Diama-Flake System

SYSTEM DATA SHEET

Item Number: DPDFS – 100-07

DESCRIPTION

DiamaPro Systems® Diama-Flake System is a decorative flake system that brings together color and durability in one package. Its formulation is well suited to withstand continuous traffic and high use environments. When using multi-colored flake, day-to-day debris will be visually reduced. The increased slip resistance will help ensure a safer floor compared to a non-treated surface. When working within a color scheme, the combination of the available base coat colors and decorative flake colors work well within most designs.

The DiamaPro Systems® Diama-Flake System is available in fast, regular, and slow cure formulation. The selection is based on all environmental conditions. With each cure time formulations, the cured film performance criteria will remain the same, only the working and return to service times change.

RECOMMENDED USES

- Commercial spaces
- Laboratories
- Auto Garages
- Residential rooms
- Utility rooms

ADVANTAGES

- **DiamaPro Systems® Diama-Poxy** can withstand up to 10 lbs. of vapor.
- **DiamaPro Systems® Diama-Poxy MVR** at 16 mil can withstand up to 25 lbs. of vapor.
- Meets USDA, FDA, EPA, and SCAQMD Standards
- Eligible for LEED Points: Made in California from Partially Recycled Materials
- Adheres to Concrete, Wood, Metal, Non-glazed tiles.
- Antibacterial
- Easy Installation
- Extreme Temperature Resistance,
- Working Temperature: 0–200°F
- Low Maintenance
- Scratch Resistance
- Waterproofing

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STORAGE, HANDLING AND DISPOSAL

- Storage:
  - Store materials in a cool (60-80°F), dry place out of direct sunlight.
  - DO NOT allow water into materials unless instructed to do so.
- Handling:
  - Safety Data Sheets must be adhered to.
  - No personnel may touch, relocate, or use materials without proper training.
  - All materials must be considered dangerous substances without firsthand knowledge.
  - Eating, smoking, or drinking is not allowed near materials.
- Disposal:
  - Follow federal, local, and building requirements for waste disposal.

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TECHNICAL DATA

DiamaPro Systems® Diama-Poxy (Base Coat and Optional Primer)

Product (B component)	MVR-Slow Cure	MVR-Fast Cure	Slow Cure	Standard	Fast Cure
Application Temperature	60-95°F <90% RH	41-77F <90% RH	60-110°F <90% RH	60-95°F <90%RH	41-85°F 90% RH
Working Time	25-30 min.	15 min.	40-50 min.	25-35 min.	15-20 min.
Recoat Time	8.5-24 hrs.	3-16 hrs.	9-36 hrs.	7.5-36 hrs.	5.5-24 hrs.
Return to Service	24 hrs.	5-6 hrs.	24 hrs.	24 hrs.	10 hrs.
Full Cure	7 days	5 days	7 days	7 days	5 days

DiamaPro Systems® Diama-Poly (Standard Topcoat)

Product		Diama-Poly 85 B Component			Diama-Poly HP B Component	
	Slow Cure	Standard	Fast Cure	Slow Cure	Standard	Fast Cure
Application Temperature	<90°F <80% RH	<80°F <35% RH	<70°F <35% RH	<80°F <55% RH	<80°F <35% RH	<70°F <35% RH
Working Time	15-25 min.	15-20 min.	5-10 min.	15-25 min.	15-20 min..	5-10 min.
Recoat Time	8-36 hrs.	4-24 hrs.	1-6 hrs.	6-24 hrs.	3-24 hrs.	1-6 hrs.
Return to Service	36 hrs.	24 hrs.	12 hrs.	24 hrs.	24 hrs.	12 hrs.
Full Cure	7 days	5 days	3 days	5 days	3 days	3 days

DiamaPro Systems® Diama-Thane NGU (*Optional:* High Wear Topcoat)

Ambient Temperature	60-110°F, <90% RH	50°F, 30% RH	50°F, 75% RH	70°F, 50% RH	90°F, 20% RH	90°F, 80% RH
Working Time	30-45 min	NR	NR	30-45 min	NR	30 min
Recoat Window	6-8 hrs.	NR	NR	8-36 hrs.	NR	6-24 hrs.
Return to Service (Foot Traffic)	48 hrs.	NR	NR	36 hrs.	NR	24 hrs.
Full Cure (Vehicle Traffic)	7 days	NR	NR	7 days	NR	5 days

*NR=Not Recommended

DiamaPro Systems® Diama-Thane HPU (*Optional:* High Performance Finish)

Ambient Temperature	60-90°F, <70% RH	50°F, 30% RH	50°F, 75% RH	70°F, 50% RH	90°F, 20% RH	90°F, 80% RH
Working Time	20 min.	25-30 min.	10-15 min.	20 min.	15 min.	15 min.**
Recoat Window	4-6 hrs.	3-6 hrs.	2-6 hrs.	3-6 hrs.	2-6 hrs.	2-6 hrs.
Return to Service (Foot Traffic)	12 hrs.	12 hrs.	12 hrs.	12 hrs.	12 hrs.	12 hrs.
Full Cure (Vehicle Traffic)	5 days	5 days	5 days	5 days	5 days	5 days

**Must add viscosity reducer.

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TOPCOAT PROPERTIES WHEN FULLY CURED

DiamaPro Systems® Diama-Poly (Standard Topcoat)

PROPERTIES	TEST METHOD	TYPICAL VALUES
Abrasion Resistance	ASTM D4060	15 mg loss
Adhesion Strength	ASTM D4541	400 psi, 100% Concrete failure
Adhesion Strength	ASTM D4541	n/a, vinyl failure
Adhesion Strength	ASTM D4541	n/a, natural quartz failure
Adhesion Strength	ASTM D4541	n/a, color quartz failure
Coefficient of Friction - Dry	ASTM D2047	0.7
Coefficient of Friction - Wet	ASTM D2047	0.6
Flame Spread/ Critical Flux	ASTM E648	Class 1
Flame Spread/ Rate of Burning	ASTM D635	Self-extinguishing
Flexibility/ Mandrel Bend	ASTM D522	Passes 1/8-in.
Gloss, 60°	ASTM D523	90
Hardness (König Hardness)	ASTM D4366	150
Impact Resistance	ASTM D2794	120 in-lbs.
Indoor Air Quality	CA 01350	Compliant
Microbial Resistance	ASTM G21	Passes, 0 growth
Tensile Elongation at Break	ASTM D2370	5%
Tensile Strength	ASTM D2370	6,000 psi
UV Resistance	ASTM D4587	High (Level 3)
Water Absorption	ASTM D570	<0.05
Yellowing Resistance	ASTM G154	< 3.0 ΔE, gray (color tested for visible changes)

DiamaPro Systems® Diama-Thane NGU (*Optional:* High Wear Topcoat)

PROPERTIES	TEST METHOD	TYPICAL VALUES
Abrasion Resistance	ASTM D4060	10 mg loss
Adhesion Strength	ASTM D4541	>400 psi, epoxy failure
Coefficient of Friction- Dry	ASTM D2047	0.7
Coefficient of Friction - Wet	ASTM D2047	0.6
Flame Spread/ Critical Flux	ASTM E648	Class 1
Flame Spread/ Rate of Burning	ASTM D635	Self-extinguishing
Flexibility/ Mandrel Bend	ASTM D522	Passes 1/8-in.
Gloss, 60°	ASTM D523	80+
Hardness (König Hardness)	ASTM D4366	170
Impact Resistance	ASTM D2794	120 in-lbs.
Indoor Air Quality	CA 01350	Compliant
Microbial Resistance	ASTM G21	Passes, 0 growth
Tensile Elongation at Break	ASTM D2370	8%
Tensile Strength	ASTM D2370	6,500 psi
UV Resistance	ASTM D4587	Mid to High (Level 2)
Water Absorption	ASTM D570	<0.05

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DiamaPro Systems® Diama-Thane HPU (Optional: High Performance Finish)

PROPERTIES	TEST METHOD	TYPICAL VALUES
Abrasion Resistance	ASTM D4060	10 mg loss
Adhesion Strength	ASTM D4541	>400 psi, epoxy failure
Coefficient of Friction - Dry	ASTM D2047	0.7
Coefficient of Friction - Wet	ASTM D2047	0.6
Flame Spread/ Critical Flux	ASTM E648	Class 1
Flame Spread/ Rate of Burning	ASTM D635	Self-extinguishing
Flexibility/ Mandrel Bend	ASTM D522	Passes 1/8-in.
Gloss, 60°	ASTM D523	80+
Hardness (König Hardness)	ASTM D4366	170
Impact Resistance	ASTM D2794	120 in-lbs.
Indoor Air Quality	CA 01350	Compliant
Microbial Resistance	ASTM G21	Passes, 0 growth
Tensile Elongation at Break	ASTM D2370	8%
Tensile Strength	ASTM D2370	6,500 psi
UV Resistance	ASTM D4587	Mid to High (Level 2)
Water Absorption	ASTM D570	<0.05

CHEMICAL AND STAIN RESISTANCE

1 = Best for chemical resistance: No adverse effects; Remove within 24 hours.
2 = Low potential for stain: No adverse effects: Removed within 24 hours.
3 = High potential for stain or degradation: Must remove within 24 hours of exposure.
NR = Not recommended

CHEMICAL	POLY	NGU	NPU	CHEMICAL	POLY	NGU	NPU
Acetic Acid 10%	1	1	1	Chromic Acid, 10%	1	1	1
Acetic Acid, 30%	2	2	2	Chromic Acid, 30%	1	1	1
Acetone	1	1	1	Citric Acid, 30%	1	1	1
Ammonia, 30%	1	1	1	Ethanol, 95%	1	1	1
Ammonium Hydroxide, 30%	1	1	1	Ethyl Acetate, 99%	1	1	1
Antifreeze (Coolant)	1	1	1	Formaldehyde, 37%	2	3	2
Benzene	1	1	1	Premium Gasoline	1	1	1
Benzyl Alcohol	1	1	1	Hydraulic Fluids	1	2	1
Betadine, 11%	1	1	1	Hydrochloric Acid, 10%	1	1	1
Boric Acid, 4%	1	1	1	Hydrochloric Acid, 30%	3	3	3
Brake Fluid, DOT 3	1	1	1	Hydrofluoric Acid, 10%	1	1	1
Hydrofluoric Acid, 30%	3	3	3	Phosphoric Acid, 20%	1	2	1
Hydrogen Peroxide, 10%	1	1	1	Potassium Hydroxide, 30%	1	1	1

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CHEMICAL	POLY	NGU	HPU	CHEMICAL	POLY	NGU	NPU
Hydrogen Peroxide, 50%	1	1	1	Propylene Glycol	1	1	1
Iodine, 2%	3	3	3	Silver Nitrate, 20%	1	3	1
Isopropyl Alcohol	1	2	1	Sodium Chloride, 20%	1	1	1
Jet Fuel	1	1	1	Sodium Hydroxide 50%	1	1	1
Lactic Acid, 30% (Dairy Facility)	1	3	1	Sodium Hypochlorite 10%	1	1	1
Lime Juice	1	1	1	Sodium Hypochlorite 30%	2	2	2
Magnesium Hydroxide	1	1	1	Sodium Persulfate	3	3	3
MEK (Methyl Ethyl Ketone)	1	1	1	Sulfuric Acid, 37% (Battery Acid)	1	2	1
Methanol	1	1	1	Tannic Acid, 20%	2	3	2
Methylene Chloride	NR	NR	NR	Tartaric Acid, 10%	1	1	1
MIBK (Methyl Isobutyl Ketone)	1	1	1	Transmission Fluid	1	1	1
Mineral Oil	1	1	1	Urine, Dog or Cat	1	1	1
Motor Oil, SAE 30	1	1	1	Urea (Nitrogen-Rich Fertilizer)	1	1	1
Mineral Spirits	1	1	1	Vinegar, Distilled	1	1	1
Mustard, Yellow	1	1	1	Water (Hard Water from Well)	1	1	1
Nitric Acid, 30%	1	NR	1	Whisky	1	1	1
Oleic Acid	1	1	1	Wine, Cabernet Sauvignon	1	1	1
Oxalic Acid, 10%	1	1	1	Xylene	1	1	1

LIMITATIONS

- An installed onsite mockup should be used to determine suitability and approval.
- Primer Coat Required
  - When known outgassing present or suspected.
- **DiamaPro Systems® Diama-Thane HPU**:
  - Do not apply single coat greater than 5 mils – 320 sq.ft./gal.
  - Do not apply directly to concrete.
- **Colorants**
- May affect working times.
- May reduce chemical resistance.
- May increase potential for stain.
- To ensure desired results are achieved, products should be tested on site before installation.

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INSTALLATION INSTRUCTIONS

SURFACE PREPARATION

- Mechanically remove all release agents, curing compounds, salts, efflorescence, grease, oil, dust, and other bond inhibiting contaminates.
- Chemical preparation only is not allowed.
- New concrete must be a minimum of 30 days old.
- Mechanically prepare concrete (grind or shotblast) to an ICRI CSP 3.
- Adhere to ICRI (International Concrete Repair Institute) current standards.
- Complete all repairs during the surface preparation step.
- Fill all joints during the surface preparation step.
- Vacuum well to remove all imbedded dust created during the surface preparation step.

MIXING

- Select a well-ventilated area outside of application zone and out of direct sunlight.
- Ideal mixing station is 10-by-10 feet or larger level surface protected by cardboard over sheet poly.
- Mix carefully to avoid introducing bubbles into the mixture by keeping the mixing fins below the surface.
- All mixing vessels must be clean.
- Pour entire contents of Part B into mixing vessel before adding other components.
- Change mixing buckets every 2-5 batches.
- Scrape the mixing vessel sides and bottom to ensure coating is thoroughly blended.
    - Buildup on bucket or transfer of buildup to a new batch affects the coating's overall appearance and may shorten a product's working time.
- Make sure that material stays thoroughly mixed throughout application.
    - Do NOT allow any material (sand for texture) to settle at the bottom of the mixing vessel.
- Only combine products within the same product line.
- ***Optional Colorant and/or Texture Additives:***
    - When adding color and/or texture: Combine additive(s) with Part A and mix until consistency and color are uniform.
    - Pour entire contents of Part B into Part A and mix.
    - TOTAL MIX TIME: 2 minutes.

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COVERAGE RATES

Application	Coverage Rate
Primer Coat (Optional) - **Diama-Poxy or MVR** 10-16 mil	100 sq.ft./gal.
Base Coat - **DiamaPro Systems® Diama-Poxy** 8-12 mil	135–200 sq.ft./gal
Decorative Flake 1/4" or 1/8"	0.10-0.25 lbs./sq.ft.
Standard Topcoat - **DiamaPro Systems® Diama-Poly** 13-14 mils	120–160 sq.ft./gal.
Optional High Wear Topcoat: **DiamaPro Systems® Diama-Thane NGU** 5-20 mil	80-320 sq.ft./gal.
Optional High-Performance Finish: **DiamaPro Systems® Diama-Thane HPU** 4-5 mil	320-400 sq.ft./gal.

NOTE: *Coverage rates are for estimating purposes only. Factors such as waste, unusual/abnormal substrate conditions, and other unforeseen job-site conditions may affect actual product yields and are the responsibility of the installer.*

APPLICATION GUIDELINES

- DO NOT apply under direct sunlight.
- DO NOT install during inclement weather.
- Primer (Optional – weak or very porous substrate or high MVER values)
  - **DiamaPro Systems® Diama-Poxy** - moisture below 10 lbs. of vapor (10-16 mil)
  - **DiamaPro Systems® Diama-Poxy MVR** - moisture is less than 25 lbs. of vapor (16 mil)
    - Primer first coat
      - DiamaPro Systems® Diama-Poxy MVR diluted with 32 oz. DiamaPro Systems® Diama-Solvent VOC. (5 mil)
    - Primer second coat
      - DiamaPro Systems® Diama-Poxy MVR (11 mil)
  - Once mixed, pour material into even rows along the substrate.
  - With a flat, metal smoothing paddle, spread the material evenly over the entire area.
  - Back-roll with 3/8" microfiber roller only if paddle lines are evident.
  - Allow to cure.
  - Apply the second coat in the same manner as the first coat.
- Base Coat – DiamaPro Systems® Diama-Poxy
  - Within the primers "Recoat Time" mix and, pour the base coat material in even rows along the substrate.
  - With the appropriate notched squeegee, spread material evenly over the entire area. (8-12 mil)
  - Back-roll with 3/8" microfiber roller cover removing all squeegee lines.
  - Keep a wet edge while applying products.

  - Wear spiked shoes when walking on material.
  - Do NOT let material puddle on floor.
- Decorative Flake
  - Pour the flake into multiple 5-gallon buckets for distribution.
  - Wearing spiked shoes, walk to the area first coated with the base coat and broadcast the flake into the wet base coat. (0.10 – 0.25 lbs./sq.ft.)
  - Allow to cure.
- Scrape the floor.
  - When applying flake, not all will adhere into the base coat and needs to be removed.
  - With a wide, steel bade on a pole, scrape the entire surface. This will sheer the flake flat while removing partially bonded material.
  - Vacuum the entire area extracting all loose flake.
- Standard Topcoat - DiamaPro Systems® Diama-Poly
  - Will encapsulate the flake, locking it in.
  - Reduces the roughness produced by the flake.
  - Once mixed, pour the material in even rows along the substrate.
  - Using a flat squeegee, pull the material uniformly over the flake filled floor. (8-12 mil)
  - Back-roll with 3/8” microfiber roller cover removing all squeegee lines producing a uniform film thickness.
  - Keep a wet edge while applying material.
  - Wear spiked shoes when walking on the wet material.
  - Do NOT let material puddle on floor.
  - Allow to cure.
- *Optional* High Wear Topcoat - DiamaPro Systems® Diama-Thane NGU
  - DiamaPro Systems® Diama-Thane NGU is applied in lieu of DiamaPro Systems® Diama-Poly.
  - DiamaPro Systems® Diama-Thane HPU is a UV stable, urethane increasing abrasion and chemical resistance over the Standard Topcoat.
  - Within the “Recoat Time” for the initial DiamaPro Systems® Diama-Poly topcoat, apply one coat of mixed material.
  - Once mixed, pour the material in even rows along the substrate.
  - Using a flat squeegee, pull the material uniformly over the flake filled floor.
  - Back-roll with 3/8” microfiber roller cover removing all squeegee lines producing a uniform film thickness. (5-20 mil)
  - Keep a wet edge while applying material.
  - Wear spiked shoes when walking on the wet material.
  - Do NOT allow the material to puddle on floor.
  - Allow to cure.

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- *Optional* High-Performance Finish - DiamaPro Systems® Diama-Thane HPU
  - DiamaPro Systems® Diama-Thane HPU is a UV stable, urethane increasing abrasion with the highest level of chemical resistance.
  - Within the "Recoat Time" for the initial DiamaPro Systems® Diama-Poly topcoat, apply one coat of mixed material.
  - Once mixed, pour the material in even rows along the substrate.
  - Using a flat squeegee, pull the material uniformly over the flake filled floor.
  - Back-roll with 3/8" microfiber roller cover removing all squeegee lines producing a uniform film thickness. (4-5 mil)
  - Keep a wet edge while applying material.
  - Wear spiked shoes when walking on the wet material.
  - Do NOT allow the material to puddle on floor.
  - Allow to cure.

CLEAN UP

- Allow the unused material to cure in the mixing vessels.
  - Discard the vessels according to the Federal, State and Local regulations.
- Uncured material can be cleaned up using **DiamaPro Systems® Diama-Coat Solvent VOC**.
  - Properly discard any rags that might have been used.
- Cured material needs to be mechanically removed from mixing paddles.

MAINTENANCE AND CLEANING

- Daily
  - Sweep, removing all abrasives.
  - Remove stain producing liquids as soon as they happen.
- Auto-scrubber
  - Fit with a soft, non-abrasive white pad.
  - Use **DiamaPro Systems® Diama-Clean 30** in the freshwater tank according to the materials dilution rate.
- Mop and Bucket
  - Use **DiamaPro Systems® Diama-Clean 30** diluted in the freshwater.

AVAILABILITY

DiamaPro Systems® Diama-Flake System is only available through DiamaPro Systems®Authorized Distributors. Only DiamaPro Systems®Trained-Applicators are allowed to install the system. For a list of Authorized Distributors or Applicators please contact DiamaPro Systems® Systems.

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CONDITIONS OF SALE / LIMITED WARRANTY

DiamaPro Systems®warrants that its products conform to the label descriptions, are free from manufacturing defects, and are fit for the ordinary purposes for which such goods are used. In as much as the use of DiamaPro Systems® Systems' product by others and other factors affecting product performance are beyond DiamaPro Systems® Systems' control, DiamaPro Systems®does not guarantee the results to be obtained. There are no warranties except as stated herein, either express or implied, including implied warranties of merchantability or fitness for a particular purpose.

SHOULD ANY DiamaPro Systems® Systems' NOT MEET INDUSTRY STANDARDS, DiamaPro Systems® Systems' WILL REPLACE THE PRODUCT, OR AT ITS OPTION, REFUND THE PURCHASE PRICE. THIS IS THE SOLE AND EXCLUSIVE REMEDY FOR ANY FAILURE OF DIAMAPRO SYSTEMS' PRODUCTS TO PERFORM AS WARRANTED AND SHALL ALSO CONSTITUTE LIQUIDATED DAMAGES IN CASE OF LOSS. UNDER NO CIRCUMSTANCES SHALL THE BUYER BE ENTITLED TO ANY OTHER REMEDY OR DAMAGES. REMEDIES FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE SPECIFICALLY EXCLUDED.

DiamaPro Systems®does not authorize any person to assume any other liability in connection with the sale or use of its products unless specifically authorized by DiamaPro Systems®in writing.

TECHNICAL SERVICES

The **DiamaPro Systems®**office offers assistance with specifications, performance test data and field services.

DISCLAIMER

Every effort has been made to ensure the accuracy of the above information and to avoid infringement of any patent or copyright. The information is based on field tests by government and private agencies, as well as lab tests, and on technical data from raw material manufacturers.

The person(s) specifying or requesting the use of these products is responsible for assuring their suitability for a specific use, as well as the proper application of the products.