Polyaspartic / polyurea

A REVOLUTIONARY COATING TECHNOLOGY
INDEX

- Introduction
- Understanding polyasparitcs
- Differences of polyaspartics & polyurethane coatings.
- Differences of polyaspartics & Epoxy coatings.
- What makes polyasparitics unique.
- Polyasparitics Recommended uses.
- Polyasparitics Applications.
- How to apply polyasparitics
- Polyasparitics Benefits.
- Polyasparitics surface preparation techniques.
- Polyasparitics Application equipment & tools.
- Polyasparitics mixing & properties.
- Polyasparitics shelf life & storage.
- Polyasparitics Technical Data sheet
- Polyasparitics Method of Statement.
- Conclusion.
Introduction

- The name polyaspartic is becoming more recognizable among formulators, specifiers, and applicators in the coatings industry to differentiate it from polyureas and polyurethaness.
- Polyaspartic is a type of polyurea
- (Polyaspartic aliphatic polyurea)
- All polyureas are a two-part system.
- A resin mixed with catalyst to create the curing reaction that hardens the material.
- Polyaspartics are based on the reaction of an aliphatic polyisocyanate and a polyaspartic ester, which is an aliphatic diamine.
- Polyaspartic coatings are different in both application and performance properties from plural component spray applied polyureas.
Understanding Polyaspartic

Polyaspartic technology is similar in application and performance characteristics to 2-component aliphatic polyurethane coatings.
Differences of Polyaspartics and Polyurethane Coatings

- Polyaspartic coatings are formulated to very high solids (70% to 100% solids)
- Polyaspartics may be applied at higher film builds (up to 15.0 mils in a single application)
- Polyaspartics are faster drying
- Polyaspartics allow a more immediate return to service
Polyaspartic Characteristics

- Rapid drying (less than 2 hours)
- Applied at temperatures from 30F to 140F
- Excellent flow and leveling
- High film build (up to 15 mils in a single coat)
- Applicable in high humidity
- Pot life of 5 minutes to 2 hours
- Excellent flexibility and high elongation
Polyaspartic Characteristics

- UV stable
- Color retentive
- High Volume Solids
- 0.0 VOC in most formulations
- High Chemical Resistance
- High Abrasion Resistance
- Low to minimal odor
Polyaspartics vs. Conventional Polyurea

- PolyasparticPolyurea
- Fast cure Very fast cure
- Generally not
- color and UV
- stable
## Polyaspartic vs. Conventional Polyurea

<table>
<thead>
<tr>
<th>Polyaspartic</th>
<th>Polyurea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast cure</td>
<td>Very fast cure</td>
</tr>
<tr>
<td>Aliphatic color and UV stable</td>
<td>Generally not</td>
</tr>
<tr>
<td>Thin to moderate film High film build (4.0 to 15.0 mils(unlimited DFT)thickness)</td>
<td>High film build</td>
</tr>
<tr>
<td>0.0 VOC</td>
<td>0.0 VOC</td>
</tr>
<tr>
<td>Variable cure speed</td>
<td>FAST cure</td>
</tr>
</tbody>
</table>
## Polyaspartic vs. Polyurethane

<table>
<thead>
<tr>
<th>Polyaspartic</th>
<th>Polyurethane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast cure</td>
<td>Moderate cure</td>
</tr>
<tr>
<td>Color and UV stable</td>
<td>Color and UV stable</td>
</tr>
<tr>
<td>Thin to moderate film (up to 15.0 mils DFT)</td>
<td>Thin film build (up to 6.0 mils DFT)</td>
</tr>
<tr>
<td>0.0 VOC</td>
<td>&lt; 2.8 lbs/gal VOC</td>
</tr>
<tr>
<td>Variable cure speed</td>
<td>One cure speed</td>
</tr>
</tbody>
</table>
## Polyaspartic vs. Epoxy

<table>
<thead>
<tr>
<th>Polyaspartic</th>
<th>Epoxy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast cure</td>
<td>Slow cure</td>
</tr>
<tr>
<td>Aliphatic Color and UV stable</td>
<td>Not Color and UV stable</td>
</tr>
<tr>
<td>0.0 VOC</td>
<td>&lt; 2.8 lbs/gal VOC</td>
</tr>
<tr>
<td>Full cure in 24 hours</td>
<td>Full cure in 5 to 7 days</td>
</tr>
<tr>
<td>Application below 50F</td>
<td>Application greater than 50F</td>
</tr>
<tr>
<td>Gloss retentive</td>
<td>Poor gloss retention</td>
</tr>
</tbody>
</table>
## Cured Coating Properties
### Epoxy vs. Polyurethane vs. FLEXMAR® Polyaspartic

<table>
<thead>
<tr>
<th>Property</th>
<th>ASTM Test Method</th>
<th>2-Pack Epoxy</th>
<th>Aliphatic PUR</th>
<th>Flexmar Polyaspartic</th>
<th>Flexmar Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasion Resistance</td>
<td>D-4060 (a) m(g) loss</td>
<td>83-105</td>
<td>60-65</td>
<td>22-28</td>
<td>Triple the Abrasion Resistance</td>
</tr>
<tr>
<td>Falling Sand Abrasion</td>
<td>D-968 (b) liters sand/mil</td>
<td>8-10 (c)</td>
<td>25-30 (c)</td>
<td>30-38</td>
<td>Triple the Wear Resistance</td>
</tr>
<tr>
<td>Adhesion Pull-Off</td>
<td>D-4541 psi concrete failure psi over steel</td>
<td>400</td>
<td>400 NR(d)</td>
<td>400 1,000</td>
<td>Twice the Adhesion to Steel</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>D-638, D-2370 psi</td>
<td>3,339-4,000</td>
<td>4,400-5,500</td>
<td>4,500-5,000</td>
<td>Equal</td>
</tr>
<tr>
<td>Impact Direct/Reverse</td>
<td>D-2794 inch pounds</td>
<td>Fails</td>
<td>100/40</td>
<td>160/160</td>
<td>40%-50% Chip Reduction</td>
</tr>
<tr>
<td>Flexibility 1/8 in Mandrel</td>
<td>D-522 cracking</td>
<td>Fails</td>
<td>Passes</td>
<td>Passes</td>
<td>50% Greater Flexibility &amp; Chip Reduction</td>
</tr>
<tr>
<td>Color-Gloss Retention:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSPC Paint Specification No. 38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48 Months South Florida</td>
<td>D-1014 meets</td>
<td>Level 1 Fails</td>
<td>Level 2</td>
<td>Level 3</td>
<td>Twice the Color &amp; Gloss Retention</td>
</tr>
<tr>
<td>2000 Hours Accelerated</td>
<td>D-4587 meets</td>
<td>Level 1 Fails</td>
<td>Level 2</td>
<td>Level 3</td>
<td>Twice the Color &amp; Gloss Retention</td>
</tr>
</tbody>
</table>

### Recoat Time or Walk-On Foot Traffic:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Minimum/Maximum Recoat-Hours</th>
<th>Unlimited</th>
<th>2 Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 70°F; Below 80% Relative Humidity</td>
<td>3-4/48</td>
<td>5/36</td>
<td></td>
</tr>
<tr>
<td>Minimum Foot Traffic-Hours</td>
<td>12-16</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Below 55°F; Above 80% Relative Humidity</td>
<td>NR(d)</td>
<td>24-36</td>
<td>Go Versus</td>
</tr>
<tr>
<td>Maximum Recoat-Hours</td>
<td>NR(d)</td>
<td>24-36</td>
<td>No-Go</td>
</tr>
<tr>
<td>Minimum Foot Traffic-Hours</td>
<td>NR(d)</td>
<td>24-36</td>
<td></td>
</tr>
</tbody>
</table>

(a) CS-17 Taber Abrasion Wheel, 1,000 gram load; 1,000 revolutions  
(b) Liters of sand to erode 1 dry mil of coating  
(c) Average of generic coatings surveyed  
(d) NR-Not Recommended. Contact coating representative for guidance.

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FLEXMAR® COATINGS, INC, LLC • Phone: 724-339-1442 • Fax: 724-339-1465 • E-mail: FlexmarCoatings@aol.com
Abrasion Wear Resistance

2-Pack Epoxy vs. Aliphatic Polyurethane vs. FLEXMAR Fast-Cure Polyaspartic

ASTM-D-968 - Falling Sand Abrasion - Liters of Falling Sand to Erode 1 Dry Mil of Coating
What Makes Polyaspartics Unique?

- When cured they tolerate temperatures up to 300F
- Resist stains from acids, oils, fats, foods, and other chemicals
- Installed down to 32F
- Flexibility and elongation factors are high
- High abrasion resistance
What Makes Polyaspartics Unique?

- High bond strength to concrete, steel, ceramic tile, fiberglass, and other composites
- Optical clarity in clear formulation
- May be applied vertically, horizontally and overhead
- High chemical resistance
- Rapid cure / short down time
What Makes Polyaspartics Unique?

- The elasticity, flexibility and elongation of polyaspartics allow
- movement of equipment and machinery
- Expansion and contraction of substrates is less of a concern
- High flexibility accommodates twisting, turning, motion or armored equipment and other small vessels and equipment and machinery
- Improved and higher elongation than epoxies and urethanes.
What Makes Polyaspartics Unique?

- Elongation up to 200%
- Improved impact resistance to dropped tools
- Does not chip and crack like hard brittle epoxies and urethanes
- Improved cleanability
- Excellent graffiti resistance
- Improved release capabilities and promotes quicker off load of materials.
Polyaspartic Recommended Uses

- Designed for use as a color stable, gloss retentive, chemically resistant, abrasion resistant topcoat
- May be applied over zinc, epoxy, urethane, and aromatic polyurea
Polyaspartic Applications

Ideal applications include:

- Military Equipment and Vehicles
- Bridge coatings
- Deck coatings
- Cold storage / low temperature application
- Processing area floors and walls
- Rail Cars
- Pipelines
- Wind Turbines
- Airports and Airport Equipment
- Amusement Parks and Water Parks
- Pharmaceutical
- Power
- Industrial equipment
- Industrial floors
- Marine
- Chemical plants
- Off-Shore Oil Platforms
- Fertilizer Plants
- Water & Wastewater
- Pulp & Paper
- Food & Beverage
- Healthcare
- Universities and Schools
- Power
- Mass Transit
- Garage floors
- Retail floors
- Stadiums
- Automotive
- Zoos
- Veterinary Clinics
- Aquariums
- Tunnels
How to Apply Polyaspartics

- Application techniques for polyaspartics include:
- Plural component spray
- Airless spray
- Conventional spray
- Brush and roll
- Low pressure cold spray
- Polyaspartics allow a formulator to control the rate of reaction and cure, therefore the pot life or working time can vary from five (5) minutes up to two (2) hours.
Plural Pump System Feeding Typical Airless Spray Gun

KEY

A  Bleeder Type
B  Air Regulator
C  Pressure Relief Valve
D  Mix Manifold
E  Air Supply Line
F  Air Line Filter
G  Air Shut-off Valve
H  Air Line Lubricator
J  Base Supply Pump
K  Catalyst Supply
L  Pressure Pot
M  Solvent Supply Pump
N  Mix Manifold Flush Inlet
O  Static Mixer
P  Primary Pump Inlet
Q  Secondary Pump Inlet
R  Ratio Adjustment Screw
S  Spray Gun
T  Ratio Indicator Plate
U  Ratio Indicator Pin
Typical Plural System with Re-Circulation

KEY
A- Reactor Proportioner
B- Heated Hose
C- Fluid Temperature Sensor
D- Heated Whip Hose
E- Fusion Spray Gun
F- Gun Air Supply Hose
G- Air Supply lines
J- Fluid Supply Lines
K- Feed Pumps
L- Agitator
M- Desiccant Dryer
P- Gun Fluid Manifold
Q- Air Filter/Separator
R- Return Lines
Typical Plural System without Re-Circulation

- **KEY**
  - A- Reactor Proportioner
  - B- Heated Hose
  - C- Fluid Temperature Sensor
  - D- Heated Whip Hose
  - E- Fusion Spray Gun
  - F- Gun Air Supply Hose
  - G- Air Supply Lines
  - H- Waste Containers
  - J- Fluid Supply Lines
  - K- Feed Pumps
  - L- Agitator
  - M- Desiccant Dryer
  - N- Bleed Lines
  - P- Gun/Fluid Manifold
  - Q- Air Filter/Separator
Polyaspartic Benefits

- Polyaspartics will help control coatings costs by significantly decreasing the cure process and adding durability.
- Polyaspartics will lengthen the service life in a variety of applications and varying environmental conditions.
- The faster dry times and higher film builds achieved in horizontal, vertical and overhead applications by brush, roll or spray translates into rapid return to service and improvements in overall productivity.
- Higher flexibility in applications and compatible with a wide variety of generic coatings.
Surface Preparation Techniques

- Always consult with the manufacturer for specific guidelines for surface preparation standards and instructions.

- Surface preparation methods or combination of methods may include:
  - High pressure hydroblasting
  - Water jetting
  - Abrasive blasting
  - Shot blasting
  - Scarifying
  - Detergent water cleaning
- Power tool cleaning
- Hand tool cleaning
- Solvent wiping

➢ Remember, whichever method(s) are used for surface preparation a sound, clean, neutralized and profiled surface suitable for the specified product must be achieved
Product Application Equipment

- Brush – Nylon/Polyester Natural Bristle
- Roller – 3/8” to 1/2” woven, shed resistant high quality short to medium nap roller cover with a phenolic core
- Airless Spray - When airless equipment is used:
  - Pump capable of 3,000 psi (207 bars)
  - .019 to .023 spray tip
  - Minimum 3/8” ID fluid hose
  - 50’ to 100’ of spray hose
  - 10’ whip hose
Product Application Equipment

- Conventional Spray – When conventional equipment is used:
  - Gun should be Binks 95 or equal
  - Cap Tip 68 PB/68
  - Atomization pressure – 80 psi
  - Fluid Pressure – 30 psi
Mixing and Pot Life of Polyaspartics

- Always follow manufacturer’s written instructions as indicated on Product Data Sheet.
- Mix in appropriate size pails.
- Use a mechanical mixer before use to assure a homogenous blend.
- Caution – Do not agitate in air or moisture.
- Check with manufacturer for pot life or working times. Pot life will vary from minutes to hours dependent on manufacturer.
- Pot life will be affected by temperature and relative humidity. Small batches may also have shorter pot life.
Reducer and Solvents for Polyaspartics

- Always consult with manufacturer for recommendations regarding reduction solvent. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and applications conditions.

- Commonly used solvents for reduction and clean up may include but are not limited to the following:
  - MEK
  - Acetone
  - Xylene
Recoat intervals of Polyaspartics

- Dry time will be influenced by temperature, humidity, air movement, and film thickness. Minimum recoat time shall be identified when the film is not deformed by firm thumb pressure and no coating is visible on thumb.
- Maximum recoat shall be identified and determined when the thumb nail test no longer makes a permanent indentation in the coating with one's thumb nail.
- Always consult with manufacturer for proprietary minimum and maximum recoat intervals of polyaspartics.
Shelf Life and Storage of Polyaspartics

- Most polyaspartics will have a shelf life of six (6) months in properly sealed and unopened containers.
- Storage temperatures shall be between 50F and 100F. Keep away from extreme heat, freezing temperatures and moisture.
Polyaspartics and Industrial Hygiene

- With proper ventilation used in conjunction with standard safety equipment—including air purifying respirators and eye and skin protection—result in very low exposure to measured levels of airborne isocyanates and polyaspartic esters.
KEMFLOOR POLYASPARTIC
High Gloss, High Strength, UV Resistant, Fast Cure, Chemical Resistant, Two Component, Polyaspartic Aliphatic Polyurea Coating

Description
Aliphatic polyaspartic, is a pure 100% solids sealer and top coat, has zero odors, moisture insensitive, low viscosity, quick dry, flexible, UV-resistant, high strength and chemical resistant coating. It is suitable for concrete and over existing epoxy coating. It can be applied at low temperature, when, fully cured, it will produce a highly abrasion resistant, high gloss and smooth finish over concrete, wood or steel.

Where to use

• Cold storage area.
• Industrial warehouses.
• Food processing areas.
• Pulp and paper mills.
• Chemical plants.
• Aircraft hangars and garages. Patios, walkways and driveways.

Advantages

• Fast cure (one day job).
• Low moisture sensitivity.
• High tensile strength.
• Color stable.
• Excellent adhesion.
• No odor and zero - VOC.
• UV stable.
• High gloss.
• Higher abrasion resistance than MMA.
• Three times more durable than epoxy coatings.
• Can be applied as a single coat up to 400 microns.
• Excellent chemical resistance.
• USDA, CFIA acceptable.
• Cures at low temperature for food contact.

Properties

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Curing time</td>
<td></td>
</tr>
<tr>
<td>23ºc</td>
<td></td>
</tr>
<tr>
<td>Foot traffic</td>
<td>4 hours</td>
</tr>
<tr>
<td>Light traffic</td>
<td>8 hours</td>
</tr>
<tr>
<td>Heavy Traffic</td>
<td>5 days</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>45 N/mm²</td>
</tr>
<tr>
<td>Elongation</td>
<td>15%</td>
</tr>
<tr>
<td>Shore D Hardness</td>
<td>70-75</td>
</tr>
<tr>
<td>Abrasion Resistance</td>
<td>25mg.Poss</td>
</tr>
<tr>
<td>Pull off strength</td>
<td>2.7 Mpa</td>
</tr>
<tr>
<td>Chemical resistance</td>
<td>Excellent, please consult Technical office</td>
</tr>
</tbody>
</table>

How to use

SURFACE PREPARATION:

• Surface must be sound, clean and dry, free from dust, laitance, grease, curing compounds and other contaminants.
• Surface to be prepared by shot blasting or any approved mechanical means to achieve a surface profile pf (CSP2-3).
• Sweep or vacuum any dust or loose particles.
• Concrete Strength after 28 days should be 25 Mpa compressive and 1.5 Mpa tensile bond strengths and moisture content >4%.
• For applying over old or new epoxy coatings, the surfaces must be sanded (80grit) and sheen removed and wiped properly to remove any dust.
• Do not coat over acrylic or polyurethane coatings unless it is deglossed.

MIXING:

• Premix (A&B) separately in its containers.
• Add Part B to part A and mix thoroughly for 2 minutes with low speed mixer or by hand.
• If desired add in 5%-15% MEK or acetone for thinning and stir.
• Avoid air bubbles while mixing.
APPLICATION:

- Prime the concrete surface with (SEALER E43). in case of wet concrete use (WETSEAL) leave to dry overnight.
- The coating can be applied with brush, roller, squeegee or airless spray.
- Apply to provide a uniform coverage without bonding and apply it in a multi directional motion at a thickness(100-500 microns)/coat.
- It can be used as a clear top coat for a broadcast quartz or flake system or used as a pigmented coating with color chips or quartz.
- Application temperature (4°c-30°c).
- Freshly applied materials should be protected from dampness, water for 72 hours.
- Any Aggregate to be used must be over dried.

CLEANING:
Clean immediately with PU PRO-solvent Cured material can be removed mechanically.

THEORETICAL COVERAGE:
0.4 Kg/m² (D.F.T. 400 microns).

PACKAGING:
1.5 kgm (A&B) pails.

SHELF LIFE & STORAGE:
12months if stored in a dry, cool conditions in their original, unopened containers.

Health and Safety

- Use goggles, gloves and breathing mask when applying.
- Apply forced ventilation in confined spaces.
- Skin splashes to be removed with hand cleaner, soap and water.
- Eye splashes to be washed with plenty of water.
- If ingested seek medical advice.

Additional Information

PROKEM provides the construction industry with a comprehensive range of construction chemicals and specialty products answering the queries of modern engineers for trouble free durable structure. PROKEM designs tailor made products should there be critical application that requires specific properties rather than our main range. For our customer's satisfaction, PROKEM extends technical services to include after sales support to assist users in a proper handling of our products.
1. **Description:**

Aliphatic polyaspartic is a pure 100% solids sealer and top coat, has zero odors, moisture insensitive, low viscosity, quick dry, flexible, UV-resistant, high strength and chemical resistant coating. It is suitable for concrete and over existing epoxy coating. It can be applied at low temperature, when, fully cured, it will produce a highly abrasion wear resistant, high gloss and smooth finish over concrete, wood or steel.

2. **Scope:**

Every so often you hear about some new wonder material that sounds too good to be true-and that's usually because it isn't true. Recently there has been a lot of talk about a miraculous new concrete floor coating and sealer called polyaspartic polyurea. This material, according to its proponents, can be applied at nearly any temperature, bonds easily to nearly any concrete surface, cures to full strength within half an hour, is flexible enough to bridge small cracks, can withstand high temperatures when cured, and has superior stain and UV resistance.

So, you're asking, is all that really true? After talking to lots of people, both believers and skeptics, I believe that the simple answer is, yes, it is true-BUT. The big "but" is that you must properly prepare the floor and the moisture vapor emission rate can't be too high and you need to have the proper solids content in the polyaspartic coating to allow it to wet out the concrete surface in order to develop proper bond. When those conditions are met, polyaspartic floors are extremely successful and an experienced contractor can indeed complete a floor in a single day. But-another but-when moisture-vapor emission rates are too high and when using 100% polyaspartic coatings, some floors have failed. Here, we'll give you both sides of the story and discuss the applications for polyaspartics, ranging from a new way to topcoat decorative concrete floors to sealing concrete countertops.
What are Polyaspartics?

To begin with, a polyaspartic is a type of polyurea (actually a polyaspartic aliphatic polyurea). Polyurea as a commercially viable material was developed in the 1980s by Texaco Chemical Company (now Huntsman Chemical). All polyureas are two-part systems, meaning that a resin has to be mixed with a catalyst to create the curing reaction that hardens the material. Polyurea has been used very successfully for corrosion-resistant coatings and repair materials, although application is awkward since it has an extremely short pot life-about 3 seconds, so the two parts must be mixed at the spray tip, requiring lots of maintenance on expensive high-pressure equipment.

Polyaspartic polyurea (or simply polyaspartics) overcomes many of those difficulties, while retaining the advantages. According to Bayer Material Science, polyaspartics are "based on the reaction of an aliphatic polyisocyanate and a polyaspartic ester, which is an aliphatic diamine." I bet you're glad we got that cleared up!

For most of us, the important thing to understand is that polyaspartics are a polymer coating material that has the following characteristics:

- Rapid curing (from 5 to 120 minutes, depending on the formulation)
- Can be successfully applied at surface temperatures from -30°F to 140°F
- Very low viscosity-equivalent to water-which gives it outstanding wetting ability on a properly prepared concrete floor
- High film build (up to 18 mils in a single coat)
- Bubble-free surfaces even at high humidity (although high humidity can speed up the cure time considerably)
- Potlife of 5 to 120 minutes
- UV stable so it will never turn yellow-and can provide UV protection to underlying coatings
- Made with a high solids content (as high as 100%), which means low or no volatile organics (VOCs) during application
- The cured coating can handle temperatures up to 350°F
- Crystal clear and does not blush white from moisture in the concrete
- Able to resist most stains, especially from oils and fats and even from red wine
- High abrasion resistance-higher than epoxy or urethane
- May be able to resist higher internal moisture vapor emission rates than some other non-breathing coatings-although this is an issue that is currently being investigated
3. **How to use:**

3.1. **Surface preparation:**
3.1.1. Installation of a polyaspartic floor starts with floor preparation to rid the surface of laitance and contaminants.
3.1.2. This is critical to success. The low-viscosity material must be able to penetrate the surface.
3.1.3. Acid etching is not recommended, since it adds moisture to the concrete and the lower pH can lead to delamination problems.
3.1.4. Most providers recommend a diamond grind at a 60 to 80 grit—just enough to get through the paste surface layer and open the pores of the concrete.

3.2. **Mixing:**
3.2.1. Cracks and joints can then be repaired.
3.2.2. *Prokem* recommends filling the cracks with sand then wetting the sand with polyurea.
3.2.3. Polyureas cure so rapidly that these repairs can be ground flush with the concrete surface in about 20 minutes.
3.2.4. The polyaspartic has such great elongation properties that you simply install the coating right over the top of these repaired cracks without getting any reflection. This does not include contraction joints.
3.2.5. We don't fill the joint, we coat down into it and back out, because if you tie the joint, it can crack the slab at mid-panel.
3.2.6. Polyaspartic is usually mixed with equal amounts of Part A and Part B.
3.3. Application:
3.3.01. At this point, the floor can be acid stained or colored with acrylic water-based stains.
3.3.02. It should be noted that prior to sealing, a test area should be stained and sealed to assure proper adhesion and chemical interaction between the top coating and the stain.
3.3.03. The installer should be looking for any areas where the stain may be interfering with the coating, or once cured, where the coating may be delaminating due to the stain.
3.3.04. The installer then rolls on the recommended number of coats of polyaspartic. This is when you can see whether the coating is wetting--absorbing into the concrete.
3.3.05. Different providers recommend different thicknesses for this primer coat and the one or two subsequent coats of polyaspartic.
3.3.06. Prokem recommends a 2 to 3 mil thick primer coat, the surface profile and the ability to flow into the substrate. With polyaspartics we have a little extra time before it cross links, so it has time to absorb into the concrete.
3.3.07. The primer coat and bed coat typically contain pigment.
3.3.08. Within an hour (or less) the primer has cured enough to walk on.
3.3.09. For applications that incorporate vinyl chips or quartz sand, the second coat is then put down. For applications with color, both of these first two coats incorporate pigment.
3.3.10. For acid stained floors, Bannister recommends stopping at two coats of clear polyaspartic.
3.3.11. For floors with vinyl chips or quartz, that material is immediately broadcast into this "bed" layer. This layer varies from 2 mils to 18 mils thick, with the vinyl chips adding as much as 8 mils.
3.3.12. The chips wet out to form a laminar layer parallel to floor,
3.3.13. The ability to wet those chips is very important.
3.3.14. Epoxy has a much higher viscosity, so the chips tend to lay on edge.
3.3.15. Polyaspartics wet out the chips and they lay down to give you the laminar effect that helps in the overall protection of the concrete.
3.3.16. Once the bed coat has cured, we recommend scraping the surface. Scrape it hard with a floor scraper to clean up the vinyl chips. That makes it smoother and also reduces the amount of product needed in the top coat to cover the vinyl chips.

3.3.18. Workers then vacuum up all loose materials before rolling on the top coat.

3.3.19. The top coat is always clear and goes on in a range of 6 to 18 mils.

3.3.20. Thinner coats are applied with 3/8-inch nap rollers and thicker coats with ¾-inch naps.

3.3.21. Thinner coats leave a slight texture to the surface as some of the vinyl chips or quartz pokes through.

3.3.22. Vinyl chips are broadcast until saturation.

3.4. **Cleaning:**
Clean immediately with PU PRO-solvent Cured material can be removed mechanically.

4. **Theoretical Coverage:**
- 0.4 Kg/m² (D.F.T. 400 microns)
Conclusion

- Polyaspartics are proving to be a valuable alternative to standard epoxies, polyurethanes and conventional polyureas.
- With increased speed of cure and user friendly attributes, polyaspartics provide productivity enhancements to painting operations.
- From an application perspective, polyaspartics simplify the spray equipment issues associated with fast cure coatings. The polyaspartics are not “so fast” that they require the use of impingement mixing plural component spray equipment.
Less expensive and less complicated spray equipment as well and brush and roll application can be used in most polyaspartic applications.

The advantages of polyaspartic technology, compounded with the proven performance and health safety of these material's, makes polyaspartic coatings and excellent option for a revolutionary coatings application.