

Company Profile

Metallurgical Consultancy and Services Sdn. Bhd.



**MS ISO/IEC 17025
TESTING
SAMM No. 442**

Contact Person : Dr. Lim Ching Liang, Director

Contact Details:

20, Seksyen U5/17 (PS), Seksyen U5
40150 Bandar Shah Alam, Selangor
Malaysia

Telephone No. : 603-78450730 & 603-78450740
Telefax : 603-78450729 (Accounts), 603-78450737 (Dr. Lim)
603-78450739 (Admin)

<http://www.metacos.com>

MS ISO/IEC 17025 : 2005 Accredited Since Oct 2009

SAMM NO. 442



TABLE OF CONTENT

Our Services

- Consultancy and Failure Investigation
- HIC and SSC
- Destructive Mechanical Tests
- Non Destructive Tests
- Metallography and Replica
- Calibration

Our Products

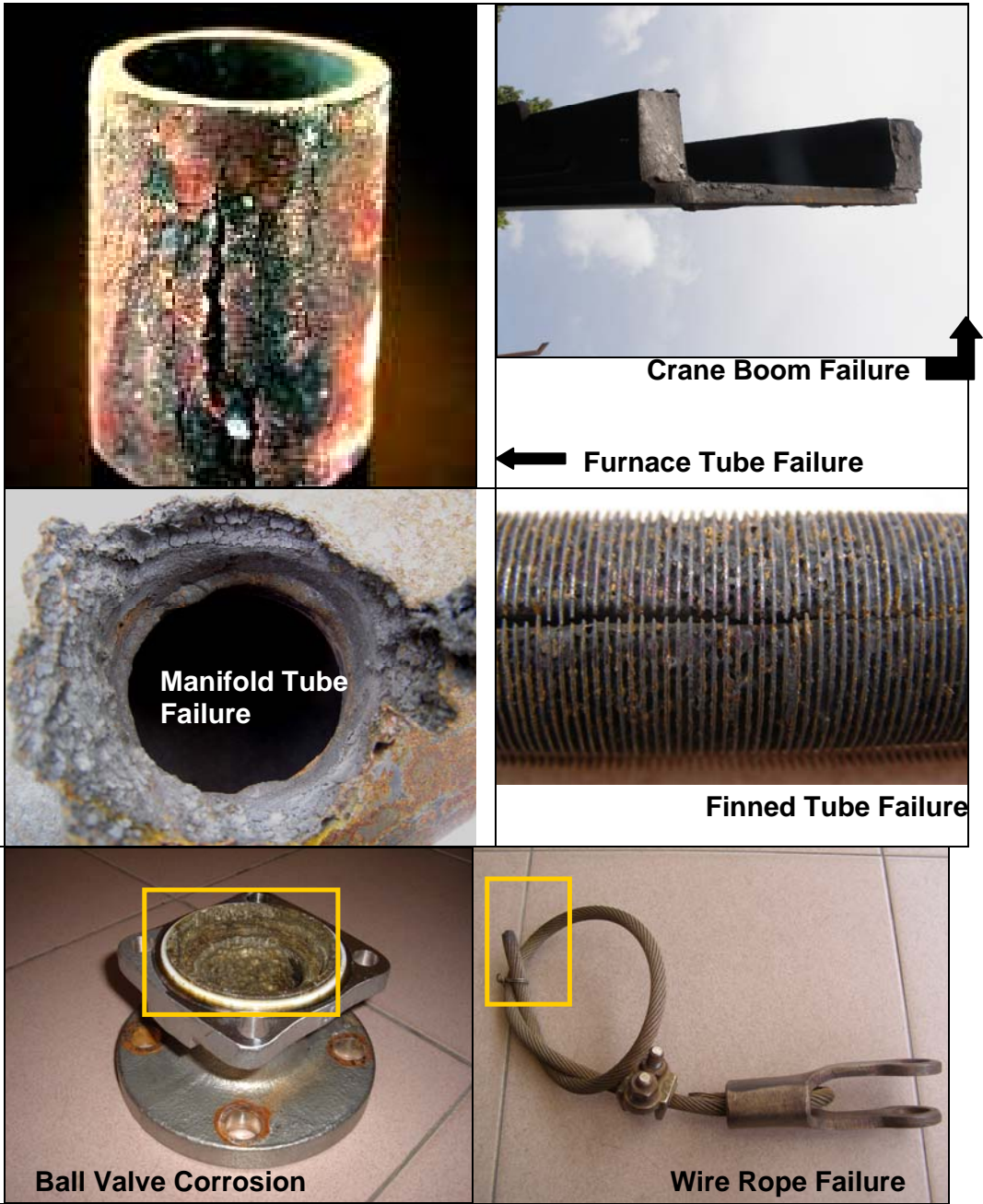
- Surfactant D5, Degreaser RP1, RP2 and Biomex 3



Our Services

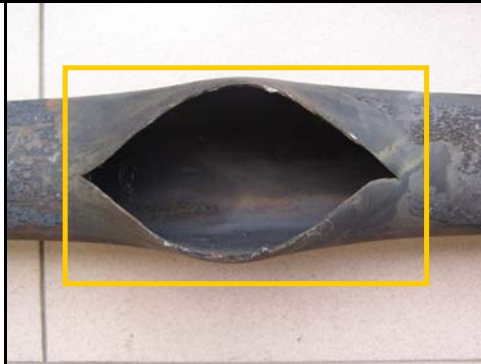
Consultancy Services

Metallurgical Consultancy and Failure Investigation Services





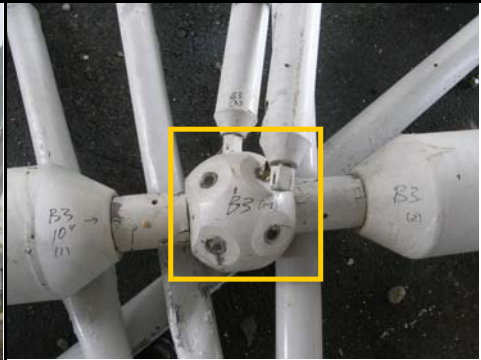
A fire damaged fiberboard factory



Boiler Tube Failure



Stadium Roof Collapse



Bolt & Nut Failure



Product Failure



Gear Failure



Alloy Wheel Failure



Turbine Shaft Failure



We specialize in Metallurgical Consultancy, our metallurgist and engineers specialize in industrial product failure investigation, corrosion, industrial accident investigation

Our principle failure analysis engineer and forensic accident investigation expert can solve your industrial failure analysis or provide expert opinion for your insurance accident investigation or product liability investigation.

We provide consultancy on welding problems, develop welding procedures, qualify welding procedures and qualify welders

We provide product liability evaluation of conformance to industry specifications.

Analysis & Testing

Hydrogen Induced Cracking (HIC) Test

Our private laboratory is able to conduct Hydrogen Induced Cracking (HIC) test in accordance to NACE Standard MR-0175 and TM-0284

This test method evaluates the resistance of pipeline and pressure vessel plate steels to Hydrogen Induced Cracking caused by hydrogen absorption from aqueous hydrogen sulfide solution.

An unstressed test specimen is exposed to a solution at ambient temperature and pressure and after a specified time (usually 4 days), the test specimen are removed, sectioned, polished and evaluated. CLR, CTR and CSR ratios were determined

Sulphide Stress Cracking (SSC) Test

Sulphide Stress Cracking (SSC) of test specimen under stress in a four point bend fixture



Destructive Mechanical Tests

All the test specimens were prepared by our associated company Kejuruteraan Metalim. We carry out destructive mechanical tests

| Description | International Code |
|---|--|
| Tensile Test (Transverse Tensile and All Weld Tensile) at Ambient Temperature | ASTM 370,ASTM E8, BS EN 10002 Part 1, ISO 6892, JIS Z 2241 |
| Tensile Test at Elevated Temperature | BS EN 10002 Part 5 |
| Tensile Test (Reinforce Bars) | BS 4449, MS ISO 146 |
| Tensile Test of Bolts, Screw and Nut | ISO 898-1 |
| Proof Load Test of Nut | ISO 898-1, ISO 898-2 |
| Shear Test of Bolt | In House Method |
| Shear Test of Clad Material and Weld Overlay | ASTM A263 |
| Through Thickness Test or Z Direction Test | ASTM 770, BS EN 10164 |
| Crack Tip Opening Displacement (CTOD) | APII 2008, BS 7448 Part 2 (1997) |
| Bend Test | ASTM 370 JIS Z 2248 |
| Flattening and Flaring Test | ASTM 370 |
| Charpy Impact Test | ASTM E23, BS EN 10045-1, JIS Z 2242 |
| Vickers Hardness Test | ASTM E92, ISO 6507, JIS Z 2244 |
| Brinell Hardness Test | ASTM E10, JIS Z 2243 |
| Rockwell Hardness Test | ASTM E18, ISO 6508-1 |
| Micro Vickers Hardness Test | ASTM E384 |
| Fracture Test | According to Relevant Code |
| Nick Break Test | According to Relevant Code |
| Macro Examination | According to Relevant Code |
| Micro – Grain Size Determination | ASTM E112 |
| Micro – Ferrite and Pearlite | JIS G 0555, JIS G 0557 |
| Micro – Point Counting | ASTM E562 |
| Chemical Composition | QP/Wi/15a |
| Hydrogen Induced Cracking HIC | NACE MR 0175, TM0284 |
| Sulphide Stress Cracking SSC | NACE TM0177 |

| | |
|----------------------------|--------------------------|
| Corrosion Test – Detecting | ASTM A262 -05 Practice A |
|----------------------------|--------------------------|



| | |
|---|--------------------------------|
| susceptibility to inter-granular attack in austenitic stainless steel. | ASTM A262 -05 Practice B |
| | ASTM A262 -05 Practice C |
| | ASTM A262 -05 Practice E |
| | ASTM A262 -05 Practice F |
| Corrosion Test – Detecting susceptibility to inter-granular attack in wrought, Ni Rich, Cr Bearing Alloys | ASTM G 28 -2008 Method A and B |

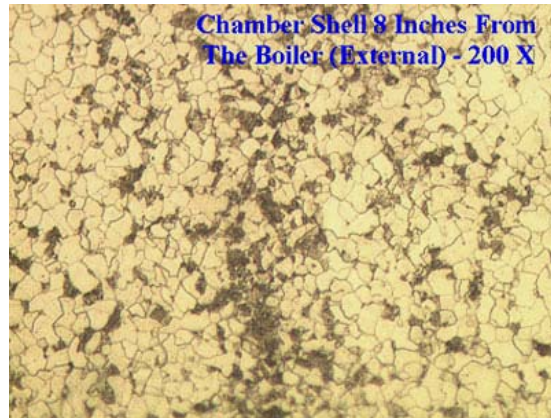
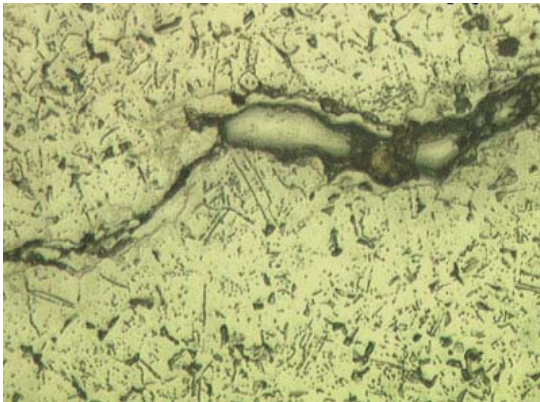


Please refer to the scope of our MS ISO/IEC 17025 accreditation for details. SAMM No. 442



Non-Destructive Tests or NDT

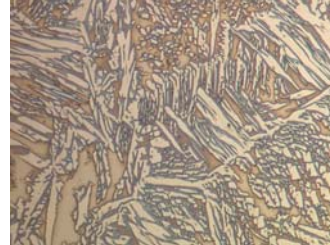
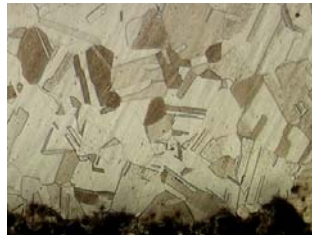
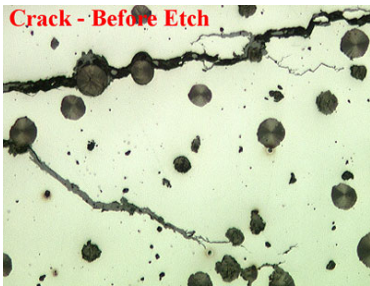
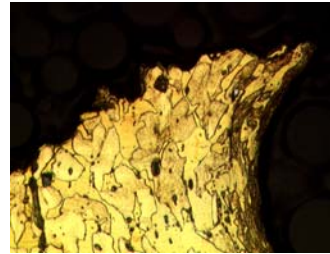
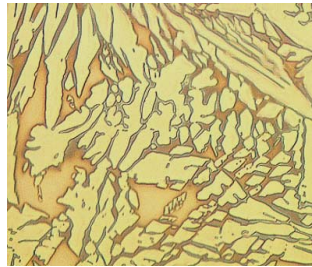
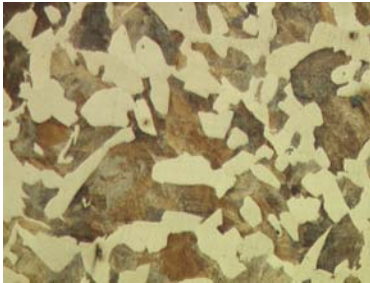
19. Replica Test (In Situ Metallography) for Failure Investigation
20. Dye Penetrant Test
21. Magnetic Particle Inspection
22. Hardness Measurement at Site
23. Radiographic Examination of Test Coupons
24. In situ Ferrite Content determination using PMI Machine and based on Scheafler Diagram.
25. Dimensional Checks using Profile projector
26. Positive Material Identification (PMI)
27. Boroscopy





Metallography and Metallurgical Inspection

27. Microstructure Analysis
28. Determination of Carburised and Decarburised depths
29. Grain Size Determination after Normalising
30. Failure Investigations
31. Ferrite Counting of Duplex Stainless Steel
32. Corrosion Tests According to ASTM 262 Practice A to F



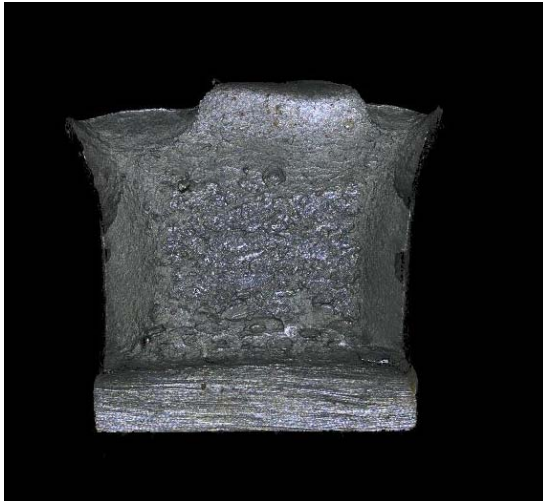
Calibration

33. Calibration of Pressure Gauges
34. Calibration of Pressure Recorders
35. Calibration of Welding Machines
36. Calibration of Torque Ranges and Torque Calibrators
37. Calibration of Emission Spectrometers



Our Latest Equipment

Our latest microscope is capable of infinite focus producing top quality fractographs for Charpy impact specimens, fractured test, nick break test and etc.



Our Products

ProductsTitle : **METACOS Surfactant D5** – A biodegradable additive to cooling towers to prevent corrosion
METACOS Biomex 3, RP1 and RP2 – Biodegradable degreasers for industrial use

METACOS Surfactant D5 is used extensive in cooling towers. This biodegradable addition and environmental friendly dispense away the need to use corrosive acids and alkaline. Biocides – a carcinogen is also not needed.

METACOS Biomex 3, RP1 and RP2 are biodegradable and environmental friendly degreaser used by industry for cleaning their storage tanks and tankers and etc.

METALLURGICAL CONSULTANCY AND SERVICES SDN. BHD. IS ONE OF THE DISTRIBUTORS OF THIS PRODUCT. For further information please contact Dr. Lim Ching Liang (Metallurgist) at 012-2781782

