TECHNICAL DATA SHEET

ThinTech Coatings
ADVANCED COATING TECHNOLOGY

METAL COATING

DESCRIPTION

ThinTech Metal Coatings is a durable and long-lasting nano-based clear coating designed to protect all metal surfaces from various destructive forces. Our metal coating provides superior resistance to rust, moisture, corrosion, salt spray, acid rain, UV damage, oxidation, galvanic corrosion, and animal & bird waste damage. ThinTech Metal Coating is peel and flake resistant, ensuring a long-lasting barrier against the elements.

Applications / Surfaces:

ThinTech Metal Coatings can be applied on Ferrous metals including: Iron, steel, stainless steel, galvanized steel; Non-Ferrous metals including aluminum, copper and bronze (raw, powder coated, painted or primed).

CHARACTERISTICS

Appearance: Light Yellow
Finish: Clear
Odor: Mild Fruity
Base Type: Solvent

Flash Point: 16.7ºC (62.1º F)
VOC: >100g/liter
Weight per Gallon: 1 kg/L (8.35 lb/US gal)

Coverage: 600 to 800 sq.ft./gal or 60 to 75 sq.m./4liters (approximate). Coverage will vary depending on porosity of the surface.
Expected Wear: 5+ years under normal conditions. Reapply as needed.
Surface Preparation: Ensure the surface is clean, dry, and other materials

APPLICATION INSTRUCTIONS

Test Area: Considering the various metals, application methods, and environments, it is recommended to perform a small test on an inconspicuous area with ThinTech Metal Coating to ensure good adhesion and the desired result is achieved.

SURFACE PREPARATION

Aluminum, Copper, Brass, Bronze, & Stainless Steel: ThinTech Coatings recommends thoroughly cleaning the entire surface to ensure a good bond between the surface and ThinTech Metal Coating. Clean the surface of any oil and grease using XD BIO CLEANER, then rinse with fresh water and dry to ensure the surface is free of any oil or grease. To double-check that the surface is free of oil and grease, use a white rag with a solvent and wipe the surface. If the rag remains white, the surface is clean; if the rag turns dark, continue cleaning until it remains white. Once the surface is clean and dry, apply one coat of ThinTech Metal Coating per the application instructions. ThinTech Metal Coating provides a long-lasting barrier of superior resistance to rust, moisture, corrosion, salt spray, acid rain, UV damage, oxidation, galvanic corrosion, animal & bird waste damage, and reduces ice adhesion. With proper surface preparation and application, ThinTech Metal Coating can protect your metal surfaces for years to come.



If you're a property owner seeking to safeguard your investment and extend the life of your outdoor spaces, look no further than our advanced formulations and unparalleled performance.

For more Information:
info@thintechcoatings.com

Galvanized Steel: For new galvanized steel, it is important to note that it will produce off-gassing for the first several months after plating. It is recommended to allow 6 months for complete off-gassing before applying Metal Coat. In case the age of the galvanized surface is unknown, test a small area for air bubbles or blistering on the surface which will appear in approximately 7 days. If none occur, then the galvanized steel is cured. Once the surface is determined to be fully cured, clean off all oil, grease, and dirt with ThinTech Coatings Surface Prep. Rinse with fresh water and dry. To ensure the surface is free of oil and grease use a white rag with a solvent and wipe the surface. If the rag remains white, the surface is clean. If the rag turns dark, continue cleaning until it remains white. Once clean, apply Metal Coat following the application instructions provided by ThinTech Coatings. Only one coat should be applied.

Powder Coated Metals: To prepare the surface for ThinTech Metal Coating, examine the powder coating for any cracks or damage. If there are any, make sure to have them re-coated or primed with a matching paint to touch up. Next, clean the surface of any dirt, oil, or grease using XD BIO CLEANER. Rinse it with fresh water and dry it. Do not use solvents as they can damage the powder coating. After ensuring that the surface is clean and dry, you can apply ThinTech Metal Coating per the application instructions. Only apply one coat.

New Iron & Steel: To ensure a successful coating application, it is important that the entire surface is free of rust, scale, oil, and grease. ThinTech Coatings recommends wiping the surface with a white rag and solvent to check for any remaining oil and grease. If the rag remains white, the surface is clean, but if it turns dark, continue cleaning until the rag remains white. For hot rolled steel, it is important to sandblast or grind off 100% of the slag to prevent de-lamination of the coating due to surface tension. After ensuring the surface is properly cleaned, prime the bare metal with a high-quality rust and corrosion primer following the manufacturer's instructions. Once the primer has dried, apply two coats of ThinTech Metal Coating per the application instructions. It is important to follow the re-application time set by the primer manufacturer to ensure proper bonding with ThinTech Metal Coating. If the re-application window has passed, the surface must be mechanically abraded with a minimum of 600 grit sandpaper to achieve a proper bond for the coating. For steel or iron surfaces without primer, ThinTech Metal Coating should be applied wet over tack, with no more than 15 minutes between coats to fill micro holes that can lead to rusting. With proper preparation and application, ThinTech Metal Coating provides a durable, long-lasting barrier against rust, corrosion, and other destructive forces, protecting your metal surfaces for years to come.

Old Iron & Steel with Existing Paint or Primer: ThinTech Coatings recommends inspecting the condition of the existing primer and paint to ensure good adhesion and no peeling or chipping. If the existing paint is not in sound condition, it must be abraded off until reaching a solid base or bare steel. ThinTech Coatings suggests sandblasting with Commercial Blast Clean SSPC-SP-6 method or repairing by sanding with 600 grit sandpaper or lower and re-painting as needed. After any repairs are made and re-painted areas have dried and cured, wipe the surface with XD BIO CLEANER to remove any dirt or debris, then wipe down with a damp rag and fresh water to prevent removal of the existing paint. Once the surface is clean and dry, apply a single coat of ThinTech Metal Coating.

APPLICATION

1. **Application:** To achieve the best finish and appearance, ThinTech Metal Coating is ideally sprayed on. When spraying, ensure that adjacent surfaces are covered to avoid drips or accidental coating. However, in cases where spraying is not possible, alternate methods such as using a fine bristle brush, a high density ultra-smooth foam roller or dipping can be used. Although, this alternate method may not yield the same spread coverage and optimum smooth finish as spraying. If applying ThinTech Metal Coating outdoors, make sure that the ambient temperature is between 45°F and 105°F and the relative humidity (RH) is under 90%. Ensure that there is no chance of rain for at least 48 hours after the estimated completion time of the coating process. It is important to make necessary accommodations for natural elements.

2. **Spraying:** ThinTech Metal Coating should be used with caution, as different finishes and metals require different application methods. Always test ThinTech Metal Coating in an inconspicuous location before applying to ensure adhesion and determine that the desired look is achieved. To ensure a smooth and even finish, always shake the contents thoroughly to re-suspend the nanoparticles that have settled to the bottom. During the application process, make sure to re-shake every 15–20 minutes to re-suspend the settling nanoparticles. When surface preparation is complete and surface is dry and free of dust, begin application using a high volume, low pressure (HVLP) spray gun with a 1.0–1.3 size tip and the pressure set at approximately 25–30 psi. If applying outdoors, make certain the ambient temperature is between 45°F and 105°F, and RH is under 90%. Make certain that there is no chance of rain for a minimum of 48 hours after the estimated time of completion of the coating process. Make necessary accommodations for natural elements. In addition, if there is high wind, it can affect the quality of the finish as blowing wind can disrupt the spray pattern. It can also contribute to contamination of the finish with blowing dirt. Take necessary precautions against natural elements.

TECHNICAL DATA

PROCESSING PROPERTIES (Under standard lab conditions)	
Touch Dry	2-3 hours
Dry Through	3-5 hours
Recoat interval	10-20 minutes
To be walked on	Min 8-12 hours
To be exposed to moisture	48 hours
Full Cure	7 Days
Properties and values are highly dependent on equipment, spray gun, mix chamber temperature, pressure and related parameters. Values are slightly different for clear. Variations are possible and expected.	

TECHNICAL DATA

TECHNICAL DATA (All values @ 77 oF / 25 oC)	US	Metric
Volatile organic compounds (ASTM D2369)	< 0.83 lb./gal	> 100 gm/ liter
Theoretical coverage	600 – 800 Ft2 / gal @ 0.7–0.75 mils DFT	16-20 m2/liter @ 18-44 microns
Specific Gravity of materials (ASTM D792)	7.36 lbs./gal	0.88 kg/ liter
Shelf life @ 77 oF /25 oC	12-24 Months	12-24 Months
Flash point - pensky martin closed cup	15 oF	-9 oC
Application Temperature	45 – 105 oF	7 – 77 oC
Abrasion Resistance CS-17 1000 Cycles (ASTM 4060)	23 mg Loss	
Surface Flammability (ASTM E162)	Heat Index 0 (Best Result)	
Adhesion to blasted carbon steel (ASTM D7234-14)	2600 PSI	
Accelerated UV Exposure 1000 hrs. (ASTM G154)	dE: <0.5	
Thermal Cycling (ASTM 6944) 50C - 4 Hours Immersion @ 25C - 4 Hours -29C - 16 Hours	No Effect	
Solvent Resistance - MEK (ASTM 4752)	1000 Rubs - No Effect	
Shore D Hardness (ASTM D2240)	72 +/- 3	
Operating Temperature	-200 - 350F	

STORAGE

Storage and shelf life should be unopened two year. Store in cool dry environment.

CLEAN UP

Clean tools and equipment with acetone and flush thoroughly immediately after application is completed and before the product dries. Remember, if the coating dries on the tools, they will not come clean with acetone or any other solvent.

CARE & MAINTENANCE

For routine cleaning, a damp rag or can be used to remove most dirt and spills from the surface. While ThinTech's Metal Coating is resistant to scratches, it is not completely scratch-proof, so it's important to avoid using abrasive cleansers or scouring pads. If an area is damaged or abraded, simply sand the affected area lightly with 600 grit sandpaper and reapply the Metal Coat. If the substrate is also damaged, make necessary repairs first before reapplying the coating.

CAUTION

For safe handling, use OSHA approved 1910.134 and ANSI Z88.2 Respiratory protection. Fresh air and exhaust are required in the work area to prevent inhaling. If inhaled, move to fresh air immediately and call a physician if any physical difficulties occur. Wear butyl-rubber gloves and other skin protection to avoid contact with the skin. If the coating comes in contact with the skin, wash it thoroughly with soap and water. To avoid splashes, use chemical safety goggles or splash shields. Never wear contact lenses without eye protection. In case of contact with the eyes, immediately flush them with water for 15 minutes and seek medical attention. If accidentally swallowed, rinse mouth thoroughly and obtain immediate medical attention. Always make sure to have excessive ventilation when working in an enclosed area.

CERTIFICATIONS / TESTED PERFORMANCE

Bond strength ASTM D7234-14 - 17.9 MPa. Quatest 3 independent laboratory report KT3-00467BHD3/1.

Adhesion ASTM D3359-09 - rated 4B.

CASS salt-fog corrosion GB/T 10125-2012 - no corrosion through 2,160 hours; slight rusting at 2,256 hours. Kin Long Hardware Products Laboratory Center report JC1935431, coated 40 x 40 x 2.0 mm 316L steel tube.

Acid resistance 87% H_2SO_4 spot exposure - no corrosion after 5,000 hours direct-to-metal; uncoated steel corroded rapidly. ThinTech laboratory study, Sept 2023-Jun 2024.

Additional referenced test methods: ASTM D3363 (film hardness), ASTM D2047 (static coefficient of friction), ASTM D2803-03 / ISO 4623 (corrosion and filiform resistance), ASTM E96-10 (water vapour transmission), and ASTM G155 (xenon-arc weathering).