

CODE CORNER

IBC REQUIREMENTS FOR CONNECTORS

Editor's Note: Code Corner will be a regular feature in upcoming issues. This column will analyze various code requirements to make them easier to understand. If you know of a section of the code that you feel is often misinterpreted or unclear, let us know and we'll feature it here. Contact us at chudak@strongtie.com.

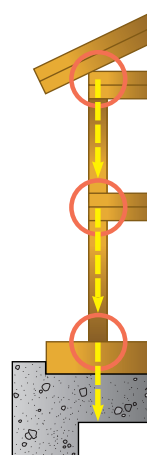
Most of the country has moved to adopt the newest codes published by the International Code Council, or ICC. The two ICC model codes that deal with connector usage are the International Building Code (IBC) and the International Residential Code (IRC). The IBC is the model code that is used to design buildings. The IRC is the code that focuses specifically on the construction of residences and town homes.

In this article we'll take a look at how just one chapter of the IBC code – Specifically 5 sections of Chapter 23 – regulates or requires connectors.

GENERAL CONNECTOR REQUIREMENTS

Section 2304.9.3 states that “Connections depending on joist hangers or framing anchors, ties and other mechanical fastenings not otherwise covered are permitted where approved. The vertical load-bearing capacity, torsional moment capacity, and deflection characteristics of joist hangers shall be determined in accordance with Section 1715.1.” The IBC defines “approved” as “Acceptable to the building official.” And, section 1715.1 specifies that joist hangers and connectors have to be tested in accordance with ASTM D1761, and requires a

specific method for determining allowable loads. Simpson always adheres to the latest standards for rating our products; however you can verify loads in ICC Evaluation Reports.

**CONTINUOUS LOAD PATH REQUIREMENTS**

Section 2304.9.6 requires that “Where wall framing members are not continuous from foundation sill to roof, the members shall be secured to ensure a continuous load path.” Simpson connectors are frequently used to maintain a continuous load path.

(continued on page 2)

PRODUCT SPOTLIGHT

NEW ARCHITECTURAL PRODUCTS GROUP IS MEANT TO BE SEEN

Not so long ago in wood construction, connectors were a hidden asset, working behind the scenes. Specified for added strength and safety, joist hangers and post caps were considered by architects and others to be structural and so tended to disappear under sheathing or behind the finished walls. Today, perhaps due to a renewed interest in functionality of design, many architects find the solid, rugged, appearance of galvanized or powder coated steel connectors adds character to a building and complements the massive look of large exposed wood members used in trusses or beams.

After conducting focus group studies with members of AIBD (*American Institute of Building Design*), surveys of AIA members, and individual discussions with architects in the field, Simpson Strong-Tie discovered enthusiastic support for the development of a group of aesthetically pleasing pre-finished

connectors and concealed joist ties for exposed wood applications.

The result is Simpson's Architectural Products Group (APG), which combines structural integrity with decorative architectural detailing to offer increased design flexibility. The APG includes a full product offering for interior and exterior applications. Designed with a textured black powder-coat finish, the products give architects and building designers a line of products that creates a distinct visual expression, while at the same time provides proven structural performance. The products are also available in galvanized or painted gray primer finish.

CONTINUED STRUCTURAL INTEGRITY

While these connectors are aesthetically pleasing, an important feature of the line



is that they still have the structural integrity of our standard connector line. With few exceptions, the products in the line have been tested and load rated and most are code approved. The detailed information on this product line is available in Simpson's *Wood Construction Connectors* catalog (C-2004) as well as in the new Architectural Products Group catalog (C-APG04).

(continued on page 4)

SERVICE UPDATE

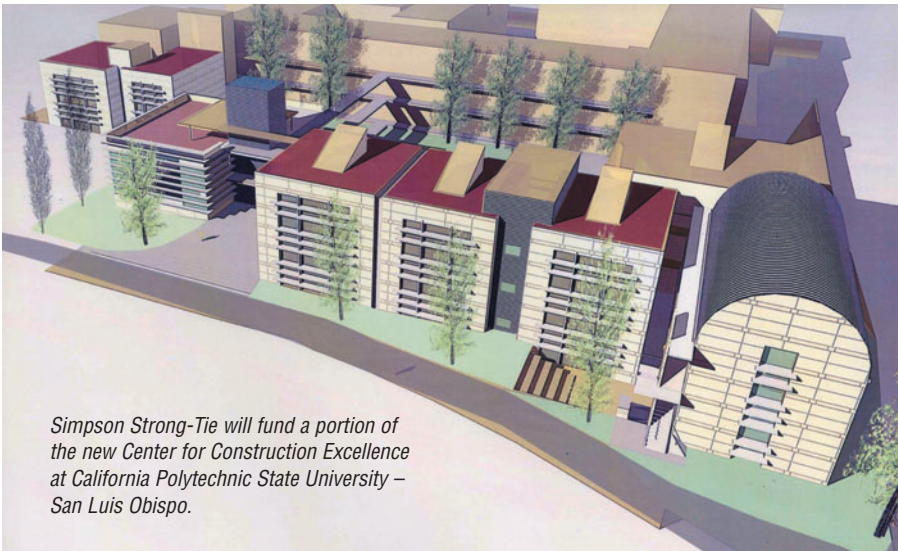
SIMPSON DONATES \$500,000 TO UNIVERSITY CONSTRUCTION PROGRAM

In its continuing efforts to support higher education, Simpson Strong-Tie has donated \$500,000 to help fund a laboratory in a new building at California Polytechnic State University in San Luis Obispo, California.

test a variety of structural components. The Materials Demonstration Lab will provide vital support for activities of four adjoining labs in the center, where students will gain hands-on experience with fundamentals of

scheduled for 2005, with completion in the fall of 2007.

"Simpson Strong-Tie is committed to education and advancing the construction of safe, cost-effective structures for our communities," said Dave Bastian, branch manager of Simpson Strong-Tie's Brea, California facilities. "Cal Poly's new construction management labs will enhance hands-on learning, which will continue to improve building practices and bring bright, skilled design and construction professionals into the work force."



Simpson Strong-Tie will fund a portion of the new Center for Construction Excellence at California Polytechnic State University – San Luis Obispo.

HANDS-ON LEARNING

The Simpson Strong-Tie Materials Demonstration Laboratory will be the largest element in the building's Center for Construction Excellence which will be part of the university's esteemed Construction Management Department. Students in several disciplines will be able to use the 5,000 square foot lab to design, build and

construction management and with residential, commercial and heavy/civil construction.

The donation is part of the Cal Poly College of Architecture and Environmental Design's campaign to raise \$7.5 million in private gifts to help fund the new building. The college will receive \$17 million in state funds for the project. Groundbreaking is

SIMILAR GOALS

Cal Poly Construction Management Department Head Allan Hauck said, "Cal Poly and Simpson Strong-Tie share similar goals of construction excellence and improving the safety of structures. We are very pleased to have had Simpson Strong-Tie as a partner for the past two decades. The new demonstration laboratory is designed to provide an interactive learning environment for students that can simulate 'real-world' projects, from the construction of roads to structural seismic mitigation that will protect homes and buildings from the forces of nature, including earthquakes and high winds."

For more information about Cal Poly's fundraising efforts or the Construction Management program, call the College of Architecture and Environmental Design at (805) 756-1323. ■

CODE CORNER - IBC REQUIREMENTS *(continued from page 1)*

POST BASE REQUIREMENTS

Section 2304.11.2.6 requires that posts or columns, supporting permanent structures and that are supported by a concrete or masonry slab or footing that is in direct contact with the earth, must be of naturally durable or preservative-treated wood unless the post or column is supported by a concrete pier or metal pedestal projecting at least one inch above the slab. Simpson Post Bases such as the AB, ABA, ABE, and ABU provide this one inch standoff.

PLATES AND SILLS REQUIREMENTS

Section 2308.6 contains the standard requirement for anchoring foundation plates and sills. It states that plates and sills shall be "bolted or anchored to the foundation with not less than 1/2" diameter steel bolts or approved anchors." Simpson Mudsill Anchors such as the MAS, MAB, LMA, or MASB can be used to meet this requirement. Note that often a reduced spacing, as shown in the Simpson Strong-Tie Catalog, will be required to be equivalent to what is specified in the code. Section 2308.12.8 requires

3/16" x 2" x 2" plate washers on anchor bolts in higher seismic areas. Simpson BP1/2 meets this requirement.

JOIST REQUIREMENTS

Section 2308.8.1 states that "Except where supported on a 1" by 4" ribbon strip and nailed to the adjoining stud, the ends of each joist shall not have less than 1 1/2" of bearing on wood or metal, or less than 3" on masonry." To meet this, the minimum bearing length of Simpson joist hanger is 1 1/2". ■

CONTINUING EDUCATION & EVENTS

NORTHEAST

Architects, Engineers, Building Officials & Contractors

Dover, Delaware Tuesday, September 14
Louisville, Kentucky Wednesday, September 22

SOUTHEAST

Builders & Contractors

McKinney, Texas Friday, July 16
Jacksonville, Florida Thursday, July 22

Lateral/Seismic Design & Construction

Atlanta, Georgia Thursday and Friday
August 12-13

Introduction to Simpson Anchor Systems

McKinney, Texas Thursday, September 16
Jacksonville, Florida Wednesday, September 22

Advanced Anchor Systems Topics

McKinney, Texas Friday, September 17
Jacksonville, Florida Thursday, September 23

NORTHWEST

General Connector Technology - for All Audiences

Portland, Oregon Wednesday, September 22
Kent, Washington Tuesday, September 28

Engineers, Architects & Specifiers

Stockton, California Thursday, September 16

SOUTHWEST

General Connector Technology - for All Audiences

Las Vegas, Nevada Thursday July 29
Honolulu, Hawaii Tuesday, August 24
Kona, Hawaii Thursday, August 26

Building Officials

Brea, California Thursday, August 5

Design Professionals

Brea, California Thursday, July 15

Contractor/Builder Developer

Brea, California Thursday, September 2

Introduction to Simpson Anchor Systems

Brea, California Thursday, September 23

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

NEWS UPDATE

THE TITEN HD® IS NOW ICC LISTED!

ICC Evaluation Service (formerly ICBO ES) report ESR-1056 covers the Titen HD® screw anchor in a variety of applications. A complete array of embedments and reduction factors make the Titen HD® easy to specify and use. Visit our website www.simpsonanchors.com to download a copy today. ■



Structural Report is published by Simpson Strong-Tie Co., Inc. All information is meant to be relevant and useful. Information provided is for general understanding only. All designs or other information should be evaluated by a qualified design professional.

MAILING LIST

To revise your mailing information or to add to the mailing list, sign up on our Web site at www.strongtie.com/newsletter/.

PRODUCT SPOTLIGHT - ARCHITECTURAL PRODUCTS GROUP *(continued from page 1)*

The product line consists of heavy gauge straps, plates, heavy angles, joist hangers, column bases and column caps – in notched or non-notched designs. Most of these products carry load ratings, so their purpose is structural, as well as decorative.

CUSTOM PLATE OPTIONS

An important additional feature in the line is Simpson's custom plate options, which are made to order from customer-supplied CAD drawings. Previously, architects relied on local fabrication shops to manufacture these custom items – a time consuming process.

MEANT TO BE SEEN

Based on Simpson's customer research, architects are requesting more design options for steel connectors and joist

hangers. "The use of natural wood for exposed ceiling beams and rafters continues to be a progressive design trend in urban



settings as well as in the hospitality market," says Tom McClain, Product Manager for APG. "Simpson's Architectural Products Group allows designers to use connectors as an integral design element that's meant to be seen."

As architects and structural engineers become more familiar with this new product group, Simpson plans to offer additional concealed connector designs as well as some products from its European factories.

The Architectural Products Group is available nationwide from authorized Simpson Strong-Tie dealers.

For detailed product information visit www.strongtie.com/apg or call 800-999-5099. ■

Inside this issue:

- ▶ *Code Corner*
- ▶ *Architectural Products Group*
- ▶ *Simpson Donates \$500,000 to University Construction Program*