

**Guide Specification****PART 1 GENERAL****1.1 SUMMARY**

- A. Provide labor, materials, equipment and supervision necessary to install a seamless, fully adhered fluid-applied roof coating system over new sprayed-in-place polyurethane foam as outlined in this specification.
- B. All existing HVAC and other equipment shall be protected from any damage that could be caused by roofing demolition, coating, and mishandling.
- C. Raising, re-setting, and protection of air conditioning equipment, ventilators, and exhaust fans may be required.
- D. Related Sections:
 1. Section 03 03 00 - Cast-in-Place Concrete
 2. Section 05 30 00 - Metal Decking
 3. Section 06 10 00 - Rough Carpentry
 4. Section 07 20 00 - Thermal Protection
 5. Section 07 50 00 - Membrane Roofing
 6. Section 07 60 00 - Flashing and Sheet Metal
 7. Section 08 60 00 - Roof Windows and Skylights

1.2 SYSTEM DESCRIPTION

- A. PERMATHANE FR shall be a complete system of compatible materials to create a seamless waterproof roof coating membrane to comply with the warranty requirements of this specification.
- B. PERMATHANE FR shall be designated for application on the specific type of deck as indicated on the drawings and specifications.

1.3 SUBMITTALS

- A. Product Data: Submit NEOGARD® product literature and installation instructions.
- B. Project Reference List: Submit list of projects as required by this specification.
- C. Samples: Submit cured samples of specified system. Samples shall be construed as examples of finished color and texture only.
- D. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the specified system.

- E. Warranty: Submit a copy of the NEOGARD® warranty to meet project specifications.

1.4 QUALITY ASSURANCE

- A. Supplier Qualifications: PERMATHANE FR, as supplied by NEOGARD, is approved for use on this project.
- B. Applicator Qualifications: The Applicator shall be approved by NEOGARD® to install the PERMATHANE FR fluid-applied roof coating system. Manufacturer's written verification of applicator approval is required.
- C. Regulatory Requirements:
 1. The fluid-applied roof coating system shall be rated Class A in accordance with the spread of flame test requirements of ASTM E108.
 2. Materials used in the fluid-applied roof coating system shall meet Federal, State and local VOC regulations.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Containers and Packaging: Materials shall be delivered in original, tightly sealed containers, clearly labeled with the manufacturer's name, brand name, type of material and batch number(s).
- B. Storage and Handling: It is recommended to store materials at 75°F (23.8°C) with careful handling to prevent damage to products. All materials shall be stored in compliance with local fire and safety requirements. Do not store at high temperature or in direct sunlight.

1.6 PROJECT CONDITIONS

- A. Do not proceed with application of fluid-applied roof coating materials when substrate temperature is less than 40°F, if precipitation is imminent or to a damp or frosty surface. Temperature should be above 40°F and more than 5°F above dew point and rising.
- B. Coordinate fluid-applied roof coating work with other trades to ensure coatings are protected from traffic and other abuse until completely cured and installation is complete.
- C. Read and follow the Material Safety Data Sheet (MSDS) and container labels for detailed health and safety information.
- D. Maintain work area in a neat and orderly condition, removing empty containers, rags, and trash from the site daily.

1.7 WARRANTY

- A. A warranty up to 10 years in length is available for institutional, commercial, industrial, and high-rise/multi-family residential projects only. Applicator must be eligible

for, and make application to NEOGARD® upon completion of fluid-applied roof coating system. For availability of extended warranties, contact NEOGARD®.

- B. As a condition of the project's completion and acceptance, deliver to the Owner, a copy of the fully executed specified warranty from NEOGARD® following individual warranty guidelines.
- C. For Joint & Several (J&S) and Manufacturers Material and Labor (MM&L) warranties, a Pre-Installation Notification (P.I.N.) form must be completed by the applicator and signed by NEOGARD® prior to ordering of materials.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. NEOGARD® Division of JONES-BLAIR® Company, 2728 Empire Central, Dallas, TX 75235, Toll Free (800) 321-6588, Fax (214) 357-7532, www.neogard.com.

2.2 MATERIALS

- A. Fluid-Applied Roofing Materials:
 - 1. Liquid Flashing: 7419 or 7441 series polyurethane coating, black, gray, tan or white in color.
 - 2. Base Coat: 7419 polyurethane coating, black in color.
 - 3. Topcoat: 7441 series polyurethane coating, gray, tan or white in color. **Note: 7443 white meets ENERGY STAR® and LEED reflectance and emissivity performance requirements (for low-slope roofs) and is approved by the Cool Roof Rating Council (CRRC).**
 - 4. Sealant: 70991 or other polyurethane sealant approved by NEOGARD®.
- B. Typical performance requirements of cured fluid-applied roof coating materials used on this project are:

PERFORMANCE REQUIREMENTS OF CURED FILM			
PHYSICAL PROPERTIES	TEST METHOD	BASE COAT	TOPCOAT
Tensile Strength	ASTM D412	400 psi	2,500 psi
Elongation	ASTM D412	500%	450%
Permanent Set	ASTM D412	25%	25%
Tear Resistance	ASTM D1004	85 lb/in	230 lb/in
Water Resistance	ASTM D471	<4% @ 7 days	4% @ 7 days
MVT	ASTM E96	0.91 English @ 28mils	2.75 English @ 12 mils
Shore A	ASTM D2240	46 - 54	78 - 86
Peel Adhesion to Foam	ASTM D903	Greater than cohesive strength of foam	Greater than cohesive strength of foam
Weathering Resistance	ASTM D822	N/A	Slight Chalk
Thermal Shock	Alternate Heat/Cold	No loss of adhesion	No loss of adhesion

2.2 ACCESSORIES

- A. Fabric reinforcement and waterproofing coverings for expansion joints shall be compatible with specified fluid-applied roof coating system.
- B. Miscellaneous materials such as adhesives, metal primers, metal vents and drains shall be a composite part of the roof system and shall be compatible with the specified fluid-applied roof coating system.
- C. Granules (Optional): Granules shall be number 11 screen size, dust free, ceramic-coated roofing granule. Use only granules as approved by NEOGARD®. Color shall be off-white, or as otherwise selected by Owner.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect surfaces, which will receive the PERMATHANE FR fluid-applied roof coating system to make sure they are clean, smooth, sound, properly prepared, and free of moisture, dirt, debris, or other contaminants.
- B. Verify that polyurethane foam surface texture ranges from smooth orange peel to verge of popcorn and is acceptable to receive fluid-applied coating system. "Popcorn" surfaces are unacceptable and must be reworked by a foam applicator prior to coating.
- C. Verify that all roof penetrations, mechanical equipment, cants, edge metal, and other on-roof items are in place and secure.
- D. Verify that all critical areas around the immediate vicinity of the coating application area are suitably protected.
- E. Verify that roof deck has sufficient slope for water to drain and that all drains and drain lines are clean and in working order.
- F. Verify all roof drains are clean and in working order.
- G. Verify that all air conditioning and air intake vents are suitably protected or closed.

3.2 PREPARATION

- A. Protect all adjoining areas that are not to receive the fluid-applied roof coating system and provide a suitable work station to mix the coating materials.
- B. All polyurethane foam surfaces shall be free of moisture, frost, dust, debris, oils, tars, grease or other materials that will impair adhesion of the fluid-applied roof coating system.

3.3 APPLICATION

- A. Factors That Affect Minimum Dry Film Thickness: Thickness values of cured film can vary due to many factors including but not limited to surface finish/texture,

wind overspray loss, roller loss, container residue/spills, equipment characteristics, and thinning. In order to help ensure proper dry film thickness, use a wet mil gauge to measure thickness of coating during application. Depending on job conditions, additional coats may be required to achieve specified dry film thickness.

- B. Base Coat: The base coat shall be applied the same day as the polyurethane foam application when possible. Apply 7419 series base coat to yield an average thickness of 33 dry mils in strict accordance with procedures outlined by NEOGARD® (see wet/dry mil chart) and allow to cure.
- C. Topcoat: Apply 7441 series topcoat to yield an average thickness of 18 dry mils in strict accordance with procedures outlined by NEOGARD® (see wet/dry mil chart) and allow to cure.
- D. Coating Thickness Requirements: Total coating system thickness shall average 51 dry mils (DFT). Minimum dry film thickness (DFT) at any point on the roof shall not be less than 30 dry mils of which 10 dry mils must be topcoat.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Inspection by an independent 3rd party or coating manufacturer's representative may be required to verify the proper installation of the system. Any areas that do not meet the minimum standards for application as specified herein shall be corrected at the applicator's expense. Manufacturer's inspection or verification shall not

constitute acceptance of responsibility for any improper application of material.

3.5 CLEANING

- A. Surfaces not intended to receive the PERMATHANE FR fluid-applied coating system shall be protected during the application of the system. Should this protection not be effective, or not be provided, the respective surfaces shall be restored to their proper conditions by cleaning, repairing or replacing. All debris from completion of work shall be completely removed from the project site.

3.5 PROTECTION

- A. After completion of application, do not allow traffic on coated surfaces for a period of at least 48 hours at 75°F and 50% R.H., or until completely cured.

END OF SECTION

Wet/Dry Mil Chart

Theoretical Dry Film Thickness - Fluid-Applied Roof Coating Base and Topcoats						
Gallons/Square		0.5	0.75	1	1.5	2
Wet Mil		8	12	16	24	32
Product	Vol Solids	Dry Mil	Dry Mil	Dry Mil	Dry Mil	Dry Mil
7419	84%	6.7	10.1	13.4	20.2	26.9
7419HB	76%	6.1	9.1	12.2	18.2	24.3
7419-CA	87%	7.0	10.4	13.9	20.9	27.8
7441 Series	75%	6.0	9.0	12.0	18.0	24.0
For maximum performance, NEOGARD® recommends these products be applied at these rates.						
The above calculations are based on glass smooth surfaces and do not include waste factors such as wind overspray loss, surface finish texture, roller loss, container residue/spills, etc.						

The information, data, and suggestions herein are believed to be reliable, based on Manufacturer's knowledge and experience. However, Manufacturer does not guarantee the result to be obtained in the Buyer's process. With regard to those products described herein that are manufactured by Manufacturer, Manufacturer warrants that the standards and qualities of such products will not vary by more than 10% from the tested results set forth in the Product Data Sheets associated with such products. **MANUFACTURER HEREBY EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.** Buyer must make its own determination of the suitability of any product for its use, whether such product is used alone or in combination with other materials. **To the extent any of Manufacturer's products is proven to be defective, Buyer's sole remedy shall be limited to the replacement of such defective product, exclusive of any costs of labor. MANUFACTURER SHALL NOT BE LIABLE OR OBLIGATED FOR ANY LOSS OR CONSEQUENTIAL OR OTHER DAMAGE INCURRED DIRECTLY OR INDIRECTLY BY BUYER OR ANY OTHER PERSON OR ENTITY THAT ARISES IN ANY WAY IN RELATION TO ANY OF MANUFACTURER'S PRODUCTS.** Nothing contained herein shall be construed to constitute inducement or recommendation to practice any invention covered by any patent without authority of the owner of the patent. No Applicator is or should be viewed as an employee or agent of Manufacturer. PermathaneFRGS.indd

NEOGARD Div. of JONES-BLAIR

2728 Empire Central - Dallas, Texas 75235 - Phone (214) 353-1600 - Fax (214) 357-7532 - www.neogard.com