 5 – 30 metres per minute and a flexible and easily repeatable, in-line method of surface activation was essential.
Working closely with Copley’s engineers the Dyne Technology technical team conducted initial tests at the Dyne Technology Technical Centre and established that the most appropriate surface treatment method was PlasmaTEC PLX atmospheric Plasma. The next step was to carry out an on-site on-line production trial with the selected PlasmaTEC equipment to satisfy both the Technical and production teams at Copely Developments.

“The Dyne Technology team provided fantastic customer support in helping us determine the best method of surface activation for our manufacturing process by conducting a “no fuss on site trial” on our production line. We are thrilled with the high performance PlasmaTEC-X as it provides consistent, reliable results and is much cheaper to run than the flame system installed previously. PlasmaTEC-X Plasma Treatment provided us with a repeatable method of surface activation that we can trust to provide consistent results every time. – Steve Walton, Operations Director

The PlasmaTEC-X

The PlasmaTEC-X Atmospheric Plasma system is an economical, environmentally friendly and efficient method of surface activation. Copely Developments required a multi nozzle Atmospheric Plasma set up, with two Plasma nozzles operating on separate lines. Utilising eight metre nozzle hoses, both Plasma nozzles are operated from a single control box despite being several metres apart.

Up to eight nozzles can be operated from one control panel with the PlasmaTEC-X and an easy to set up timer mode allows for both simultaneous and independent nozzle operation. Adjustable parameters allow for reliable and consistent surface activation and this is furthered by “AirSave” which continuously monitors compressed air flow to ensure that the unit is consistently running at its optimum performance levels.

The high running costs experienced with Flame Treatment are now a thing of the past thanks to Atmospheric Plasma Treatment. The PlasmaTEC-X boasts plug and play technology, running off a standard 13 Amp mains electrical supply and factory compressed air, this system offers our lowest cost of ownership Atmospheric Plasma unit yet.
Our intelligent plasma system automatically reports when the plasma tip needs replacement, removing the guess work for consumables replacement, minimising unexpected downtime and reducing the cost of consumables as parts are replaced only when necessary.

Speak to the Plasma Treatment experts!

If you’re facing a similar problem to our customer, why not get in touch? With over 40 year’s practical industry experience, the Dyne Technology team are best placed to provide trusted advice and guidance on how to solve the problems of adhesion.

You can get in touch with us by calling +44(0) 1543 411 460 or alternatively email info@dynetechnology.co.uk.