

**NOTE: Although this coating composition is not a fire-retardant product, it will not support combustion and will self-extinguish when the source of fire is removed.*

Test Data

Salt Spray 5% (ASTM B 117)
 2 coats of URETHABOND 104 over rusty steel and
 1 coat of URETHABOND 111, two component
 urethane finish coat applied with an "X" scribed
 through center plate. After 14,000 hours exposure
 only slight undercutting at spots along "X" was
 noted and this was less than 1/32" undercut. Total
 film thickness 8.0 mils approximate.

Tabor Abrasion (CS-17, 1000 gms.)
 1000 Cycles 15 mg.
 Pencil Hardness 2 H
 Flexibility (ASTM D-5222) Pass 1/8"
 mandrel bend
 MEK Double Rubs, 48 hr. cure Pass 100
 Gardner Impact 160 in. lbs, direct and
 reverse

CHEMICAL RESISTANCE

Hydrochloric Acid 5%	Excellent	Oxalic Acid 10%	Excellent
Hydrochloric Acid 10%	Excellent	Citric Acid 10%	Excellent
Sulphuric Acid 5%	Excellent	Lactic Acid 85%	Good
Sulphuric Acid 10%	Excellent	Oxalic Acid	Good
Sulphuric Acid 30%	Good	Oleic Acid	Excellent
Nitric Acid 5%	Excellent	Maleic Acid 10%	Excellent
Nitric Acid 10%	Excellent	Gasoline	Excellent
Phosphoric Acid 10%	Good	Toluene	Excellent
Phosphoric Acid 50%	Good	Xylene	Excellent
Caustic Soda 10%	Excellent	Methanol	Excellent
Caustic Soda 40%	Excellent	Ethanol	Excellent
Ammonia 5%	Fair	Ethylene Glycol	Excellent
Ammonia 10%	Fair	Ethyl Acetate	Excellent
Sodium Bicarbonate 10%	Excellent	Acetone	Excellent
Sodium Chloride Solution 5%	Excellent	Methyl Ethyl Ketone	Excellent
Sodium Chloride Solution 10%	Excellent	Methyl Isobutyl Ketone	Excellent
Ammonium Chlorate 30%	Excellent	Perchloroethylene	Excellent
Formic Acid 10%	Good	Tricresyl Phosphate	Excellent
Acetic Acid 10%	Good	Tricresyl Phosphate	Excellent
Methylene Chloride	Poor	Skydrol A500	Excellent
MIL-E-23699 Hydraulic Oil	Excellent	JP-4 Jet Fuel	Excellent

RATING SYSTEM - TESTS WERE RUN IN TOTAL IMMERSION AND FOLLOWING RATES GIVEN: **Excellent** - 3 months with no blistering or coating degradation. **Very Good** - 2 months with no blistering or coating degradation. **Good** - 1 month with no blistering or coating degradation. **Fair** - 1/2 month with no blistering or coating degradation. **Poor** - Less than 1/2 month.

Surface Preparation

New metal surfaces should be cleaned of oil, grease and dirt. To obtain optimum results, the metal should be sandblasted and URETHABOND 104 primer applied, then topcoated with URETHABOND 111. If metal surface is rusted and sandblasting is not practical from an application or cost standpoint, URETHABOND 104 can be applied directly over rust which is tightly adherent. Although this situation is not as ideal as sandblasting, excellent results have been obtained (See CFI Bulletin

104.1). When painting over previously painted surfaces a spot test should be made to check for lifting, or incompatibility with the old coating. Dirt and loose paint should be removed by suitable method and spot primed before application of finish coat. It is extremely important that this surface is free of all moisture prior to coating application or blistering of paint film may occur. See also the Product Information Bulletins on the above primers.

SUGGESTED SPRAY EQUIPMENT SETTINGS

Equipment	Gun	Fluid Tip Or Nozzle	Gun Pressure	Fluid Needle Or Temp.	Air Cap or Pattern
Normal Spray					
De Vilbiss	MBC 510/ JGA 502	E or FF		E or FF	765
Binks	18	66 or 63C		65 or 63A	63PB
Airless					
De Vilbiss 4711	JGA-5026	JAC-31	2000-2200 psi	Ambient	12-14 in.
Binks 98 Series	39/43	9-1860	2000-2200 psi	Ambient	12-14 in.
Grayco Hydra-Spray	Std.	163-617	2000-2200 psi	Ambient	12-14 in.
Nordson	Std.	20C09	2000-2200 psi	Ambient	16-18 in.
Spraying Systems Gunjet	25A	650050TC	2000-2200 psi	Ambient	12-14 in.

Use DRY air source and properly maintained moisture traps on all equipment. Clean equipment IMMEDIATELY after use with CFI 704 cleanup solvents.

Concrete floors should be primed with WEARCOAT 1020 or WEARCOAT 490 after sandblasting or acid etching. (Refer to CFI Bulletin G-3).

Application

URETHABOND 111 can be applied immediately after mixing the two components. However, thorough mixing of the two components is important. Mechanical mixing is preferred at slow speed to avoid air entrapment. This coating may be applied by spray (air or airless), brush or roller (close nap) as outlined in CFI Bulletin G-2. If application is by spray method suitable protective vapor/particulate respirators should be worn by all personnel in the area. In poorly ventilated enclosed areas or when airborne concentrations exceed TLV (ceiling) for HDI, a fresh air supplied mask should be worn. In all cases, observe OSHA/NIOSH regulations for respirator use (29 CFR 1910.134) whenever a respirator is used. Spray equipment must be equipped with properly working vapor traps and air supply must be dry.

PRECAUTIONS

WARNING: Flammable

Contains Aliphatic Polyisocyanate Prepolymer Hexamethylene Diisocyanate. Use only with adequate ventilation.

Good industrial hygiene practice dictates that when isocyanate based coatings are spray applied, some form of respiratory protection should be worn. During the spray application of organic solvent containing coating systems, the use of a supplied-air (either positive pressure or continuous flow type) respirator is mandatory when one or more of the following conditions exist:

- The airborne isocyanate concentrations are not known; or
- The airborne isocyanate monomer concentrations exceed 0.05 ppm (10 times the TLV); or
- The airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the MGL); or
- No airborne solvent concentration exceeds its odor threshold; or
- Spraying is performed in a confined space (see OSHA confined space standard 29 CFR 1910.146)

Individuals with chronic respiratory problems or prior respiratory reactions to isocyanates must not be exposed to vapors or spray mist containing isocyanates. If affected by inhalation, vapor or spray mist, remove to fresh air. If breathing difficulty persists or occurs later, consult a physician and have label information available. (Read MSDS prior to product use.)

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Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective at the time the sealed container is first opened, and in no event beyond the shelf date printed on the label. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith.

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