



## Root Cause Failure Analysis

Visual Examination · Optical Microscopy · Scanning Electron Microscopy (SEM) · Energy Dispersive X-ray Spectroscopy (EDS) · Microhardness Testing · XRD ·



### Root Cause Failure Analysis...

Root Cause Failure Analysis (RCFA) is the systematic investigation of a component, its construction, application, and history to determine the failure mechanism and its underlying cause. RCFA may be used for legal, insurance, safety, environment or production reasons. Once a component fails, one must determine the basic cause(s) of the failure and recommend any changes necessary to reduce or eliminate the risk of recurrence.

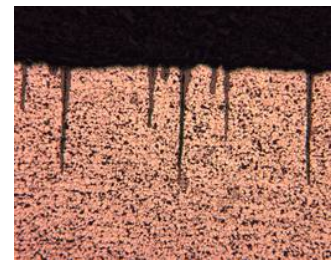
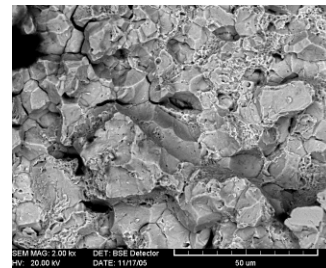
Our standards are exceptional in meeting the customer's needs and adding value to their business. Our team has over 50 years of failure analysis experience among them. This, along with our well equipped laboratory allows for an efficient determination of the root cause of a failure and recommendation of the best solution.

### Key Capabilities...

- Collection of background data and sample selection
- Visual examination
- Macroscopic examination with stereomicroscope
- Optical microscopy and metallography
- SEM microscopy with EDS (Energy Dispersive X-ray Spectroscopy) capabilities
- X-ray Diffraction (XRD)
- Macrohardness testing
- Microhardness testing
- Determination of the failure mechanism and root cause
- Report and recommendations

### Examples of RCFA Projects Include...

- Mine exhaust fan
- Mine hoist motor
- Mine hoist gear
- Stress corrosion cracking of acid plant equipment
- Fatigue failures of shafts in crushing and grinding equipment
- Boiler tube corrosion and rupture failures
- Drill bits
- Expansion joint
- Agitator shaft and impellers
- Lifting devices
- Fasteners
- Organic and ceramic coatings and linings
- Refractories



### Contact Us

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