Designing shear walls, understanding the performance of stud-to-track details, and the lack of standardization in all connection details are the top research needs for cold-formed steel as identified by the ASCE-SEI committee on cold-formed steel. This committee has recently put together a ranked list of research needs. At the time that the survey was conducted the committee consisted of 16 members: 9 consulting engineers, 5 academics, and 3 manufacturing/industrial representatives.

The process was conducted by surveying the committee on their general thoughts for research needs in cold-formed steel. The chair of the committee then synthesized these general needs into specific items in one of three categories: state-of-the-art/practice summaries, basic behavior questions, or standardization needs. The committee was then sent a list of all the specific research items along with the original comments from the individual committee members and asked to rank the research items from most to least important.

Based on the committee’s response the top five research needs for state-of-the-art/practice summaries are ① shear walls, ② headers, ③ seismic design, ④ bracing, and ⑤ the Direct Strength Method. Shear walls are an area where little guidance exists for engineers and a summary of best practice is sorely needed. For headers, the recent AISI SG02-6 publication helps in many situations. For seismic design little specific guidance currently exists, but there is hope as the AISI-COS has recently created a subcommittee that is charged with developing a standard. At present little funding for fundamental research on cold-formed steel seismic design is available. This is clearly an area of significant concern and need. Bracing is always an important issue for cold-formed steel and Tom Sputo, a member of the ASCE-SEI committee on cold-formed steel, has recently been awarded a special project by ASCE to provide a state-of-the-art summary on bracing. The same committee along with the AISI-COS is also providing design examples for the Direct Strength Method.

Dissemination of practical knowledge is active, but fundamental research is lacking. The top five research needs on basic behavior identified by the committee are ① stud-to-track connection performance, ② lateral load transfer particularly diaphragm loads, ③ boxed headers and determining the amount of composite action, ④ multi-story lateral stiffness particularly understanding the role of the floor in platform construction with shear wall-floor-shear wall as the lateral system, is the floor a weak link? and ⑤ bridging needs for purlins, girts, and joists to address when bracing is needed to stop distortional buckling. Currently, funds to address these fundamental issues are unavailable. The top two identified standardization needs are ① standard connection details, and ② a catalog of anticipated behavior for given connection details.

Other useful resources for studs include this SEI committee, CCFSS, SSMA, LGSEA, and AISI-COFS. For metal buildings MBMA, and for cold-formed steel racks, RMI. Clearly, there is much work to be done!

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2 www.ce.jhu.edu/bschafer/asce-sei-cfs/asce-sei-cfs.htm
3 American Iron and Steel Institute, Committee on Specifications, see www.steel.org for more details.

The best single resource for practical guidance on steel stud walls is the recent AISI Cold-Formed Steel Framing Design Guide CF02-1.

The mission of the ASCE-SEI committee on cold-formed steel is “to disseminate and interpret information on the behavior and design of structural steel members, cold-formed to shape from flat materials, and to stimulate research and the publication of technical papers in this field of activity.”