

CONTRACTOR SURVEY PINS SUCCESS TO PINNING STEEL

BY ROBERT J. SHLUZAS

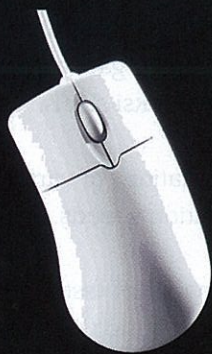
More than 47 percent of builders and contractors surveyed by the Cold-Formed Steel Engineers Institute ranked Pin Fastening as their number-two priority for framing with cold-formed steel; number one was Training. And why not? Traditional methods for fastening CFS can be laborious, use excess materials, and not accommodate many of the fastening combinations encountered on today's jobs. ▶▶▶

HARDENED STEEL PINS HAVE BEEN USED SUCCESSFULLY IN CONSTRUCTION FOR DECADES. IRONICALLY, IT IS THIS LENGTHY HISTORY THAT CARRIES FORWARD "OUTDATED" TESTING AND PERFORMANCE EVALUATIONS OF PINS THAT CAN REDUCE THEIR USE IN MODERN DAY CONSTRUCTION WHERE CFS DESIGN OPTIONS INCREASE EVERY DAY.

Common uses for pins include fastening various materials or fixtures to a variety of steel gauges. Many of us have attached CFS to plywood, oriented strand board or gypsum board. But did you know that pins are being used successfully to join up to five layers of steel-to-steel, or fastening to structural steel, and that pins are installed at speeds that are five to 10 times faster than conventional fastening methods?

The growth in the use of CFS framing has created innovative designs for structural assemblies that require new fastening methods to create new economic viability for steel. The demand is growing rapidly, and pin fastening has kept ahead of the curve with in-

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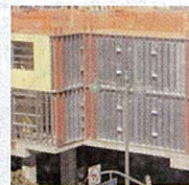
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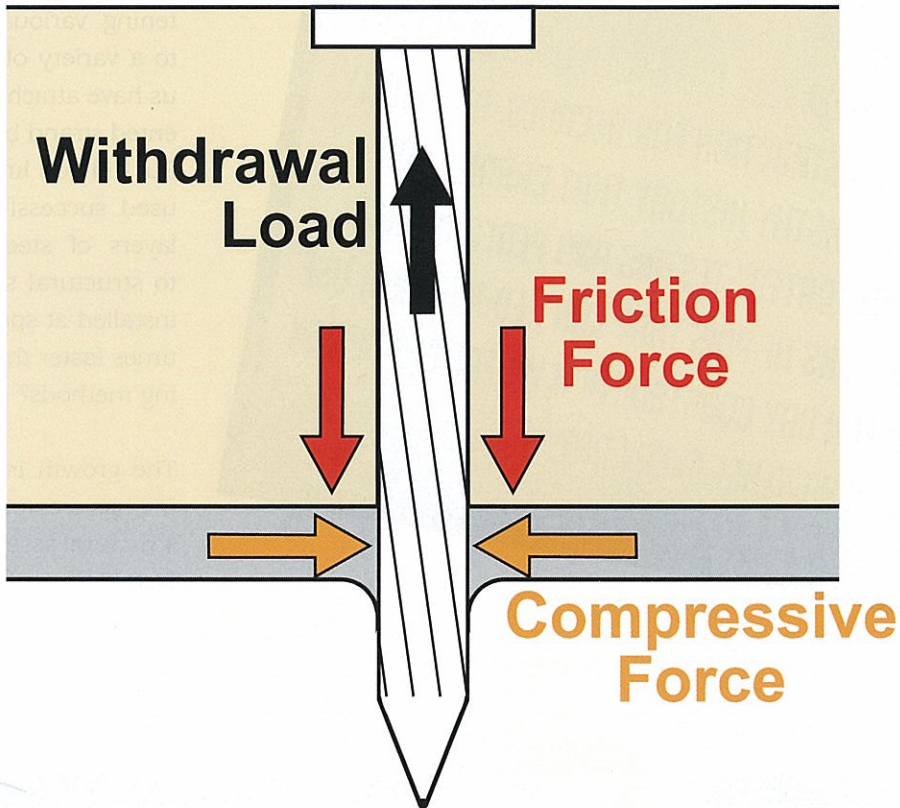


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Without the development of protocols, pins can exhibit withdrawal and shear values equal to or greater than tensile in cold-formed steel.

novative new pins and unique high pressure installation systems.

What Else Is Being Done?

The Technical Development Committee for CFSEI has begun work toward creating new standards and design guides to increase the use of pins for CFS construction. They are causing the development of the following:

- Minimum test standard results that can be used to interpolate/extrapolate fastener performance.
- Data to support new “Safety Factor” recommendations for various

Building Code Evaluation Services.

- Evaluations of various fastener testing in 20 gauge to 22 gauge and 33ksi to 90ksi steels.
- Evaluations of various fastener installation speeds.
- A matrix of test protocols for comparisons of fastening methods.

A key to the development and use of fastener evaluation protocols will be their effects on “safety factors” used to design CFS structures. As mentioned, the outdated use of the safety factors created for pins in

and 3/16-inch steel plate design engineer unfavourable to vary this value as 100 percent! A review of two such recommendations—one using a pin “safety factor” while the other, which is familiar with the capabilities of pins, recommends a safety factor of 1.7.

Without the development of new protocols, pins can approximate withdrawal and bearing strengths that are equal to or less than those of screws in another irony, pin withdrawal strengths usually outperform screws in shear. The use of steel plate fasteners is the best practice because of their installing minimum material. The use of steel plate work goes a long way toward establishing performance.

Showing fastener equivalents to all who make up the project team is the key.

Offering a wider range of CFS capabilities.

Offering economic benefit to building owners and subcontractors.

Offering the builders'/contractors' knowledge for pin connections.

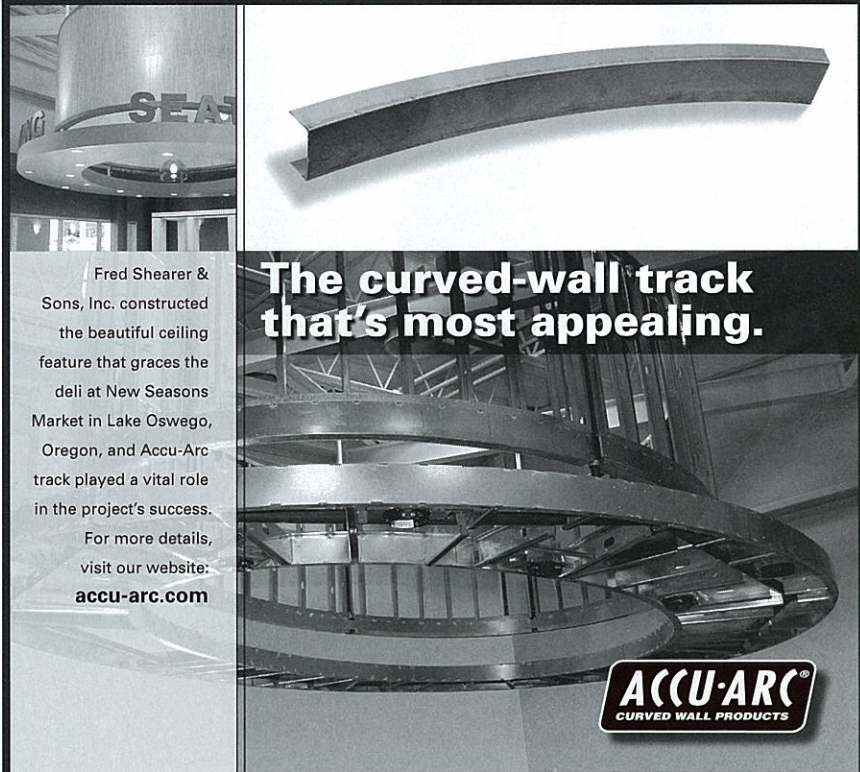
Author
John H. Hluzas is president of AeroSmith Fastening Systems, Inc. and has worked in the steel framing materials and fastener industry for more than 30 years. He

has authored building code specifications and is currently a member of the Technical Development Committee for the CFSEI.

For More Information

You can learn more about pin fastening equivalency by contacting

the Cold Formed Steel Engineers Institute, www.cfsei.org; from AeroSmith Fastening Systems, (800) 528.8183 or www.aerosmithfastening.com; or the Steel Framing Alliance at www.steel framingalliance.com.



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