

Metal Finishing

Landscape Forms metal outdoor furniture is finished using Landscape Forms' exclusive Pangard II® Polyester Powder coat System. The Pangard II® multistep system of cleaning, priming and powder coating produces the finest metal finish available for site furniture. It provides an attractive, durable metal finish that;

- prevents corrosion
- has outstanding gloss retention
- has good chemical resistance
- is UV stable
- is impact resistant
- has excellent abrasion resistance
- is extremely hard
- retains sufficient flexibility to resist cracking and chipping

Pangard II® polyester powder coat is lead-free, Hazardous Air Pollutant (HAPS) free, does not generate hazardous waste, and contains less than 1% Volatile Organic Compounds (VOC's).

Metal Preparation and Cleaning

Rigorous preparation is key to a successful finish. At Landscape Forms this begins with brushing, grinding, filing or sandblasting welded parts to remove carbon and prepare the metal for cleaning and pretreatment.

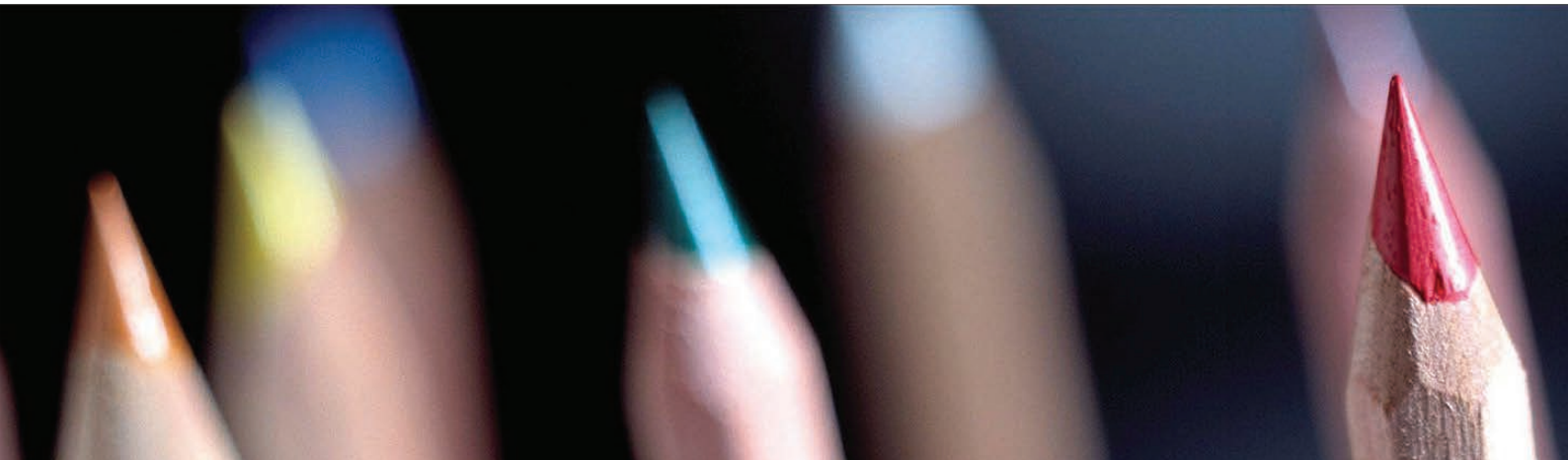
- Products are cleaned using a heated wash to degrease and remove surface oils.
- A zinc phosphate pre-treatment is applied. The zinc finish builds a structure with good bite and hold for coating and is highly resistant to corrosion creep.
- Some aluminium extrusions get a paintable anodic coating for paint adhesion and corrosion resistance.

Unlike many site furniture manufacturers that use an iron phosphate or sandblasting pre-treatment on metal products, Landscape Forms uses zinc phosphate because it produces a more durable finish than either of these two methods. The sacrificial zinc gives the treated metal self-healing properties. Under abuse in the field, even if the finish is cut or scraped right down to the metal, the layer of zinc helps prevent corrosion creep.

Epoxy Undercoat

Rigorous preparation is key to a successful finish. At Landscape Forms this begins with brushing, grinding, filing or sandblasting welded parts to remove carbon and prepare the metal for cleaning and pretreatment.

- An epoxy undercoat (e-coat) is applied to steel and aluminium products. The ecoat provides strong cohesion to the zinc substrate pre-treatment with additional protection for the metal and acts as a moisture barrier between the substrate and the final finish. It penetrates all crevices, including those not readily reached by powder coating, to protect against corrosion. When reheated during the powder coating process, it provides a good foundation for adhesion to the powder coat.
- The e-coat is oven cured in preparation for powder coat applications.



Metal Finishing

Powder Coat Finish

- E-coated steel and aluminium products are thoroughly cleaned, rinsed and dried to remove oils, dust and debris in preparation for powder coat.
- Two coats of powder coat are applied, with oven curing after each application. All brackets and connectors are finished along with product parts to ensure uniformity of colour.
- The topcoat is applied over the primer and parts are again cured in an oven. This heating process cross-links the coating and fuses it to the prime coat. The topcoat adds depth to the finish and provides colour and gloss protection. The average film thickness for most colours is six mils.

MECHANICAL & ENVIRONMENTAL PROPERTIES OF PANGARD II® POLYESTER POWDER COAT

Property	Test Method	Performance
Colour (non-metallic)	CIEL*A*B	Delta E 1.0 Max
Gloss Consistency (Gardener 60)	ASTM D-523	+/-5
UV Resistance (Colour)	ASTM G155, cycle 7	Delta
UV Resistance (Gloss)	ASTM G155, cycle 7	<20% loss
Solvent Rub	PT-310.070	10 double
Corrosion Resistance 1500hr.test	ASTM B 117	Max undercutting 1mm
Cross Hatch Adhesion	ASTM D-3359 method B	100% Pass
Flexibility (conical mandrel)	ASTM D-522	3mm @ 2mils
Erichsen Cupping	ISO 1520	8mm
Impression hardness (Buchholtz)	ISO 2815	95
Direct Impact Test	ASTM D 2794	60 in/lbs @2.5mils
Reverse Impact Test	ASTM D 2794	60 in/lbs @2.5mils
Pencil Hardness	ASTM D 3363	2H (min)
Chip Resistance	ASTM D 3170-03	100% pass
Chemical Resistance	ASTM 1308	
Humidity Resistance 1500 hr test	ASTM D 2247 -87	Max blisters 1mm
Total Durability	LF-Total Durability	Pass @ 1.5, 5, 9.5 mils

Landscape Forms uses the most technologically advanced application equipment available. The application equipment on our paint lines provide complete coverage even in hard-to-reach areas; uniformity of thickness; and improved charging of powder particles to achieve optimal transfer efficiency and limit waste.

The result of this multi-step process is beautiful, impact-, light-, weather- and corrosion-resistant furniture that is exceptionally durable and prepared for many years of active use with minimal maintenance.

Maintenance

The Pangard II® polyester powder coat finish requires minimal routine maintenance. Surface dirt may be removed with a brush or sponge and water mixed with a mild detergent. High pressure washing (not to exceed 500psi) with a mild detergent removes stubborn dirt. Steam cleaning is not recommended.

Anodized Finish

Anodizing aluminium is a highly controlled oxidation process, creating a finish that is durable and corrosion-resistant. It is composed entirely of aluminium oxide. This finish is not applied to the surface like paint, but is fully integrated with the underlying aluminium substrate, so it will not chip or peel.

DURABILITY: is a chemical reactive finish that has complete bonding with the underlying aluminium.

MAINTENANCE: Rinsing or washing with mild soap and water will usually restore the anodized finish to its original appearance.

COLOUR: Anodizing aluminium allows it to retain its metallic appearance, while still offering resistance to chipping and peeling.

HEALTH: The anodized finish is chemically stable, will not decompose and is nontoxic. Because the process is a reinforcement of a naturally occurring process, it is non-hazardous and produces no harmful by-products.