Two-coat process interior & exterior applications

THIS DATA SHEET IS INTENDED FOR THE APPLICATOR AS A GUIDE ON PARAMETERS THAT CONSIDERABLY AFFECT THE QUALITY OF THE POWDER COATING FINISH

Typical applications

- high performance architectural coating
- heavy corrosion protection
- window and door frames
- bicycle and motorcycle parts

Features

- improved corrosion protection
- improved weather resistance
- improved scratch resistance (metallics)
- better chemical resistance (metallics)
- improved grip and touch resistance (interior)
- imparts more depth to metallic effects (3D effect)
- required for TIGER Drylac® Dormant Transparent finishes
- required for TIGER Shield® system

Finish

Working with two-coat powder coatings requires precision. All guidelines must be adhered to.

To ensure that all provisions are given for a quality finish, an open communication channel must be established between the coater and the client, and between the coater and the powder coating manufacturer.

Processing

Corona and Tribostatic*

Better adhesion and reduction of back ionization effect may be achieved when the base coat is applied with Corona equipment and the top coat is applied with Tribo equipment. If the top coat is applied with Corona equipment, the gun voltage (reduction of the field strength) and powder coating volume should be reduced. Free ion collecting devices will further aid in the application.

** For Tribostatic powder coatings, confirm before ordering. Suitability of metallic effects for Tribostatic processing must be verified prior to actual application. Please refer to the latest edition of the relevant application guidelines for metallic effect powder coatings*

Since not all powder coatings are suitable for recycling/reclaim, please verify before ordering.

Finish

When curing two-coat systems, the best intercoat adhesion is achieved when pre-gelling the base coat at 392 °F (200 °C) for 2-3 minutes prior to applying the second layer. The top coat is then cured in conformity to the applicable Product Data Sheet for the powder coating system used.

If the base coat is a TIGER Drylac® metallic powder coating, a cure time between 50-75% of the curing parameters; as described in the applicable Product Data Sheet, should be observed. This will reduce variations in the metallic effect.

When using TIGER Drylac® brilliant reflective surface powder coating (Mirror Silver, Kromezone, Chrome OGF) as base coat and a clear coat is to be applied over such finishes, the base coat must be cured at 100%, or at least at 75% of the curing parameters; as described in the applicable Product Data Sheet.

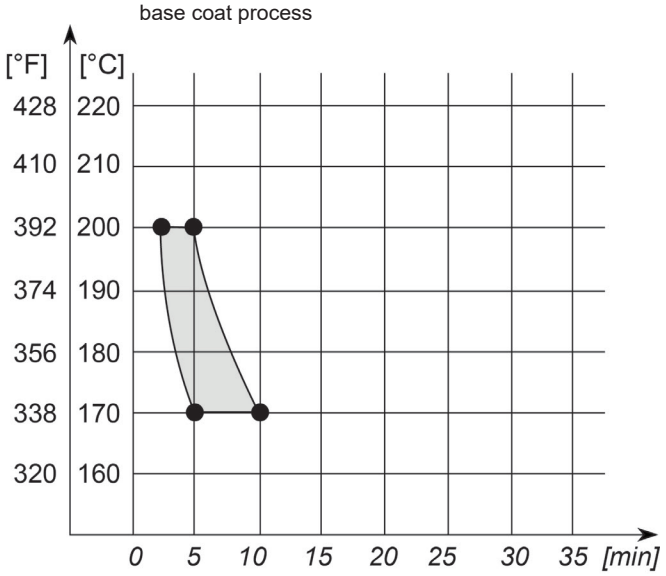
When pre-gelling, and subsequent curing takes place in a direct fired gas oven, the intercoat adhesion between the base coat and the top coat may suffer if variations in the gas supply occur.

Application guidelines

Cure parameters

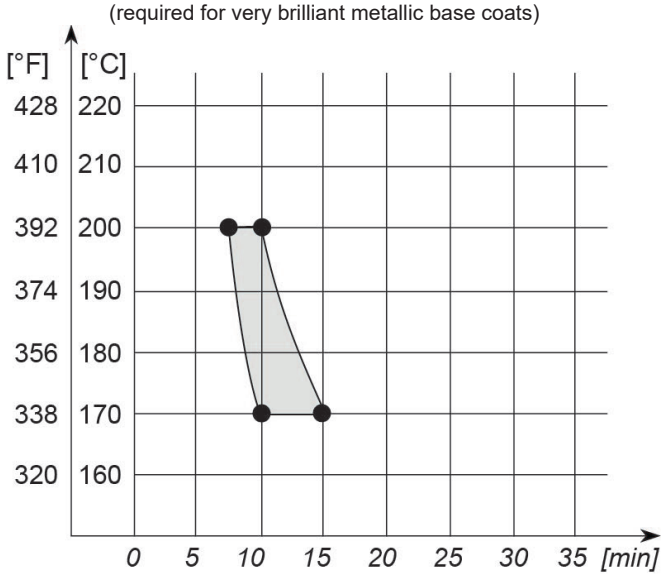
(substrate temperature versus curing time)

base coat process



substrate temp.	min. curing time	max. curing time
338 °F (170 °C)	5 minutes	10 minutes
392 °F (200 °C)	2.5 minutes	5 minutes

(required for very brilliant metallic base coats)



substrate temp.	min. curing time	max. curing time
338 °F (170 °C)	10 minutes	15 minutes
392 °F (200 °C)	7.5 minutes	10 minutes

Cure parameters must be closely observed since mechanical properties will develop before full cross-linking.

Test results

Checked under laboratory conditions on iron phosphated steel test panels Bonderite B-1000 or equivalent. Cure conditions are according to the cure curves. Actual product performance may vary due to product-specific properties such as gloss, color, effect and finish as well as application-related and environmental influences. When used as a two-coat system, the increase in film thickness will result in a decrease of mechanical properties.

test method	test	TIGER Shield	metallic + clear top coat	recoating smooth glossy
ISO 2360	**recommended film thickness**	2.5-3.5 mils per coat (60-80 µm)	2.5-3.5 mils per coat (60-80 µm)	2.5-3.5 mils per coat (60-80 µm)
ASTM D3359 method B	**cross cut tape test** 1mm cutting distance	5B	5B	5B
ASTM D522	**mandrel bending test** cracking of coating	≤3/16 inches (≤5 mm)	≤3/16 inches (≤5 mm)	≤3/16 inches (≤5 mm)
ASTM D2794	**ball impact test** cracking of coating	20 in/lb no appearance of cracks	20 in/lb no appearance of cracks	20 in/lb no appearance of cracks

Cleaning recommendations: refer to the latest edition of TIGER "Cleaning Recommendations" information sheet, Version 00-1005.

Application guidelines

Please note

To avoid contamination, a maximum of 12 hours must elapse between the application of TIGER Drylac® base coat and any TIGER Drylac® top coat.

For metallic finishes it is recommended to observe the guidelines published in the latest edition of TIGER Drylac® Information Sheet “Metallic effect powder coatings”.

Please consult the manufacturer before applying any 2-coat systems that feature (i) a primer or e-coat as base coat and (ii) a metallic effect powder coating as a top coat.

Top coating with a clear exterior grade powder coating over an interior grade powder coating does not result into a weather resistant coating system.

Post-bending properties of any part must be verified prior to application. Minor cracks in the coated surface may lead to corrosion.

Joint sealants and any other auxiliary products, such as glazing aids, gliding waxes, drilling and cutting lubricants, which come in contact with the coated surface, must be pH-neutral and free of substances that may damage the finish. Therefore, a suitability test at the applicator’s end, prior to coating, is highly recommended.

In general, colors in the red, orange and yellow range may require an increased film thickness to achieve full hiding.
Please read and understand the Safety Data Sheet (SDS) before use.

Chemical resistance

The required chemical resistance of a powder coating depends, among other things, on its formulation. Chemical resistance requirements must be considered according to processing conditions and final use of the finished product. This is best established during the product specification process. Agreement between all parties involved must be reached about the requirements for such chemical resistance as well as the test method, which may be performed in accordance with PCI test method #8 “Solvent Cure Test”. Furthermore, the test duration and concentration of the test media need to be agreed upon.

Disclaimer

TIGER’s verbal and written recommendations for the use of its products are based upon experience and in accordance with current technological standards. These are provided in order to support the buyer or user. They are non-committal and do not create any additional commitments to the purchase agreement. They do not release the buyer from verifying the suitability of TIGER products for the intended application. TIGER warrants that its products are free of flaws and defects to the extent stipulated in the Terms of Delivery and Payment.

As part of TIGER product information program, each Product Data Sheet is updated periodically. The latest version shall prevail. It is recommended to always check for the latest editions on TIGER’s website download area www.tiger-coatings.com to make sure you have the most current version of this Product Data Sheet. The information on TIGER’s Product Data Sheets are subject to change without notification.

This Product Data Sheet supersedes and replaces all previous Product Data Sheet versions and notes to customers published in relation to this product and is only intended to provide a general overview on the product.

Latest versions of Technical Information Sheets and Terms of Delivery and Payment are downloadable from www.tiger-coatings.com and form an integral part of this Product Data Sheet.

Application guidelines

Certified according to ISO 9001 | 14001

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