

PIP 3800 TSR

Thermal-Shock Resistant Epoxy Mortar System



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PIP 3800 TSR is a three-component, epoxy mortar system designed for restoring areas exposed to moderate temperature cycling. **PIP 3800 TSR** is formulated with inherent binder flexibility to create a dense mortar system. **PIP 3800 TSR** can be hand trowel or power trowel applied at an application thickness of 3/16" to 1/4".

USES:

This system is designed for restoring areas exposed to moderate temperature cycling by creating a dense protective layer. It also serves applications requiring high abrasion and impact protection. This product is suited for general food, dairy and beverage applications where a polyurethane concrete is not required.

ADVANTAGES:

- Mortar can be pigmented to match top coat colors
- Extremely low odor
- Temperature resistance
- Excellent impact and abrasion resistance
- Seals substrate to create environmental barrier
- Resists attack from a variety of industrial chemicals
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC and CA.
- USDA Compliant

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).

PACKAGING KITS/ PART NUMBERS:

5.08 Cubic Foot Kit PIP 3800 TSR Epoxy Mortar- 325 SF

5- 2 bag field mixes

(1) Protect 3800-A/5 (5 gallons)

(1) Protect 3800-B/5 (5 gallons)

PIP 3000 Coarse Aggregate 250 lb. (5 bags)

PIP 3000 Fine Aggregate 250 lb. (5 bags)

53.85 Cubic Foot Kit PIP 3800 TSR Epoxy Mortar- 3446 SF

53 2 bag field mixes

(1) Protect 3800-A/55 (53 gallons ea.)

(1) Protect 3800-B/55 (53 gallons ea.)

PIP 3000 Coarse Aggregate 2650 lb. (53 bags)

PIP 3000 Fine Aggregate 2650 lb. (53 bags)

OPTIONS:

Product may be tinted when desired with the use of a Protect CPU colorpack. Recommended use is 1/2 pint of CPU colorpack per 1.02 cu. ft. mix:

LIMITATIONS:

Contamination and surface defects: If contaminants including oil, silicone, mold release agents and/or other materials are present, product may crawl away from the surface. All surface contaminants should be removed with a suitable detergent prior to application. Solvent cleaning of silicone based contaminants is NOT RECOMMENDED; please contact Protective Industrial Polymers' technical service for additional recommendations. **PIP 3800 TSR** will amber over time from UV exposure. Top coating with an aliphatic pigmented 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	600-1000 cPs
Dry Time	ASTM D5895	Tack Free 12 hr Dry 18 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 H-10, mg loss/1000 cycles/1000g mass	ASTM D4060	340 mg
Coefficient of Friction- COF James Test	ASTM D2047	0.55 0.65(w/NS-36)
Compressive Strength	ASTM C579A	8000 psi
Adhesion to Concrete	ASTM D4541	400 psi concrete failure
Impact	ASTM D2794	60 in.lbs Direct & Reverse
Modulus of Elasticity	ASTM C580	454 kpsi
Minimum Applied Thickness		3/16" or 5 mm

RECOMMENDED APPLICATION RATE: **PIP 3800 TSR** should be applied at a minimum 3/16 inch or 5 mm.

INSPECTION AND APPLICATION:

Caution! Follow all precautions and instructions prior to installation.

SUBSTRATE: The concrete substrate 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.

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VAPOR/CONTAMINATION: Concrete must be dry before applications of this floor coating. Test concrete for moisture vapor transmission (MVT) using calcium chloride testing ASTM F1869 or in-situ RH testing ASTM F2170. Do not exceed a maximum result of 3 pounds per 1000 sq. ft. over 24 hours or a value above 70% RH (internal concrete humidity) without approved treatment.

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 to 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 MSDS.
- Motorized mortar mixer.
- Screed Box.
- Hand Trowel.
- Power Trowel.

PREPARATION:

Surface dirt, grease, oil and contaminants 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 4 is recommended.

JOINTS: All non moving 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.

PRIME: PIP 3800 TSR SHOULD BE APPLIED OVER A WET EPOXY PRIMER for maximum performance. If this is not possible, seed the primer with a silica sand aggregate providing a surface profile and tooth for bond. Use PIP 3600 or 1000CR as the epoxy primer (See appropriate product data sheet for application instructions).

MIXING: Mix 1 gallon of epoxy resin **Protect 3800-A**, 1 gallon of **Protect 3800-B** and 1/2 pint (Optional) of **CPU colorpack** into the running mortar mixer for a minimum of 1 minute. Add 1 bags (50 lbs.) of Protect 3000 Coarse and 1 bag (50 lbs.) Protect 3000 Fine Aggregate. Mix for 3 minutes. Transfer to screed box to apply to the floor. NOTE: ANY MORTAR LEFT IN THE MIXER FOR EXTENDED PERIODS OF TIME WILL HARDEN!

APPLY: PIP 3800 TSR is installed at a rate of 65 square feet per mix using a screed box or rake. Power trowel the wet mortar to compact, densify, level and smooth the material. Care should be taken not to over-trowel to avoid friction blisters.

COATING: PIP 3800 TSR 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.

CURING (DRYING): Allow the mortar to cure (dry) for a minimum 184 hours after application at 75°F (24°C) and 50% RH before grinding and applying the grouting resins and finishing with the final desired top coats. 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 MATERIAL SAFETY DATA SHEET (MSDS) 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.

REPAIR: Repair gouges, chip outs, and scratches as soon as possible to prevent moisture and chemical under cutting 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, NEGLIGENCE 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.