

MCOR™ 1110 (mCoat™ IM) is an industrial-grade, two-component high build, novolac hybrid coating. Incorporating the best properties of both urethane and high performance novolac epoxy in one technology. The balance of properties allows for a long-term sustainable barrier, protecting steel and other materials from corrosion associated with immersive and corrosive conditions. Serving a variety of harsh corrosive industries, such as petrochemical, water/wastewater, marine, energy and other processing and treatment related activities.

The 100% solid hybrid coating offers forgiveness and surface tolerance, impressive adhesion and formulated for environments which are susceptible to movement, corrosive exposure, microbial and chemical attack, and vibration. mCoat™ IM can be applied by brush, roller, or spray. It is self-priming, so there is no requirement for logistical primer timing and it ties back into itself indefinitely.

Applications

- Immersed/submerged pump, casings, and pipe components
- Interior tanks and vessels
- Immersed machinery and equipment
- Immersed offshore and marine structures
- Below-grade or sub-structures, columns, saddles, etc
- Exterior protection against splash
- Other immersed assets

Features

- 100% solids, no VOCs
- Moderate impact strength and vibration tolerance
- Surface & moisture tolerant
- Great chemical resistance
- Cold temperature performance
- Easy-to-apply by roller, brush or spray
- Self-priming
- Self-leveling
- Moderate to high film build
- Semi-flexible (15% tensile elongation)

Film Thickness & Theoretical Coverage

mCoat™ IM is designed to be applied as a two-coat system. Applied at 305 microns (12 mils) minimum to 635 microns (25 mils) maximum by roller/brush or 1.27 mm (50 mils) maximum by spray, per coat.

mCoat™ IM is a 100% solid coating that will not shrink. 1.8 m²/kg. at 0.5 mm DFT (19 ft²/kg. at 20 mils DFT). Actual coverage will depend on surface conditions, irregularities, and surface profile.

Surface Preparation

The success of any coating application is directly proportional to the completeness of the substrate preparation and the care the application crew puts into the application. Surface

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must be clean and sound. Verify that the temperature of the surface is at least 3 degrees C (5 degrees F) higher than the dew point temperature to preclude condensation.

Metal: Before preparing steel, please inspect and remove oil, grease, or other contaminants - "Solvent Cleaning" (SSPC-SP1) may be required. Grind any weld spatter or steel weld inconsistencies. Abrasive blasting (or other approved mechanical methods) to SSPC SP-6/NACE No. 3 "Commercial Blast Cleaning" must be used in order to achieve a clean surface with a minimum profile of 75 microns (3 mils); remove dust and debris by high compressive air or solvent cleaning (SSPC-SP1) may be required again. MCOR™ Primecoat™ MTE is advised as a primer should the substrate be susceptible to flash-rusting, to stripe coat any edges or bends in the metal for enhancing peak retention, or should the metal not possess the characteristics to achieve optimal profiling capability.

Concrete: Remove all oil, dirt, and contaminants and prepare the concrete by abrasive blasting, high pressure water blasting, jetting and/or approved mechanical methods to SSPC SP-13/NACE No. 6 "Surface Preparation of Concrete." Surface should be dry and free of dust. Although primers are optional: should the substrate prove to be excessively outgassing, the MCOR™ Primecoat™ SE is recommended to reduce the occurrences of pinholing. The MCOR™ Primecoat™ SE would also be advised for substrate surface conditioning and enhancement.

Application Method

Material is supplied in two (2) containers (base+cure) as a unit. If possible, always mix a complete unit in the proportions supplied; if not, use a calibrated scale to weigh out each component or use measuring cups to measure by volume, if volume ratio is provided.. Adding more or less hardener will adversely affect the cured physical properties. Measure the material temperature prior to mixing. If the material is cooler than 16 °C (60 °F), raise its temperature slowly to above 22 °C (72 °F). For published working time to remain manageable, do not exceed 32 °C (90 °F). After the components have been measured, combine entire contents of cure with base and mix thoroughly with a power agitator. Mix for five (5) minutes until the mixture becomes uniform in color and viscosity with no visible streaks or lumps and be aware of pot life (higher temperature and mass accelerates pot life). When possible, MCOR™ recommends mCoat™ IM as a two-coat system. Apply the mixture immediately (advanced curing agents are utilized to create strong crosslinking; hence, shortens pot life) with brush, roller, or spray.

Equipment

Brush: short hair bristle. **Roller:** mohair, nap or foam roller (only use high quality shed-resistant rollers) **Spray:** MCOR™ recommends at minimal the use of a .016" orifice spray tip or greater, 45:1 spray pump or greater, 3/8" hoses, with 1/4" whip. Purge with MCOR™ #5 Cut & Clean.

Volume Capacity & Color

A unit is a two-component (base+cure)

The volume capacity of a 1 kg of mixed mCoat™ IM is 0.91 Liters.

mCoat™ IM is available in:

- Light Grey (LGY)

Storage & Handling

Shelf life: 24 months, sealed.

Store in a dry area away from direct sunlight. The material should be conditioned to between 22 °C (72 °F) and 32 °C (92 °F) before use.

Clean tools with MCOR™ #5 Cut & Clean.

Thinning

Thin with MCOR™ #1 Reduction not to exceed 2% by volume.

Limitations

Apply in good weather when air and surface temperatures are above 13 °C (55°F). For optimum application properties, condition the material to 22 °C (72 °F) temperature range prior to mixing and application.

Technical Properties

Type:	Epoxy novolac hybrid
Finish:	Gloss
Mixing ratio (by weight)	2 : 1
Solids by volume:	ASTM D2697 100%
Solvents (VOC) by volume:	0%
Bond strength (steel):	ASTM D4541 100 Bar (1,450 psi)
Pot life:	30 min. (25 °C / 200 g)
Water absorption:	ASTM D1653 < 0.1 g/sq.m.
Tensile strength:	ASTM D638 53 MPa (6,200 psi)
Hardness, Shore D:	ASTM D2240 82
Tensile elongation:	ASTM D2370 15%
Viscosity (mixed):	ASTM D2196 1,150 cps @ 25 °C
Complete cure:	48 hours (25 °C)
Temperature exposure (dry):	-26 °C – 76 °C (-15 °F - 170 °F)
Temperature exposure (wet):	80 °C (175 °F) max
Recoat Time	2 hr. (25 C) – no max

Safety

Consult Material Safety Data Sheet (SDS) for all material safety information.

Chemical Resistance (partial list, specific chemical rating requests are available upon request)

Acetone	B-Good	Hydraulic Oil (Petro)	A-Excellent	Explanation of Footnotes 1. Satisfactory to 110°F (43°C) 2. Satisfactory to 220°F (104°C)
Alcohols:Isopropyl	A-Excellent	Hydraulic Oil (Synthetic)	A-Excellent	
Ammonia 10%	A ¹ -Excellent	Hydrogen Peroxide 100%	A-Excellent	Ratings -- Chemical Effect A = Excellent. B = Good -- Minor Effect, slight corrosion or discoloration. C = Fair -- Moderate Effect, not recommended for continuous use. Softening, loss of strength, swelling may occur. D = Severe Effect, not recommended for ANY use. N/A = Information not available.
Antifreeze	A-Excellent	Hydrogen Sulfide (aqua)	A-Excellent	
Beer	A ¹ -Excellent	Jet Fuel (JP3, JP4, JP5)	A-Excellent	
Benzene	B ¹ -Good	Kerosene	A-Excellent	
Boric Acid	A ¹ -Excellent	Naphtha	A-Excellent	
Chlorine Water	A ¹ -Excellent	Nitric Acid (20%)	C-Fair	
Detergents	A ¹ -Excellent	Oils:Citric	A-Excellent	
Diesel Fuel	A-Excellent	Oils:Diesel Fuel (20, 30, 40, 50)	A ¹ -Excellent	
Ethanol	A ¹ -Excellent	Oils:Fuel (1, 2, 3, 5A, 5B, 6)	A ¹ -Excellent	
Ether	A ¹ -Excellent	Petroleum	A ¹ -Excellent	
Fatty Acids	A-Excellent	Phenol (10%)	C-Fair	
Fluorine	A ¹ -Excellent	Propane (liquefied)	A-Excellent	
Formaldehyde 100%	A-Excellent	Phosphoric Acid (crude)	C-Fair	
Fuel Oils	A ¹ -Excellent	Potassium Carbonate (Potash)	A-Excellent	
Gasoline (high-aromatic)	A-Excellent	Sodium Hypochlorite (<20%)	B-Good	
Gasoline (unleaded)	A ¹ -Excellent	Sodium Hypochlorite (100%)	D-Severe Effect	
Grease	A-Excellent	Sugar (Liquids)	A-Excellent	
		Sulfuric Acid (75-100%)	B-Good	