

DECK SAFETY

NEW DTT2Z DECK CONNECTOR FOR RAILING POSTS AND LEDGERS MEETS BUILDING CODES AND RESULTS IN SAFER DECKS



Increasing reports of deck failures across the country have led to a greater focus on deck safety in the building codes. The two main areas of concern are the guardrail-post connection and the deck-to-house connection—both of which are critical to the performance and safety of the deck. Simpson Strong-Tie has developed a new solution to make both of these deck connections safer and stronger: the DTT2Z deck tension tie.

The International Residential Code® (IRC) requires deck railing posts to be able to resist a 200-lb. load in any direction. Many common guardrail-post connections that attach only to the rim joist do not meet this requirement.

The new DTT2Z connects the railing post back into the deck framing, not just to the rim joist, creating a connection that meets the code provisions for guardrail reinforcement and results in a safer deck.

In addition, the DTT2Z can be used to tie the deck into the house for a more secure ledger connection. It meets the IRC requirements for laterally attaching the deck to the house and can be used to satisfy the provisions of the AF&PA Prescriptive Residential Wood Deck Construction Guide (DCA6).

(continued on page 2)



Guardrail-Post Connection

CODE NEWS

STEEL STRONG-WALL® SHEARWALL NOW EVALUATED TO THE 2006 IBC

Simpson Strong-Tie® Steel Strong-Wall® shearwalls have been tested and evaluated to ICC-ES's new acceptance criteria for pre-fabricated steel shearwalls, AC 322. An updated version of our evaluation report, ESR-1679, is available at www.strongtie.com. With this new report, our entire line of Wood and Steel Strong-Wall panels in all applications are now evaluated to the 2006 IBC.

Some of the features to look for in the new evaluation report include tabulated load values which consider bearing stress calculations on 2500 psi minimum

concrete foundations and incorporate complete designs for anchorage in shear and tension, calculated to ACI 318, Appendix D. For more information, including the new load values and tables, visit our website.

Please note: We recommend using the updated ESR report values until the new *Strong-Wall® Shearwalls* catalog (C-SW09) is released. These tables supersede previously published values from our *Strong-Wall® Shearwalls* catalog, C-SW07. ■



TESTING UPDATE

WORLD'S LARGEST SHAKE TABLE TO TEST SEVEN-STORY BUILDING (Part 2 of 3 article series)

In the last issue of the Structural Report® we told you about how Simpson Strong-Tie is participating in an unprecedented research event that will highlight the importance of earthquake-resistant construction around the world. During a series of tests scheduled to begin late June, Colorado State University along with four other universities, the National Science Foundation, the Japanese government, Maui Homes USA, the U.S. Forest Products Laboratory and Simpson Strong-Tie will simulate several seismic events on the world's largest shake table.



Special Moment Frames are constructed on the first level.

The Hyogo Earthquake Engineering Research Center, nicknamed "E-Defense," is a 3D full-scale earthquake testing facility located in Miki City, Japan, just north of Kobe. Its shake table measures approximately 65 ft. by 49 ft. and can support building experiments weighing up to 2.5 million pounds.

E-Defense's current U.S.-sponsored project, known as the NEESWood Capstone test, features a full-scale, seven-story, condominium tower that weighs nearly a million pounds. The 40 ft. by 60 ft. structure will be subjected to the ground motions of the infamous Northridge 6.7 magnitude earthquake. The tower is outfitted with Simpson Strong-Tie® products, including steel special moment frames on the first floor with Anchor Tiedown System (ATS) and other Simpson Strong-Tie connectors in the six stories of wood above. As the world's largest



Carpenters continue to work on the 7-story structure.

full-scale test ever attempted, this event is intended to help researchers validate new design methods for mid-rise, wood-framed buildings in earthquake-prone areas.

Steve Pryor, Simpson Strong-Tie lead researcher on the project says, "The information gleaned from the testing will be invaluable in building our understanding of not only how mid-rise buildings respond to earthquakes, but also how to properly integrate structural hardware into the building to achieve the desired result."



The complete structure weighs 880,000 pounds and it took several hours to move it from the laboratory floor onto the shake table.

The current test schedule for the building is as follows:

June 30 - Steel moment frame and six-story wood building subjected to moderate and Design-Basis earthquake levels.

July 6 - Steel is locked down to allow for testing of six-story wood structure at moderate and Design-Basis earthquake levels.

July 14 - Six-story wood building subjected to the MCE (2,500 year) earthquake.



The 7-story structure was built on the lab floor and then had to be lifted onto the shake table using two 400 metric ton overhead cranes.

At the time of this printing, the project was on schedule and carpenters had just put finishing touches on the seventh floor of the building and the team successfully moved the building from the floor to the shake table – quite a feat in and of itself. The Capstone test structure has a total of 14,500 sq. ft. (1,350 sq. meters; 410 tsubos) of living space (23 units) plus retail shop space at the first level.

To see time-lapse images of the build process, video footage of the test, and to learn more about the project, visit www.strongtie.com/capstonetest. ■

DECK SAFETY (continued from page 1)

The DTT2Z deck tension tie fastens quickly and easily using Simpson Strong-Tie® Strong-Drive® screws (SDS), which install without pre-drilling and are included with each connector. The DTT2Z also comes with a ZMAX® coating for additional corrosion protection.

To learn more about the DTT2Z deck tension tie and other deck products and resources, visit the new Simpson Strong-Tie® Deck Center www.strongtie.com/deckcenter. ■



Deck-to-House Lateral-Load Connection

WORKSHOPS & TRAINING

NORTHEAST

Continuous Load Path - Wood Framed Structures

Salisbury, Maryland Wednesday, September 16
 Lexington, Kentucky Wednesday, September 23
 Charlottesville, Virginia Wednesday, October 21

Simpson Strong-Tie Anchor Systems® for Engineers & Architects

West Des Moines, Iowa Wednesday, August 19
 Indianapolis, Indiana Wednesday, October 14

SOUTHEAST

Builders, Contractors, & Developers

Jacksonville, Florida Thursday, August 20

Effective Selling with Simpson Strong-Tie Anchor Systems®

McKinney, Texas Friday, September 11
 Jacksonville, Florida Thursday, September 17

High Wind Design & Detailing – Two Day Seminar

Jacksonville, Florida Wednesday, October 7 and
 Thursday, October 8
 McKinney, Texas Thursday, October 15 and
 Friday, October 16

Introduction to Simpson Strong-Tie Anchor Systems®

McKinney, Texas Thursday, September 10
 Jacksonville, Florida Wednesday, September 16

NORTHWEST

Building Officials & Inspectors Workshop

Stockton, California Wednesday, September 23

Deck Framing Connection Seminar

Stockton, California Wednesday, September 30

Engineers, Architects, & Specifiers Workshop

Stockton, California Wednesday, September 16

General Connector Technology

Portland, Oregon Wednesday, October 7

SOUTHWEST

Connector Workshop for Building Officials & Inspectors

Brea, California Thursday, August 6

Connector Workshop for Contractors, Builders, & Developers

Honolulu, Hawaii Wednesday, August 19
 Brea, California Thursday, September 3

Connector Workshop for Engineers, Architects, & Specifiers

Honolulu, Hawaii Tuesday, August 18
 Brea, California Thursday, October 8

Deck Framing Connection Seminar

Brea, California Tuesday, August 11

Simpson Strong-Tie Anchor Systems® Workshop for All Audiences

Brea, CA Thursday, September 17
 Bakersfield, California Thursday, October 1

For more information regarding workshop content and for a complete schedule, visit the Workshops and Training section of our website at www.strongtie.com/workshops.

SOFTWARE UPDATE

ANCHOR DESIGNER SOFTWARE™ VERSION 4.0 NOW AVAILABLE

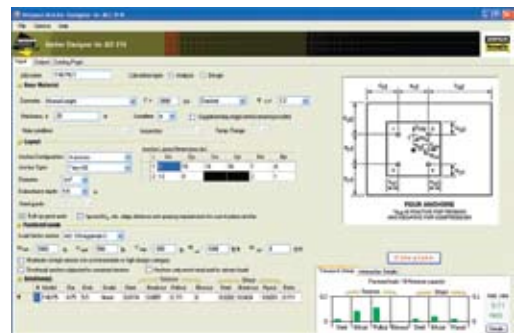


Anchor Designer Software™ for ACI 318 (version 4.0) analyzes and suggests anchor solutions using the ACI 318, Appendix D strength design methodology. It provides cracked and uncracked-concrete anchor solutions for numerous Simpson Strong-Tie Anchor Systems® mechanical and adhesive anchors. With its easy to use graphical interface, Anchor Designer Software for ACI 318 eliminates the need for tedious calculations by hand that would otherwise be necessary to determine ACI 318 Appendix D anchor solutions.

Version 4.0 additions include:

- Updated to run analysis and design of rectangular bolt patterns up to 12 bolts.
- Offset distances for applied load can now be specified.
- Cast-in-place anchor selection expanded. Diameters offered are now from 3/8" to 2" and embedment depth as deep as 25" can be specified.
- Stainless-steel selections are added to cast-in-place anchors.
- "Condition" pull-down menu is updated so that different "conditions" can be specified between tension and shear calculations.

Learn more about the features and benefits of the software and download your free copy at www.simpsonanchors.com/software. ■



PRODUCT SPOTLIGHT

SIMPSON STRONG-TIE ANCHOR SYSTEMS® INTRODUCES GAS-ACTUATED NAILER



Gas-actuated fastening tools are used on job sites everyday because of their speed and reliability. Simpson Strong-Tie Anchor Systems® has launched its first gas-actuated nailer, the GCN150, a cordless fastening tool with a two-shot per second firing capacity.

Fast and efficient, the GCN150 is ideal for light-duty applications, such as fastening drywall track to concrete flooring, steel, CMU and metal decks. Other common uses include attaching hat channel, furring strips, drywall track and plywood underlayment. The nailer is simple to load and use, and does not require operators to be licensed or certified. It features a 40-pin magazine and 1,200-shot fuel cell to maximize fastening time. Since the GCN150 is cordless, it eliminates the need for compressors, hoses or an external power source.

To learn more about the new GCN150 gas-actuated nailer, visit www.simpsonanchors.com/catalog/pat. ■

GREEN UPDATE

OPTION TO CONVERT YOUR STRUCTURAL REPORT® SUBSCRIPTION TO EMAIL

You received this printed copy of the Structural Report® newsletter because you signed up on our website or because you are a customer of Simpson Strong-Tie.

To save time, money and the environment, we're giving you the option to begin receiving the newsletter via email. Go to www.strongtie.com/emailonly, enter your email address and click submit. We will remove your name from the printed, mailed version and begin sending you the newsletter via email next quarter. If you'd like to continue to receive the printed version by regular mail, no action is required. ■



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Inside this issue:

- ▶ ***New DTT2Z Deck Connector Meets Building Codes and Results in Safer Decks***
- ▶ ***Steel Strong-Wall® Shearwall Evaluated to the 2006 IBC***
- ▶ ***World's Largest Shake Table to Test Seven-Story Building (part 2)***
- ▶ ***Anchor Designer Software™ Version 4 Now Available***
- ▶ ***Introducing New Gas-Actuated Nailer***