SS03897

Used for Florida State Wide Product Approval

FL2355

Products on this Report which are approved:

Product	FL#
TTN	2355.1

SIMPSON Strong-Tie®

SIMPSON STRONG-TIE COMPANY, INC

Jax Apex Technology, Inc.
4745 Sutton Park Court, Suite 402
Jacksonville, FL 32224

All products listed in this report are currently approved for state use under the provisions of Florida Product Approval Rule 9B-72 and/or 61G15-36. Reference product approval number FL2355. All substantiating data submitted for the original application has been reviewed for compliance with the 2004 Florida Building and Residential Codes.

Jeffrey P. Arneson, P.E., a licensed Florida professional engineer and employee of Jax Apex Technology, Inc. (Apex Technology) has reviewed the data submitted for compliance with the Florida Building Code. Neither Jeffrey P. Arneson, nor Apex Technology, are responsible for any errors or omissions to any documents, calculations, drawings, specifications, tests, or summaries prepared and submitted by the design professional or preparer of record who are listed in the Substantiating Data section of this report.

Jeffrey P. Arneson, the Florida engineer who prepared this report, and Apex Technology have no financial interest in the manufacturing, sales, or distribution of the products included in this report. Jeffrey P. Arneson and Apex Technology comply with all criteria as stated in Florida Administrative Code Chapter 9B-72.110.

REPORT NO: SS03897

CATEGORY: Structural Components – Other

SUBMITTED BY:

Simpson Strong-Tie Company, Inc.
5956 W. Las Positas Blvd
Pleasanton, CA 94588

1. PRODUCT NAME

Mechanical Anchors:

TITEN Concrete & Masonry Screws (TTN):

2. SCOPE OF EVALUATION

Load Evaluation as a Structural Component using the requirements of the Florida Building and Residential Codes

3. DESCRIPTION

TITEN Concrete & Masonry Screws (TTN):

TITEN screws are for installation into concrete and masonry substrates. TTN concrete & masonry screws are available in 3/16-inch and ¼-inch diameter with a minimum overall length of 1 ¼-inch. The screws are available with an HWH-slotted hex washer head or a flat Phillips head. The screws are available in a carbon steel or stainless steel version. The carbon steel version is manufactured from AISI C 1022 steel with a zinc coating. The stainless steel version is manufactured from heat treated AISI 410 stainless steel with protective coating.

4. MATERIALS

4.1 Fastener Material:

TITEN Concrete & Masonry Screws (TTN): Steel specifications for the TTN listed in this evaluation report shall be as indicated in the previous section.

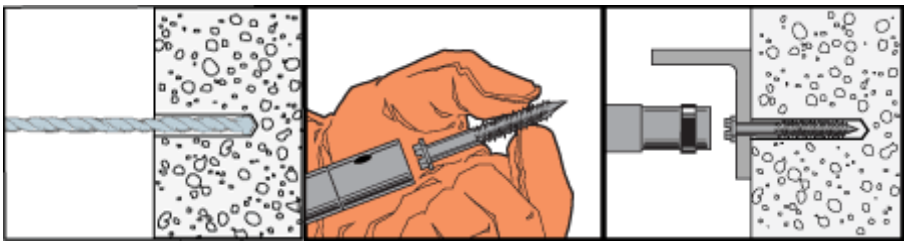
4.2 Substrate Material: Masonry. Masonry design specifications shall be the stricter of the specifications by the Engineer of Record, the Florida Building Code minimum standards, or the following:

Material	Specification	Minimum Compressive Strength
Masonry, f'm	ASTM E447	1500 psi
Masonry Unit	ASTM C90	1900 psi
Mortar	ASTM C270 Type S	1800 psi (or by proportions)
Grout	ASTM C476	2000 psi (or by proportions)

5. INSTALLATION

Installation shall be in accordance with this report and the most recent edition of the *Simpson Strong-Tie Anchor Systems* catalog. Should information in this report conflict with catalog information, the information provided in this report supercedes the catalog.

TITEN Concrete & Masonry Screws (TTN):



Caution: Oversized holes in the base material will reduce or eliminate reduce the anchor's load capacity.

- Drill a hole in the base material using the appropriate diameter carbide drill bit as specified in the table. Drill the hole to the specified embedment depth plus ½-inch to allow the thread tapping dust to settle and blow it clean using compressed air. Overhead installations need not be blown clean. Alternatively, drill the hole deep enough to accommodate embedment depth and dust from drilling and tapping. Position fixture, insert screw and tighten using drill and installation tool fitted with a hex socket or Phillips bit.

6. SUBSTANTIATING DATA

Supporting test data has been submitted from:

- Wiss, Janney, Elstner Associates, Inc. Report WJE No. 2001.4316 dated March 19th, 2004.
- Stork Materials Technology Report No. 3295545.1R1 dated June 24th, 2008

7. FINDINGS

The anchors listed in this evaluation report comply with the 2004/2007 Florida Building and Residential Codes when installed in accordance with this report. Maximum allowable loads shall not exceed the allowable loads listed in this report.

8. LIMITATIONS

1. Maximum allowable loads shall not exceed the allowable loads listed in this report. Allowable loads listed in this report are based on allowable stress design. The loads in this report are not applicable to Load and Resistance Factor Design.

2. Allowable loads for more than one direction for a single anchor shall be checked using the following interaction equation.

   $(Ps/Pt) + (Vs/Vt) \leq 1.0$

   Ps = Applied service tension load, pounds
   Pt = Allowable service tension load, pounds
   Vs = Applied service shear load, pounds
   Vt = Allowable service shear load, pounds

9. ALLOWABLE LOADS

TITEN Concrete & Masonry Screw (TTN)

TABLE 1: Allowable Design Load Capacities for 3/16-inch and ¼-inch diameter Carbon Steel TTN into Hollow or Grout-filled CMU (pounds)

3/16" diameter x 1-1/4" embedment	
Tension	Shear
160	220

1/4" diameter x 1-1/4" embedment	
Tension	Shear
165	300

TABLE 2: Allowable Design Load Capacities for 3/16-inch and ¼-inch diameter Stainless Steel TTN into Hollow or Grout-filled CMU (pounds)

3/16" diameter x 1" embedment	
Tension	Shear
78	78

1/4" diameter x 1-1/4" embedment	
Tension	Shear
137	124

10. CODE REFERENCES

Florida Building Code 2004/2007 Edition

Section 104.11	Alternate Materials and Methods
Chapter 1714.2	Load Test Procedure Specified
Chapter 1912	Anchorage to Concrete – Allowable Stress Design
Chapter 21	Masonry

Florida Residential Code 2004/2007 Edition

R101.2.1	Scope
R4407	HVHZ Masonry

11. IDENTIFICATION

Each product covered by this report shall be marked using the manufacturer's identification mark.

Jax Apex Technology, Inc.
Jeffrey P. Ameson, P.E.
P.E. No. 58544
December 17, 2008