83110
DATA SHEET

ClovaMastic

Hi-Build Low Temperature Cure Epoxy

Industry Approvals

Env. Canada:	✓	Category 25
MPI:	✓	Category 108
AWWA:	✓	C-210 (non-potable)
Auto Refinish:	✓	Category 1

General Properties

ClovaMastic is a two component, low VOC, high solids, immersion grade epoxy primer/finish coat containing zinc phosphate anti-corrosive. This multi purpose coating exhibits excellent chemical and rust inhibiting properties. Ideal for cool weather application, this product cures at temperatures as low as -18 degrees C. (0 Degrees F.) It can be applied directly to steel where abrasive blasting is not practical and has improved surface wetting capabilities providing superior surface tolerance and adhesion. ClovaMastic provides a combination of anti-corrosive barrier protection, chemical fume and spillage resistance, along with good abrasion resistance. Ideal for use in moderately corrosive environments and where early recoating is desired.

Recommended Uses

Suitable for use as a one or two coat primer/finish coating or as an intermediate coating over recommended anti-corrosive primers. Ideal for immersion or non-immersion service for storage tanks, oil and gas equipment, structural steel, pulp and paper mills, sewage treatment plants, water treatment plants, marine and other heavy industrial areas. Ideal as a one-coat maintenance finish coat over Zinc Rich primers

Product Information

GENERIC TYPE
Chemically cured epoxy

PIGMENT TYPE
Chemically resistant pigments

COLOR
83110 Off White, 83114 Black

BASES
83113 Clear*

FINISH
Low Gloss

AVERAGE VOLUME SOLIDS
79%

AVERAGE WEIGHT SOLIDS
89%

RECOMMENDED FILM THICKNESS
Wet: 8 - 12 mils
Dry: 6 -10 mils

SHELF LIFE *(from date of manufacture)*
831 Series Component "A" - 3 years
83110B Component "B" - 3 years

**83113 Clear Base can be tinted with up to 32Y/2 gal kit of Industrial XP Colorant. All colourant should be added to the "A" component.*

MIXED RATIO
1:1 By volume

INDUCTION TIME
15 minutes at 25°C (77°F)

POT LIFE at 25°C (77°F) 50% R.H.
2.5 hours (Regular "83110B" Activator)
8.5 hours (Summer "83110BX" Activator)

VISCOSITY MIXED
115 - 125 K.U.

TEMPERATURE RESISTANCE (DRY)
120°C (248.8°F) Intermittent
93°C (199.4 °f) Continuous

V.O.C. MIXED
173 g/L (1.44 lbs/gal)
**refer to MSD sheet for current VOC values*

THINNER
C-25 Fast Evaporating

ACCELERATOR
A-65 Epoxy accelerator at recommended levels

THEORETICAL COVERAGE
1267.2 ft^2/gal @1 mil (25 microns) DFT
31.6 m^2/L @ 1 mil (25 microns) DFT
Actual coverage may vary depending on substrate and application methods.

Drying Time* with Summer Grade "83110BX" Activator

Substrate Temperature	Hard Dry	Self Re-Coat	Re-Coat with Urethane Minimum	Re-Coat with Urethane Maximum
25°C (77°F)	6 hours	6 hours	1 hour	14 days
15°C (60°F)	12 hours	10 hours	2 hours	14 days
10°C (50°F)	16 hours	15 hours	4 hours	14 days

Drying Time* with regular "83110B" Activator

Substrate Temperature	Hard Dry	Self Re-Coat	Re-Coat with Urethane Minimum	Re-Coat with Urethane Maximum
25°C (77°F)	4 hours	4 hours	4 hours	14 days
15°C (60°F)	6 hours	6 hours	8 hours	21 days
5°C (40°F)	48 hours	10 hours	16 hours	28 days
minus 7°C (20°F)	>120 hours	24 hours	48 hours	indefinite

*Temperature, Relative Humidity, and Film Thickness will affect dry and re-coat times.

Recommended Primer

83110

STEEL	Self Priming or 83 Series Zinc Rich Primers
CONCRETE	Self Priming
GALVANIZED	Self Priming*
ALUMINUM	Self Priming*

** An SSPC SP-16 Brush-Off Blast is recommended*

Surface Preparation

Surface to be coated must be clean, dry and free from loose mill scale, weld spatter, oil, grease or other contaminants. Minimum surface preparation for steel in non-immersion service is SSPC-SP2. For immersion service an SSPC SP10 "Near White Blast" is required. Existing finishes should be tested for film integrity. If found to be sound, apply several test patches and inspect adhesion, lifting or wrinkling before proceeding with the project. A minimum SSPC-SP6 is recommended when using 83110BX Summer Grade Activator. * See Limitations

Typical Resistance (Non-Immersion)

WEATHER	EXCELLENT	**SALT WATER**	EXCELLENT	**ACIDS**	GOOD
MOISTURE	EXCELLENT	**FRESH WATER**	EXCELLENT	**ALKALIS**	EXCELLENT
SOLVENTS	GOOD	**ABRASION**	EXCELLENT	**OIL**	GOOD

Methods of Application

Airless Spray: Minimum tip pressure: 5100psi. Minimum pump size: 56:1@100psi air line. Tip sizes .021" - .025"

Brush/Roller: Can be brushed or rolled but lap marks will be visible.

Limitations

Do not use for potable water service. This epoxy product will chalk and yellow with age however this will not affect performance of the coating. Application should not proceed when the relative humidity is above 85%. Not recommended for overcoating loose rust, mill scale, salts or other contaminants which may be on the surface. * Use of 83110B Regular and 83110BX Summer Grade Activators will result in slightly different colour / appearance of the cured coating. Do not mix B and BX Activators on the same job.

Mixing Instructions

Mix base A component and Activator 83110 B or BX separately with good agitation. Add Activator to base A component and mix thoroughly until homogenous. Allow to react in can for 15 minutes (induction time). If thinning is necessary or required (up to 10%), proceed only after recommended induction time has passed. For application during hotter weather when longer open times are required, summer grade activator 83110BX can be used.

Safety Precautions

This product is for industrial use only. **Refer to Material Safety Data Sheet for proper health and safety information.**

Storage and Handling

FLASH POINT	-5°C (23°F) TCC
PRODUCT WEIGHT	14 lbs/gallon mixed
STORAGE	Store in a cool, dry, well ventilated secure location.
PACKAGE SIZE	2 gallon and 8 gallon kits

Some package sizes or colors may be by special order only. Please check with your Cloverdale Representative when ordering.

Warranty Disclaimer

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ClovaMastic PERFORMANCE CRITERIA*

1. Abrasion Resistance

Method: ASTM D4060 Abrasion Resistance of Organic Coating by Taber Abrader, 1000 gram load, CS-10 Wheel, 1000 Cycles

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 1 coat

Results: Not more than 70 mg loss

2. Adhesion

Method: ASTM D4541, Elcometer Adhesion Test

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 1 coat

Results: Not less than 800 psi

3. Chemical Resistance

Method A: AWWA C-210 Section 4.3, 4.1. Exposure 30 days.

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 2 coats. Coating Was Exposed To: - De-ionized water, 1% Sulfuric Acid Solution; 1% Sodium Hydroxide

Results: Pass. No Blistering, Peeling, Disbondment.

Method B: Covered spot test for 1 week at room temperature.

Coating System: ClovaMastic, (1 coat) Coating was exposed to - 5% Sodium Hydroxide solution; 5% Sulfuric Acid Solution; 5% Hydrochloric Acid; 5% Monobasic Sodium Phosphate Solution; 5% Sodium Hypochlorite Solution; Heavy Duty Liquid Detergent.

Results: Unaffected-slight discoloration

4. Humidity Resistance

Method: ASTM D4585 Testing Water Resistance of Coatings using Controlled Condensation (Humidity)

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 2 coats.

Results: 1500 hours - unaffected. No sign of rust.

5. Recoating Window

Method: ASTM D4541, Elcometer Adhesion Test

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 2 coat

Results: Best between 1 day to 30 days

6. Salt Spray (Fog)

Method: ASTM B117

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 1 coat

Results: After 1500 hours, no blistering, cracking or delamination of film. No more than 1/8" rust creepage at scribe.

7. Impact Resistance

Method: ASTM D2794, Resistance of Organic Coating Effects of Impact (Bonderite

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 1 coat

Results:
Not less than 12 kg - cm direct
Not less than 2.5 kg - cm reverse

8. Pencil Hardness

Method: ASTM D3363

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 1 coat

Results: Minimum 5H Hardness

9. Cathodic Disbondment

Method: ASTM G8 at -1.5Vand 20^0 C. for 28 days, three holidays.

Coating System: ClovaMastic Hi-build, Low Temp Cure Epoxy - 2 coats at 25 mil avg. 6.4 mm holiday dia.

Result: Pass - Average radius of disbondment - 2.7 mm

10. Immersion Service

Method: Continuous immersion in certain cargos

Result: Pass - Consult your Cloverdale Technical Sales Representative for specific cargos.

* ***This data applies when catalyzed with ether 83110B Regular Grade or 83110BX Summer Grade Catalyst***

Check for recent amendments to this data sheet at www.cloverdalepaint.com

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