

**Subject:** Continuous Galvanized Rebar (CGR) Integration

**Continued Education Topics:**

CGR is a specialized pure zinc alloy coating for construction projects featuring exceptional formability that complies with ASTM A1094. Because CGR is processed prior to fabrication, rebar can be staged in stock lengths prior to being released by fabrication resulting in a reliable and consistent supply chain.

Value Proposition that distinguishes CGR technology

- Logistical improvements since the rebar protective coating is processed prior to fabrication
- Design flexibility with the ability to bend after fabrication without cracking or peeling
- Chloride Threshold Level is improved 2-4 (x) with a Pure Zinc Metallurgical Bonded Coating
- Does NOT require special grades of steel, and utilizes readily available standard uncoated bar
- Economic advantage as cost comparisons are minimal and typically  $\leq 10\%$
- Proven field performance utilizing protection methods dating back over 300 years
- Fabricated by any rebar fabricator without special equipment or additional handling
- Design freedom with minimal impact on structural design as the splice/lap connections are standardized
- Widely available from established distribution throughout North America
- Can be stored outside in the weather without concern of deterioration

Industry impacts that improve the world's infrastructure that the next generation will inherit:

- New infrastructure is being designed and developed to handle increased population demands
- North America is seeking sustainable solutions to overhaul and rehabilitate the existing infrastructure
- Modernized techniques with proven technology to deliver the durability of a 100+ year design life

Sustainability and Resiliency Features:

- The manufacturing process is factory controlled free of VOC pollutants and hazardous air emissions
- The automated process improves operational efficiencies reducing the facility carbon footprint
- The transportation + logistical advantages contribute to decreasing the embodied energy impacts
- Zinc is a natural mineral that cycles through the environment and the 24th most abundant mineral on earth
- 35% of Zinc is repurposed from recycled sources and can be reused infinitely
- 100% recyclability of galvanized steel is an unrivaled benefit to minimizing environmental impacts
- The initial cost is the Life Cycle Cost (LCC) and the lowest maintenance free cost of ownership

Design and Specification Highlights (03 21 00 REINFORCEMENT BARS)

- ASTM A1094
  - Coating minimum (50  $\mu\text{m}$ ) 2 Mil
  - Fabrication is performed after galvanizing without cracking
  - Shipping & Handling - Nationwide, truckload quantities
- ASTM A767 Class II
  - Coating minimum (86  $\mu\text{m}$ ) 3.4 Mil
  - Fabrication is performed after galvanizing / minor cracking and flaking of the coating in bend areas
  - Shipping & Handling - Limited local supply
- ASTM A767 Class I
  - Coating minimum (150  $\mu\text{m}$ ) 5.9 Mil
  - Fabrication not recommended after galvanizing
  - Shipping & Handling - Fabricate rebar, ship to galvanizer, return to fabricator, repeat
- ASTM A780/A780M
  - Standard Practice with 3 Repair Methods for Damaged and Uncoated Areas of Galvanized Coatings

