

# FOCUSING MICRO TO REVEAL MAJOR ISSUES

METALLOGRAPHIC AND FAILURE  
ANALYSIS METHODS CAN REVEAL  
THE POTENTIAL EXTENT OF CORROSION  
BY INTERROGATING MINUTE DETAILS.

## OUR EXPERT TEAM CAN HELP YOU:



### DISCOVER

The extent of corrosion  
or deterioration throughout  
your structure



### DETERMINE

The remaining service life  
of your structure



### CALCULATE

Accurate costs for repair  
and protection options



### PLAN & IMPLEMENT

Remediation works  
with accuracy

Do you suspect your structure  
is corroding or deteriorating?  
**Let us scratch the surface and help  
you understand what lies beneath.**

# STATE OF THE ART TECHNOLOGY CAN AID IN THE ANALYSIS OF YOUR ASSET & INFRASTRUCTURE

From buildings, bridges, rails, tanks, tunnels, roads viaducts reinforced concrete, steel and composites, no structure is hard to assess.

**Ask us how Infracorr's technology can aid in the analysis of your asset and infrastructure.**

## MACROGRAPHIC EXAMINATION

Our Canon DSLR with Macro Lens offers high resolution and 1:1 magnification. With resolution of up to 100  $\mu\text{m}$  allowing for detailed macrographic examination, features such as surface defects, corrosion damage or fracture surfaces can be easily examined with this piece of equipment.

Combining the Canon DSLR with a suite of failure investigative techniques allows detailed analysis of fracture surfaces to determine failure mode and defect propagation paths and initiation (as part of fractographic examination), allowing understanding of the root cause of failure.

## HIGH MAGNIFICATION MICROSCOPY

A metallographic microscope is an inverted optical microscope that offers 50 to 1000x magnification, allowing for detailed flat specimen and cross section examinations of materials such as metals, coatings, concrete and plastics.

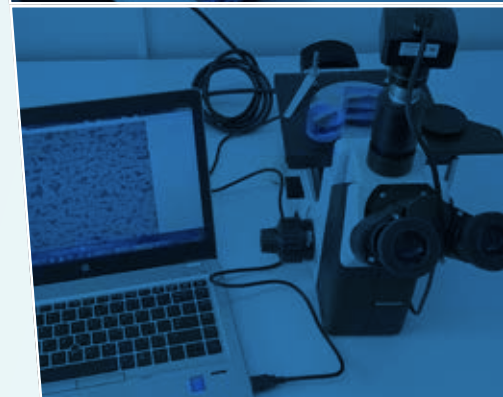
High magnification is used to examine microstructures and can identify the morphology of fractures, corrosion and inherent defects such as voids or inclusions, allowing the quality and condition of the material to be understood.

## LEEB REBOUND HARDNESS TESTER

This piece of equipment allows for relatively non-destructive hardness testing and grade identification of metals used in steel structures. This allows for us to check the surface hardness of specific elements in buildings such as shafts, bearings, pipes and girders.

Rebound testing can be an effective way to confirm the grade of bulky, heavy, rigid metal samples and should be considered anytime ultrasonic thickness testing is performed. The hardness and approximate strength combined with dimensions can provide a good overall understanding of the structure or component.

This type of testing can also be used on various metals and alloys, however, it's typically combined with chemical testing to ascertain more conclusive results for grade identification, and is supplemented by further destructive testing if a comprehensive understanding of the mechanical properties is required.



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