

Modern Steel Construction

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Workforce Development Win

BY PATRICK ENGEL

The Fabricator Education Training Program is AISC's most ambitious and thorough effort yet toward improving talent recruitment and retention.

A NEW PROGRAM for AISC member fabricators is designed to shorten the time needed to make new employees productive and immediately show them a promising career path in the industry.

The Fabricator Education Training Program is a self-paced online class to help new hires quickly acclimate to working in steel fabrication. The key to its success, though, is how it was developed. AISC staff worked closely with an industry leader in adult learning and a group of experienced fabricators to ensure the training modules were relevant, correct, and engaging.

The program's collaborators come from a diverse collection of fabrication shops, from small to large, from low-volume to high-volume, and from bridge-focused to building-focused to all-purpose. All of them have seen the boost that effective training creates and wanted to give shops of all sizes an opportunity to benefit from it.

"I think it's going to be a boon to fabricators, small and large," Cooper Steel Fabricators president Duff Zimmerman said.

The Fabricator Education Training Program's first curriculum, Fabricator Fundamentals, launched in August. Modules on layout and fit-up of beams and columns will be released later in 2024. The program is only available to AISC member fabricators, and membership dues cover the cost. To access the training, email fabtraining@aisc.org or submit the form at aisc.org/fabricatortraining.

"We're going from zero to a junior fitter, in essence," said Mark Trimble, AISC senior vice president and a former vice president at Huntington Steel in Huntington, W. Va.

The high-quality training program improves the onboarding process, but just as importantly, it aims to retain more employees by showing them a path to improvement and success.

"It's one thing to get workers, but if we can get the workers jump-started and have them become productive as quickly as possible, we'll have a workforce a lot faster," Trimble said.

Most of all, the program's collaborators hope it gives new hires a sense of pride, ownership of the work, and a vision of a successful career in fabrication—increasing the chances they stay in the industry. Seeing their progress quantified brings a sense of accomplishment that the sink-or-swim, learn-by-osmosis training programs commonly found in fabrication shops can't provide.

"People can get discouraged if they feel like they're failing at the job," said Glenn Tabolt, CEO of STS Steel and AISC Board of

Directors vice chair. "You have to make sure you bring them along in a way that builds confidence."

Fabricators compete for workers with major equipment manufacturers, automobile plants, and other trades. Some of those competitors are large corporations that had ample money and time to invest in formal training programs long ago. Many steel fabricators, though, don't have the schedule freedom or resources to commit to developing a thorough, trackable program.

"If you're up against Nissan or Honda, they have unlimited resources for training and employee development compared to a 100-person fabricator shop that mostly uses internal knowledge and trains one person at a time," said Joel Landsverk, AISC's Fabricator Education Training Program manager.

Individual fabrication companies, including some of the nation's largest, have tried to create, implement, and maintain a formal, digestible, and trackable training program for their new shop employees. Refining the message and the lessons into easily understandable classes for a beginner takes time and agreement on what to teach. Picking an appropriate online education vendor can be time-intensive and expensive. Those factors, in addition to the commitment to maintaining the training library, are often a large enough roadblock to prevent the work from getting done at all.

Cooper Steel was an outlier, though. In the early 2000s, it developed an in-person training program modeled after the Steel Erectors Association of America's method, which Zimmerman helped create. The program included a twice-weekly, six-week in-person class for employees and non-employees at a local technical college. Employees who completed it were offered a \$1 per hour raise. Non-employees were offered a job at the end.

The program created ownership and built a workforce pipeline for Cooper Steel, a large fabricator based in Shelbyville, Tenn. It was proof of concept that thorough training matters and a lack thereof was a reason behind fabricators' shared workforce development issues.

"I shared our training program with the AISC board, and they agreed there was an unmet need for training like this," Zimmerman said. "We need to do it, but we need to train with videos and computers because that's how young people learn. It enables them to have some control over the pace and not feel embarrassed if they have to go over a concept more than once."

Welding Basics

MENU TRANSCRIPT

- Welcome
- Introduction
- Common Welding Equipment
- Elements of Welding Equipment
- Requirements for Welding
- Personal Protective Equipment
- Is This Safe?
- Tack Welding and Laying Down a Weld
- Weld Size
- Quality Welds
- Welding Issues
- Spotting Issues With Welds
- Moving Forward
- Quiz Preparation

Pick List

Job #: 4028
Date: 1/23/24

Customer: Artisan Performing Arts Center
Sequence: 102

Qty	Dimensions	Grade	Length	PO#	Location	Heat
1	W 12 x 26	A992	20'-0	4028	26	256311
1	W 24 x 55	A36	48'-0	4028	3	54847
1	HSS 8 x 4 x 3/8	A500C	24'-0	4028	18	34997C
2	HSS 8 x 4 x 3/8	A500C	36'-0	4028	12	2966054

Finding the Right Material

Which of these beams is a match to the second item on the pick list?

Select the best answer; then select **Check**.

- A36, #9023, 24 x 55 x 48
- A992, #4028, 24 x 55 x 48
- A36, #4028, 24 x 55 x 48

Check

AISC had the resources, expertise, and a strong desire to develop a widely accessible training program for their member fabricators that expands on Cooper's original design and helps many fabrication shops compete for workers at a level above what their resources would otherwise allow. Still, there were several hurdles to clear: defining and understanding the audience, finding an e-learning content creation company that could understand fabrication, partnering with a successful industry insider and fabricator trainer, and gathering a diverse group of subject matter experts to guide and review the content.

"AISC decided that if it was going to invest in training," Zimmerman said, "it needed to be as modern and up-to-date as possible."

Content Crafting

Trimble and Tabolt formed a committee of subject matter experts—most of them fabricators—to help develop the program. They needed a team to produce it and people to appear in the videos, but the early priority was finding a veteran trainer. They found their instrumental member at 2022 NASCC: The Steel Conference in Denver.

Kenny Hicks, a training specialist at Able Steel Fabricators in Arizona, held a session at the conference and spoke about the training program he started from scratch in 2018. Four years after its inception, his program had sparked a steady stream of applications for Able Steel's open positions.

AISC board members and staffers were in the audience for his session. Several spoke with Hicks afterward and visited Able, which offered its shop as a studio for the training videos. Cooper Steel Fabricators, TrueNorth Steel, Dave Steel Company, and Thomas Steel, Inc. also opened their shops for program material production.

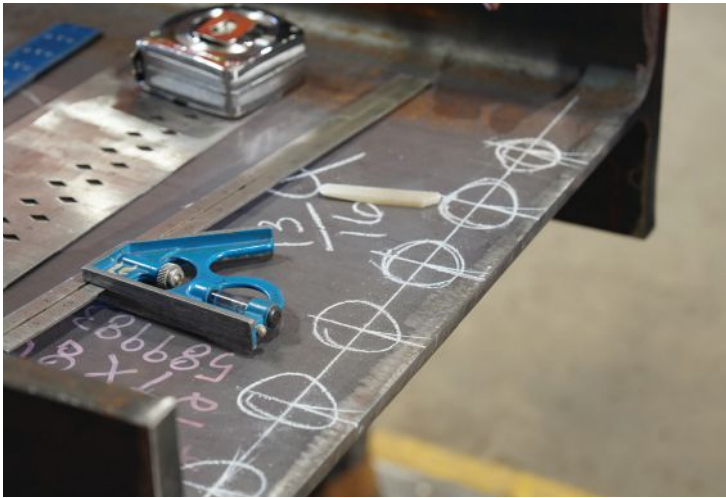
"Kenny has been a trainer, fitter, and quality assurance person," Tabolt said. "He's enthusiastic about training people."

Among Hicks' first pieces of guidance was knowing where to start with each topic and, more importantly, where to stop.

"You can go deep into each category and talk about different experiences or methods," Hicks said. "One of the things when I'm training at Able is that I'll show you a way to do it. It's not the only way to do it. There are several ways to fit structural steel. But the main thing is we're clear on the fundamentals, and we include in each module that you have to follow your shop's procedures and guidelines."

The committee of subject matter experts came from several shops with different methods. No matter the method they chose for a course, it had to answer a guiding question: What do you want new hires to accomplish?

"When you think about drawing reading, you don't want them to just learn how to read a drawing without a purpose," Tabolt said. "You want them to read a drawing so they can correctly and accurately layout and fit those parts."



The Fabricator Fundamentals curriculum has 13 modules covering tasks that focus on a new hire’s first 90 days:

- Introduction to Steel Fabrication—What is it? How does it work?
- Career Success: Your First 90 Days—Tips for success and learning what to expect
- Read and Use a Tape Measure 1: Fractions
- Read and Use a Tape Measure 2: Measuring
- Grinding Basics
- Bolts and Bolting Basics
- Handtool Fundamentals: Clamps
- Handtool Fundamentals: Squares
- Identifying Main Material
- Identifying Detail Pieces
- Crane and Rigging Basics
- Welding Basics
- Career Success: Beyond 90 Days—There are many opportunities in steel fabrication!

All 13 apply equally to a small one-shop company or a large fabricator with multiple locations.

“For so many of our members, it’s such a big leap from what they’ve traditionally done for training,” Landsverk said. “Most of their training is passed down. You have a guy who’s been in the shop for 40 years and done the thing a new hire is trying to do. Spending a few hours with that mentor and learning is a long way from a developed, intentional training method and plan.”



Kenny Hicks (right) has extensive fabricator training experience and is prominently featured in the program material.

Educational and Entertaining

Creating the Fabricator Education Training Program meant fabrication experts without teaching skills had to mesh with teaching experts without fabrication skills. The training program committee interviewed three online learning content developers and liked Artisan Learning’s approach most because of its experience creating online learning content for adults.

Around the same time, AISC hired Landsverk to manage the curriculum developers, e-learning content development experts, video producers, and fabricator subject matter experts. He had spent more than 20 years working on corporate training and technical content development. His company, Landsverk Media, was a subcontractor in another bid for the fabricator training program, and he had worked closely with AISC’s project team for months before the bid was awarded to Artisan.

Upon earning the bid, Artisan had to take the fabrication material the committee developed and turn it into an online course module, which meant it first had to become fluent in the art of fabrication.

“We know how we would train people, but we learned we weren’t doing it very well because Artisan shined a light on how people learn and why we can’t teach at the pace we think someone should learn,” Trimble said. “We take for granted all the things we already know about fabrication that people don’t inherently know.”

Hicks trained the Artisan team as if they were new fabricators. Artisan traveled to fabrication shops nationwide, consulted with subject matter experts to develop standardized terminology, and immersed its team in the fab shop environment.

“It’s not somebody who doesn’t know how to fabricate who created these lessons,” Tabolt said. “It’s professional educators drawing the information from subject matter experts who really know how to do this stuff.”

Subject Matter Expert Committee

The following people were subject matter experts who helped develop the Fabricator Education Training Program:

- Larry Martof, AISC
- Russell Barngrover, SteelFab Inc.
- Christian Crosby, Schuff Steel
- Jason Lansford, Delongs Inc.
- Adam MacDonald, AGT Robotics
- Linda Hale, QMC Auditing
- Dennis Haught, AISC
- Jeremy Michalsky, TrueNorth Steel
- Rodney Harden, Cooper Steel
- Scott Vesper, Southern New Jersey Steel
- Viji Kuruvilla, Lexicon Inc.
- Willard Deemer, East Valley Institute of Technology
- Kenny Hicks, Able Steel Fabricators, Inc.
- Mark Trimble, AISC
- Glenn Tabolt, STS Steel, Inc.
- Matthew Haaksma, Orange County Ironworks, LLC
- Ben Spaeth, TrueNorth Steel

The training video format is Hicks, and other mentors like him, on camera coaching an actor who plays a new fab shop employee. The actors knew as little about fabrication as most new hires do. The questions they asked were sparked by real-time curiosity and processing of instructions—just like a new hire—rather than a script. They were truly learning in the moment.

“We’re watching organic development happen on screen,” Landsverk said. “We have some great mentors and actors who are learning in front of the viewer. It’s almost like reality TV.”

The subject matter experts knew they had to develop the lessons in a way that was appropriate for their learners. That meant a precise understanding of the audience and how it learns. The committee developed several fictional characters with racial, socioeconomic, educational, and geographic backgrounds commonly found in new fabrication shop hires. Among those personas were a high school graduate looking for a career direction and a person recently discharged from the military.

“We built content around those people,” Trimble said. “All of us subject matter experts had to back off and let it flow the way Artisan guided us. They would use us as experts but craft the courses in a way that would truly benefit the learner.”

The finished product is a first for AISC’s educational efforts. AISC has published 16 editions of its *Steel Construction Manual* and more than 40 design guides, created countless webinars, and started a Night School program—all intended to help engineers continue to grow and learn. The Fabricator Training Program, though, is one of its first educational programs for the shop employees who have their hands on the steel every day.

“It took me years to gain all this knowledge,” said Hicks, a four-decade industry veteran. “Now, we put it in a training curriculum that will slingshot these new students into their careers in structural steel.” ■



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