The Heritage Range
Woodland Finishes

Sublimation Process

The Italian company 'Decoral' developed the process which allows high-quality woodgrain or other effects to be produced on aluminium, combined with all the protective advantages of powder coating.

Mill finish

Base coat

Film

Sublimated

A special polyurethane powder coating is applied to the aluminium, and part -cured. The design is printed onto a film, using inks which will sublime when heated. (That is to say, the solid material will convert to a vapour without passing through a liquid phase in which it could flow out and blur the printed outlines.)

The printed film is then wrapped round the coated aluminium, made to adhere firmly by vacuum processing, then heated to approx 200°C.

The colour from the ink sublimes onto the powder coating and diffuses into it, producing a permanently fixed decorative effect. Only certain powder coatings can be used because they must be capable of withstanding reheating to 200°C without damage. In this process the powder coating provides the protective effect, while the film-based technology applies the decorative appearance.

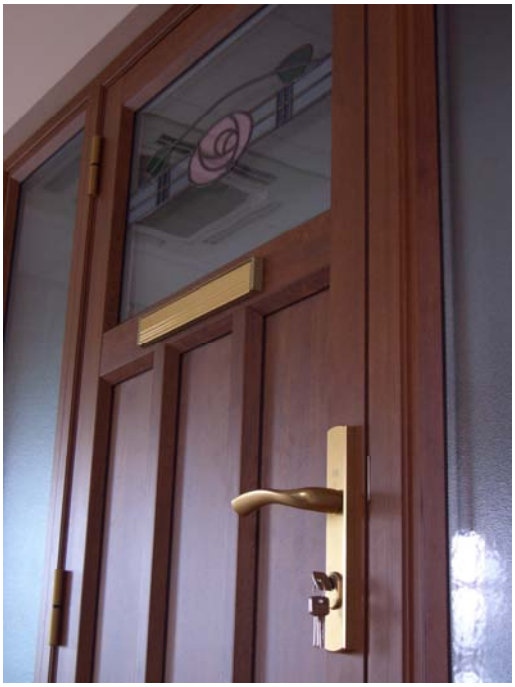
This type of process is well established in textile technology, where it is known as dye transfer printing.

Finishes

Oak—A traditional solid wood colour with mature shading

Walnut—A lighter close grained finish

Rosewood—A deep ruddy wood with a rich sheen



Installed Oak door with side screens

Please note that the colours shown above are for representative purposes and may vary from the true product colour.

Joedan Manufacturing UK Ltd ● Head Office & Showroom Unit 3 ● Joedan Park ● Northway Gate ● Ashchurch ● Tewkesbury ● Gloucestershire ● GL20 8JP
t. 01684 274000 ● f. 01684 274200 ● e. windows@joedan.co.uk ● www.joedan.co.uk
A member of the **JOEDAN HOLDINGS** group of companies.
Registered Office: 35, Rodney Road ● Cheltenham ● Gloucestershire ● GL50 1HX ● Company Number 01923313

The Heritage Range
Classic Painted Finishes

Process

The aluminium extrusions are loaded into specially designed baskets. They are then taken, under computer controlled conditions through the following 11-stage immersion process.

1. Alkaline Degreasing
This removes oil, dirt and some oxide.
Degreasing lifts organic contaminants and a little oxide from the surface.

2. Alkaline Etching
Removes swarf and the natural aluminium oxide layer to provide a chemically abraded surface for the paint to bond onto.

3. Rinse
Overflowing and recirculating warm water rinse.

4. Rinse
Also overflowing and recirculating but at ambient temperature.

5. Desmutting
The removal by the etching bath of a layer of aluminium means that more of the alloying oxides which are not soluble in strong alkaline conditions will now be left on the surface as a grey 'smut'. The smut and aluminates formed from the etching operation are soluble in dilute acids and this solution removes them. Desmutting removes alloying oxides to produce a 'pure' aluminium layer.

6. Rinse
Overflowing water rinse.

7. Conversion Coating
Provides an inert, amorphous, iridescent green, chromium-phosphate film which is integral with the prepared aluminium. Chromate layer deposited on the surface.

8. Rinse
Overflowing water rinse.

Powder coated

9. Rinse
Deionised water rinse.

10. Rinse
Deionised water is controlled. The effectiveness of the previous chemical treatments can be reduced by poor rinsing. The use of high purity, deionised water in the final rinse ensures that the aluminium will be in optimum condition for painting.

11. Drying
Dried at temperatures below 85°C. The use of excessive heat to dry components whilst the chromate conversion coating is still 'soft' may result in 'mud cracking'. This can reduce adhesion of the paint coating and its long term durability.

The aluminium has now finally been cleaned down to pure metal, coated with a chromate film and carefully dried, providing a substrate to which paints bond remarkably well. This represents a cost-effective route to achieving a durable and colourful finish, ensuring quality products and innovative technologies are available to meet current and future needs of our customer base.

Finely divided polyester powders are given a polarised electric charge from a high voltage generator. The particles, being similarly charged repel each other and seek an earth (the extrusion to be coated). The coated components are heated to 200°C for 10 minutes causing the powder to melt, flow and chemically react to form a continuous film, which is firmly anchored to the substrate. Electrostatic coating, as the process is known, provides good coverage as the powder tends to 'wrap around' the profile.

Colours

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