Technical Data Sheet

PIP 1250 WR

Water-Reducible Epoxy System

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

DESCRIPTION:
PIP 1250 WR is a multi-purpose, two-component, water-reducible semi-gloss epoxy primer and coating. **PIP 1250 WR** is designed as both a direct to concrete water vapor permeable epoxy primer and for a thin film breathable epoxy coating. **PIP 1250 WR** is typically applied in one or two coats followed by a topcoat of PIP 2000 series or PIP 200 ESD urethane. PIP1250WR can also be used to reduce the effects of concrete outgassing prior to application of heavier solids primers and coating systems. PIP GlossGrip additive is recommended in the urethane topcoat when there is a known risk of significant moisture vapor drive. **PIP 1250 WR** can also serve as a final wear coat in multiple coat applications.

USES:
Suited for applications where a "no odor" general use coating is desired such as office areas, schools, display area floors, and light duty industrial work areas.

ADVANTAGES:
- Perm Rating of 9-12 (specified thickness)
- Permeability up to 100X that of traditional high solids or solvent borne epoxy coatings.
- Can be applied to standard mix green concrete in as little as 3 days as a sealer.
- Allows transmission of moisture through the primer coating without failure
- Seals concrete, protecting against dirt and spills
- Resists staining and minor chemical spills of cleaning and industrial chemicals
- No induction time
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC and CA* (*including SCAQMD)

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

SHELF LIFE: 1 year from date of manufacture (unopened)

PACKAGING KITS/ PART NUMBERS:
Volume Mix Ratio: 1A: 3B: .25C
PIP 1250 WR Clear 4.00 gallons
1200/1250WR-A/1
1250WR-B/5SF
Volume Mix Ratio: 1A: 3B: .25C
PIP 1250 WR Pigmented 4.25 gallons
1200/1250WR-A/1,
1250WR-B/5SF
CPWE-xxx/Q

OPTIONS:
Color Pack: 0 VOC Color packs designated as **CPWE-XXX** can be used with **PIP 1250 WR**. Many standard and custom colors are available; please refer to the price list for available colors. It is important to have a color consistent floor in a similar color before application of **PIP 1250 WR** or multiple coats may be required. Some brilliant or pastel colors may require multiple coats or double color pack to obtain full hide.
Traction: Aggregate can be incorporated with **PIP 1250 WR** to improve traction.

LIMITATIONS:
Contamination and surface defects (fisheyes): If contaminates of oils, silicones, mold release agents and/or others are present, **PIP 1250 WR** may fisheye or crawl away from a contaminated surface. Surface contaminates should be removed with a suitable detergent prior to application. Solvent cleaning of silicone contaminates NOT recommended; please contact the lab for additional cleaning methods.

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	≥199 °F (93°C)
Volume Solids (mixed)	ASTM D2369	42 %
Mixed Viscosity	ASTM D2196	250-450 cPs
Dry Time	ASTM D5895	Tack Free 3-4 hr Dry 8-12 hr Full Cure 7 days
VOC-Volatile Organic Compound	ASTM D3960	0 g/l

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Tabor CS-17, mg loss/1000 cycles/1000g mass	ASTM D4060	120 mg
Coefficient if Friction-COF James Test	ASTM D2047	0.55 0.65(w/NS-36)
Water Vapor Permeability	ASTM E96	6.67×10^{-7}
Adhesion to Concrete	ASTM D4541	350 psi concrete failure
Impact	ASTM D2794	80 in.lbs Direct & Reverse
Hardness (Pencil)	ASTM D3363	H
Dry Film Thickness	at 5 mils WFT	2.4 mils

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical

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properties, as stated, are to be considered as representative of current production and should not be treated as specifications.

CHEMICAL RESISTANCE*:

PIP 1250 WR Clear	1 Day	7 Days
ACIDS, INORGANIC		
10% Hydrochloric	G	G
30% Hydrochloric	P	P
10% Nitric	P	P
50% Phosphoric	P	P
37% Sulfuric	F	P
ACIDS, ORGANIC		
10% Acetic	F	P
10 % Citric	E	G
Oleic	P	P
ALKALIES		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	G	F
SOLVENTS		
Ethylene Glycol	E	E
Isopropanol	P	P
Methanol	P	P
d-Limonene	E	E
Mineral Spirits	E	E
Xylene	P	P
Methylene Chloride	P	P
MEK	P	P
PMA	P	P
MISCELLANEOUS		
20% Ammonium Nitrate	E	E
Bleach	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. **PIP 1250 WR** is not intended for major chemical contact. Test against chemical attack accordingly.

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 substrate must be free of curing membranes, silicate surface hardener, paint, or sealer and be structurally sound. If you suspect concrete has been treated or sealed, proceed with complete removal process. Consult your PIP representative for further instruction if silicate hardeners or membranes have been utilized.

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 95% (using ASTM F2170), Protective Industrial Polymers must be consulted and issue a written moisture mitigation recommendation prior to product use.

VAPOR/CONTAMINATION: Testing for MVT does not guarantee against future problems. If there is no known vapor barrier or the vapor barrier is inadequate, there is an elevated risk of bond failure. Other factors including the migration of oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) from the concrete from may also elevate the risk of adhesion difficulties. Consult your PIP representative for approved mitigation treatments.

TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions must 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 surface temperature is more than five degree over the dew point.

APPLICATION EQUIPMENT:

- **Protective equipment and clothing as called for in the SDS (Safety Data Sheet)**
- **Jiffy® Mixer Blade model ES**
- **Clean container for mixing material**
- **Low speed high torque drill motor**
- **High quality short nap roller covers- ¼-3/8 inch nap**
- **Application Squeegee**

PREPARATION:

Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water.

Mechanical Preparation: Blasting or grinding the surface is the preferred method of preparation. The success of industrial diamond grinding as a concrete preparation method will vary depending on technique and the hardness of the concrete.

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.

MIXING: Premix component B at slow speed prior to mixing together. Use a Jiffy® mix blade attached to a slow speed drill. The color pack should be added prior to adding the Part A. Add Part A and mix for 3 minutes. Mix only enough material at one time not to exceed the pot life. ***Note:*** Once this material is opened and mixed it cannot be resealed for later use.

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WATER REDUCTION- PIP 1250 WR may be reduced with water for viscosity reduction, ease of application and for deeper penetration into the concrete substrate especially when used as a direct to concrete primer. Water addition of ½-1 gallon maximum per 4 gallon mix is permitted. WATER MUST BE ADDED ONLY AFTER the Parts A B and C are mixed thoroughly. Adding water to the Part A prior to adding the Part B will destroy the coating.
When mixed as a final wear coat, a maximum of only 1 quart of water is recommended.

APPLICATION
***APPLY* PIP 1250 WR** at a rate of 320 sq. ft. per gallon (5 mils) to the floor surface using a notched squeegee or application tray. Back roll the wet coating using a ¼ inch nap mohair roller. Care should be taken to overlap and cross lap, but not over roll the coating introducing air to the surface.

WORKING TIME
PIP 1250 WR does not have a traditional pot life resembling 100% solids systems whereas they harden in the pail in a short amount of time. Rather, this material exhibits a viscosity increase with time. Application viscosity will double in approximately 15-20 minutes at 72F. Mixed as is (without water reduction) the viscosity will increase from 400 cps to 800 cps in 40 minutes. With a ½ gallon water addition per 4 gallon mix, the viscosity will increase from 125 cps to 250 cps in 15-20 minutes. When encountering dense concrete, it is advised to reduce the 1250 WR with ½-1 gallon of water ONLY AFTER THE COMPONENTS HAVE BEEN MIXED to reduce viscosity and achieve better penetration into the concrete and increase coverage rates.
It is recommended to plan application so that each mix is applied within 25 minutes. Best practice as with any epoxy is to pour puddle out onto floor and squeegee then backroll to reduce viscosity build in mass.

SPREADING RATE: When **PIP 1250 WR** is applied as a primer, surface irregularities and porosity in the concrete may affect coverage rate. Be sure to plan accordingly as there may be a need for extra material to provide proper coverage. The best practice is to measure and grid the floor to be sure of proper application rate.

RECOMMENDED APPLICATION RATE: 5 mils–
320 sq. ft. per gallon at 5 mils WFT (7.8 sq. m, per liter at 127 microns)

One kit (4.00 gallons) of mixed **PIP 1250 WR (clear)** will cover 1280 sq. ft. (118.9 sq. m) at 5 mils WFT (127 microns).
One kit (4.25 gallons) of mixed **PIP 1250 WR (pigmented)** will cover 1363 sq. ft. (126.5 sq. m) at 5 mils WFT (127 microns).

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

***RECOAT:* PIP 1250 WR** can be coated with other PROTECTIVE INDUSTRIAL POLYMERS urethanes or epoxies. Minimum re-coat time at 72F and 40% RH is approximately 5 hours. Cooler temperatures will extend this time, warmer may accelerate. Coating must be tack free and no damaged by foot traffic before re-coating. Maximum re-coat time without physical prep such as sanding is 24 hours.

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.

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 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, 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

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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.