

HD-250 SYSTEM

250mil HYBRID POLYMER CEMENT FLUID APPLIED WATERPROOFING

**MATERIALS**

1. 2.5 Hot Dipped lbs/sq yd Galvanized Metal Lath
2. Corrosion-resistant staples
3. Pli-Dek Seam Paper
4. GU80-1 Base Coat Powder (gray)
5. GU80-1 Liquid Admixture
6. Fluid Applied Waterproofing Membrane (CR, HR, or PMA)
7. PD-2014 Reemay Fabric
8. Protection Course
9. Separation Sheet
10. PD Drain Board
11. Polyurethane Sealant
12. Closed Cell Backer Rod

TOOLS

1. Variable Speed Drill (capable of producing 1000 RPM's)
2. Wind-lock B-M1 mixing blade or equivalent
3. Extension Cord
4. Clean 5 Gallon Plastic Containers
5. Measuring Bucket (1 gal, 2 gal, etc.)
6. Hand Grinding Stone
7. Level
8. Pencil
9. Utility Knife
10. Scissors
11. Masking Tape
12. 4" x 22" Pool Trowel
13. Stainless Steel Trowel
14. Margin Trowel
15. Small Paint Brushes
16. Paint Roller (3/4" nap)
17. Extension Handle
18. Hopper Gun
19. Compressor (1-1/2 horsepower, electric or better)
20. Air Hose
21. Semi-stiff Broom
22. Dust Mask
23. Goggles
24. Rubber or Cloth Gloves
25. Metal Spiked Golf Shoes
26. Tin Snips
27. Hammer
28. Pneumatic Staple Gun
29. Hudson or Chapin Sprayer
30. Caulking Gun
31. Squeegee

I. PURPOSE**A. General**

1. This document is to establish uniform procedures for installing Pli-Dek Cold Fluid Applied Waterproofing Membrane – HD-250.

2. Consult with Pli-Dek Systems, Inc. if modifications to this Application Instruction are required to adjust to job-site conditions.

II. SUBSTRATE INSPECTION/PREPARATION**A. General**

1. Pli-Dek materials must be applied over sound dry substrates. **Contact Pli-Dek Systems, Inc. for installation approvals over OSB substrates.
2. All surfaces must be sloped a minimum of ¼" per foot (6.4mm/.3m).
3. Maximum deflection of a deck surface shall be less than L/360th of the span.

B. Plywood

1. Plywood shall be a minimum of 16mm, 5/8" (3/4" recommended) exterior grade, and have a maximum span between supports of 410mm (16") on center. All plywood shall be securely fastened to the supports with screws or ring shank nails spaced in accordance with APA guidelines and Building Code requirements.
2. Framing or blocking must support all plywood edges, except as per APA guidelines; blocking is not required when tongue and grooved plywood is utilized.
3. The plywood surface shall be clean, dry, and free of dirt, dust, oil, petroleum products, paint and any other contaminants that may impair adhesion.
4. All plywood seams shall be staggered and gapped 1/8" (3.2mm). All seams shall be covered with a maximum of 50mm (2") wide flashing paper tacked in place.
 - a. Note: If the plywood is butted tightly, the seams shall be saw cut to provide a 1/8" (3.2mm) gap between sheets, except tongue and grooved. Ensure that the tongue and groove section of the plywood is installed so as to allow for expansion
5. All adjacent edges of the plywood sheets shall not be more than 1/32" (0.78mm) out of plane (i.e. above or below adjacent sheet).
6. Plywood should be installed with a ¼" (6.4mm/.3m) per linear foot slope to drain. Decks with parapet enclosures must be sloped to a drain or scupper.
7. Any variation from the framing specifications mentioned in this section, require written approval



and system recommendations from Pli-Dek Systems, Inc.

C. Flashing

1. Flashing shall be minimum 26 gauge, galvanized, bonderized sheet metal. NOTE: All metal flashing must be wiped clean with solvent to remove oils from the surface.
2. Openings shall be flashed before installation of doors and sliders. NOTE: If doors or sliders have been installed without proper flashing, we recommend they be removed and proper flashing installed.
3. All penetrations, including posts, or other objects that protrude through the deck shall be installed and flashed prior to applying the Pli-Dek materials.
4. All decks with a parapet surround require a scupper not less than 76mm (3") wide, and 100mm (4") high, spaced a maximum of 3.65m (12 ft) apart. Any scuppers or overflows shall be installed and flashed prior to applying Pli-Dek materials.
5. All deck drains must be flanged, and properly installed to a proper depth.
 - a. NOTE: Brass drains with a sheet metal flange are recommended.
6. Gravel stops shall have a maximum ground dimension of 3/16".
7. All flashing must be attached to the substrate with galvanized ring shank nails (minimum 25mm (1") length.
8. All flashing shall overlap adjacent pieces, a minimum of 100mm (4"), and seams caulked with an elastomeric caulking compound.
9. Deck/Wall interfaces must be flashed.
10. All stairs must be flashed.
11. When copper flashing/drains are used, ensure that all galvanized metal; such as, nails, staples, lath, drains, etc. does not come into contact with copper (do not allow any dissimilar metals to come in contact with each other). The contact of the two dissimilar metals will create rust and corrosion (electrolysis). **Contact Pli-Dek Systems, Inc. for additional details and recommendations.
12. See HD-250 Details for further written instructions. Contact Pli-Dek Systems, Inc for written approval on flashing details that vary or are not included in Details.

D. Sloping

1. It's the General Contractor's, his representative's, or individual owner's responsibility to assure adequate drainage.

2. Pli-Dek Systems, Inc. requires a slope of 1/4" per linear foot.
3. If auxiliary slope is required, slope mix may be applied. (See Sloping Application Instructions SM-140 for complete details and limitations). When this type of sloping will not accommodate the problem, then drains become a necessity. Pli-Dek Systems, Inc. and/or trained applicator will not be held responsible for ponding water or the effects resulting from the installation of slope material.
4. The alternatives available for proper drainage are the responsibility of the General Contractor. Contact Pli-Dek Systems, Inc. for complete details.
5. Pli-Dek Systems, Inc and/or trained applicator will not be held responsible for ponding water or the effects resulting from sloping installation.

E. Retrofit/Tear-Off Application

1. Asphalt, coal tar pitch or other existing membrane shall be removed. CONTACT Pli-Dek Systems, Inc to review existing conditions for site specific requirements.

III. MIXING INSTRUCTIONS

1. All Pli-Dek products should be stored in a cool dry place at the jobsite to avoid flash drying in the bucket.
2. Pour 3.8L (1 gallon) of GU80-1 Liquid Admixture into a clean 19L (5 gallon) plastic container.
3. Add one 21kg (46lb.) bag of GU80-1 Base Coat (gray), and mix thoroughly for 3 to 4 minutes. Use a Wind-lock B-M1 mixing blade, or equivalent, powered by a 13mm (1/2") variable speed drill, capable of producing 1000 RPMs. TIP: In areas subject to extremely dry and/or hot climates, it may be necessary to add water (up to .47L [1 pint] per mix). To avoid flash drying, it may be necessary to chill the GU80-1 Liquid Admixture before mixing. A proper safety ventilation mask should be worn when working with all Pli-Dek products.

IV. BASE COAT APPLICATION

1. Mix the GU80-1 Base Coat as described in Section III.
2. Pour the GU80-1 Base Coat over the metal lath and trowel, filling all voids at a rate of 25-30 square feet per mix. The metal lath must be completely covered in the GU80-1 Base Coat.
3. Allow the GU80-1 Base Coat to dry for a minimum of 6 hours prior to applying the next application. If the base coat does not cover the lath completely, a screed coat is required.



V. COLD RUBBER (CR) MEMBRANE APPLICATION

A. Detailing

1. Shrinkage cracks shall be treated with a pre-treat coat of Pli-Dek Waterproofing Membrane – CR (30 mil).
2. Moving construction or structural cracks greater than 1/8" (1.5mm) shall be routed out and sealant (polyurethane/ASTM C 920) installed prior to installing a pre-treat coat of Pli-Dek Waterproofing Membrane.
3. At all horizontal / vertical junctures and projections a sealant fillet (cant) of 3/4" X 3/4" (polyurethane/ASTM C 920) shall be installed.
4. At expansion joints, contact Pli-Dek Systems, Inc. for specific job-site condition recommendations.

B. CR Membrane Application

1. Standard Application:
 - a. Horizontal or Vertical Surfaces.
 - b. Pli-Dek Waterproofing Membrane – CR shall be installed by roller, trowel, or smooth squeegee application at a rate of 60 to 120 mil (25 square foot per gallon) wet film thickness (WFT).
 - c. Recommended application of filter fabric for use as a separation sheet. Contact Pli-Dek Systems, Inc. for job site requirements.
2. High Build Application:
 - a. Horizontal Surfaces.
 - b. Application of the first coat of Pli-Dek Waterproofing Membrane – CR shall be installed by squeegee, or trowel application at a rate of 90 mil (18 square feet per gallon) wet film thickness (WFT).
 - c. Application of the PD-2014 Reemay Fabric into the wet CR shall have overlaps of 2" minimum and end laps of 4". Stagger all end overlaps. Allow the first coat and PD-2014 Reemay Fabric to set a minimum of 24 hours prior to the installation of additional coats of CR.
 - d. Application of the second coat of Pli-Dek Waterproofing Membrane – CR shall be installed by smooth squeegee application at a rate of 90 mil (18 square feet per gallon) for a total thickness of 120 mil minimum wet film thickness (WFT).
 - e. Recommended application of Filter Fabric for use as a separation sheet. Contact Pli-Dek Systems, Inc. for job site requirements.

C. Limitations

1. Application Temperatures: 40°F (4°C).

2. Cure time are dependent on environmental conditions: substrate temperature, air temperature, humidity, wind speed, etc.

D. Flood Testing

1. The Pli-Dek Waterproofing Membrane – CR shall be properly cured prior to water testing.
2. Flood Testing is recommended per ASTM D 5957 with 2" of water for a minimum of 24 hours.
3. As an alternative, Electronic Field Vector Mapping may be used.

E. Overburden Installation

1. Installation of poured-in-place concrete or paver overburden installation are designed and installed by others.

VI. POLYMER MODIFIED ASPHALT (PMA) MEMBRANE APPLICATION

A. Detailing

1. Sloping of the structural deck surface at 1/4" per foot (6.4mm/.3m) or per local Building Code requirements.
2. Shrinkage cracks shall be treated with a pre-treat coat of Pli-Dek Waterproofing Membrane – PMA (30 mil).
3. Moving construction or structural cracks greater than 1/8" (1.5mm) shall be routed out and sealant (polyurethane/ASTM C 920) installed prior to installing a pre-treat coat of Pli-Dek Waterproofing Membrane.
4. At all horizontal / vertical junctures and projections a sealant fillet (cant) of 3/4" X 3/4" (polyurethane/ASTM C 920) shall be installed.
5. At expansion joints, contact Pli-Dek Systems, Inc. for specific job-site condition recommendations.
6. All pre-treat coat must cure a minimum of 12 hours prior to the application of the membrane.
7. All surfaces of pre-treat or sealant preparations shall be wiped clean with Xylene prior to the application of the field membrane.

B. Membrane Application

1. Horizontal or Vertical Surfaces.
2. Pli-Dek Waterproofing Membrane – PMA shall be installed by squeegee application at a rate of 60 mil (25 square foot per gallon) wet film thickness (WFT).

C. High Build Application

1. Horizontal Surfaces
2. Application of the first coat of Pli-Dek Waterproofing Membrane – PMA shall be installed by squeegee, or



roller application at a rate of 60 mil (25 square feet per gallon) wet film thickness (WFT).

3. Application of the PD-2014 Reemay Fabric into the wet PMA shall have overlaps of 2" minimum and end laps of 4". Stagger all end overlaps. Allow the first coat and Reemay to set a minimum of 1 hour prior to the installation of additional coats of PMA.
4. Application of the second coat of Pli-Dek Waterproofing Membrane – PMA shall be installed by squeegee or roller application at a rate of 60 mil (25 square feet per gallon) for a total thickness of 120 mil minimum wet film thickness (WFT).

D. Flood Testing

1. The Pli-Dek Waterproofing Membrane – PMA shall be properly cured prior to water testing.
2. Flood Testing is recommended per ASTM D 5957 with 2" of water for a minimum of 24 hours.
3. As an alternative, Electronic Field Vector Mapping may be used.

E. Limitations

1. Application Temperatures: 40°F (4°C).
2. Cure time are dependent on environmental conditions: substrate temperature, air temperature, humidity, wind speed, etc.

VII. HOT RUBBER (HR) MEMBRANE APPLICATION

A. Detailing

1. Sloping of the structural deck surface at ¼" per foot (6.4mm/.3m) or per local Building Code requirements.
2. All surfaces to receive HR require primer to insure adhesion to the substrate. Asphalt Primer shall be installed at a rate of 200 square feet per gallon by roller or sprayer.
3. Shrinkage cracks shall be treated with a pre-treat coat of Pli-Dek Waterproofing Membrane – HR (60 mil).
4. Moving construction or structural cracks greater than 1/8" (1.5mm) shall be routed out and sealant (polyurethane/ASTM C 920) installed prior to installing a pre-treat coat of Pli-Dek Waterproofing Membrane.
5. At all horizontal / vertical junctures and projections a (cant) of 3"x 3" with HR at a rate of 90 mil and PD-2014 Reemay Fabric embedded into the HR.
 - a. Alternate method at all horizontal/vertical junctures and projections a (cant) of 3"x3" with HR at a rate of 90 mil and PD Neoprene Flashing embedded into the HR.
6. At expansion joints, contact Pli-Dek Systems, Inc. for specific job-site condition recommendations.

7. All metal surfaces of pre-treat or sealant preparations shall be wiped clean with Xylene prior to the application of the field membrane.

B. HR Membrane Application

1. Primer
 - a. All surfaces to receive HR require primer to insure adhesion to the substrate. Asphalt Primer shall be installed at a rate of 200SF/gallon (7.4 – 14.7 m²/L) depending on surface texture.
2. Standard Application
 - a. Horizontal Surfaces.
 - b. Pli-Dek Waterproofing Membrane – HR shall be installed by squeegee application at a rate of 1.4 lbs/215 mils wet film thickness (WFT).
 - c. PD Neoprene Flashing – shall be installed at all turn ups, penetrations and drains unless otherwise specified by Pli Dek, Inc. Apply 90 mils of HR to areas which PD Neoprene Flashing will be applied. Embed PD Neoprene Flashing. Install the specified system on top of the horizontal leg of the PD Neoprene Flashing.
 - d. Application of the first coat of Pli-Dek Waterproofing Membrane – HR shall be installed by squeegee application at a rate of 90 mil wet film thickness (WFT).
 - e. Application of PD-2014 Reemay Fabric into the wet HR shall have overlaps of 2" minimum and end laps of 4". Stagger all end overlaps. Immediately install the second coat of HR over the Reemay.
 - f. Application of the second coat of Pli-Dek Waterproofing Membrane – HR shall be installed by squeegee application at a rate of 125 mil wet film thickness (WFT) for a total thickness of 215 mil minimum wet film thickness (WFT).

C. Separation Sheet

1. Separation Sheet shall be rolled onto hot applied rubberized asphalt membrane while still warm and tacky.
2. Lap protection course 2" on side laps and 6" on end laps.
3. Starting at the low points or drains lay the protection course membrane in full continuous sheets in a shingle pattern. Stagger all end laps.

D. Limitations

1. Application Temperatures: 40°F (4°C).
2. Cure times are dependent on environmental conditions, substrate temperature, air temperature, humidity, wind speed, etc.



E. Flood Testing

1. The Pli-Dek Waterproofing Membrane – HR shall be properly cured prior to water testing.
2. Flood Testing is recommended per ASTM D 5957 with 2" of water for a minimum of 24 hours.
3. As an alternative, Electronic Field Vector Mapping may be used.

VIII. Protection Course/Drainage Composite

A. Protection Course

1. Specified protection course is placed over properly cured Pli-Dek Waterproofing Membrane – CR, HR, or PMA (as specified).
 - a. Layout specified protection course over the cured Pli-Dek Waterproofing Membrane – CR, HR, or PMA with a minimum of 1½" side overlaps and 3" end laps.
 - b. Cut and fit the specified protection course around penetrations with a maximum of 1" variance from the penetration.

B. Drain Board

1. PD Drain Board as specified may be placed over the specified protection board and/or properly cured Pli-Dek Waterproofing Membrane – CR, HR, or PMA.
 - a. Roll the specified PD Drain Board over the protection board (if specified) or over the cured HR.

- b. Butt the side and roll ends together and overlap the filter fabric on to the adjacent roll to provide a continuous mat for separation of soils or overburden.
- c. Cut and fit the PD Drain Board around penetrations with a maximum of 1" variance from the penetration.
- d. On horizontal application it is recommended tape is applied to seams to prevent debris from getting into the drainage system.

Disclaimer

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* The Trained Applicator indicates certain employees of the company have been instructed in the proper application of Pli-Dek products and have received copies of the Pli-Dek Application Instructions and Specifications. The Trained Contractor Program is not an apprenticeship. Each trained contractor is an independent company and bears responsibility for its own workmanship. Pli-Dek Systems Inc. assumes no liability for the workmanship of a trained contractor.

