

Research Update

January 15, 2005

Five Research Projects Nearing Completion

Nearing completion are five research projects to (1) test steel floor assemblies and establish needed fire and sound ratings, (2) study the effects of corrosion of galvanized fasteners on cold-formed steel framing connections and develop a guide on fastener use in coastal areas, (3) provide alternatives to the in-line framing requirement by adding details and span-load tables for new load bearing top track options to the AISI Prescriptive Method, (4) experimentally study the influence of the wall stud end gap on strength and serviceability and propose an acceptable tolerance for design, and (5) create the documentation necessary to enable the expansion of the AISI Prescriptive Method for gable end walls. Results of this important work are expected to significantly impact design standards and codes, as well as design guides, training curriculum and seminars. Once completed, the reports from these projects will be available through the Steel Framing Alliance website (www.steel framingalliance.com).

Five New Research Projects Being Initiated

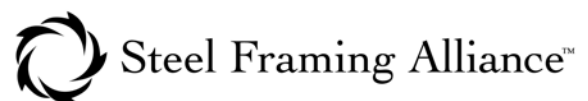
The Steel Framing Alliance's core value of "maintaining leadership in construction technology through innovation" is the primary driver behind its research initiatives. These efforts will be strengthened in the immediate future with the initiation of five new research projects.

- **Reinforcing Holes in Floor Joists** is a continuation of work conducted at the McMaster University to determine appropriate prescriptive methods for reinforcing holes such that the floor joist member selection tables would apply to hole diameters up to 3 inches less than the joist web depth. Currently, the AISI Prescriptive Method provides floor joist member selection tables for a range of joist sizes; however, these tables do not apply to a floor joist with a hole larger than the standard perforation size (i.e., 2 ½ inches by 4 ½ inches). Therefore, if a larger hole must be cut in a joist, an engineered design is necessary.
- **Hip Roof Rafter and Ridge Framing** is a project that will formalize a design methodology that may be used to develop roof rafter span tables for the AISI Prescriptive Method, investigate alternative framing concepts for the hip rafters and the ridge members, and carry out a test program to validate the design methodology for those members. The traditional hip rafter or ridge member requires that the end of each roof rafter be cut on a slope when connecting to the ridge and on a slope and a skew when framing into a hip. This is not desirable because of the required labor to ensure accurate connections for the rafters to the hip or the ridge. An alternative hip rafter configuration could also be used as the roof ridge member and may offer the potential for panelizing the roof assemblies. Consideration will be given to extending the research findings to valley framing.
- **Clip Angle Bearing Stiffeners** is a project that will develop design rules for cold-formed steel floor joists with clip angles used as bearing stiffeners. Stiffeners are commonly used in cold-formed steel construction to strengthen the floor joists at bearing locations. Preliminary tests have shown that clip angles can develop significant capacity when used as bearing stiffeners. Continuation of this work will involve testing and the development of design expressions based on ultimate strength of the clip angle/joist/rim track assembly.
- **ILZRO ZC-26 Project on Pressure Treated Wood** is a project that will work towards establishing reliable life prediction data for galvanized steel products used with currently available pressure treated wood products.
- **Fiberboard Sheathed Shear Walls** is a project that will endeavor to learn something about the performance of fiberboard sheathing on steel-framed shear walls, through one test, and to compare the tested value to the values that are currently published in the IRC.

The Research Team serves the Steel Framing Alliance as a technical advisory group, facilitating the timely technical review of research and the dissemination of its findings. For more information, please contact the Research Team Leader, Jay Larson, jl Larson@steel.org, 610.691.6334.

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