

# Coating for Extreme Applications Hi-Pro Z



BUILDING VALUE IN AIR.



March  
2021

In 1972, Greenheck took the lead as the first commercial and industrial fan manufacturer to introduce electrostatic powder coatings. Greenheck continues to lead by offering a superior epoxy powder base coat and powder coating finish.

This epoxy base coat technology is used extensively outside the HVAC industry to protect bridge beams, automotive components and other heavy-gauge steel products. This advanced technology is available on Greenheck steel products.

Greenheck's coating process starts with a minimum of five wash stages to treat all components prior to painting. Cleaner parts result in better coating adhesion and durability. We then use an advanced two coat powder application method that includes a base coat of epoxy powder and a topcoat of Greenheck's Hi-Pro Polyester. The combination of this topcoat over our epoxy base coat results in the coating Hi-Pro Z. These oven-cured coatings provide superior corrosion resistance along with a tough, uniform finish to combat the most extreme conditions.

To help determine what process and coating may be right for your specific environment, refer to the performance tested guide provided on page three.

## Two Coat System

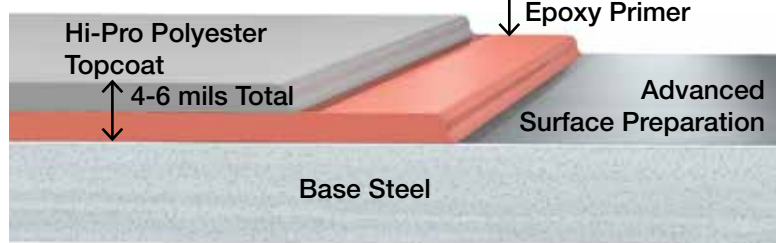
When compared to a traditional single coat powder application, the benefits of the two coat system include:

- An automatic powder coat application produces uniform coverage and unmatched paint quality.
- The double coat thickness provides superior durability and protection from air and water.
- The base coat provides additional corrosion protection.

### Traditional One Coat Process



### Greenheck Hi-Pro Z Two Coat Process



When selecting a powder coating finish for heavy-gauge welded steel fans, critical information such as environment, moisture, exposure, abrasives, and chemicals should be considered.

Powder coatings are the best choice for most extreme applications. Major advantages over most vendor-applied liquid coatings include:

- Superior finish with uniform coverage and thickness.
- A better coating provides better protection.
- The process is environmentally friendly.
- Unequaled value.

|                  |   |                           |   | Environments |         |            |                 |                    |        |
|------------------|---|---------------------------|---|--------------|---------|------------|-----------------|--------------------|--------|
| Coatings         |   | Color                     | Coating Specifications  | CLEAN AIR    | COASTAL | CHEMICAL * | EXTREME WEATHER | ABRASIVE PARTICLES | SUN-UV |
| One Coat Process | <b>Permatector™</b><br>Standard coating for steel products in both indoor and outdoor applications                                | Concrete Grey<br>RAL-7023 | Thickness: 2.0 - 3.0 mils<br>Polyester powder coating                                     | X            |         |            |                 |                    | X      |
|                  | <b>Hi-Pro Polyester</b><br>Formulated for exterior durability, color and gloss retention. Excellent for chemical applications.    |                           | Thickness: 2.0 - 3.0 mils<br>High performance polyester powder coating                    | X            |         | X          |                 |                    | X      |
| Two Coat Process | <b>Hi-Pro Z</b><br>Two coat powder paint coating is resistant to saltwater, chemical fumes and moisture in corrosive environments | Concrete Grey<br>RAL-7023 | Thickness: 4.0 - 6.0 mils<br>Hi-Pro polyester topcoat with Hi Performance epoxy base coat | X            | X       | X          | X               | X                  | X      |

Note: Hi-Pro Z is not available on aluminum.

\*Chemical-Resistant Rating Below

## Test Data

| Salt Spray ASTM B117 |            |            |            |            | Durability                    |                                      |
|----------------------|------------|------------|------------|------------|-------------------------------|--------------------------------------|
| Hours                | 1000       | 2000       | 3000       | 4000       | Pencil Hardness<br>ASTM D3363 | Cross-Hatch Adhesion<br>ASTM D3359-B |
| Permatector          | ██████████ |            |            |            | 3H                            | No Failure                           |
| Hi-Pro Polyester     | ██████████ |            |            |            | 2H                            | No Failure                           |
| Hi-Pro Z             | ██████████ | ██████████ | ██████████ | ██████████ | 2H                            | No Failure                           |

Salt Spray ASTM B117 is a comparative test that indicates the corrosion resistance of powder paint coatings.

Pencil hardness and cross-hatch adhesion tests determine the durability of a coating to withstand scratches, nicks and chips.

Chemical resistance ratings provide information on how each coating option will hold up in certain chemical environments.

Greenheck's two coat powder paint system provides unparalleled corrosion protection in the most extreme conditions. Our paint system offers three and four times the corrosion resistance of other coatings commonly available in the fan industry.

| *Chemical Resistance Ratings |   |                     |           |     |                 |            |
|------------------------------|---|---------------------|-----------|-----|-----------------|------------|
| Chemical                     | Bleach  | Sulfuric Acid (10%) | HCl (10%) | MEK | Chlorine (0.1%) | NaOH (20%) |
| Permatector                  | 0   | 1                   | 2         | 2   | 0               | —          |
| Hi-Pro Polyester             | 0   | 0                   | 0         | 1   | 0               | —          |
| Hi-Pro Z                     | 0   | 0                   | 0         | 1   | 0               | 1          |
| RATING DESCRIPTIONS          | 0 - No effect<br>1 - Slight change in gloss or color<br>2 - Surface etching, severe staining, but film integrity remains<br>3 - Significant pitting, cratering, swelling, or erosion with obvious surface deterioration |                     |           |     |                 |            |

# Specifications

## Multi-Stage Wash

All carbon steel components shall be cleaned and chemically treated by multi-stage processes that shall include alkaline cleaner to remove oil and film; iron phosphate coating to increase corrosion protection and paint bond; and seal rinse to seal pores in iron phosphate coating for optimum corrosion protection.

## Two Coat Electrostatic Powder System

Fan components shall be coated with a two coat powder coating consisting of a epoxy powder base coat electrostatically applied and gelled. Minimum dry film thickness to be 2-3 mils.

A polyester powder topcoat shall be electrostatically applied at a minimum dry film thickness of 2-3 mils atop the base coat and baked simultaneously with the epoxy base coat. The total dry film thickness of the two coat powder coating system shall be a minimum of 4-6 mils.

## Available Coatings

Hi-Pro Z shall exceed 4,000-hour salt spray under ASTM B117 test method. Finish color shall be concrete grey, RAL-7023.

Specify Hi-Pro Z for your extreme applications or for any environment where physical appearance and corrosion protection is essential.



## Our Commitment

*As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.*

Product warranties can be found online at [Greenheck.com](http://Greenheck.com), either on the specific product page or in the literature section of the website at [Greenheck.com/Resources/Library/Literature](http://Greenheck.com/Resources/Library/Literature).

