



APPLICATION PROCEDURE

PERMAKOTE® / PERMAKOTE PLUS® PERMAKOTE® SEMI-GLOSS / PERMASIL™ / PERMAGARD® TAR & GRAVEL ROOFING SURFACE

ENERGY STAR PARTNER
APPLICATION PROCEDURE
#PAK-TG
 8-20 YEAR LIMITED MATERIAL WARRANTY
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02/11/19
superseding: 02/09/17

MATERIAL ESTIMATION:

Material Estimations are Approximate and Can Differ from Job to Job and Are Not Guaranteed to be Correct Due to Many Variables.

CHLORINE Water Mixture	1 quart per 100 square feet	
SLURRY MIX	Approx. 10 gallons per sq ft	SEE FORMULA STEP #: 4
PERMAPATCH™	1 gallon fills 144 cubic inches	Caulk and Seal all penetrations 1/8" or greater
PERMATAPE™ (2"¼"/8"x100')	Tape any seams if necessary	Use PERMABOND™ as Saturant*
*Add additional PERMABOND™ as Saturant for Tape as follows: 1/4 gallon per 2" Roll - 1/2 gallon per 4" Roll - 1 gallon per 8" Roll		
PERMABOND™ PRIMER	75-125 square feet per gallon	1 Coat is Required
PERMAKOTE® FINISH**	100-125 square ft / gal per coat	2 Coats are Required
** FINISH COAT of PERMAKOTE®, PERMAKOTE® SEMI-GLOSS, PERMAKOTE PLUS®, PERMASIL™ or PERMAGARD® (Substitute PERMAKOTE PLUS® or PERMAKOTE SUPER PLUS® on Flat Roofs.)		

WARRANTY CONFORMANCE:

A Warranty Registration Certificate Form Must Be Submitted within 90 days of Completed Application. Confirm Specific Minimum Acceptable Product Spread & Usage Rates for Warranties stated on the Warranty Registration Certificate Form. Roof Surfaces greater than 10,000 square feet requires a Job Completion Form. Request Forms before Application of Any Coating. SLOPED ROOFING SURFACE DEFINITION: These warranties and Application Procedure are for Well Drained, Sloped Roofing Surfaces Only. A Sloped Roof must have a slope greater than 1" per 24" or an angle greater than 4 degrees, otherwise inquire about PERMAKOTE PLUS® or PERMAKOTE SUPER PLUS® Limited Ponding Water Roof Coating. Warranty will be void if these criteria are not met.

WARRANTY TERMS:

A Limited Material Pro-Rated Warranty for Chipping, Cracking and Peeling, only, Available:
 PERMAKOTE® 15 Years
 PERMAKOTE® SEMI-GLOSS 12 Years
 PERMAKOTE PLUS® 15 Years
 PERMAGARD® 20 Years
 PERMASIL™ 15 Years
 (SLOPED ROOFING SURFACES ONLY)

GETTING STARTED:

Gravel Roof Material Estimates can vary substantially depending on the porosity of the surface, thickness of the gravel, how much slurry is applied, etc. Insure yourself that you will compensate for any unexpected material needs by over estimating.

All coatings must be stirred manually or mechanically before being used (except for PERMAPATCH™). Do not let products freeze. Do not use any of these products at temperatures below 40 degrees Fahrenheit. Apply all products to dry surfaces only and do not apply products when they will be subjected to rain or heavy dew before they have had enough time to dry (Check Product Data Sheets). Do not thin any products unless specifically mentioned within this application specification manual.

STEP#1: VISUAL INSPECTION and REPLACEMENT of DAMAGED BUILDING MATERIALS

The substrate to be coated must be in SOUND condition. Physically inspect the surface area for missing or damaged building materials. Replace and/or repair all damaged areas, so that the surface is in sound and solid condition.

Inspect the substrate for any existing leaks and be sure to repair leaks prior to the application of coating.

TIP: You can eliminate or reduce the amount of slurry mix required by removing excess loose gravel.

STEP#2: CLEANING THE ROOF SURFACE

Clean the entire roof surface using a water and chlorine bleach solution (approximately 1 quart chlorine bleach to 5 gallons of water). Thoroughly remove all dirt, oil, grease, residues, mold, mildew, algae and any other surface contaminants. Severe mildew requires a stronger concentration of chlorine bleach. When roof is completely cleaned, rinse and flood the roof with water to remove all chlorine and contaminants. Let roof surface dry at least 24 hours before continuing.

STEP#3: PREPARING THE ROOF SURFACE FOR SLURRY MIX

Use a push broom to level off the remaining gravel to achieve a roof surface even with the slope of the roof. Do not leave any piles of gravel or low spots. Remove all extraneous debris off entire roof surface.

STEP#4: SLURRY MIX FORMULA & APPLICATION

Prepare the cementitious slurry mix on the job site using the following formula:

FORMULA for Approximately 50 Gallons of Slurry Mix:

- (2) 50 pound bags of Calcium Carbonate or Marble Dust
- (1) 100 pound bag of White Portland Cement
- 5 Gallons of PRO-SEAL LINK™ Vinyl Acrylic Resin
- Approximately 35 to 40 Gallons of Water (depending on desired consistency)

Mix the ingredients using an industrial grade drill motor or a mechanical mixer. Start with 20 gallons of water, then add the powders and the PRO-SEAL LINK™. Gradually add the rest of the water to achieve a consistency such that a paint stick can stand straight up in the batch. Pump or pour the Slurry Mix on the roof. Use a broom or rake to move the Slurry Mix around while at the same time leveling off the gravel. The spread rate of the slurry mix will vary depending on the surface and the desired outcome. You should have enough Slurry Mix on the roof so that it is almost covering all the gravel. The Slurry Mix is used to: lock down all the gravel so that coating can be applied to a solid surface, and to level the roof sufficiently to eliminate the ponding of water. Having a level roof will allow even evaporation when water is present. Let the Slurry Mix dry for at least 5 days to insure the release of alkalines which are inherent in cement. If you do not wait at least 5 days the alkalines could adversely react with the acrylics.

As an ENERGY STAR® PARTNER, Nationwide Protective Coating Mfrs., Inc. has determined that select products meet or exceed the ENERGY STAR® guidelines for Energy Efficiency.

In Any Event Nationwide Protective Coating Manufacturers, Inc. will not be liable or responsible for any past, present or future leaks or any resulting consequential or incidental damages.



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STEP#5: CAULKING & PATCHING IMPERFECTIONS

After slurry has been allowed to cure, patch and caulk all cracks, crevices, fractures, holes, valleys, voids, etc., with PERMAPATCH™. Use a trowel or stiff brush to apply PERMAPATCH™. Multiple coats are better than one thick coat when possible. The thicker PERMAPATCH™ is applied the longer it will take to dry. Wait for at least 4 hours before applying additional coats of PERMAPATCH™ and let the final application dry at least 24 hours before continuing. PERMAPATCH™ dries from top to bottom, so be careful when working around a caulked area since it will be skin dry. PERMAPATCH™ can be coated over before it is completely dry, since it is a high solids material.

STEP#6: TAPING SEAMS (If Applicable, otherwise proceed to STEP#7:)

Tape all visible seams, large cracks & fractures, which are prone to water intrusion, on the surface to be coated. Apply a liberal coat of PERMABOND™, at 10-12 mils wet film thickness, directly to the area to be taped using 1) brush, 2) at least a one inch nap roller, or 3) at least a 3,000 P.S.I. airless sprayer with a .025 or larger tip and lay the PERMATAPE™ directly onto the WET PRIMER. The tape must be put down before PRIMER has had a chance to start drying (approximately 15 minutes). After all areas are taped let them dry for 1 to 2 hours, then apply a second light coat of PERMABOND™, at 5-8 mils wet film thickness, over the top of the tape. Let the tape dry for at least 2 hours after applying the second coat of PERMABOND™ before continuing.

STEP#7: PRIME COAT

Apply PERMABOND™ using 1) brush, 2) at least a one inch nap roller, or 3) at least a 3,000 P.S.I. airless sprayer with a .025 or larger tip

When Spraying or Rolling PERMABOND™, it must be applied perpendicular to the slope of the roof; example: If the slope of the roof runs from North to South then the PERMABOND™ must be applied spraying from East to West. This will be the start of a checkerboard application pattern, refer to diagram on bottom right corner of this page.

Apply the PERMABOND™ at a rate of 75-125 square feet per gallon covering the entire roof surface. A wet film thickness of 10-12 mils wet, which will result in dry film thickness of 4-5 mils, is required. Let the PERMABOND™ dry for at least 12 hours before continuing.

STEP#8: FIRST COAT of FINISH/TOP COAT (PERMAKOTE®-PERMAKOTE® SEMI-GLOSS-PERMAKOTE PLUS®-PERMASIL™-PERMAGARD®)

Be sure the entire surface is clean and free of all moisture. Also insure that the entire area to be coated is primed, if not then spot prime as needed.

Apply PERMAKOTE™ using 1) brush, 2) at least a one inch nap roller, or 3) at least a 3,000 P.S.I. airless sprayer with a .025 or larger tip. Remember to substitute PERMAKOTE PLUS® or PERMAKOTE SUPER PLUS® on Flat Roofs.

When Spraying or Rolling PERMAKOTE®, the first coat of PERMAKOTE® must be applied perpendicular to the coat of PERMABOND™ to achieve a checkerboard pattern, refer to diagram on bottom right corner of this page.

Apply the first coat of PERMAKOTE® at a rate of 100-125 square feet per gallon per coat over the entire roof surface. A wet film thickness of 12-15 mils, which will result in dry film thickness of 8-10 mils, is required. Let the PERMAKOTE® dry for at least 12 hours before continuing.

STEP#9: SECOND COAT of FINISH/TOP COAT (PERMAKOTE®-PERMAKOTE® SEMI-GLOSS-PERMAKOTE PLUS®-PERMASIL™-PERMAGARD®)

Be sure entire surface is clean and free of all moisture.

Apply PERMAKOTE® using 1) brush, 2) at least a one inch nap roller, or 3) at least a 3,000 P.S.I. airless sprayer with a .025 or larger tip. Remember to substitute PERMAKOTE PLUS® or PERMAKOTE SUPER PLUS® on Flat Roofs.

When Spraying or Rolling PERMAKOTE®, the second coat of PERMAKOTE® must be applied perpendicular to the first coat of PERMAKOTE® completing the checkerboard pattern, see diagram below.

Apply the second coat of PERMAKOTE® at a rate of 100-125 square feet per gallon per coat over the entire roof surface. A wet film thickness of 12-15 mils, which will result in dry film thickness of 8-10 mils, is required. Let the PERMAKOTE® dry for at least 24 hours before continuing to STEP#10, the Final Evaluation.

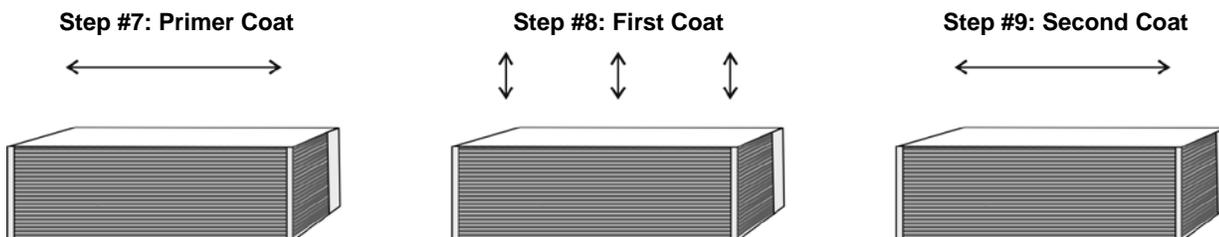
STEP#10: FINAL EVALUATION

At this time a detailed evaluation of the completed job will determine the quality of the workmanship and whether strict application specifications have been met. Be sure to check that all roof areas are completely coated under permanently placed roof items such as roof top air conditioning units.

Divide the roof into 1,000 square foot sections and randomly check one spot in each section for a dry film thickness of at least 20 mils. Remember to touch up the penetration made by the dry film thickness gauge. If specifications have not been met, determine how much material will be required to meet specifications and recoat. Check dry film thickness again until specifications have been met.

Remember to substitute PERMAKOTE PLUS® or PERMAKOTE SUPER PLUS® on Flat Roofs.

How to Achieve the Checkerboard Application Pattern:



In Any Event Nationwide Protective Coating Manufacturers, Inc. will not be liable or responsible for any past, present or future leaks or any resulting consequential or incidental damages.