

Materials

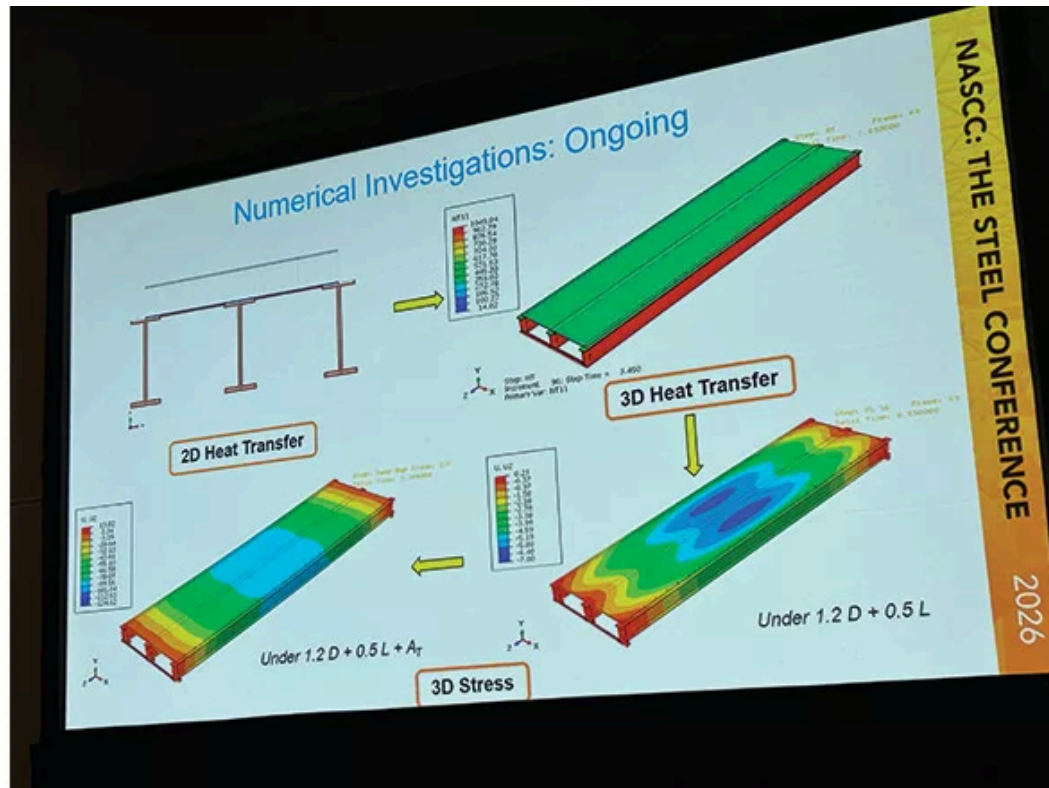
www.enr.com/articles/62976-steel-construction-institute-to-release-sustainability-guide

Photo by Jeff Yoders/ENR

Purdue University's Amit Verma shares the latest testing results on Fast Floor at NASCC 2026.

Steel Construction Institute to Release Sustainability Guide

[Jeff Yoders](#)

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New research and development of structural steel construction methods was the primary focus of the North American Steel Construction conference, held April 22 to 24 in Atlanta. But the nearly 7,000 attendees of the annual American Institute of Steel Construction event also found that advances in artificial intelligence came up again and again in sessions with fabricators, design engineers and architects.

Fast Floor, the steel floor system designed for the Speed Core building core system, now is nearing the end of its testing phase, said institute President Charlie Carter. "What we are testing now as a second phase is the connection of a beam to a girder with the same sort of drop-in connection, which is a little bit different than it would be to a column," he said. "We thought about putting out the first round of this, of just a beam-to-flange connection, but we thought that's not enough information for someone that wants to use the whole system. So we are pressing on the research for a beam-to-girder connection, and once that's complete, we'll have the whole package for anyone to use, and will be a much faster connective system."

Carter said Amit Verma, a civil engineering professor and renowned fire and building engineering expert at Purdue University, will conduct fire tests, one of the last tests needed for the Fast Floor system. "We are leaning toward performance-based fire design for this sort of a system," he explained. "The best way would be if we had no fire protection needed, and it would show good performance, and that's what we hope that Dr. Verma will come out with the final results that's actually coming up in the next few months."

Helping Fast Floor Patent-Free

Carter assured journalists at a press conference that Fast Floor, like Speed Core, would remain free of patents and any engineer would be able to use it in their designs.

“We’ve supported the research, along with foundations and fabricators and others, to have a non-proprietary system that goes out to market that any fabricator and any developer and any architect can use with no licensing fee or anything,” said Carter.

He added that the institute is promoting “that we want to have the steel product, the steel in the building, and that supports our fabricators and our directors. So there is no licensing fee. It’s not patented. It’s a system that anyone can use, and we do that with virtually all of our research.”

The institute also said it will have a newer and more robust version of its Steel Construction Sustainability Guide targeted for a June release. Its sustainability leaders said it would be a full design guide similar to the group’s Steel Construction Manual or Seismic Design Guide, incorporating tracking of sustainable materials that go into steel such as scrap from electric arc furnace mills, inputs like sustainable energy from solar farms and even details of carbon calculator’s and the institute’s own environmental product declarations.

AI and Steel Demand

When asked about the backlog demand for steel beams that are 30-in.-wide or more—popular in data center construction—executives from steelmakers ArcelorMittal, Nucor and Gerdau quoted delays ranging from July to November due to demand. All said that prices had increased with demand by 40% to 60% in the last six months alone.

To deal with this demand, fabricators are turning to artificial intelligence tools to do everything from automate safety manuals to confirming proper welds. Matthew Haaksma, quality manager at Orange County Ironworks, explained how to use tools such as ChatGPT and Clark, an institute AI tool trained on its publications, for inspections and quality control. He noted that integrating AI into the firm’s shop workflows also introduced challenges, such as maintained data accuracy, implementation costs, training needs and a risk of overrelying on automation. The Clark chatbot has been updated with the latest institute design guides and publications and is available at clark.aisc.org.



ENR Associate Technology, Equipment and Products Editor Jeff Yoders has been writing about design and construction innovations for 20 years. He is a five-time Jesse H. Neal award winner and multiple ASBPE winner for his tech coverage. Jeff previously wrote about construction technology for Structural Engineer, CE News and Building Design + Construction. He also wrote about materials prices, construction procurement and estimation for MetalMiner.com. He lives in Chicago, the birthplace of the skyscraper, where the pace of innovation never leaves him without a story to chase.