

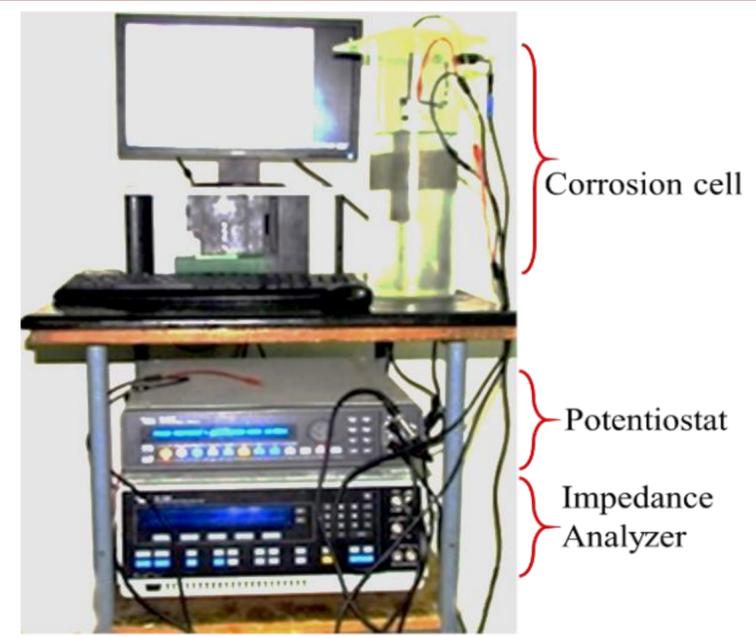
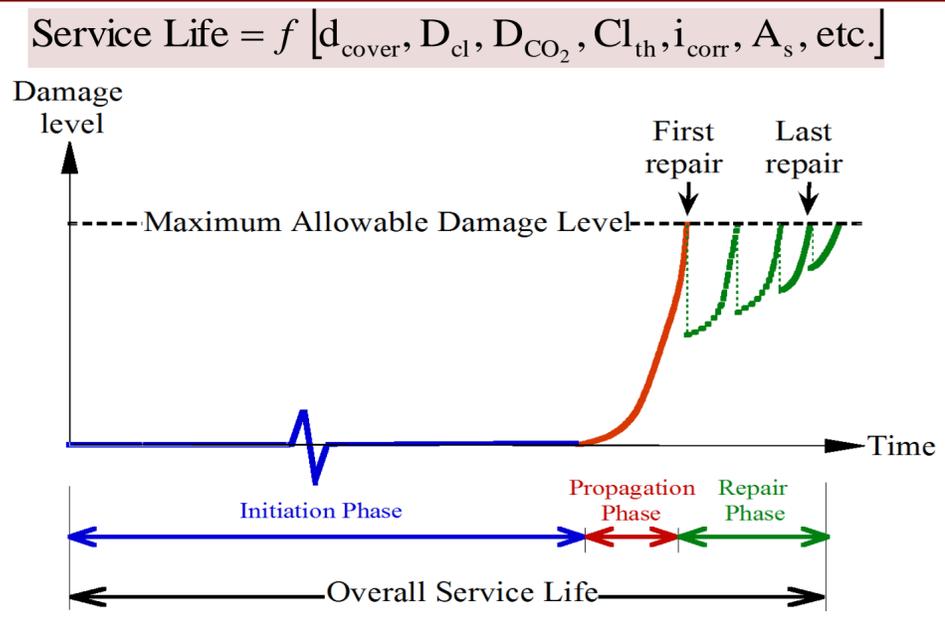
Understanding the corrosion mechanisms and related parameters to estimate service life of steel-cementitious systems



Models/frameworks are available to estimate the service life and residual capacity of steel-cementitious systems. However, key input parameters for such frameworks are not available, especially for systems used in India. These knowledge gaps need to be filled by: (1) estimating the chloride threshold and corrosion rate of various systems (e.g., systems with corrosion inhibitors, prestressed concrete, etc.), (2) understanding how to reliably test these parameters and draw conclusions - standardized procedures are needed; and (3) understanding the effect of corrosion on the mechanical properties (strength, ductility, bond etc.) of these systems.

Modeling service life of concrete structures

Electrochemical workstation



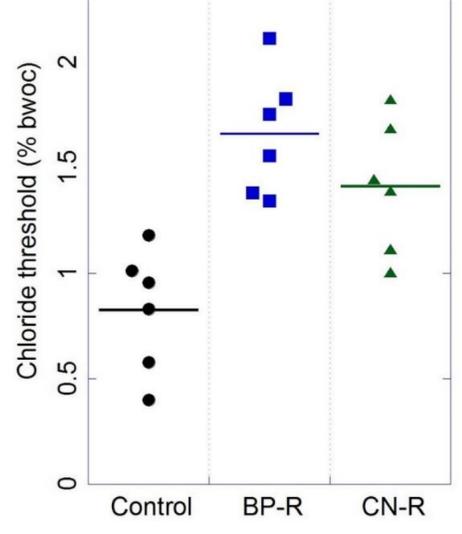
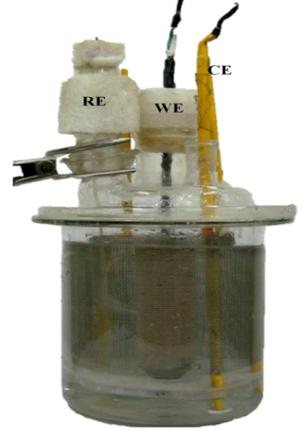
Developing test methods to assess corrosion characteristics of steel-cementitious systems



Assessing the long-term performance of systems with corrosion inhibitors and special cements

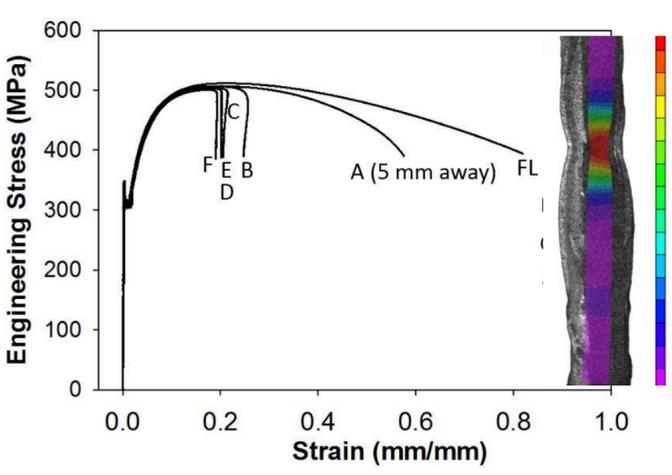


Developing short-term test methods for reliably determining the chloride threshold and corrosion rate

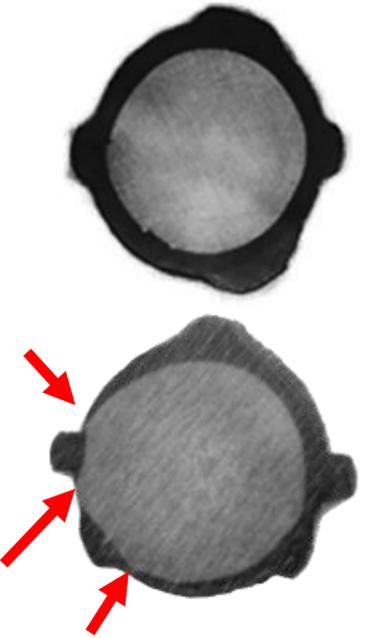


Mechanical and electrochemical characteristics of pristine and corroded rebars

Effect of corrosion on the bond behavior of prestressed concrete systems

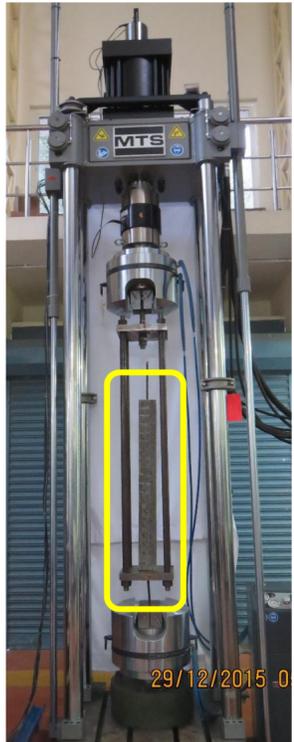


Full-field displacement and strain computation using Digital Image Correlation (DIC) techniques



Quality assessment of steel reinforcing bars

Determining the transmission length and bond strength



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