COPPS INDUSTRIES, INC.
An ISO 9001 Certified Company

TECHNICAL BULLETIN

Armorgard 500 – K-500

Description:

Copps Armorgard 500 is a 100 % solids, self-leveling, primerless, odorless, pigmented epoxy flooring system designed to resurface concrete. Armorgard 500 has been formulated to reduce the "yellowing" that conventional epoxy systems develop. Armorgard 500 has excellent resistance to most harsh chemicals and can be applied as thin as 10 mil (0.25 mm). Armorgard 500 is USDA approved for application to structural surfaces or surfaces that will receive incidental food contact. Adhesion to wood, concrete and most metals is excellent.

Armorgard 500 was designed to protect floors from the light to medium traffic found in power plants, chemical processing, pulp and paper mills, the food and beverage industry, and anywhere a clean, attractive appearance is desired.

Product Advantages:

- PRIMERLESS
- 100 % SOLIDS
- CHEMICALLY RESISTANT
- BONDS TO DAMP CONCRETE

Application Guidelines:

Application thickness can be varied from 10 mil (0.25 mm) in a rolled coat (unfilled) to 1/4" (6.35 mm) in a broadcast (aggregate filled) topping.

Handling Properties:

COMPONENTS	Resin and Hardener (Aggregate optional)		
COLOR	Gray, Tile Red		
MIXED VISCOSITY, cP or mPa.s	1,000		ASTM D 2196
WORKING TIME, min	25		
GEL TIME, min	35		
TACK-FREE TIME, h	5-6		
INITIAL CURE or FOOT TRAFFIC, h	9-12		
COVERAGE* (@10mil or 0.25 mm, unfilled), ft^2/gal (m^2/l)	160	(4.16)	
APPLICATION TEMPERATURE, °F (°C)			
Ideal	70-80	(21-27)	
Acceptable	55-90	(13-32)	

*Depends upon concrete porosity

Physical Properties:

HARDNESS, Shore D	85		ASTM D 2240
ADHESION TO CONCRETE, psi (MPa)	800	(5.5) (100 % failure in concrete)	ASTM D 4541
COMPRESSIVE STRENGTH, psi (MPa)	12,500	(86.2)	ASTM D 695
TENSILE STRENGTH, psi (MPa)	5,000	(34.5)	ASTM D 638
ELONGATION @ BREAK, %	6		ASTM D 638
FLEXURAL STRENGTH, psi (MPa)	12,000	(82.8)	ASTM D 790

Chemical Resistance:

Excellent Resistance		Very Good	Not Recommended
Motor Oil	10 % Nitric Acid	10 % Acetic Acid	>50 % Acetic Acid
Unleaded Gasoline	10 % Sulfuric Acid	Methyl Alcohol	>50 % Nitric Acid
Kerosene	50 % Sulfuric Acid	1,1,1-Trichloroethane	Methylene Chloride
Diesel Fuel	50 % Sodium Hydroxide	Toluene	Methyl Ethyl Ketone
Ethylene Glycol	10 % Hydrochloric Acid	Xylene	
Water	Skydrol		
10 % Lactic Acid	Bleach		
10-30 % Citric Acid	Cyclohexanol		

The above recommendations are based on a 28 day immersion @ 72°F (22 °C).

Surface Preparation:

Armorgard 500 is used to strengthen and seal a porous concrete substrate, therefore, adhesion is paramount. To achieve excellent adhesion, the substrate should be free of all loose and foreign material and should be roughened slightly to provide a coarse profile by shot blasting.

Before blasting, any contaminates on/in the concrete must be identified. Oils, grease, fats, waxes or other contaminates must be removed prior to roughening the concrete. These can be removed with an application of warm (120-140°F or 49-60°C) caustic detergent, steam cleaning or pressure washing. De-grease the floor, follow with a hot water rinse. Repeat this procedure until the water does not "bead up" on the concrete.

Shot blasting using self-propelled, self-contained equipment is the recommended preparation method.

NEW CONCRETE MUST CURE A MINIMUM OF 28 DAYS PRIOR TO THE APPLICATION OF ANY EPOXY. CONCRETE MUST BE TESTED FOR MOISTURE AND VAPOR TRANSMISSION BEFORE COATING.

Mixing:

To mix Armorgard 500 pour the contents of the pail marked Hardener into the larger Resin pail. Immediately mix for 3 minutes using a Jiffy Mixer and a slow speed drill. Mix at slow speed (less than 500 rpm) to avoid air entrainment. DO NOT mix more material than can be used within the stated working time. REMEMBER - you will have less working time at higher temperatures.

Armorgard 500, before it has hardened, can be removed from tools with Copps Enviro Kleen solvent.

Application:

Relative humidity and dew point must be determined before application to avoid adhesion failures. The dew point is used to predict the substrate temperature at which moisture begins to condense, in the form of water, on the substrate. Never apply a coating unless the concrete surface temperature is 5°F (2°C) above the dew point. This temperature difference must be observed until the epoxy coating is cured to a tack-free state. A dew point calculation chart is available from a Copps Technical Representative.

PRIMER: Armorgard 500 can be applied to prepared concrete without a primer. The application of a primer is recommended to reduce concrete outgassing, in turn producing a smoother coating.

Apply with a squeegee and a medium (3/8" or 12.7 mm nap) roller.

Packaging:

Armorgard 500 is conveniently packaged in a pre-measured 1.5 (5.7 l) or 4 (15 l) gallon kit containing a resin (Part A) and a hardener (Part B); larger bulk quantities are also available. Armorgard 500 comes in 2 standard colors: gray and tile red. Special colors are available, with minimum quantity requirements.

SAFETY PRECAUTIONS

Avoid breathing of vapors. Forced local exhaust is recommended to effectively minimize exposure. NIOSH approved, organic vapor respirators and forced exhaust are recommended in confined areas, or when conditions (such as heated polymer, sanding) may cause high vapor concentrations. Do not weld on, burn or torch any epoxy material. Hazardous vapor is released when an epoxy is burned. Avoid skin or eye contact. Wash skin with soap and water if contact occurs. If eye contact occurs flush with water for 15 minutes and obtain medical attention. Read and understand all cautions on can labels and safety data sheets before using this material.

FOR INDUSTRIAL USE ONLY

WARRANTY AND DISCLAIMER

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