COPPS INDUSTRIES, INC.
An ISO 9001 Certified Company

TECHNICAL BULLETIN

Armorgard 601SF – K-601SF

Description:

Armorgard 601SF is a 100 % solids, chemically resistant, no odor, slurry and broadcast epoxy flooring system. Armorgard 601SF was designed to provide outstanding protection, for new or old damaged concrete, against a wide range of chemicals, specifically organic acids, solvents, and mineral acids found in food processing and chemical plants. Armorgard 601SF 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 601SF was designed to protect floors from moderate industrial traffic (specifically, steel-wheeled carts and forklift trucks) making it ideally suited for chemical processing, food and beverage plants, power plants, pulp and paper mills, utilities and anywhere a clean, tough floor is needed.

Product Advantages:

- OUTSTANDING CHEMICAL RESISTANCE
- 100 % SOLIDS
- EXCELLENT IMPACT RESISTANCE
- LOW TEMPERATURE CURE 40 °F (4.4 °C)
- EXCELLENT WEAR RESISTANCE
- FAST WALK-ON TIME

Application Guidelines:

Application thickness can be varied from 1/16" to 1/8" (1.6-3.2 mm) topping.

Handling Properties:

COMPONENTS	Resin (Part A)/Hardener(Part B)/Slurry Aggregate(Part C) /Broadcast Aggregate(Part D)	
COLOR	Gray, Red, Natural	
CONSISTENCY	Self-Leveling Mortar	
WORKING TIME, h	1	
GEL TIME, h	2	
TACK-FREE TIME (1/8" or 3.2 mm thick), h	3.5	
INITIAL CURE OR FOOT TRAFFIC TIME, h	4-5	
FULL CURE (FOR CHEMICAL IMMERSION), h	48-72	
APPLICATION TEMPERATURE, °F (°C)		
Ideal	70-80	(21-27)
Acceptable	40-90	(4-32)
COVERAGE per 42 lb (19 kg) kit @ 1/8" (3.2 mm), ft^2 (m^2)	25	(2.32)

Physical Properties:

HARDNESS, Shore D	87		ASTM D 2240
ADHESION TO CONCRETE, psi (MPa)	> 500	(3.4) (100 % failure in concrete)	ASTM D 4541
COMPRESSIVE STRENGTH, psi (MPa)	12,300	(84.8)	ASTM D 695
TENSILE STRENGTH, psi (MPa)	1,500	(10.3)	ASTM D 638
FLEXURAL STRENGTH, psi (MPa)	3,700	(25.5)	ASTM D 790

Excellent Resistance		Very Good	Not Recommended
Motor Oil	10 % Sulfuric Acid	20 % Lactic Acid	Methyl Ethyl Ketone
Unleaded Gasoline	50 % Sulfuric Acid	1,1,1-Trichloroethane	50 % Acetic Acid
Gasohol	70 % Sulfuric Acid	Butyl Cellosolve	50 % Nitric Acid
Kerosene	10 % Hydrochloric Acid	Toluene	Methylene Chloride
Diesel Fuel	10 % Phosphoric Acid	30 % Nitric Acid	
Ethylene Glycol	50 % Phosphoric Acid	Skydrol	
Water	75 % Phosphoric Acid	36 % Hydrochloric Acid	
10 % Lactic Acid	50 % Sodium Hydroxide	90 % Oleic Acid	
10 % Acetic Acid	Bleach		
20 % Acetic Acid	Xylene		
10 % Oleic Acid	Ethyl Alcohol		
10 % Nitric Acid	Methanol		
10 % Citric Acid	C_6-C_{12} Fatty Acid		
30 % Citric Acid	50 % Gluconic Acid		
Cyclohexanol			

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

Surface Preparation:

Armorgard 601SF 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 shot 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 process 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 28 DAYS PRIOR TO THE APPLICATION OF ANY EPOXY. CONCRETE MUST BE TESTED FOR MOISTURE AND VAPOR TRANSMISSION BEFORE APPLICATION.

Mixing/ 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 air 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 your Copps representative.

PRIMER MIXING (If required): To mix Copps K-049 Primer pour the contents of the can marked Hardener into the large pail (resin). 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.
PRIMER APPLICATION (If required): Apply 5 mil (0.13 mm) of Copps K-049 Primer to the prepared concrete with a short nap (1/4" or 0.6 cm) roller. This insures adhesion to the concrete substrate.
DO NOT apply K-049 Primer over standing water. Damp concrete is acceptable.
MIXING: To mix Armorgard 601SF pour the contents of the can marked Hardener into the larger resin can. Immediately mix for 2-3 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. Add this liquid to a rotating pail mixer and add all of the slurry aggregate (Part C), let mix for 1-2 minutes. Do not add broadcast aggregate Part D to the mortar.
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 air 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 your Copps representative.
APPLICATION: Immediately pour out the mixed kit onto the floor in 7-10" (18-25 cm) wide strips. Spread evenly with a clean trowel (steel finishing trowel, 3 x 14). Finish each kit before mixing another to insure proper working times and surface textures. As the material begins to set up the trowel will pull on the surface creating a porous surface, this can be corrected by cleaning the trowel with isopropyl alcohol or acetone.

Once the slurry is applied, broadcast the pre-measured Part D broadcast aggregate (separate box) into the wet slurry at a rate of 3/4 lb/ft² (3.66 kg/m²). Let dry and brush off excess aggregate.
LOCKDOWN: A liquids only squeegee coat of Armorgard 601SF liquids only may be applied to the broadcasted Armorgard 601SF. An application rate of 90 ft^2/gal (2.2 m^2/l) will produce a moderate non-skid. A lockdown is recommended to ensure a completely sealed surface. The lockdown thickness can be varied to produce the desired non-skid texture.
The Armorgard 601SF can be applied to the K-049 Primer immediately or up to 24 hours later @ 72°F (22°C). If more than 24 hours have passed it is necessary to scuff the primer surface if it is not tacky.
Do not rapidly raise the air or substrate temperature, this can cause outgassing of the concrete and joint shrinkage. This can lead to product cracking or failure
Armorgard 601SF will leave a moderately textured surface.
Armorgard 601SF, before it has hardened, can be removed from tools with Copps Enviro Kleen solvent or warm soapy water.

Packaging:

Armorgard 601SF is conveniently packaged in pre-measured (25 ft^2 or 2.3 m^2 @ 1/8" or 3.2 mm) 4 component kits, containing a resin (Part A), hardener (Part B), a slurry aggregate (Part C) and a broadcast aggregate (Part D). Larger bulk quantities are also available.

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 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. Use soft rubber wheels on any vehicle that will be traveling on the floor; this will reduce scuffing and abrasion marks**.**

FOR INDUSTRIAL USE ONLY

WARRANTY AND DISCLAIMER

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