

POWDER & WET COATING

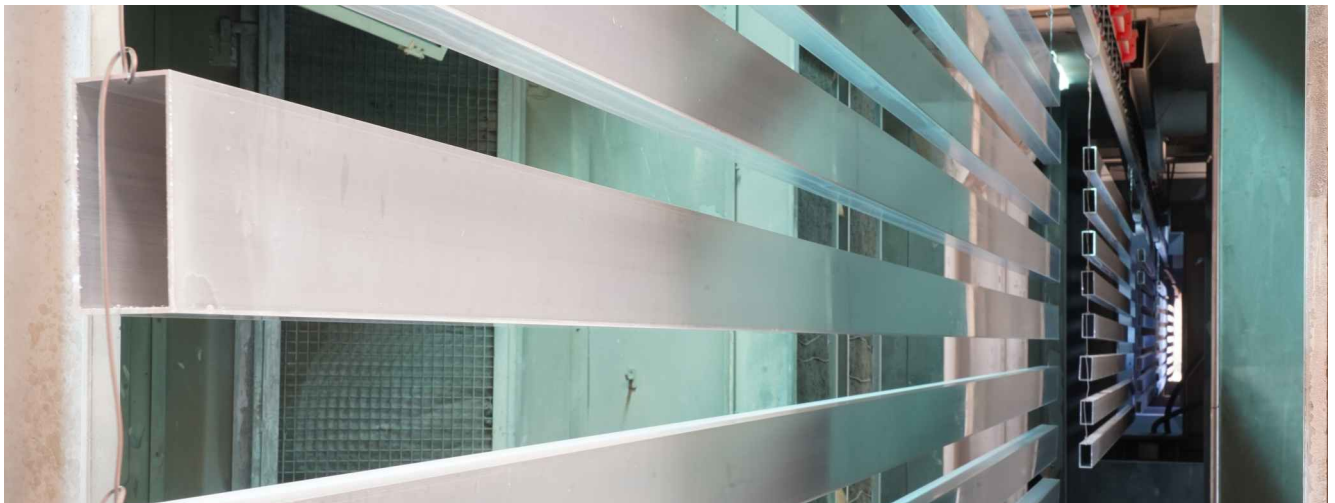


Intercare Powder & Wet Coating division, spread out over 40,000 sq. ft., holds a Qualicoat certificate for surface treatment of Aluminium Alloy awarded by QMEA (Quali Middle East Association) and has the capacity to meet the market's demand. The machines in use for coatings have been sourced from reputed European manufacturers and are compliant with British and ASTM standards.

In the wet coating works, the facility is capable of wet coating, mild steel, and wooden surfaces of any size and style, including decorative coating and anti-corrosion wet coating.

SPECIALITIES:

- HIGH-PERFORMANCE POWDER COATINGS – applied as a dry powder through an electro-static process on any metallic surface (most particularly aluminum) then cured with heat. Warranty range from 10 to 20 years.
- HIGH-PERFORMANCE LIQUID COATINGS – for painting high-end niche products using polyvinyl di-fluoride (PVDF) with a warranty of 25 years. Latest Paint Technologies are coming into play, and Intercare Ltd maintains a constant update on upgrading its facilities as well as is conscious of the requirements of the market.



PROCESS OF POLYESTER POWDER COATING



a) **Powder:** Intercare use architectural polyester powders supplied by Jotun, Akzonobel, Axalta and National who are an ISO 9000 supplier of powders to the protective and decorative markets.

b) **The importance of Pretreatment:** Intercare Coatings follow Qualicoat & ISO standards for coating on Aluminium, Mild Steel and Galvanized Steel substrates.

Experience has shown that for modern powders that gives coating thickness of 50, 50 - 90 microns, the pre-treatment of the substrate is of foremost importance.

Accordingly, intercare has included conversion coatings in the pre treatment process which are Chrome free coating for Aluminium and Iron Phosphate for Ferrous and Galvanized steel products. In all there are 9 stages to Intercare's pretreatment for Powder Coating.

The chemical treatments improve the corrosion resistance of the substrate and because of the non-crystalline structure of these conversion coatings, the mechanical adhesion is enhanced to a great extend.

It is also extremely important that the rinse water used between the various chemical treatments are based on deionized water so that all surfaces for powder coatings are free from cations and anions which affect the deposition of the electrostatically charged powders.

Intercare have installed their own R.O unit with additional stages for de-ionizing the final water to a conductivity of less than 10 microsiemens.

c) **Coating:** Following pre-treatment the materials to be coated are transferred to a conveyor and transported to the spray area.

The powder is applied electrostatically by means of automatic spray guns operating from reciprocators. Intercare also have a facility for manual spraying where required.

The final process stage is curing, which is carried out in a 19-meter long oven, through which the sprayed material passes by conveyor (the oven temperatures are carefully maintained by our quality control personnel to ensure correct cure).

Following curing the coated materials are checked for quality and packed ready for despatch to the client.

d) **Quality assurance:** With its own fully equipped laboratory, Intercare carefully monitor not only the chemical strengths of their pretreatment baths and conductivity of the inter stage rinses, but also carry out the important mechanical tests on the finally coated products including:-



QUALITY TESTS FOR POWDER COATING

Gloss Test (DIN 65730) (By instrument): To compare samples with manufacturers recommended gloss level. This test also gives an indication of the correct curing of the powder coating.

Adhesion (DIN 535/ISO 240-2Hz): Cutting the coating down to the substrate on a grid system using 6 blades at 2mm centres.

The resulting cross hatch is then subject to severe adhesion stress to confirm the coating strength is at the correct level.

Impact Resistance: Falling weight from specified height with inspection of the deformed area to ensure coating has neither cracked or been detached from the substrate, on either face.

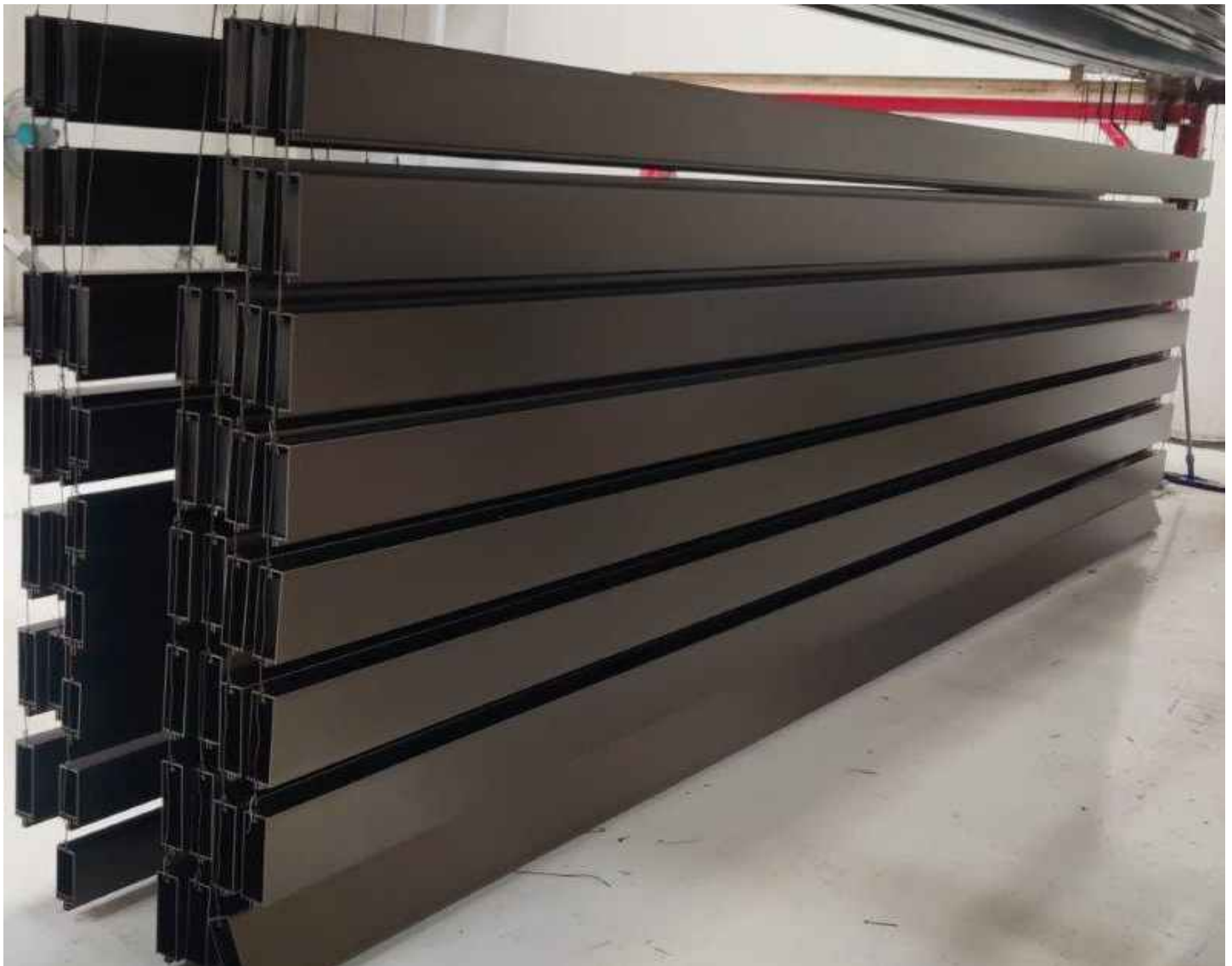
Bend Test: Bending a Test piece around a cylindrical mandrel from 30mm dia to 3mm dia and checking the coating for cracks on both faces of the bend.

Coating Thickness Test: During the inspection process of the finished coated product, a series of coating thickness test are made to ensure the Standard Thickness of 50 microns to 90 microns has been maintained

MEK Test: 50 Rubs with cotton wool soaked in Methyl Ethyl Ketone to test correct curing of the powder coating.

Oven Test: Regular Tests are made on the ovens used for Powder curing to check the heating zones of the oven and the temperature gradient, the curing time for the powder is according to the manufacturer's recommendations.

This continual monitoring of the Powder Coating processes ensures that our customers receive high quality coatings which conform to the standards required for the extreme and harsh conditions of sunlight and humidity found in the Arabian Gulf Area.



TECHNICAL SPECIFICATION

Composition: Pigment consisting of Titanium oxide and calcium carbonate Binder consisting of epoxy and polyamide resins. Volatile matters consists of Glycol and Esters.

Process: The process involves the following stages:

- a) Substrate pre-treatment of light sanding.
- b) Cleaning and degreasing with thinners or perchlorethylene.
- c) Pre coating spraying with a light high build undercoat the above process is equivalent to chromating/phosphating 60/80 micron DFT.
- d) Further light sanding and smoothing of surface areas.
- e) Applying top coat electrostatically by our No.2 process as mentioned above:
- f) Curing under normal conditions within controlled environment to achieve recommended hardness and toughness of the coat.

