

**POLYCOAT  
PRODUCTS**  
A Division of American Polymers Corp.

## GENERAL GUIDELINES

### SECTION 1: SAFETY AND STORAGE

These guidelines cover safety and storage of Polycoat Products elastomeric coatings. **Failure to follow these guidelines can result in bodily injury or property damage.**

Polycoat Products produces three basic types of coatings. These are solvent based, 100% solids, and waterborne coatings. Each type has specific hazard potentials and storage requirements. Solvent solution coatings have hazards associated with fire, solvent toxicity and chemical toxicity. One hundred percent solids coatings have low fire risk but may require special care because of chemical toxicity. Waterborne coatings have negligible risk of fire and moderate to very low chemical toxicity. Both the contractor and workman must know the precautions necessary to protect against fire, explosive combustion and toxicity. The contractor and his employees should be familiar with the individual product labels, material safety data sheets (MSDS), product data sheets and guide specifications that describe specific hazards, content, proper use and storage recommendations.

To protect against fire, explosion and chemical toxicity it is important to provide ventilation at all times. Many coating applications are in open exterior areas where natural ventilation minimizes hazards.

Applications in confined spaces and tanks pose greater danger. Use extreme caution. Remove all ignition sources. Check atmosphere for oxygen deficiencies. Use adequate personal protective equipment. Observe precautions pertaining to confined space entry. Confined space "Entry Permit" may be required, check with OSHA, EPA and other local regulatory agencies before proceeding. When natural air movement is insufficient, as in a confined area, forced air ventilation is required. Confined areas are best ventilated by equipment which exhausts the air from near floor level, since solvent vapors are heavier than air and tend to collect in low areas. A competent, properly equipped workman must be stationed outside confined areas while work is in progress to assist in case of emergency.

#### FIRE AND EXPLOSION PREVENTION

Flash points are listed in material safety data sheets (MSDS) for each of Polycoat's products containing solvent. **The workman and foreman must know the flash point for material being applied.** The flash point is the lowest temperature at which a coating gives off sufficient solvent vapor to form an ignitable mixture with air. This mixture of solvent vapor and air can then be ignited by an outside source such as sparks, flame, lit cigarettes, etc.

When combustible vapor is mixed with air in certain proportions, ignition will produce an explosion.

Fire and explosion hazards are reduced to a minimum when solvent vapors are controlled. When work must be done in confined areas, solvent vapor concentrations should be routinely checked with OSHA approved equipment. Should vapor concentrations approach the lower limit, increase air ventilation or stop coating application until the vapor concentration is reduced to a safe level. Do not work in confined areas, even with ventilation and respirators, when concentrations of solvent vapors are above the lower explosive limit.

Open flame, welding, smoking or other ignition sources shall not be allowed in a building, overhead or near a building where coating is being applied or has been recently applied. Proper "No Smoking" and "Fire Hazard" signs shall be placed in the working and restricted areas.

All electrical equipment and outlets must be grounded. This includes switches, connectors, lights and motors. Lights must have a protective enclosure to prevent physical damage. Whenever solvent vapors are present, all electrical equipment must be explosion proof, complying with the National Electrical Code. It is the responsibility of the contractor to verify that these precautions are in place.

Any equipment, such as spray guns and compressed air nozzles, which can produce a static charge, must be grounded.

All hand tools used in solvent vapor areas must be of non-sparking construction. When non-compliant tools must be used, remove equipment to an area free of solvent vapor or exhaust solvent laden air thoroughly before beginning work.

Work clothes must be of a material such as cotton, which does not generate static charges. Beware of synthetic materials. Shoes should not have metal sole plates since these cause sparking.

Have fire extinguishers as prescribed by NFPA, the Fire Department, and/or OSHA within easy access of work areas where solvent coatings are being applied. Check with NFPA and local fire regulations for proper extinguishers.

Ventilation shall be provided to coated areas not only during application but also for sufficient time after to ensure complete evaporation of solvents.

One person must be assigned at all times the clear responsibility to look for and turn off any equipment which could cause ignition of solvent vapors. This includes pilot lights, switches, electric spark starters, and motors. Workmen must lock switches to prevent accidental operation when solvent vapors are present.

Mixing of materials must be done in a well ventilated area.

## TOXICITY AND HEALTH CONSIDERATIONS

Isocyanates may cause allergic skin or respiratory reactions. **Individuals with chronic respiratory problems or prior respiratory reactions to such material should not be exposed to vapors.** All personnel in the application area must wear OSHA approved air respirators where an airborne concentration of isocyanate vapors is expected to exceed the threshold limit value (TLV) or concentration levels are unknown. For emergencies use a positive pressure self-contained breathing apparatus. Cartridge type respirators are not approved for protection against isocyanates because they have poor warning properties since the odor at which isocyanate can be smelled is substantially higher than the exposure limits. Use explosion-proof, suction type, ventilation equipment (exhaust fans and blowers) with sufficient cfm capacity to keep isocyanate vapors below the TLV limit.

**Caution!** Air circulation and exhaustion of isocyanate vapors must be maintained until the coatings have fully cured to ensure that no potential fire, explosion or health hazard remains. Warning symptoms (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic overexposure from inhalation. This product can produce asthmatic sensitization upon even a single inhalation or upon repeated inhalation exposures to lower concentrations. Exposure to vapors of heated isocyanates can be extremely dangerous. Employee education and training in safe handling of this material is required under OSHA Hazard Communication Standard.

Portable air sampling equipment is available to measure the content of some solvents in the air. Workmen and foremen must be certain that measurements of this type are being made when men are working in an enclosed area.

An approved fresh air supplied respirator with an approved source of respirable air must be used for protection when solvent vapor is present. The use of a fresh air supplied respirator does not reduce the necessity for good ventilation to lessen fire hazards and ensure proper drying of coatings.

Any time a workman begins to feel discomfort or irritation to the eyes, nose or throat the concentration of solvent vapor is too high for steady exposure. If a person feels light-headed, giddy, dizzy or exhilarated the solvent vapor concentration is too high and must be reduced by better ventilation. **Any persons so affected must go to an area of fresh air.**

The effectiveness of ventilation depends on the physical barriers which restrict airflow. Open exterior areas on roofs or decks ventilate normally by natural air movement. Confined areas in rooms, tanks and some pit or pond areas, as well as roofs or decks surrounded by walls or high parapets require forced air ventilation.

Solvents may cause allergic skin or respiratory reactions. Immediate effect is stupor (central nervous system depression). Individuals with chronic respiratory problems or prior respiratory reactions to such materials should not be exposed to vapors.

The application method of using an airless sprayer will cause the same volume of product to produce higher airborne vapor concentrations in a shorter period of time than other application methods. It is important that air is monitored

and full precautions are taken as indicated above.

First Aid: In case of skin contact, remove contaminated clothing as needed and immediately wash off with plenty of water and mild soap for at least 15 minutes.

**If medical attention is required, have label and material safety data sheet (MSDS) available for physician.**

For industrial use by professional applicators only. Not intended for sale to the general public. Not to be sold or delivered to a minor. **Keep out of the reach of children!**

## HEALTH & SAFETY PRECAUTIONS

The uncured components of these products can cause irritation to the eyes, skin, mucous membranes and respiratory tract, and are harmful if swallowed. Avoid contact with eyes and skin, especially open cuts. Wear protective clothing, chemical resistant rubber gloves, chemical tight goggles, protective barrier cream, etc. to prevent contact with material. Wash hands with soap and water before eating, drinking, smoking, applying cosmetics, or using the toilet facilities. Launder contaminated clothing and footwear before reuse. Air dry contaminated clothing in a well ventilated area before laundering. Discard unwashable contaminated shoes and clothing. Safety shower and eye wash stations should be available. Educate and train employees in the safe use of this product. Untrained persons must not be allowed in or around work area unsupervised and without proper safety and respiratory equipment.

**Prior to beginning any project, the health and safety of building occupants and people in adjacent areas and buildings should be considered. Vapors are heavier than air and can travel considerable distances. Take care to protect these people by posting signs, sealing off buildings from infiltration of odors and fumes by turning off air intake, vacating the building or using other appropriate measures. Precautions should continue until coatings have completely cured and no residual odor remains.**

**These products may contain chemicals which the State of California lists as causing cancer, birth defects, or other reproductive harm (Proposition 65).**

## OTHER SAFETY CONSIDERATIONS

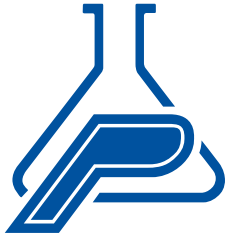
Footwear must be a safety shoe with steel toe for protection. Fifty-five gallon drums of coating are very heavy and can cause considerable damage if set on an unprotected foot. The sole should be of a soft, resilient material to give the best traction without damaging coated areas.

Use extreme caution when working on sloped areas. Use lifelines. Wet coatings are very slippery.

When working in bright sun with light colored coating, wear dark glasses to prevent glare blindness.

## PROPERTY PRECAUTIONS

Consider possible damage to property. Overspray can ruin finishes on autos and other surfaces (brick, paint, plastic, etc.). Solvent vapors in confined areas can damage plants and pets, including tropical fish and birds. Foods, even those stored in freezers, can pick up a solvent taste and should be protected from vapors.



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## STORAGE

Moisture reacts with isocyanates to produce carbon dioxide. Do not breathe the vapors. Store in tightly closed containers to prevent moisture contamination.

Keep product in a cool, dry, ventilated storage area, in closed containers and out of direct sunlight. Store in containers above ground and surrounded by dikes to contain spills or leaks.

All material should be stored in a cool, shaded place, preferably at a temperature of 65°F (18°C). Higher storage temperatures for extended periods can cause thickening and even gelation of elastomeric coatings.

When opening containers, check them first for any signs of expansion which can occur due to pressure build up resulting from moisture reaction. Open containers carefully, pointing them away from face and body to prevent expulsion of material.

Whenever work is stopped for the day, all coatings and thinners should be stored in tightly sealed factory containers to prevent evaporation and fire hazard. Materials left on unsupervised job sites may attract the curious or the malicious. Protect your materials properly and avoid potential harm to others.

Do not keep open containers in confined places.

Protect water based emulsion coatings from freezing.

Containers, even those that have been emptied, may contain dangerous and explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Do not pressurize containers to empty them. In the event that thinners and/or solvents are used, for clean-up or dilution, consult the material safety data sheet (MSDS) for that particular product for additional health and safety information.

The above information is based on standard industrial practices and is meant to outline the hazards but is not necessarily all inclusive. Common sense and care in evaluating the possibility of hazards is essential.

Nothing contained herein should supersede local laws, codes, ordinances or regulations.

The standards and regulations published by the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, EPA and local statutory authorities, where applicable, should be consulted for further detail and compliance.

## CONFINED SPACES AND TANKS

This type of application poses greater dangers. Use extreme caution. Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair. Remove all ignition

sources. Check atmosphere for explosiveness and oxygen deficiencies. Use adequate personal protective equipment. Observe precautions pertaining to confined space entry.

***Confined space "Entry Permit" may be required, check with OSHA, EPA and other local regulatory agencies before proceeding.***

## SECTION 2: JOB CONDITIONS

Construction work such as expansion joints, control joints, drains, ducts and other penetrations should be complete prior to the coating application.

Surfaces must be thoroughly dry to ensure adhesion of all primers and coatings. When in doubt, test for moisture with a moisture meter or 16 hour mat test (ASTM D-4263). Dirt or dust which settles on surfaces before start of work or between coats must be removed.

Surface temperature should be 50°F (10°C) or above because cooler surfaces may have ice, frost or condensation. Application of some coatings can be done at lower temperatures provided the surface is free of moisture. The ideal conditions for curing are 70°F (21°C) and 50% relative humidity. See temperature limitations listed in product data sheets.

Job specifications require that surfaces be accepted by the coating applicator prior to start of work. Substrates which are not structurally sound or which do not meet the specification requirements for surface finish or condition should not be accepted. Correction of surface defects is the general contractor's responsibility. Review of specification requirements with the general contractor before the substrate is constructed will minimize problems at the time of acceptance.

## SURFACE PREPARATION

Concrete or plywood substrates must be free of all contamination that may impair proper bonding. Substrates must be sloped a minimum of ¼" per foot for drainage, and must be primed with the applicable primer prior to application of the membrane and surface protection materials.

**Concrete:** The surface of concrete substrates must be clean and free of standing water. All holes, joints and cracks must be pointed flush with portland cement mortar and all high spots cut or ground off to provide a smooth, even surface. Before the material is applied the substrate must be swept or blown clean to remove dust or foreign material. Paint, grease and oil must be removed either by grinding or sandblasting and concrete surfaces must be shotblasted or water blasted. Control joints are cut per standard concrete construction practices and caulked.

Concrete must exhibit 3000-psi minimum. Concrete surfaces to be coated must be trowel finished in compliance with the American Concrete Institute (except that hand troweling is not required), followed by a fine hair brooming, left free of loose particles, and shall be without ridges, projections, voids and concrete droppings that would be mechanically detrimental to coating application or function.

***Neat cement sacking is not an acceptable surface preparation for coatings.***

**Plywood:** Plywood should be new or cleaned and sanded. Plywood must be exterior grade plywood, having either tongue-and-groove edges and ends perpendicular to supports. The plywood is a minimum 19/32", 5/8", 21/32", or 3/4" thick.

Plywood should be installed with a maximum of 1/16" space between the plywood sheets and laid over joists on 16" centers. Plywood sheets must be screwed down securely or nailed with coated annular ring or screw shank nails.

If the underside of the joists is covered, the floor/ceiling cavity must be vented to aid in drying and to minimize moisture buildup in the deck structure.

Damaged panels shall be repaired or replaced prior to coating.

Old plywood must be primed with Polyprime at a rate of 1/3 gallon per 100 square feet prior to coating application.

The only acceptable grade of plywood is APA rated, exterior grade with exterior glue or better.

The appearance characteristics of the plywood and grade should be considered.

**Note:** The above plywood grade is called out in compliance with the American Plywood Association's Standard. Plywood grading which does not reference APA markings may not be a suitable grade.

No liability is assumed by Polycoat Products for defects in the substrate.

### **PROTECTION OF WORK**

While work is under way and for 72 hours thereafter, traffic from other trades should be stopped.

Material should be stored on plywood or non-asphaltic insulation board.

Adjacent surfaces which are not to be coated, such as walls, thresholds, fascias, etc., should be carefully masked before priming and coating. Mask vertical surfaces at the line detailed in the architectural drawings or, if none is shown, mask 4" or more up from the deck. When coatings are applied by spray, caution is necessary, particularly during windy weather, to prevent overspray damage.

## **SECTION 3: PRIMING**

Polycoat Products elastomeric coatings frequently require a primer. The preferred primer varies with the substrate as described below. Guide specifications state primer requirements. Product data sheets contain application instructions.

## **CONCRETE**

**Sealing Concrete:** Most concrete has surface porosity although it is seldom visible. This porosity develops at the time of placement from various causes including water content, drying rate, aggregate type and troweling action. When elastomeric coatings are placed over concrete, there is a risk that blisters will form from outgassing through surface pores. This risk is minimized by the use of a primer system.

Polyprime should be applied on all concrete and dense aggregate structural concrete.

Prime entire deck surface and all vertical or sloping surfaces of curbs, cants, parapets, etc., which are to receive coatings, with one coat of Polyprime applied by roller or spray. The coverage rate is about 1/3 gallons per 100 square feet.

Allow urethane primers to dry for one hour or more before applying the base coat.

Allow epoxy primers to dry until tack free before applying the base coat.

**Note:** Surface temperature is more important than air temperature. The normal minimum surface temperature for application is 50°F (10°C).

## **WOOD**

Polycoat Products urethane coatings are self-priming when applied to new wood construction (primer is not necessary). For optimum adhesion on old plywood it is advisable to use Polyprime.

## **STEEL**

Wire brush or sand steel surfaces until the metal is bright. Solvent wipe after cleaning.

Apply Polyprime at the rate of 1/3 gallon per 100 square feet. Primer should be permitted to dry tack free before applying topcoat. This ensures proper adhesion under most conditions. Never apply Polyprime to wet or moist surfaces.

## **COATED SURFACES**

Decks to be re-coated should be thoroughly cleaned, dried, and primed with Polyprime at the rate of 1/3 gallon per 100 square feet.

All coated surfaces require special attention. A test patch should be applied to check for bonding. If adhesion to substrate is poor and lifting does occur, remove coating before coatings are applied. If adhesion is good, the surface is smooth and no lifting occurs, apply coating as specified.

## **SECTION 4: EXPANSION JOINTS**

### **SEALING OF CRACKS, CONSTRUCTION JOINTS, SUBSTRATE CHANGES, AND FLASHINGS**

This step, which follows priming and precedes coating, is the most critical stage in the application of Polycoat Products coatings. Success or failure in application of this system depends largely on how they are treated.

Working cracks in concrete are joints or cracks which have moved or will move appreciably, in any or all of the three dimensions, due to thermal changes or vibration. A crack



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which extends at each end to the edge of the surface, to a building expansion joint or to another working crack may be a working crack. A crack with minute broken fragments along the edge is probably a working crack.

## CONCRETE

To prepare expansion joints, substrate changes, cracks and flashings, apply backer rod if necessary then a polyurethane sealant and reinforcement tape, embedded into the sealant, with a stripe coat centered over the crack. The crack must be fully sealed. Cracks over  $\frac{1}{16}$ " shall be routed to  $\frac{1}{4}$ " x  $\frac{1}{4}$ " prior to application of sealant and reinforcing tape.

## SUBSTRATE CHANGES

Use caulking and reinforcement tape, with a stripe coat centered over the crack, backer rod and polyurethane sealant as required at changes in substrate material. Reinforcement tape must be embedded into the sealant. It is also required when the substrate changes plane in a valley, or a crack exists at other changes in plane.

## JOINTS IN PLYWOOD

When a joint must be invisible at close range, filling voids and nail heads is necessary. Any wood-adhering, non-shrinking, firm-setting, nonstaining material is satisfactory. An epoxy/100 mesh sand grout may also be used.

To prepare plywood joints, flashings and substrate changes, apply a polyurethane sealant and reinforcement tape embedded into the sealant with a stripe coat centered over supported joints on the same plane, supported joints at changes in plane, or unsupported joints.

Defects in taping and flashing must be corrected prior to proceeding with base coats.

## SECTION 5: COATING APPLICATION

Polycoat Products materials are one or more components, liquid applied polyurethanes. When properly combined and applied they cure to form tough, high strength elastomeric membranes. All specified quantities are minimums and are on an undiluted basis. No allowances have been made for material waste, uneven surfaces, spillage, material applied thicker than specified, or material left in containers or equipment.

## MIXING

**Important:** All products must be mixed according to the product data sheets prior to use.

Mix two component materials individually before combining. Stir all materials thoroughly before use. Examine both Part-A and Part-B for graininess. Partial containers should not be

stored longer than one or two days as exposure to atmospheric moisture induces cure. Keep containers covered whenever possible.

For best results, power mix thoroughly for five minutes, scraping sides of container. Best results are obtained by pouring Part-B into Part-A while mixing. Polyethylene or polypropylene mixing containers are recommended, as they can be reused. Cured material is easily stripped out cleanly the following day.

If the product requires a catalyst, the best results will be obtained by pouring the catalyst into the product while mixing.

Mix only as much material as can be used within the specified pot life.

## COLD WEATHER APPLICATION

During cold weather, special precautions must be taken in applying urethanes. These coatings should not be applied to surfaces 50°F (10°C) or colder. Store materials above 65°F (18°F), or warm to above 65°F (18°C) prior to use.

If graininess is observed, warm the entire contents of the can to 60°F (16°C), and mix until smooth.

Lower temperature and humidity may extend curing time.

## HOT WEATHER APPLICATION

Product data on pot life and cure rate are provided for materials at 70°F (21°C). At temperatures above 70°F (21°C), pot life and cure time will decrease proportionately as temperature and humidity increase. Store materials out of direct sun and mix only the amount that can be applied within the pot life. Refer to product data sheets for further information.

## APPLICATION OF BASECOAT

All specified quantities are on an undiluted basis. Better films are usually produced with less entrapped air when the rate of application is no more than 1½ gallons per 100 square feet. However, the recommended rate varies by product and specification.

Apply Polycoat Products urethane in a uniform thickness without skips or holidays. Basecoats can be squeegeed or rolled, depending on job type and size. Allow each coat to dry until tack free and sufficiently cured for foot traffic before applying additional urethane coating. A period less than one hour to overnight may be required depending on drying conditions and the particular product used.

For a slip resistant surface, uniformly broadcast a washed, dry, rounded 16 to 90 mesh silica sand into the wet topcoat

at a rate of 4 to 10 lbs. per 100 sq. ft. or to refusal. Slip resistance will vary depending on the coating thickness.

Extend each coat over cants and up vertical surfaces of pads, curbs, walls and parapets. The top of curbs and equipment pads shall be similarly coated. In the case of walls and parapets, extend coating to the point where counter flashings enter the masonry. Where no counter flashing is specified, hold the base coats just short of the termination line at the edge of the deck to avoid seeping under masking tape or spilling on adjacent unprotected surfaces.

If the entire job cannot be carried through to completion without interruption, the interruption should occur after the first coat. This will provide protection for the system.

Coated surfaces must be clean and dry before work resumes.

#### **APPLICATION OF TOPCOAT**

Inspect the surface for damage prior to the application of topcoat. Any surface damage must be repaired by replacing base coat so that a continuous membrane in substantially uniform thickness covers the entire surface prior to topcoat application.

While careful color matching procedures are used, different batches of urethane may vary slightly in hue. This variation will be too slight to be perceptible if changes are made at natural breaks in the surface. Intermixing of batches may be necessary or desirable to ensure consistency in topcoat color.

#### **CAUTION**

Excessively heavy applications of urethane can cause pigment separation during drying, resulting in a blotched color. Uniform application at the specified coverage rate is important to provide proper results.

Remove masking tape at edges of coating area as soon as the final coat of urethane is applied. By removing the tape while the coating is wet, it will not be necessary to cut it off and will avoid damage to the edge of the coating. Any seepage under the tape on rough surfaces can be wiped off with thinner while wet.

***The following conditions must not be coated with Polycoat Products deck coating systems:*** on grade or below grade slabs, split slabs with buried membrane, sandwich slabs with insulation, slabs over unvented metal pan, suspended

pool decks, swimming pools, magnesite or lightweight concrete, asphalt surfaces or asphalt overlays.

Floor hardeners may adversely affect the adhesion of the coating.

Polycoat Products coating systems should not be subjected to rising water tables or hydrostatic pressure on slab-on-grade applications.

If there is a question regarding a substrate, please contact a Polycoat Products representative.

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***Please read all information in the general guidelines, product data sheets, guide specifications and material safety data sheets (MSDS) before applying material. Published technical data and instructions are subject to change without notice. Contact your local Polycoat Products representative or visit our website for current technical data and instructions.***

#### **DISCLAIMER**

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the users responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and Polycoat Products makes no claim that these tests or any other tests, accurately represent all environments.