

Research Update

October 15, 2003

Research Team Announces Work Completed on Three Research Projects Sponsored by the Steel Framing Alliance

Work was completed on the project by the NAHB Research Center to make a **Cost and Energy Comparison Between Steel and Wood Homes**. The objective of this test program was to compare the labor and material cost and energy performance of steel-framed homes to those of nearly identical wood-framed homes to determine if the costs were “in the same ballpark”. Specific tasks were to include monitoring the cost of construction by collecting time and motion data on homes in Valparaiso, IN; Beaufort, SC and Fargo, ND, and to follow-up with blower door (infiltration) and co-heat tests to compare the short-term energy usage of each house. A final report on *Steel vs. Wood Costs: A Case Study* is available from The Store on the Steel Framing Alliance website.

Work was also completed on the project by the NAHB Research Center to develop a **Hybrid Wood and Steel Details–Builder’s Guide**. The objective of this project was to compile, develop and test connection details illustrating recommended methods of joining cold-formed steel framing with wood framing to aid in the integration of wood and steel framing and, thereby, expand the use of steel in the residential market. The final report, *Hybrid Wood and Steel Details–Builder’s Guide*, dated July 2003, is available for free download on the Members-Only R&D Reports page of the Steel Framing Alliance website.

Work was also completed on the project by the NAHB Research Center to study the durability of **Galvanized Steel Framing for Residential Buildings**. The objective of this project was to investigate the corrosion performance of galvanized steel framing components in residential construction by measuring actual corrosion rates of steel framing members over a 3-year period and correlating these to environmental conditions. Later, the monitoring period was extended to 5 years. The final report, *Galvanized Steel Framing for Residential Buildings*, dated September 2003, is available for free download on the Members-Only R&D Reports page of the Steel Framing Alliance website.

Work also continues on completing a number of research and development projects, including:

- **Long Term Energy Comparison** – To compare the energy consumption and estimate the total R-value of the three sets of houses.
- **Fire and Acoustic (Residential)** – To compile a report summarizing the existing fire and acoustic details used in steel-framed homes.
- **Fire and Acoustic (Commercial)** – To test steel floor assemblies to establish needed fire and sound ratings.
- **Corrosion of Galvanized Fasteners** – To study the effects of corrosion of galvanized fasteners on cold-formed steel-framing connections.
- **Alignment of Steel Framing Bearing Stiffeners** – To gain a more thorough understanding of floor joist behavior when there is misalignment in the load path.
- **Estimating the Response of Cold-Formed Steel Frame Shear Walls** – To develop deflection expressions for current shear wall configurations.

The Steel Framing Alliance’s core value of “maintaining leadership in construction technology through innovation” is the primary driver behind these research initiatives. The ideas and involvement of builders, contractors, designers and suppliers in this process is essential to its success.

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