



Metal Fusion

Data Sheet

Part # MF

DESCRIPTION: Concrete Solutions Metal Fusion is a three-dimensional metallic epoxy system designed to create elegant and exotic looking seamless floors. Metal Fusion is a 100% solids, two component, epoxy formulation consisting of a high performance Bisphenol A epoxy resin blend combined with a Cycloaliphatic curing agent. It is a versatile, high grade epoxy material for a variety of job applications. Always do a sample of the color selected and have it approved before starting a job.

TYPICAL USES: Ideal for residential and commercial use including, living rooms, kitchens, bathrooms, retail stores, office spaces, lobby areas, tattoo parlors, barber shops, hair salons, restaurants, clothing stores, casinos and showroom floors.

FEATURES & BENEFITS:

- 100% solids, zero VOC
- Low viscosity
- Excellent adhesion. Bonds well to concrete and other substrates
- Adheres to damp concrete
- Self leveling
- Resistant to amine blush, resistant to exudation
- Will not crystallize, even in cold environments
- Insensitive to moisture
- Not regulated by the DOT

CHEMICAL PROPERTIES:

	Result
Solids by Volume/Weight	100%
Volatile Organic Compounds	0 lbs/gal (0 g/l)
Mix Ratio, parts per volume	2A [resin] : 1B [hardener]
Pot Life	15 min
Recoat	12 – 24 hrs
Tack Free @ 70°F (21°C)	5 hrs (warmer temps accelerate dry time)
Walk on Time (light foot traffic)	12 – 15 hrs
Coverage Rate per Gallon	40 – 50 sq. ft.
Recommended Application Temperature	≥40°F (4°C) [cures faster in warmer temps, cure time is longer in cooler temperatures]
Odor	low
Flash Point	Resin = 400°F, Hardener = 210°F
Shelf Life - unopened containers	12 months

TYPICAL PHYSICAL PROPERTIES:

	Test	Result
Adhesion -concrete	ASTM D-903	300 psi
Hardness (Shore D)	ASTM D-2240	82
Tensile Strength (psi)**	ASTM D-412	7,500
Flexural Modulus (psi)	ASTM D-790	11,900
Elongation (%)	ASTM D-412	4
Compressive Strength (psi min)	ASTM D-695	10,000

SURFACE PREPARATION: The surface to be coated should be thoroughly clean; free of any contaminants such as oil, grease or other incompatible materials. Shotblasting or dustless grinding are common surface preparation methods to clean and etch the surface. Some surfaces may also require scrubbing with detergent following by rinsing and wet/dry vacuuming.

CONCRETE SOLUTIONS® METAL FUSION *(continued)*:

MOISTURE VAPOR TESTING: All concrete floors not poured over a proper moisture barrier, are subject to possible moisture vapor transmission or hydrostatic pressure problems which can cause a coating system to blister or fail. Before applying a coating system over a concrete floor which is on-grade or below grade, the customer should be informed of this potential problem and given the option to have a qualified moisture testing company perform calcium chloride test to give the proper recommendations.

MIXING INSTRUCTIONS: The mixing ratio for Metal Fusion is 2 parts A to 1 part B. Mix thoroughly for 3 – 5 minutes using a drill motor and mixing paddle. Scrape the sides and bottom of the container while mixing. Mix up no more material than can be used in a 15 minute time period.

APPLICATION INSTRUCTIONS: Important – Before applying Metal Fusion always blow the entire surface to be coated, including around all the edges, corners and under walls to be sure no loose debris will come out during the Metal Fusion application. Loose debris hidden under drywall can become imbedded in the Metal Fusion if not removed ahead of time.

Follow the step by step instructions below to achieve the best results. It is recommended to use Concrete Solutions Epoxy 200 as a primer to help guard against possible moisture vapor transmission problems from below the concrete surface. Epoxy 200 also helps to fill in pin holes in the surface to avoid bubbles in the Metal Fusion that can rarely be caused from out gassing. **Wear proper OSHA approved dual cartridge type respirator during application.**

Step 1 - Once the surface preparation and any patching required is completed, apply Epoxy 200 Color or WB Epoxy Color (for a quicker application) at a coverage rate of approximately 200 sq. ft. per gallon using our Metal Edge Squeegee and a ¼" nap shed-resistant roller. Allow the Epoxy 200 to cure for 12 – 15 hours (overnight) or until dry enough to walk on. Before applying the Metal Fusion over Epoxy 200, check the surface for any tiny open pinholes or open fine cracks in the Epoxy 200.

If everything looks tight and covered you can proceed with step 2. If you see any open pinholes or fine cracks that didn't get filled in, they should be patched with our fast setting Unitex Propoxy 300 or something equivalent. Feather the Unitex Propoxy 300 to zero using a putty knife. Do not leave a build up on the surface.

Step 2 - Pour the entire mix in a thin row next to the starting edge. Don't let it sit in the bucket for more than 5 minutes after mixing or it will react and set up faster. You have at least 20 – 30 minutes to spread it around. Spread the Metal Fusion using our 3/16" notched squeegee and follow behind with a spiked roller. Roll several times with spiked roller. Metal Fusion coverage is 50 – 60 sq. ft.

Within 15 minutes of mixing the first batch, mix and apply the next batch of Metal Fusion in order to keep a wet edge where the two mixes will blend together. After spreading and rolling the second mix, you can now blow the 1st section that's been sitting for at least 20 – 30 minutes (do not exceed 30 minutes) with an electric or cordless blower. Wear spike shoes and hold the blower 4 – 6" away from the surface. Move it around randomly in a circular motion. The blower will wrinkle up the metal fusion and then self level again. You can blow the surface between 20 – 45 minutes after you spread. It's okay to blow the Metal Fusion immediately after spreading as long as you also blow it a second time after 20 – 30 minutes to achieve the best results.

Another option to create different effects is to spray Acetone after blowing the surface using an acetone resistant pump up sprayer. Turn off all pilot lights and open flames when using Acetone and wear a proper respirator. Spray in random spots in a fog coat or spray in a straight stream to create drip marks that look like moon craters. Experiment on a sample board. Do not spray too heavy, especially over the green colors (Metallic Jade and Meteorite) which are more sensitive to too much Acetone. Light fog sprays or drips only. You won't see the results right away from the acetone, it takes time to react with the Metal Fusion. Always do a sample board first before doing a job.

Keep doing the above process until the entire floor is completed or you've reached a designated stopping point. Measure the coverage rate of the first kit of Metal Fusion to make sure you have enough to cover your job. If necessary you can stretch each kit thinner using a 3/8" nap paint roller. Have one handy just in case. Clean tools with Acetone. Allow the Metal Fusion to cure for 12 – 15 hours or more before walking on.

Step 3 – Apply Topcoat Sealer - (Warning: Flammable) Turn off any pilot lights or open flame sources. Wear the proper dual cartridge OSHA approved breathing mask. Apply HP Urethane within 24 hours of applying the Metal Fusion. After 24 hours the Metal Fusion will need to be sanded using 80 – 100 grit sandpaper on an orbital sander before applying HP Urethane. Mix the HP Urethane 2 parts A to 1 part B. Spread thin using a washed clean ¼" nap shed resistant paint roller or mohair roller at a coverage rate of 300 – 400 sq. ft. per gallon.

CONCRETE SOLUTIONS® METAL FUSION (continued):

CHEMICAL RESISTANCE: When chemical resistance is a factor, it is recommended to do a test to determine suitability.

Excellent resistance to the following reagents:

Xylene, 1,1,1	5% Detergent Solution	50% Sodium Hydroxide
70% Sulfuric Acid	10% Hydrochloric Acid	Skydrol
Synthetic Gasohol	Mogas	Diesel [No. 2 and 3] oils
JP-4, 5,7,8	Diethylene Glycol	Monomethyl Ether

Good resistance to the following reagents:

Toluene	MEK	EB
10% Acetic Acid	Ethyl Alcohol	Methyl Alcohol

COLOR OPTIONS: Available in 11 standard metallic colors

HOW SUPPLIED: Packaged in 1 ½, 3 and 15 gallon kits for convenient use in a 2:1 mixing ratio [2 parts A to 1 part B]

WARNING: The Epoxy 200, Acetone and HP Urethane are combustible and should be kept away from open flames. Turn out all pilot lights. Wear the proper breathing mask in areas with poor ventilation. Read Safety Data Sheet before using. For professional use only!

SAFETY PRECAUTIONS: Health Considerations: Consult the Rhino Linings® Safety Data Sheets (SDS)

Chemical systems require the use of proper safety equipment and procedures. Please follow the Rhino Linings® product SDS and Safety Manual for detailed information and handling guidelines.

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