



PLEASE NOTE: The specifications herein are intended for the basic guidance of spec writers and installing contractors focusing on the use of self-supporting 2cm porcelain paver units in open joint installations. Consult with a licensed architect, landscape architect or engineer to determine the suitability of the design, job site and for compliance with local codes and regulations.

Pedestal Ready Porcelain Pavers – UnderLock FS Lock Down Pedestal Installation Guide Specifications

Section 07 555

Part 1 – General

1.01 RELATED DOCUMENTS

- A. Drawings and general provision of contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to work of this Section.

1.02 SUMMARY

- A. Perform all work required to complete as indicated by the Contract Documents and furnish all accompanying items necessary for the proper installation of Pedestal Ready Porcelain Pavers.
- B. Pedestal Ready Porcelain Paver and pedestal support systems, if used, are to be placed over roofing/waterproofing systems where indicated. Standard Pedestal Ready Porcelain Paver System to comply with IBC 1504.4 – ANSI/SPRI RP-4 for wind uplift.
- C. Related Sections include the following:
 - 1. Section 03 30 00 Cast in Place Concrete.
 - 2. Section 07 00 00 Modified Bituminous Sheet Membrane Waterproofing.
 - 3. Section 07 10 00 Waterproof Membrane.
 - 4. Section 07 10 00 Drains in Waterproofed Concrete Slabs above Conditioned Space
 - 5. Section 07 92 00 Sealants.

1.03 REFERENCES

- A. Testing Standards
 - 1. ANSI A326.3 - Dynamic Coefficient of Friction.
 - 2. ASTM C-1028 - Static Coefficient of Friction.
 - 3. ASTM C-1262 - Test Method for Evaluating Freeze-Thaw Durability.
 - 4. ULCL 21 - Load Carrying Capacity
 - 5. ULPC 21 - Post Crack Load Capacity -Safety Backing (SB)
 - 6. ASTM C 648 - Breaking Strength
 - 7. ASTM 1026 - Freeze/Thaw: RESISTANCE
 - 8. ASTM C 650 - Chemical/Stain Resistance: Class: A

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9. ASTM C 1378 - Chemical/Stain Resistance: Class: A

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used, including preparation instructions, installation methods, storage, handling requirements and recommendations.
 - 2. Submit written instructions for recommended maintenance.
- C. Shop Drawings:
 - 1. Installer layout drawings of each paved area showing the pattern of pavers, indicate cut pavers, drainage patterns, drains and relationship of paving joints. Show details at curbs and vertical surfaces.
- D. Samples:
 - 1. Installer to submit sample to be selected by Architect / Engineer / Landscape Architect / Owner from manufacturer's available standard textures and colors.

1.05 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** All products covered under this Section shall be produced by a single manufacturer, unless otherwise specified, with a minimum of 5 (5) years proven production of this porcelain paver product.
- B. **Installer Qualifications:** Installer shall have a minimum of five (5) years proven specialized construction experience with this product and be capable of estimating and building from blueprint plans and details, in addition to proper material handling. All work must comply with local, state/provincial licensing and bonding requirements.

1.06 MOCK-UP INSTALLATION

- A. Prior to the start of Pedestal Ready Porcelain Paver work, construct mock-up of each type of paver size and pattern area for the owner and architect to review. The mock-up will be at the project site or at a location mutually agreed to by the owner and contractor.
 - 1. Construct the mock-up installation in a minimum 4-foot by 4-foot area of typical details as shown on the drawings.
 - 2. After review approval of the mock-up, it will be retained and used as a standard of quality for the pedestal ready porcelain paver work. At completion of the work, remove the mock-up installations and related materials from the project site. If the mock-ups are incorporated in the actual construction, record their locations and sizes on the actual built record drawings for the project.

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1.07 DELIVERY, STORAGE AND HANDLING

- A. In accordance with provisions of Section 01 60 00.
- B. Porcelain pavers to be banded on pallets and delivered in original unopened packaging with legible manufacturer identification.
- C. Protect porcelain pavers during shipment, storage and construction against damage.

1.08 PROJECT CONDITIONS

- A. Do not install products under adverse environmental conditions.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer:
 - 1. UnderLock | 1.336.437.9753 | UnderLockUSA@gmail.com | www.UnderLockUSA.com
- B. Substitutions: Not permitted.
- C. Porcelain pavers, equal in appearance and pedestal ready function and meeting these specifications, will be acceptable when the specified submittals from Section 00 26 00 are approved in writing by the Architect prior to bid.

2.03 PERFORMANCE REQUIREMENTS

*Performance Requirements based on 24"x24"x3/4" pedestal ready porcelain paver

- 1. Thickness: 3/4"
- 2. Weight: 10 lbs/psf
- 3. Freeze/Thaw: RESISTANCE ASTM 1026
- 4. Water Absorption: ~0.1% ASTM C 373
- 5. Recommended Use: Exterior
- 6. Slip Resistance: ≥ 0.60 ANSI 137.1 (DCOF)
- 7. Chemical/Stain Resistance: Class: A ASTM C 650, Class: A ASTM C 1378
- 8. Breaking Strength: ≥ 2000 lbs ASTM C 648
- 9. Center Load (ULCL 21) porcelain paver to have a tested center load $>2,000$ lbs
- 10. Post Crack (ULPC 21) porcelain paver to have a tested post crack load $>1,000$ lbs

2.04 INSTALLATION MATERIALS

- A. Components and Materials:

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1. UL VJack Adjustable Pedestal: Polypropylene (PP) that adjusts from ½ to 40 inches in height. Slope compensation of up 5%. Outside base diameter 8-5/64 inches. Design compressive strength 2,248 lbs. Ultimate compressive load max height is 4,271 lbs.
2. UL VJack Shim 2mm: 2mm thickness made of rubber.
3. Lock Down: UnderLock FS is made of high strength nylon and stainless-steel components. System components are factory installed and are hidden below the paver surface.

B. Basic Use:

1. UnderLock pedestal ready porcelain pavers are designed for exterior application on roof decks, plazas, parking garages, terraces and other flat or sloped surfaces structurally sound with required dead load capacity.
2. The standard paver is an open joint system and will drain all water to waterproofing/roofing system below.
3. The Lock Down System complies with above sections.

C. Design Wind Speed

1. UnderLock FS (Full System) connects all pavers together on pedestals providing resistance to uplift per ANSI SPRI RP-4 Section 3.3.2. For more extreme uplift conditions, use UnderLock TP (Thru-Pedestal) which enables the direct adhering of UnderLock FS pavers through each pedestal to membrane surface. Simulated wind uplift pull test: Modified (over plywood subfloor) In house TAS 114-95 Appendix B result: - 353.5 psf 2:1 Safety Factor. Therefore, UnderLock system components meet the -45 minimum Miami- Dade County requirements for that method. Membrane manufacturer should be consulted to be sure their product is suitable for the adhering of pedestals. Factors of safety are computed based on specific wind uplift pressures generated at each paver system location on the building.

2.5 INSTALLATION MATERIALS

A. Pedestals and Accessories

1. Shim:
 - a. Rubber shim 2mm thick.
2. Pedestal Systems:
 - a. UL VJack Pedestals: Accommodates various pitches and height changes of the project area. Pedestals made from polypropylene (PP) that adjusts from ½ to 40 inches in height. Slope compensation of up 5%. Outside base diameter 8-5/64 inches.
 - b. Lock Down Spacer Tab: The Locking Spacer Tab (ULFF 316) is made of a high impact copolymer polypropylene. These units sit upon the UL VJack pedestal.

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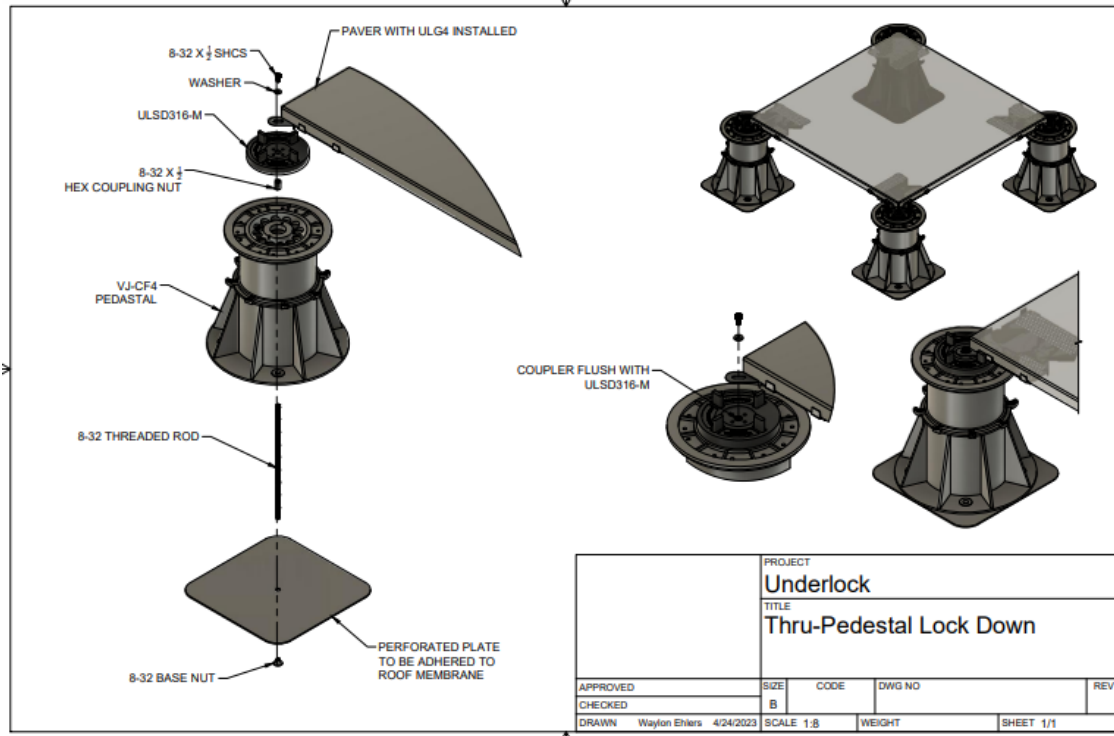
For systems that require adhering of system to membrane and are utilizing UnderLock Thru-Pedestal Lock Down, the Locking Spacer Tab (ULSD 316 Hex) is set upon the UL VJack Pedestal.

3. Thru-Pedestal Lock Down Unit (where required)
 - a. Thru-Pedestal (TP) is a stainless-steel unit consisting of a 7" square stainless-steel base plate having a central stainless-steel welded T-nut, stainless-steel threaded rod and a stainless-steel hex coupler that is seated flush to the top of the Lock Down Spacer Tab ULSD316 Hex. Used for projects that may require each paver connection on pedestal to be direct adhered via all stainless-steel components -to subfloor/membrane or for edge/termination of lock down cut pavers.

PART 3 – EXECUTION

3.01 INSPECTION

- A. Examine all jobsite surfaces to receive the parts of the paving materials. Notify the contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected. Installation of pedestal ready porcelain pavers and associated construction constitutes acceptance of the adjacent and underlying construction.



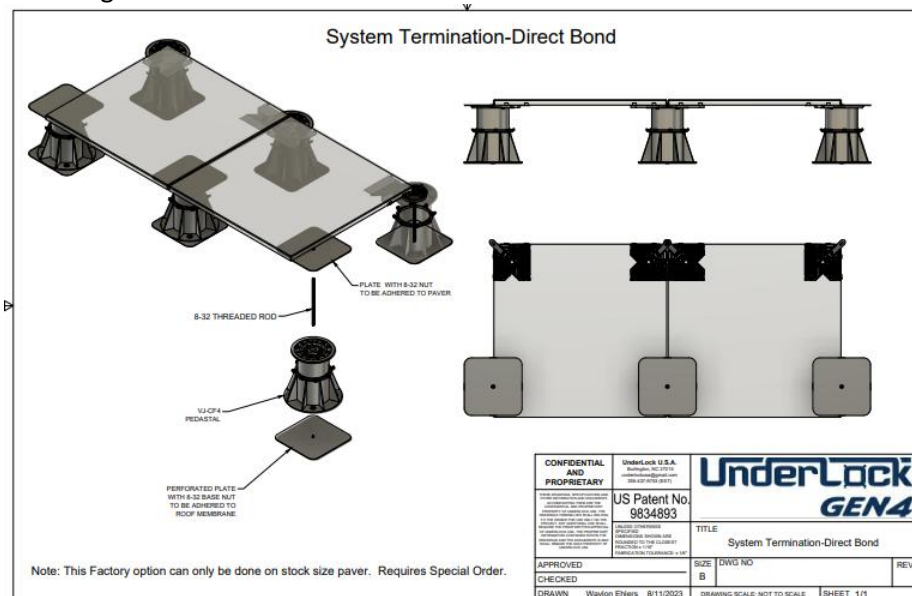
3.02 INSTALLATION OF LOK DOWN SYSTEM

A. Install in accordance with UnderLock:

1. Install in accordance with contributing manufacturer's instructions. Installation requirements vary for each individual project site. Pavers used, pattern, grid layout, starting point and finished elevation should be shown on plan view shop drawings which have been prepared and approved by the designer, installing contractor and/or owner.
2. Inspection of deck and fixed elevation locations. All height or location problems to be corrected before installation.
3. Compare layout to shop drawings or architectural drawings. All variances of field conditions to drawings to be reviewed and corrected prior to starting installation.



4. Level surface installation using UL VJack pedestals equipped with Top Slope Corrector or Bottom Slope Corrector used for pedestals taller than 20" in height to follow manufacturer's installation procedures. No variances to system allowed.
5. Minor adjustments can be handled with 2mm rubber shim.
6. Place Lock Down Spacer Tab (ULFF or ULSD) on the adjusted pedestal.
7. Set UnderLock FS paver on Lock Down Spacer Tab with Stainless-Steel Corner straps stacking on top of the adjacent paver corner straps. When all paver corners are placed on pedestal, align the stacked strap holes with an awl or nail punch.
8. Place included socket screw equipped with lock washer and fender washer in place and tighten loosely to allow adjustment of surrounding paver connections. When satisfied with alignment then finish tightening until snug (lock washer compressed).
9. Use Thru-Pedestal Direct Bond Termination to terminate the system per engineering design.



B. Placement Tolerance:

1. The surface elevation of pavers shall be 1/8 inch to 1/4 inch (3 mm to 6 mm) above adjacent drainage inlets, concrete collars or channels.
2. Joints between pavers to be greater than 1/16 inch (1.6 mm). Designed open joint width is 3/16 inch.

3.3 CLEANING AND PROTECTION

- A. Remove and replace pavers which are loose, chipped, broken, or otherwise damaged, or if units

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do not match adjoining units as intended.

- B. Wash entire surface with neutral ceramic tile cleaner, rinse with clean water and allow to dry thoroughly.

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