



## Technical Data

### PRODUCT DESCRIPTION

A two-component, aliphatic/acrylic polyurethane coating that has superior performance in a heavy duty industrial environment. Pinnacle 330HS has excellent color and gloss retention, good flexibility and abrasion resistance, and is resistant to a wide range of solvents and chemicals under splash and spill conditions. V.O.C. compliant.

### INTENDED USES

Pinnacle 330HS is formulated as a high performance finish coat on properly primed exterior steel tanks, structural steel and equipment, galvanized steel, concrete and masonry surfaces in highly corrosive environments or prolonged exterior exposure. May be used Direct to Metal or Concrete in selected environments. NOT INTENDED FOR IMMERSION SERVICE.

### PHYSICAL PROPERTIES

<b>Color</b>	Cotton White, Silver Gray, Jet Black, Safety Red, Safety Yellow, Safety Orange, Safety Blue and Safety Green. Can also be tinted to ICS Color System.
<b>Finish/Sheen</b>	85 - 95 @ 60° / 65 - 75 @ 20°
<b>Bases (Part A)</b>	White Base IG-1221, Deep Base IG-1223, Clear Base IG-0224
<b>Cure (Part B)</b>	IG- 0220
<b>Resin Type</b>	Aliphatic Isocyanate Converted Acrylic Urethane
<b>Clean-up Solvents</b>	Diamond Vogel N-3023 Xylol
<b>Solids By Weight</b>	75 %
<b>Solids by Volume</b>	62%
<b>Theoretical Coverage**</b>	994 ft <sup>2</sup> /gal @ 1 mil
<b>Dry Film Thickness / Coat</b>	2 - 3 mils (50 - 75 microns)
<b>Wet Film to Achieve DFT</b>	3 - 5 mils (75 - 125 microns)
<b>Coverage at DFT**</b>	331 - 497 ft <sup>2</sup> /gal @ 2 - 3 mils DFT
<b>VOC's (Tint Bases)</b>	2.34 - 2.63 lbs./gal. (281 - 316 grams/liter) Range from 316 to 333 g/L depending on color.
<b>Induction Time</b>	None required
<b>Mixing ratio (by volume)</b>	9 parts resin to 1 part cure. Product packaged in pre-measured kits.
<b>Thinning</b>	DO NOT THIN
<b>*** Pot Life [At 70°F (21°C)]</b>	3 hours

### Drying Time\* (hours) [ASTM D 1640]

	<u>At 90°F (32°C)</u>	<u>At 70°F (21°C)</u>	<u>At 50°F (10°C)</u>	<u>At 32°F (0°C)</u>
Set to Touch	½	1 ½	1 ½	2 ½
Dry Through	4	5	10	24+
Recoat Time - Min.	4	5	10	24+
Recoat Time - Max.	7 days	30 days	60 days	---

\* Dry times vary with surface temperature, air movement, humidity and film thickness.

\*\* Coverage rates are estimates based on the products volume solids and make no allowance for material loss during application. Actual spread rates may vary dependent on applicator experience, surface porosity and texture.

\*\*\* Extreme temperatures can dramatically shorten Pot life.

### RECOMMENDED SYSTEMS

Multi-E-Poxy 180 Epoxy Mastic/Pinnacle 330 HS  
 Multi-E-Poxy 180 Epoxy Mastic/V-Tech 500 Hi-Build Epoxy Primer/Pinnacle 330HS  
 V-Tech 500 Hi-Build Epoxy Primer/V-Tech 500 Hi-Build Epoxy Primer/Pinnacle 330 HS  
 V-Tech 600 Universal Primer/V-Tech 600 Universal Primer/Pinnacle 330 HS  
 V-Tech 705 Organic Zinc Rich Primer/Multi-E-Poxy 180 Epoxy Mastic/Pinnacle 330HS

## ***SURFACE PREPARATION***

All surfaces must be cured, clean, sound, dry and free of all dirt, dust, efflorescence, wax, oil, grease, chalk and any other contamination that would interfere with new coating adhesion. The direct-to-metal capabilities of Pinnacle 330HS provides a single-coat system at reduced installation cost for use in protected environments. For DTM applications minimum recommended surface preparation for iron and steel is SSPC-SP6/NACE 3. For best results all bare surfaces must be properly prepared and primed prior to application of this product.

<b>Ferrous Metal Surfaces:</b>	An abrasive blast to SSPC-SP-6 commercial blast is recommended for primed and DTM applications. Prime with Mult-E-Poxy 180 Epoxy Mastic, V-Tech 500 Hi-Build Epoxy Primer or V-Tech 600 Universal Primer. If blasting is not possible, remove loose rust and mill scale with hand or power abrading tools per SSPC-SP-2 or SSPC-SP-3. Prime the surface with Mult-E-Poxy 180 Epoxy Mastic.
<b>Masonry Surfaces:</b> Poured concrete Concrete block	New concrete must cure for a minimum of 30 days at 72°F (22°C) prior to coating application. Level all surface projections and mortar spatters by stoning. Rake mortar joints clean and remove all soluble salts.
<b>New Galvanized &amp; Aluminum Surfaces</b>	Solvent wipe to remove surface contamination, then use a cleaning and etching solution or blast per SSPC-SP-7 brush-off blast.
<b>Weathered Galvanized &amp; Aluminum Surfaces</b>	Power or hand wash with detergent and rinse thoroughly. The surface must be dull and have a profile; use a cleaning and etching solution if needed.
<b>Previously Painted Surfaces:</b>	Power or hand washing is recommended to remove contamination. If oil or grease is present, use of a cleaner/degreaser is required. All cleaning residue must be completely rinsed from the surface. Allow to dry. Remove all loose coatings, rust and corrosion by scraping, sanding or other abrading method as per SSPC-SP-2 and SSPC-SP-3. Slick glossy surfaces must be dulled by sanding.
<b>Mildew:</b>	Remove by using a solution of one part household bleach and three parts water. Apply to mildewed area and scrub. Allow solution to remain on the surface for 3 to 5 minutes and then rinse completely and allow to dry before coating application.

---

## ***APPLICATION***

Part A (resin) and part B (cure) are packaged in pre-measured kits. The mixing ratio is 9 parts A to 1 part B. Thoroughly mix Part B into Part A using an explosion-proof power drill and Jiffler mixer to disperse pigments. The material must be applied within the estimated pot life. For optimum application, material should be from 50° to 90°F (10° to 32°C) and at least 5°F (3°C) above the dew point. Above 122°F (50°C), sagging may occur.

<b>Brush or Roller:</b>	Apply product in full even coats. Maintain a wet edge. To insure adequate film build, two coats are recommended when applying by brush or roller (See the drying times chart for recoat period). A roller nap of 3/8" is recommended or use a China bristle brush.
<b>Airless Spray:</b>	Flush airless lines with Xylol. Equipment must be clean prior to start. Apply a wet coat in even, parallel passes with 50 % overlap to avoid bare areas and pinholes. If required, cross spray at right angles.

<i>Tip Orifice</i>	<i>Atomizing Pressure</i>	<i>Mat'l Hose ID</i>	<i>Manifold Filter</i>
0.013" to 0.015"	2500-3000 psi	1/4"	60 mesh

---

## ***PERFORMANCE CRITERIA***

Pinnacle 330 HS will meet or exceed the following performance testing criteria.

<b>Adhesion:</b>	Method: ASTM D 3359 Cross Hatch Substrate: 6" x 12" Steel Panel Surface Preparation: SSPC-SP-10 blast with 1.5 mil profile. System: Mult-E-Poxy 180, one coat / Pinnacle 330HS, one coat. Requirement: 5B average of 3 trials. Method: ASTM D 4541 Elcometer Pull Off Adhesion Substrate: 6" x 12" Steel Panel Surface Preparation: SSPC-SP-10 blast with 1.5 mil profile. System: Mult-E-Poxy 180, one coat / Pinnacle 330HS, one coat. Requirement: Not less than 1100psi average of 3 trials.
------------------	---

**PERFORMANCE CRITERIA** (cont.)

- Abrasion Resistance:** Method: ASTM D 4060 Taber Abrasion Test, CS-17 wheel 1000 gram load.  
System: Mult-E-Poxy 180, one coat / Pinnacle 330HS, one coat.  
Requirement: No more than 165 mg. lost after 1000 cycles.
- Corrosion Resistance:** Method: ASTM B 117-94 Salt Spray (Fog) Test  
Substrate: 6" x 12" hot rolled steel  
Surface Preparation: SSPC-SP-10 blast with 1.5 mil profile.  
System: Mult-E-Poxy 180, one coat / Pinnacle 330HS, one coat.  
Requirement: 1500 hrs. - No face blistering, cracking, softening or delamination of film.  
0 - 2.5mm scribe creepage and no more than 1% rusting at the edges.
- Exterior Exposure:** Method: ASTM D 1014-83. Reapproved 1988. Exposed at south 45°.  
Location: Miami, FL / Orange City, IA / Ocean City, NJ  
System: Mult-E-Poxy 180, one coat / Pinnacle 330HS, one coat.  
Requirements: Miami, FL, 97% gloss retention after 12 months exposure.  
Orange City, IA, 98% gloss retention after 11 months exposure.  
Ocean City, NJ, 88% gloss retention after 9 months exposure.
- Pencil Hardness:** Method: ASTM D 3363-74  
System: Mult-E-Poxy 180, one coat / Pinnacle 330HS, one coat.  
Requirements: 2B-HB pencil hardness.
- Flexibility:** Method: ASTM D 522 Cylindrical mandrel.  
System: Mult-Poxy 180 / Pinnacle 330HS  
Requirements: No cracking or delamination of film after full cure.
- QUV Weathering:** Method: ASTM D 4587  
System: Pinnacle 330 HS  
Result: 1000 hrs, passes
- Heat Resistance:** Method: ASTM D 2485 High Temperature Service  
System: Pinnacle 330HS one coat  
Requirements: Passes @ 250° F (121° C)
- Impact Resistance:** Method ASTM 2794  
System: Pinnacle 330HS one coat  
Result: Direct 100 in/lbs, Reverse 30 in/lbs

---

**PACKAGING**

	<i>1 gallon kit</i>	<i>5 gallon kit</i>
Part A Resin	1 Gallon (short filled)	5 Gallon can (short filled)
Part B Cure	1 Pint (short filled)	1 Gallon can (short filled)

---

**SHIPPING WEIGHT**

<i>Base</i>	<i>1 gallon kit</i>	<i>5 gallon kit</i>
IG 1221	11 lbs. (5.04 kilos)	54 lbs. (24.41 kilos)
IG 1223	11 lbs. (4.96 kilos)	53 lbs. (24.14 kilos)
IG 0224	10 lbs. (4.46 kilos)	47 lbs. (21.41 kilos)

---

**STORAGE**

Store in protected area maintained at 40 - 100°F (4 - 38°C).

---

**SHELF LIFE**

Two years from date of manufacture when maintained in protected storage. Subject to inspection thereafter.

## SAFETY DATA

**"Material Safety Data Sheets" are available from your Diamond Vogel representative. Prior to use of this product, obtain and review the Material Safety Data Sheet for health and safety information. Read and observe all precautionary notices on container labels. NOT INTENDED FOR RESIDENTIAL USE.**

---

## CAUTION

This finish may become slippery when wet. The use of a non-slip additive is recommended when used on horizontal surfaces such as porches, patios, steps or any other floor areas which are exposed to moisture. **However**, Diamond Vogel makes no guarantees or claims that this will prevent accidents. Diamond Vogel's liability is limited to the purchase price of the product.

---

## CHEMICAL RESISTANCE

### Chemical Resistance for Splash and Spillage

The information included in this chart reflects Pinnacle 330HS's resistance to these chemical in environments where the coating may periodically come in contact with such materials. Cleaning and general maintenance will prolong the integrity of all epoxy mastic coatings. For more detailed information, contact your local Diamond Vogel sales representative.

#### Solvents:

MEK - Very Good  
Toluene - Very Good  
Xylene - Very Good  
Unleaded Gas - Very Good  
Denatured Alcohol - Excellent  
Nethanol - Very Good  
Mineral Spirits - Excellent  
Triethylamine - Very Good  
N-Butanol - Very Good  
MIBK - Very Good  
5% Phenol PM Acetate - Good  
Isopropyl Alcohol - Excellent  
Butyl Cellosolve - Very Good  
Perchloroethylene - Very Good  
Ethylene Glycol - Excellent

#### Acid:

Acetic Acid 5% - Excellent  
Acetic Acid 10% - Excellent  
Sulfuric Acid 5% - Excellent  
Sulfuric Acid 10% - Excellent  
Sulfuric Acid 50% - Excellent  
HCL 5% - Excellent  
HCL 10% - Excellent  
HCL 37% - Very Good  
Phosphoric Acid 10% - Excellent  
Phosphoric Acid 50% - Excellent  
Phosphoric Acid 85% - Excellent  
Oleic - Excellent

#### Oils:

Dirty Motor Oil - Very Good  
Brake Fluid - Very Good  
Skydrol - Very Good

#### Salts and Bases:

Sodium Hydroxide 10% - Excellent  
Sodium Hydroxide 50% - Excellent  
Ammonium Hydroxide 10% - Excellent  
Ammonium Hydroxide 28% - Excellent

#### Miscellaneous:

Bleach - Excellent  
Dowanol PM - Very Good  
Water - Excellent  
Hydrogen Peroxide 3% - Excellent  
  
Povidone Iodine 10% (Betadine) - Good  
TSP 1% - Excellent  
TSP 10% - Excellent  
Windex w/AM.D - Excellent  
Pot Ash - Excellent  
Phosphate Fertilizer - Excellent  
(Ammonium Phosphate)  
28% Nitrogen Fertilizer - Excellent  
26% Ammonium Hydroxide Sol. - Excellent  
Diesel Fuel - Excellent  
Aviation Hydraulic Fluid - Good  
10W30 - Excellent  
Aircraft Motor Oil - Excellent.  
Disc Brake Fluid - Good

Excellent Resistance - Pinnacle 330HS will withstand long term exposure to this condition. This product is recommended when cleanup and maintenance is impractical and irregular.

Good Resistance - Pinnacle 330HS has above average performance to this condition. Spills must be removed within two to four days of contact. General maintenance and cleaning will prolong the life of this product.

---

## LIMITED WARRANTY

The technical data and suggestions for use contained in this document are true and correct to the best of our knowledge, at the date of issuance. The statements of this document do not constitute a warranty, expressed or implied, as to the performance of these products. Since Diamond Vogel Paints does not control the application of its products, or the condition of the surfaces to which they are applied, Diamond Vogel Paint's liability will under no circumstances exceed replacement of the product. **All technical information is subject to change without notice.**

Diamond Vogel Paint  
1110 Albany Place SE Orange City, IA 51041  
Phone 712.737.8880 Fax 712.737.4998  
marketing@diamondvogel.com www.diamondvogel.com