



Overview

Pre-treatment or preparation of metal for powder coating is the most important stage in the process. It is fundamental to a successful finish.

A fully automated 11-stage system including separate stages for aluminium and galvanized steel. The chrome-free and heavy metal-free technology is the best preparation for adhesion and corrosion protection.

This system is equal or better than traditional chrome-based systems and is specified by all the major architectural powder manufacturers.

Key Points

- Suitable for aluminium and steel and galvanized steel
- Chrome free
- Automated process
- Low environmental impact
- Qualicoat approved
- GSB approved
- Conforms to BS EN 12206-1 & BS EN 13438

Approvals

Aluminium. Qualicoat A-024 (exp: 31/12/2024). GSB licence Nr A-304a (exp: 31/07/2027)

The processes described are approved by all our powder suppliers enabling us to offer comprehensive guarantees. Employing the systems described ensures powder coating conformance to BS EN12206-1 for aluminium and BS EN 13438 for galvanized steel

Plant

General description:

The plant consists of 11 stainless steel tanks 6500mm long, 750mm wide, 1650mm deep each holding 8884 litres of process liquids. They are parallel to each other with a twin transporter crane traversing overhead.

Material is loaded into one of 3 stainless steel baskets and locked into position behind a light curtain to prevent unauthorised access.

A pre-programmed sequence is selected that matches and optimises the process for the design and material type. The programme sets the tank sequence (aluminium or galvanized steel), the dwell times in each tank, the immersion and withdrawal speed into and out of the tanks and the drain angles. For complex designs there is chemical agitation to ensure full coverage and cleaning of the surface.

The basket is lifted by 2 hoists and cycles through the sequence before returning to the starting point.

Between tanks 6 and 7 there is a "dry bay" that allows overtaking of baskets which enables baskets of materials operating on different programmes to go through the system at the same time.

For non-standard product, the plant can be manually operated.

All the de-mineralised water is manufactured on site and the chemical tanks are monitored and automatically dosed with fresh chemical as required.

Each tank is sampled once per day and the contents checked for compliance to specification in our on-site laboratory

Process

General description:

Aluminium. Titanium-Zirconium (TiZr) non-chrome 6-stage pre-treatment.

Galvanized steel. Silane (Oxsilan) non-chrome 8-stage pre-treatment.

Process stages aluminium.

1. Acid etch cleaner. A specially developed acidic blend that will clean, deoxidise, etch and desmut in one operation.
2. Cold water rinse.
3. De-ionised water rinse to remove salts & solids in suspension. <200µs conductivity.
4. Conversion coating. Titanium-Zirconium.
5. De-ionised water rinse. <100µs conductivity.
6. De-ionised water rinse. <30µs conductivity.

Tank sequence: 2, 4, 7, 9, 10, 11.

Process stages galvanized steel.

1. Etch cleaner. A specially developed bespoke multi-function metal preparation.
2. Cold water rinse.
3. Cleaner and conversion preparation.
4. Cold water rinse.
5. De-ionised water rinse to remove salts & solids in suspension. <200µs conductivity.
6. Conversion coating. Silane – based.
7. De-ionised water rinse. <100µs conductivity.
8. De-ionised water rinse. <30µs conductivity.

Tank sequence: 1, 3, 5, 6, 7, 8, 10, 11

Applied under ISO 9001: 2015 Quality Management System. Approval Nr: LRQ 10532977. Exp: 31 August 2027

Specific chemical codes, composition and process conditions are excluded for confidentiality.

Warranty

For C2 and C3 environments: 25-year warranty for gloss, colour and adhesion is offered as standard.

For C4 and C5I & C5M environments: Guarantees are conditional on project location, environmental conditions and pre-contract approval.

Warranties are offered in conjunction with Powdertech standard terms and conditions and a documented cleaning and maintenance programme.

Please note:

Whilst every care has been taken to provide accurate information this document is for guidance only and should be read in conjunction with other data sheets where applicable.

This document forms no part of a contract. Any warranty is subject to individual review.