Technical Data Sheet

PIP 1775 Novalac

Novalac Epoxy System

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

DESCRIPTION:

PIP 1775 Novalac is a three-component, highly chemical-resistant, pigmented epoxy novalac coating. **PIP 1775 Novalac** is applied as a top coat or used to recoat an existing epoxy floor. This product produces a gloss finish.

USES:

Target areas for **PIP 1775 Novalac** include battery charging, chemical processing, and other chemical exposure areas. **PIP 1775 Novalac** is designed to withstand a wide array of chemical contact including strong acids, caustics, and solvents.

ADVANTAGES:

- 100% novalac resin system
- Fast cure
- Excellent impact and abrasion resistance
- Seals concrete and protects against chemical spills
- Resists concentrated aromatic & hydrocarbon solvents, inorganic & organic acids, and caustics
- Extremely Hard, Gloss finish
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC and CA.

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 (un-opened).

KIT PART NUMBERS:

PIP 1775 Novalac 3.13 gallon Kit
1775-A/5SF (2 gallons net vol.)
1775-B/1 (1 gallon net vol.)
CPU-####/P (color pack)

PIP 1775 Novalac 15.625 gallon Kit
(2) 1775A/5 (5 gallons net vol. ea.)
(1) 1775-B/5 (5 gallons net vol. ea.)
(5) CPU-####/P (color pack)

OPTIONS:

Color Pack: 0 VOC Color packs designated as **CPU-####**can be used with **PIP 1775 Novalac**. 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 1775 Novalac** or multiple coats may be required. Brilliant or light pastel colors may require multiple coats or double color pack to obtain full hide.

Coefficient of Friction: Aggregate can be incorporated into **PIP 1775 Novalac** to improve traction in slip hazard areas.

LIMITATIONS:

Contamination and surface defects: If contaminates 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 contaminates is NOT RECOMMENDED; please contact Technical Service for additional recommendations. **PIP 1775 Novalac** will amber over time from UV exposure and may, like any epoxy, produce a surface blush if exposed to high levels of humidity combined with cooler temperatures. **PIP 1775 Novalac** has a low likelihood of blush, but in the case that a blush occurs the coating can be wiped with a 50% solution of water and white vinegar.

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	≥255 °F (124°C)
Volume Solids (mixed)	ASTM D2369	100 %
Mixed Viscosity	ASTM D2196	1300-2300 cPs
Dry Time	ASTM D5895	Tack Free 4.5 hr Dry 7-8 hr Full Cure 7 days
VOC-Volatile Organic Compound	EPA Method 24	0 g/l clear & pigmented

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Tabor CS-17, mg loss/1000 cycles/1000g mass	ASTM D4060	75 mg
Coefficient if Friction-COF James Test	ASTM D2047	0.72
Adhesion to Concrete	ASTM D4541	350 psi concrete failure
Impact	ASTM D2794	16 in.lbs Direct & Reverse
Hardness (Pencil)	ASTM D3363	2H
Dry Film Thickness	at 15 mils WFT	15 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.

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CHEMICAL RESISTANCE*:

PIP 1775 Novalac	1 Day	7 Days
ACIDS, INORGANIC		
10% Hydrochloric	E	E
30% Hydrochloric	E	E
10% Nitric	E	E
50% Phosphoric	E	G
37% Sulfuric	E	E
98% Sulfuric	E	E
ACIDS, ORGANIC		
10% Acetic	G	F
10 % Citric	E	E
Oleic	E	E
ALKALIES		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	E	E
SOLVENTS		
Ethylene Glycol	E	E
Isopropanol	E	E
Methanol	P	P
d-Limonene	E	E
Jet Fuel	E	E
Gasoline	E	E
Mineral Spirits	E	E
Xylene	E	E
Methylene Chloride	P	P
MEK	P	P
PMA	G	F
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 coating after 14 days of cure. Some 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 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 75% (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.

RECOAT: **PIP 1775 Novalac** is not recommended to be top coated with urethanes. It is be used as a topcoat over existing (sound) epoxy coatings. The prior cured coating surface must be sanded with 100 grit sand paper or sanding screen installed on a swing-

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type floor buffer. Sand to a uniform dulled surface. Remove all sanding debris with a vacuum and damp mop. Scrub with detergent and rinse with clean water. Surface must be dry before coating.

BARE CONCRETE APPLICATION: **PIP 1775 Novalac** MUST BE APPLIED OVER AN EPOXY PRIMER (OR SURFACE). PIP 1000 CR is the recommender as the epoxy primer. (See appropriate product data sheet for application instructions).

MIXING:
Volume Mix Ratio: 2A: 1B: .125C

Use a Jiffy® ES mix blade attach to a slow speed drill (using a paint stick to mix is not adequate). The color pack should be added and mixed into the Part A prior to adding the hardener Part B. Mix all components together for 2-3 minutes. **DO NOT THIN WITHOUT CONTACTING PIP FOR TYPE AND AMOUNT OF SOLVENT!**
Mix only enough material at one time not to exceed the pot life. ***Note:*** Once materials are opened and mixed it can't be resealed for later use.

APPLICATION: RECOMMENDED APPLICATION RATE: 15-20 mils. (80-107 sq. ft. per gallon at 15-20 mils WFT). One 2.13 gallon kit will cover 228 sq. ft. at 15 mils. A large 15.625 gallon kit will cover 1140 SF at 15 mils.

Apply **PIP 1775 Novalac** at a rate of 15-20 mils (80-107 sq. ft. per gallon) to the floor surface using a notched squeegee or application tray. Back roll the wet coating using a 3/8" inch nap roller. Care should be taken to overlap and cross lap, but not over roll the coating introducing air to the surface.

SPREADING RATE: When **PIP 1775 Novalac** is applied, surface irregularities and porosity in the substrate may affect coverage rate. Be sure to plan accordingly as there may be a need for extra material to provide proper coverage. Too little material may produce a non-uniform look. The best practice is to measure and grid the floor to be sure of proper application rate.

CURING (DRYING): Allow the coating to cure (dry) for a minimum of 8 hours after application at 75°F (24°C) and 50% RH before re-coat or exposure to foot traffic. Allow a minimum of 24 hours before exposing to heavy (forklift) vehicular traffic. Full physical and chemical resistance properties take 7 days to develop.

TECHNICAL SUPPORT: For application questions, please contact your salesman or PIP technical service at 440-243-4560.

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

READ SDS (SAFETY DATA SHEET) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED. 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 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 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.