CAL551-210: EPOXY UNI-COAT

Self-Priming Industrial Maintenance Coating

PRODUCT PROFILE

DESCRIPTION

CAL551-210 Industrial Maintenance Coating for Metal and Concrete Substrates, Ceramic-Filled, 100% Solids.

CAL551-210 is designed to provide 100% solids, zero VOC alternative to coal tar epoxies. It eliminates the user and environmental concern of solvent-based coal tar epoxies, and at the same time, matches or exceeds the protection provided by them.

CAL551-210 is self-priming in most applications and tolerates less than perfect surface preparation and adheres well to a variety of substrates. CAL551-210 has high rubber content, and offers good impact resistance, while remaining quite flexible and stretches enough to bridge micro-cracks up to 0.10 inch. CAL551-210 can also be used on metal structures that are subject to vibration or moderate flexing.

TYPICAL APPLICATIONS

Cooling Towers Floors
Foundations Walls
Secondary Containment Structures

TECHNICAL DATA

PHYSICAL PROPERTIES

Specific Gravity	Resin: 1.73; Hardener: 0.97
Weight	11.56 pounds/gallon
Flash Point	> 250° F (121° C)
Volatile Organic Compounds (VOC)	0 grams/liter excluding H_2O
Coefficient of Thermal Expansion (.00001/per degree F.)	1.4
Color	Dark Gray
Recommended Coverage	16 -20 mils
Coverage per Gallon (theoretical)	160 square feet per 10 mils of thickness
Container Size	Pt., Qt., Gallon

CHEMICAL RESISTANCE

Acetic Acid up to 10%	Gasoline	Potassium Hydroxide 50%
Ammonium Hydroxide 25%	Hydrochloric Acid up to 30%	Sodium Hydroxide
Brine	Isopropyl Alcohol	Sulfuric Acid up to 70%*
Copper Sulfate	Mineral Spirits	
Diesel Fuel	Nitric Acid up to 10%	

APPLICATION PREPARATION

SERVICE TEMPERATURE

EXPOSURE	MAXIMUM RECOMMENDED TEMPERATURE
Dry Service	160° F (71° C)
Spills, Splashes & Fumes	140° F (60° C)
Immersion Service	110° F (43° C)

SURFACE PREPARATION

Note: For optimal coating performance, take considerable care with surface preparation.

Metal: Remove all oil, grease or scale from the surface, then blast with sharp sand or grit to finish. Use a non-spherical blast medium to give a 2 - 3 mil (50 - 75 micron) profile and to achieve the following surface preparation standards or their equivalents:

Non-chemical Service	SSPC-SP 6 Commercial Blast (NACE 3)
Intermittent Splash or Wear	SSPC-SP 10 Near White Metal Blast (NACE 2)
Immersion or Abrasive Service	SSPC-SP 5 White Metal Blast (NACE 1)

Concrete: Concrete should be aged at least 28 days before coating and the surface should be clean, dry and free of form-release agents, silicone water proofers and/or curing agents.

Sand blasting or scarification is recommended. Wash down old concrete to remove all residues and neutralize the pH before blasting or scarifying.

These products are normally self-priming. However, under certain conditions such as old, porous or poorly finished concrete, CAL551-102 primer/sealer is recommended to avoid bubbling caused by outgassing. If these conditions exist, call Calicorp for assistance as two coats of CAL551-101 may be indicated on air entrained concrete.

MIXING PROCEDURES

Note: Do not mix partial kits.

1. Thoroughly mix the resin before adding the hardener: CAL551-210 is 100% solids and contains materials with high specific gravity.
2. Empty the entire amount of hardener into the resin container.
3. Mix thoroughly—until uniform in consistency—then continue to mix for an additional 2 - 3 minutes. Pay special attention to the bottom and sides of the container to insure complete mixing. Due to the high viscosity of this product, a mechanical mixer is preferred. Use at low speed and keep the mixing blade down in the product to avoid entrapping air. If mixing by hand, use a square-cornered, flat implement, such as a standard paint stirring stick.

THINNING

If thinning is necessary, especially at temperatures lower than 60° F (16° C), add up to 5 fl oz of MEK per gallon. (The addition of 5 fl. Oz of MEK will reduce the solids content to 96%.) Read the Material Safety Data Sheet for MEK (flammable liquid) before using it.

POT LIFE

AMBIENT TEMPERATURE	TIME
40° F(4° C)	9 hours
75° F(24° C)	2 hours, 30 minutes
92° F(33° C)	1 hour

Do not keep the blended coating in the original container: exotherm – heat created during the curing process – can 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".

APPLICATION PROCEDURE

CAUTIONS

1. If the ambient temperature is 85° F (29° C) or higher, pot life may be as short at 20 minutes. Have the working surfaces ready, and mix no more than one gallon of the coating at a time. To increase the pot life under these conditions, put the tray or pan on ice or in ice water. **Do not** get water or ice in the tray with the coating.
2. The substrate temperature must be at least 5° F (3° C) above dew point—the temperature at which moisture will condense on the surface of the substrate—during all blasting and coating procedures. To calculate the dew point, consult the chart below.

Example: if the ambient air temperature is 70° F—top row below—and the relative humidity is 65%—left column—the dew point is 57° F. Under these conditions, the substrate temperature would need to be at least 62° F before proceeding with blasting and coating procedures.

%RH	Ambient Air Temperature, °F(°C)						
	50 (10)	60 (16)	70 (21)	80 (27)	90 (32)	100 (38)	110 (43)
90	47 (9)	(14)	67 (19)	77 (25)	87 (31)	97 (36)	107 (42)
85	45 (7)	55 (13)	65 (18)	75 (24)	84 (29)	95 (35)	104 (40)
80	44 (7)	54 (12)	63 (17)	73 (23)	82 (28)	93 (34)	102 (39)
75	42 (6)	52 (11)	62 (17)	71 (22)	80 (27)	91 (33)	100 (38)
70	40 (4)	50 (10)	60 (16)	69 (21)	78 (26)	88 (31)	98 (37)
65	38 (3)	48 (9)	57 (14)	67 (19)	76 (24)	86 (30)	95 (35)
60	36 (2)	46 (8)	55 (13)	65 (18)	74 (23)	83 (28)	92 (33)
55	34 (1)	43 (6)	53 (12)	62 (17)	71 (22)	80 (27)	90 (32)
50	31 (-.5)	41 (5)	50 (10)	59 (15)	69 (21)	78 (26)	87 (31)

APPLICATION

CAL551-210 may be sprayed, brushed, rolled or applied by squeegee. Use a medium bristle brush or a non-shed roller—3/8" nap or shorter—designed for use with epoxies. To spray CAL551-210, use an airless system—such as those available from Binks, DeVilbiss or Graco—with the following specifications a guideline:

Pump Ratio	40:1 or greater
Minimum Output	4000 psi
In-Line Filter	30 mesh
Tip Size Product Hose	.022 - .035 inch
Minimum – Optimum I.D.	.375 - .5 inch
Maximum Length	60 feet

MULTIPLE COATS

Second and subsequent coats must be applied **before the previous coat has completely cross-linked.** Apply additional coats when the previous coat will still string out (pigtail) and hold its shape when touched. If only slight tack remains, allow the product to cure, then brush blast before applying the next coat. Sanding or wire brushing may abrade small areas.

The same requirement applies when overlapping the seams of adjacent coating sections to create a continuous protective film. If the coating surface to be overlapped at the seam cannot be brush blasted, use a non-impact means such as power brushing or sanding to create a mechanical profile.

CURE TIME
(@ 70° F/21° C)

Re-coat Window	24 hours
Light Loading	48 hours
Immersion (Aqueous) Service	7 days
Full or Chemical Service	7 days

SPEED CURING

The cure time varies with temperature variations. If speed curing is desired, cure time can be reduced and product performance enhanced by artificially applying heat during the curing process of the final coat. Allow to cure for 3 hours at 75° F, and then increase temperature to 150° F for 1.5 hours.

CLEAN-UP

Use a mixture of MIBK and Xylene (50/50) or MEK for clean-up. Read the Material Safety Data Sheets for any of these products (flammable liquids) before using them. Skin can be cleaned with denatured alcohol, preferably ethanol.

MATERIAL SAFETY DATA

HAZARDOUS INGREDIENTS

RESIN	HARDENER
Bisphenol A CAS #25085-99-8, 10-50% Exposure limits: TLV PEL: none established	Polyamide CAS #68410-23-1 50% or less Polyamido Amine, CAS #647- 754-99-0 50% or less Modified Polyamine, CAS # (Trade Secret), no established limit, irritant

PHYSICAL DATA

	RESIN	HARDENER
Specific Gravity	1.41	0.97
% Volatiles by volume	Nil	< 0.5%
Appearance/Odor	Olive Brown	Brown/Slight Sweet Odor
Melting Point	< 0 degrees F (-18o C)	< 0 degrees F (-18o C)
Solubility in Water % by weight	Negligible	Negligible
pH	ca 5	ca 10

FIRE AND EXPLOSION DATA

	RESIN	HARDENER
Flash Point	> 300o F (149o C)	> 200o F (93o C)
Extinguishing Media	Carbon Dioxide, foam, dry chemical	
Special Procedures	Use a self-contained breathing apparatus.	

NOTE: decomposition and combustion products may be toxic.

HEALTH AND HAZARD INFORMATION

	RESIN	HARDENER
Inhalation	LC_{50} (rabbits): 6000 mg/kg	LC_{50}: possible respiratory irritant if atomized
Skin Contact	LD_{50} (rabbits): 4000 mg/kg	Possible irritant, dermatitis in extreme
Eye Contact	Irritating	Severe Irritant
Ingestion	LD_{50} (rabbits): 4000 mg/kg	LD_{50} (rats): 3000 mg/kg
Acute Overexposure	Irritation, possible sensitization	Irritation, possible sensitization, nausea
Chronic Overexposure	Skin sensitization, dermatitis	Skin sensitization, may be corrosive

EMERGENCY FIRST AID PROCEDURES

	RESIN	HARDENER
Ingestion	If large amounts are ingested, induce vomiting if conscious.	Call physician immediately. Give generous amounts of water if conscious. **Do not** induce vomiting.
Inhalation	Remove to fresh air. Give oxygen if breathing is difficult.	
Eyes	Immediately flush eyes with water for 15 minutes. Call physician.	
Skin	Promptly wash with mild soap and water.	

REACTIVITY DATA

	RESIN	HARDENER
Conditions contributing to instability	Stable	**Do not** heat in bulk as dangerous decomposition may occur, liberating toxic fumes.
Hazardous Decomposition Products	Carbon Monoxide, Carbon Dioxide, Phenolics	Carbon Monoxide, Carbon Dioxide, Phenolic Nitrogen Oxides and Compounds
Conditions Contributing to Hazardous Polymerization	Will not occur	Heating in bulk
Incompatibility	Strong oxidizers, strong acids and bases	

		RESIN	HARDENER
DISPOSAL OR SPILL PROCEDURES	Aquatic Toxicity	Not available at this time	Not available at this time
	Steps to be taken if material is spilled	Shovel into closeable container for disposal.	Absorb into sand or other absorbent material. Shovel into closeable container and dispose of in professional manner.
	Waste Disposal Method	Not considered hazardous under RCRA (40CFR 261) Dispose according to state, federal and local regulations.	

		BOTH
SPECIAL PROTECTION MEASURES	Ventilation Requirements	Good general mechanical ventilation and local exhaust
	Specific Personal Protective Equipment	Organic chemical cartridge respirator if needed in non-vented area
	Eyes	Splash-proof chemical goggles
	Gloves	Impervious gloves
	Other	Appropriate equipment to prevent probability of skin and eye contact.

SPECIAL PRECAUTIONS	Can cause irritation; wear protective skin and eye equipment. **Do not** heat in bulk; dangerous decomposition may occur, liberating toxic fumes.
ORDERING INFORMATION	For additional information, prices or to place an order, contact Calicorp or a Calicorp representative.

This product is not regulated by the DOT and is not considered a hazardous waste under the RCRA.

MSDS information provided by the manufacturer.
Please call Calicorp for additional information regarding this product or its application

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