Mascoat®

Innovating Thermal and Sound Protection

450EN HIGH BUILD NOVOLAC EPOXY

Selection & Specification Data

Product Name	Mascoat 450EN
Product No.	M-450EN
Description	Mascoat 450EN is a 2-part primer to be used under insulating coatings or conventional insulation in highly corrosive environments. It is designed to provide CUI protection per NACE SP0198. When used under insulation, 450EN offers outstanding resistance to wet & dry cycling at high temperatures up to 450˚F. The coating can be used on steel for offshore platforms, barges, refineries, petrochemical plants, power plants, pulp & paper mills, and many other areas as recommended. The coating can also be used to line steel tanks at a higher film thickness.
Features	♦ Excellent corrosion protection ♦ Ambient temperature cure ♦ Easy to apply ♦ Excellent thermal shock resistance ♦ Excellent build on edges ♦ Single coat capability ♦ High build formulation ♦ VOC compliant
Color	Medium Grey
Finish	Semi-gloss
Components	Dual-component with optional reducers
Volume Solids Content (mixed)	80% ±1%
Mix Ratio	Full kits only
WFT per Coat	5–7 mils (200-300µ)
DFT per Coat	3–5 mils (150-250µ) The above thickness is for use below Mascoat and other coatings. Bulk materials will require thicker coats.
Theoretical Dry Coat Coverage	1283 ft^2/gallon @ 1 mil (31.5 m^2/liter @ 25µ)
VOC Content	
Unthinned	0.8 lbs/gallon (448 gram/liter)
Reducer 3-450	0.8 lbs/gallon (448 gram/liter)
Reducer 4-450	2.2 lbs/gallon (263 gram/liter)
Limitations	Continuous temperature: 425˚F (218˚C). Non-continuous temperature: 450˚F (232˚C) Discoloration may occur above 250˚F(121˚C)

Substrates & Surface Protection

Remove oil and grease from the surface with solvent or a commercial cleaner, which does not leave a residue according to SSPC-SP1.

Steel:

Non-Immersion Service: Abrasive blast to a Commercial Grade cleanliness according to SSPC-SP6 to achieve a 1.5 – 3 mil anchor profile.

Immersion Service: Abrasive blast to a White Metal cleanliness according to SSPC-SP5 to achieve a 1.5 – 3 mil anchor profile.

Application Equipment

Listed below are the general equipment guidelines for the application of this product.

Conventional Sprayer	Industrial sprayers such as DeVilbiss MBC or JGA and Binks 18 or 62 having double regulated pressure pot, 3/8' I.D. minimum material hose and a .070" I.D. fluid tip and air cap are recommended.
Airless Sprayer	Sprayer such as Graco's Extreme with a 60:1 ratio and a 0.017–0.021" tip is recommended. A 30 mesh inline filter is recommended
Power Mixer	Use only explosion proof power mixers
Brush or Roll	For small areas and touch-up only. Use a medium brush and short nap roller with solvent resistant fibers and core.

Application Conditions

	Material	Surface	Ambient
Minimum	50˚F (10˚C)	50˚F (10˚C)	50˚F (10˚C)
Maximum	90˚F (32˚C)	110˚F (43˚C)	110˚F (43˚C)

Special reducing and application procedures are required outside these temperatures. Surface temperatures should be 5˚F (2.7˚C) above dew point to prevent condensation.

Applying Over Inorganic Zinc

When applying over cured inorganic zinc, reduce Mascoat 450EN (1 pint per gallon) and apply a mist coat of approximately 1-3 mils wet, which seals the inorganic zinc. The mist coat should be followed by another coat to achieve the total desired film build. Consult SSPC-PS Guide 8.00 for topcoating zinc-rich primers.

Physical Data

Item	Results	Test Method
Impact Resistance	80 in-lbs – Direct Impact	ASTM D-2794
Adhesion	3913 psi	ASTM D-4541
Abrasion Resistance	1 kg load/1000 cycles – weight loss CS 17 wheel – 60 mg	ASTM D-4060
Molten Sulfur Cyclic Test	Pass	NACE SP0302

Resistance

Exposure	Immersion	Splash/Spillage	Fumes
Acidic	Excellent	Excellent	Excellent
Alkaline	Excellent	Excellent	Excellent
Solvents	Good	Excellent	Excellent
Salt water	Excellent	Excellent	Excellent
Water	Excellent	Excellent	Excellent

Mixing & Reducing

Mixing Power mix Part A, then blend Part B into Part A and mix until uniform at the following ratio:

	1 Gal. Kit	5 Gal. Kit
Part A	0.89 gallon	4.45 gallon
Part B	0.11 gallon	0.55 gallon

Reducing M-450EN may be thinned up to 1 pint per gallon with Reducer 3-450. For application to a hot surface, Reducer 4-450 is recommended. Reduction of M-450EN will reduce the film build.

Pot life Two hours at 75°F (24˚C). Less at higher temperatures. Pot life ends by loss of film build

Packaging, Handling, & Storage

	1 Gal. Kit	5 Gal. Kit
Packaging Unit		
Part A	0.89 gallon	4.45 gallon
Part B	0.11 gallon	0.55 gallon
Shipping Weight		
Package Unit	12 lbs. (5.4 kg)	60 lbs. (27.2 kg)
	1 Gal	5 Gal
Reducer 3-450	12 lbs (5.4 kg)	60 lbs (27.2 kg)
Reducer 4-450	9 lbs. (4.1 kg)	45 lbs. (20.4 kg)
Flash Point		
Part A	0˚F (-18˚C)	
Part B	>200˚F (93˚C)	
Reducer 3-450	100˚F (37˚C)	
Reducer 4-450	0˚F (-18˚C)	
Shelf Life	2 years for both Part A and Part B when stored inside at 40–110˚F (4.4–43.3˚C)	

Cleanup & Safety

Cleanup Cleanup with Reducer 3-450 or acetone

Safety For minimum protection, Mascoat recommends a half mask respirator with organic vapor cartridge. In confined spaces, a fresh airline respirator may be used. Tight sealing safety goggles recommended for eye protection.

Ventilation Adequate ventilation should be used as the first measure to ensure airborne thresholds listed in Section 8 of the SDS are not exceeded.

Clothing Wear suitable protective clothing (long sleeved clothing, chemical resistant apron, antistatic boots. Impervious clothing such as Tyvek® coveralls for light protection or Saranex® 23-P for moderate protection.

Skin Contact If product comes into contact with skin, wash thoroughly with soap and plenty of water for at least 15 minutes. Do not use solvents or thinners to dissolve material.

Caution Read and follow all caution statements on this sheet and the Safety Data Sheet. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. All equipment should be non-sparking and explosion proof. Remove all sources of ignition. Remove contaminated clothing and shoes.

Dry & Cure Times

The following minimum times are based on a 10 mil DFT and adequate air ventilation. Higher thickness and reduced air circulation increase drying times.

Surface Temperature	To Touch	To Handle	Final Cure
60˚F (15˚C)	16 hours	72 hours	14 days
75˚F (24˚C)	8 hours	36 hours	7 days
90˚F (32˚C)	4 hours	18 hours	4 day

Elevated temperature final cure will increase the resistance of M-450EN. Product can be topcoated at “To Handle” time frame.

Maximum Recoat

Surface Temperature	Days
60˚F (15˚C)	14
70˚F (21˚C)	7
80˚F (27˚C)	4
90˚F (32˚C)	1

If the maximum recoat time is exceeded, the coating should be sweep blasted with fine aggregate to roughen surface.