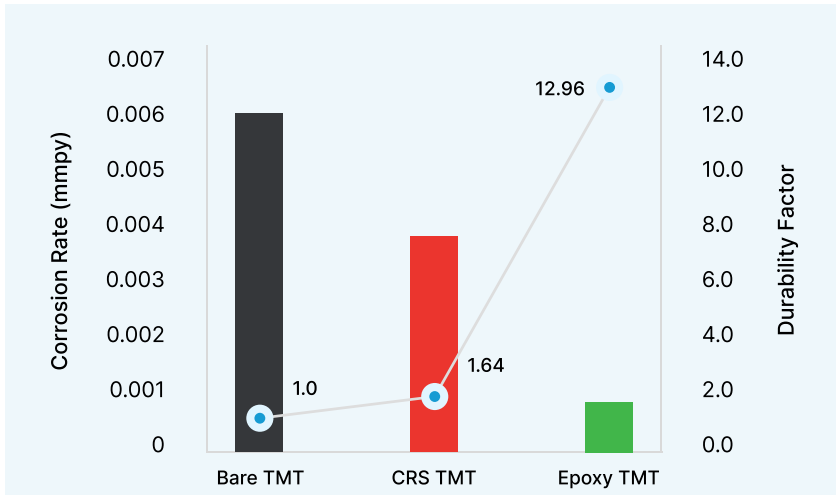


ET-Epoxy TMT Bar

# Laboratory Results Under Simulated Conditions

Results of corrosion testing in a laboratory under simulated coastal, salty, humid conditions.



**सौरसञ्चार-केन्द्रीय विद्युतरसायन अनुसंधान संस्थान**  
**CSIR-CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE**  
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**CSIR-CECRI**  
 Looking Over Through Electrochemistry

Date: 19.09.2022

To:  
 Electrochem (I) Limited,  
 Nanakkudi, Kottak, Coimbatore.

**विषय/विषय: Mr. Krishna Chetani, GSI Operations, Epoxy coating chart.**

Our Ref: SSP 1319

**प्रकृत看: Corrosion performance evaluation of bare TMT, CRS, and Epoxy coated steel rebars embedded in concrete exposed in coastal sea environment.**

**प्रकृत看 Duration: 2 years.**

The overall conclusions arrived based on the studies conducted with respect to the above project are listed below.

- Steel rebars with epoxy coating embedded in concrete specimens showed better performance in the absence and presence of chloride ions in concrete. Epoxy coated rebars can be used in concrete constructions to protect against corrosion.
- Both bare TMT and CRS rebars embedded in concrete specimens showed severe corrosion under alternate wetting and drying cycles.
- The epoxy coating was found to be intact with the rebar and no damage to the coating was observed.
- The corrosion rate of the epoxy rebars was found to be less than that of TMT and CRS rebars.
- The epoxy coated steel rebars effectively provided barrier effect to resist corrosion.
- Electrochemical potentiodynamic studies in the field (at Mandapam, near Rameswaram in Tamilnadu which is considered to have the second most corrosive environment in the world) and lab studies showed that, for the least cost considered, the corrosion rate of epoxy TMT rebars was found to be about 7 to 12 times lower than that of the bare TMT rebars.

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