Diama-Flow RC
SYSTEM DATA SHEET

Version Number: 100-07

DESCRIPTION

DiamaPro Systems® Diama-Flow RC System has urethane polymer cement (UPC) chemistry used with decorative flake that brings together color and industrial durability in one package. Its urethane cement technology works well in high moisture environments. It is suited to withstand continuous industrial traffic in high use environments. The increased slip resistance will help ensure a safer floor compared to a non-treated surface.

The **DiamaPro Systems® Diama-Flow RC System** is available in both standard**,** fast and slow cure formulations. Selection should be based on ambient temperature, humidity, and overall job-site environmental conditions. Regardless of the selected cure rate, the cured film maintains identical performance characteristics. Only the working time, cure time, and return-to-service intervals vary between formulations.

RECOMMENDED USES

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

ADVANTAGES

- **DiamaPro Systems® Diama-Flow RC** can withstand up to 15 lbs. of vapor.
- **DiamaPro Systems® Diama-Poxy MVR** 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, 0–200°F
- Low Maintenance
- Scratch Resistance
- Waterproofing

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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LIMITATIONS

- UV Stability
  - Coating will amber over time.
  - If color stability is important, a UV resistant formulation is available.
- Prime Coat
  - May be required when the substrate is highly absorbent.
  - When outgassing is suspected or prevalent.
  - When the concrete is very porous or in poor condition.
- All concrete repairs must be completed before installation.
- Do not let material puddle on floor.
- An onsite mockup should be installed to ensure desired results.
- When temperatures increase, material cures faster.
- Adhere to the DiamaPro Systems® Dew Point Calculation Chart.
- DO NOT apply under direct sunlight.
- DO NOT install under inclement weather conditions.
- Application times are based on test results compiled by lab technicians in a controlled setting.
- 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.
- For best results, apply when application temperatures and relative humidity are low.
- **DiamaPro Systems® Diama-Poly**
  - Do not apply single coat greater than 14 mils thick (114 sf per gallon).
- DiamaPro Systems® Diama-Thane HPU
  - Do not apply single coat greater than 5 mils thick (320 sf per gallon).
  - Do not install directly over moisture-sensitive concrete, vinyl chip, 30-grit or larger quartz, or 80-mesh or larger aluminum oxide.

STOREAGE AND APPLICATION TEMPERATURES

Ideal Storage Environment	Dry, Out of Direct Sunlight, 60-80°F
Material Temperature During Application	50-70°F and 5°F Above Dew Point
Minimum Substrate Temperature During Application	5°F Above Dew Point
Recommended Application Temperature	60-90°F, <80% RH (Relative Humidity)

TECHNICAL DATA

DiamaPro Systems® Diama-Flow RC Slow

Application Temperature	60-90°F, <80% RH	50F, 50% RH	70°F, 50% RH	100°F, 50% RH
Working Time	30 min.	40 min.	30 min.	20 min.
Recoat Time	12 hrs.	24 hrs.	12 hrs.	10 hrs.
Return to Service	24-36 hrs.	36 hrs.	24 hrs.	24 hrs.
Full Cure	7 days	7 days	7 days	7 days

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DiamaPro Systems® Diama-Poly (Topcoat)

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

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

Product	Fast Cure	Slow Cure
Application Temperature	40-80F <40% RH	60-110F <90% RH
Working Time	15-20 min.	30-45 min.
Recoat Time	2-4 hours	6-8 hours
Return to Service	12 hours	48 hours
Full Cure	7 days	7 days

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.

COLORANTS

- May affect working times.
- May reduce chemical resistance.
- May increase potential for stain.
- Coatings tested at ambient temperature over 1-3 days' exposure to chemical.
- To ensure desired results are achieved, products should be tested on site before installation.

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CHEMICAL AND STAIN RESISTANCE

1 = Best for chemical resistance: No adverse effects on fully cured coating; Remove within 24 hours.
2 = Low potential for stain: No adverse effects: Remove within 24 hours.
3 = High potential for stain or degradation: Must be removed 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
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

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PROPERTIES WHEN FULLY CURED

DiamaPro Systems® Diama-Flow RC (Base Coat)

PROPERTIES	TEST METHOD	TYPICAL VALUES
Abrasion Resistance	ASTM D4060	70 mg loss
Abrasion Resistance with Anti-Slip	ASTM D4060	40-60 mg loss
Adhesion Strength	ASTM D4541	>500 psi, concrete failure
Compressive Strength	ASTM C579	7,000 psi
Flame Spread/ Critical Flux	ASTM E648	Class 1
Flame Spread/ Rate of Burning	ASTM D635	Self-extinguishing
Flexural Modulus of Elasticity	ASTM C580	3.5 x 10^6 psi
Flexural Strength	ASTM C580	2,700 psi
Hardness (Shore D)	ASTM D2240	80
Impact Resistance	ASTM D2794	>160 in-lbs.
Indoor Air Quality	CA 01350	Compliant
Linear Shrinkage	ASTM C531	0.20%
Microbial Resistance	ASTM G21	Passes, 0 growth
Moisture Vapor Permeance	ASTM E96	0.15 perms
Tensile Strength	ASTM C307	2,000 psi
Thermal Coefficient of Linear Expansion	ASTM C531	2.0 x 10^(-)5 in/in/°F
Thermal Shock Resistance	ASTM C484	50 cycles, no cracking
Water Absorption	ASTM C413	<0.10%

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)

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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

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

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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.
- 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.

COMPONENTS

- DiamaPro Diama-Flow Roll Coat Slow Cure
  - Part A: 12 lbs.
  - Part B: 12 lbs.
  - Part C: 12 lbs.
- Decorative Flake
  - 40 lbs. boxes
    - Small – 1/8”
    - Standard -1/4”
- DiamaPro Systems® Diama-Poly
  - Part A: 1-5 gal. Unit
  - Part B: 1-5 gal. Unit
  - 2-10 gal. mixed unit
- DiamaPro Systems® Diama-Thane NGU
  - Part A: 1 or 5 gallons
  - Part B: 1 or 5 gallons
  - 2- or 10-gallon Unit
- DiamaPro Systems® Diama-Thane HPU
  - Gloss:
    - Part A – ½ gal.
    - Part B – 1 gal.
    - 1.25 gal. mixed unit
  - Satin
    - Part A – 1 qt.
    - Part B – 1 gal.
    - 1.5 gal. mixed unit

MIXING

- Select a well-ventilated area outside of application zone and out of direct sunlight.
- Ideal mixing station is 4-by-4 feet or larger level surface protected by cardboard or poly sheets.
- 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 A into mixing vessel before adding other components.
- Add Part B into Part A
- 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.

COVERAGE RATES

Application		Coverage Rate
Base Coat – DiamaPro Systems® Diama-Flow RC	8-12 mils	135–200 SF/gal
Decorative Flake 1/8”-1/4"		0.10 – 0.25 lbs./sq.ft.
Standard Topcoat – DiamaPro Systems® Diama-Poly	10-12 mils	160–200 SF/gal
(Optional) DiamaPro Systems® Diama-Thane NGU Topcoat	5-14 mils	114-320 sq.ft./gal.
(Optional) DiamaPro Systems® Diama-Thane HPU Topcoat	4-5mils	320–400 SF/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
  - For very porous substrates.
  - For moisture vapor levels over 15 lbs., consult with the DiamaPro Systems® Technical Advisor for additional information.
- Base Coat – DiamaPro Systems® Diama-Flow RC Slow Cure
  - With the appropriate notched squeegee, spread material evenly over the entire area at 8-12 mils. Directly over the prepared substrate.
  - 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.
    - While broadcasting, gradually fill the floor.
  - Once the floor has been completely covered in flake.
  - 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.

- Topcoat – DiamaPro Systems® Diama-Poly
  - Fills imperfections in the surface.
  - Encapsulates 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 at a rate of 8-12 mils.
  - 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:* - DiamaPro Systems® Diama-Thane NGU
  - **DiamaPro Systems® Diama-Thane NGU** is a UV stable, urethane increasing abrasion and chemical resistance.
  - **DiamaPro Systems® Diama-Thane NGU** is applied in lieu of **DiamaPro Systems® Diama-Poly**
  - 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 grouted floor.
  - 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 allow the material to puddle on floor.
  - Allow to cure.
- Optional Heavy-Duty Topcoat - **DiamaPro Systems® Diama-Thane HPU**
  - **DiamaPro Systems® Diama-Thane HPU** is a UV stable, urethane increasing abrasion and chemical resistance.
  - **DiamaPro Systems® Diama-Thane HPU** MUST be applied over a **DiamaPro Systems® Diama-Poly** grout coat.
  - Within the "Recoat Time" for the initial **DiamaPro Systems® Diama-Poly** grout coat, 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 grouted floor.
  - 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 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-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 Industrial 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®**.

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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.

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