Promek AMC

TECHNICAL DATA SHEET

PROMEK AMC

High gloss acrylic that is a direct to metal high gloss water based copolymer specifically designed for use in industrial and marine HVAC coils, micro-channel coils and refrigeration coils to stop corrosion from salt and industrial pollution. The coating exhibits excellent performance properties with minimal thermal resistance and pressure drop. In addition the formulation contains broad spectrum antimicrobial additives to stop slim and mould build up on indoor unit coil surfaces.

SPECIFICATIONS

Water based acrylic resin applied by air less spray gun or high-pressure spray gun. The coating is UV resistant, has a DFT of no more than 20 microns, flexible and highly resistant to aggressive environments. Corrosion resistance was confirmed by testing of no less than 20 000 hrs. salt spray resistance per ASTM B117 using aluminum test panels. Permanently resistant to microbial contamination on coated surfaces.

APPLICATIONS FOR PROMEK AMC

New or existing outdoor air-cooled chiller or compressor unit condenser coil and indoor unit evaporator coil of AHU and Fan Coil Units.

APPLICATION METHOD

Following PROMEK AMC procedures using neutral cleaners to prepare the clean and dry the coil surface or panel surface. Spray using compressed air or airless spray gun. PROMEK AMC coating needs to be mixed well before application.

STORAGE

Store in original contained out of direct sunlight and in areas less than 35 C. Shelf life plus 5 years when stored in unopened original contained. Once opened and partially used contents have shelf life of 6 months.

PROMEK AMC Typical Properties

Salt Spray: ASTM B117: 20,000 hours

Cyclic Offshore: ISO 12944-9: 5,000 hours (formerly ISO 20340)

QUV Resistance: ASTM D4587: 2,000 hours

UV-C Resistance: PLUS 1,500 hours

Humidity: ASTM D4585: 5,000 hours

Dry Film Thickness (DFT): 20-30 microns

Bend Test: ASTM D522: PASS

Crosshatch Adhesion: ASTM D3359: 5B

Pencil Hardness: ASTM D3363: 2B

Impact Resistance: ASTM D2794-93:
Direct - 1.68 kilograms/metre
Indirect – 1.00 kilograms/metre

Heat Transfer Reduction: <1% as applied for heat transfer components (i.e. at recommended dry film thickness)

Dry Heat Resistance: Withstands 160°C with excursions to 190°C without damage.

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Product Description

The formulation is a HYBRID Resin which allows the addition of special properties which increase both the corrosion resistance and the overall performance of the heat exchange surface. The resin matrix is a tightly crosslinked coating which bonds to all metal substrates. The formulation provides super hydrophobic and anti-microbial film characteristics suitable for both top coat and maintenance applications.

The Promek AMC coating can be applied to precoated fins to increase anti-microbial and anti-corrosion protection.

Recommended Uses: see chart

Promek AMC is a direct-to-metal high- performance coating specially formulated for marine / saltwater environments and used principally to enhance indoor air quality and protect heat transfer equipment and components.

Chemical Resistance

Promek AMC is resistant to a broad range of acidic and alkaline environments. Please contact supplier for specific environments.

Packaging Information

Supplied in 10 Litre DRUMS

Physical Properties

Solids by weight (ASTM D2369): 43% ± 3%

Solids by volume (calculated): 32% ± 3%

Flash Point: NA water based

Shelf life: 5 years from date of manufacture

Color: multiple colours available with consultation

VOC Content

52 grams / liter as supplied (less water and exempt solvents)

Film Thickness

For all surfaces, a typical DFT of 20 – 30 microns, achieved with 60-90 microns wet film

Coverage

Theoretical coverage is approximately 2 sqm per litre on coil face ie 1sqm of coil body with FPI of 12-16 and 15 sqm per litre on flat panels.

Coverage rates are only estimates and make no allowance for material loss. Actual rates will vary dependent on application method, surfaces, etc.

Curing/Drying:

Air dry: Coil should be dry to touch within 1 hours of final application at ambient temperatures of 20-25°C. Warmer temperatures will enhance drying time; cooler temperatures will lengthen the drying time. Coil should be dry to handle after 24 hours at ambient temperatures. Avoid applications where humidity is above 75%.

Oven dry: Coils can be baked to speed up drying time. 120-140°C for 30 minutes. Temp is coil substrate temperature not oven temp.

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Surface Preparation

All surfaces must be clean and dry sound. Free of any oils, dirt, grease, wax, and other contamination that may interfere with coating adhesion.

In general, new coils, the surface should be cleaned with a neutral heavy-duty degreaser. Followed by a thorough water rinse. All surfaces must be dry and free of any debris prior to application of coating.

Previously Painted Metal Surfaces:

Remove all loose coatings, rust, and corrosion by scraping and sanding.

Thinning

No thinning is required for this material.

Application

Application is specific to heat transfer components. For other parts, please contact supplier.

Spray Application for Heat Transfer Equipment:

1. Consult SDS prior to use.

2. Use standard production type spray equipment.

3. Mix coating with an appropriately sized stirring knife or spatula until no settle is seen at the base of the agitating utensil. A slow speed paddle/ power mixer may be used in larger storage vessels or as needed.

4. NON-DEDICATED EQUIPMENT: It is recommended that spray equipment be dedicated to only applying water-based coatings and this will guarantee no contamination of the coating from other coatings and solvents.

5. Air supply must be uncontaminated. Adjust air pressure to approximately 50 PSI at the gun and provide approximately 50 PSI (3.5 bar) at pressure pot.

6. Adjust spray gun by first opening liquid valve and then adjust fan to cover 10-12 cm length, holding gun perpendicular to the surface at a distance 15-20 centimeters.

7. Apply as a mist pass and lightly coat the surface and allow coating to flash off between passes for approximately five minutes.

8. Moving spray gun slowly - each coat consists of 3 spray passes: (1) straight into fins; (2) on 45-degree angle to right; (3) on 45-degree angle to left - on both sides of coil. These three spray passes are considered ONE coat - make sure to allow 5 minutes dry time between passes to avoid runs/sags.

9. More coating may be applied after initial three passes after 30 minutes.

10. When finished, clean equipment with clean water until water runs clear.

11. Allow coating to air-dry for a minimum of 24 hours of before assembly.

- Check dry by twisting thumb while applying pressure to paint. If coating appears to move under pressure, let dry further and recheck.

- Coating is dry enough if you do not leave a thumb print in the paint.

- Temperature and humidity can dramatically impact drying times

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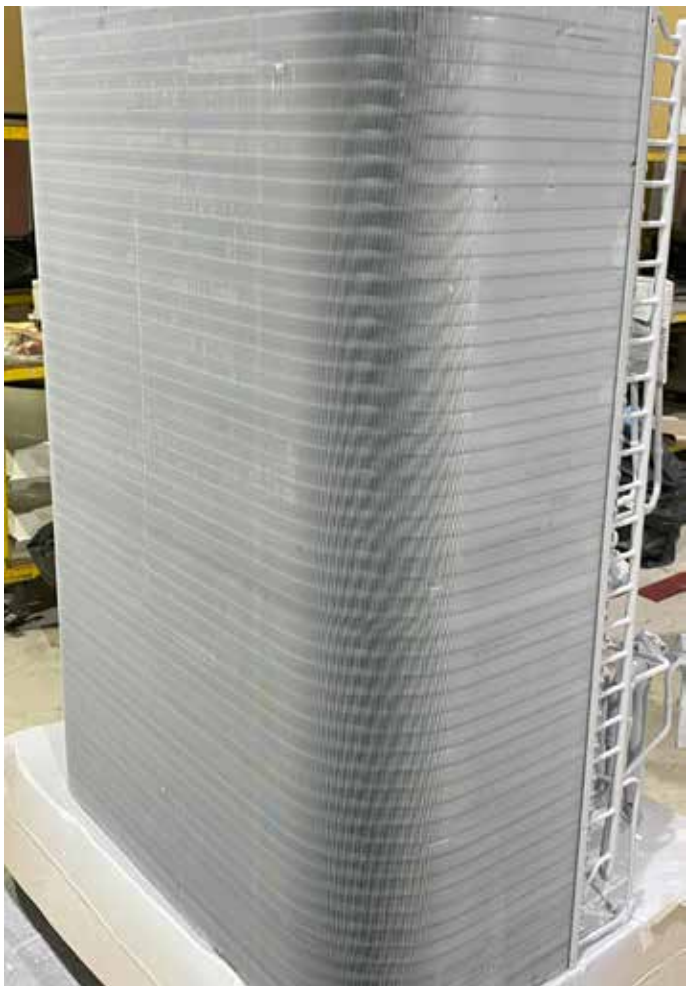
Chemical Resistance

Corrosive Agent	Strength	Rating
Hydrochloric Acid	5%	E
Hydrochloric Acid	10%	E
Hydrochloric Acid	20%	E
Sulphuric Acid	5%	E
Sulphuric Acid	10%	E
Sulphuric Acid	20%	E
Phosphoric Acid	5%	E
Phosphoric Acid	10%	E
Phosphoric Acid	20%	E
Phosphoric Acid	30%	E
Acetic Acid	10%	E
Trichloroethylene		E
Toluene		G
Methylated Spirits		G
Mineral Turpentine		G
MEK (Methyl Ethyl Ketone Solvent)		G
Acetone		G
(NB: Where 1% = 10,000 ppm)		
Legend: E = Excellent G = Good P = Poor		



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Properties

Property	Test Method	Result
SALT SPRAY	ASTM B117	Exceeds 20000 hours
SALT SPRAY ACIDIC	ASTM G85 A1	Exceeds 5000 hrs
Water Immersion	ASTM D870	500 hrs minimum
Cross Hatch	ASTM 3359	PASS
Hardness	ASTM 3359	5B
UV Resistance	ASTM D4587	Exceeds 1000 hrs
Flexibility	ASTM D522M	PASS
THERMAL CONDUCTIVITY	ASTM E1225	2.6 W/MK
C5 Condensation	ISO 6270	PASS
C5 Chemical Resistance	ISO 7523	PASS
Thermal resistance		< 1%
Pressure drop		< 1%
Physical Properties		
Solids % by: volume/wt	30.00% /50.00%	
Density	1.1 Kg/L	
pH	8.8 – 9.5	
Gloss at: 20°/60	65/92	
VOC	52 g/litre	
Flash point	Water-Borne / Non-Flammable	
DFT	20 microns	
Coverage (flat panel)	15 sqm per litre	
Coverage (Coil face)	2 sqm per litre	
Application temp.	Apply at above 5°C and below 75% humidity	
Coverage (Coil face)	2 sqm per litre	
Application temp.	Apply at above 5°C	

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