Advancing Quality, Driving Innovation: The Epoxy Interest Group's Role in Reinforcing Concrete Bridges

by Brent Toller, Epoxy Interest Group

In 2008, the Epoxy Interest Group (EIG) was established within the Concrete Reinforcing Steel Institute (CRSI) to promote the use, quality, and performance of epoxy-coated reinforcing steel. What began as a focused effort to elevate the standards for corrosion-resistant reinforcement has since developed into a highly collaborative, technically driven, and growing trade association. EIG operates as an "institute within the institute," with its own steering committee, separate membership dues, budget, and dedicated website (epoxyinterestgroup.org).

The member companies include epoxy-powder suppliers, coating applicators, and reinforcing bar fabricators. All members are committed to EIG's mission statement:

> ***To increase the quality and performance of epoxy encapsulated rebar, dowel bars, and wire mesh in protecting the integrity of steel and concrete.***

EIG seeks to fulfill this mission by working closely with CRSI, owners, and other industry stakeholders to enhance quality across the entire epoxy-coated reinforcement supply chain. Two critical programs are the CRSI Epoxy Coating Plant Certification and the CRSI Certification for Fabrication of Epoxy-Coated Reinforcement. Both certifications are voluntary, but they are increasingly recognized and required by state departments of transportation (DOTs). In fact, 31 DOTs now require participation in the CRSI applicator certification program, which is a powerful testament to the program's value and reliability.

Launched in 1991, the CRSI Epoxy Coating Plant Certification for fusion-bonded epoxy-coating applicator plants focuses on ensuring that epoxy coating is applied with the highest standards. A third-party auditor accredited to ISO/ICE 17065:2012 evaluates plant operations with regard to coating thickness, adhesion, curing, holiday testing, surface preparation, and more. This auditing process is rigorous, and plants know they must perform at the highest level to meet the quality criteria during the coating process to achieve and maintain certification.

But what happens after the coating process—when the bar is fabricated, stored, and shipped? This is where EIG's second major program takes effect.

In response to DOT concerns and owner feedback, EIG worked with CRSI to introduce the CRSI Certification for Fabrication of Epoxy-Coated Reinforcement Program in 2013. This certification ensures that epoxy-coated reinforcing bars are handled, cut, bent, touched up, and transported properly, thereby safeguarding coating integrity and maintaining corrosion protection throughout the bars' journey to the jobsite. The program reviews quality-control processes, handling and storage procedures, repair protocols, and employee training. As the industry has embraced this program, DOTs have gained greater confidence that fabricated epoxy-coated reinforcing bars will perform to the highest expectations.

The CRSI Certification logo signifies that a plant meets quality standards for epoxy-coated reinforcement, verified through independent third-party audit. All Photos and Figures: Epoxy Interest Group.

From Experience: Why Certification Matters

As a former epoxy-coating plant manager, I can say from experience that these EIG and industry-driven programs are not just "check-the-box" exercises—

Epoxy-coated reinforcing bars, coated and then fabricated in accordance with ASTM A775 requirements.

Epoxy-coated reinforcing steel provides long-term corrosion protection in bridge applications, especially in areas exposed to deicing salts and moisture such as the driving surface of the Mount Hope Bridge (shown here), which spans the Arkansas River in Kansas.

they shape how a plant operates daily. As required by our CRSI certification, we trained every employee on our quality plan and CRSI's requirements. If we were not meeting CRSI's certification standards, we would risk losing business. At one point, our plant served 12 states, 10 of which required CRSI certification. If we failed one audit, our market would have been reduced from 12 states to 2.

The quality-driven environment that we maintained to pass the annual audits kept us sharp. We knew that the inspectors were reviewing our documentation, including our equipment inspection logs and our history of coating samples and tests. We also knew that we were accountable to our customers—DOTs, contractors, and engineers who expect durability, consistency, and excellence. The CRSI Epoxy Coating Plant Certification stamp meant our product was meeting the highest industry standards.

Raising the Bar for the Next Generation of Coating Technology

EIG is not only focused on current standards ASTM A775[1] and A934[2]—it is also actively shaping the future of corrosion-resistant reinforcement coatings. (See the Safety and Serviceability articles in the Spring 2022 and Fall 2022 issues of *ASPIRE*® for more information about the current standards.) Working in partnership with CRSI, EIG has supported the rollout of the new ASTM A1124 standard for textured epoxy-coated reinforcing bar.[3] This next-generation coating for reinforcing steel improves adhesion to concrete and long-term durability of the coating, and CRSI has already established a new certification program to support it. That means DOTs and owners can require the same level of quality assurance for this advanced coating that they expect for traditional epoxy coatings.

For more information about ASTM A1124 and textured coating developments, see the Safety and Serviceability article in the Winter 2024 issue of *ASPIRE*. This new technology represents a pivotal shift for the epoxy-coating industry.

EIG and CRSI: A Shared Mission

Our trade group's strength lies not only in the quality standards it maintains but also in its unity with our umbrella trade organization. Because EIG is a specialized trade group within the 100-year-old CRSI organization, our trade group benefits from the broader resources and stellar reputation of one of the longest-standing U.S. industry associations. Each EIG member is also a CRSI member, and we are unified in the greater mission to promote and support the steel reinforcement industry.

References

1. ASTM International. 2019. *Standard Specification for Epoxy-Coated Steel Reinforcing Bars*. ASTM A775/A775M-19. West Conshohocken, PA: ASTM International.
2. ASTM International. 2019. *Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars*. ASTM A934/A934M-19. West Conshohocken, PA: ASTM International.
3. ASTM International. 2023. *Standard Specification for Textured Epoxy-Coated Steel Reinforcing Bars*. ASTM A1124/A1124M-23. West Conshohocken, PA: ASTM International.

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