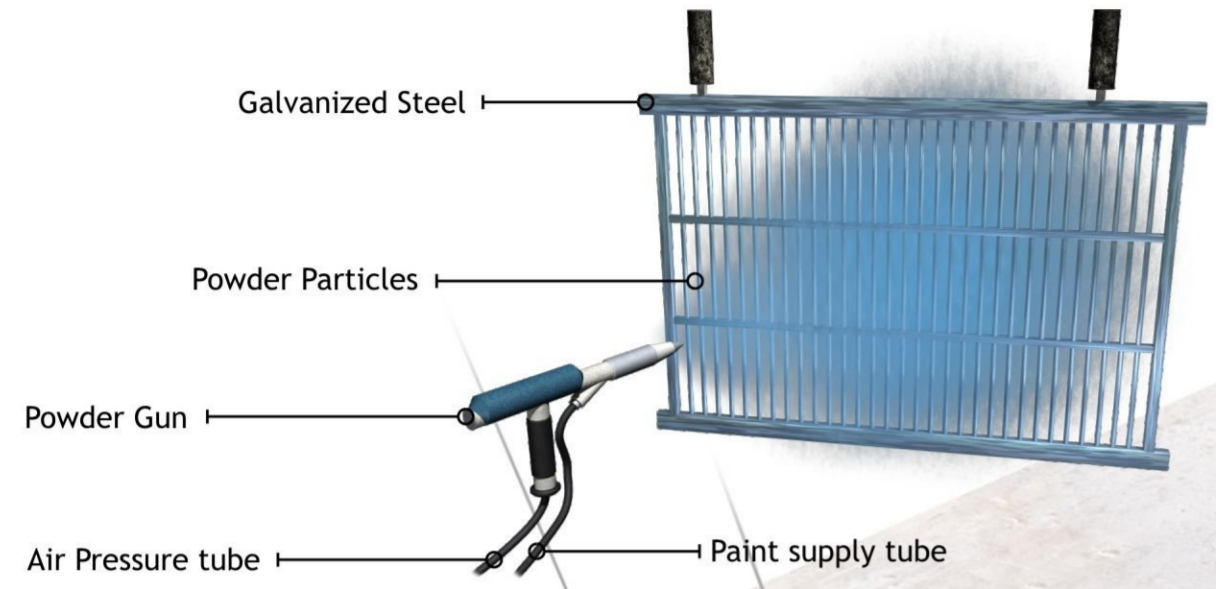


# Stage 3

# THE POWDER COATING & FINISHING PROCESS

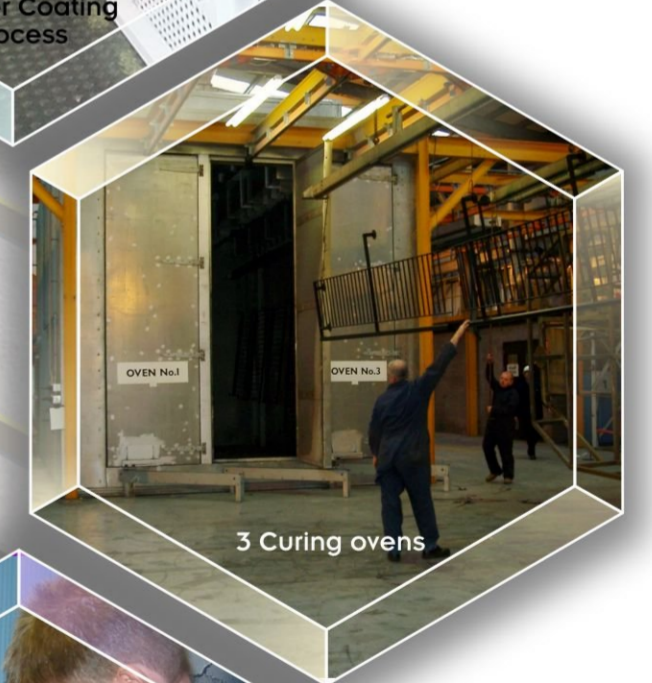
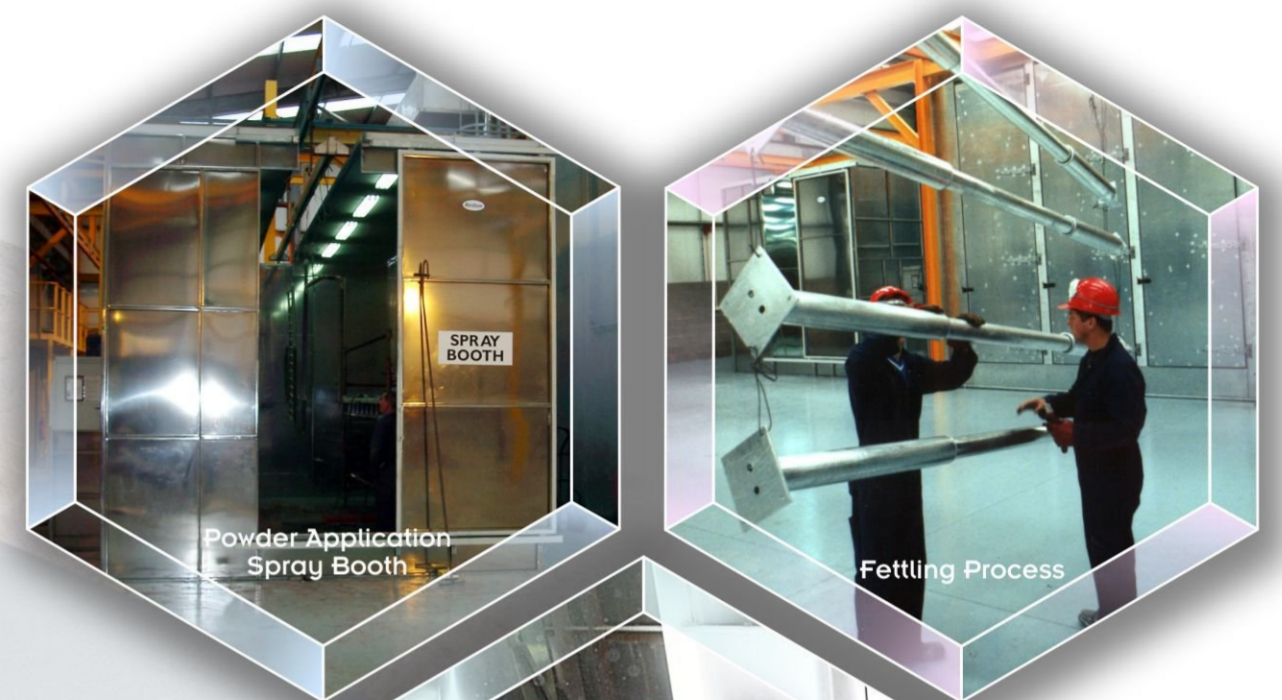
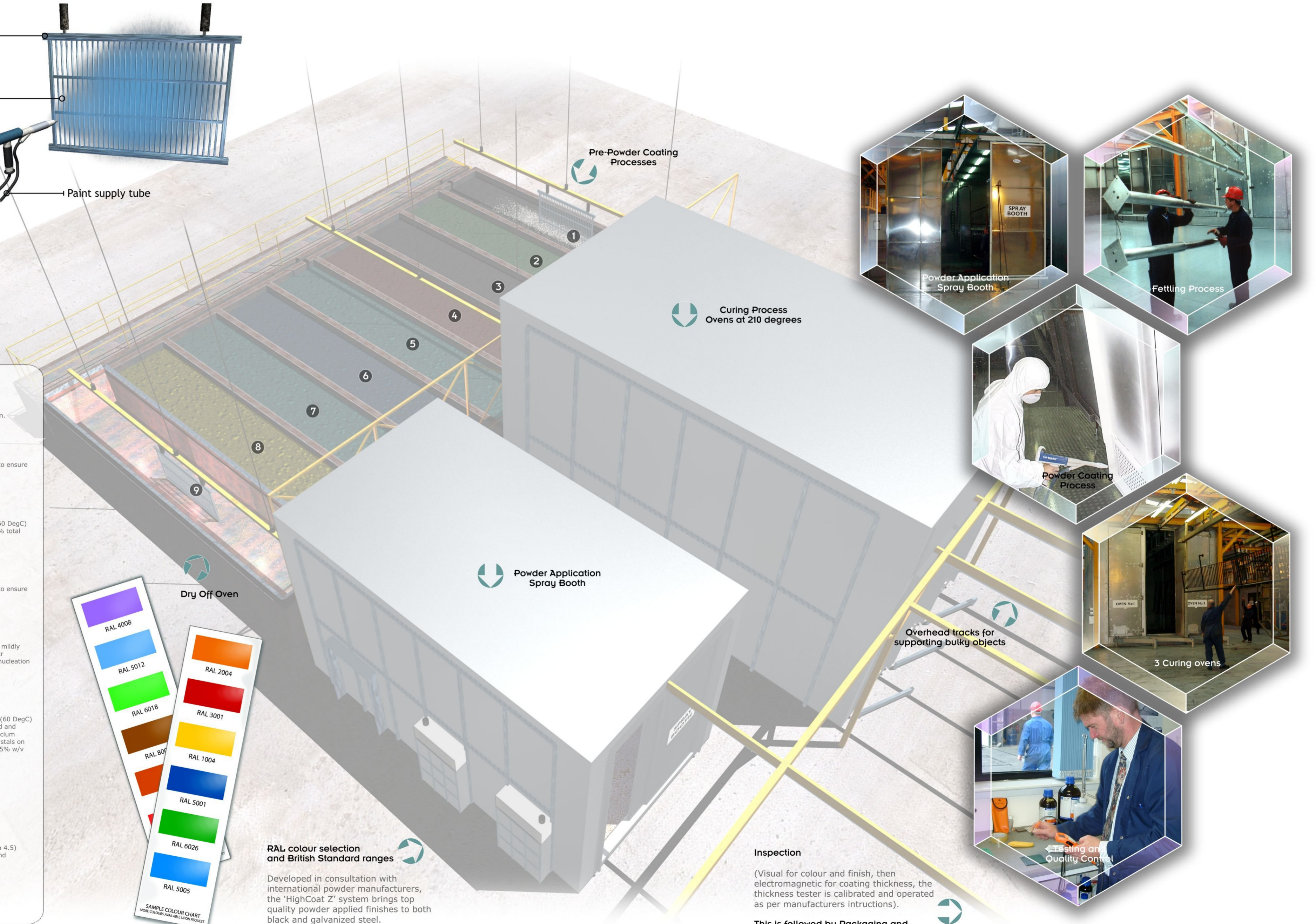


## Powder Coating Pretreatment

- 1 Alkali Degrease**  
Alkali degrease in heated (60 DegC) caustic (sodium hydroxide) solution at 7g/ltr concentration.
- 2 Rinse x 2**  
Submerged in water at ambient temperature twice to ensure the Alkali agent is fully rinsed.
- 3 Acid Etch**  
Acid / etch stage involving immersion in a heated (60 DegC) mixture of sulphuric and phosphoric acid at 8 to 10% total acid which cleans and de-rusts the substrate.
- 4 Rinse x 2**  
Submerged in water at ambient temperature twice to ensure the Acid agent is fully rinsed.
- 5 Refining Agent**  
Refiner stage involving immersion in an air agitated mildly alkaline suspension of a titanium powder at 0.75g/ltr concentration and ambient temperature to provide nucleation for crystal formation in the next stage.
- 6 Zinc Phosphate**  
Zinc Phosphate stage where immersion in a heated (60 DegC) aqueous solution of Zinc, Phosphoric acid, Nitric acid and other metal ions such as Manganese, Nickel and Calcium produces a complete covering of Zinc Phosphate crystals on the surface of the substrate. The level of Zinc is 0.15% w/v and the total acidity is 4 to 5%.
- 7 Rinse**  
Rinse in water at ambient temperature.
- 8 Sealer Solution**  
Sealing rinse stage, the final mildly acidic (pH 3.5 to 4.5) chromium-free post rinse at 0.25% concentration and ambient temperature.
- 9 Drying Oven**  
Final pre-treatment stage is the Dry off oven.



**RAL colour selection and British Standard ranges**  
Developed in consultation with international powder manufacturers, the 'HighCoat Z' system brings top quality powder applied finishes to both black and galvanized steel.



**Inspection**  
(Visual for colour and finish, then electromagnetic for coating thickness, the thickness tester is calibrated and operated as per manufacturers instructions).  
**This is followed by Packaging and Despatch.**