

Hot Products

Machinery, software, tools and materials 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 Award winners are just a sample of some of the creative solutions recently introduced for designers, detailers, fabricators and erectors. Some offer advanced technology; others provide simple and practical applications in response to common problems. But all stand out as novel approaches to on-the-job difficulties.

Products were awarded prizes in the following categories: connecting materials, engineering software, fabrication and detailing software, fabrication and erection equipment, and other products. The number of "Hot Products" and "Honorable Mentions" that were awarded was not limited by category. 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. AISC products were not eligible for awards. Only submitted products were considered.

Connecting Materials

Hot Product

Twist-on Groutless Masonry Anchor System

Introduced: January 2003

Cost: \$10.00

Heckmann Building Products Inc.

1501 N. 31st Avenue

Melrose Park, IL 60160-2911

Ph: 800.621.4140 or 708.865.2403

Fax: 708.865.2640

heckmann@worldnet.att.net

www.heckmannbuildingprods.com

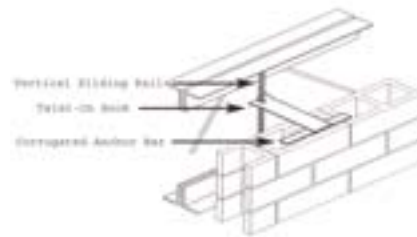
The new Twist-On Groutless Masonry Anchor System will allow a proper, economical connection of a masonry wall to a joist or joist girder. Currently, the masonry wall is connected to steel using methods that do not conform to proper engineering design criteria, and in many cases, details are shown that cannot be implemented.

Masonry anchors must conform to the following design criteria:

- Vertical adjustability to allow the girder's free deflection.
- Vertical adjustability to match the mortar bed.
- Predictable load resistance to horizontal forces.

Existing Anchors: As applied to joists, they consist of a strap hooked around the top chord of the truss on one end and embedded in the masonry on the other. These masonry anchors are not adjustable, they don't allow deflection, and they often cannot be embedded in the mortar bed. They do not satisfy the criteria.

Twist-On System: Conforms with all design criteria. It economically uses formed plate for the anchor and a steel bar for the vertical sliding rail. The load resistance is fully tested. It is equipped with an anchor plate to allow groutless secure embedment in hollow blocks. It allows great savings in steel design. This product significantly improves a very important, yet often overlooked detail in building design.



Hot Product

XL Shear Connectors and Concrete Anchors

Introduced: June 2002

Cost: Product comes in seven different diameters and 52 different length increments, prices vary.

Nelware Process Monitoring Software

Introduced: October 2002

Cost: \$2300

Nelson Stud Welding, Inc.

7900 West Ridge Rd.

Elyria, OH 44036-2019

Ph: 440.329.0040

Fax: 440.329.0492

Nelson.Sales@NelsonStud.com

www.nelsonstudwelding.com

Nelson Stud Welding's new family of headed stud-welded fasteners anchor concrete to steel. XL (Extra Long) Shear Connectors and Concrete Anchors extend the available stud length by 50% over

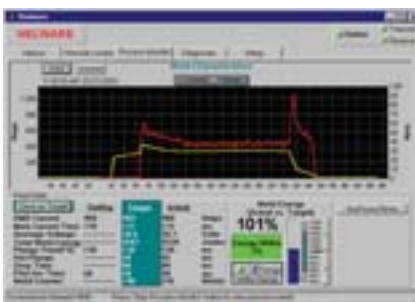


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current cold-formed, stud-welded anchors. XL stud lengths up to 15" under the head are cold formed for improved quality. The longer lengths also give architects and engineers greater freedom of design at lower costs. Previously, deeper floor or deck slabs required expensive hot-headed anchors that required two time-consuming primary operations to complete. The XL studs are formed quickly and completely in one operation, significantly reducing cost.

Prior to the availability of XL studs, an alternate design required "piggy-backing," whereby the fabricator or applicator is required to weld two shorter stud lengths together, and then again weld the finished assembly. The XL stud is shipped to the job site with correct length specifications, reducing material and installation costs.

XL studs are made from and certified to ASTM A108 grades 1010 through 1020, and are manufactured, tested and certified in compliance with AISC, AASHTO, AWS D1.1, D1.5 and other ISO and EN codes.



Nelware Process Monitoring software is for safety-critical applications, or for customers that strive for higher-quality standards for their stud-welding program. The software can be loaded on a laptop or desktop computer, and connects to the stud-welding power unit through a panel mounted RS232 plug. The process monitor allows the user to establish target values

for a "good" weld, then compares actual values of all subsequent welds against the target values to determine a "pass" or "fail" status. The user receives a visual indicator of the weld status after each weld, and the user has the option to continue production, or disable the welding operation on a "fail" signal. All data for each weld is time and date coded, and stored in memory. It can also be downloaded to an electronic spreadsheet for permanent retention. Recorded values include target values and actual values of total weld energy, weld current, arc voltage, plunge time, hot plunge time, and pilot arc time. Accompanying each record is a weld counter, and a time and date stamp. The monitor also displays a trace of the weld current and arc voltage over weld time.

Honorable Mention

Invertec® V275-S

Introduced: February 2003

Cost: \$1,983

The Lincoln Electric Company
22801 St. Clair Ave.

Cleveland, OH 44117

Ph. 216.481.8100

Fax: 216.486.1751

info@lincolnelectric.com

www.lincolnelectric.com



The Invertec V275-S is one of the highest-powered small inverters in its class for welding with AWS E6010 and E7018 stick electrodes. It is also the only small inverter to

carry the IP-23S environmental rating for outdoor use.

The Invertec V275-S can be used for Stick and TIG processes, and is available in individual units packaged in an eight-pack rack. The compact unit is built for the rigors of the construction site and provides up to 275 amps, so operators can weld with up to 7/32" electrodes. It features input power flexibility, with the capability to operate on any input voltage from 208 to 575 volts, AC single- or three-phase power.

It includes a selectable Hot Start for extra starting amperage when welding on thick, rusty or dirty materials; a Variable Arc Force Control which allows the user to dial in "soft" or "crisp" arc characteristics; and Touch-Start™ TIG capability to permit the TIG arc to be established without high frequency starting. The V275-S carries no derating when used with single-phase input power, so operators get the same performance whether set for single or three phase.

Honorable Mention

Lohr SMARTEX™ TC Bolt

Introduced: April 2002

Cost: Varies based on grade, diameter and length (many available)

Lohr Structural Fasteners

P.O. Box 1387

Humble, TX 77347

Ph: 281.446.6766

Fax: 281.446.7805

klohr@lohrfasteners.com

www.lohrfasteners.com

Lohr SMARTEX™ presents an advance in bolting technology with its composite head design. The top half resembles a traditional hex head for all the advantages ironworkers appreciate: a wrenchable surface, easy removal from connections/test equipment, and extra insurance against unexpected installation problems. The bottom half of the head presents a washer-

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sized bearing surface equal to that of a hardened flat washer, to eliminate the need for a second washer under the head on slotted and oversized holes.

The 1 $\frac{1}{8}$ " A490 SMARTHEX features a $\frac{5}{16}$ " washer under the head, currently required for oversized or short slotted holes on A490s greater than 1" in diameter. With engineer-



ing approval, this could mean that customers will reap a double sav-

ings benefit by eliminating the extra washer cost and using a shorter and less-expensive bolt.

SMARTHEX is also the industry's only mill-to-connection traceable tension-control bolt. Heads are stamped with unique lot ID codes, which provide quick identification, even after installation.

Engineering Software

Honorable Mention

STAAD.Pro 2003 with Open-STAAD

Introduced: March 2003
Cost: \$3,995 (US Only)
Research Engineers International
22700 Savi Ranch Pkwy
Yorba Linda, CA 92887
Ph: 714.974.2500
Fax: 714. 974.4771
info@ca.reiusa.com
www.reiworld.com



STAAD.Pro 2003 introduces structural engineering software whose graphical environment, design routines and reporting capabilities can be customized using Visual Basic (VBA) and macros inside the STAAD.Pro application. Fully VBA compliant and embedded with its own VBA editor (like Excel), engineers can add in their

own post-analysis routines, like seismic connection designs or prestress concrete design by using over 500 exposed STAAD functions. Engineers worldwide can develop their own STAAD macros inside STAAD and share them on REI's website. Larger E & C companies can tightly integrate STAAD with their legacy systems, while smaller consulting companies can dynamically link STAAD's results and model-generation routines with upstream and downstream applications like AutoCAD, Excel, MathCad and detailing packages. Repetitive modeling or data mining routines like skip loading or bill of materials report can be automated with a click of a button. STAAD.Pro 2003 also includes an integrated shear wall designer, which requires no user-defined meshing, a two-way slab designer with full reinforcement layout, and integrated moment connections and footing modules that automatically resize themselves if the model changes. STAAD.Pro 2003 eliminates the need for engineers to use a myriad of software to complete a project.

Honorable Mention

RISAFloor Version 1.0

Introduced: March 2003
Cost: \$2500.00 (stand-alone),
\$5000.00 (five-station network)
RISA Technologies
26632 Towne Centre Dr., Suite 210
Foothill Ranch, CA 92610
Ph: 800.332.RISA
Fax: 949.951.5848
info@risatech.com
www.risatech.com



RISAFloor is the first floor software that fully integrates with a general analysis program, RISA-3D. This gives the design engineer the ability to model gravity systems and lateral systems in one integrated model while still providing a full-featured 3D-analysis program. This new technology lifts many modeling limitations previously imposed on the design engineer.

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RISAFloor automates modeling, calculates loads, designs beams and columns, evaluates floor vibrations with modern methods, and creates CAD drawings with true slab edges. It serves virtually all necessary information to RISA-3D for the design of lateral systems, including automatically building the lateral system and calculating ver-

tical and lateral loads. The engineer can then add anything to the model using features such as moving loads, tension/compression-only members and springs, tapered wide flanges and plate/shell finite element modeling.

RISAFloor features finite element analysis, including beam-column interaction, parabolic load

attribution, advanced loading capabilities, such as tapered loads and two-way area loads, continuous beams, advanced slab-edge tracing, parent/child floor relationships, additive load resolution, absolute deflections, and vibration analysis with AISC *Design Guide 11*.

Fabrication and Detailing Software

Honorable Mention

SteelLogic 9.0

Introduced: November 2002

Cost: \$4,995

Computer Detailing Corporation

362 2nd Street Pike #128

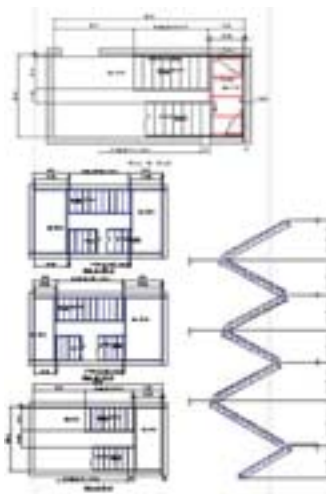
Southampton, PA 18966

Ph: 215.355.6003

Fax: 215.938.6860

Norm@steellogic.com

www.steellogic.com



SteelLogic is an integrated detailing system that creates plans, elevations and detail drawings of structural steel and miscellaneous metal, and also generates bills of material, cutting and shipping lists, and other material reports. The system uses the power of the Auto-

CAD engine with the enhancement of SteelLogic toolbars, tool tips and dialog boxes. An in-depth knowledge of AutoCAD is not required.

The primary new features of SteelLogic 9 is the ability to not only detail stair stringers and railing, but to automatically draw stair-framing plans in minutes, with an unlimited number of different runs.

A comprehensive section through the stair-framing plans can be created with a single button click. Enlarged details of connections, for structural or miscellaneous work, can be created without the user's concern about scaling. A variety of railing posts is accessible and tools for making special ones exist. Various pans, nosings and support clips can be inserted.

Honorable Mention

Steelware

Introduced: July 2002

Cost: Full version of Steelware is \$5,000; Stair Plans and Elevations only is \$700.00

Steelware, Inc.

PO Box 15179

Greenville, SC 29610

Ph: 864.294.1206

Fax: 864.246.9207

sales@steelware.com

www.steelware.com



Steelware set out to find a solution for detailing erection stair plans and elevations. The result was programs with the ability to perform these functions in a fraction of the time. Instead of offsetting, copying and arraying lines, you can fill out easy-to-use dialog boxes, and within minutes detail a two-flight erection stair plan complete with dimensions. There is no limit on the size stair tower you can create, because the program will do both full- and partial-plan views. This stair plan and elevation portion is included in the full version of Steelware, which also includes all the modules for detailing structural and miscellaneous fabrication details. You also can purchase just the Stair Plans and Elevations separately. All of the software works with AutoCAD Release 14 through 2002, and you can also purchase a full version for AutoCAD LT 2002.

Fabrication and Erection Equipment

Hot Product

The Beam Gauge Tool

Introduced: February 2002
 Cost: Introductory price: \$88
 J & B Specialty Tool
 526A Paradise Way West
 Greenwood, IN 46143
 Ph: 317.883.1849
 Fax: 317.883.1949
 jbc@indyweb.net
 www.beamgaugetool.com

The beam gauge tool is two- to three-times faster and more accurate than all previous methods of laying out the holes in the web. It contacts the outside of the flange at the center line of the web, as shown on structural blueprints for fabricators.

Beams typically are not square. Generally, layout people measure from the top of the flange to get to the first hole gauge. If flanges are tipped in or out (not square), the holes will already be off. This presents a problem for erectors, because when things don't line up, the job cannot be completed on schedule, and everyone is thrown off track. This tool is easy to use, fast and accurate.



Hot Product

Peddinghaus FDB 2500/3 Plate Processing System

Introduced: April 2003
 Cost: Will Advise
 Peddinghaus Corporation
 300 N. Washington Ave.
 Bradley, IL 60915
 Ph: 815.937.3800
 Fax: 815.937.3800
 lyle-menke@peddinghaus.com
 www.peddinghaus.com



The FDB 2500/3 can process stock mill plate up to 96" wide, up to 3" thick, and up to 20' stock lengths. In a one-pass process, this machine can prepare all holes, carbide-mark the part number, and thermal-cut any shape or contour required.

Current architectural design practice requires increasing amounts of plate moment connections, including shear tabs, gussets, etc. Varying shapes, sizes, and material thickness are needed to meet all these plate fabrication demands.

The engineering design of the FDB 2500/3 meets all steel construction criteria, with capability to process material from 6 by 1/4" flat stock up to 96 by 3" heavy plate. Three drill spindles provide 2" hole diameters. Two thermal-cutting torches, plasma and oxy-fuel, are provided to enhance the cutting capability. A carbide part-marking system actually mills the part number for easy identification, even

after galvanizing. An integrated part unloader delivers the part to the operator.

Historically, processing plate was a laborious process involving off-loading, cutting individual parts, locating hole coordinates, punching or drilling holes, and moving the part to the weld or fit-up area. Not only is this an inefficient process, it is inherently dangerous with the constant manual moving of these components.

The FDB 2500, with its patent-pending single-pass process, eliminates material handling hazards and increases shop productivity over previous manual methods.

Honorable Mention

Kaltenbach KC 1200 Coping Machine

Introduced: Fall 2002
 Cost: Will Advise
 Kaltenbach, Inc.
 6775 Inwood Drive
 Columbus, IN 47201
 Ph: 800.825.5729
 Fax: 812.342.4471
 sales@kaltbachusa.com
 www.kaltbachusa.com

The Kaltenbach KC 1200 is designed for coping beams, columns, channel and angles. The six-axis CNC robot is capable of inner and outer contour copes, weld preps, and three-dimensional straight or miter cuts. The machine can be programmed as a stand-alone unit, but is designed to be downloaded from an office computer and is capable of importing files from standard detailing software packages. This technology is state of the art, freely program-



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ble, and standard on most Kaltenbach structural fabricating machinery. It provides a significant improvement over the very limited "macro"-style systems still used on competitors' machines.

Honorable Mention

PowerCut™-1250

Introduced: July 2002

Cost: \$2,500 – \$3,000

ESAB Welding and Cutting Products

411 S. Ebenezer Road

Florence, SC 29501-0545

Ph: 800.ESAB.123

Fax: 843.664.4258

bfernicola@esab.com

www.esabna.com

The ESAB Plasmarc™ PowerCut™-1250 offers big machine power and fast-cutting speeds in a

rugged, portable package. Get plasma cuts up to 1¹/₄" (severs 1¹/₂" with a machine that weighs just 86 lb. The PowerCut™-1250's fiberglass composite case makes it useful in harsh environments such as construction sites. With its rounded shape and compact size (just 12.5" wide by 16.5" high by 32" deep), it fits through manholes and other tight spaces. An exclusive power-line conditioner allows it to operate with poor power lines.

ESAB's PowerCut™-1250 arrives ready-to-cut and includes the PT-32EH torch. Advanced torch design (no separate swirl baffle and use of long-life consumables) simplifies operation and lowers operating costs, while permitting 30% higher travel speeds. The torch's ergonomic, textured handle is com-

portable and prevents slipping. It also features dual-switch capability, and just one step is required to energize the torch. Designed for safety, the torch won't operate unless parts are properly positioned. Drag or standoff cutting is easy with the PowerCut-1250, and it includes a template-following feature.



Other Products

Honorable Mention

WPS-Designer 2.0

Introduced: April 2003

Cost: \$295

IWE-Consulting

352 NW 152 ND Lane

Pembroke Pines, FL 33028

Ph: 954.432.2655

iwec@att.net

www.iweconsulting.com

Welding Designer 2.0 welding software creates welding procedure specifications in accordance with the Structural Welding Code-Steel AWS D1.1:2002. WPS-Designer facilitates the development and analysis of WPSs and PQRs. Users can go beyond the technical requirements of their jobs to understand the larger picture, improving and enhancing the welding operations.

WPS-Designer 2.0 combines engineering design methods and artificial intelligence concepts to develop an "informating" system that gives users access to the

knowledge necessary to make informed decisions. A considerable effort has been put on the learning process, because users of WPS-Designer can restructure their conceptual understanding of the design and analysis of welding procedures, specifications and procedure qualification records.

Features include: Fully interactive windows interface, WPS/ PQR Analysis-Design, Prequalified Groove Welded Joints, weight of weld metal, preheating-PWHT, welding cost estimating and deposition rate equations.

