

PART 1 GENERAL

1.1 SUMMARY

- A. Provide labor, materials, equipment and supervision necessary to install cold fluid-applied membrane coating materials as outlined in this specification to new or existing concrete surfaces.
- B. The manufacturer's application instructions for each product used are considered part of this specification and should be followed at all times.
- C. Related Sections:
 - 1. Section 03 30 00: Cast-in-Place Concrete
 - 2. Section 03 40 00: Precast Concrete
 - 3. Section 07 90 00: Joint Protection

1.2 SYSTEM DESCRIPTION

- A. Perma-Gard III is a coal-tar free, modified polyurethane liquid, designed to create a seamless waterproof membrane.
- B. Perma-Gard III shall be designated for application on the specific type of substrate indicated on the drawings.

1.3 SUBMITTALS

- A. Technical Data: Submit manufacturer's product data, Safety Data Sheets (SDS) and installation instructions.
- B. Samples: Submit samples of Perma-Gard III. Samples shall be construed as examples of finished color of the system only.
- C. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the specified cold fluid-applied waterproofing system.
- D. Warranty: Submit copy of manufacturer's standard sample warranty, identifying the terms and conditions stated in section 1.7 Warranty.

1.4 QUALITY ASSURANCE

- A. Supplier Qualifications: Perma-Gard III, as supplied by Neogard, is approved for use on this project.
- B. Applicator Qualifications: Applicator shall be approved to install specified system.
- C. Requirement of Regulatory Agencies: Specified materials shall meet existing Federal, State and local VOC regulations.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Materials shall be delivered in original sealed containers, clearly marked with supplier's name, brand name and type of material.
- B. Storage and Handling: Recommended material storage temperature is 75°F (23°C). Handle products to prevent damage to container. All materials shall be stored in compliance with local fire and safety requirements. Do not store at high temperatures or in direct sunlight.

1.6 PROJECT CONDITIONS

- A. Read and follow the SDS and container labels for detailed health and safety information.

- B. Apply materials only when substrate temperature is above 40°F (4°C). Substrate shall be dry, clean, and frost-free. Temperature shall be more than 5°F (3°C) above dew point and rising. Do not apply if precipitation or freezing temperatures are imminent.
- C. Coordinate waterproofing work with other trades. Applicator shall have sole right of access to the specified area for the time needed to complete the application and allow the cold fluid-applied coatings to cure adequately.
- D. Protect plants, vegetation or other surfaces not to be coated against damage or soiling.
- E. Keep products away from spark or flame. Do use equipment which may produce sparks during application and until all vapors have dissipated. Post "No Smoking" signs.
- F. Maintain work area in a neat and orderly condition, removing empty containers, rags and debris daily from the site.

1.7 WARRANTY

- A. Upon request, Neogard shall offer a manufacturer's standard warranty for institutional, commercial, industrial, and high-rise/multi-family residential projects only, after substantial completion of the application and receipt of a properly executed warranty request form.

PART 2 MATERIALS

2.1 MANUFACTURER

- A. Neogard, A part of Hempel, 2728 Empire Central, Dallas, TX 75235, (800) 321-6588, www.neogard.com.

2.2 MATERIALS

- A. Primer: Concrete and metal primers as required by Neogard.
- B. Flashing Tape: 86218 (62ZJB) flashing tape.
- C. Sealant: 70991 (47XJB) or other polyurethane sealant approved by Neogard.
- D. Vertical Additive: 7922 (990JB) to enhance sag resistant properties of cold fluid-applied membrane waterproofing material.
- E. Cold Fluid-Applied Membrane: 7401 (47KJB) polyurethane coating.

2.3 MATERIAL PERFORMANCE CRITERIA

- A. Typical physical properties of cured 7401 urethane used on this project are:
 - 1. Tensile Strength, ASTM D412, 250 psi
 - 2. Elongation, ASTM D412, 500%
 - 3. Permanent Set, ASTM D412, 25%
 - 4. Water Resistance, ASTM D471, <3%
 - 5. MVT at 60 mils, ASTM E96, 0.60 English perms
 - 6. Shore A, ASTM D2240, 30–40
 - 7. Adhesion, ASTM D4541, 200 psi
- B. The above tested results are typical values. Individual lots may vary up to 10% from the typical value. Further technical information can be found at www.neogard.com.

2.4 ACCESSORIES

- A. Miscellaneous materials such as cleaning agents, adhesives, reinforcing fabric, closed cell backer rod, deck drains, etc., shall be compatible with the specified cold fluid-applied waterproofing material.

- B. Protection Course: Protection board shall be a minimum 1/8" nominal thickness, pre-molded bitumen composition board or other composition compatible with the membrane waterproofing material. Prefabricated drainage system (PDS) is suitable for use as protection course.

2.5 MIXING

- A. Comply with manufacturer's instructions for mixing procedures.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Concrete: Verify that the work done under other sections meets the following requirements:
 1. That the concrete does not contain voids or gaps or "honey-comb" surfaces and is free of ridges and sharp projections. If metal forms or decks are used they should be ventilated to permit adequate drying of concrete on exterior exposed substrate.
 2. That the concrete was cured for a minimum of 28 days. (Minimum of 3,000 psi compressive strength). Water-cured treatment of concrete is preferred. The use of concrete curing agents, if any, shall be of the sodium silicate base only; others require written approval by Neogard. Mechanically remove membrane-forming curing compounds prior to application of Perma-Gard III.
 3. That the concrete was finished by a power or hand steel trowel followed by soft hair broom to obtain light texture or "sidewalk" finish.
 4. Surfaces to receive cold fluid-applied waterproofing are free of oil, grease, dirt, debris, etc.

3.2 PREPARATION

- A. Cleaning: Surfaces contaminated with oil or grease shall be vigorously scrubbed with a stiff bristle broom and a strong non-sudsing detergent, such as Neogard 8500 BioDegradable Cleaner (089JB). Thoroughly wash, clean, and dry.
- B. Cracks and Cold Joints: Visible hairline cracks (less than 1/16" in width) in concrete and cold joints shall be cleaned, primed as required and treated with thoroughly mixed 7401 material a minimum distance of 2" on each side of crack to yield a total thickness of 30 dry mils. Large cracks (greater than 1/16" in width) shall be routed and sealed with 70991 sealant. Sealant shall be applied to inside area of crack only, not applied to substrate surface. Detail sealed cracks with thoroughly mixed 7401 a distance of 2" on each side of crack to yield a total thickness of 30 dry mils.
- C. Control Joints: Seal control joints equal to or less than 1" in width with 70991 sealant. Depending on the width to depth ratio of the joint, backing material and a bond breaker may be required. Install sealants in accordance with ASTM C1193 and manufacturer's instructions. Sealant shall be applied to inside area of joint only, not applied to substrate surface. Detail sealed joints with thoroughly mixed 7401 material a distance of 2" on each side of joint to yield a total thickness of 30 dry mils.
- D. Flashing Tape: Install 86218 flashing tape where indicated on the drawings and/or where required by the manufacturer prior to the application of base coat.
- E. Surface Condition: Surface shall be clean and dry prior to coating.

3.3 APPLICATION

- A. Factors That Affect Dry Film Thickness: Volume of solids, thinning, surface profile, application technique and equipment, overspray, squeegee, brush and roller wet out, container residue, spills and other waste are among the many factors that affect the amount of wet coating required to yield proper dry film thickness. To ensure that specified dry film thickness is achieved, use a wet mil gauge to verify actual thickness of wet coating applied, adjusting as needed for those factors which directly affect the dry film build.
- B. Cold Fluid-Applied Membrane: Thoroughly mix 7401 and apply at the rate of 23 sf/gal (4.25 gal/100 sf or 68 wet mils total thickness) in a minimum of two coats to yield 60 dry mils.

- C. For vertical applications, add 7922 Vertical Additive (990JB) at the rate of 8 ounces per 5 gallons of membrane waterproofing material. After mixing, an induction time of 30 minutes is required to achieve a sag resistance of 16-18 mils.
- D. Flood Test For Horizontal Applications: Follow ASTM D5957 standard guide for flood testing horizontal waterproofing installations.
 - 1. Waterproofed area shall be flood tested for 48 hours, after system has cured 24 hours at 75°F (23°C) and 50% relative humidity prior to installation of protection course.
 - 2. Plug drains on deck surface and use sand bags or other means to contain water.
 - 3. Flood test to a depth of 2 inches for the duration of the test.
 - 4. Repair any leaks that may appear.
- E. Protection Course: Apply horizontal and/or vertical protection course in accordance with procedures recommended by protection course manufacturer.
- F. Applicator is responsible for applying sufficient coating to the substrate.

3.4 CLEANING

- A. Remove debris resulting from completion of coating operation from the project site.

END OF SECTION

Issued by: Hempel (USA) – Neogard Perma-Gard III

This Guide Specification supersedes those previously issued.

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