CON-DEK SYSTEM
WATERPROOF DECK COATING-CONCRETE SUBSTRATES

PLI DEK

PART I. GENERAL

1.01 Scope

A. Provide all labor, materials and equipment necessary to apply the Con-Dek System over horizontal concrete surfaces. This specification includes application over horizontal concrete, which requires waterproofing.

1.02 Related Sections

A. Concrete 03300
B. Sealants 07900

1.03 Description

A. Con-Dek is a proprietary blend of high performance acrylic formulations. The Con-Dek System is a waterproof barrier with a decorative coating that offers a variety of colors and textures.

1.04 Submittals

A. Samples:
   1. The applicator shall make and submit a sample of the proposed finish to the architect and/or owner for approval.

B. Manufacturer's Information:
   1. Submit manufacturer's product information and specifications.

1.05 Quality Assurance

A. Qualifications:
   1. Manufacturer shall be Pli-Dek Systems, Inc.
   2. The applicator shall be listed with Pli-Dek Systems, Inc. as a trained* installer.

B. Substrates:
   1. Con-Dek should be applied over the following horizontal concrete substrates when prepared in accordance with this specification and Con-Dek Application Instruction CD-120.
      A. Concrete on Grade (No vehicle traffic)
      B. Concrete Decks
      C. Dek C-Ment
      D. Rehabilitation Projects (Contact Pli-Dek Systems, Inc. for details.)
   2. The applicator*/contractor shall verify that the proposed substrate has been properly prepared in accordance with the Con-Dek Application Instructions, CD-120, before application of the Con-Dek materials.

C. Certifications:
   1. The Con-Dek System is recognized by the following Model Building Code organizations.
      A. ICC- ES
      B. Florida Product Approval
      C. City of Los Angeles Research Report

D. Performance Requirements:
   1. Water Vapor Transmission (ASTM E 96) *Con-Dek should not be applied on surfaces experiencing moisture vapor transmission.
   2. Bond Strength (ASTM C 297)
   3. Accelerated Aging (ASTM D756)
   4. Abrasion Resistance (ASTM D 968)
   5. Water Absorption (ASTM D570)
   6. Impact Resistance (ASTM D3746
   7. Freeze-thaw (ASTM C67)
   8. Accelerated Weathering (ASTM G 23)
   9. Surface Burning (ASTM E 84)
   10. Chemical Resistance (ASTM D2299)
   11. Spread of Flame (ASTM E108)
   12. Static Coefficient of Friction (ASTM C 1028-96)

1.06 Delivery, Storage and Handling

A. All materials shall be delivered to the job site in the original, unopened packages with labels intact. Upon arrival, materials shall be inspected for physical damage or freezing. Questionable materials shall not be used.

B. Minimum storage temperature shall be 4°C (40°F). Maximum storage temperature shall be 43°C (110°F). All materials shall be stored in a dry location, out of direct sunlight and protected from weather and other damage in accordance with material data safety sheets.

1.07 Job Conditions

A. Existing conditions:
   1. The applicator shall have access to electrical power, clean potable water and clean work area at the location where the Pli-Dek materials are to be applied.
   2. Other working trades need to be made aware to keep off those areas being covered by Pli-Dek materials during the application and curing process.

3. All required inspections must be made prior to the installations of the Pli-Dek materials.

B. Environmental Conditions:
   1. The ambient air and surface temperature shall be a minimum of 10°C (50°F) and a maximum of 43°C (110°F) and shall remain so for at least 24 hours.
   2. For additional application requirements in Inclement Weather areas, refer to Technical Bulletin TB-110.

C. Protection:
   1. Adjacent areas and materials shall be protected from damage, drops and spills.
   2. The Pli-Dek materials shall be protected by permanent or temporary means from weather and other damage, prior to, during, and immediately after application. Care must be taken to prevent condensation and/or heat buildup when using a tarp or plastic as protection.

D. Sequencing and Scheduling:
   1. Application shall be coordinated with other construction trades.
   2. Sufficient labor and equipment shall be employed to ensure a continuous operation.

1.08 Warranty

A. Contact Pli-Dek Systems, Inc. for complete details.

1.09 Design Responsibility

A. The designer selected by the purchaser shall be responsible for all decisions pertaining to design, detail structural capability, attachment details, shop drawings, placement/detailing of expansion joints, etc. Pli-Dek has prepared guidelines in the form of specifications, details, application instructions, and product sheets to facilitate the design process only. Pli-Dek is not liable for any errors or omissions in design or for any changes, which purchasers, specifiers, designers, or their appointed representatives may make to Pli-Dek's published comments.

1.10 Maintenance

A. Sealants, abuse, and flashing should be inspected on a regular basis and repairs made as necessary.
B. Contact Pli-Dek Systems, Inc. for maintenance and warranty requirements.

PART II. PRODUCTS

2.01 General

A. Pli-Dek Systems, Inc. or its authorized distributors shall supply all products. Substitutions or additions of other materials will void the warranty.

2.02 Components

A. GU80-1 Top Coat Mix: A Portland cement and silicon dioxide composition that is to be combined with Pli-Dek Liquid Admixture GU80-1.
B. GU80-1 Liquid Admixture: An acrylic polymer emulsion.
C. GS88-1 Pigmented Sealer: A pigmented water based acrylic surface sealer.
D. Fiberglass Mat: Chopped strand .75 oz. woven mat.
E. PD Resin Base Coat: A high build elastomeric acrylic resin.
F. GS13 or PD Clear Sealer: Water-based, clear sealer (optional).

2.03.1 Materials

A. Water: Shall be clean and potable.
B. Caulking: Urethane based. Contact Pli-Dek for recommendations.
C. Flashing: 26 gauge bonderized, galvanized sheet metal. For Inclement Weather areas, bonderized flashing is not recommended (refer to Technical Bulletin TB-110 Inclement Weather).

2.04 Equipment

A. Mixing shall be done with a clean Wind-lock B-M1 mixing blade or equivalent powered by a 13-mm (1/2") variable speed drill capable of producing 1000 RPM.
B. Refer to the Con-Dek ICC ESR-2097 Application Instructions, CD-120, for a complete list of recommended tools.

PART III- EXECUTION

3.01 Inspection

A. Examination of Substrate:
   1. Ensure that the substrate is of a type listed in Section 1.05.B.
   2. Concrete decks shall be sloped for positive drainage. A minimum of 3.2 mm/. 3m (1/8" – 1/4" per linear foot) is recommended. Ensure compliance with local building codes.
      a. Pli-Dek requires galvanized, stainless steel, or copper deck drain as per Drain Detail, CD-11, over light-weight concrete installations. Over structural concrete, cast-iron drains are recommended. Please contact Pli-Dek for help in acquiring these drains. Do not use plastic or shower drains. If copper drains are used, please contact Pli-Dek for instructions on dissimilar metals.

B. Flashing:
   1. Flashing shall be minimum 26 gauge galvanized, bonderized sheet metal. For Inclement Weather areas, bonderized flashing is not recommended (refer to Technical Bulletin TB-110 Inclement Weather).
   2. Dissimilar metals; such as Copper and galvanized, should NEVER come in direct contact with each other
   3. Proper flashing must be installed at all doors, walls, fascia edges, posts, penetrations, columns, etc. See Pli-Dek Details for further instructions (Pli-Dek Details). Contact Pli-Dek for written approval on flashing details that vary or are not included in Pli-Dek Details.

4. Flashing must be installed to accommodate all exterior wall coating applications from coming in contact with the deck surface. Exterior siding, stucco, etc. must be held off the deck a minimum of 50 mm (2").
5. All flashing splices must be overlapped a minimum of 100 mm (4") and caulked between any two pieces of flashing with a Vulkem 931 Urethane sealant or equivalent. All flashing overlaps shall be installed as to not "buck" water.
6. Flashing at walls must be installed behind the building paper (or equivalent) on all areas that intersect the deck surface.

C. Planter Transitions:
1. Contact Pli-Dek for written instructions.

3.02 Substrate Preparation

A. Concrete on Grade and Concrete Decks:
1. Concrete shall have cured a minimum of 28 days before application of the Con-Dek coating.
2. All undermined, cracked, damaged, etc. concrete must be repaired or replaced before applying the Pli-Dek coatings over the concrete surfaces.
3. All concrete surfaces must be cleaned to remove all grease, oil, moisture, dust, paint, sealers, efflorescence etc. that may impair the adhesion of the Pli-Dek materials. All concrete areas are to be free of moisture, wax, oil, silicone, or solvent curing compounds. Refer to the Con-Dek ICC ESR-2097 Application Instructions, CD-120, for complete information.

B. Dek C-Ment:
1. The DEK C-MENT, manufactured by MaxxExterior, shall have moisture content less than 5% and installed as per published MaxxExterior guidelines.
2. All undermined, cracked, damaged, etc. DEK C-MENT must be repaired or replaced before applying the Pli-Dek coatings over the concrete surfaces.
3. The surface must be cleaned as to remove all grease, oil, moisture, dust, paint, sealers, efflorescence etc. that may impair the adhesion of the Pli-Dek materials. All concrete areas are to be free of moisture, wax, oil, silicone, or solvent curing compounds. Refer to the Con-Dek ICC ESR-2097 Application Instructions, CD-120, for complete information.
4. Install a primer and screed coat as per Con-Dek Application Instructions, CD-120.
5. Refer to MaxxExterior for complete sound and fire ratings.

C. Recommended Field Verification Testing by Applicator:
1. TARMEX Moisture Content Verification
2. Plastic Sheet Test
3. If Moisture Content exceeds 5% or presence of moisture, contact Pli-Dek Inc. for recommendations.

D. Moisture & Vapor Transmission per ASTM Testing by Owner (**Refer to Technical Bulletin TB-111 Concrete Moisture & Vapor Drive Testing):**
1. TARMEX Moisture Content Test per ASTM F2170
   a. Confirm moisture content <5%
2. Plastic Sheet Test per ASTM D4263 (visual inspection)
   a. Confirm the absence of moisture.
3. If Moisture Content exceeds 5% or presence of moisture, perform Calcium Chloride per ASTM F1869 and report results to Pli-Dek Inc. for recommendations.
4. If owner has not performed the test detailed above, document and provide notice to the owner of absence.

3.03 Application

A. General:
1. All concrete surfaces shall be ground free of any contaminants, primed with GU80-1 Liquid Admixture, and then covered with .75 oz fiberglass mat and coated with the PD Resin Base Coat. Refer to the Con-Dek Application Instructions, CD-120, for complete information.

B. Primer Coat:
1. Pli-Dek recommends that substrates meets or exceeds CSP-2 Rating prior to application to remove contaminates. If you are confident that contaminates are not present, you can proceed with a primer coat. Primer Coat: 1 gallon of GU80 Liquid Admixture to 4 gallons of water.

C. Fiberglass and PD Resin Coat:
1. All concrete surfaces shall be covered with the .75 oz fiberglass Mat and coated the PD Resin Base Coat, refer to Con-Dek Application Instructions, CD-120, for complete information.

D. PD Resin Second Coat:
1. Apply a second coat of PD Resin Base Coat as described in Con-Dek Application Instructions, CD-120. Allow it to dry a minimum of 2 to 6 hours (additional time may be necessary under the adverse drying conditions).

E. Screed Coat (Optional):
1. Mix the GU80-1 Liquid Admixture with GU80-1 Top Coat until a uniform consistency is achieved. Refer to Con-Dek Application Instructions, CD-120 for complete instructions.
2. Apply a Screed coat over the previously applied GU80-1 Base Coat. Allow it to dry completely, for approximately 2 (two) to 6 (six) hours, depending on weather conditions.

F. Con-Dek Finish Coats: (See Con-Dek Application Instructions, CD-120, for installation of finish options.)
1. Knockdown Texture Finish
2. Polymer Sand Finish
3. Underlayment System
4. Custom Finish

3.04 Field Quality Control

1. The applicator shall be responsible for the proper application of the Con-Dek materials.
2. Pli-Dek Systems, Inc. assumes no responsibility for on-site inspections, application, or workmanship.

3.05 Clean Up

1. The applicator in accordance with contract provisions shall remove all excess Con-Dek materials from the job site.
2. All surrounding areas, where the Con-Dek materials have been applied, shall be left free of debris and foreign substances resulting from the contractor's work.

3.06 Slip and Fall Precaution

A. OSHA, American Disabilities Act (ADA), and The Federal Housing Act (FHA) have now set enforceable standards for slip-resistance on pedestrian surfaces. Pli-Dek Systems, Inc. recommends the use of angular slip-resistant aggregate in all coatings or flooring systems that may be exposed to wet, oily/greasy, or otherwise potentially slippery conditions. It is the end users responsibility to provide a flooring system that meets current safety standards. Pli-Dek Systems, Inc or its sales agents will not be responsible for injury incurred in a slip and fall accident. Please consult local building codes for the current coefficient of friction requirement**.**

Disclaimer

Information contained in this specification conforms to standard detail and product recommendations for the installation of the Pli-Dek products as of the date of publication of this document and is presented in good faith. Pli-Dek Systems, Inc. assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. Pli-Dek Systems, Inc. or the Pli-Dek Applicator does not warrant cracks in the Pli-Dek Finish material resulting from structural movement and/or recurring of existing cracks in the substrate. To insure that you are using the latest, most complete information, contact Pli-Dek Systems, Inc., at:

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* The Trained Applicator has certain employees of the company that 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