

## PRODUCT PROFILE

### DESCRIPTION

**COMBAT DIAMOND** is an extremely durable abrasion resistant compound that sets-up harder than metal. Combat Diamond contains an aggressive mixture of silicon carbide, alumina and ceramic beads blended into a workable mixture ideally suited to industrial applications where abrasion has blown through elbows, cyclones, and material handling equipment. Combat Diamond is a 100% solids, no VOC's epoxy mixture that has the ability to get your equipment up and running in no time by eliminating the need for time consuming metal cutting and welding repairs on existing production equipment. Surface preparation is simple. Combat Diamond is extremely hard and abrasive resistant. Combat Diamond is non-machinable due to the inherent hardness of the set material. **Patch it and walk away from your problem.**

- Non-Flammable
- Excellent UV stability
- Excellent impact resistance and corrosion protection

### CHEMICAL RESISTANCE

- |                                 |                         |                           |
|---------------------------------|-------------------------|---------------------------|
| • Acetic Acid up to 10%         | • Isopropyl Alcohol     | • Most Sulfides           |
| • Ammonium Hydroxide*           | • Mineral Acids         | • Sulfuric Acid up to 80% |
| • Aromatic & Aliphatic Solvents | • Nitric Acid up to 45% | • 1,1,1-Trichloromethane  |
| • Black Liquor                  | • Mild Organic Acids    | • Urea Solutions          |
| • Butyl Acetate                 | • Most Phosphates       | • White Liquor            |
| • Butyl Carbitol                | • Phosphoric Acid       |                           |
| • Most Chlorides                | • Potassium Hydroxide*  |                           |
| • Hydrogen Sulfide              | • Sodium Hydroxide*     | *Ambient temperature only |

### PREPARATION SP5 FINISH

Recommended: Metal surfaces must be prepared by thoroughly cleaning and roughening to gain maximum adhesion. Sweat oily chemical soaked items and then grit blast a very rough 2-4 mil profile into the surface. (NACE 1 / SSPC-SP-5)

### PHYSICAL PROPERTIES

Color .....	Resin: Black	Hardener: Red
Container Size .....	1 gallon and 4x1 kg kits	
Coverage per gallon (Theoretical) .....	12.8 sq. ft. @ 1/8" thickness	
Mix Ratio by Volume/Weight .....	5:1 (Resin:Hardener)	
Flash Point .....	> 200°F (93.5°C)	
Pull-Off Adhesion Test ASTM D 4541 .....	Minimum adhesion is 2850psi	
Coefficient of Thermal Expansion (10-6/per °F) .....	1.1	
Thermal Stability		
(weight loss after 48 hours @ 300°F) .....	0.0003 grams	
Specific Gravity .....	Resin: 2.32 Hardener: 1.02	
Volatile Organic Compounds (VOC) .....	0 grams/liter	
Weight per gallon .....	15.30 lbs	

**POT LIFE**

45°F (7°C) .....	1 hour 10 minutes
75°F (24°C) .....	40 minutes
92°F (33°C) .....	25 minutes

*Note: Do not keep the blended coating in the original container unless immediate use is planned. Otherwise, exotherm—heat created during the curing process—will considerably shorten the pot life. Pour the coating into a rolling tray or large aluminum-basting pan. Try to keep the depth of the coating in the tray below 3/8”.*

**SERVICE TEMPERATURE**

Dry Service .....	360°F (182°C)
Spill/Splash .....	300°F (149°C)
Immersion Service* .....	240°F (115.5°C)

*\* Immersion with solvents, mineral acids, or alkalines, or if over 150°F, contact factory.*

**CURE TIME  
(AT 75°F OR 24°C)**

Re-coat Window .....	1/2 hours
Light Loading .....	6 hours
Immersion (Aqueous) Service .....	24 hours
Full or Chemical Service .....	120 days

**TOP-COATING & JOINING  
ADJACENT SECTIONS**

If the compound is to be coated, apply the coating within the re-coat window (see table above). If this is not possible, allow the compound to cure, then brush-blast, wire-brush or sand to create a mechanical profile on the surface before coating.

When it is necessary to join multiple sections of the compound to create a continuous protective layer over a large area, do not attempt to feather and overlap adjoining sections. If adjoining sections cannot be applied within the re-coat window (see table above), continue the full thickness of the compound up to the joint between sections. Allow the first section to cure, then create a mechanical profile, using one of the means listed above, on the edge that will be joined to the next section to ensure a satisfactory bond.