

**Pei Evaluation Service®** is an accredited ISO Standard 17065 Product Certifier, accredited by the IAS. This **Product Evaluation Report** represents a product that **Pei ES** has Evaluated. This product has a Product Evaluation Service Agreement & Follow-up Inspection Service Agreement. This **Product Evaluation Report** in no way implies warranty for this product or relieves **Titan Products Inc.** of their liabilities for this product. This **PER** is an official document if it is within one year of the initial or re-approval date.

**Initial Approval**  
June, 2020

**Re-Approved**

See all **Pei ES Listings** at: [www.p-e-i.com](http://www.p-e-i.com)

**Report Owner**

**Titan Products Inc.**  
2111 Boat Factory Drive  
Pleasant View, TN 37146

**Approved Manufacturing Locations**

**Titan Products Inc.**  
2111 Boat Factory Drive  
Pleasant View, TN 37146

**Product**

**Titan SP-90 & SP-110 Foundation Brackets**

**Evaluation Report Information**

[www.titanproductsinc.com](http://www.titanproductsinc.com)  
Titan contact: Matthew Chance - (615) 746-6876

**General Details**

The **Titan** Foundation Brackets are used as support for structures to recover lost elevations and to provide uniform supplemental support to foundations. The **Titan** Foundation Brackets provides structural lift to help stop settlement of the structure. These products are used on residential, commercial and industrial foundations. The **Titan** Foundation Brackets can be installed in either interior or exterior applications.

The **Titan** Foundation Brackets have been tested and evaluated for eccentric compression strength with a maximum unsupported tube length of 5 inches. This PER does not address seismic loading for this system, existing footing suitability or attachment requirements to the footings. Corrosion resistance and longevity shall be addressed by the registered design professional on a job specific basis. **Titan Products Inc.** has a Product Evaluation Service Agreement with **Pei Evaluation Service® (Pei ES)** and a Follow-up Inspection Service Agreement with **Progressive Engineering, Inc. (Pei)**. The manufacturing facility has an approved Q.C. Manual to manufacture Models SP-90 & SP-110 Foundation Brackets and is audited quarterly by **Pei**.

**Product Description**

The **Titan** model SP-90 & SP-110 Foundation Brackets are push pier systems consisting of an under footing self standing bracket body that attaches to an existing footing, a guide sleeve that passes through the bracket body, a piling tube shaft that is hydraulically advanced to firm bearing strata, and the lifting threaded rods and nuts passing through a pile cap plate to hold the imposed load.

**Building Code Compliance**

<u>2012, 2015 &amp; 2018 International Residential Code®</u>	<u>2012, 2015 &amp; 2018 International Building Code®</u>
Section R104.11	Section 104.11
Section R106.1.2	Section 1810.1.4
Section R301.1.3	

**Section R104.11** of the International Residential Code® is for Alternate materials, designs and methods of construction and equipment pertaining to the corrosion resistance being addressed by the register design professional on a job specific basis.

**Section R106.1.2** of the International Residential Code® requires that manufacturer's installation instructions, as required by this code, shall be available on site at the time of the inspection.

**Section R301.1.3** of the International Residential Code® allows non-conventional alternatives to be used as long as they are designed in accordance with accepted engineering practices.

**Design Considerations**

A structural evaluation **shall** be submitted at the request of the building official on a job specific basis with consideration to the existing foundation suitability, soil conditions, corrosion requirement and overall building foundation and pier system integrity.

**Table 1 - Titan Foundation Brackets Compression Load Ratings**

Model	Product Designation	Ultimate Load Bracket Only in Lbs.	Allowable Bracket Capacity using 2.0 Safety Factor in Lbs.	Allowable Bracket Capacity using 2.5 Safety Factor in Lbs.
<b>Model SP-90</b>	Foundation Bracket	<b>91,900</b>	<b>45,950</b>	<b>36,760</b>
<b>Model SP-110</b>	Foundation Bracket	<b>114,933</b>	<b>57,467</b>	<b>45,973</b>

**Notes:**

1. Table 1 provides tested bracket capacities. A licensed engineer shall verify the actual available capacity based on the size of the pier pipe, expected corrosion loss, the site specific soil conditions and appropriate Safety Factor.
2. Allowable capacities shall be utilized with Allowable Strength Design (ASD) loading.
3. The Titan Foundation Brackets capacity results reflect a 5" maximum unsupported pile guide sleeve length.

**Material Specifications****Titan Model SP-90**

**Pile Guide Sleeve-** is fabricated from steel tubing with a 3-1/2" outside diameter and a nominal .165" wall thickness from ASTM A500, Grade C steel.

**Pile Section-** is fabricated from steel tubing with a 2-7/8" outside diameter and a nominal .165" wall thickness from ASTM A500, Grade C steel.

**Bracket-** A robotically welded steel assembly consisting of 3/8" thick parts cut from ASTM A36 steel plate. The need for a Corrosion coating to be determined by the site Engineer or Code official.

**Pile Cap Plate-** is 1" tk. x 3-1/2" x 9" long steel that conforms to ASTM A36 steel.

**Lifting Rods-** two (2) 3/4" -10 threaded rod, ASTM A193, Grade B7 steel using (4) 3/4" -10 ASTM A194-14, Grade 2H heavy hex nuts.

**Footer Bearing Plate-** 3/8" tk. X 9-1/4" wide x 7-1/4" steel conforming to ASTM A36 steel.

**Titan Model SP-110**

**Pile Guide Sleeve-** is fabricated from steel tubing with a 4" outside diameter and a nominal .225" wall thickness from ASTM A500, Grade C steel.

**Pile Section-** is fabricated from steel tubing with a 3-1/2" outside diameter and a nominal .165" wall thickness from ASTM A500, Grade C steel.

**Bracket-** A robotically welded steel assembly consisting of 1/2" thick parts cut from ASTM A36 steel plate. The need for a Corrosion coating to be determined by the site Engineer or Code official.

**Pile Cap Plate-** is 1-1/2" tk. x 4" x 9" long steel that conforms to ASTM A36 steel.

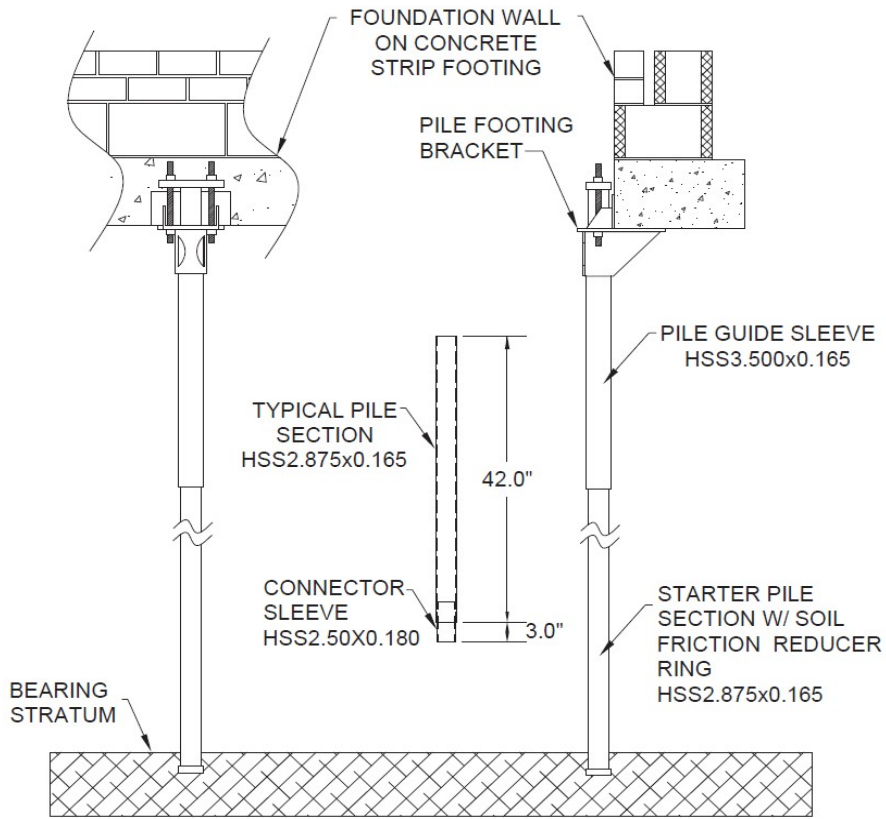
**Lifting Rods-** two (2) 7/8" -9 threaded rod, ASTM A193, Grade B7 steel using (4) 7/8" -9 ASTM A194-14, Grade 2H heavy hex nuts.

**Footer Bearing Plate-** 1/2" tk. X 10" wide x 8" steel conforming to ASTM A36 steel.

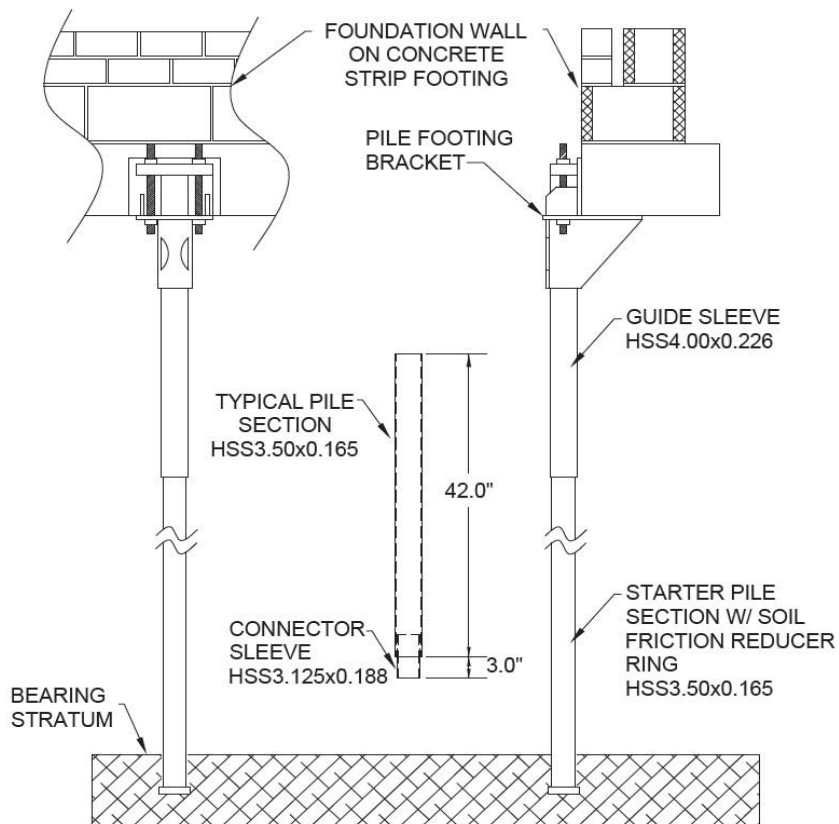
**Optional Pile Section-** is fabricated from steel tubing with a 4" outside diameter and a nominal .210" wall thickness from ASTM A500, Grade C steel. Can be used without a guide sleeve.

**General Product Usage and Limitations**

1. A site survey is necessary of the area where the Piers are going to be driven to locate any possible interference such as utilities, plumbing, electrical, or phone lines.
2. Small excavations are dug for each access point for the placement of the Piers. The total space needed for the foundation is typically 3 feet square.
3. The bearing area around the footing must be a smooth and level condition while adjusting the face of the stem wall to vertical at the point of the bracket attachment. The footings should be notched where required and suitable to do so.
4. The utility bracket should be secured to the footing using anchor bolts. A hydraulic cylinder should be mounted on the drive stand to drive the pier pipe into the soil.
5. The existing structure is used as a reaction force with a hydraulic pump and cylinder combination to drive the pier into the soil.
6. Adjacent piers shall NOT be advanced simultaneously.
7. Each Pier system that is installed, is load tested against the weight of the structure to ensure that the system can withstand a load greater than needed to restore the structure. A registered design professional shall provide the test load safety factor requirements based upon the site specific soil conditions.
8. Each Foundation System installed should follow Titan Products Inc "Typical Specification" for Installation instructions. A copy of these installation instructions shall be made available on the job site at the time of installation.
9. The Titan Foundation Brackets are rated for compression loading only. Lateral and uplift loading from wind and seismic shall be carried by the existing shallow foundation and verified by a registered design professional.
10. All the excavated soil at each pier location shall be replaced and compacted after the piers are proof load tested.



**Titan Model SP-90 Foundation Bracket**



**Titan Model SP-110 Foundation Bracket**

### Product Labeling

Each System that is covered by this **PER**, must be marked with the following information:

1. **Titan** Model Number
2. This **PER** Number & *Pei* **ES** Name or Logo
3. Load Rating
4. **Titan Products, Inc.** name and address

### Acceptable Evaluation Marks



### Product Documentation

A Product Evaluation Service Agreement between *Pei Evaluation Service* and **Titan Products Inc.**

A Follow-up Inspection Service Agreement between *Progressive Engineering Inc.* and **Titan Products Inc.**

**Titan Products Inc** Quality Assurance Manual - Dated: 8/9/2019

**Titan Products Inc** Typical Specification - Dated: 2019

A *Pei* test report No. 2020-6000(A) - Eccentric Compression Test on Titan Model SP-90 Foundation Bracket - Dated: May 4, 2020

A *Pei* test report No. 2020-6000(B) - Eccentric Compression Test on Titan Model SP-110 Foundation Bracket - Dated: May 6, 2009