Technical Data Sheet

PIP 3610 ESR

Epoxy Slurry Resurfacer

PROTECTIVE INDUSTRIAL POLYMERS

7875 Bliss Parkway North Ridgeville, OH 44039
440-327-0015 440-353-0549 - FAX

DESCRIPTION:

PIP 3610 ESR is a 4-component, 100% solids, epoxy-slurry self leveling mortar system. It can be applied with a notched squeegee or slurry/cam rake at an application thickness of 60 to 90 mils.

USES:

This system is designed for restoring old or damaged concrete by creating a dense protective layer. It also serves applications requiring increased abrasion resistance. This product is suitable for industrial applications where a slurry is specified to rebuild slightly damaged concrete.

ADVANTAGES:

- Slurry can be pigmented to match topcoat colors
- Extremely low odor
- Self levels to a smooth glossy surface
- Seals rough substrate to create environmental barrier
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC and CA.

STORAGE: Materials should be stored in un-opened containers between 65°F (18°C) and 90°F (32°C) and at or below 50% RH.

SHELF LIFE: 1 year from date of manufacture (un-opened).

Volume Mix Ratio: 2 gal A: 1 gal B: 1/2 pint CPU-xxx color :37 lb. PIP Aggregate 3610

KIT PACKAGING:
4.71 Gallon Kit PIP 3610 ESR Pigmented Epoxy Mortar 125 SF
3610-A/5SF
3610-B/1
CPU-xxx/HP
PIP Aggregate 3610 (37 lbs.)

OPTIONS:

Top coatings containing angular aggregate can be applied to improve traction in slip hazard areas.

LIMITATIONS:

Contamination and surface defects: If contamination including oil, silicone, mold release agents and/or other materials are present, resin systems may fisheye or crawl away from the surface. All surface contaminates should be removed with a suitable detergent prior to application. Solvent cleaning of silicone based contamination is NOT RECOMMENDED; please contact the Technical Service for additional recommendations. PIP 3610 ESR will amber over time if exposed to UV light. Top coating with an aliphatic urethane will provide UV stability.

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	≥215 °F (102°C)
Volume Solids (mixed)	ASTM D2369	100 %
Mixed Viscosity (resin only)	ASTM D2196	250-500 cPs
Dry Time	ASTM D5895	Tack Free 4-6 hr Dry 6-10 hr Full Cure 7 days
VOC-Volatile Organic Compound	ASTM D3960	0 g/l clear ≤50 g/l with pigment pack

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Tabor CS 17, mg loss/1000cycles/1000g mass	ASTM D4060	60 mg
Compressive Strength	ASTM C579A	11,500 psi
Compressive Strength	ASTM D695	10,000 psi
Modulus psi	ASTM D695	$2.0x10^5$
Adhesion to Concrete	ASTM D4541	400 psi concrete failure
Flexural Strength	ASTM C 580	10,000
Tensile	ASTM C 307	5,800
Minimum Applied Thickness		60 Mils

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications.
* Tested with 65 lbs of aggregate.

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CHEMICAL RESISTANCE*:

PIP 3610 ESR	1 Day	7 Days
ACIDS, INORGANIC		
10% Hydrochloric	E	E
30% Hydrochloric	F	P
10% Nitric	E	E
50% Phosphoric	G	F
37% Sulfuric	E	E
ACIDS, ORGANIC		
10% Acetic	G	F
10 % Citric	E	G
Oleic	E	E
ALKALIES		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	E	E
SOLVENTS		
Ethylene Glycol	G	G
Isopropanol	E	E
Methanol	P	P
d-Limonene	E	E
Jet Fuel	E	E
Gasoline	G	F
Mineral Spirits	E	E
Xylene	E	G
Methylene Chloride	P	P
MEK	P	P
PMA	G	G
MISCELLANEOUS		
20% Ammonium Nitrate	E	E
Brake Fluid	E	E
Bleach	E	E
Motor Oil	E	E
Skydrol®500B	E	E
Skydrol®LD4	E	E
20% Sodium Chloride	E	E
10% TSP	E	E

*Based on spot testing of the clear coating after 14 days of cure. Pigmented versions may see reduced chemical resistance and staining.

Legend: **E- Excellent (Not Effected)**
G-Good (Limited Negative Effect)
F-Fair (Moderate Negative Effect)
P-Poor (Unsatisfactory)

INSPECTION AND APPLICATION:
Caution! Follow all precautions and instructions prior to installation.

SUBSTRATE: The concrete must be free of curing membrane, silicate surface hardener, paint, or sealer and be structurally sound. If you suspect the concrete has been treated or sealed, prepare substrate for complete removal of treatment.

MOISTURE: Moisture and moisture vapor transmission rates are dynamic in nature and may change over time. Initial testing does not guarantee future results. If the relative humidity of the concrete substrate is over 75% (using ASTM F2170), Protective Industrial Polymers must be consulted and issue a written moisture mitigation recommendation prior to product use.

VAPOR/CONTAMINANTS: Testing for MVT is effective, however it does not guarantee against future problems. If there is no vapor barrier or the vapor barrier is damaged, vapor transfer can contribute to floor failure. Contamination on concrete from oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) may also contribute to floor failure. Contact your PIP technical representative for further information.

TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions should be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30-80%. DO NOT apply coatings unless the floor temperature is more than five degree over the dew point.

APPLICATION EQUIPMENT:

- **Protective equipment and clothing – Refer to SDS (Safety Data Sheet)**
- **Motorized mortar mixer or high torque drill mixer and paddle.**
- **Screed or Cam Rake or notched squeegee.**
- **Hand Trowel.**

PREPARATION:
Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water.
Mechanical Preparation: Shot Blasting or grinding the surface is the preferred method of preparation. A minimum surface profile of ICRI CSP 3 is recommended.

JOINTS: All nonmoving joints (control joints) can be filled with a rigid or semi-rigid joint compound. Construction joints may be filled with semi-rigid joint filler and might need to be re-built and re-cut depending on conditions. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over.

RECOAT: PIP 3610 ESR can be top coated with other Protective Industrial Polymer systems after cure. Proper recoat limitations and directions must be honored. If sanding is required, remove all sanding debris with a vacuum. If contaminated with traffic, scrub with detergent and rinse with clean water. Surface must be allowed to dry before coating.

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PRIME: PIP 3610 ESR SHOULD BE APPLIED OVER A CURED PRIMER for maximum performance. Use PIP 1000 series coatings or PIP 1200/1250WR as the epoxy primer (See appropriate product data sheet for application instructions).

MIXING: Add pint colorpack first to the Part A 3610-A/5SF. Mix until color uniformity is reached throughout the pail. Add 1 gallon of 3610-B/1 and mix for 2 minutes. Add 37 pounds (1 bag) of PIP Aggregate 3610. Mix until sand is completely wet (about 1 minute) Transfer and apply to the floor.

APPLICATION:

APPLY: PIP 3610 ESR (with full aggregate) is installed at a rate of 125 square feet per 4.7-gallon mix. Rake with a pin rake set at 60 mils. Care should be taken not to position the rake handle above or below the applicator's waist because the depth of application may vary. Finish roll with a 3/16" nap roller.

CURING (DRYING): Allow the mortar to cure (dry) for a minimum 8 hours after application at 75°F (24°C) and 50% RH before opening to light foot traffic or finishing with the final topcoat if applicable. Only open the floor to light traffic after sufficient cure, allow more time for low temperatures and higher humidity or for heavier traffic. Full coating properties may take up to 7 days to develop.

TECHNICAL SUPPORT: For application questions, please contact your salesman or PIP technical service at 440-327-0015.

DISPOSAL: Dispose in accordance with federal, state, and local regulations.

READ SDS (SAFETY DATA SHEET) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED. FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

MAINTENANCE GUIDELINES:
Allow floor coating to cure at least one week before cleaning by mechanical means (IE: sweeper, scrubber, disc buffer).

CARE: Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance of your new Protective Industrial Polymers floor. Regularly sweep to avoid ground in dirt and grit which can quickly dull the finish, decreasing the life of the coating. Spills should be removed quickly as certain chemicals may stain and can permanently damage the finish.
Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.

CAUTION: Heavy objects dragged across the surface will scratch all floor coatings. Avoid gouging or scratching the surface.
Pointed items or heavy items dropped on the floor may cause chipping or concrete pop out damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from lift trucks can heat the coating to its softening point causing permanent damage and marking.

REPAIR: Repair gouges, chip outs, and scratches as soon as possible to prevent moisture and chemical undercutting and permanent damage to the floor coating.

WARRANTY AND CONDITIONS OF USAGE

WARRANTY AND LIMITATION OF LIABILITY: Protective Industrial Polymers Inc. ("PIP") warrants that its products shall conform to the manufacturer's written specifications and shall be free from defects for one (1) year from the date of purchase. PIP MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES AND DISCLAIMS THE SAME, INCLUDING, WITHOUT LIMITATION, FAILURE OF THE PRODUCT DUE TO ACTS OF GOD, FLOODING, EXTREME OR ABNORMAL TEMPERATURES, HUMIDITY AND MOSITURE, STRUCTURAL CONDITIONS, SITE PREPARATION AND CONDITIONS, ACCIDENTS, DAMAGE CAUSED BY INSTALLATION OF MACHINERY, EQUIPMENT OR FIXTURES WITHOUT ADEQUATE FLOOR PROTECTION OR WITHOUT ADEQUATE TIME FOR CURING, FAILURE TO COMPLY WITH CONDITIONS OF USAGE (SPECIFIED BELOW), VANDALISM, NEGLIGENT OR INTENTIONAL ACTS OF THIRD PARTIES OR OTHER CASUALTIES. If any PIP product fails to conform to this warranty, PIP shall either replace the product at no cost to Buyer or refund the cost of the product, in PIP's sole discretion. Replacement of any product or a refund of the cost of any product shall be the sole and exclusive remedy available to buyer, and buyer shall have no claim for incidental, special or consequential damages, including, without limitation, business interruption damages. Any warranty claim must be made within one (1) year from the date of delivery of products. PIP does not authorize anyone on its behalf to make any written or oral statements which in any way alter PIP's warranty or installation and storage information or instructions in its product literature or on its packaging labels. Any installation of PIP products which fails to conform to such installation information or instructions or the "Conditions of Usage" (specified below) shall void this warranty. Product demonstrations, if any, are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. Buyer shall be solely responsible for determining the suitability of PIP's products for the Buyer's intended purposes.

CONDITIONS OF USAGE: Installation of all products purchased must be by professional installers periodically published by PIP or otherwise approved by PIP in writing. Modification to any of PIP's products voids the warranty. The installer shall maintain a written contemporaneous record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). PIP reserves the right of inspection of any installed product, installation and maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full. Moisture Vapor Transmission (MVT) and ASR (Alkali Silica Reaction) Disclaimer and Exclusion: Although rare, some floors at or below grade level are sometimes subjected to saturation by moisture from beneath the concrete floor slab. This moisture can travel through the concrete and collect between floor toppings creating the potential for delaminating from hydrostatic pressure and or ASR. Conditions contributing to this include heavy rainfall, broken pipes, excess hydration within fresh concrete, and other factors or defective and old concrete. These factors are difficult, if not impossible to predict. PIP recommends testing for MVT and/or the presence of ASR in the concrete substrate prior to applying any polymer floor topping. The recommended test method for MVT is ASTM F 2170-11. ASR can be predicted by a higher than normal pH within the concrete. If high pH should be detected, it is recommended a lab test for ASR. If and when delamination of the floor occurs because of a moisture condition that exists beneath or in the concrete slab beyond the capacity of the individual product installed or failure of the concrete due to ASR, this Limited Warranty does not extend to such delaminating or topping failure. This writing constitutes the sole and only agreement of warranty relating to PIP products.

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