

Analytical tests of the corrosion product, process water and investigation of the metallurgy and microbial influences are often an essential tool to solve corrosion-related problems, especially in the area of corrosion failure investigation. Extrin can provide the following analytical services.

## Water Analysis



The ability of water to conduct electricity is affected by its ionic concentration, in which Total Dissolved Solids (TDS) affect the water's ability to conduct electricity. This electrical conductivity is an important parameter in predicting corrosion.

Extrin can provide special laboratory testing which can **determine the corrosivity of water**, using the Langelier Saturation Index (LSI) and the Ryzner Stability Index (RSI). These are two common indices for predicting corrosion.

## Corrosion Product Testing

### Scanning Electron Microscopy (SEM)

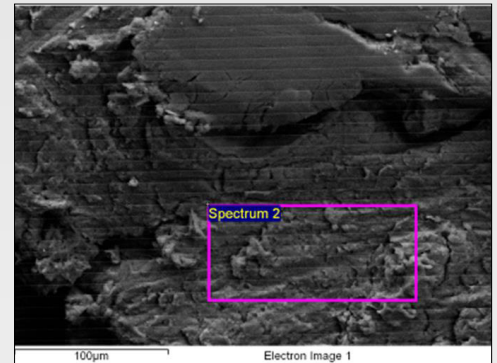
On of the most used analytical technique for the characterisation of corrosion product.

### Energy-dispersive X-ray Spectroscopy (EDS)

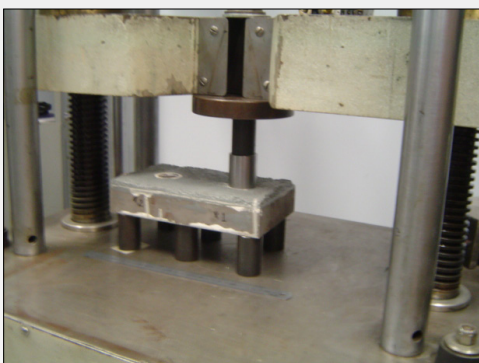
Valuable for the elemental analysis or chemical characterisation.

### X-ray Crystallography

Used for determining the atomic and molecular structure of a crystalline structure.



## Materials Testing



Shear

Tension

Atmospheric Simulation

Compression

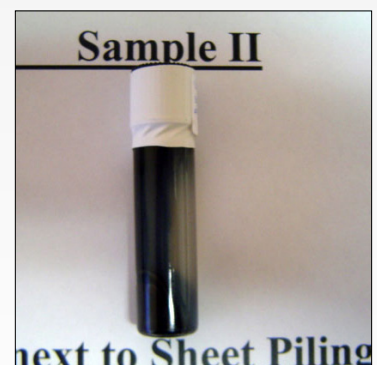
Flexural

Site Exposure Trials

## Microbial Testing

The identification of microorganisms responsible for corrosion can be affected by many factors including: freshness of the sample, collection procedure, transportation to the laboratory etc.

Extrin can perform Microbial Testing varying from the very basic enumeration for a specific bacteria to the more complex DNA.



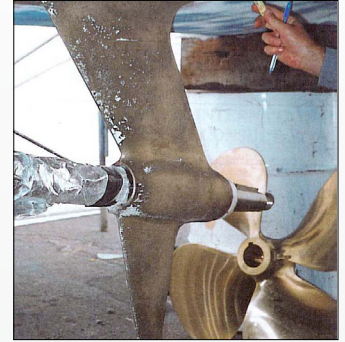


### **Asset/Infrastructure Assessment**

- Corrosion Management Audit
- Asset Condition
- Failure Investigation
- Criticality Review

### **QA/QC**

- Coating Inspections
- Project Management
- Repair Integrity Analysis
- Shutdown Planning and Maintenance Management



### **Microbial Investigation**

- Site Inspections
- Analytical Testing Mechanism Determination
- Remediation

### **Cathodic Protection**

- Complete System Design
- System inspections and testing
- Material Procurement
- Coordination of installation



### **Concrete Services**

- Durability Assessments
- Mix Design Review
- Protective Coatings
- Refurbishment works
- Project Management

### **Corrosion Training Services**

- Corrosion Awareness
- Corrosion Prevention
- Corrosion Detection
- Other Client-Specific Training Courses



### **Failure Analysis**

- Failure Catalyst Analysis
- Review and Recommendations
- Asset inspection and testing

### **Design and Durability**

- Durability Report
- Materials selection
- Concrete mix design
- Corrosion rate prediction
- Maintenance specifications



Visit our website for more information on our services and projects undertaken



**“Consultants in Corrosion Management”**

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