## **Concrete Reinforcement Corrosion**

Corrosion of reinforcing steel is the most common cause of deterioration in reinforced concrete structures. It is a worldwide problem that causes a wide range of economic, aesthetic, and functional issues. In the U.S. alone, it is estimated that annual repair costs for public infrastructure exceeds \$50 billion.

CTLGroup has extensive technical expertise on the assessment of existing structures affected by atmospheric corrosion, reinforcement corrosion, the development of corrosion protection plans, the repair of affected areas, and prevention of further deterioration.

Understanding the roots causes and consequences of corrosion deterioration is the key to preventing and correcting damages. An advanced knowledge of the influencing parameters can help facility and asset managers assess the effects of reinforcement corrosion on the remaining service life of a structure, and to confidently develop a cost-benefit analysis for renovation programs, or possible replacement.

## **Structural Assessments**

- Structural condition assessment
- Non-destructive testing and evaluation
- Development of corrosion protection plans
- Repair, restoration, and retrofit design

## **Structural Diagnostics & Testing**

Existing concrete infrastructure is continuously subject to corrosion degradation. CTLGroup conducts document review and field assessments for determining the causes for deterioration and the present condition of the structure using advanced nondestructive evaluation methods.

CTLGroup experts perform field and laboratory corrosion testing to interpret and analyze data in order to accurately understand the condition of reinforced concrete structures subjected to corrosion.

- Load testing
- Vibration monitoring and analysis
- Crack monitoring
- Sampling and laboratory testing

## **Corrosion Mitigation**

CTLGroup develops corrosion protection plans tailored for specific service life requirements and exposure conditions.

Reinforcement corrosion oriented repair plans can range from material replacement, to utilizing passive or active repair methods. Passive repair methods include the application of coatings that delay the ingress of deleterious substances, specifically carbon dioxide or chlorides. Active protection methods include electrochemical prevention of corrosion by (CPre) or cathodic protection (CP).









