Inside
Results of ILZRO Study
Changes in Code
When builders use our Steel Framing products, we expect callbacks.

For over three decades, CEMCO’s commitment to quality and service has awarded them some of the most prestigious projects in the nation. With a reputation as the leader in steel framing and metal bath systems throughout the Western United States, builders, architects, and specifiers continually look to CEMCO to ensure their projects are completed on time and on budget. Whether it’s innovative products like SURE-BOARD for SHEAR or CEMCO’s pre-engineered light gauge roof trusses, we have products specific to the projects you build. Builders like Brookfield Homes, Schuber Homes and Lenmar Homes, have all used CEMCO quality steel products, and they keep calling us back! So, call us today and see how we can help you with your next project; then add us to your speed dial; you’ll be glad you did.

You build it once. Build it right.
If you have not yet begun to incorporate steel framing into your operations and construction projects, you must be wondering what others know that you haven’t discovered.

More than 7 percent of all new homes in California and Florida are built with steel framing. In Hawaii, more than 70 percent of the homes built in 2002 were framed with steel. Other hot spots across the United States include Arizona, Nevada, Texas and major cities in the Southeast. Nationwide, 10 percent of all multifamily projects use steel studs for the interior walls.

Major builders like Lennar Family of Homes, Centex, Brookfield, Schuler, Castle and Cooke, and Pulte have started to integrate steel framing into their new projects or are using steel framing in a significant way. At the Steel Framing Alliance, we are spotting trends that point to even greater growth in the use of steel framing by remodelers and builders who are increasingly combining steel framing with wood studs, steel studs in structural insulated panel walls, and steel-stud floor and interior walls in insulated concrete form construction.

Among the many reasons driving the use of steel is cost. According to cost comparison studies recently adjusted for current material prices, labor and material for steel framed floors costs 7 cents less per square foot than traditional wood framing. For interior walls, the cost is 16 cents per square foot less. Builders who have used steel framing for three or more houses typically report that their total costs are equivalent to those for wood framing.

The increased attention paid to non-combustible construction is also fueling interest in the use of steel trusses, floor joists and wall studs. Problems with mold and termites in California and the Gulf Coast states are accelerating the broad adoption of steel framing. Steel’s status as the most recycled material also appeals to the environmentally conscious among us. Building codes and standards, as well as innovations in fastening and construction methods, are making it easier to specify and use steel than ever before.

If you have not yet made the switch to steel but would like to join the growing numbers who have, there are a few key words of advice I would offer. First, try incorporating steel framing one application at a time. Start with the interior walls, then add the floors, and finally the exterior walls and roof. As with any change, there is a learning curve and this step-by-step approach will give you and your crew the opportunity to get a feel for framing with steel.

Make sure you have the right tools. A screwgun, electric shears, C-clamp, chalk line and magnetic level are all the basic tools you’ll need and will make a huge difference in your productivity.

Your membership in the Steel Framing Alliance is another important tool. For a minimum annual investment of $150, you have access to information about the steel framing market, training aids and options, technical and design resources, and the “heads up” on innovations and trends that will help strengthen your competitive position and increase the efficiency of your operations. Some examples of what you will see in 2004 include more hands-on training opportunities, “best practices” studies and recommendations, and information on where you can go for discounts on builders risk insurance.

So, if you haven’t started using steel framing yet, perhaps it’s time to learn what others have already discovered.
The Steel Framing Alliance and Steel Stud Manufacturers Association will operate under the same roof, as SSMA opens a new Technical Services Office at Alliance headquarters in Washington, D.C.

Don Allen, P.E., director of engineering development for the Alliance, has been named technical director of the SSMA. His appointment was effective Dec. 1. SSMA is the Chicago-based trade association representing manufacturers of cold-formed steel studs, track and joists. Formed in 1999 by a merger of the Metal Stud Manufacturers Association, SSMA has standardized cold-formed steel nomenclature and design values for industry products.

The relocation of the SSMA Technical Service Office to Washington, D.C., and its proximity to SFA and the AISI will further enhance the coordinated technical efforts of the cold-formed steel industry to the benefit of the design build community, according to Larry Williams, Alliance president.

SSMA publishes a Product Technical Information Catalog, design details and Tech Notes to assist designers and users of lightweight steel framing systems.

Allen assumes the SSMA post recently vacated by the retirement of Neal Peterson, of Devco Engineering, Corvallis, Ore. Peterson served SSMA since its incorporation in 1999 and was instrumental in the development of SSMA technical resources.

Allen, who holds a civil engineering degree from the Georgia Institute of Technology, has been involved in commercial and residential steel framing since 1990. His designs include some of the light steel framing in the Georgia Dome and Atlanta Olympic Stadium, as well as hundreds of steel framed projects across the Southeast.

Allen recently served as vice president of the Light Gauge Steel Engineers Association, and as that organization’s executive director. He currently chairs the General Provisions subcommittee of the American Iron and Steel Institute Committee on Framing Standards and regularly lectures on light-gauge steel design and construction issues.

Twenty-three students comprised the inaugural class of Stud U, an instructional seminar sponsored by the Alliance and METALCON 2003 at the October show. Hailing from Israel, Trinidad, Scotland, Canada and the United States, the group learned about the benefits of cold-formed steel, including the latest methods and tools, and then hit the ground running to construct the main show structure.

In fewer than 12 hours, their creations, two buildings of 1,828 square feet, opened to attendees for touring. The buildings showcased panels from Premium Steel Building Systems, the Nuwall from NUCONSTEEL, panels made with steel from Clark-Western Metal Lath and Steel Framing Systems, TradeReady Floor System by Dietrich Metal Framing, trusses by Alpine TrussSteel, and roofing by Copper Sales Inc., as well as M & P Fasteners international screws and Simpson Strong-Tie connectors. Additional cold-formed steel was supplied by Steel Construction Systems.

Each participant received a tool bag full of the appropriate tools to maximize his or her career in steel, including equipment from Irwin Industrials Tools, Aeromast Fastening Systems, ET&T Fastening Systems, Flex-Ability Concepts, Meyer Wholesale Group, Dietrich Metal Framing, Kwikdim Manufacturing, Simpson Strong-Tie, The Stanley Works, NUCONSTEEL, Steel Stud Systems, and others.
Teamwork

Stud U

continued from page 5

Manufacturers Association, American Iron and Steel Institute, and Mid-Atlantic Steel Framing Alliance. Danny Feazell of Premium Steel Building Systems served as Stud U’s master contractor and instructor. He was assisted by Nader Eihaji of the NAHB Research Center, Tim Feazell, Wayne McGuire of Premium Steel Building Systems, Bob Wilson, Dave Mennel and John Wand.

The Alliance thanks Doug Pearson, Steve Hilton, Don Allen, Danny Feazell, Janice Duncan, Nader Eihaji, Tim Feazell, Wayne and Sue McGuire, and John Rizzotto for assistance in delivering the structures to the Spring Inc., a domestic-violence center in Tampa that will enjoy the benefits of this steel structure for years to come.

For more information on Stud University contact Mark Rizotto at mrizotto@hai.com at (412) 522-5210.

Industries News

Steel on the Horizon

Several Alliance members are hard at work today inventing and developing steel-framing products we may see on the jobsite tomorrow. Here’s a sampling.

Composite Systems, along with several manufacturer partners, has completed the second phase of testing at Brigham Young University for steel deck shear panels using steel-to-steel adhesives. Jim Chatterley says ultimate loads maximized at 4,000 pounds per foot with a drift of 1 inch; the goal for phase three will be to create a design that will develop an ultimate shear capacity of 8,000 pounds per foot with 1.5 inches of drift. (Visit: www.compositelathingingsystems.com.)

Gemini Structural Systems Inc. is refining a moisture-venting panel and accessories for exterior wall applications. Herb Schilger says his approach would provide significant improvement in cases where minimizing moisture in the wall cavity is a concern. (Visit: www.geministructures.com)

Lifetime Structural Systems is developing an innovative framing approach, which includes the positioning of framing bases in the concrete foundation. John Rizotto says this approach allows for the rapid erection of prefabricated framing assemblies and saves considerable field erection time. (Contact: rizotto@bellsouth.net)

Newport Partners LLC is behind a HUD-sponsored field evaluation of the Attexor clinching tool. Mark Nowak says that clinching was showing particular promise in the pre-assembly of built-up members used to frame around door and window openings. (Contact: marknowak@newportpartnersllc.com)

Professor AM Mamarri of Penn State University has a concept for a Multi-hazard-resistant Panelized Brick Veneer Wall System. A report is available on this system and its developers are looking for potential partners to help fund its commercialization. (Contact: amm@engr.psu.edu)

Sunburst Enterprises has a concept named iWall. Rick Hubbard says its idea is to fabricate load-bearing exterior wall panels with OSB at the center and hat channels on either side to maximize strength and minimize thermal conductivity. (Contact: RickLHub@yahoo.com)

The Alliance encourages readers to follow up directly with the above contacts for more information on the various developments.

Correction

In the April-June 2003 issue of FRAMEWORK, in the story “National Alliance meets at PACRIM,” the quote from Tom Porter, executive vice president of CEMCO, should have read:

“If the state of California had one-third market share, we would need an additional 500,000 tons of steel to service that market.”

Corrections

COFS work heats up

The Alliance will begin to receive guidance on its investments in research and development from a new task group formed by the American Iron and Steel Institute. The COFS Fire, Sound and Thermal Task Group is intended to serve not only the needs of the COFS, but also the broader needs of the industry on these subjects.

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**Teamwork**

**TECHNOLOGY TEAM - continued**
- Corrosiveness of new treated wood sheathing, subsequently assigned to the AISI COFS Corrosion & Durability Task Group.
- Thermal performance of steel roofs, subsequently assigned to the AISI COFS Fire, Sound & Thermal Task Group.
- Multi-family construction problems/concerns.
- Hybrid framing.
- Prescriptive Method for SIPs.

American Iron and Steel Institute Committee on Framing Standards is currently refining and prioritizing a list of barriers needing to be addressed and is currently refining and prioritizing a list of subjects, which includes:
- Gable end wall framing for the Prescriptive Method.
- PAF connections for stud walls.
- Reinforced holes in floor joists.
- Rafters on hips, double track connection for ridge.
- Angle bearing stiffeners.
- Jamb studs, back-to-back header connection to jack stud.
- Prescriptive requirements for foundation cripple walls.
- Prescriptive requirements for single L-Headers.
- Prescriptive load-bearing top track options.

**Dofasco products recognized as healthy**

Dofasco Inc.’s galvanized and Galvalume steel used in manufacturing light-gauge steel framing has been recognized by the Asthma Society of Canada as part of a healthy indoor air environment. “This acknowledgement speaks to one of many inherent qualities and attributes of Dofasco steel as a building material,” said Brian Aranha, Dofasco’s vice president, commercial. “Light steel framing is an inert, neutral material. It does not release chemicals into the air, it does not support mold growth, and it does not offer a source of food or shelter for insects such as termites.”

“The Asthma Society of Canada has recognized Dofasco steel building products as part of a healthy home due to its neutral impact on indoor air quality,” said Frank Viti, chief operating officer of the Asthma Society of Canada. “The Asthma Society of Canada is active in its focus on asthma education and research, which includes raising awareness of products that are part of a healthy indoor air environment.”

Dofasco is the first Canadian steel company to receive recognition for its galvanized and Galvalume steel products from the Asthma Society of Canada. Building products made with Dofasco steel will carry a label bearing the Asthma Society and Dofasco logos, along with the phrase, “The Asthma Society of Canada recognizes that building products made with Dofasco steel are part of a healthy indoor air environment.”

Dofasco is based in Hamilton, Ontario.

**Alliance-member products in concept home**

Products supplied by CEMCO grace what is being billed as the nation’s first antimicrobial home. Located northwest of Los Angeles, the AK Steel Concept Home features products made from carbon and stainless steels using coatings containing an anti-microbial compound. Anti-microbial-coated steels reduce bacteria, mold and fungus growth.

In total, the AK Steel Concept Home incorporates about 200,000 pounds of steel, including 35,000 pounds of steel coated with the anti-microbial compound. In addition to numerous antimicrobial fixtures throughout the home, its structural framing and portions of the exterior are also made of steel, making it easier to maintain and making it more resistant to fire, earthquakes and insect damage. The roof and many architectural elements are made from stainless steel, enhancing the home’s appearance.

“The home’s unique use of anti-microbial-coated steel is in response to the demand for products that help keep homes cleaner,” said Alan H. McCoy, vice president, public affairs for AK Steel. “Public awareness of microbes has grown rapidly in the past few years, and with it so has the interest in products that can help address concerns for cleanliness. The AK Steel Concept Home also demonstrates how steel can enhance structural and architectural elements of residential construction.” CEMCO is based in City of Industry, Calif.

Examples of exciting steel-framed projects are everywhere, as is evidenced by the Woodstock Baptist Church, in Woodstock, Ga., whose story is now featured on the Alliance Web site.

The case study outlines how the contractors, architect and engineers—as well as steel framing itself—overcame its unique structural and design challenges, including a massive main sanctuary, a 300-foot dome, a cupola and 30-foot cross weighing more than 50 tons.


**Teamwork**

**TECHNOLOGY TEAM - continued**
- Stud-to-track end gap tolerance.
- L-headers attached to head track.
- Floor joist span tables for multi-family dwellings.
- Update of Prescriptive Method.
- Feasibility of high-strength steels in the Prescriptive Method.

The Technology Team continues to encourage both members and non-members to use the Barrier Submission and Product Submission forms, which are available on the R&D page of the Alliance Web site, to make the Alliance aware of technological needs in the industry.

**Do you have company news you’d like to share with the industry?**
- Personnel change?
- Acquisition?
- New Business?

E-mail Editor Sarah Humphreys at Humphreys_S@msn.com or call (714) 842-6418.
NUCONSTEEL launches program for fabricators

NUCONSTEEL has launched an authorized fabricator program for fabricators of trusses and wall panels across the United States, with two manufacturers already participating.

The NUCONSTEEL Authorized Fabricator Program presents a component manufacturer or fabricator with the opportunity to add a light-gauge steel-framing system to its product offering. The NUCONSTEEL system bills itself as uniquely versatile and compatible with other construction materials, as well as highly efficient in the just-in-time fabrication process. “By aligning their business with a strong brand like NUCONSTEEL, the fabricator brings a mark of quality, longevity and innovation to their work,” said Courtney J. Hanson, NUCONSTEEL’s vice president, market and product development. “At the same time, they can add efficiencies to the fabrication process this industry has not yet seen.”

Rib Roof Metal Systems Inc. a turn-key metal component manufacturer and erector, and Structural Concepts LLC, a manufacturer of pre-engineered and fabricated light-gauge steel framing panel systems, have aligned with NUCONSTEEL to fabricate and market its NuTruss load-bearing light-gauge steel-truss system. Rib Roof will operate the program from its Rossville, Tenn., and Rialto, Calif., facilities. Structural Concepts will do so from its plant in Corona, Calif.

NUCONSTEEL’s Authorized Fabricator Program features a dedicated Web site for each fabricator in the program. Here the fabricator can access its special net pricing on truss chord, web, hat channel and other accessories, its customized NuTruss brochure, and spec sheet; secure online order processing for all materials; and download technical files, marketing collateral files and a license agreement. In addition, the program provides exclusive sales support and customer service, fabricator training, and manufacturing and construction support.

Steel Framing is the Future of Construction. Be a Part of it.

If you’re in the steel or the building industry, here’s something vitally important for you. Steel framing is fast replacing conventional framing in both commercial and residential construction. The Steel Framing Alliance is a key industry body that’s aggressively driving the market towards this new building technology. Join the Alliance and capitalize on this immense opportunity. Benefit from networking, PR, resources, marketing, training and more. Together, we can make steel framing the future. Your future.

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NUCONSTEEL in Sweets

NUCONSTEEL announces its first-time placement in McGraw Hill Construction’s Sweets Catalog File—AEC Edition. It can also be found in Sweets Directory, online at sweets.construction.com, and on the Sweets CD.

NUCONSTEEL, a Nucor Co., produces load-bearing light-gauge steel-framed trusses, walls and floor systems for low-to mid-rise construction. Sweets allows users to obtain design ideas, compare and select products, and make specifications and purchases from the information its information. Sweets Catalog File—AEC Edition reaches the top 27,000 AEC firms, representing 243,000 construction professionals across all commercial and high-end residential construction market sectors where an architect, engineer or contractor is involved.

Market statistics from several sources reveal significant penetration in multi-family construction (3.19 percent) and tremendous opportunity in non-residential structural framing (3.2 million tons), including exterior wall, floor and roof framing. These market data will help guide the activities of the Alliance and the investment of its resources in research and development projects.

The market data report can be found on the Alliance Web site: www.steelframingalliance.com.

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End the mystery of making the switch from wood to steel with the book Steel-Frame House Construction, written by the NAHB Research Center and former Alliance President Tim Waite.

To order, call (202) 785-2022 or visit www.steelframingalliance.com.

The new free TrusSteel Cold-Formed Steel Truss Design Guide contains guide specifications, CAD details, code reports and more.

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STEEL-STUD-BRICK-VENEER DESIGN GUIDE

For practicing structural engineers and architects to design steel-stud-brick-veneer systems for commercial and high-rise residential buildings, this guide reviews relevant structural and building science principles. General guidelines for the detailing are provided along with specific structural design recommendations.

The NUCONSTEEL Technical Manual presents products’ specifications, profiles, section properties and product details, as well as extensive amounts of design criteria, general information on light-gauge steel framing, material safety data, and fire and sound ratings.

It can be ordered online at nuconsteel.com, by phone at (940) 891-3050, or via e-mail tmrequest@nuconsteel.com.

Tools of the Trade – Part II

by Maribeth Rizzuto

In the last issue of FRAMEWORK, we covered how to outfit your tool belt for under $400 to get started in steel framing. Key supplies were a good electric screwgun, a good pair of electric shears, a magnetic level and a chalk line.

Once the screwgun has been mastered, it is appropriate to look at the advancements in fastening technology to speed up time on the job. Collated attachments and nail guns are just two of the ways to do so.

Collated attachments

Collated attachments are extensions to a screwgun that speed production time by automatically feathering the next fastener into position. Typically used for the application of subflooring, roof sheathing and steel-to-steel connections, the fasteners are produced in strips or coils and take the stress and strain from framers by allowing them to stand as they complete their task.

It is necessary to be proficient with a basic screwgun in case the attachment becomes damaged. In many cases framers learn how to use the attachment before the screwgun. Unfortunately if this is the case and the attachment malfunctions, the job stops. In recent years, major manufacturers, including Grabber and Senco, have produced collated systems for completion of various task at the jobsite that eliminate waste and speed production time.

Nail guns

While similar to collated systems, nail guns provide for the attachment of materials like OSB, plywood and siding to walls. With the use of standard air compressors, nail guns pneumatically drive ballistic pins through a material like siding or OSB into cold-formed steel up to 68 mil.

Pneumatic drive pins are made of high-carbon steel that enables them to penetrate steel studs. They have a deformed surface pattern that varies by manufacturer. As the pin is driven, the point pierces the stud forcing the...
Corrosion Performance of Steel Framing

A five-year study recently completed by the National Association Home Builders Research Center supports steel framing’s viability under a number of climatic conditions. In 1997, the International Lead and Zinc Research Organisation, headquartered in North Carolina, sponsored the research initiative titled Galvanized Steel Framing for Residential Buildings with a chief objective of investigating the corrosion performance of metallic-coated steel-framing components in steel-framed homes.

Four sites at four different locations, as shown in the accompanying table, were selected by the NAHB Research Center. The sites represented a range of climates and typical building types for each region. The sites were chosen such that field results would be applicable to a large selection of homes and climates.

Sites Unseen

At each site, numerous test samples were installed in building cavities where steel framing would typically be used (e.g., attics, floor systems, walls). The corrosion test samples consisted of galvanized and Galvalume- and Galfan-coated flat plates and segments of C-section stud. Two sites were also equipped with electronic monitoring systems that measured and recorded surface temperatures, relative humidity and time of wetness for a one-year period.

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Location</th>
<th>Environment</th>
<th>Foundation</th>
<th>Distance to Water</th>
<th>Exterior Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Miami, Fla.</td>
<td>Humid, inland</td>
<td>Slab-on-grade</td>
<td>Several miles from Atlantic Ocean</td>
<td>Stucco</td>
</tr>
<tr>
<td>2</td>
<td>Leonardtown, Md.</td>
<td>Semi-marine with humid summers</td>
<td>Crawlspace</td>
<td>Less than 75 ft. from Potomac River</td>
<td>Stucco</td>
</tr>
<tr>
<td>3</td>
<td>Long Beach Island, N.J.</td>
<td>Marine</td>
<td>Piers with enclosed area under house</td>
<td>Less than 1/4 mile from Atlantic Ocean</td>
<td>Aluminum Siding</td>
</tr>
<tr>
<td>4</td>
<td>Hamilton, Ontario, Canada</td>
<td>Industrial with cold winters</td>
<td>Basement</td>
<td>Inland</td>
<td>Brick Veneer</td>
</tr>
</tbody>
</table>

We’re building a framework for growth in the construction industry.

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Tools continued from page 15

The world of tools for cold-formed steel framing is rapidly expanding. Manufacturers are working hard to provide framers with cutting edge technologies to make the installation of cold-formed steel cost competitive with other framing systems.

In the next issue, we will take a closer look at some of the latest advancements for cutting cold-formed steel.

Marketh Rizuto is director for training and education for Steel Framing Alliance.

The compressive strength of the steel causes the stud to grip the pin. An increase in stud thickness or tensile strength increases the pin’s pullout resistance.

There is no doubt that nail guns are faster than screwguns, but each has very specific uses. Manufacturers including ET&F, ITW Buildex, Senco and Aerosmith have inventories consisting of systems for just about all applications. In just the past year, a gun has been developed for steel-to-steel connections, as well. For the finish carpenter, both ET&F and Senco have developed nailers to attach chair rail, crown molding and other trim. This is accomplished without damaging the finished product. In instances of high wind and in high seismic areas, a combination of pins and screws may be required. It is always appropriate to consult with the manufacturer for the right application and use.
These data were needed to determine if thermal and moisture conditions existed that would allow condensation to form on building components. Samples were retrieved from each site at one-year, three-year and five-year intervals. The corrosion rate for each retrieved sample was measured, and the life expectancy of each colony or set was estimated using industry standards.

The environmental data collected from the Hamilton and New Jersey sites after one year of electronic monitoring period indicated that the samples and their micro-environments (e.g., a wall cavity) remain dry throughout the year. This observation supports the low-coating loss measurements reported for these two sites over one-, three- and five-year exposure periods.

**Losses low**

Coating-loss measurements from the four sites have indicated very minor mass loss rates for all sample types, sample coatings and sample locations. The fastest coating corrosion rate observed for any of the samples was a loss of 0.04 grams for Galfan plate samples installed hanging in the attic of the Miami site after five years of exposure.

The estimated life spans for all plate samples were calculated based on the maximum duration of exposure (i.e., five-year exposure). The life expectancy ranged from 218 to more than 1,260 years with an average of 743 years for all samples at all locations. The lowest life span was calculated for a Galvalume plate sample located in the wall cavity of the Hamilton site after one year of exposure (218 years).

The estimated life expectancies of the coated samples were re-calculated using the minimum coating weight rather than the actual coating weight (for example a 0.06 ounce-per-foot squared was used for a 0.60 coating). The estimated life expectancy using the minimum coating weights ranged from 220 to more than 1,100 years with an average of 650 years for all samples at all locations. The results of this program reaffirmed the findings of the AISI Durability of Cold-Formed Steel Framing Members document published in October 1995.

A complete report of the study is available for download at the Alliance Web site, www.steelframingalliance.com.
Changes in Building Codes

by Don Allen

Building codes have been a part of world culture and government for thousands of years. The first recorded building code was part of “The Law Code of Hammurabi,” dating from around 1800 BC. It contained requirements like, “If a builder builds a house for someone, and does not construct it properly, and the house which he built falls in and kills its owner, then that builder shall be put to death.”

We have come a long way since the days of Hammurabi, and the penalties for construction are not quite as severe. Today’s codes set minimum design requirements that protect both the owner and the builder, making collapse less likely and protecting the builder when extreme conditions cause failure of a properly built structure. The complex and comprehensive codes that govern our construction today, as well as the documents being developed for future codes, can benefit the steel builder when used properly.

What are building codes?

According to the International Code Council, development of its codes must conform to the following four guidelines:

1. Protect public health, safety, and welfare.
2. Do not unnecessarily increase construction costs.
3. Do not restrict the use of new materials, productions or methods of construction.
4. Do not give preferential treatment to particular types or classes of materials, products or methods of construction.

According to the National Fire Protection Association, the purpose of building codes is, “To provide minimum design regulations to safeguard life, health, property and public welfare and to minimize injuries by regulating and controlling the permitting, design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures within the jurisdiction.”

Representation

These are some rather wordy definitions, but they give us a better idea of what the code writers are trying to do. This does not mean that politics does not play a part in code development. All of the major types of building materials have full-time paid professionals whose primary job is to ensure that their products are properly represented in the codes.

The American Iron and Steel Institute has three such employees on its code staff: Hank Martin P. E., Robert Wills P. E. and Jonathan Humble AIA. The code staff works diligently to make sure that the codes are fair to steel, to ensure that steel’s best interest is properly represented, and to keep other entities from gaining an unfair advantage for their product or service. Some of their recent accomplishments include having the Prescriptive Method for Cold-Formed Steel Framing adopted into the International Residential Code and Safety Code, and having shear wall values incorporated into the Steel chapter of the International Building Code.

Why have the codes changed so much recently? Building codes are in constant state of change. They are always trying to keep up with innovations in the marketplace: new materials, new construction methods, new tools and new research.

Also, development in research and research methods allow scientists to better predict loads on structures, including forces from hurricanes and earthquakes. With new tools to model the loads and new products to resist the loads, the codes and builders try to ensure that all this work goes in to making buildings safer, cheaper, and less costly to operate and maintain.

Help to steel

Developments that have helped the steel industry include fire-rated systems for steel roof trusses, multiple new proprietary truss member shapes and steel truss systems, wider implementation of new tools and fastening for steel, including nailing, clinching and even adhesives, and standardization of the nomenclature for cold-formed steel members.

The codes have responded to many of these new developments, but code development is a slow process. Because of the long timeframe for development, adoption and implementation, builders and designers can respond to changes, often before the new codes are implemented and enforced.

Ten years ago, the primarily regional building codes adopted a uniform format.

For residential design, many years earlier they had collaborated and formed the Council of American Building Officials. Realizing the need for a separate residential code, CABO developed the One and Two Family Dwelling Code. Provisions of the Prescriptive Method for steel were adopted in the 1995 version of this code, making it easier for builders and designers to specify and use steel in homes. When the CABO code was essentially replaced by the International Residential Code, these same prescriptive provisions were included in the new document but updated to include the new member designations.

After adopting the uniform format, Building Officials and Code Administrators International, International Conference of Building Officials, and Southern Building Code Congress International formed the ICC and pledged to develop a unified series of codes: the International Codes. The goal was to have one code that covered the entire country and could be adopted by each state or local jurisdiction as a part of local law.

At the time, codes had been adopted regionally: the National Building Code was used primarily in the Northeast, the Southern Building Code primarily in the South, and the Uniform Building Code primarily in the West. Even though each code covered the entire United States, there were certain regional issues and politics that made a specific code more attractive to the builders and politicians in a certain region and, therefore, more likely to be adopted.

Buildings without borders

The ICC worked to settle regional differences and incorporate provisions that would please all parties. It was successful in most cases, although some areas of the country have been slow to accept the ICC codes. With the publication of the 2000 IBC, there were mixed reviews. Several states and jurisdictions adopted the code almost immediately. Several others decided not to adopt the IBC and sought other alternatives. Examples include Florida, where code officials worked with SBCCI to develop the Florida Building Code 2001, and some west coast states, where political battles are slowing the code adoption process.

Part of the controversy concerning adoption of the IBC and IRC on the west coast was partially because of NFPA and the development of its own building code, the NFPA 5000. NFPA had cold-formed steel in its sights from the beginning. They were always trying to do. This does not mean politicians in a certain region and, therefore, more likely to be adopted.
Building Codes
continued from page 21

their predecessor codes. The heights and areas for types of construction typical for steel framing will in most cases be greater than previous codes, thus the new codes present market opportunities for steel.

Provisions
Regarding structural provisions the new codes are almost identical. They both adopt all new steel design standards as well as ASCE 7-02. The biggest differences for structural engineers are in the inspection chapters, and some specific loading changes that affect not only steel but all building materials. Here are some examples:

Earthquake Design Data: The following information shall be shown, regardless of whether seismic loads govern the lateral design of the building:
• Seismic use group
• Special response coefficients SDS and SD1
• Site Class
• Basic seismic force resisting system
• Design base shear
• Analysis procedure

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Steel Framing is the Future of Construction. Be a Part of it.

If you’re in the steel or the building industry, here’s something vitally important for you. Steel framing is fast replacing conventional framing in both commercial and residential construction. The Steel Framing Alliance is a key industry body that’s aggressively driving the market towards this new building technology. Join the Alliance and capitalize on this immense opportunity. Benefits from networking, PR, resources, marketing, training and more. Together, we can make steel framing the future. Your future.

Steel Framing Alliance
Turn Potential into Profits

Join the Steel Framing Alliance

For now, if you are involved in residential construction, and your local jurisdiction has adopted the IRC or NFPA 5000, the best resources you can have are the Prescriptive Method and General Provisions standards.

Act locally
If you are building in an area where the code officials are not familiar with steel, visit your local building inspector’s office and take him or her a copy of the Prescriptive Method and its companion documents, the Header Design, Truss Design and General Provisions standards.

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Important note: the next version of the International Codes, and new code adoption across the United States. For now, portions of the international codes have been adopted (at least by local jurisdictions) in more than 37 of the states; more are likely to follow. As states begin to adopt the NFPA 5000, as well as develop their own codes and code amendments, it will be interesting to see how this plays out in the implementation of construction. For now, if you are involved in residential construction, and your local jurisdiction has adopted the IRC or NFPA 5000, the best resources you can have are the Prescriptive Method and General Provisions standards.
Getting Started with Steel

MAKE STEEL HAPPEN FOR YOURSELF IN JUST 10 EASY STEPS:

**STEP 1:** Consider starting with steel in one application first: walls or roofs

*Resources:*
- Steel Floor Guide: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Steel Exterior Wall Guide: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Steel Interior Wall Guide: [www.steelframingalliance.com](http://www.steelframingalliance.com)

**STEP 2:** Talk to your local code official before you build

*Resources:*
- International Residential Code: [www.iccsafe.org](http://www.iccsafe.org)
- Steel Kiln Dry Cycles: [www.steelframingalliance.com](http://www.steelframingalliance.com)

**STEP 3:** Look for a skilled steel framer in your area

*Resources:*
- SFA Training School Map: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- SFA Framer Directory: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Construction Specifiers Institute: [www.skillsusa.org](http://www.skillsusa.org)

**STEP 4:** Train your own crew on steel

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- SFA Training School Map: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Steel Frame House Construction: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Commercial Metal Stud Framing: [www.steelframingalliance.com](http://www.steelframingalliance.com)

**STEP 5:** Get a start-up kit & money-saving resources

*Resources:*
- Start-up Kit for Home Builders: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Start-up Kit for Commercial Contractors: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Steel Floor Guide: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Steel Interior Wall Guide: [www.steelframingalliance.com](http://www.steelframingalliance.com)

**STEP 6:** Know the right STUF

*Resources:*
- Right STUF-L: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- General Provisions: [www.steelframingalliance.com](http://www.steelframingalliance.com)

**STEP 7:** Get the mother of all steel standards: The Prescriptive Method

*Resources:*
- General Provisions: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Prescriptive Method for One and Two Family Dwellings: [www.steelframingalliance.com](http://www.steelframingalliance.com)

**STEP 8:** Help your designers with the details

*Resources:*
- Steel & Wood Costs: A. A. C. (www.steelframingalliance.com)
- Steel Studs: [www.steelframingalliance.com](http://www.steelframingalliance.com)
- Steel Joists: [www.steelframingalliance.com](http://www.steelframingalliance.com)

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**STEP 10:** Join the Steel Framing Alliance

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**MEMBERSHIP Milestones**

The Alliance Welcomes New Members...

- Alfred State—SUNY College of Technology
- Alford Spec
- Bobst Construction Service
- Bradley Insurance
- Burlington County Institute of Technology
- Callahan Construction Co.
- Calvert Career Center
- Capitol City Enterprises Inc.
- Champaign County Building Regulations
- City of Englewood
- City of Miamisburg
- City of Middletown
- City of Orem
- City of Springfield
- Clinton County Building Dept.
- County of Ventura
- Crockett County High School
- Crossroads Affordable Quality Homes LLC
- Crown Builders
- David B. Mennel

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**CALENDAR Industry Events**

**JANUARY**

- 9-10 Residential Steel Framing Workshop, Ivy Tech State College Northwest. (219) 981-4402 ext. 2253.
- 19-22 NAHB International Builders’ Show, Las Vegas. (800) 368-5242 ext. 8111.
- 30-31 Association of the Wall and Ceiling Industries—International Academy technical track featuring steel framing for commercial drywall. (703) 538-1610.

**FEBRUARY**

- 15-17 AWCI Construction Directions, Las Vegas. (703) 534-8300.
- 21-23 Construction Specifiers Institute, Chicago. (800) 689-2900.
- 13-14 Residential Steel Framing Workshop, Ivy Tech State College Northwest. (219) 981-4402 ext. 2253.

**MARCH**

- 12-14 Residential Steel Framing Workshop, Ivy Tech State College Northwest. (219) 981-4402 ext. 2253.
- 23-26 PACE, Las Vegas. (800) 368-5242 ext. 8111.
- 30-31 Construction Specifiers Institute, Chicago. (800) 689-2900.
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