



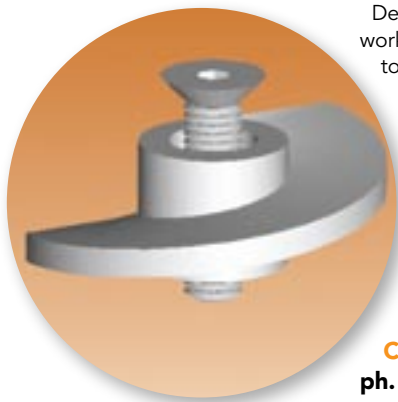
2007 HOT Products

Machinery, software, tools, and supplies are the steel industry's most important accessories—and innovation among these products can mean faster, more cost-effective steel design and construction. This year's Hot Products are just a sample of some of the creative solutions recently introduced for designers, detailers, fabricators, and erectors. Some offer advanced technology, while others provide simple and practical applications in response to common problems. But all

stand out as novel approaches to on-the-job difficulties.

Hot Products were selected by MSC staff from products offered by exhibitors at NASCC: The Steel Conference in New Orleans in April. The awards are based on descriptions and claims by the manufacturers; no product testing or evaluation was performed. These awards do not constitute a product endorsement by *Modern Steel Construction* or by AISC.

Floorfix Fastener



Designed to secure steel floor plates from one side, the new Floorfix enables one person, working from above, to position raised pattern floor plates—eliminating the need for access to the underside of the floor plate. The new fastener allows the floor plate to be secured, removed, or repositioned quickly and easily using only simple hand tools. Simple three-step installation includes: 1) assembling the Floorfix clip to the underside of the floor plate and lowering the plate into the desired position; 2) rotating the countersunk screw counter-clockwise with one full turn; and 3) tightening the screw until the plate is securely fixed to the steelwork.

Floorfix is manufactured from ductile iron to standard ASTM A536: Grade 65-45-12 and galvanized for corrosion-resistance to standard ASTM A123/A123M. Three sizes are available—screw diameters of $\frac{3}{16}$ in., $\frac{3}{8}$ in. and $\frac{1}{2}$ in.—to accommodate floor plates ranging from $\frac{1}{8}$ in. to $\frac{1}{2}$ in. thick and steelwork flanges ranging from $\frac{1}{8}$ in. to $\frac{5}{8}$ in. thick.

Contact: BeamClamp Division of Kee Industrial Products, Inc.,
ph. 800.851.5181, www.keeklamp.com

Life-Cycle Cost Calculator

The annual cost of preventable, atmospheric corrosion of steel products is estimated to be 3% to 4% of the gross national product. For the United States, that represents \$276 billion. The Life-Cycle Cost Calculator (www.galvanizingcost.com) was specifically developed to prevent a specifier from designing projects that contribute to that total cost.

A project's total cost for the duration of the design life is often two to five times greater than the initial cost, and the Calculator is a tool to assist with the decision as to what system is most economical in the long run. Calculating the life-cycle cost for maintenance must consider the impact inflation has on future expenditures and conversely the lost opportunity to invest money used for maintenance at an interest rate over the life of the project. The Life-Cycle Cost Calculator does exactly that, using established financial industry equations and a database of initial cost data for 40 unique corrosion protection systems and specific project input provided by the specifier.

Input required includes the unit of measure, currency designation, coating system being considered, surface preparation method, project size, application method, project design life, and service environment. The result is a direct comparison of the calculated, initial project cost of a chosen corrosion protection system to the initial cost of hot-dip galvanizing as input by the estimator or from the database's national average cost for hot-dip galvanizing.



Contact: American Galvanizers Association, ph. 720.554.0900, www.galvanizeit.org

V630 Structural Drilling System

The Voortman V630 has three high-performance drill spindles with a maximum spindle speed of 2,500 rpm. The spindles are servo driven and have constant torque throughout the full rpm range.

Each spindle is positioned by ball screws that are also servo driven to control exactly the approach, feed per revolution, and retraction of the drill spindles.

Given the speed and feed control via program command, the V630 easily uses carbide indexable drills for superior performance. Feed rates far in excess of 20 in. per minute are easily obtained. Couple this technology with the internal cooling of the drill bit, which is 98% air and 2% lubricant, and the drill can produce holes that look like they have been reamed with no burr in 3 to 4 seconds with no coolant contamination of the material, which can effect welding, painting, blasting, and galvanizing of the beam.

Each spindle has a high-speed tool changer with five tools per axis for a maximum of 15 tools. The tools are measured by laser, so no manual intervention or setting of switches is required by the operator. The lead edge of each piece of material to be run is measured by multiple laser lines to detect miter cuts, straight cuts and pre-coped material. The material is positioned in the "X" axis with a roller-feed measuring system, and the system incorporates two height-adjustable measuring wheels that are positioned at the centerline of the material to be processed, guaranteeing accuracy.



Contact: Voortman Corporation, ph. 815.935.3010, www.voortmancorp.com

Ring of Fire

Visitors to this year's NASCC in New Orleans experienced firsthand a new thermal processing technology. The Peddinghaus "Ring of Fire" employs the capacity to effectively process all AISC structural shapes, including beams, columns, angle iron, channel iron, and HSS square and rectangular tubes, as well as plate and flat stock. Thus, all typical functions of today's fabrication shop—sawing, drilling, coping/burning—can now be performed with one machine.

The Ring of Fire employs plasma cutting and precise positioning technologies to obtain precise hole generation; serve as a cut-off device for running multiple sections; provide accurate flange and web surface bevels; achieve all standard AISC



copies and flange thinning; process all interior web/flange cuts for building electrical, heating, ventilation, etc.; and provide part identification to replace laborious shop layout. All of this is available in a compact design that requires a small shop footprint.

NASCC revealed an ongoing trend in the structural industry: a lack of qualified, skilled labor in the fabrication shop. The Ring of Fire effectively combats this problem with the capacity to address many shop functions into one effective, automated system, as well as with its reduction of excessive material handling processes.

Contact: Peddinghaus Corporation, ph. 815.937.3800, www.peddinghaus.com

FabTrol MRP Version 2.0

Version 2.0 of this steel fabrication and project management software marks another milestone upgrade. The new release provides a broad collection of requested feature enhancements throughout the product's integrated modules for estimating, drawing management, material management, production control, and shipping functions.

The overriding theme of this release is the new Automated Data Capture (ADC) module. The ADC module is tightly integrated with the production modules and the Shipping Manager module, and provides the ability to both track production progress through the shop and to manage shipping operations, using barcode transactions. The resulting benefits are significant for fabricators as it allows them to:

- fully integrate and improve production and shipping operations.
- reduce labor costs and improve accuracy through automated data entry.
- maximize shop throughput and recognize production bottlenecks.
- quickly see the work process in real time and make better decisions.
- increase customer satisfaction by having instant access to project progress.
- improve shipping accuracy and avoid common shipping errors that are often very costly.

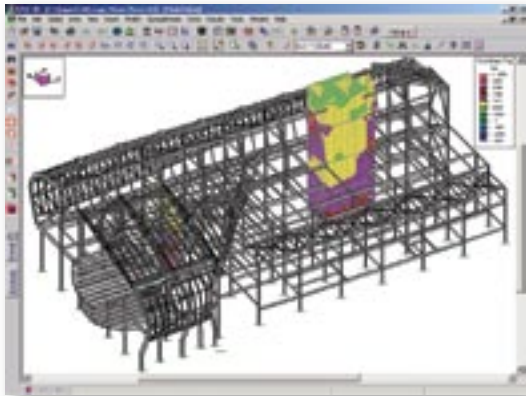
In addition, Version 2.0 introduces a powerful new mechanism for tracking assemblies shipped to and from locations other than the job site. It allows fabricators to manage shipments sent to galvanizers and other subcontractors so that everything is delivered accurately and on time to the job site as required.

Contact: FabTrol Systems, ph. 888.FABTROL, www.fabtrol.com



RISA-3D Version 7

RISA-3D Version 7 is a significant step forward in the analytical power available to all practicing structural engineers. The proprietary accelerated sparse solver implemented in this latest version has been in development for several years and increases solution speeds by factors of up to 100 or more when compared with current industry standard technology, as well as reduces disk storage requirements by 99% or more. For example, a



model (pictured) that took 11 minutes and required over 600 MB of space to solve using industry standard technology, solves in 6 seconds and requires only 2 MB of space using Version 7. While this new technology is an "under the hood" improvement, it is quite significant in that it makes practical the solution of much larger and more complete models, as well as greatly increases the design engineer's ability to test different scenarios. This usually results in better designs.

Version 7 also adds support for the 2005 AISC specification and 13th edition manual using the Direct Analysis Method, enhanced support for BIM products, and both import and export support of the CIS/2 standard.

**Contact: RISA Technologies, ph. 800.332.7472,
www.risatech.com**

PythonX Robotic Structural Fabrication System

The PythonX Robotic Structural Fabrication System is designed to help structural steel fabricators automate all their fabrication processes on one machine. Created to replace conventional beam drill lines and band saws for fabrication of structural steel and metal buildings, the machine uses the latest in robotics and plasma technology to fabricate I-beams,



channels, HSS, angle, and strip plate. It can produce bolt holes approved for structural joints, cope cuts, slots, cutouts, T-beams, and cut to length, miter cut, and scribe part/layout marks using one robotic plasma torch, eliminating countless hours of material handling. Everything is accomplished on one machine, saving valuable shop space.

Programming the machine consists of taking a DSTV output of a structural member from a standard detailing software package, opening it up in the PythonX, and pressing the Start button. The machine then produces the complete part, with holes, copes, cutouts, and even layout marks for clips and stiffeners, that will be welded to the member. Automating all of the operations that PythonX can accomplish would require several machines, including a drill line, bandsaw, angle line, coping machine, marking machine, and a small burning table, which would cost five times as much and take up five times the shop space.

**Contact: Burlington Automation, ph. 905.681.9622,
www.pythonx.com**

Compact Adjuster

The compact adjuster is a new stainless adjustable fork/clevis end fitting for use with both cable- and rod-tension systems for structural support in architectural and industrial applications. Able to support extremely high yield and break loads for wire sizes from 1/4 in. to 7/8 in. in diameter and tie rod diameters from 1/4 in. to 1 1/4 in., it features 316SS strength and corrosion resistance. The telescoping ends provide adjustment in uncompromised proportions while hiding the threads, increasing functional and aesthetic appeal. No midpoint turnbuckles are needed, and with independent adjustment at each end, the compact adjuster reduces installation time by 50%.

**Contact: Ronstan International, Inc.,
ph. 401.293.0539,
www.ronstan.com/arch**

