PART 1 GENERAL

1.1 SECTION INCLUDES
   A. Waterproof Deck Coating and accessories.

1.2 RELATED SECTIONS
   A. Section 07 90 00 - Sealants.

1.3 REFERENCES
   A. ASTM C 297 - Bond Strength.
   C. ASTM D 1242 – Resistance of Plastic Materials to Abrasion
   D. ASTM E 96 – Water Vapor Transmission of Materials
   E. ASTM E 108 – Fire Tests of Roof Coverings
   F. ASTM E 108 – Spread of Flame
   G. ASTM E 108 – Intermittent Flame
   H. ASTM G 23 - Weatherability
   I. ASTM D2707L – Tensile Strength -- Longitude
   J. ASTM D2707T – Tensile Strength -- Transverse
   K. ASTM A756 – Freeze-Thaw cycle for deleterious effects
   L. ASTM A756 – Freeze-Thaw cycle for weight loss
   M. ASTM C150-72 – Compressive Strength
   N. ASTM D2299 – Chemical Resistance
   O. ASTM C1028-96 – Static coefficient of Friction
   P. ASTM E119 – One-Hour System
   Q. ASTM Pending -- Impact
   R. ASTM Pending – Concentrated Load
   S. ASTM Pending – Percolation

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

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Installer's approval by Manufacturer: Submit document stating manufacturer's acceptance of Installer as Certified Applicator for the specified materials.

D. Warranty: Submit a sample warranty identifying the terms and conditions stated in Warranty article.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5-year experience manufacturing similar products.

B. Manufacturer Certifications: Manufacturer recognized by the following Model Building Code organizations:
   1. ICC-ES
   2. Florida Product Approval
   3. City of Los Angeles Research Report

C. Applicator Qualifications: Experienced in applying the same materials and shall be specifically certified in writing by the system manufacturer.

D. Sample: Provide a sample for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.
   2. Do not proceed with remaining work until workmanship is approved by Architect.
   3. Rework mock-up area as required to produce acceptable work.

1.7 PRE-INSTALLATION MEETINGS

A. Pre-Installation Conference: Prior to beginning work, convene a conference to review conditions, installation procedures, schedules and coordination with other work.

B. Convene minimum two weeks prior to starting work of this section.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in original, factory-sealed, unopened containers bearing manufacturer’s name and label intact and legible with following information.
   1. Name of material.
   2. Manufacturer’s stock number and date of manufacture.

B. Recommended storage and application temperature between 40 degrees F (4 degrees C) and 110 degrees F (43 degrees C). Store materials in a dry location, out of direct sunlight and protected from weather and other damage in accordance with safety data sheet.

C. Handling: Handle materials to avoid damage.

1.9 PROJECT 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 waterproofing materials are to be applied.
2. Other working trades need to be made aware to keep off those areas being covered by waterproofing 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 50 degrees F (10 degrees C) and 110 degrees F (43 degrees C) and shall remain so for at least 24 hours.
   2. For application instructions in areas classified as Inclement Weather areas, refer to Waterproof Deck Coating – Pli-Dek System Application Instructions PD-120.

C. Protection:
   1. Protect adjacent areas and materials shall be protected from damage, drops and spills. Protect plants, vegetation and animals which might be affected by waterproofing operations.
   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.
   3. The materials shall be protected from weather and other trades which may damage the integrity of the product.

D. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

1.10 SEQUENCING
   A. Application shall be coordinated with other construction trades.
   B. Sufficient labor and equipment shall be employed to ensure a continuous operation.

1.11 WARRANTY
   A. Warranty: Provide manufacturer’s standard limited material warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS
   A. Acceptable Manufacturer: Pli-Dek Systems, Inc., which is located at: 41610 Date Street, Suite 104, Murrieta, CA 92562; Toll Free Tel: 800-364-0287 Tel: 951-834-9550; Fax: 951-834-9551; Email: request info (info@plidek.com); Web: www.plidek.com

   B. Substitutions: Not permitted.

   C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 WATERPROOFING MEMBRANE
   A. Waterproofing membrane shall be Con-Dek System comprised of the following components:
      1. GU80-1 Gray Base Mix: A Portland cement and silicon dioxide composition that is to be mixed with GU80-1 Liquid Admixture.
      2. GU80-1 Top Coat Mix: Proprietary blend of various sands and cement, when combined with GU80-1 Liquid Admixture, is a polymer modified cement coating.
      3. GU80-1 Custom Top Coat Mix: Proprietary blend of various sands and cement, when combined with GU80-1 Liquid Admixture, is a polymer modified cement coating.
4. GU80-1 Liquid Admixture: Water based acrylic emulsion.
5. GS88-1 Pigmented Sealer: Blend of high solid acrylic polymers that provides and elastomeric water repellent coating.
6. Fiberglass Mat: Medium-fine fiber chopped strand mat composed of multi-directional chopped glass filament bundles.
7. PD Resin: Elastomeric acrylic material designed to absorb into the fiberglass mat and adhere to the concrete substrate or Pli-Dek GU80 Base Coat.
8. GS13: Durable and versatile water based sealer and concrete coating (optional).
9. PD Clear: Solvent based, clear, single component VOC compliant sealer and glaze (optional).

2.3 ACCESSORY PRODUCTS
A. Galvanized Metal Lath: 2.5 lbs/sq yd G60, an expanded metal lath, that is hot dipped not electro-galvanized.
B. Sealants: ASTM C-920 Polyurethane Joint Sealant.
C. Flashing: 26 gauge bonderized, galvanized sheet metal.
D. PD Flash Coat and Flash Coat Seam Tape or self-adhering drywall mesh tape.

PART 3 EXECUTION
3.1 EXAMINATION
A. Before any waterproofing work is started, the Pli-Dek certified applicator shall thoroughly examine all surfaces for any deficiencies. Where deficiencies exist, the Architect, Owner, or Contractor shall be notified in writing and corrections made.
B. Condition of Plywood Surfaces:
   1. Ensure that the substrate is of sound and dry exposure 1 sheathing.
   2. Refer to ICC-ES Legacy Report for framing requirements.
   3. All surfaces shall be sloped for positive drainage. A slope of 6.4 mm/.3m (1/4” slope per square foot is highly recommended, not required.)
      a. Pli-Dek requires a galvanized or stainless steel deck drain as per Drain Detail, PD-24, on all plywood installations. Please contact Pli-Dek for help in acquiring these drains. Do not use plastic or shower drains, use of these types of drains will void warranty. If copper drains are used, please contact Pli-Dek for instructions on dissimilar metals.
   4. All plywood seams shall be staggered and a 3.2 mm (1/8”) space between all sheets shall exist.
   5. Framing or blocking must support all plywood edges, except as per APA guidelines, blocking is not required when tongue and groove plywood is used. Joists to be spaced 16” on center. For alternate assemblies contact Pli-Dek Systems, Inc. for written approval.
   6. Maximum deflection of the deck shall not exceed L/360th of the span.
   7. Minimum thickness of plywood shall be 16 mm (5/8”). 3/4” thick exposure 1 sheathing recommended.
   8. All adjacent edges of the plywood sheets shall not be more than 0.78 mm (1/32”) out of plane (i.e.: above or below each other).
   9. Flashing shall be minimum 26 gauge galvanized bonderized sheet metal, (contact Pli-Dek for Alternatives).
   10. Proper flashing must be installed at all doors, walls, fascia edges, posts, penetrations, columns, etc.
   11. 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 2”.
   12. All flashing splices must be overlapped a minimum of 4” and caulked between any two pieces of flashing with ASTM C-920 polyurethane joint sealant or equivalent.
13. All vertical flashing shall be coated with ¾ oz. Fiberglass and PD Resin or PD Flash Coat and Flash Coat Seam Tape or self-adhering drywall mesh tape, GU80 Top Coat, and GS88 Pigmented Sealer at the time of applying each product.
14. Flashing at walls must be installed behind the building paper (or equivalent) on all areas that intersect the deck surface.
15. All door pans, threshold flashing, and deck to wall flashings shall be coated with ¾ oz. Fiberglass and PD Resin or PD Flash Coat and Flash Coat Seam Tape or self-adhering drywall mesh tape.

3.2 SURFACE PREPARATION
A. All seams in plywood shall be gapped 3.2 mm (1/8”), and covered with a maximum of 50 mm (2”) wide Pli-Dek approved flashing paper and tacked in place.
B. Plywood shall be free of dust, moisture and/or other debris or residue that would affect adhesion.
C. Delaminated plywood shall be replaced with sound plywood.
D. Fascia boards shall be installed to be level with the plywood substrate.

3.3 APPLICATION
A. Refer to Pli-Dek Application Instructions, PD-120, for complete information.
B. Plywood Deck Preparation:
   1. Lay out 2.5 lbs/sq yd G60 Hot Dipped Galvanized Metal Lath in a staggered pattern over the entire plywood surface overlapping the metal flashing, to the edge of the deck surface.
   2. Overlap all edges of metal lath, a minimum of 13mm (3/4”).
   3. Offset metal lath edges a minimum of 150mm (6”) from plywood seams. (See DECK PLAN in the Pli-Dek Detail Appendix.)
   4. Secure metal lath to plywood with a minimum 22mm (7/8”) crown by a minimum 16mm (5/8”) long corrosion resistant staples spaced approximately 1½” on center around the perimeter and on overlapped lath seams, and 75mm (3”) in the field (approximately 12 staples per square foot).
   5. Additional staples spaced every 1½” on center are required where the metal lath overlaps the seam paper.
C. Base Coat:
   1. Mix the GU80-1 Liquid Admixture with GU80-1 Base Coat. Refer to Pli-Dek Application Instructions, PD-120 for complete instructions.
   2. Trowel Base Coat emulsion into the galvanized expanded metal lath completely covering the metal lath. Allow it to dry completely, for approximately 2 to 6 hours, depending on weather conditions.
D. Screed Coat Application
   1. Screed coat may not be necessary in all applications. Contact Pli-Dek Systems, Inc. for application details and recommendations.
   2. Prior to the screed coat application, remove any high or rough edges using a hand grinding stone or scraper.
   3. The deck must be free of all surface contaminants, such as dust, dirt, etc., which will impair the adhesion of the Pli-Dek GU80-1 Top Coat.
   4. Mix the GU80-1 Top Coat and trowel over the base coat at a rate of 150 square feet per mix. Allow to dry for a minimum of 2 - 6 hours.
E. “F” System (Fiberglass and PD Resin Coats):
   1. Lay out the 3/4 oz. fiberglass mat, overlapping metal flashing to the horizontal edge and overlap mat seams by a minimum of 1/4”.
   2. Thoroughly mix the PD Resin and then pour PD Resin over the fiberglass mat, and apply with a pool trowel at a rate of approximately 40 - 50 square feet per gallon. Allow 6 – 8 hours to dry.
F. Finish Coat Preparation: Prior to any finish coat installation, the following must be completed: Grind any rough areas, being careful not to damage Fiberglass and PD Resin. Rough areas will affect the aesthetic appearance of the finished product. The deck must be free of all surface contaminants, such as dust, dirt, etc. which will impair the adhesion of the Finish Coats.
G. Finish Coat Application:
   1. Knockdown:
      a. Using a hopper gun, spray the Knockdown Coating over the entire deck surface at a rate of 150 square feet per mix. When the material begins to dry, knockdown the material with a trowel.
2. Elastomeric Sand Finish:
   a. Air temperature for application of the Sand Finish must be between 10°C (50°F) and 43°C (110°F) and must remain so for a minimum of 8 hours. Do not apply over any moisture.
   b. Apply a bead of manufacturer’s recommended elastomeric joint sealant at all wall-to-deck junctions, wood posts, wrought iron posts, etc.
   c. Before application, mix PD Resin using a mechanical mixer at slow speeds; mix thoroughly until a homogenous mixture and color is obtained. Use care not to allow the entrapment of air into the mixture.
   d. Apply PD Resin over the entire deck surface and flashing using a ¾” nap roller and a brush at a rate of 75 square feet per gallon. Do not allow PD Resin to puddle.
   e. Broadcast aggregates of washed, dry, rounded, crystal silica sand, approximately 16 mesh at a rate of 100 lbs. per 100 square feet or until refusal (depending on skid resistance requirements) into the wet/uncured PD Resin.
   f. Allow a minimum of 8 hours before removing all excess silica sand.
   g. Air temperature for application of the GS88-1 Sealer must be between 13°C (55°F) and 43°C (110°F) and must be allowed to dry for a minimum of 8 hours. Ensure humidity levels.
   h. The deck must be free of all surface contaminants, such as dust, dirt, etc., which will impair adhesion of the GS88-1 Sealer.
   i. Mix the GS88-1 Sealer thoroughly by boxing, stirring, or by using a mechanical mixer. Box and mix all containers to ensure consistent coloring throughout.
   j. Apply the GS88-1 Sealer over the dry PD Resin and Sand Coat, using a 19mm (¾”) nap paint roller, suitable for latex type coatings (2 coats may be necessary.)
   k. To make cleaning easier in high traffic areas, a coat of GS13 or PD Clear Sealer may be applied over the dry GS88-1 Pigmented Sealer at a rate of 200 square feet per gallon. Surface will become more slippery. Use of a non-skid agent is recommended.
      1) Surface will become more slippery. Add 40 grit nonskid sand (approximately 5 oz per gallon) to the GS13 or PD Clear Sealer.
      2) Continuously mix the sealer through the application process so the no skid sand does not settle to the bottom of the pail.

3. Underlayment:
   a. The vertical leg of all flashings should be coated with Fiberglass and PD Resin or PD Flash Coat and Flash Coat Seam Tape or self-adhering drywall mesh tape.
   b. PD Resin should not be exposed to construction traffic.
   c. Apply a screed coat of GU80-1 Top Coat over the entire deck and up the vertical leg of all flashings at a rate of 150 square feet per mix. Allow to dry for a minimum of 2 - 6 hours.
   d. Allow a minimum of 8 hours prior to installing any finished product over the PD Resin and sand surface or screed coat.

4. Polyacrylic Smooth Finish:
   a. Mix the GU80-1 Top Coat and Trowel a screed coat over the entire deck surface at a rate of 150 square feet per mix. Allow it to dry for a minimum of 6 hours.
   b. It may be necessary to apply an additional coat of GU80-1 Custom Top Coat to create a smoother finish. Coverage rate should be approximately 200 square feet per mix. **Please note: Surface will not be perfectly smooth and will have some imperfections/variations.
   c. Apply a bead of Pli-Dek recommended elastomeric joint sealant to all wall-to-deck junctions, wood posts, wrought iron posts, etc. Air temperature for application of the GS88-1 Sealer must be between 13°C (55°F) and 43°C (110°F) and must be allowed to dry for a minimum of 8 hours. Ensure humidity levels.
   d. The deck must be free of all surface contaminants, such as dust, dirt, etc., which will impair adhesion of the GS88-1 Sealer.
   e. Mix the GS88-1 Sealer thoroughly by boxing, stirring, or by using a mechanical mixer. Box and mix all containers to ensure consistent coloring throughout.
   f. Apply the GS88-1 Sealer over the dry PD Resin and Sand Coat, using a 19mm (¾”) nap paint roller, suitable for latex type coatings (2 coats may be necessary.)
   g. To make cleaning easier in high traffic areas, a coat of GS13 or PD Clear Sealer may be
applied over the dry GS88-1 Pigmented Sealer at a rate of 200 square feet per gallon. Surface will become more slippery. Use of a non-skid agent is recommended.

1) Surface will become more slippery. Add 40 grit nonskid sand (approximately 5 oz per gallon) to the GS13 or PD Clear Sealer.

2) Continuously mix the sealer through the application process so the no skid sand does not settle to the bottom of the pail.

5. Epoxy Stone Finish: Contact Pli-Dek for written instructions

6. Custom Finish:
   a. The GU80-1 Custom Top Coat or Gu80-1 Top Coat should be troweled down over the substrate with the desired color added to the mix at a rate of 150 square feet per mix.
   b. Darker colors are recommended to help hide the PD Stain. Once the GU80 Custom Top Coat has cured, for a minimum of 2-6 hours, the stencils can be applied.
   c. After applying the stencil, trowel GU80 Custom Top Coat into the template using the thickness of the template as a guide, at a rate of 150 square feet per mix. Texture can be added to the wet mix if desired.
   d. After the GU80 Custom Grout Coat Mix has cured, allow for a minimum of 2-6 hours. the stencils should be removed.
   e. Once the surface is swept up, the PD Stain can be used to create the desired modeling. Samples should be made prior to the finish coat application and approved.
   f. Allow PD Stain to cure, under normal conditions, PD Stain cures in 10 to 60 minutes, under adverse weather conditions, cure time could increase to 24 hours. Once PD Stain has cured, the surface should be sealed with the desired Pli-Dek Clear Sealer.
   g. For exterior applications, apply a coat of GS13 or PD clear Sealer at a rate of 200 sqft. per gallon (2 coats may be necessary). For interior applications, apply Resinyte Urethane 100 at a rate of approximately 225-270 sqft. per gallon with a squeegee and back rolled with a ¼” non-shedding nap roller. Use of non-skid agent is recommended.

3.4 CLEAN UP

A. The applicator in accordance with contract provisions shall remove all excess Con-Dek materials from the job site.

B. All surrounding areas, where the waterproofing materials have been applied, shall be left free of debris and foreign substances resulting from the contractor’s work.

3.5 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.

END OF SECTION

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 ensure that you are using the latest, most complete information, contact Pli-Dek Systems, Inc., at:
* 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.