



The ArmorGalv[®] solution for Rebar - ArmorBar[™]

In recent years, rebar corrosion has proven to be a serious issue in many projects, particularly in infrastructure, such as bridges and highway overpasses. Just the issue of Highway overpasses is costing Billions of Dollars per year in maintenance, repair and replacement.



Typical corrosion of bridges and overpasses.

The **ArmorGalv[®]** process offers a unique solution to the issue of corrosion protection for Rebar.

- The system offers corrosion protection superior to that of epoxy coatings and hot dip Galvanizing, as measured in salt spray tests. **ArmorGalv[®]** coated steel with simple silicate sealers have achieved better than 5000hrs in ASTM-B117 salt spray testing.
- The **ArmorGalv[®]** process follows the Rebar indentations and provides an even coating without filling the indentations as does conventional hot dip Galvanizing, and even Epoxy, to some extent.
- The surface of the **ArmorGalv[®]** treated Rebar is hard and abrasion resistant, thus providing security that the corrosion protected surface will not get damaged during transportation, handling and installation.
- The **ArmorGalv[®]** process allows the treatment rebar at elevated temperatures, high enough to provide stress relieving. This may be particularly interesting in cold rolled rebar where we need to meet high elongation requirements (for earthquake zones, for instance).
- The **ArmorGalv[®]** process does not have the embrittlement issues associated with hot dip galvanizing.
- The **ArmorGalv[®]** finished surface has a unique, sponge-like, structure which provides extremely good bonding of paint and epoxy, which can offer even better protection for especially exposed structures, such as in marine environment.
- For most applications, the **ArmorGalv[®]** coating with its silicate based sealer, is sufficient for providing long term corrosion protection. It is also not affected by fresh concrete chemistry.
- The fact that **ArmorBar[™]** can be bent after coating, without being damaged, makes it ideal for this application.



Bent **ArmorBar™** - No flaking or peeling.

- The **ArmorGalv®** process is completely environment friendly and has, in fact, received an official EPA award as a “zero emission” process.
- The **ArmorGalv®** system allows for Galvanizing of **finished** forms as well as post forming after coating, without loss of the coating.
- The **ArmorBar™** solution is economically competitive with current systems.

In a just concluded two year study by the National Academy of Sciences, it concluded as follows:

“Tests comparing the performance in severe salt environments with and without abrasion show a 5 to 10 times improvement in performance with the TZD-coated steel versus HDG steel.”

and:

“TZD-coated reinforcement will have a significantly lower initial cost than stainless steel reinforcement, and can be applied to all strength grades of steel, allowing for potential additional savings where the designer can use higher tensile strengths to reduce the amount of reinforcing bars needed. When used with higher strength bars and lower permeability concrete, TZD could potentially lower the overall upfront and service life costs for bridges versus alternative reinforcing bar options.”