



ULTRA ENGINEERING SERVICES

Add value to your products through testing



Reliable Testing, Certification & Compliance
Solutions Since 25+ Years

Engineering Excellence in Material Testing & Inspection

www.ultraengineering.in

Introduction



ULTRA Engineering Services provides services in the following category



**Training &
Certification**



**EN15085, EN1090, ISO3834,
PED, ASME, AWS**

- Training and certification for testing and calibration laboratory as per ISO 17025: 2017 standards and Measurement Uncertainty.
- Six Sigma Courses
- The ISO 9001 Quality Management System (QMS)
- ISO 14001 Environmental Management System (EMS)
- IATF 16949 quality management system for automotive production.
- ISO 45001:2018: Occupational Health and Safety Management System OHSMS
- ISO 3834-2: quality requirements for fusion welding of metallic materials
- CQI-9 : Continuous Quality Improvement – Heat Treat System Assessment).

- **CQI-11 (Continuous Quality Improvement) is a standardized self-assessment tool developed by the Automotive Industry**
- **CQI-12: Special Process for automotive industry standard for coating system assessments**
- **CQI-15 : Special Process: Welding System Assessment.**
- **CQI-27: Special Process: Casting System Assessment (CSA)**
- **CQI-29 (Brazing System Assessment)**
- **Certification for Painting and Coating Inspector**
- **Certification of Welding Inspectors**
- **Certification of All welders in all welding process**
- **CE / PED Certification of Welding Consumables**
- **NDE Level-I/II certification in (PT, MT,UT, VT and RT) as per SNC-TC-A)**

Note : We are providing these training on : On-site basis, off-line basis at our office premises and at Company's or Laboratory premises



Failure Analysis

FAILURE ANALYSIS OF FORGED COMPONENT CASE STUDY BY - SEM-EDS ANALYSIS

Category

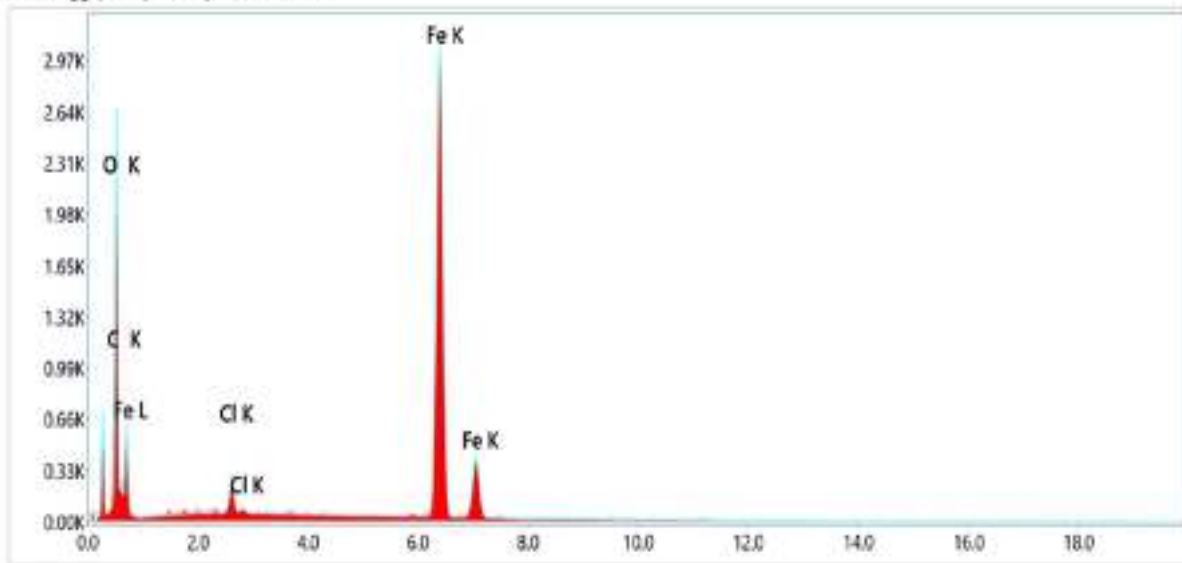
All Forged, Casting, Welded, brazed components, plastics and plastic products by the expert technical competent persons in the respective field.



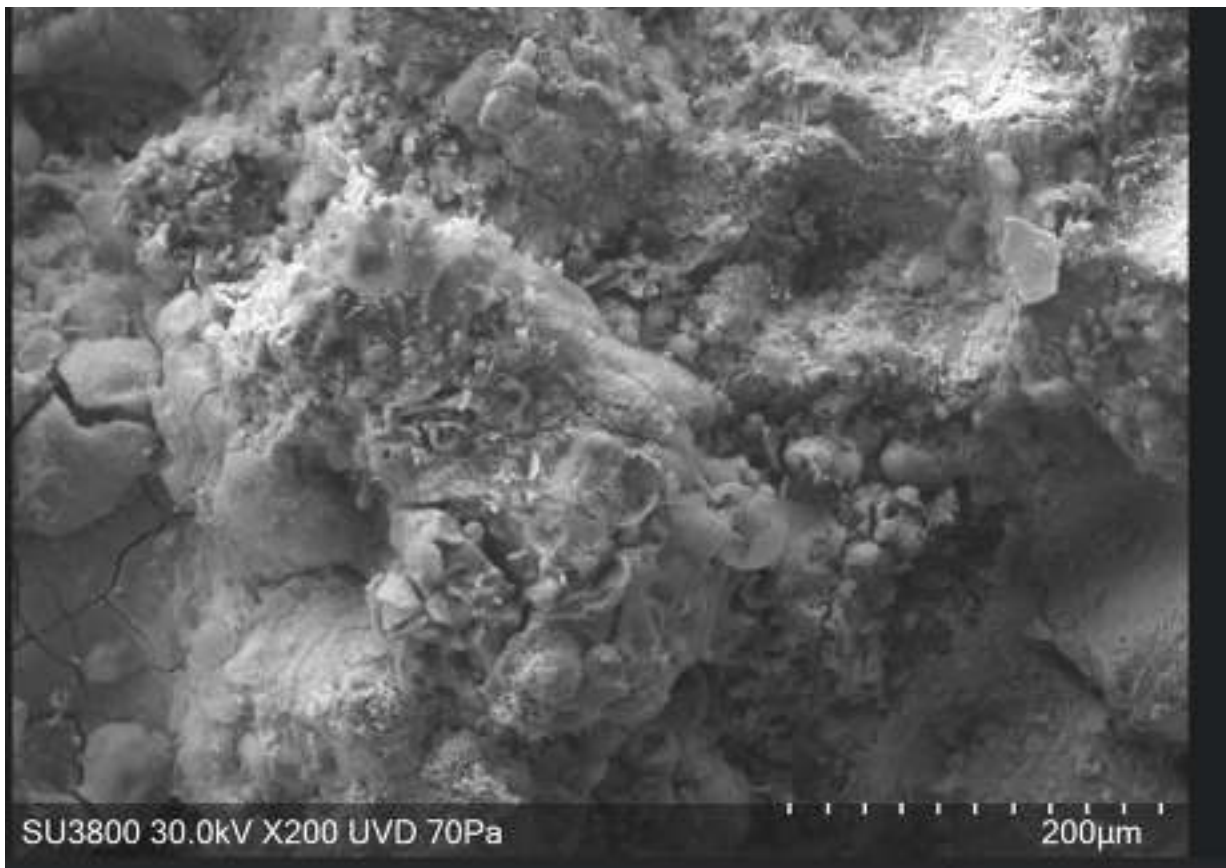
Introduction to Failure Analysis

kV: 30 Mag: 400 Takeoff: 38.3 Live Time(s): 30 Amp Time(μs): 3.84 Resolution (eV) 127.6

Ultra Engg. | SDC | Area 1 | Selected Area 4



Det: Element



THIRD PARTY INSPECTION



Independent third-party inspection and weld quality assessment services on-site or turnkey basis.

Weld Quality Inspection

In-Process Inspection

Final Inspection

Vendor Assessment

Stage Inspection

Expediting Services



Certified inspectors with ASNT, BGAS-CSWIP, and AWS qualifications

Introduction to Non-Destructive Testing Services



We are providing NDT services on site and at customer's premises on Man-day basis as well as on turnkey basis



(Like PT, MPT, UT, Ultrasonic Thickness Gauge, Hardness testing, DFT measurement, Surface roughness test on site.)



Introduction to Non-Destructive Testing Services



Not only testing , we are providing remedies with the failure observed along with Root Cause Analysis.

Ultrasonic Thickness Measurement

We provide service for Ultrasonic Thickness measurement of various boiler components, Heat exchanger, Vessels, Tank. Thickness Range: 0.5mm to 500mm , Resolution up to: 0.001 mm , Temperature up to: 500 Deg C.



Ultrasonic Testing

To detect deep Internal Defects.

APPLICATIONS:

- Weld Joints in Boilers, Heat exchanger, Vessels, Process Column
- Weld Joints in Headers & Tube

A photograph showing a person's hand holding an ultrasonic testing probe against a metal surface. The probe is connected to a device with a digital display showing a waveform. The metal surface has the number "67" marked on it.

Introduction to Product Certification through BIS



Battery



PCB



Air Conditioner



Solar panels



Fasteners



Structural Items

Introduction to Safety and load test



Third party inspection with certification services

Testing and certification of Lifting Tools, Pressure Plants and Pressure Vessels & Pressure Plants as per Factories Act 1948 & Maharashtra Factories Rules 1963.

Testing and certification of LPG Storage Tanks, Safety Relief Valves as per SMPV Rules 1981.

Safety Audit, Fire Audit, Electrical Safety Audit and preparation of Safety Reports as per Factories act 1948 & Maharashtra Factories rules 1963



Lifting Hooks



EOT Cranes



Safety Relief valves



LPG Storage Tanks

Introduction to Laboratory Testing Services provider for All Materials



● TESTING SERVICE PROVIDER

● Speciality in testing (Fatigue testing , Creep testing, hot tensile, vibration testing, thermal shock testing, weather test, flammability test, Corrosion test (NSS / CASS test) .

● CHEMICAL ANALYSIS in categories

- Metals and Alloys, Building Material, Hazardous & Restricted Chemicals, Lubricants, Metallic coatings & treatment solutions, Industrial & Fine Chemicals, Ores & Minerals, Plastic & Resins, Rubber & Rubber Products, Soil and Rock, Solid Fuels, Textile, Water. Paper and Pulp, TEXTILE (WOVEN & NON-WOVEN)
- All Corrosion tests. (Salt spray, IGC, Mole growth), Petroleum and Products, Paints & Enamels, Wood and Wood Products

● BIOLOGICAL-

BIOLOGICAL TESTS ON OTHER MISCELLANEOUS TEST ONN)

- Fabric / Textiles, Coated material sheets, Plastic, Painted sheets, non-woven fabric, Canvas, Plastics, Painted Sheets.

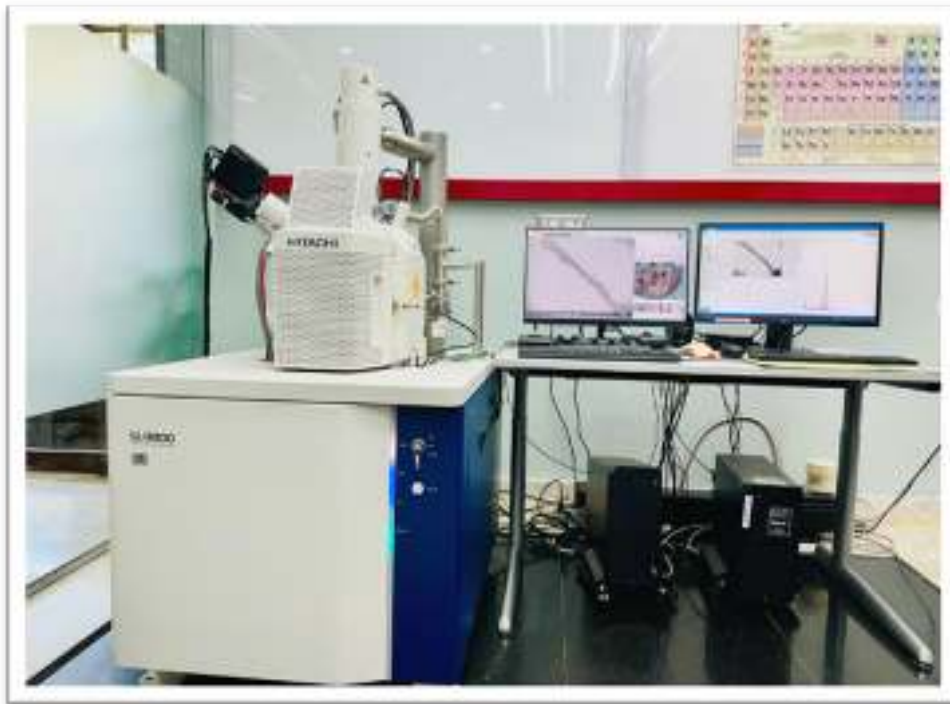
● DIAGNOSTIC RADIOLOGY QA TESTING DISCIPLINE

- Radiography (X-ray -Fixed Portable, Mobile)
- Computed Tomography (CT)
- Mammography
- Interventional Radiology & Fluoroscopy
- Mechanical testing: Building, Infrastructure & Construction Materials, Heating, Ventilating, and Air Conditioning (HVAC), Leather and Leather Products, Mechanical Properties of Metals, Metallography Test, Paper & Paper products, Hot Tensile Test, Creep resistance test, Fatigue test, Performance/Durability/ Safety Test, Plastics and Plastic Products, Rubber and Rubber Products, Soil and Rock, Rock- Basic, Textile Materials, Wood and Wood Products

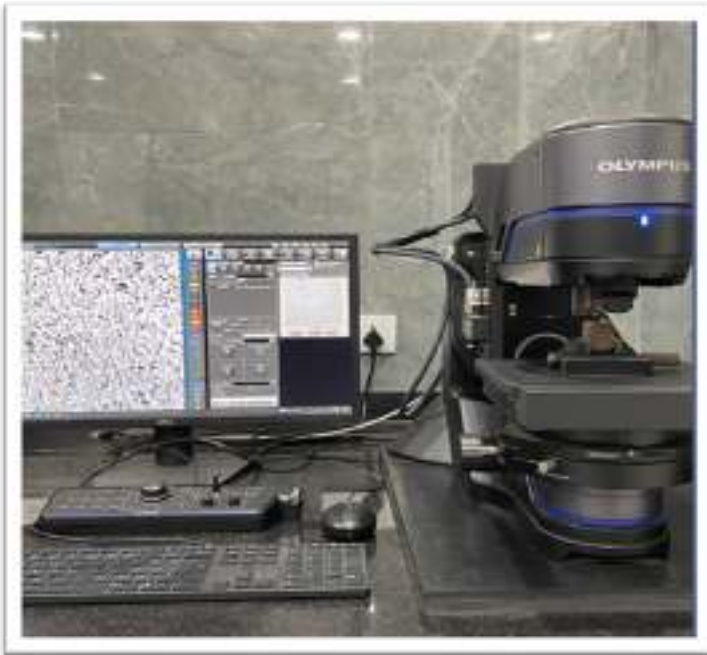
Introduction to Laboratory Testing Services provider for All Materials



- **Photometry Testing**
- (Glasses/ Mirrors, Light Sources (Electric Lamp) , Luminaires
- Electrical:
- Environmental test, Domestic electrical appliances, Safety Testing
- Electronics
- IT Equipment, Audio equipment.
- SEM-EDS and fractography



Introduction to Laboratory Testing Services provider for All Materials



**Microstructure
Examination**



**Chemical Analysis by
Optical Emission Spectrometer**

Hardness measurement



APPLICATIONS:

Material, Weld & HAZ area of any
equipment Welding And Metal Failure
Part Investigation
Low thickness Material

Introduction to Laboratory Testing Services provider for All Materials



- **Corrosion Testing:**

- Corrosion testing refers to the processes conducted by laboratories in order to solve, prevent or mitigate problems related to corrosion.

Types of Corrosion Test:

IGC Practice A, B, C, D, E, F as per ASTM A 262

IGC Practice W, X, Y, Z as per ASTM A 763

IGC Test Method as per ASTM A 923



- **MILLIPORE TEST: CONTAMINATION – EVALUATION**



- **Radiography Testing**

To detect the Internal Defects of Weld Joints and Casting. APPLICATIONS: Weld Joints in Steam Drum , Weld Joints in Headers , Butt Joints of Pipes and Tubes

Introduction to to Laboratory Testing Services



Positive Material Identification (PMI)

To identify the grade of various materials and alloys.

● APPLICATIONS:

Almost all Metals and Alloys can be identified Sorting of Metals



Introduction to ADVANCE NDT Testing Services

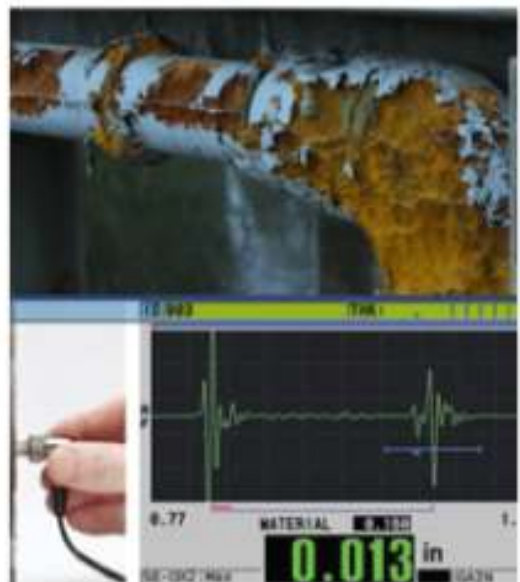


Internal Oxide Scale Measurement (IOT)

Advanced Ultrasonic Testing to measure thickness of Internal Oxide Scale.

APPLICATIONS:

- Boiler Super Heater Tubes
- Boiler Re-Heater



Introduction to ADVANCE NDT Testing Services



● APPLICATIONS:

Tank roof & shell Vessel Storage
Bunker Cement Ash Silo Offshore
Structure Chimney.

Scorpion (Remote-access
ultrasonic crawler)

Advance dry-coupled remote-
access ultrasonic crawler to bring
thickness measurement and data
improvements to tank shell inspections and other
structures such as vessels and offshore installations



ID Eddy Current Testing (ECT)

To detect defects in Heat
Exchanger and Condenser
Tubes in Power Plants.



**To detect defects
in Heat Exchanger
and Condenser
Tubes in Power
Plants.**



Helium Leak Testing (HLT)

To detect very Small Leaks in any vessel.

● APPLICATIONS:

Heat Exchangers Valves Pressure Vessels
Condensers Generators

Introduction to RLA Testing Services of Boilers



RLA and NDT of Boilers.

Our firm is recognized by Central Boiler Board as a **WELL – KNOWN RLA ORGANIZATION** for carrying out Remnant Life Assessment of up to and above 120kg/cm² pressure any type of boilers and Boiler component.

Competent Person - IBR

We have authorized Competent person for Inspection & Certification of boiler and boiler components under the Indian Boiler Regulation, 1950 during repairing and annual In-Service Boiler.

Competent Person - SMPV - PESO

Authorized Competent person for Inspection & Certification under the Static and Mobile Pressure Vessel Rule, 2016

Rule-18: Periodic Testing, Certification of Safety and Relief valves

Rule-19: Periodic Inspection, Testing and Certification of Pressure Vessel.

Introduction to RLA Testing Services of Boilers



Competent Person - DISH (Directorate of Industrial Safety and Health)

Authorized Competent person for Inspection & Certification
under the Factory Act, 1948

Section: 28, Hoists and Lifts

Section: 29, Lifting machines, chains, ropes, and lifting tackles

Section: 31 Pressure Plant

IBR Welder Qualification

Our firm is recognized by
Central Boiler Board as a
"COMPETENT AUTHORITY"
for welder Qualification /
Re-qualification under
the IBR-1950.



Introduction to RLA Testing Services of Boilers



In - House Welding Facility

We have In - House facility for Welding and Testing for qualification of welder under observation of Competent Person.

This certificate is used in welding of Boilers pressure part and components during manufacturing, erection and repairing work under the IBR, 1950.

This certificate is applicable anywhere in India under IBR,1950.



Post Welding Heat Treatment (PWHT) and Stress Relieving

We are leading industrial PWHT, Stress Relieving service provider in power industries as per Indian Boiler Regulation, 1950 with digital panel and graph system.

Pre-Heating during Welding

Heating of metal parts for maintenance work.



Introduction to RLA Testing Services of Boilers



Post Welding Heat Treatment (PWHT) and Stress Relieving

We also provide PWHT service via Low-Voltage Stress Relieving Equipment.

Low-Voltage Equipment is used in:

- High Thickness Alloy Steel Drum
- Critical and Super-Critical Boiler Steam Pipeline



● Fire Resistance Test

Door and Shutter Assemblies, Fire Protective Doors, Windows and Accessories, Fire Resistant Brattice Cloth.

As per standard: IS 17518 (Part 1), ISO 3008-1: 2022

UL 10 C : 2021

,BS 476 (Part 22): 1987

IS 4355 (Clause 3.4.1 & Appendix A): 1977



Introduction to RLA Testing Services of Boilers



Supply of Engineering products dealing with :

- Fluids, Lubricants & Rust preventive oils.

Product Verticals



Heat Treatment
Fluids

Forging Die
Lubricants

Machining and
Grinding Fluids

Other Specialty
Products

- vSupply of Heat treatment fixtures and Trays

Heating Tray



Test Bar Holder



Introduction to RLA Testing Services of Boilers



**Stainless Steel Charging
Tray for Pit Type Heat**



Woven Type Wire Mesh

Heat Exchangers , Tanks, Vessels and Reactors.

STAY CONNECTED

ULTRA ENGINEERING SERVICES

IMAGES



MILIPORE TEST SETUP



WELD PENETRATION TEST : ZOOM STEREO MICROSCOPE



Zoom stereo microscope



Chemical Analysis by OES



IMAGES



IMAGES



IMAGES



IGC TEST SETUP



IGC TEST SETUP



SALT SPRAY TEST SETUP



JOMINY END QUENCH TEST SET UP

IMAGES



**FIRE
TESTING
FACILITIES
FOR DOORS
AND
WINDOWS**



ULTRA ENGINEERING SERVICES

Add value to your products through testing

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