AUE-50000 Series
Wind Turbine Polyurethane Topcoat

AUE-50000 series is a highly erosion – resistant polyurethane topcoat which offers the adhesion, flexibility, smoothness and protection from environmental attack required for wind turbine blade application.

AUE-50000 series was specifically developed for use on turbine blades, leveraging PPG's history of technical innovation in automotive and aerospace markets. The products are designed for spray or roll application, and is compatible with a wide array of equipment, including robotic. AUE-50000 produces an ultra-smooth surface in which excessive film builds are not required to provide superior protection. These features result in shorter cycle times, reduced labor and material costs and enhanced energy output.

AUE-50000 is designed to be used as a system with PPG polyurethane or epoxy primers. These systems produce an excellent balance of performance properties that deliver long term, low maintenance asset protection in any operating environment including desert or offshore.

Features

- Outstanding erosion resistance at thinner films
- Ultra-smooth surface profile
- Excellent cold temperature flexibility, impact and abrasion resistance
- VOC compliant to 420g/l

Benefits

- Longer service life, productivity enhancement
- Enhanced energy output
- Superior protection in harsh environments
- Reduced volatile emissions

Required Products

- AUE-50000 Standard Polyurethane Topcoat (A Component)
- AUE-3550 Curing Agent (B Component)

Physical Properties (typical)	Method/Measure	Result
VOC	EPA Method 24	<420 g/l
HAP level	Lb./gal. solid coating	0.16
Gloss	60° meter	30 +/- 10 GU
Viscosity	#3 Zahn	18-22 seconds
Pot life @ 24ºC		2-2.5 hours
Dry film density	@ 1.0 mils dry film	0.0084 lbs/sq. ft
Volume solids		57% +/- 3%
Weight solids		65% +/- 4%
Mix Ratio	Pigmented package to B cure	4:1
Recommended dry film		4.0 mils
Theoretical coverage @ 100% T.E.	@ 1.0 mils dry film	914 ft²
Dry times @ 24ºC	To touch	1 hour
	To handle	8 hours
	In service	48 hours
Service temperature		-40°C to 150°C
Shelf life	From date of manufacture	12 months
Colors	As required, including	RAL 2009, RAL 3000, RAL 3020, RAL 7035, RAL 7038

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Surface Preparation

Composite Substrates

1. Blow off surface with compressed air.
2. Clean the composite surface with PPG DX330 Wax & Grease Remover oranother mild solvent cleaner to remove any dirt or mold release agent.

Mixing

Before mixing the paint, the material should be allowed to reach room temperature. Shake the base component or stir thoroughly.

Add 1 part AUE-3550 B curing agent to 4 parts of AUE-50000 series Part A color while agitating. Mix the material until it is homogenous.

Spray Equipment

AUE-50000 series Topcoats can be applied by air, airless or HVLP spray equipment.

Air Spray

Tip size:	1.2 to 1.8 mm
Air pressure:	45 to 60 psi (3-4 bar)
Pot pressure:	10 to 20 psi (0.7- 1.4 bar)

High Volume Low Pressure (HVLP)

Tip size:	1.0 to 1.4 mm
Air pressure:	10 psi maximum (0.7 bar)
Pot pressure:	10 to 20 psi (0.7 – 1.4 bar)

Airless Spray

Tip size:	.011 to .013 inches
Fluid pressure:	700 to 1000 psi (48-69 bar)

Application

Apply:	2 uniform, wet coats
Flash:	15 to 30 minutes between coats
Dry film thickness	2.0 mils (50 microns) per coat
Total dry film build	4.0 mils (100 microns)

Clean Up

Clean spray guns, gun cups, storage pots, etc., thoroughly with lacquer thinner or urethane grade reducer.

Health and Safety

See Material Safety Data Sheet and Labels for additional safety information and handling instructions.

EMERGENCY MEDICAL OR SPILL CONTROL INFORMATION (412) 434-4515; IN CANADA (514) 645-1320

Materials described are designed for application by professional, trained personnel using proper equipment and are not intended for sale to the public. Products mentioned may be hazardous and should only be used according to directions, while observing precautions and warning statements listed on label. Statements and methods described are based upon the best information and practices known to PPG Industries. Procedures for applications mentioned are suggestions only and are not to be construed as representations or warranties as to performance, results, or fitness for any intended use, nor does PPG Industries warrant freedom from patent infringement in the use of any formula or process set forth herein.

Technical Data – HSP-7401/AUE-50000 System

Test	Test Method	Typical Specification	HSP-7401 AUE-50000 Series
Color		No lead, chrome	Available
Film Build (per coat)			2.0 Mils (topcoat)
60° Gloss	ASTM D523	40 max	30 +/- 10
Appearance	Visual Inspection	Good	Excellent
% Adhesion	ASTM D3359 Method A	100%	100%
Pull-Off Strength	ASTM D4541	4 MPa	5 MPa
Hum Adhesion	ASTM D4585	96 Hr.	340 Hr. - No Defects
QUV A Gloss Ret. Color change	ASTM G154 (500 hrs.)	70% 1.0 max.	80% <1.0
QUV B Gloss Ret. Color change	ASTM D4587 (1000 hrs.)	40% 1.0 max.	60% <1.0
Filling properties	Visual Inspection	NR	Very Good (primer)
^Cylindrical Mandrel bend @ room temp.	ASTM D522 Method B .5 inch	Pass, no cracking	Pass
^Cylindrical Mandrel bend -40C	ASTM D522 Method B 2.5 inch	Pass, no cracking	Pass
Falling sand #L to fail	ASTM D 968-93	40L	100 + L
Taber Abrasion (2000 cycles)	#D4060 g of coating loss	0.17g	<0.15g
Impact Resistance (CRS)	ASTM D2794		100 in/lbs.
*Rain Erosion (Whirling Arm) (30"@300mph)	BMS 10-72V	None	TBR+
VOC	EPA Method 24	3.5	2.8 lb./gal primer (340 g/l) 3.5 lb./gal topcoat (420 g/l)

Test Notes:
CS-10 wheel and 1000g wt.
* PPG internal test with proprietary equipment
^ Mandrel bend performed over CRS, all others over epoxy composite.
+ In test - To Be Reported

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