

High Build Epoxy Primers

HBE Series Primers

HBE-400 Dark Gray Primer
HBE-402 White Primer

HBE series primers are chrome free high build epoxy primers designed for profile filling and corrosion resistance when applied over properly prepared steel, galvanized steel and aluminum. Depending on which A and B sides are combined, an array of useful primer colors will result. Please see the Miscellaneous section for details.

These products offer high build, rapid dry times, excellent adhesion and toughness. They may also be used as a high build intermediate over zinc rich primers.

Features and Benefits:

- Excellent filling properties for blast substrate
- Excellent corrosion and chemical resistance
- Excellent adhesion
- Easy to spray, use, and sand

Associated Products:

- HBE-400 High Build Epoxy Primer – Dark Gray
- HBE-401 High Build Epoxy Catalyst – White
- HBE-402 High Build Epoxy Primer – White
- HBE-403 High Build Epoxy Catalyst – Black
- HBE-405 High Build Epoxy Hot Weather Catalyst – White

Physical Constants: *All values are theoretical, depend on color and are Ready-to-Spray. Actual values could vary slightly due to manufacturing variability.*

	HBE-400 w/HBE-401 (Light Gray)	HBE-400 w/HBE-403 (Dark Gray)	HBE-400 w/HBE-405 (Light Gray)	HBE-402 w/HBE-401 (White)	HBE-402 w/HBE-403 (Dark Gray)	HBE-402 w/HBE-405 (White)
Weight per gallon (US)	10.47 lbs/gal	10.34 lbs/gal	10.52 lbs/gal	10.95 lbs/gal	10.82 lbs/gal	10.76 lbs/gal
Percent solids (by weight)	57.4%	57.1%	59.8%	61.0%	60.8%	62.0%
Percent solids (by volume)	38.4%	38.8%	40.3%	41.1%	41.5%	42.1%
VOC	4.46 lbs/gal	4.44 lbs/gal	4.23 lbs/gal	4.27 lbs/gal	4.24 lbs/gal	4.09 lbs/gal
HAPs	≤ 3.5 lbs/gal	≤ 3.5 lbs/gal	< 3.5 lbs/gal	< 3.5 lbs/gal	< 3.5 lbs/gal	< 3.5 lbs/gal
Photo-chemically reactive	Yes	Yes	Yes	Yes	Yes	Yes

Flashpoint:

HBE-400 = 79°F (26°C), HBE-401 = 52°F (11°C)

HBE-402 = 80°F (27°C), HBE-403 = 53°F (12°C) HBE-405 = 68°F (20°C)

Directions for Use

Substrate Preparation: The surface to be coated must be sanded and free of all contamination (including dust, dirt, oil, grease, and oxidation). A chemical treatment (or conversion coating) will improve adhesion and performance properties of the finished coat. Variability can occur with substrates, preparation, application method or environment. We recommend that adhesion and system compatibility be checked prior to full application.



Metal

Direct to Substrate

Cold Rolled Steel

Excellent

Hot Rolled Steel

Excellent

Galvaneal

Fair – Good

Galvanized

Fair – Good

Aluminum

Good

Plastic / Fiberglass

Surface should be free of all contamination. Because of the variability of plastic/fiberglass substrates, coating performance should be confirmed on the actual plastic/fiberglass substrate being used.

Note: For acceptable compatibility between this primer and CPC topcoats please see the CPC Primer/Topcoat compatibility chart (CPCTB01).

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Directions for Use

Mix Directions:



Mix Directions:

Mix 1 part component A (HBE-400 or HBE-402) to 1 part component B (HBE-401, HBE-403, or HBE-405); Refer to the miscellaneous section on next page for the resultant color mixtures. Mix thoroughly before and occasionally during use. Apply material in one wet coat overlapping each pass 50%.



Thinning:

Up to 10% with Q60 (MEK)

Blend Ratios:

Primer	Catalyst
HBE-400 or HBE-402	HBE-401, HBE-403, or HBE-405
1	: 1



Pot Life @ 77°F (25°C):

8 hours, after mixing

Spray Viscosity Range:

HBE-400	#3 Zahn	23 – 27 seconds
HBE-402	#3 Zahn	29 – 32 seconds



Shelf Life:

(all components A or B side) 48 months for gallons and 24 months for pails.

Application Equipment:



Conventional/Compliant (with or without pressure pot): 1.4 – 1.8 needle/nozzle, 45 – 60 psi at the gun
1.0 – 1.4 needle/nozzle on pressure pot



HVLP (with or without pressure pot): 1.3 – 1.6 mm needle/nozzle, 10 psi at cap or per manufacturer
1.0 – 1.4 needle/nozzle on pressure pot



Airless: 1400 – 2000 psi fluid pressure with a .013" – .017" tip

Air-Assisted Airless: 850 psi fluid pressure with a .011" – .015" tip

Brush: Polyester or nylon

Roll: Short nap roll

Electrostatic: No recommendation

Application:



Apply: 1 – 2 medium coats with a 10 – 15 minute flash between coats.
Apply only when air, product and surface temperature are above 50°F (10°C) and when surface temperature is at least 5°F (3°C) above the dewpoint.

Recommended Wet Film Build: 3.6 – 7.8 mils

Recommended Dry Film Build: 1.5 – 3.0 mils

Square Foot Coverage @ 1mil no loss: 616 – 664 sq. ft.

Dry Times:



Air Dry @ 77°F (25°C) 50% RH:

To Touch: 45 minutes

To Handle:* 3 hours

To Sand: 16 hours

To Topcoat: 1 hour

Recoat: After 30 minutes and before 7 days

Force Dry: Allow a 10 minute flash then 30 minutes @ 160°F (70°C)



** Paint film is not fully cured for 7 days. Drying time listed may vary, depending upon film build, color selection, temperature, humidity and degree of air movement.*

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Technical Data*

Performance Properties:

System:
BONDERITE® 1000
HBE-400/HBE-401

Test	ASTM Method	Result HBE-Series
Gloss @ 60° Angle	D523	14
Pencil Hardness	D3363	2H
Conical Mandrel	D522	Pass
Adhesion	D3359	5B
Gravelometer	D3170	4
In Service Temperature Limit**		300°F (149°C)

*** As you approach 300°F (149°C), depending on the pigmentation, the color may change, but the film's integrity will be maintained up to 300°F (149°C).*

Chemical Resistance:

System:
Bonderite 1000
HBE-400/HBE-401

Chemical	ASTM Method	Result HBE-Series
Toluene	D1308	Slight ring
10% NaOH (Sodium Hydroxide)	D1308	Pass
10% HCl (Hydrochloric acid)	D1308	Medium bleaching
10% H ₂ SO ₄ (Sulfuric acid)	D1308	Pass
Gasoline	D1308	Mild blistering
Isopropanol	D1308	Slight ring
Water†	D1308	Pass

† Although resistant to intermittent exposure, this product is not recommended for immersion.

Weather Resistance:

Salt Spray and Humidity System:
Bonderite 1000
HBE-400/HBE-401
AUE-360

	ASTM Method	Result HBE-Series
Salt Spray – 1000 hours	B117	
Corrosion Creep	D1654	6A – 8A
Scribe Blisters	D714	2F
Face Blisters	D714	None
Humidity – 500 hours	D2247	
5 Minute Recovery Adhesion	D3359	5B
1 Hour Recovery Adhesion	D3359	5B
24 Hour Recovery Adhesion	D3359	5B

All tests results assume proper cure and preparation of test substrates. Unless otherwise stated, all results were obtained spraying product direct to metal on *Bonderite 1000*.

*The application and performance property data above are believed to be reliable based on laboratory findings. It is for the buyer to satisfy itself on the suitability of the product for its particular use. Variation in environment, procedures of use, or extrapolation of data may cause unsatisfactory results.

Miscellaneous:

To achieve the desired color, mix recommended Primer and Catalyst in a 1:1 mix ratio:

Desired Color	Primer	Catalyst
Light Gray	HBE-400	HBE-401 or HBE-405
Dark Gray	HBE-400	HBE-403
White	HBE-402	HBE-401 or HBE-405
Dark Gray	HBE-402	HBE-403

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Safety:



These materials are designed for application only by professional, trained personnel, using proper equipment under controlled conditions and are not intended for sale to the general public.

Safe application of paints and coatings requires knowledge of equipment, materials and individual training. Directions and precautionary information on both equipment and products should be carefully read and strictly observed for personal safety and property protection. Consideration must be given to eliminate conditions, which may generate hazardous atmospheres during spray application or subject operators or bystanders to injury or illness.

Special precautions must be taken when utilizing spray equipment, particularly airless equipment. High-pressure injection of coatings into the skin by airless equipment may cause serious injury requiring immediate medical attention at a hospital. Treatment advice may also be obtained from Poison Centers.

Air quality should be maintained with adequate ventilation; applicators can achieve additional protection by wearing respirators and other protective garments such as gloves and overalls. In all cases, wear protective eye equipment. During the application of all coatings materials, all flames, welding and smoking must be prohibited. Explosion proof equipment must be used when coating these materials in confined areas.

PRECAUTIONARY INFORMATION

Before using the products listed herein, carefully read each product label and follow directions for its use. Please read and observe all warnings and precautionary information on all product labels. Prevent all contact with skin and eyes and breathing of vapors and spray mist. Repeated inhalation of high vapor concentrations may cause a series of progressive effects including irritation of the respiratory system, permanent brain and nervous system damage and possible unconsciousness and death in poorly ventilated areas. Eye watering, headaches, nausea, dizziness and loss of coordination are indications that solvent levels are too high. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

KEEP OUT OF THE REACH OF CHILDREN

MEDICAL RESPONSE

Emergency Medical or Spill Control Information (412) 434-4515; CANADA (514) 645-1320 and in MEXICO 01-800-00-21-400. Have label information available.



Safety Data Sheets (SDS) for the PPG products mentioned in this publication are available through www.ppgcommercialcoatings.com (Safety, SDS Search) or your PPG Distributor.

For additional information regarding this product, see the SDS and LABEL information.



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