FLEXMAR®

Standard (72% Solids) Series
0-VOC Polyaspartic Aliphatic Polyurea

Technical Product Bulletin

Product Description

This original series of FLEXMAR pigmented primer-sealer and clear finish coatings represent original standard two-component polyaspartic aliphatic polyurea products for interior and exterior use over properly prepared concrete, mineral substrates, wood, metal, deglazed ceramic tile, and certain plastics.

When introduced in the early 1990s by Bayer, the patent-holder of polyaspartic chemistry and raw material supplier, basic guide formulations demonstrated the advantage of quick cure and therefore shortened time for return to service. It also resulted in short application working open times that were a challenge to installers and were subject to solvent odors in areas with limited air movement or turnover.

Formulated for decorative or protective uses, they are self-priming and have excellent penetration and bond strength to properly prepared surfaces. They are UV resistant, light stable, and abrasion, impact, and wear resistant with flexible properties. They have good chemical-splash- and spill-resistant properties involving commercial and household cleaners, pool water treatment products, and hot tires.

Applications

FLEXMAR coatings are ideal for concrete garage floors, patios, walkways, driveways, pool decks, concrete countertops, automotive sales and service areas, restaurant kitchen and dining areas, courtyards, atriums, malls, retail stores, rest rooms, fire stations, airplane hangars, warehousing, animal housing facilities, etc.

Product Features and Benefits

- Self-priming, excellent penetrating and bond strength.
- Excellent abrasion, impact, and wear resistance.
- Excellent hot tire pickup resistance.
- Can reduce floor care, cleaning, and maintenance costs.
- Low-temperature cure (-30°F/-34°C); longer cure time needed in low temperatures. (Note: Reference is related to surface temperature, not ambient temperature.)
- Re-coat time, 1 hour; walk-on time, 1 to 2 hours.
- 1:1 mix ratio (“Part A” to “Part B”) by volume.
- Can contribute toward satisfying credits under the U.S. Green Building Council LEED program.
- Factory-pigmented coatings for greater color consistency batch-to-batch and a higher density of pigment for superior hide and filling over concrete.
- UV-resistant (non-yellowing); optical clarity of clear sealer/finish.
- Can add micro media agents to improve slip reduction. Contact manufacturer or distributor for more information.
- 0 VOC.
- Low solvent odor.
- Meets FDA/CFSAN, US Food Code, Physical Facilities criteria, outlined in 6.101.11 Surface Characteristics USDA acceptable. Not tested for 21 CFR food contact.
- Excellent stain resistance.
- Skydrol resistance.
- Random/incidental heat contact: tolerant to 300°F (149°C).

Limitations

- Not recommended for use over solvent- or water-reducible acrylic sealers or stains.
- Not for use by spray application.
- Not for use by do-it-yourself individuals.

Product Uses

- Two or three-coat floor system consisting of self-priming color primer/sealer followed by either a second color coat or a clear “bed” coat for accepting and wetting decorative flake chips (or other decorative media), followed by clear sealer/ finish coat. Note: Decorative chips may be broadcast directly into the primer/sealer coat. Consult FLEXMAR Coatings.
- Final clear sealer/finish over decorative concrete surfaces such as acid, color- or dye-stained, semi-polished concrete, polymer-modified cementitious overlayments, or seamless multi-build epoxy/color quartz flooring. Note: Not recommended over acrylic sealers or stains.
- High foot traffic, along with certain types of vehicle and material-handling equipment.
- UV-resistant sealer/finish coat over safety surfacing systems or outdoor running tracks.

FLEXMAR Coatings, Inc.

P.O. Box 210
New Kensington, PA 15068

Office: 724-339-1442
Fax: 724-339-1465

www.flexmarpolyaspartics.com

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Product Data

Type of Material: Polyaspartic Aliphatic Polyurea

VOC Content: 0 VOC

Recommended Dry Film Thickness: 2 to 6 mils per coat

Colors:

Clear: High or medium gloss

Pigmented: Standard factory or custom colors

Shelf Life: 12 months unopened. Store at 40°F to 100°F (4°C to 38°C) in a covered area (out of the sun)

Working Open Time:* 10 to 15 minutes

Minimum Re-Coat:* 1 hour, minimum

Light Foot Traffic:* 1 to 3 hours minimum

Maximum Re-Coat:* 48 hours (contact manufacturer)

Mixing Ratio:* 1.0 part A; 1.0 part B, by volume

Typical Property Profile:

Adhesion to Concrete, ASTM D-4541: >500 psi concrete cohesive failure 100%.

Tensile Strength, ASTM D-638: 4,500 to 5,000 psi

Falling Sand Abrasion Resistance ASTM-D 968:

Clear ..... 30 liters sand/1 dry mil

Pigmented ..... 38 liters sand/1 dry mil

Taber Abrasion, ASTM D-4060: 22-28 mg loss, CS-17 wheel, 1,000 g load, 1,000 revolutions

Chemical Resistance, ASTM D-1308: Refer to chemical resistance chart

Flexibility Mandrel Bend, ASTM D-522: Passes, no cracking, ⅛-in. mandrel bend

Impact, ASTM D-2794: 160/160 in.-lb direct/reverse, no cracking

Hardness, ASTM D-2240: 77 Shore D

Flammability, ASTM D-635: Self-extinguishing

Theoretical Coverage

1 mil DFT ..... 1,155 ft²
2 mils DFT ..... 577 ft²
3 mils DFT ..... 385 ft²
4 mils DFT ..... 289 ft²
5 mils DFT ..... 231 ft²
6 mils DFT ..... 193 ft²

Surface Preparation

Before application the receiving surface must be deemed structurally and mechanically sound, clean, and dry. Proper surface preparation is required for decorative-concrete, thin-film “Class-A-type” flooring systems or sealer/finish coatings. This is best achieved with mechanical grinding machines using diamond heads achieving a final 50- to 120-grit profile. Recommended surface profile is SP-2, Reference ICRI Technical Guideline No. 03732.

All receiving surfaces must be free of previous coatings, sealers, curing compounds, water repellants, laitance, efflorescence, oils, fats, grease, waxes, residues from cleaning compounds, non-visible soluble salts, and any other impediments to adhesion. The resulting surface must be a neutral pH 7.

Always check for potential bond breakers. One method is simply wiping the surface of the prepared concrete with a dark cloth. If white powder is present it should be removed. Another method entails pouring a slight amount of water on the concrete in random areas. If the water is absorbed into the concrete and leaves it wet, the substrate is porous and thus acceptable. If water beads up, this indicates a bond breaker is still present and further surface preparation steps are necessary, such as additional mechanical grinding.

The rising moisture vapor emission rate must not exceed 3 lb/1,000 ft² over a 24-hour period as measured by the calcium chloride test method, ASTM F-1869. The relative humidity in the slab must not exceed 80 percent.

Any repairs that are not associated with normal cleaning and surface preparation work (i.e., cracks, chips, pitted/ severe spalls deemed non-structurally sound, or levelness issues) must be properly addressed and remedied prior to application of the coating due to the fact that coatings follow the contours of the existing substrate. All spalls and cracks should be repaired in accordance with ICRI standards.

*At 70°F (20°C) and 50% relative humidity.

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Mixing

Mix "Part A" and "Part B" in equal parts (1:1) by volume using a clean, dry, working pot. Stir gently using a mechanical stirrer, avoiding overmixing or creating a vortex that would introduce moisture. Do not mix at or below the dew point, which will shorten the pot life. No induction time is required prior to use.

If micro-media agents are to be incorporated, they are to be added after thorough mixing of "A" and "B."

Working Open Time

Approximately 7 to 10 minutes of working open time exists at a temperature range of 70°F to 80°F (21°C to 27°C) and 50% relative humidity. At higher temperatures and humidity the pot life can be shorter.

Application Instructions

Apply using roller, squeegee, or magic trowel. The roller must have an industrial-grade, phenolic-resin core with a synthetic-nap or lambs-wool cover, ⅛- to ⅜-inch nap, 18-inch width.

Always use good air ventilation to remove evaporating solvents in enclosed areas.

This product is not to be applied using spray atomization. Not for do-it-yourself applications.

Cleanup

Use Xylol or MEK. DO NOT USE ALCOHOLS.

Storage and Shelf Life

The product must be stored in tightly sealed containers in a climate-controlled, dry location at normal room temperature. Containers which have been opened for use must be resealed immediately in a new container, preferably filled to the top (the more airspace in the container the greater the potential for reaction with moist air, decreasing the shelf life of the product).

Safety Precautions

Polyaspartic aliphatic polyurea products contain chemical ingredients that are considered hazardous. Read the container label warning and Material Safety Data Sheet for important health and safety information prior to use for details on the safe handling and use of these products.

LEED Certification Information

Flexmar Coatings is a member of the U.S. Green Building Council, and our polyaspartic coatings and sealers can contribute toward satisfying credits in the Indoor Environmental Quality and Materials and Resources categories under the LEED program. Contact Flexmar Coatings for more information and for third-party verification.

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