SD Labs
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Tel: 844 MICROBE

Product Data/ Application Instructions

- Unique, high-gloss, self-priming coating
- Can be applied directly over inorganic zinc
- Gloss and appearance retention exceeding the best polyurethane
- Significantly lower applied costs
- Excellent resistance to acid and corrosion
- High solids, low VOC
- Resists high humidity and moisture
- Applied by brush, roller or spray—without thinning
- Outstanding resistance to chemical splash and spill

Typical Uses

EnduraGuard 41 adheres strongly to bare steel, coated steel and inorganic zinc silicate coated surfaces on new construction, repair and field maintenance coating projects. It provides effective long-term corrosion control and weather ability.

- Structural steel
- –Bridges –Marine
- Tanks
- Piping
- Industrial power plants
  - Power –Wastewater treatment
  - Pulp and paper – Chemical and petrochemical
- Concrete walls and floors
- Transportation
  - Rail car exterior – Vehicle equipment–buses, trucks
- •Marine
  - Decks – Topside and superstructures on ships
  - Boot tops – Barges and offshore platforms

Physical Data

Finish Gloss		
Components	2	
Curing mechanism	Chemical reaction	
Volume solids (calculated)		
EnduraGuard 41	90%± 3%	
Dry film thickness per coat	3 – 7mils (75 – 175microns)	
Coats*	1 or 2	
Theoretical coverage ft^2/gal m^2/L		
1mil (25microns)	1444 35.5	
3mils (75microns)	481 11.8	
5mils (125microns)	289 7.1	
7mils (175microns)	206 5.1	
VOC**	lb/gal	g/L
Endura Guard 41 (EPA method 24)	0.7	84.0
EnduraGuard 41 mixed/thinned@ 2 1/2 oz/gal (calculated)	0.83	99.9

Temperature resistance, dry	°F	°C
Continuous	200	93
Intermittent	250	121
Flash point (SETA)	°F	°C
Resin	207	97
Cure	205	96

Qualifications

NFPA – Class A
USDA – Incidental food contact

**When applying more than one coat, it is recommended that total dry film thickness not exceed 10mils.*
***The mixed and applied coating cure reaction will produce VOC of mixed alcohols. For 100 g/l VOC requirements, a VOC - exempt thinner.*

EnduraGuard 41Advantage: EnduraGuard 41 *is the world's first weather able epoxy it embodies the properties of both a high performance epoxy and acrylic polyurethane in one coat. This multi-purpose coating offers "breakthrough" weather resistance and corrosion control.*

Typical Properties

Physical

Abrasion resistance (ASTMD4060)	
1 kg load/1000 cycles weight loss	
CS-17wheel	53mg
Adhesion, Elcometer (ASTMD4541)	2700 psi
Elongation (ASTMD522)	14%

Performance

Salt spray (ASTMB117)	5500 hours
Face corrosion, blistering	None
Humidity (ASTMD2247)	5500 hours
Face corrosion, blistering	None
Gloss retention (ASTMG53) QUV-B bulb	
Greater than 50%gloss retention at 26weeks	

Chemical Resistance Guide

Environment	Splash and Spillage	Fumes and Weather
Acidic	E	E
Alkaline	E	E
Salt solutions		
Acidic	E	E
Neutral	E	E
Alkaline	E	E
Freshwater	E	E
Solvents	E	E
Petroleum products	E	E

F-Fair G-Good E-Excellent

This table is only a guide to show typical resistances of EnduraGuard 41. For specific recommendations, contact your SD Labs representative for your particular protection needs.

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Systems Using ENDURAGUARD 41

Substrate	Coats	DFT per coat
Steel (blasted)	1 or 2	3-5
Intact coating	1	3
Concrete	1	3-5
Masonry	1	3-5

Application Data

Applied over**	Prepared or primed steel, primed concrete, prepared galvanizing or aluminum
Surface preparation	
Steel	SSPC-SP5, 6 or 10
Concrete	ASTMD4259 or 4260
Galvanizing	Galvaprep or blast lightly
Aluminum	Alumiprep or blast lightly
Aged coatings	Contact your SD Labs representative

Method Airless or conventional spray, brush or roller

Mixing ratio (by volume) 4 parts resin to 1 part

cure Pot life (hours)*	°F	°C
90/32	70/21	50/10
EnduraGuard 41 1½	4	6½

‡ Thinning material with ½ pt/gal after 3 hours will extend pot life to 5 hours at 70°F.

Environmental Conditions

Temperature	°F	°C
Air	40 to 120	4 to 49
Surface	40 to 120	4 to 49
Relative humidity	40%minimum	

Surface temperatures must be at least 5°F (3°C) above dew point to prevent condensation during application and initial dry through. Relative humidity lower than 40%will extend dry times.

Heat curing

Allow EnduraGuard 41 to dry to touch before exposing to curing temperatures above 140°F.

Drying time (ASTMD1640) (hours) @40%R.H. or above

	°F/°C		
90/32	70/21	50/10	32/0
Touch 1½	3	6	12
Through	4	6	11

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Recoat/topcoat time (hours) @40%R.H. or above

	°F/°C		
90/32	70/21	50/10	32/0
Minimum 3	4½	9	32
Maximum##	None		

##See surface preparation for aged coatings.
***Appearance will vary depending on substrate and application method. Use Two coats of ENDURAGUARD 41 over bare concrete for abrasion resistance coating.*

Surface Preparation

Abrasive Resistance Coating

Coating performance is, in general, proportional to the degree of surface preparation. Refer to specifications for the specific primer being used. Prior to coating, primed surface must be clean, dry, undamaged and free of all contaminants including salt deposits. Round off all rough welds and remove all weld spatters.

Steel – Remove all loose rust, dirt, grease or other contaminants by one of the following depending on the degree of cleanliness required: SSPC-SP6 or 10. The choice of surface preparation will depend on the primer selected and end-use service conditions. In very low to low corrosively environments,

EnduraGuard 41may be applied directly to steel that has been abrasive-blasted to a near-white metal condition (SSPC-SP10).

Concrete – Acid etching (ASTMD4260) or abrasive blast (ASTMD4259) new concrete before priming.

Aluminum– Remove oil, grease or soap film with neutral detergent or emulsion cleaner, blast lightly with fine abrasive.

Galvanizing – Remove oil or soap film with detergent or emulsion cleaner, then blast lightly with fine abrasive.

Aged coatings – Contact your SD Labs representative. A test patch of ENDURAGUARD 41 over intact clean coating and observation for film defects over a period of time may be required, dependent upon the type of aged coating.

Repair – Prepare damaged areas to original surface preparation specifications, feathering edges of intact coating. Thoroughly remove dust or abrasive residue before touch up.

Application Equipment

The following is a guide; suitable equipment from other Manufacturers may be used. Changes in pressure, hose and tip size may be needed for proper spray characteristics.

Airless spray – Standard equipment with a 30 to 1 pump ratio or larger with a 0.015- to 0.021-in. (0.38 to 0.53mm) fluid tip.

Conventional spray – Industrial equipment such as DeVilbiss MBC or JGA spray gun with 78 or 765 air caps and “E” fluid tip, or Binks No. 18 or 62 gun with a 66 x 63 PB nozzle set up. Separate air and fluid pressure regulators, and a moisture and oil trap in the main air supply line are recommended.

Power mixer – Jiffy Mixer powered by an air or an explosion proof electric motor.

Brush – Natural bristle. Maintain wet edge.

Roller – Use industrial roller. Level any air bubbles with bristle brush.

Environmental Conditions

Temperature	°F	°C
Air	40 to 120	4 to 49
Surface	40 to 120	4 to 49
Relative humidity	40%minimum	

Surface temperatures must be at least 5°F (3°C) above dew point to prevent condensation during application and initial dry through.
Relative humidity lower than 40%will extend dry times.

Heat curing
Allow EnduraGuard 41 to dry to touch before exposing to curing temperatures above 140°F.

Application Procedure

Adhere to all application instructions, precautions, conditions, and limitations to obtain the maximum performance. For conditions outside the requirements or limitations described, contact your SD Labs representative.
1. Flush equipment with thinner before use.
2. Mix to a uniform consistency.
3. Add EnduraGuard 41 cure to EnduraGuard 41 resin. Mix thoroughly until uniformly blended.

Pot life (hours)* °F/°C

	90/32	70/21	50/10
EnduraGuard 41	1 ½	4	6 ½

4. If needed for workability, thin up to 1 pint per gallon EnduraGuard 41.
5. Apply a wet coat in even, parallel passes, overlap each pass 50 percent to avoid holidays, bare areas and pinholes. If required, Follow with a cross spray at right angles to first pass.

Drying time (ASTMD1640) (hours) @40%R.H. or above °F/°C

	90/32	70/21	50/10	32/0
Touch	1½	3	6	12
Through	4	6	11	38

Recoat/topcoat time (hours) @40%R.H. or above °F/°C

	90/32	70/21	50/10	32/0
Minimum	3	4½	9	32

6. Brush and/or roll applications will require 1-2 coats to achieve a 3-7mil DFT. There will be some surface texture, which is typical for brush and roll applications.
7. Clean all equipment with thinner immediately after use.

**Thinning material with ½ pt/gal after 3 hours will extend pot life to 5 hours at 70°F.*
****See surface preparation for aged coatings.*

Safety Precautions

Read each component's material safety data sheet before use. Mixed material has hazards of each component. Safety Precautions must be strictly followed during storage, handling and use.
CAUTION – Improper use and handling of this product can be hazardous to health and cause fire or explosion.
Do not use this product without first taking all appropriate Safety measures to prevent property damage and injuries. These measures may include, without limitation: implementation of proper ventilation, use of proper lamps, wearing of proper protective clothing and masks, tenting and proper separation of application areas. Consult your supervisor.
Proper ventilation and protective measures must be provided during application and drying to keep spray mists and vapor concentrations within safe limits and to protect against toxic hazards. Necessary safety equipment must be used and ventilation requirements carefully observed, especially in confined or enclosed spaces, such as tank interiors and buildings.
This product is to be used by those knowledgeable about proper application methods. SD Labs makes no recommendation about the types of safety measures that may need to be adopted because these depend on application environment and space, of which INFINITE COATINGS is unaware and over which it has no control. If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product.
Note: Consult Code of Federal Regulations Title 29, Labor, parts 910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable federal, state and local regulations on safe practices in coating operations.
This product is for industrial use only. Not for residential use.

Shipping Data

Packaging unit	1-gal	5-gal
Cure	0.17 gal in 1-qt can	1 gal in 1-gal can
Resin	0.83 gal in 1-gal can	4 gal in 5-gal can
Shipping weight (approx)	lb	kg
1-gal unit		
Cure	2.0	0.9
Resin	10.3	4.7
5-gal unit		
Cure	9.0	4.1
Resin	50.0	22.7

Shelf life when stored indoors at 40 to 100°F (4 to 38°C) resin and cure 2 years from the date of manufacture
Numerical values are subject to normal manufacturing tolerances, colors and testing variances. Allow for application losses and surface irregularities.
This product is photo chemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.